Stream Channel and Habitat Attributes in the National Forests in North Carolina Before and After the Hurricane Flooding Events of 2004

Report for: Western North Carolina Storm Recovery Incident

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October 2005

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Introduction

In the mid-1990's the National Forests in North Carolina (NFsNC) began working with scientists from the Forest Service Southern Research Station (SRS) and biologists from the SRS Center for Aquatic Technology Transfer (CATT) to develop and apply stream habitat inventory methods based on the Hankin and Reeves (1988) visual estimation techniques. The resulting basinwide visual estimation technique (BVET) habitat inventory that emerged allowed the NFsNC to collect data to describe the current condition of streams and to examine for changes in stream habitat over time (Dolloff et al. 1993). The NFsNC BVET habitat inventory can be adapted to meet project-specific goals while maintaining the integrity of a core set of attributes needed for comparison between inventories over time (Roghair et al. 2003). In total, the NFsNC completed BVET habitat inventories on 49 streams reaches between 1998 and 2004. The goal of the inventories was to provide baseline stream habitat data for Forest-wide stream habitat monitoring efforts focused primarily on 3rd order streams (Sheryl Bryan, NFsNC; pers. comm.).

Between September 8th and 28th 2004 remnants of Hurricanes Frances, Ivan, and Jeanne passed over western North Carolina causing extensive flooding, damage to infrastructure and property, and loss of life. In the NFsNC alone there was an estimated $47 million in storm related damage with an estimated $5 million in damage to water/soil resources. Short-term goals to assess impacts and determine appropriate responses to storm damage were established and an incident command team was assigned to coordinate the recovery effort.

In January 2005 resource managers from the NFsNC contacted the CATT to request assistance with BVET habitat inventories in several affected watersheds. The CATT provided a crew of six persons between May and August 2005 to perform stream habitat inventories and to assist with other recovery efforts as needed. The crew completed a total of 53 BVET inventories focusing on watersheds impacted most severely by flooding (Curtis Creek, Davidson River, South Toe River, and Pigeon River watersheds). Five of the 53 streams had been previously inventoried by the NFsNC between 1998 and 2004.

This report summarizes the results of the summer 2005 stream habitat inventories and compares them to the range of conditions encountered in NFsNC streams prior to the 2004 hurricanes. For the five reaches inventoried both before and after the hurricanes we are able to make direct pre- and post-flood comparisons of habitat attributes. We compare our results with impacts observed following other extreme flood events in the Appalachians and present recommendations based on these comparisons.

Methods

BVET habitat inventories

All habitat inventories were based on the basinwide visual estimation technique (BVET) habitat inventory described in Dolloff et al. (1993). BVET habitat inventories performed prior to 2005 generally followed procedures outlined in Roghair (2003), though there was considerable variation in the number of attributes included in inventories and the length of inventory reaches. Inventories performed in summer 2005 followed procedures outlined in Roghair (2005). Inventories performed in summer 2005 began at confluences for streams contained within National Forest boundaries and at the downstream USFS boundary for all other streams. Inventories were terminated when we encountered an upstream USFS boundary, when the wetted channel was less than 1 m average wetted width for more than 500 m, or when conditions were unsafe for survey personnel to continue. We were unable to determine the starting points for several inventories performed prior to 2005 and ending points were generally not described.

Two-stage visual estimation techniques were used to quantify habitat in selected stream reaches. During the first stage habitat was stratified into similar groups based on naturally occurring habitat units including pools (areas in the stream with concave bottom profile, gradient equal to zero, greater than average depth, and smooth water surface), and riffles (areas in the stream with convex bottom profile, greater than average gradient, less than average depth, and turbulent water surface). Glides (areas in the stream similar to pools, but with average depth and flat bottom profile) were identified during the survey but were grouped with pools for data analysis. Runs (areas in the stream similar to riffles but with average depth, less turbulent flow, and flat bottom profile) and cascades (areas in the stream with greater than 12% gradient, high velocity, and exposed bedrock or boulders) were grouped with riffles for data analysis.

Habitat in each stream was classified and inventoried by a two-person crew. One crew member identified each habitat unit by type (as described above), estimated average wetted width, average and maximum depth, riffle crest depth (RCD), substrate composition, and percent fines. The length (0.1 m) of each habitat unit was measured with a hip chain. Average wetted width was visually estimated. Average and maximum depth of each habitat unit were estimated by taking depth measurements at various places across the channel profile with a graduated staff marked in 5 cm increments. The RCD was estimated by measuring water depth at the deepest point in the hydraulic control between riffles and pools. The RCD was subtracted from average pool depth to obtain an estimate of residual pool depth. Substrates were classified in one of nine size classes according to the modified Wentworth scale (Appendix A). Dominant substrate (covered greatest amount of surface area in habitat unit) and subdominant substrate (covered 2nd greatest amount of surface area in habitat unit) were visually estimated. Percent fines was the percent of

surface area of the stream bed that consisted of sand, silt, or clay substrate particles (particles < 2 mm diameter).

The second crew member classified and inventoried large woody debris (LWD) within the stream channel, determined the Rosgen's channel type associated with each habitat unit, and recorded data on a Husky Fex21 data logger. LWD was assigned to one of four size classes (Appendix A). All woody debris less than 1 m long and less than 10 cm in diameter were omitted from the survey. Rosgen's channel type was visually estimated using criteria found in Rosgen (1996).

The first unit of each habitat type selected for intensive (second stage) sampling (i.e. accurate measurement of wetted width) was determined randomly. Additional units were selected systematically (every 10th habitat unit type for streams >1000 m and every 5th habitat unit type for streams <500 m). The wetted width of each systematically selected habitat unit was measured with a meter tape across at least three transects. In each of the systematically selected (second stage) riffles we also measured the bankfull stream channel width, riparian width, measured channel gradient, and water temperature. We measured bankfull channel width perpendicular to flow. Riparian width was estimated by measuring from the edge of the bankfull channel to the intersection with the nearest landform at an elevation equal to two-times maximum bankfull depth as described by Rosgen (1996). When the stream channel was too damaged from flooding to identify bankfull channel indicators bankfull channel widths and riparian widths were not measured. Gradient was estimated by using a clinometer to site from the downstream to the upstream end of the selected riffle. Water temperature was measured with a thermometer in flowing water out of direct sunlight.

Data Analysis

BVET data

We used the ratio of measured to estimated area to develop a calibration ratio, which allowed us to correct visual estimates and estimate stream area with confidence intervals (Hankin and Reeves 1988). BVET calculations were computed with a Microsoft Excel spreadsheet using formulas found in Dolloff et al. (1993). Data were summarized using Excel spreadsheet and SigmaPlot graphics software templates developed by the CATT.

Direct comparisons

We compared habitat attributes for five stream reaches inventoried both before and after the flood event. Where total inventory lengths differed between years we truncated the longer inventory to match the shorter inventory reach. All reaches used for comparisons started at the same point (either at the confluence with another stream or at the Forest Service boundary) and ended at approximately the same

distance upstream. We examined each stream reach for changes in several habitat attributes. The complete survey information for the truncated surveys are included in the 'Stream Summaries' section of this report.

Range of conditions

We used data from all reaches inventories before and after the flood event to examine for changes in the range of conditions encountered in NFsNC streams. Streams inventoried during both time periods encompassed a range of channel gradients and sizes. For comparison purposes we grouped streams by channel gradient: <2%, 2-4%, 4-10%, and >10%. The gradient categories were based on those used in the Rosgen stream classification system (Rosgen 1996). Streams within similar gradient classes were examined for changes in several attributes.

Results

BVET data

Separate BVET data analyses were completed for each inventoried stream reach. Results are presented in two sections: 1) the 'Summary Tables' section allows readers to quickly compare attributes between streams, and 2) the 'Stream Summaries' section provides detailed results for each stream, including several tables and charts for selected attributes.

Direct comparisons

The total number of pools and riffles decreased in all five reaches (Table 1), however there was an increase in the average size of pools and riffles for all five reaches after the flood events of 2004 (Table 2). The pool:riffle ratio decreased (i.e. there was a decrease in the total surface area covered in pools) after the flood events (Table 3), with a corresponding increase in the total surface area covered by riffles (Table 4), and total stream area was essentially unchanged (Table 5). Post-flood mean residual pool depth was lower in 4 of the 5 reaches. The exception was Davidson River where the mean residual pool depth more than doubled (Table 6).

The total amount of LWD per km decreased in all five reaches after the flood events (Table 7). The largest change occurred in Little East Fork Pigeon River where the total pieces of size 1 (1-5 m long, 10-50 cm diameter) and size 2 (1-5 m long, >50 cm diameter) LWD decreased dramatically. The smallest change occurred in Newberry Creek where pre- and post-flood estimates were within 15 pieces per km. Size 1 and size 3 LWD (>5 m long, 10-50 cm diameter) both increased in quantity in Newberry Creek and size 3 increased in Cove Creek after flooding. Both before and after flooding, the majority of the LWD in all streams were categorized in size classes 1, 2, and 3. Very few of the largest size category (size 4; > 5 m long, > 50 cm diameter) were counted before or after the flood event.

Cobble, boulder, and bedrock were the most commonly encountered substrates in all stream reaches both before and after the flood events. There were slight post-flood shifts in towards larger sized substrates in the Davidson River and Cove Creek as organic material, sand, and gravels were replaced by cobbles, boulders and bedrock (Figure 2), but the other stream reaches were very similar in substrate composition before and after flooding.

Range of conditions

Streams inventoried after the flood events were on average higher in channel gradient and smaller in channel width than those inventoried prior to the flood event (Figure 3). We could not examine for changes in stream channels with less than 2% gradient due to small sample sizes in both pre- and post-flood inventories. We inventoried several streams in the 2-4% gradient category during both pre- (n = 8) and post-flood (n = 5) inventories. The bulk of streams inventoried prior to the floods were in the 4-10% gradient category (n = 18). There were nearly the same number of post-flood streams in the 4-10% gradient category (n = 21), however post-flood streams within the category were generally higher gradient and less wide than those in the pre-flood event group (Figure 4). Few pre-flood streams were over 10% gradient (n = 4), whereas nearly half of all post-flood inventories (n = 25) were on streams with over 10% gradient. Disparity in pre- and post-flood sample sizes in the greater than 10% category and differences in stream size and gradient within the 4-10% category limited our ability to compare pre- and post-flood conditions, but we were able to make the following observations.

The median values for percent pool area, pools per km, riffles per km, mean pool area, mean riffle area, and mean residual pool depth were similar for streams in the 2-4% and >10% gradient categories before and after the flood events (Figure 5). Apparent decreases in median values in the 4-10% gradient category may be explained by differences in pre- and post-flood stream size and gradient rather than effects of flooding (see above and 'Discussion').

In contrast to the results from the direct comparisons, we found that the median amount of total LWD per km was higher in post-flood than pre-flood event streams in the 4-10% gradient category, was nearly equal in the 2-4% gradient category and was only slightly lower in the >10% gradient category (Figure 6). Pieces greater than 50 cm in diameter (size 2 and size 4) comprised the lowest proportion of total LWD. The median amount of LWD 10-50 cm in diameter (size 1 and size 3) remained nearly the same or was higher in all gradient classes during post-flood event inventories. The NFsNC desired future condition for LWD (greater than 62 total pieces per km) was most frequently met in streams greater than 10% in gradient. LWD loading generally increased with increasing stream gradient.

Substrate sizes were not substantially different in pre-flood and post-flood streams in any gradient class. Pools in lower gradient streams were dominated by sand and bedrock substrates, whereas the

highest gradient streams were dominated by cobbles, boulder and bedrock (Figure 7). There was a slight shift towards larger size substrates in pools in the 4-10% substrate category, though this may once again be related to differences in stream gradient in pre- versus post-flood streams (see above and 'Discussion'). Riffles in all gradient categories were dominated by cobble, boulder and bedrock both before and after the flood events (Figure 8).

Discussion

Large floods, landslides, and debris flows triggered by high-intensity rain events are common in mountain landscapes and play important roles in shaping stream channels and their biotic communities (Hack and Goodlet 1960, Montgomery and Wohl 2003, Swanson 1980, Wieczorek at al. 2004, Wondzell and Swanson 1999). Such events can have dramatic effects on stream channels through scouring and deposition of substrates, clearing of riparian vegetation, creation of large debris jams, displacement or elimination of stream fauna, and destruction of infrastructure. These disturbances vary in intensity as they travel across the landscape creating a variety of post-flood conditions. In addition recurrence intervals are irregular and can vary widely between streams leaving them in a variety of post-disturbance succession states even within the same watershed. This variation in space in time creates habitat heterogeneity necessary for population persistence in variable stream environments (Montgomery and Wohl 2003, Reeves et al. 1995, Reice et al. 1990).

The ability of streams to respond to extreme flooding is evident in the considerable resilience stream habitat and biota demonstrate in the wake of such events. Following similar disturbances, stream habitat attributes have returned to near pre-flood conditions within six years (Roghair et al. 2002) and stream fishes typically recolonize reaches and return to near pre-flood population density within 1-3 years (Dolloff et al. 1994, Lamberti et al. 1991, Lennon 1961, Roghair and Dolloff 2004, Smith and Atkinson 2001). The ability of streams to respond depends on many factors, including pre-disturbance watershed condition and intensity and magnitude of the event.

In the NFsNC flood effects were most pronounced when we compared results of habitat inventories performed on five reaches both before and after flooding. In these reaches we observed decreases in pools and riffles per km and increases in average pool and riffle area. These results correspond well with changes observed following Hurricane Hugo flooding on Basin Cove in western NC (Dolloff et al. 1994). However the large decreases in total LWD observed here are in sharp contrast to flood effects on LWD loading in Basin Cove and the Staunton River, a debris flow impacted stream in Shenandoah National Park, VA (Roghair et al. 2002). In both streams the total amount of LWD *increased* sharply following extreme flooding. These studies also showed marked increases in the dominant substrate size following flooding, whereas the streams inventoried here showed only minor, if

any shifts towards larger dominant particle sizes. These differences may be attributable to differences in flood intensity, pre-flood watershed conditions or watershed characteristics between the five reaches used for direct comparison and those observed in previous studies.

In addition to providing data for direct comparisons, the NFsNC stream monitoring program provided valuable data for comparison of the range of pre- and post-hurricane habitat conditions. The program was originally developed to monitor habitat conditions in 3rd order streams (Sheryl Bryan; NFsNC, pers. comm.). Post-flood inventories included some 3rd order streams but were focused primarily on streams higher in the watershed where flooding appeared to have the greatest impact. The resulting dataset provided few streams for direct comparisons and a post-event sample skewed towards higher gradient streams.

The confounding effect of the disparity in stream gradient and width can be seen in the results for streams in the 4-10% gradient category. It appears that post-flood streams in this category had decreases in many attributes including area in pools, pools per km, riffles per km, mean pool area, mean riffle area, and residual pool depth. As a whole, these results do not match post-flood conditions observed in other Appalachian Mountain streams impacted by similar events (Table 8). However, they do correspond with changes expected with increasing channel gradient and decreasing channel width. Higher gradient channels tend to have longer bedrock and step-pool cascades (classified as riffle habitat during BVET), resulting in less pool area and fewer habitat units per km, and total surface area decreases as channel width decreases. In light of these differences and considering the lack of change observed in other gradient classes it appears that the flooding events did little to alter the pre-flood range of conditions on the Forest.

Management Recommendations

1) In the majority of streams no major habitat modification projects (e.g. LWD inputs or installation of cover structures) will be necessary. Although changes observed in some stream reaches were dramatic, the overall effect on stream habitat was minimal. In addition, the NFsNC report that although fish populations had decreased in many streams, recruitment was strong and there were few if any areas where fish were completely eliminated (Sheryl Bryan, pers. comm.). Streams with good pre-event watershed condition will naturally move towards pre-event conditions over time.

2) There may be areas where direct management action is needed; for example in areas with infrastructure damage or where post-flood conditions have created safety concerns. In these areas channel modifications and habitat manipulation may be deemed necessary. Care should be taken to maintain hydrological integrity and to promote natural functioning of the channel and riparian areas to the greatest extent possible. For example, in replacing washed out road-stream crossings care should be taken to allow passage of LWD and substrate materials downstream as the channel stabilizes and fish and other aquatic organisms upstream as populations recover.

3) Restoration of recreation areas and infrastructure offers opportunities to improve overall watershed integrity. When restoring washed out trails, roads, and campgrounds it may be possible to move them out of floodplains and riparian areas, reducing ecological impacts and impacts to infrastructure from future floods. During all restoration projects care should be taken to minimize sediment inputs and damage to riparian areas or the stream channel. In some areas damage may be severe enough to warrant permanent road or trail closures.

4) The NFsNC should continue, and if possible expand their stream monitoring program. The program initiated in the mid-1990's provided valuable data needed to assess changes in stream condition following the hurricanes. In the future the Forest may wish to expand the program beyond 3rd order streams. The Forest should emphasize accuracy and consistency in data collection and arrange for regular training for technician performing inventories.

5) The best post-flood strategy is overall Forest management that promotes healthy watersheds. Naturally functioning watersheds with intact riparian buffers, natural levels of sediment input, and good connectivity between streams will generally suffer less damage and be able to mount a faster response to disturbance than those in poor pre-flood condition.

Table 1. Numbers of habitat units in sampled reaches of five streams inventoried before and after hurricane induced flooding on the NFsNC in September 2004.

	Pools		**Riffles**		**Total**	
Stream	**Before**	**After**	**Before**	**After**	**Before**	**After**
Davidson River	119	53	154	64	273	117
Newberry Creek	34	15	31	13	65	28
Cove Creek	20	6	18	11	38	17
Little EF Pigeon River	39	21	63	16	102	37
Upper Creek	28	11	34	10	540	220

Table 2. Estimated average areas (m^2) of habitat units in sampled reaches of five streams inventoried before and after hurricane induced flooding on the NFsNC in September 2004.

	Pools		Riffles		Total	
Stream	**Before**	**After**	**Before**	**After**	**Before**	**After**
Davidson River	744	762	1098	2878	944	1919
Newberry Creek	46	62	37	158	42	106
Cove Creek	64	87	75	233	69	182
Little EF Pigeon River	46	67	74	342	63	186
Upper Creek	69	90	251	690	19	36

Table 3. Pool:riffle ratio for sampled reaches of five streams inventoried before and after hurricane induced flooding on the NFsNC in September 2004.

Stream	**Before**	**After**
Davidson River	0.52	0.22
Newberry Creek	1.36	0.45
Cove Creek	0.95	0.20
Little EF Pigeon River	0.38	0.26
Upper Creek	0.23	0.14

Table 4. Total pool and riffle area (m^2) and 95% confidence intervals (CI) for sampled reaches of five streams inventoried before and after hurricane induced flooding on the NFsNC in September 2004.

	Before				**After**			
Stream	**Pool**	**95% CI (+/-)**	**Riffle**	**95% CI (+/-)**	**Pool**	**95% CI (+/-)**	**Riffle**	**95% CI (+/-)**
Davidson River	88560	9080	169126	19249	40386	5617	184171	17458
Newberry Creek	1561	83	1151	143	928	4	2053	45
Cove Creek	1274	93	1344	157	521	0	2566	148
Little EF Pigeon River	1784	50	4683	280	1417	17	5474	90
Upper Creek	1926	411	8548	1842	989	52	6903	13

Table 5. Total area (pool and riffle combined) (m^2) and 95% confidence intervals (CI) for sampled reaches of five streams inventoried before and after hurricane induced flooding on the NFsNC in September 2004.

	Before		After	
Stream	**Total Area**	**95% CI (+/-)**	**Total Area**	**95% CI (+/-)**
Davidson River	257686	20649	224557	18216
Newberry Creek	2712	146	2981	43
Cove Creek	2618	160	3087	202
Little EF Pigeon River	6466	284	6891	88
Upper Creek	10474	1888	7892	54

Table 6. Residual depths (cm) for pools in sampled reaches of five streams inventoried before and after hurricane induced flooding on the NFsNC in September 2004.

Stream	**Before**	**After**
Davidson River	29	69
Newberry Creek	16	14
Cove Creek	32	16
Little EF Pigeon River	32	17
Upper Creek	45	38

Table 7. Large woody debris (LWD) per kilometer for sampled reaches of five streams inventoried before and after hurricane induced flooding on the NFsNC in September 2004

	Before					After				
Stream	**1**	**2**	**3**	**4**	**Total**	**1**	**2**	**3**	**4**	**Total**
Davidson River	51	11	70	14	146	8	0	17	1	27
Newberry Creek	23	29	19	8	79	36	0	28	2	66
Cove Creek	186	66	28	12	293	45	5	42	2	94
Little EF Pigeon River	588	171	12	0	771	3	0	4	0	7
Upper Creek	54	2	36	1	93	4	0	10	0	14

Table 8. Observed changes in stream channel characteristics following extreme flood events in Appalachian streams. Symbols indicate a decrease (-), increase (+) or no change (0) in the habitat attribute. NA = no data available. NFsNC 2004 is the present report; see 'Literature Cited' for other data sources.

Data Source	**Total Pool Area**	**Ave. Pool Area**	**Ave. Riffle Area**	**Pools per km**	**Riffles per km**	**LWD Per km**	**Dominant Substrate Size**
NFsNC 2004	-	+	+	-	-	-	0
Roghair et al. 2002	0	-	-	+	+	+	+
Dolloff et al. 1994	0	+	+	-	-	+	+
Carline and McCullough 2003	0	NA	NA	+	+	0	+

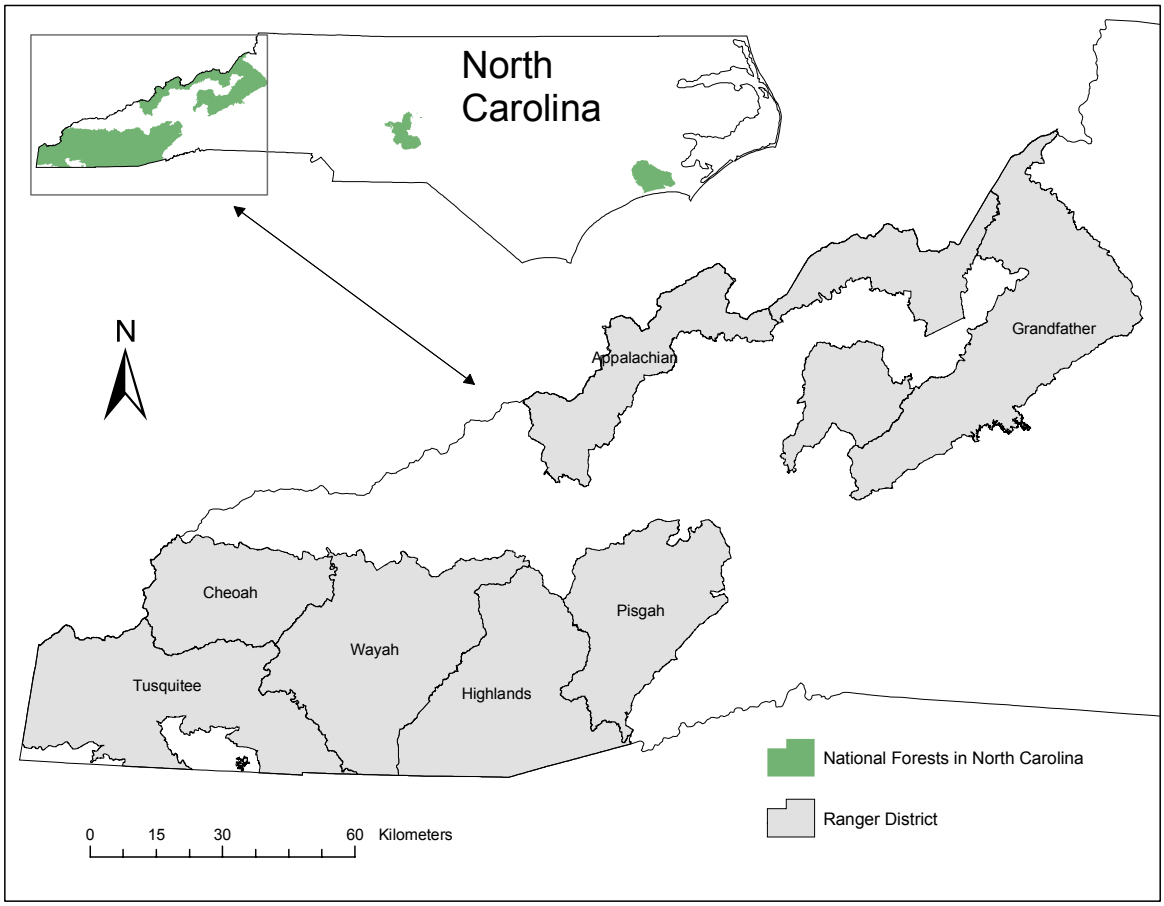

Figure 1. NFsNC Ranger Districts with stream inventories completed before and after the 2004 hurricanes.

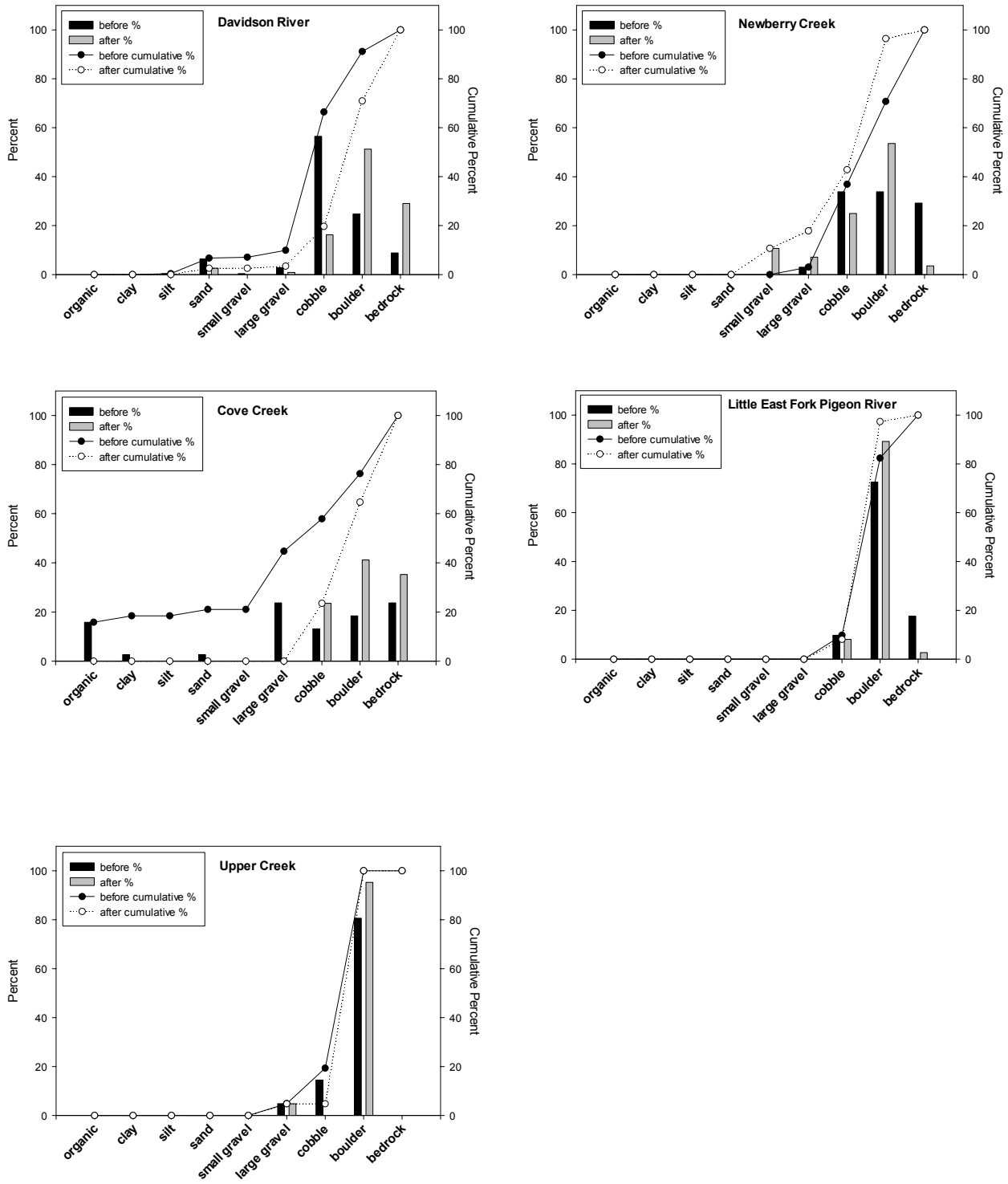

Figure 2. Percentages (bars) and cumulative percentages (lines) of occurrence of dominant substrates for pools and riffles combined in five stream reaches inventoried before and after hurricane induced flooding on the NFsNC in September 2004.

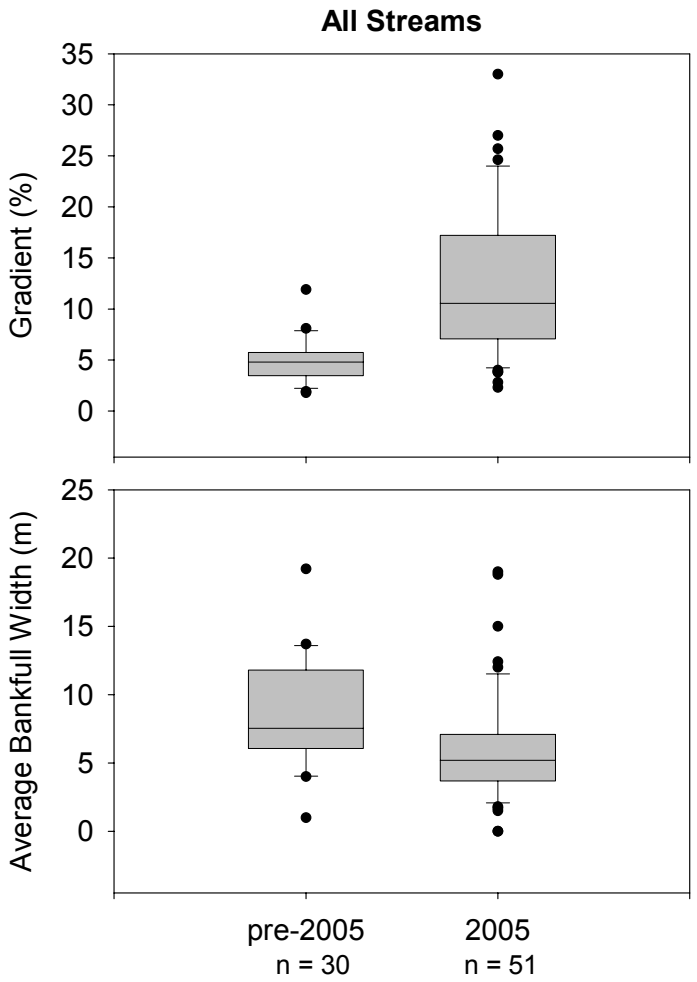

Figure 3. Channel gradient and average bankfull channel width for all streams inventoried before and after hurricane induced flooding on the NFsNC in September 2004. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.

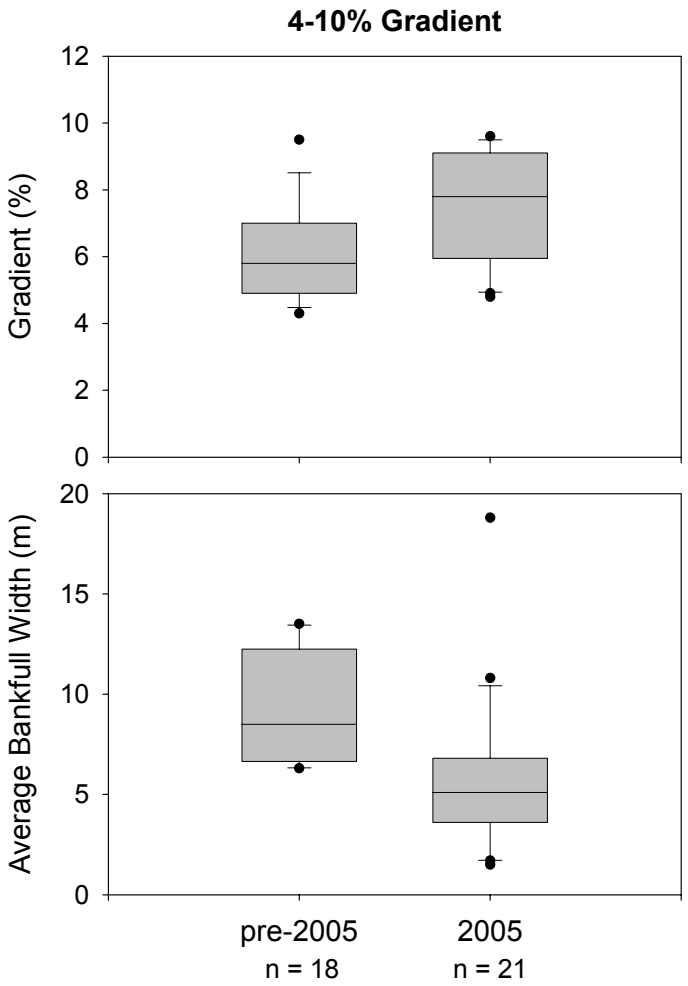

Figure 4. Channel gradient and average bankfull channel width for streams in the 4-10% gradient category inventoried before and after hurricane induced flooding on the NFsNC in September 2004. See Figure 3 for interpretation of box plots.

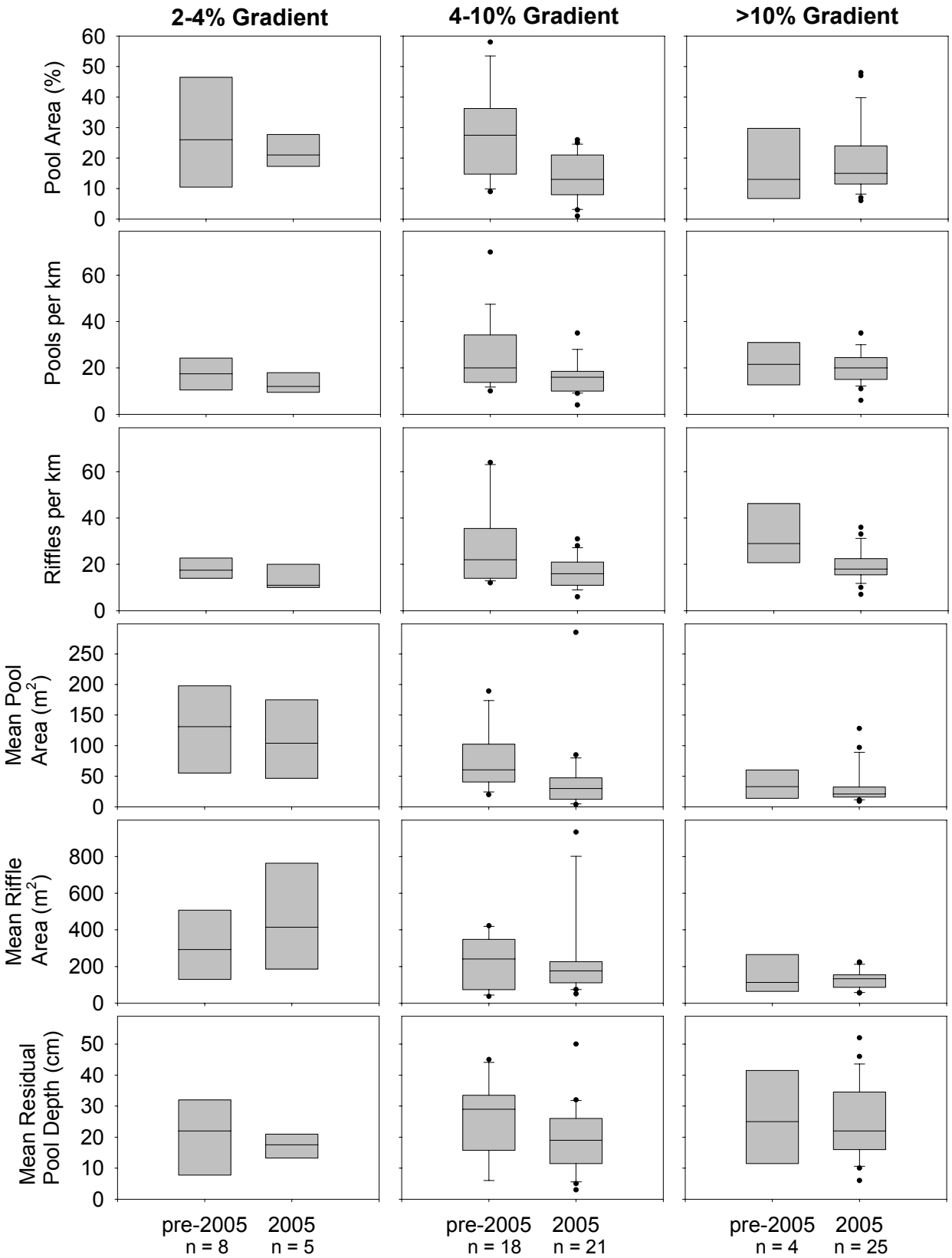

Figure 5. Stream habitat attributes for streams inventoried before and after hurricane induced flooding on the NFsNC in September 2004. See Figure 3 for interpretation of box plots.

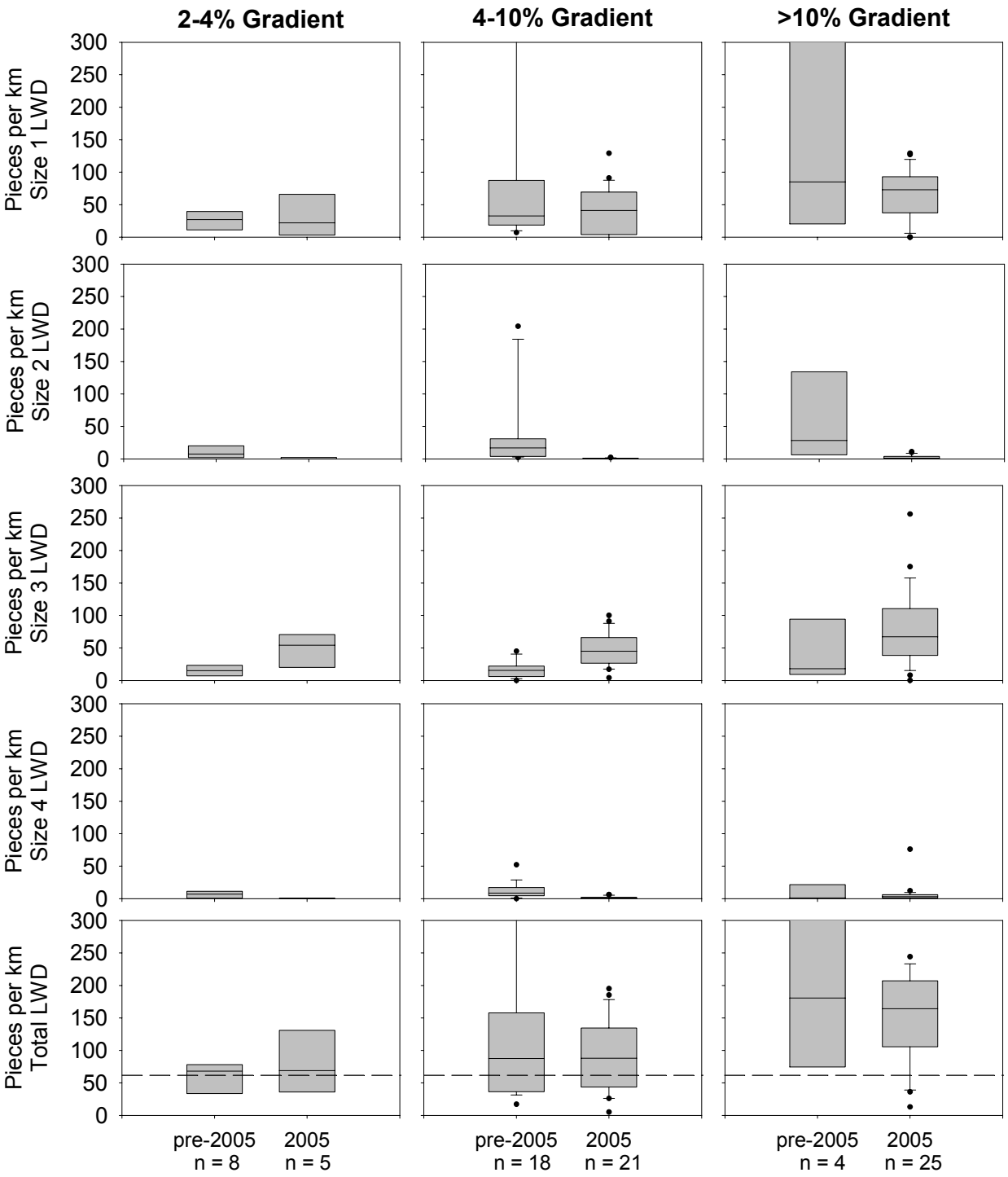

Figure 6. LWD per km for streams inventoried before and after hurricane induced flooding on the NFsNC in September 2004. Dashed line on Total LWD charts is desired future condition of 62 pieces per km. See 'Summary Tables' for range of values on box plots past the upper extent of their charts. See Figure 3 for interpretation of box plots.

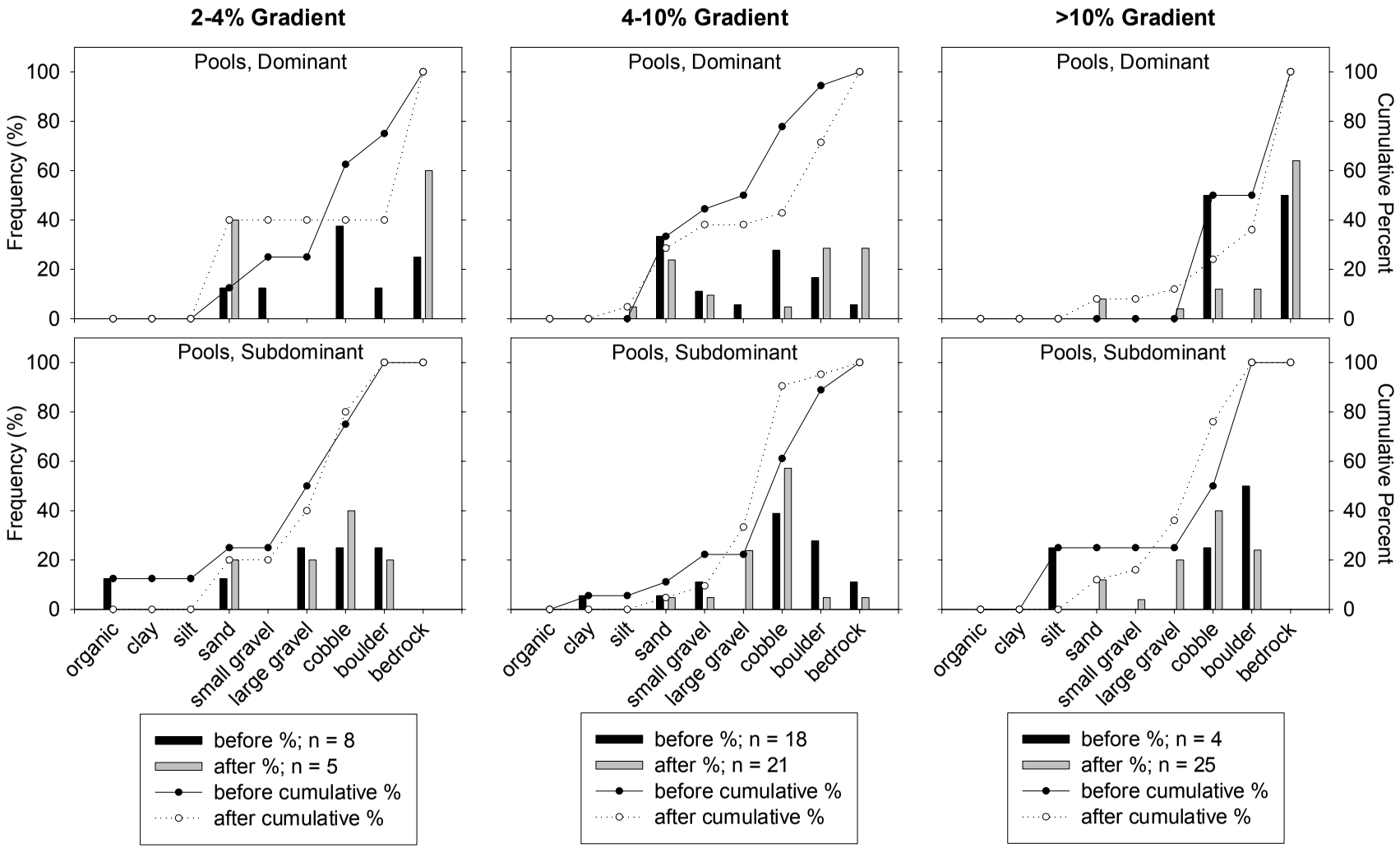

Figure 7. The most commonly encountered dominant and subdominant substrates in pools for streams inventoried before and after hurricane induced flooding on the NFsNC in September 2004.

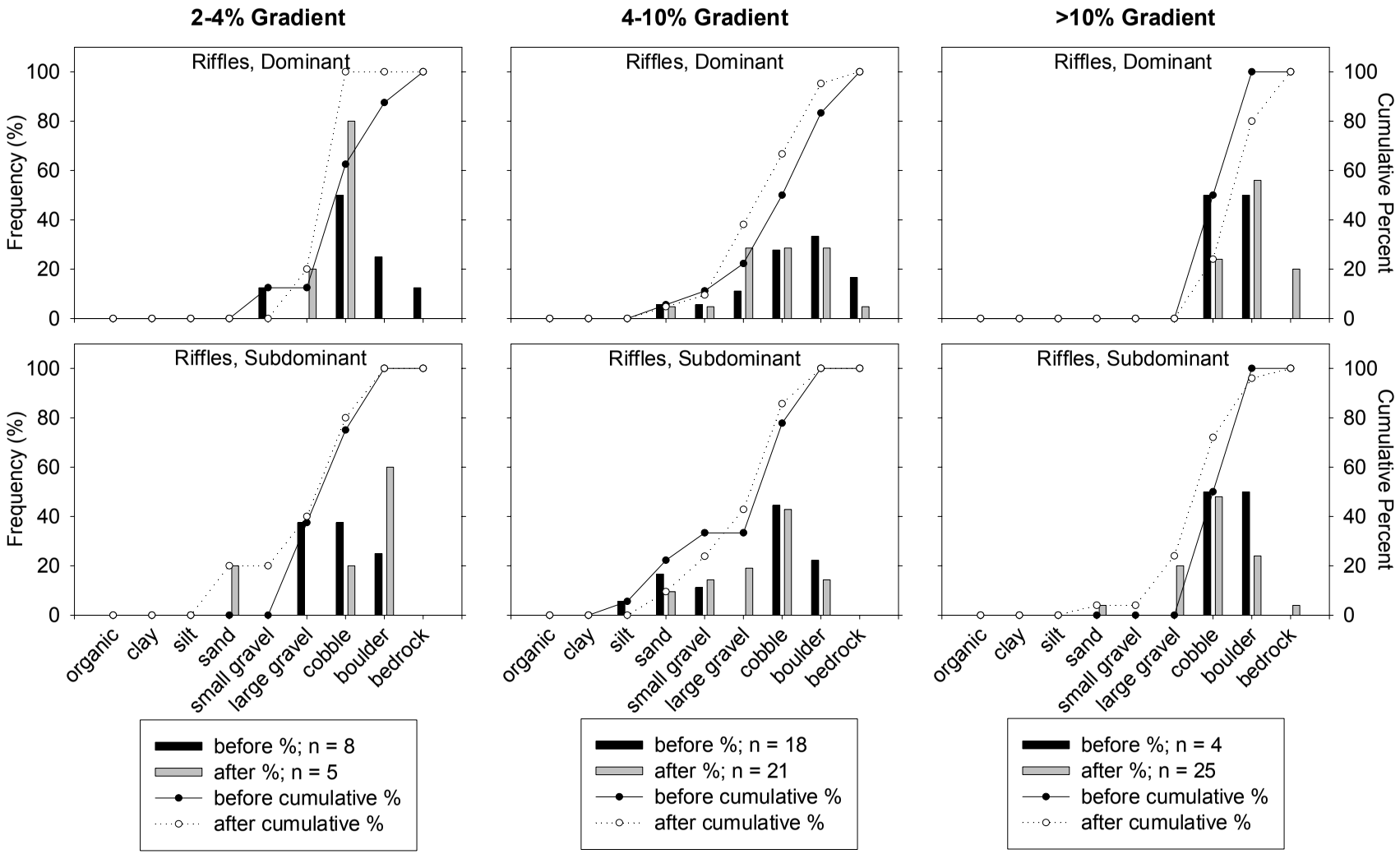

Figure 8. The most commonly encountered dominant and subdominant substrates in riffles for streams inventoried before and after hurricane induced flooding on the NFsNC in September 2004.

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Acknowledgements

We thank the CATT summer field crew for collecting all the 2005 data presented in this report. The field crew included Sean Dougherty, Ryan Smith, Adam Street, Katherine Tapp, John Whipple, and crew leader, Eric Fitzpatrick. We also thank the technicians and biologists on the NFsNC for collecting the pre-2005 habitat data. In addition, we thank Sheryl Bryan, the Western North Carolina Storm Recovery Incident Management Team, and the NFsNC for providing assistance with logistics and funding for the surveys.

Summary Tables

Pre-2005 Surveys

Survey information for streams surveyed prior to year 2005 using BVET habitat methods on streams of the National Forests of NC. 'Length' is total survey length. 'Start X' and 'Start Y' are the X/Y coordinates for the beginning point of the survey and are recorded in the coordinate system: NAD 1927 StatePlane North_Carolina FIPS 3200 Lambert Conformal Conic.

Stream	Date	length (km)	district	quad	6th HUC	Start Description	Start X	Start Y
Big Creek	6/28/00	0.8		Dunsmore Mountain				
Bowlens Creek	6/21/00	1.0	Appalachian	Mount Mitchell	06010108070010	FS boundary		
Upper Creek	6/23/04	1.2	Appalachian	Celo		confluence with South Toe River		
West Fork Shut In Creek	2001	0.4	Appalachian	Lemon Gap	06010105140010			
Corner Rock Creek	2001	1.0	Appalachian	Barnardsville/Mount Mitchell	06010105110010			
Hickory Fork	6/10/03	2.3	Appalachian	White Rock/Greystone	06010105130030	FS boundary	904222.315	837177.282
Groundhog Creek	6/21/04	2.0	Appalachian	Waterville	06010106020070	interstate 40	802836.550	754563.996
Middle Creek	2001	1.0	Appalachian	Celo	06010108020010	FS boundary	1046716.000	758394.000
Rock Creek	6/20/00	1.0	Appalachian	Celo	06010108020010	FS boundary	1045582.963	754043.155
Little Santeetlah Creek	6/12/00	1.1	Cheoah	Chestnut Mountain				
Little Slickrock Creek	6/4/00	1.6	Cheoah			mouth		
Shell Stand Creek	6/1/04	2.4	Cheoah	Hewitt	06010204020010	confluence with Rock Creek	526031.9605	587764.9797
Snowbird Creek	6/16/00	2.3	Cheoah	Santeetlah Creek	06010204020010	confluence with Owl Camp Branch	526031.961	587764.980
Santeetlah Creek	6/15/00	0.9	Cheoah	Santeetlah Creek	06010204020020	road xing near confluence with Whig Creek		
Left Fork Steels Creek	6/1/98	2.5	Grandfather	Chestnut Mountain		confluence with mainstem		
Armstrong Creek	6/13/00	1.0	Grandfather	Celo	03050101020020	FS boundary	1071183.003	757260.869
Buck Creek	6/1/98	3.7	Grandfather	Chestnut Mountain	03050101060010	confluence	1158484.960	799643.990
Little Fork Steels Creek	6/1/98	4.7	Grandfather	Chestnut Mountain	03050101060010	confluence	1165892.960	794125.025
Steels Creek	6/1/98	11.1	Grandfather	Chestnut Mountain	03050101060010	confluence with Buck Creek		
Andrews Creek	2001	1.0	Grandfather	Grandfather Mountain	03050101070030	confluence with Stack Rock Creek	1169101.451	855810.199
Wilson Creek	7/13/00	0.9	Grandfather	Grandfather Mountain	03050101070030			
Newberry Creek	6/15/00	0.5	Grandfather	Old Fort	03050101010020	FS boundary	1045835.982	717211.303
Fowlers Creek	6/4/00	1.5	Highlands	Cashiers	03060102010010			
Overflow Creek	6/19/00	2.4	Highlands	Highlands	03060102010020			
Tanassee	6/20/01	2.1	Highlands	Sam Knob	06010203010010	SR 1759 bridge		
Wolf Creek	6/18/01	1.7	Highlands	Sam Knob	06010203010010	confluence with Balsam Lake		
Wolf Creek	6/18/02	3.1	Highlands	Big Ridge		confluence with Tanassee Creek		
Scotsman Creek	6/21/00	2.3	Highlands	Cashiers	03060102010010	confluence with Chattooga River	768919.908	485153.877
West Fork Overflow Creek	6/18/00	1.1	Highlands	Scaly Mountain	03060102010020			
Davidson River	05/19/03	17.7	Pisgah	Shining Rock	06010105010070	FS boundary	893934.1748	575124.6254

Survey table cont.

Stream	Date	length (km)	district	quad	6th HUC	Start Description	Start X	Start Y
Cove Creek	6/27/00	0.6	Pisgah	Shining Rock	06010105010070			
Little East Fork Pigeon River	2001	1.0	Pisgah	Waynesville/Sam Knob	06010106010020	FS boundary	839056.453	616448.061
Gipp Creek	7/3/00	1.4	Tusquitee	Andrews	06020002100010			
Long Branch	7/6/00	2.4	Tusquitee	Andrews	06020002071010			
Muskrat Branch	7/7/00	1.3	Tusquitee	Rainbow Springs	06020002050020	highway 64	621231.446	501726.936
Pounding Mill Creek	7/5/00	1.3	Tusquitee	Shooting Creek	06020002050020	1st place where road crosses stream		
Big Laurel Creek	6/26/00	1.4	Wayah	Wayah Bald				
Devils Prong	7/21/98	0.9	Wayah	Rainbow Springs	06010202050010			
Jarrett Creek	9/14/00	1.6	Wayah	Wayah Bald/Topton	06010202050010			
Kilby Creek	6/30/98	1.0	Wayah	Rainbow Springs	06010202050010			
Kimsey Creek	7/15/98	4.9	Wayah	Rainbow Springs	06010202050010			
Long Branch	7/30/98	1.9	Wayah	Rainbow Springs	06010202050010			
Mooney Creek	7/28/98	2.3	Wayah	Rainbow Springs	06010202050010			
Nantahala River	6/30/98	11.7	Wayah	Rainbow Springs	06010202050010			
Park Creek	6/30/98	3.2	Wayah	Rainbow Springs	06010202050010			
Rough Fork	6/28/00	1.7	Wayah			FS boundary, near confluence of Wayah Creek		
Wesser Creek	6/27/00	1.1	Wayah	Wesser	06010202050050	FS boundary. Left Fork Wesser Creek		
Ray Branch	8/6/03	3.9	Wayah	Wayah Bald	06010202040020	FS boundary below FS RD 7279	645341.125	559805.375
East Fork Dicks Creek	7/8/04	2.1	Wayah	Sylva North	06010203020040	FS boundary	738104.938	635776.125

Summary of pool habitat characteristics for streams surveyed prior to year 2005 using BVET habitat methods on streams of the National Forests of NC. 'Total Area (%)' is percent of total stream surface area in pools (includes glides), 'Total Area (m^2)' is surface area of stream in pools, 'Mean Area' is mean surface area of individual pools, 'Mean Max Depth' is the mean maximum depth of all pools, 'Mean Ave Depth' is mean average depth of all pools, 'Mean Residual Depth' is mean residual depth of all pools, 'Glides' is percent of pool habitat units surveyed as glides, '>35% Fines is percent of pools with greater than 35% of substrate materials < 2 mm in diameter.

Stream	Total Area (%)	Total Area (m^2)	Total Count (n)	# per km	Mean Area (m^2)	Mean Max Depth (cm)	Mean Avg Depth (cm)	Mean Residual Depth (cm)	Glides (%)	>35 % Fines
Big Creek	29	1772	21	26	84	66	40	19		
Bowlens Creek	28	1434	37	37	39	64	41	29		
Upper Creek	18	1926	28	23	69	91	70	45		
West Fork Shut In Creek	12	170	19	44	9	41	28	15		
Corner Rock Creek	14	649	28	28	23	46	35	24		
Hickory Fork	16	2359	24	10	98	85	49	24		
Groundhog Creek	12	2296	36	18	64	85	61	43		
Middle Creek	31	1645	39	38	42	60	41	28		
Rock Creek	53	3232	46	45	70	72	47	32		
Little Santeetlah Creek	11	896	24	21	37	68	46	21		
Little Slickrock Creek	10	668	27	17	25	42	26	15		
Shell Stand Creek	9	1646	23	10	72	67	42	10	4	
Snowbird Creek	28	7432	39	17	191	110	64	32		
Santeetlah Creek	16	1236	17	19	73	76	51	30		
Left Fork Steels Creek	27	2941	78	31	37	57	38	17		
Armstrong Creek	30	2098	34	33	62	42	26	13		
Buck Creek	44	5007	97	26	52	67	31	12		
Little Fork Steels Creek	37	8006	156	33	51	50	25	6		
Steels Creek	52	47944	240	22	200	89	62	32		
Andrews Creek	35	1610	33	33	49	72	49	37		
Wilson Creek	51	2786	38	42	73	94	65	51		
Newberry Creek	58	1561	34	70	46	73	52	16		
Fowlers Creek	36	4152	22	15	189	69	48	31		

Pool table cont.

Stream	Total Area (%)	Total Area (m^2)	Total Count (n)	# per km	Mean Area (m^2)	Mean Max Depth (cm)	Mean Avg Depth (cm)	Mean Residual Depth (cm)	Glides (%)	>35 % Fines
Overflow Creek	29	5147	30	13	172	99	72	44		
Tanassee	31	3170	49	23	65	64	55	34		
Wolf Creek	19	1533	22	13	70	56	39	22		
Wolf Creek	74	14214	75	25	190	28	10	31	35	
Scotsman Creek	27	4789	28	12	171	74	49	35		
West Fork Overflow Creek	28	1769	22	19	80	90	64	46		
Davidson River	34	88560	119	7	744	113	67	29	24	
Cove Creek	49	1274	20	36	64	71	46	32		
Little East Fork Pigeon River	28	1784	39	39	46	70	51	32		
Gipp Creek	35	2212	19	14	116	64	46	33		
Long Branch	12	1322	45	19	29	55	40	27		
Muskrat Branch	11	677	34	27	20	53	54	44		
Pounding Mill Creek	17	763	48	36	16	42	21	7		
Big Laurel Creek	13	1085	22	15	49	61	42	25		
Devils Prong	22	416	33	36	13	42	20	6		
Jarrett Creek	14	1808	49	30	37	51	31	15		
Kilby Creek	20	792	28	28	28	55	32	17		
Kimsey Creek	9	1838	67	14	27	47	23	6		
Long Branch	15	733	33	18	22	43	22	7		
Mooney Creek	23	1980	50	22	40	60	38	19		
Nantahala River	24	34333	107	9	318	51	76	51		
Park Creek	9	2127	40	12	53	52	22	6		
Rough Fork	9	838	34	20	25	65	47	33		
Wesser Creek	13	591	29	26	20	51	40	26		
Ray Branch	5	564	43	11	13	49	33	11		
East Fork Dicks Creek	14	936	54	25	17	45	28	13		

Summary of riffle habitat characteristics for streams surveyed prior to year 2005 using BVET habitat methods on streams of the National Forests of NC. 'Total Area (%)' is percent of total stream surface area in riffles (includes glides), 'Total Area (m^2)' is surface area of stream in riffles, 'Mean Area' is mean surface area of individual riffles, 'Mean Max Depth' is the mean maximum depth of all riffles, 'Mean Ave Depth' is mean average depth of all riffles, 'Runs' is percent of riffle habitat units surveyed as runs, 'Cascades' is percent of riffle habitat units surveyed as cascades.

Stream	Total Area (%)	Total Area (m^2)	Total Count (n)	# per km	Mean Area (m^2)	Mean Max Depth (cm)	Mean Average Depth (cm)	Runs (%)	Cascades (%)	>35 % Fines
Big Creek	71	4359	20	25	218	38	23			
Bowlens Creek	72	3778	64	63	59	28	17			
Upper Creek	82	8548	34	28	251	51	28			
West Fork Shut In Creek	88	1225	28	65	44	23	15			
Corner Rock Creek	86	3877	43	43	90	25	17			
Hickory Fork	84	12229	29	12	422	58	31			
Groundhog Creek	88	16162	53	26	305	41	23			
Middle Creek	69	3654	50	49	73	33	20			
Rock Creek	47	2852	64	63	45	29	19			
Little Santeetlah Creek	89	7564	28	25	270	46	28			
Little Slickrock Creek	90	6248	27	17	231	31	18			
Shell Stand Creek	91	16097	46	19	350	50	27			
Snowbird Creek	72	19063	40	17	477	55	27			
Santeetlah Creek	84	6643	17	19	391	54	34			
Left Fork Steels Creek	73	7801	65	26	113	32	19			
Armstrong Creek	70	4853	34	33	143	22	14			
Buck Creek	56	6501	94	25	68	34	14			
Little Fork Steels Creek	63	13819	148	31	93	28	16			
Steels Creek	48	43637	184	17	236	47	30			
Andrews Creek	65	3016	51	51	59	28	17			
Wilson Creek	49	2640	52	57	51	32	19			
Newberry Creek	42	1151	31	64	37	41	25			
Fowlers Creek	64	7234	21	14	344	48	29			

Riffle table cont.

Stream	Total Area (%)	Total Area (m2)	Total Count (n)	# per km	Mean Area (m2)	Mean Max Depth (cm)	Mean Average Depth (cm)	Runs (%)	Cascades (%)	>35 % Fines
Overflow Creek	71	12571	30	13	419	66	42			
Tanassee	69	6940	52	25	133	39	26			
Wolf Creek	81	6553	22	13	298	38	22			
Wolf Creek	26	5003	73	24	69	25	8			
Scotsman Creek	73	13000	36	16	361	37	19			
West Fork Overflow Creek	72	4535	22	19	206	50	28			
Davidson River	66	169126	154	9	1098	63	36			
Cove Creek	51	1344	18	32	75	33	18			
Little East Fork Pigeon River	72	4683	63	63	74	36	25			
Gipp Creek	65	4176	21	15	199	39	22			
Long Branch	88	10070	46	19	219	37	24			
Muskrat Branch	89	5663	35	27	162	31	20			
Pounding Mill Creek	83	3823	50	37	76	23	10			
Big Laurel Creek	87	7213	28	19	258	37	23			
Devils Prong	78	1485	34	37	44	21	12			
Jarrett Creek	86	11209	50	31	224	28	15			
Kilby Creek	80	3231	26	26	124	34	19			
Kimsey Creek	91	17956	70	14	257	31	15			
Long Branch	85	4115	33	18	125	23	13			
Mooney Creek	77	6649	49	22	136	34	22			
Nantahala River	76	110010	102	9	1079	30	55			
Park Creek	91	21248	41	13	518	29	14			
Rough Fork	91	8427	42	24	201	41	25			
Wesser Creek	87	3841	29	26	132	37	23			
Ray Branch	95	10712	74	19	145	33	19			
East Fork Dicks Creek	86	5570	69	32	81	37	16			

Summary of LWD per km and Rogen's channel types for streams surveyed prior to year 2005 using BVET habitat methods on streams of the National Forests of NC. LWD sizes: 1) <5 m long, <55 cm diameter, 2) < 5 m long, >55 cm diameter, 3) >5 m long, <55 cm diameter, 4) >5 m long, >55 cm diameter. 'Rosgen Channel Type' is the percent of all habitat units that were classified within channel types A thru G. See Appendix A for description of Rosgen channel types.

Stream	Large Woody Debris per km					Rosgen's Channel Type						
	1	2	3	4	Total	A	B	C	D	E	F	G
Big Creek	238	68	29	4	338							
Bowlens Creek	1045	157	22	0	1224	100						
Upper Creek	54	2	36	1	93		100					
West Fork Shut In Creek	2274	1044	287	14	3618							
Corner Rock Creek	516	97	13	3	629							
Hickory Fork	152	204	40	9	405		100					
Groundhog Creek	109	2	117	0	228		100					
Middle Creek	647	182	45	14	887							
Rock Creek	191	17	6	3	217		100					
Little Santeetlah Creek	19	28	25	52	124							
Little Slickrock Creek	17	4	7	5	33							
Shell Stand Creek	41	2	18	2	63		100					
Snowbird Creek	8	7	6	8	29							
Santeetlah Creek	7	4	0	6	17	100						
Left Fork Steels Creek	14	7	32	11	64							
Armstrong Creek	259	30	12	0	301		100					
Buck Creek	18	6	6	3	34							
Little Fork Steels Creek	10	3	15	7	35							
Steels Creek	25	3	38	14	79							
Andrews Creek	870	166	9	2	1046							
Wilson Creek	512	71	18	3	604							
Newberry Creek	23	29	19	8	79	35	65					
Fowlers Creek	66	27	19	26	138							
Overflow Creek	37	18	21	23	99							
Tanassee	14	2	1	2	20							
Wolf Creek	20	3	3	10	37							

LWD table cont.

	Large Woody Debris per km					Rosgen Channel Type						
	1	2	3	4	Total	A	B	C	D	E	F	G
Wolf Creek	17	0	3	0	20							
Scotsman Creek	28	15	15	25	82							
West Fork Overflow Creek	38	12	12	21	83							
Davidson River	51	11	70	14	146		68	4		4	24	
Cove Creek	186	66	28	12	293							
Little East Fork Pigeon River	588	171	12	0	771							
Gipp Creek	50	37	17	13	116							
Long Branch	40	19	16	8	83							
Muskrat Branch	56	5	5	7	73							
Pounding Mill Creek	33	15	7	10	66							
Big Laurel Creek	70	39	33	50	191							
Devils Prong	40	21	39	10	109							
Jarrett Creek	92	56	51	36	235							
Kilby Creek	56	28	35	56	174							
Kimsey Creek	24	17	16	15	71							
Long Branch	29	12	25	9	75							
Mooney Creek	22	34	11	22	89							
Nantahala River	9	8	18	12	47							
Park Creek	35	23	10	6	73							
Rough Fork	112	51	57	34	253							
Wesser Creek	31	0	8	0	39							
Ray Branch	61	19	26	28	133		100					
East Fork Dicks Creek	7	38	10	0	55		100					

Summary of riparian width calculations, mean channel widths, mean channel gradients, and mean water temperatures for streams surveyed prior to year 2005 using BVET habitat methods on streams of the National Forests of NC. The left riparian width, right riparian width, and bankfull channel widths were added together before values for 'Riparian Width Total' were calculated. Left and right riparian widths were pooled together before values for 'Riparian Left & Right Width' were calculated.

	Riparian Width Total (m)					Riparian Left and Right Width (m)					Mean Bankfull	Mean	Mean Water
Stream	Mean	Max	75th	25th	Min	Mean	Max	75th	25th	Min	Width (m)	Channel Grad	Temp (C°)
Big Creek													
Bowlens Creek													
Upper Creek	23	34	27	20	12	5	11	7	3	2	13.5	4.7	
West Fork Shut In Creek													
Corner Rock Creek													
Hickory Fork	23	29	26	19	18	7	10	8	4	4	9.5	3.0	
Groundhog Creek	25	40	28	18	15	6	15	6	4	2	13.7	7.3	
Middle Creek													
Rock Creek													
Little Santeetlah Creek											6.7	4.5	
Little Slickrock Creek											7.0	5.2	
Shell Stand Creek											9.2	1.8	16
Snowbird Creek											13.5	4.0	
Santeetlah Creek											13.0	5.9	
Left Fork Steels Creek													
Armstrong Creek													
Buck Creek													
Little Fork Steels Creek													
Steels Creek												3.6	
Andrews Creek													
Wilson Creek													
Newberry Creek													
Fowlers Creek												5.3	
Overflow Creek											11.2	5.7	
Tanassee											7.6		

Riparian table cont.

	Riparian Width Total (m)					Riparian Left and Right Width (m)					Mean Bankfull	Mean	Mean Water
	Mean	Max	75th	25th	Min	Mean	Max	75th	25th	Min	Width (m)	Channel Grad	Temp(C°)
Wolf Creek											7.5	5.6	
Wolf Creek											9.5	4.0	
Scotsman Creek											12.0		
West Fork Overflow Cr.											1.0		
Davidson River	31	77	35	21	19	6	38	6	1	0	19.2	6.2	
Cove Creek													
Little E.F. Pigeon River													
Gipp Creek											6.5	4.9	
Long Branch											5.8		
Muskrat Branch											6.3		
Pounding Mill Creek											5.5		
Big Laurel Creek											6.0		
Devils Prong													
Jarrett Creek													
Kilby Creek													
Kimsey Creek												4.9	
Long Branch												3.1	
Mooney Creek													
Nantahala River												3.5	
Park Creek												3.4	
Rough Fork											7.9	1.9	
Wesser Creek											6.9		
Ray Branch											4.1	8.1	17
East Fork Dicks Creek											4.0	11.9	14

2005 Surveys

Survey information for streams surveyed during 2005 using BVET habitat methods on streams of the National Forests of NC. 'Length' is total survey length. 'Start X' and 'Start Y' are the X/Y coordinates for the beginning point of the survey and are recorded in the coordinate system: NAD 1927 StatePlane North_Carolina FIPS 3200 Lambert Conformal Conic.

Stream	Date	length (km)	district	Quad	6th HUC	Start Description	Start X	Start Y
Big Lost Cove Creek	6/8/05	2.1	Appalachian	Old Fort	06010108020010	FS boundary	1046607.419	742088.941
Hemphill Creek	6/8/05	0.8	Appalachian	Montreat	06010108020010	confluence with Left Prong South Toe River	1035207.968	729505.9591
Left Prong South Toe River	6/8/05	2.8	Appalachian	Montreat/Old Fort	06010108020010	confluence with Right Prong South Toe River	1036324.003	733726.9613
Neals Creek	6/9/05	1.8	Appalachian	Old Fort	06010108020010	confluence with Big Lost Cove Creek	1046414.025	741276.9574
Right Prong South Toe River	6/7/05	2.5	Appalachian	Montreat	06010108020010	confluence	1036323.963	733726.9579
Bear Drive Branch	6/1/05	1.4	Grandfather	Old Fort	03050101010020	confluence with Curtis Creek	1053105.961	728893.0286
Big Camp Rock Branch	5/31/05	2.3	Grandfather	Old Fort	03050101010020	confluence with Curtis Creek	1051333.989	725141.0394
Chute Branch	5/27/05	1.3	Grandfather	Old Fort	03050101010020	confluence with Newberry Creek	1042030.961	722005.0066
Curtis Creek, lower	5/25/05	2.3	Grandfather	Old Fort	03050101010020	FS boundary	1059038.916	707251.4569
Deep Branch	5/26/05	1.4	Grandfather	Old Fort	03050101010020	confluence with Curtis Creek	1052914.96	711500.0185
Hickory Branch	5/31/05	1.0	Grandfather	Old Fort	03050101010020	confluence with Curtis Creek	1050963.041	720815.0125
Horse Branch	5/28/05	0.7	Grandfather	Old Fort	03050101010020	FS boundary	1047090.25	716417.0305
Laurel Log Branch	5/27/05	1.0	Grandfather	Old Fort	03050101010020	confluence with Newberry Creek	1042643.993	724827.0394
Left Prong	5/28/05	1.1	Grandfather	Old Fort	03050101010020	confluence with Newberry Creek	1042643.972	724827.0392
Licklog Branch	6/1/05	0.9	Grandfather	Old Fort	03050101010020	confluence with Curtis Creek	1052453.984	726290.0391
Long Branch	5/30/05	0.5	Grandfather	Old Fort	03050101010020	confluence with Curtis Creek	1050943.039	720732.0039
Newberry Creek	5/25/05	3.3	Grandfather	Old Fort	03050101010020	FS boundary	1045835.982	717211.3025
Paddys Branch	5/25/05	1.8	Grandfather	Old Fort	03050101010020	confluence with Curtis Creek	1054487	709238
Slick Falls Branch	5/31/05	1.2	Grandfather	Old Fort	03050101010020	confluence with Curtis Creek	1050179.971	720470.0386
unnamed trib to Curtis Creek	6/1/05	0.5	Grandfather	Old Fort	03050101010020	confluence with Curtis Creek	1050778.961	723925.024
Andy Cove	06/15/05	0.8	Pisgah		06010105010070	confluence with Davidson River		
Avery Creek	6/16/05	5.7	Pisgah	Pisgah Forest	06010105010070	confluence with Davidson River	885297.1252	580227.7315
Big Bear Pen Branch	07/27/05	0.6	Pisgah	Shining Rock	06010105010070	confluence with Looking Glass Creek	869047.9387	592527.0119
Cedar Rock Creek	08/03/05	2.9	Pisgah	Shining Rock	06010105010070	confluence with Davidson River	869583.9844	579762.9911
Clawhammer Cove	07/25/05	0.8	Pisgah	Shining Rock	06010105010070	confluence with Avery Creek		
Coontree Creek	07/28/05	1.7	Pisgah	Shining Rock	06010105010070	confluence with Davidson River	877570.9834	581415.0095
Cove Creek	6/15/05	4.3	Pisgah	Shining Rock	06010105010070	confluence with Davidson River	861196.9984	579480.0393
Curtis Creek, upper	5/26/05	2.2	Pisgah	Old Fort	03050101010020	FS boundary	1049428.713	718182.0578
Daniel Ridge Creek	8/9/05	1.3	Pisgah	Shining Rock	06010105010070	confluence with Right Fork Davidson River	852775.8975	583459.0943
Davidson River	06/16/05	17.9	Pisgah	Pisgah Forest/Shining Rock	06010105010070	FS boundary	893934.1748	575124.6254
East Horse Cove	07/26/05	1.1	Pisgah	Shining Rock	06010105010070	confluence with Horse Cove	872178.0191	578709.9896

Survey table cont.

Stream	Date	length (km)	district	quad	6th HUC	Start Description	Start X	Start Y
Fate Osteen Branch	07/25/05	0.5	Pisgah	Shining Rock	06010105010070	confluence with Davidson River	870593.9821	579678.0229
Grogan Creek	08/02/05	3.2	Pisgah	Shining Rock	06010105010070	confluence with Cedar Rock Creek	865903.9655	577323.9912
Gumstand Branch	6/15/05	0.8	Pisgah	Shining Rock	06010105010070	confluence with Looking Glass Creek	870074.9879	590133.0073
Horse Cove	07/26/05	1.5	Pisgah	Shining Rock	06010105010070	confluence with Davidson River	871420.0465	579815.9693
Johnson Mountain Creek	07/11/05	0.5	Pisgah	Pisgah Forest	06010105010070	confluence with Davidson River		
Justus Cove	6/16/05	1.0	Pisgah	Shining Rock	06010105010070	confluence with Looking Glass Creek	869496.9857	593752.0074
Laurel Fork Branch	8/10/05	2.4	Pisgah	Shining Rock	06010105010070	confluence with Davidson River	857811.9534	580199.0236
Little East Fork Pigeon River	8/13/05	4.4	Pisgah	Sam Knob	06010106010020	FS boundary	839056.4534	616448.0607
Log Hollow Branch	8/9/05	0.8	Pisgah	Shining Rock	06010105010070	confluence with Big Bear Pen	867972.7992	592478.2142
Long Branch	8/10/05	2.8	Pisgah	Shining Rock	06010105010070	confluence with Davidson River	859530.0019	579541.9641
Looking Glass Creek	06/15/05	8.4	Pisgah	Shining Rock	06010105010070	confluence with Davidson River	875189.0058	582335.013
Moore Cove	07/27/05	0.7	Pisgah	Shining Rock	06010105010070	confluence with Looking Glass Creek	874194.9826	587884.0531
Poundingmill Branch	08/05/05	1.2	Pisgah	Shining Rock	06010105010070	confluence with Looking Glass Creek	870071.0049	600207.0201
Pressley Cove	07/14/05	1.1	Pisgah	Shining Rock	06010105010070	confluence with Avery Cove		
Right Fork Davidson River	08/03/05	2.2	Pisgah	Shining Rock	06010105010070	confluence with mainstem Davidson River	852775.974	583459.0794
Searcy Creek	8/6/05	1.8	Pisgah	Shining Rock	06010105010070	confluence with Davidson River	862839.9615	578538.8944
Shut-in Branch	7/28/05	1.6	Pisgah	Shining Rock	06010105010070	confluence with Davidson River	879973.9861	578053.9577
Slick Rock Falls	07/20/05	0	Pisgah	Shining Rock	06010105010070	confluence with Rockhouse Creek	866183.029	583074.0064
West Fork Pigeon River	8/13/05	10.4	Pisgah	Sam Knob	06010106010020	FS boundary	825593.0307	614704.3597
Camp Creek	6/4/05	1.5	Toecane	Old Fort	06010108020010	confluence with South Toe River	1041320.961	740409.9983
Lower Creek	6/6/05	2.6	Toecane	Old Fort	06010108020010	FS RD 472 crossing	1040302.96	737597.021
Middle Fork Upper Creek	6/10/05	0.3	Toecane	Montreat	06010108020010	confluence with South Fork Upper Creek	1033119.977	735931.0388
Upper Creek	6/9/05	2.2	Toecane	Old Fort/Montreat	06010108020010	confluence with South Toe River	1039107.961	736599.0178

Summary of pool habitat characteristics for streams surveyed during 2005 using BVET habitat methods on streams of the National Forests of NC. 'Total Area (%)' is percent of total stream surface area in pools (includes glides), 'Total Area (m^2)' is surface area of stream in pools, 'Mean Area' is mean surface area of individual pools, 'Mean Max Depth' is the mean maximum depth of all pools, 'Mean Ave Depth' is mean average depth of all pools, 'Mean Residual Depth' is mean residual depth of all pools, 'Glides' is percent of pool habitat units surveyed as glides, '>35% Fines is percent of pools with greater than 35% of substrate materials < 2 mm in diameter. * = value not calculated.

Stream	Total Area (%)	Total Area (m^2)	Total Count (n)	# per km	Mean Area (m^2)	Mean Max Depth (cm)	Mean Avg Depth (cm)	Mean Residual Depth (cm)	Glides (%)	>35 % Fines
Big Lost Cove Creek	10	1147	34	16	34	73	41	15	3	9
Hemphill Creek	21	456	29	35	16	60	38	16	7	14
Left Prong South Toe River	24	2996	80	29	37	74	45	20	8	11
Neals Creek	14	880	36	20	24	71	42	16	0	11
Right Prong South Toe River	48	6784	53	21	128	95	53	22	8	0
Bear Drive Branch	9	309	21	15	15	59	43	31	0	5
Big Camp Rock Branch	19	1251	60	26	21	59	43	25	0	7
Chute Branch	14	777	35	27	22	60	39	18	20	3
Curtis Creek, lower	23	6396	29	13	221	96	68	26	10	31
Deep Branch	12	254	24	17	11	32	25	13	0	8
Hickory Branch	14	375	29	28	13	58	27	10	21	31
Horse Branch	14	203	22	30	9	35	20	10	36	95
Laurel Log Branch	15	336	22	23	15	63	45	19	5	0
Left Prong	23	608	25	23	24	65	49	23	0	20
Licklog Branch	15	347	20	22	17	55	32	16	15	30
Long Branch	15	277	19	35	15	45	31	19	5	5
Newberry Creek	23	4280	93	28	46	88	51	19	14	0
Paddys Branch	13	665	26	15	26	42	28	16	0	27
Slick Falls Branch	30	401	16	13	25	50	31	17	19	31
unnamed trib to Curtis Creek	47	753	9	17	84	51	40	18	11	56
Andy Cove	8	38	8	10	5	28	15	5	38	88
Avery Creek	24	10138	67	12	151	83	50	21	12	36
Big Bear Pen Branch	*	288	6	10	48	68	48		17	33
Cedar Rock Creek	19	2554	55	19	46	62	38	14	18	38
Clawhammer Cove	10	203	12	15	17	48	34	23	0	8

Pool table cont.

Stream	Total Area (%)	Total Area (m^2)	Total Count (n)	# per km	Mean Area (m^2)	Mean Max Depth (cm)	Mean Avg Depth (cm)	Mean Residual Depth (cm)	Glides (%)	>35 % Fines
Coontree Creek	21	780	18	10	43	43	31	21	0	6
Cove Creek	21	3663	69	16	53	74	40	14	12	4
Curtis Creek, upper	18	3949	38	17	104	73	47	14	11	16
Daniel Ridge Creek	35	1180	29	22	41	101	71	46	0	0
Davidson River	18	40386	53	3	762	180	119	69	9	17
East Horse Cove	7	138	13	11	11	44	33	22	0	8
Fate Osteen Branch	6	26	5	10	5	37	27	22	0	40
Grogan Creek	29	2769	62	19	45	54	34	13	35	65
Gumstand Branch	10	181	11	14	16	38	25	6	36	82
Horse Cove	17	880	18	12	49	58	42	27	11	39
Johnson Mountain Creek	1	7	2	4	4	43	30	25	0	100
Justus Cove	4	110	9	9	12	38	20	3	33	89
Laurel Fork Branch	11	1182	40	17	30	78	48	19	0	25
Little East Fork Pigeon River	26	6389	108	25	59	115	64	32	0	0
Log Hollow Branch	13	310	12	16	26	70	47	31	8	33
Long Branch	22	1758	49	17	36	59	29	8	45	63
Looking Glass Creek	17	14707	74	9	199	104	62	21	1	20
Moore Cove	8	176	10	14	18	41	39	22	0	20
Poundingmill Branch	24	405	21	17	19	68	47	37	0	0
Pressley Cove	6	104	6	6	17	38	25	11	0	33
Right Fork Davidson River	22	1304	47	21	28	86	61	42	0	0
Searcy Creek	12	626	31	18	20	43	26	8	16	81
Shut-in Branch	10	466	22	14	21	64	48	34	0	0
Slick Rock Falls										
West Fork Pigeon River	25	30481	107	10	285	133	71	31	21	2
Camp Creek	21	1179	26	17	45	89	57	35	0	0
Lower Creek	31	4540	47	18	97	117	73	52	0	0
Middle Fork Upper Creek	15	107	9	30	12	89	62	42	0	0
Upper Creek	3	2221	26	12	85	133	86	50	0	0

Summary of riffle habitat characteristics for streams surveyed prior to year 2005 using BVET habitat methods on streams of the National Forests of NC. 'Total Area (%)' is percent of total stream surface area in riffles (includes glides), 'Total Area (m^2)' is surface area of stream in riffles, 'Mean Area' is mean surface area of individual riffles, 'Mean Max Depth' is the mean maximum depth of all riffles, 'Mean Ave Depth' is mean average depth of all riffles, 'Runs' is percent of riffle habitat units surveyed as runs, 'Cascades' is percent of riffle habitat units surveyed as cascades. * = value not calculated.

Stream	Total Area (%)	Total Area (m^2)	Total Count (n)	# per km	Mean Area (m^2)	Mean Max Depth (cm)	Mean Avg Depth (cm)	Runs (%)	Cascades (%)	>35 % Fines
Big Lost Cove Creek	90	10188	43	21	237	52	24	16	44	0
Hemphill Creek	79	1697	30	36	57	28	11	0	87	3
Left Prong South Toe River	76	9388	70	25	134	45	20	3	80	0
Neals Creek	86	5367	38	21	141	53	24	5	47	0
Right Prong South Toe River	52	7298	48	19	149	62	18	0	96	0
Bear Drive Branch	91	3077	19	13	162	39	15	0	32	5
Big Camp Rock Branch	81	5227	50	22	105	35	17	0	86	0
Chute Branch	86	4813	33	26	146	41	14	6	85	0
Curtis Creek, lower	77	21295	24	10	887	60	33	8	4	0
Deep Branch	88	1866	24	17	78	23	13	0	8	0
Hickory Branch	86	2214	29	28	76	23	6	0	10	0
Horse Branch	86	1205	22	30	55	18	6	0	5	23
Laurel Log Branch	85	1901	21	22	91	39	13	0	100	0
Left Prong	77	2057	25	23	82	45	18	0	92	0
Licklog Branch	85	1987	19	21	105	43	13	0	84	0
Long Branch	85	1632	17	31	96	24	9	0	0	0
Newberry Creek	77	14236	81	24	176	57	25	1	49	0
Paddys Branch	87	4498	31	17	145	25	12	0	55	0
Slick Falls Branch	70	951	16	13	59	30	8	0	81	6
unnamed trib to Curtis Creek	53	858	9	17	95	47	21	0	67	0
Andy Cove	92	455	9	11	51	21	9	0	22	44
Avery Creek	76	31830	64	11	497	50	27	8	3	0
Big Bear Pen Branch	*	*	6	10		47	28	0	0	0
Cedar Rock Creek	81	10695	65	23	165	38	18	20	11	5
Clawhammer Cove	90	1853	12	15	154	24	15	0	0	0

Riffle table cont.

Stream	Total Area (%)	Total Area (m^2)	Total Count (n)	# per km	Mean Area (m^2)	Mean Max Depth (cm)	Mean Avg Depth (cm)	Runs (%)	Cascades (%)	>35 % Fines
Coontree Creek	79	3005	18	10	167	26	13	0	17	0
Cove Creek	79	13948	69	16	202	62	21	6	17	1
Curtis Creek, upper	82	18246	55	25	332	52	32	31	0	4
Daniel Ridge Creek	65	2232	24	18	93	64	32	0	71	0
Davidson River	82	184171	64	4	2878	104	52	13	2	0
East Horse Cove	93	1717	11	10	156	27	17	0	18	0
Fate Osteen Branch	94	442	6	12	74	23	7	0	0	33
Grogan Creek	71	6640	48	15	138	31	13	15	0	4
Gumstand Branch	90	1640	12	16	137	35	12	0	50	8
Horse Cove	83	4212	18	12	234	34	18	11	0	6
Johnson Mountain Creek	99	555	3	6	185	13	5	0	0	100
Justus Cove	96	2470	9	9	274	32	11	0	11	11
Laurel Fork Branch	89	9142	51	21	179	51	22	14	35	0
Little East Fork Pigeon River	74	18597	85	19	219	73	28	2	36	0
Log Hollow Branch	87	2052	12	16	171	44	19	0	8	0
Long Branch	78	6313	41	15	154	30	15	34	12	5
Looking Glass Creek	83	71651	84	10	853	66	35	17	13	0
Moore Cove	92	2136	10	14	214	43	17	0	50	0
Poundingmill Branch	76	1315	20	16	66	32	16	0	40	0
Pressley Cove	94	1544	7	7	221	29	11	0	100	0
Right Fork Davidson River	78	4540	43	19	106	51	30	0	93	0
Searcy Creek	88	4711	37	21	127	30	14	11	30	3
Shut-in Branch	90	4112	20	13	206	35	19	0	45	0
Slick Rock Falls	*	*	*	*	*	*	*	*	*	*
West Fork Pigeon River	75	91443	98	9	933	108	33	1	20	1
Camp Creek	79	4307	26	17	166	65	29	0	96	0
Lower Creek	69	10097	45	17	224	74	31	4	71	0
Middle Fork Upper Creek	85	600	10	33	60	43	25	0	70	0
Upper Creek	97	63046	23	11	2741	84	40	0	48	0

Summary of LWD per km and Rogen's channel types for streams surveyed during 2005 using BVET habitat methods on streams of the National Forests of NC. LWD sizes: 1) <5 m long, <55 cm diameter, 2) < 5 m long, >55 cm diameter, 3) >5 m long, <55 cm diameter, 4) >5 m long, >55 cm diameter. 'Rosgen Channel Type' is the percent of all habitat units that were classified within channel types A thru G. See Appendix A for description of Rosgen channel types.

Stream	Large Woody Debris per km					Rosgen's Channel Type						
	1	2	3	4	Total	A	B	C	D	E	F	G
Big Lost Cove Creek	0	0	26	0	27	0	0	0	0	0	0	0
Hemphill Creek	115	1	124	4	244	54	46	0	0	0	0	0
Left Prong South Toe River	55	0	57	1	113	35	65	0	0	0	0	0
Neals Creek	0	0	39	2	41	0	0	0	0	0	0	0
Right Prong South Toe River	92	0	88	0	180	73	27	0	0	0	0	0
Bear Drive Branch	57	0	38	2	98	0	0	0	0	0	0	0
Big Camp Rock Branch	86	6	120	6	219	100	0	0	0	0	0	0
Chute Branch	83	7	105	8	204	10	90	0	0	0	0	0
Curtis Creek, lower	6	0	32	1	40	0	100	0	0	0	0	0
Deep Branch	47	1	66	6	120	0	91	0	0	0	4	4
Hickory Branch	129	0	66	0	195	0	100	0	0	0	0	0
Horse Branch	105	0	109	3	216	86	14	0	0	0	0	0
Laurel Log Branch	127	1	67	2	197	100	0	0	0	0	0	0
Left Prong	94	0	112	4	210	100	0	0	0	0	0	0
Licklog Branch	129	4	256	1	391	0	0	0	0	0	0	0
Long Branch	91	2	91	2	185	0	0	0	0	0	0	0
Newberry Creek	39	0	47	1	86	47	53	0	0	0	0	0
Paddys Branch	49	1	103	12	164	88	0	0	0	0	12	0
Slick Falls Branch	72	0	45	5	122	22	78	0	0	0	0	0
unnamed trib to Curtis Creek	37	11	175	4	226	100	0	0	0	0	0	0
Andy Cove	0	0	45	1	47	100	0	0	0	0	0	0
Avery Creek	22	0	31	0	54	0	100	0	0	0	0	0
Big Bear Pen Branch	45	0	54	0	98	100	0	0	0	0	0	0
Cedar Rock Creek	0	2	23	1	26	0	100	0	0	0	0	0
Clawhammer Cove	73	4	65	1	143	100	0	0	0	0	0	0
Coontree Creek	62	1	73	1	138	100	0	0	0	0	0	0

LWD table cont.

Stream	Large Woody Debris per km					Rosgen Channel Type						
	1	2	3	4	Total	A	B	C	D	E	F	G
Cove Creek	42	1	43	2	88	11	47	0	0	0	42	0
Curtis Creek, upper	0	0	68	0	69	0	71	29	0	0	0	0
Daniel Ridge Creek	38	8	36	8	89	79	0	0	0	0	0	21
Davidson River	8	0	17	1	27	0	0	32	0	0	61	7
East Horse Cove	90	1	97	8	195	100	0	0	0	0	0	0
Fate Osteen Branch	14	0	28	0	42	0	82	0	0	0	0	18
Grogan Creek	87	4	73	0	164	0	75	25	0	0	0	0
Gumstand Branch	0	0	146	0	146	65	35	0	0	0	0	0
Horse Cove	72	1	60	3	136	29	32	6	0	0	32	0
Johnson Mountain Creek	41	0	20	0	61	0	80	0	0	0	20	0
Justus Cove	0	0	100	6	106							
Laurel Fork Branch	67	0	62	3	133	0	38	62	0	0	0	0
Little East Fork Pigeon River	1	0	4	0	5							
Log Hollow Branch	31	0	42	1	74	21	79	0	0	0	0	0
Long Branch	72	0	48	0	120	0	100	0	0	0	0	0
Looking Glass Creek	6	1	9	1	18	0	0	0	0	0	100	0
Moore Cove	75	0	76	0	151	0	0	0	0	0	100	0
Poundingmill Branch	51	0	61	3	115	73	27	0	0	0	0	0
Pressley Cove	101	0	8	76	185							
Right Fork Davidson River	74	10	59	3	146	100	0	0	0	0	0	0
Searcy Creek	51	0	39	2	92	0	100	0	0	0	0	0
Shut-in Branch	78	2	87	1	168	100	0	0	0	0	0	0
Slick Rock Falls												
West Fork Pigeon River	18	0	27	0	45	0	0	7	0	0	93	0
Camp Creek	30	4	29	1	65	0	100	0	0	0	0	0
Lower Creek	10	1	20	6	36	100	0	0	0	0	0	0
Middle Fork Upper Creek	13	0	0	0	13	100	0	0	0	0	0	0
Upper Creek	7	1	17	1	27	33	67	0	0	0	0	0

Summary of riparian width calculations, mean channel widths, mean channel gradients, and mean water temperatures for streams surveyed during 2005 using BVET habitat methods on streams of the National Forests of NC. The left riparian width, right riparian width, and bankfull channel widths were added together before values for 'Riparian Width Total' were calculated. Left and right riparian widths were pooled together before values for 'Riparian Left & Right Width' were calculated.

	Riparian Width Total (m)					Riparian Left and Right Width (m)					Mean Bankfull	Mean	Mean Water
Stream	Mean	Max	75th	25th	Min	Mean	Max	75th	25th	Min	Width (m)	Channel Grad	Temp (C°)
Big Lost Cove Creek	9	10	9	8	7	1	3	2	1	1	5.7	11.3	13
Hemphill Creek	10	12	10	9	8	2	5	2	1	0	6.4	15.0	13
Left Prong South Toe River	13	23	16	11	6	3	13	3	0	0	8.1	17.0	12
Neals Creek	7	7	7	7	7	1	1	1	1	1	5.9	8.0	12
Right Prong South Toe River	16	24	17	12	11	3	14	4	1	0	9.2	18.4	12
Bear Drive Branch											0.0	12.0	13
Big Camp Rock Branch	5	8	7	3	0	2	3	2	1	1	4.8	18.5	13
Chute Branch	10	16	13	7	5	2	6	3	1	1	5.7	14.7	13
Curtis Creek, lower	19	22	20	18	16	2	5	3	1	1	15.0	5.0	12
Deep Branch	8	8	8	8	8	2	4	3	1	0	4.0	8.0	12
Hickory Branch	8	9	9	8	7	1	3	2	1	0	5.6	13.0	14
Horse Branch	6	6	6	5	5	1	1	1	0	0	4.5	8.5	13
Laurel Log Branch	11	14	12	9	7	3	6	3	2	1	4.9	27.0	12
Left Prong	8	10	9	8	8	2	5	3	0	0	4.6	25.7	12
Licklog Branch	12	16	14	10	8	3	7	4	1	0	6.4	24.0	13
Long Branch	8	8	8	8	8	1	1	1	1	1	6.8	11.0	14
Newberry Creek	11	16	12	10	6	2	4	2	1	0	7.6	16.1	12
Paddys Branch	5	6	5	4	4	1	1	1	0	0	3.7	7.0	12
Slick Falls Branch	7	7	7	7	7	1	1	1	1	1	4.8	13.0	14
unnamed trib to Curtis Creek											0.0	15.5	14
Andy Cove	3	3	3	3	3	1	1	1	0	0	1.7	7.3	14
Avery Creek	17	26	20	13	11	5	17	8	1	0	7.9	4.8	15
Big Bear Pen Branch		0			0	1	1	1	0	0	4.8		
Cedar Rock Creek	14	18	16	12	8	5	15	8	1	1	6.1	3.8	14
Clawhammer Cove	4	4	4	4	4	0	1	1	0	0	3.3	12.0	18
Coontree Creek	4	6	5	3	3	0	1	0	0	0	3.5	6.8	16

Riparian table cont.

Stream	Riparian Width Total (m)					Riparian Left and Right Width (m)					Mean Bankfull Width (m)	Mean Channel Grad	Mean Water Temp (C°)
	Mean	Max	75th	25th	Min	Mean	Max	75th	25th	Min			
Cove Creek	14	26	20	9	4	4	15	4	1	0	6.8	7.3	14
Curtis Creek, upper	17	21	20	15	14	3	5	5	2	1	12.0	3.8	14
Daniel Ridge Creek	7	7	7	6	6	1	1	1	0	0	5.2	19.7	15
Davidson River	26	41	28	21	14	4	16	3	2	0	19.0	2.8	15
East Horse Cove	4	4	4	4	4	1	2	1	0	0	2.7	9.5	16
Fate Osteen Branch	2	3	3	2	2	0	1	0	0	0	1.5	5.0	16
Grogan Creek	24	44	27	16	13	9	23	12	5	0	5.7	2.3	
Gumstand Branch	10	17	12	7	5	3	7	6	1	1	3.2	9.0	12
Horse Cove	5	6	6	5	4	1	2	1	0	0	3.7	7.3	15
Johnson Mountain Creek	3	3	3	2	2	0	1	0	0	0	1.8	6.3	15
Justus Cove	6	12	8	4	3	2	8	1	0	0	2.5	5.7	13
Laurel Fork Branch	14	21	21	10	7	5	12	8	1	1	6.5	7.6	
Little East Fork Pigeon River	15	24	15	13	12	2	13	2	1	1	10.8	10.1	15
Log Hollow Branch	9	10	9	8	7	2	4	2	1	0	4.9	17.7	15
Long Branch	16	27	23	10	7	8	23	11	3	1	3.8	7.0	15
Looking Glass Creek	16	23	20	12	8	3	11	3	1	0	10.4	4.0	14
Moore Cove	5	5	5	5	5	0	1	1	0	0	3.8	11.7	16
Poundingmill Branch	4	6	5	3	3	1	1	1	0	0	2.8	21.5	16
Pressley Cove		0			0	3	5	4	2	1	12.4	23.0	15
Right Fork Davidson River	8	12	10	7	5	2	5	2	1	0	5.0	17.3	15
Searcy Creek	8	11	9	7	5	2	4	2	1	0	5.1	7.4	15
Shut-in Branch	47	89	68	26	5	22	85	22	0	0	3.4	11.3	16
Slick Rock Falls													
West Fork Pigeon River	26	36	26	22	17	3	17	4	1	0	18.8	7.3	16
Camp Creek	8	8	8	8	8	2	2	2	2	1	5.2	33.0	11
Lower Creek	11	14	13	10	9	2	7	2	0	0	7.4	24.0	13
Middle Fork Upper Creek	7	7	7	7	7	1	1	1	1	1	5.5	24.6	12
Upper Creek	12	13	13	12	11	2	3	2	1	1	8.9	7.7	12

Stream Channel and Habitat Attributes in the National Forests in North Carolina Before and After the Hurricane Flooding Events of 2004

Appendix A: BVET Category Descriptions

Size classes used to categorize substrate particles during BVET habitat surveys on selected streams on the NFs of NC.

Size Class	Name	Size (mm)	Description
1	Organic	--	Dead organic matter, leaves, detritus, etc.
2	Clay	<.00024	Sticky
3	Silt	.00024 - .0039	Slippery
4	Sand	.0039 – 2	Gritty
5	Small Gravel	3 – 16	Sand to thumbnail
6	Large Gravel	17 – 64	Thumbnail to fist
7	Cobble	65 – 256	Fist to head
8	Boulder	>256	Larger than head
9	Bedrock	--	Solid parent material

Size classes used to categorize large woody debris during BVET habitat surveys on selected streams on the NFs of NC.

Size Class	Length (m)	Diameter (cm)
1	1 - 5	10 – 55
2	1 - 5	> 55
3	> 5	10 – 55
4	> 5	> 55

Bankfull channel characteristics used to determine Rosgen channel types in the field during BVET habitat surveys on the Dry River Ranger District, summer 2004.

Channel Type	A	B	C	D	E	F	G
Entrenchment	< 1.4	1.4 – 2.2	> 2.2	n/a	> 2.2	< 1.4	< 1.4
W/D Ratio	< 12	> 12	> 12	> 40	< 12	> 12	< 12
Slope (%)	4 – 9.9	2 – 3.9	< 2	< 4	< 2	< 2	2 – 3.9

Stream Channel and Habitat Attributes in the National Forests in North Carolina Before and After the Hurricane Flooding Events of 2004

Appendix B: pre-2005 Stream Summaries

Pre-2005 Stream Summaries – Index by Ranger District

Appalachian 50
- Bowlens Creek 50
- Upper Creek 54
- West Fork Shut In Creek 58
- Corner Rock Creek 62
- Hickory Fork 66
- Groundhog Creek 70
- Middle Creek 74
- Rock Creek 78

Cheoah 82
- Little Santeetlah Creek 82
- Little Slickrock Creek 86
- Shell Stand Creek 90
- Snowbird Creek 94
- Santeetlah Creek 98

Grandfather 102
- Left Fork Steels Creek 102
- Armstrong Creek 106
- Buck Creek 110
- Little Fork Steels Creek 114
- Steels Creek 118
- Andrews Creek 122
- Wilson Creek 126
- Newberry Creek 130

Highlands 134
- Fowlers Creek 134
- Overflow Creek 138
- Tanassee 142
- Wolf Creek 146
- Wolf Creek 150
- Scotsman Creek 154
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Pisgah 162
- Davidson River 162
- Cove Creek 168
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Tusquitee 176
- Gipp Creek 176
- Long Branch 180
- Muskrat Branch 184
- Pounding Mill Creek 188

Wayah 192
- Big Laurel Creek 192

Devils Prong 196
Jarrett Creek 200
Kilby Creek 204
Kimsey Creek 208
Long Branch 213
Mooney Creek 217
Nantahala River 221
Park Creek 225
Wesser Creek 229
Ray Branch 233
East Fork Dicks Creek 237
Big Creek 241

Stream:	**Bowlens Creek**
District:	Appalachian
USGS Quadrangle:	Mount Mitchell
Survey Date:	06/21/00
Downstream Starting Point:	FS boundary
Total Distance Surveyed (km):	1.0

	Pools	**Riffles**
Percent of Total Stream Area:	28	72
Total Area (m^2):	1403±203	3778±405
Correction Factor Applied:	0.97	1.01
Number of Paired Samples:	4	6
Total Count:	37	64
Number per km:	37	63
Mean Area (m^2):	39	59
Mean Maximum Depth (cm):	64	28
Mean Average Depth (cm):	41	17
Mean Residual Depth (cm):	29	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	
Percent with >35% Fines:		

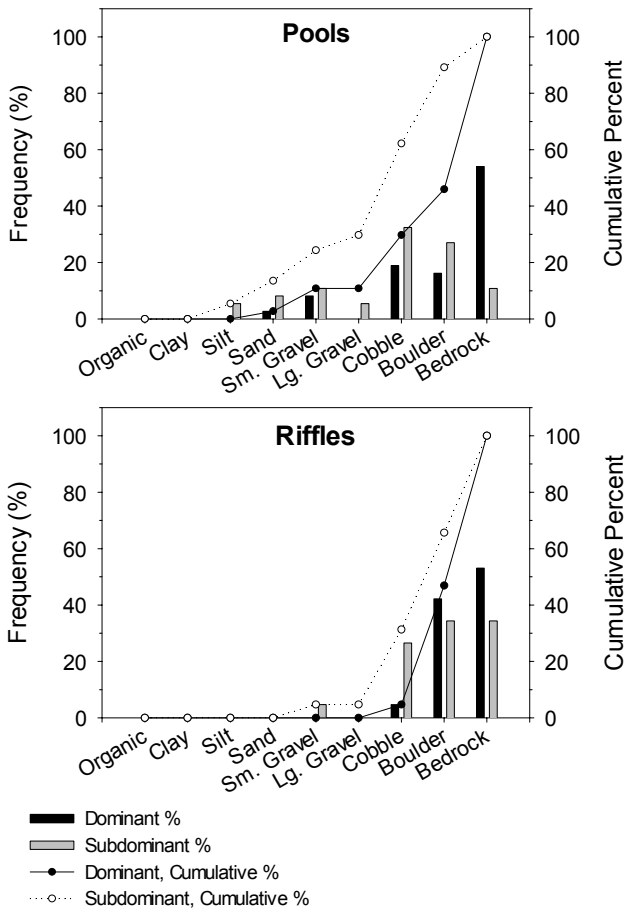
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	1045
< 5 m long, > 55 cm diameter:	157
>5 m long, 10 cm – 55 cm diameter:	22
> 5 m long, > 55 cm diameter:	0
Total:	1224

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

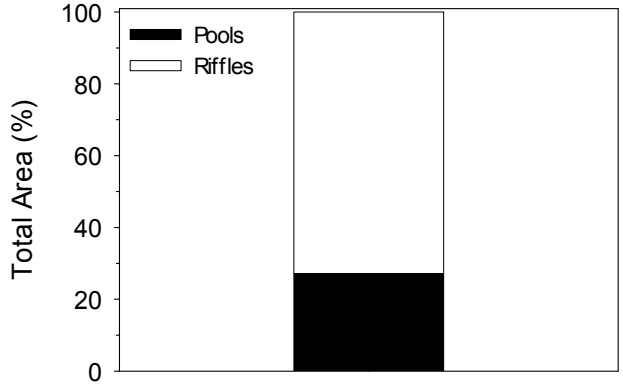
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	100
B:	0
C:	0
D:	0
E:	0
F:	0
G:	0

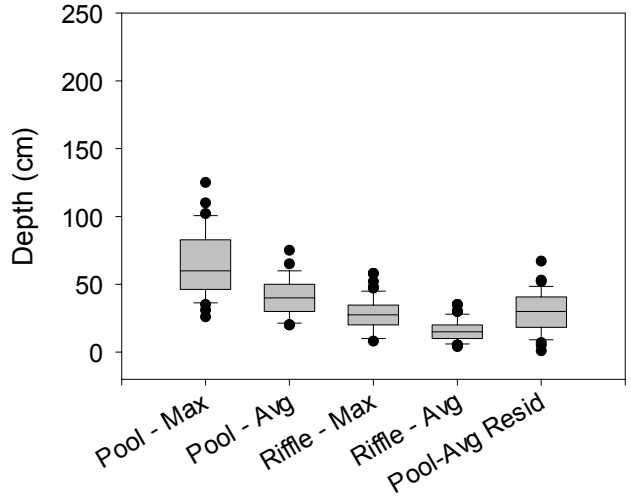
Other Stream Attributes
Mean Bankfull Channel Width (m):
Mean Channel Gradient (%):
Median Water Temperature (C˚):



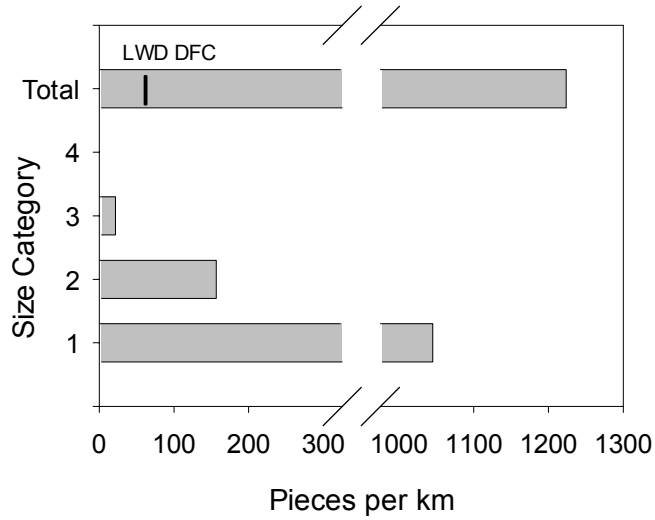
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Bowlens Creek, in summer 2000.



Estimated area of Bowlens Creek in pools and riffles as calculated using BVET techniques, summer 2000.



Maximum and average depths and residual pool depths for pools and riffles in Bowlens Creek, summer 2000. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Bowlens Creek, summer 2000. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

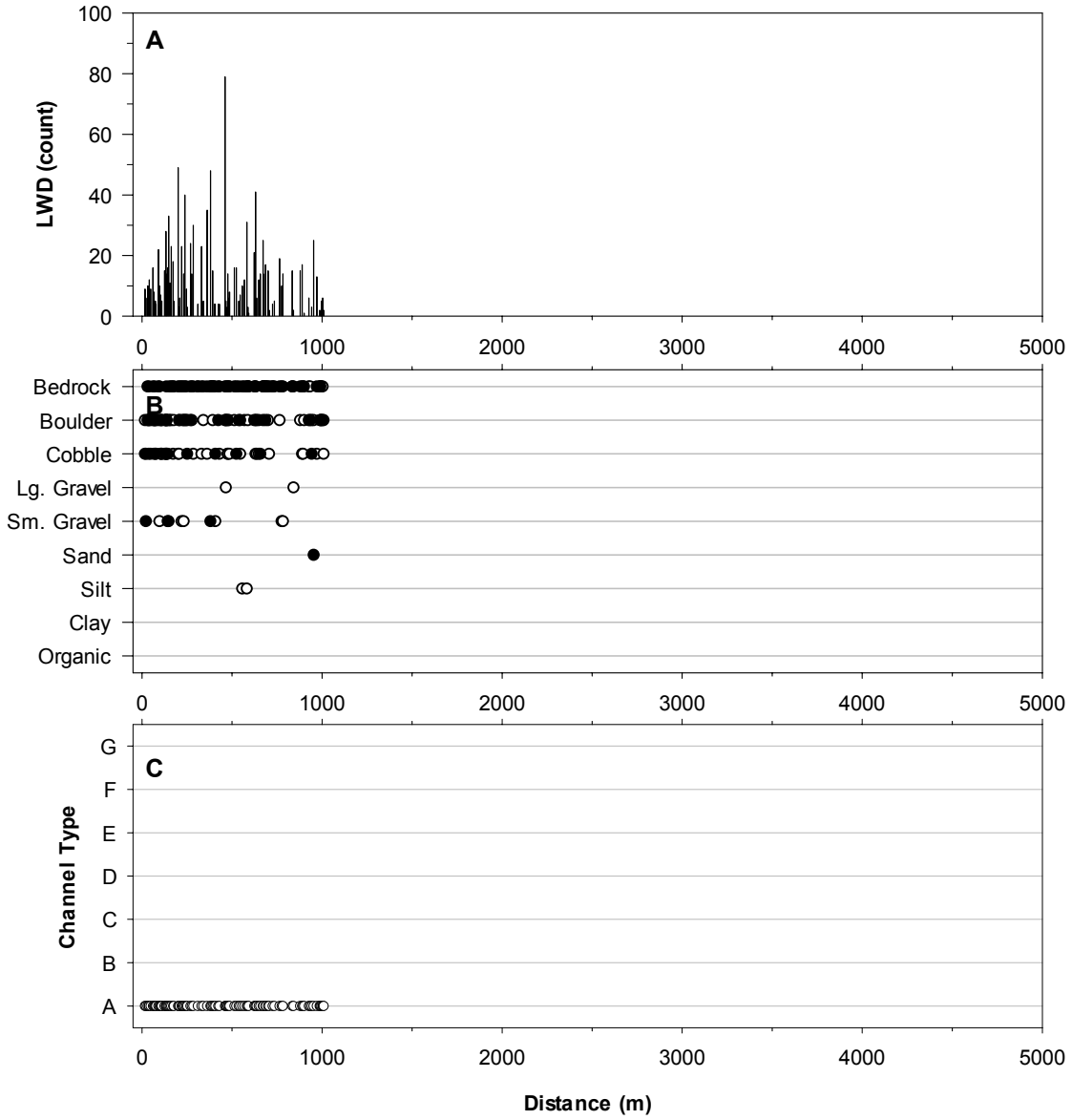
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Bowlens Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Trib	309.8		small trib on right
Other	942.1		burnsville water intake - cement dam

Photos taken of Bowlens Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Bowlens Creek, summer 2000. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Upper Creek**
District:	Appalachian
USGS Quadrangle:	Celo
Survey Date:	06/23/04
Downstream Starting Point:	confluence with South Toe River
Total Distance Surveyed (km):	1.2

	Pools	**Riffles**
Percent of Total Stream Area:	18	82
Total Area (m^2):	1926±411	8548±1842
Correction Factor Applied:	1.07	1.24
Number of Paired Samples:	3	3
Total Count:	28	34
Number per km:	23	28
Mean Area (m^2):	69	251
Mean Maximum Depth (cm):	91	51
Mean Average Depth (cm):	70	28
Mean Residual Depth (cm):	45	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	32
Percent with >35% Fines:		

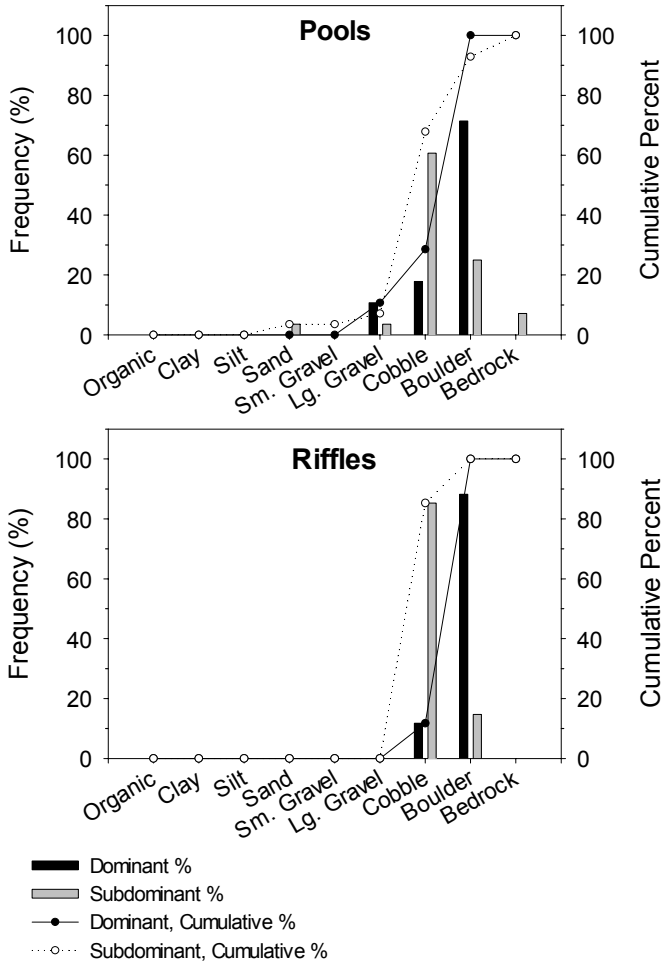
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	54
< 5 m long, > 55 cm diameter:	2
>5 m long, 10 cm – 55 cm diameter:	36
> 5 m long, > 55 cm diameter:	1
Total:	93

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	23	5
Maximum:	34	11
75th Percentile	27	7
25th Percentile	20	3
Minimum	12	2

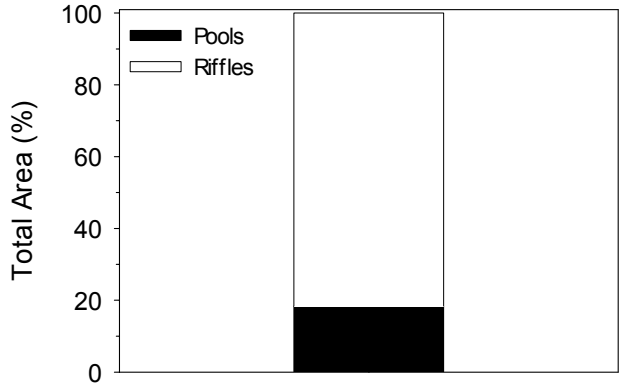
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	0
B:	100
C:	0
D:	0
E:	0
F:	0
G:	0

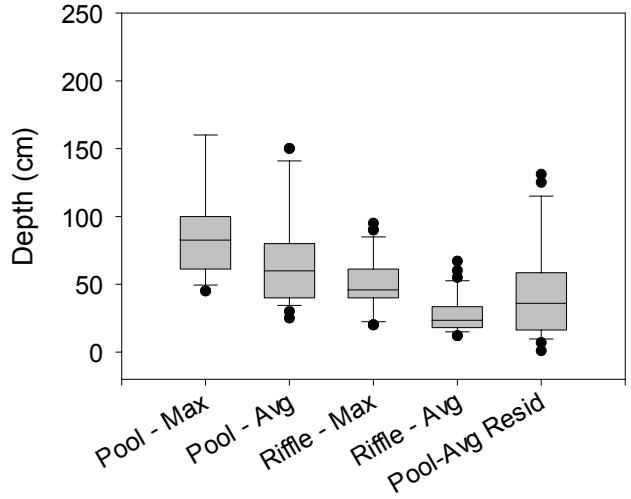
Other Stream Attributes	
Mean Bankfull Channel Width (m):	
Mean Channel Gradient (%):	5
Median Water Temperature (C˚):	



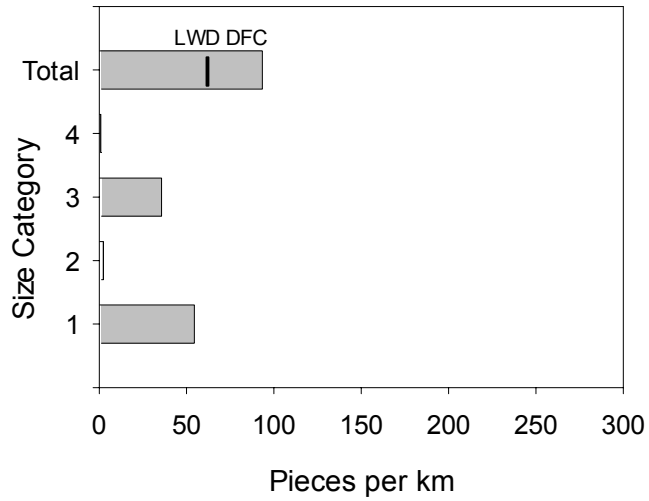
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Upper Creek, summer 2004.



Estimated area of Upper Creek in pools and riffles as calculated using BVET techniques, summer 2004.



Maximum and average depths and residual pool depths for pools and riffles in Upper Creek, summer 2004. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Upper Creek, summer 2004. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

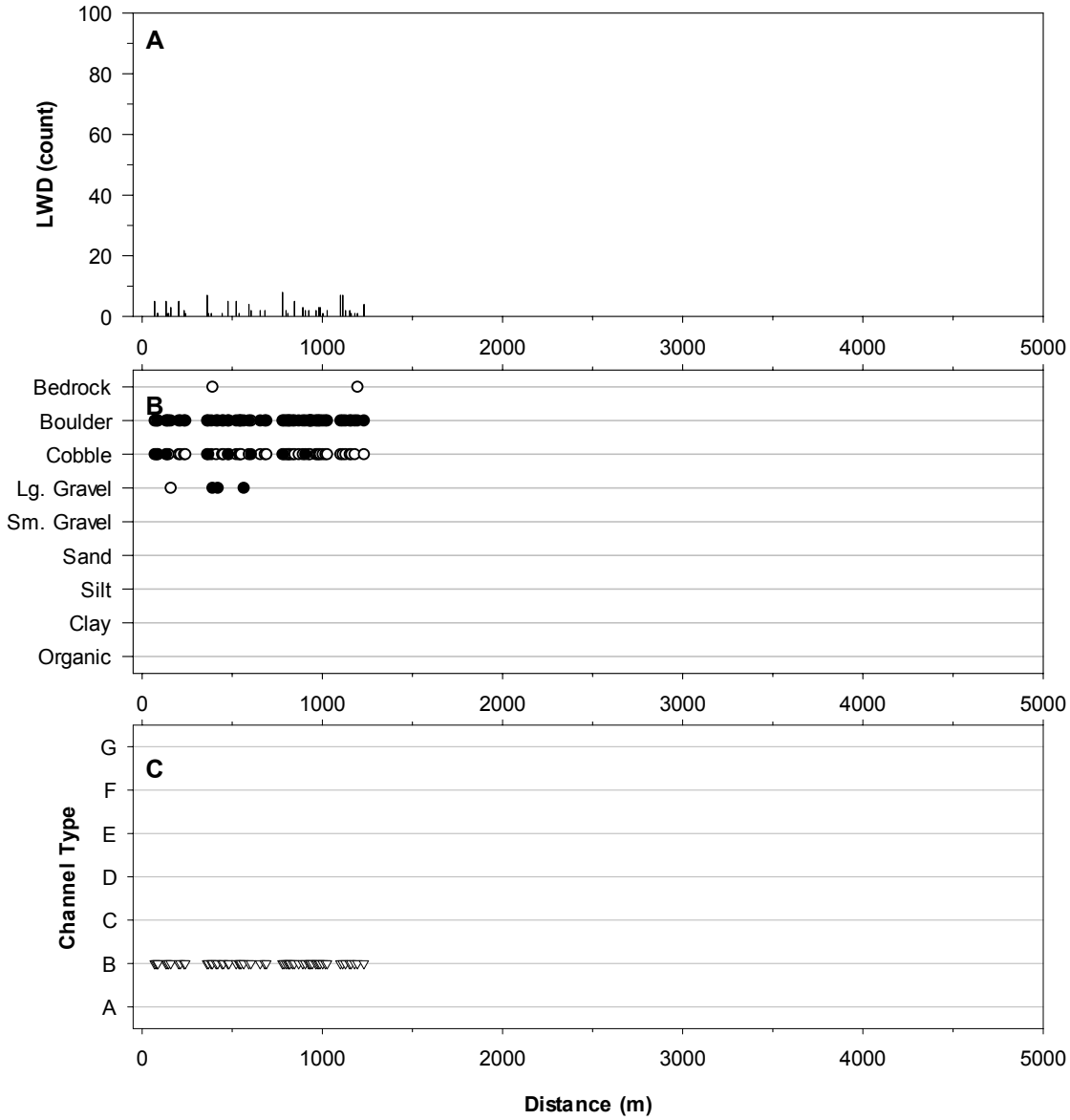
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Upper Creek during BVET habitat survey, summer 2004. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Road	17.0		South Toe River Road
Side Channel	263.9		Side channel Right
Side Channel	309.5		End channel
Fall	635.1		4ft fall
Side Channel	838.0		Side Channel
Side Channel	881.4		End side channel
Fall	1048.6		Side Channel Right
Fall	1098.0		6ft Waterfall
Fall	1194.0		Falls 20ft. Falls
Trib	1230.2		End @ trib on Right

Photos taken of Upper Creek during BVET habitat survey, summer 2004. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Upper Creek, summer 2000. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**West Fork Shut In Creek**
District:	Appalachian
USGS Quadrangle:	Lemon Gap
Survey Date:	2001
Downstream Starting Point:	Forest boundary
Total Distance Surveyed (km):	0.4

	Pools	**Riffles**
Percent of Total Stream Area:	12	88
Total Area (m^2):	170±30	1225±59
Correction Factor Applied:	1.00	1.06
Number of Paired Samples:	3	5
Total Count:	19	28
Number per km:	44	65
Mean Area (m^2):	9	44
Mean Maximum Depth (cm):	41	23
Mean Average Depth (cm):	28	15
Mean Residual Depth (cm):	15	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	39
Percent with >35% Fines:		

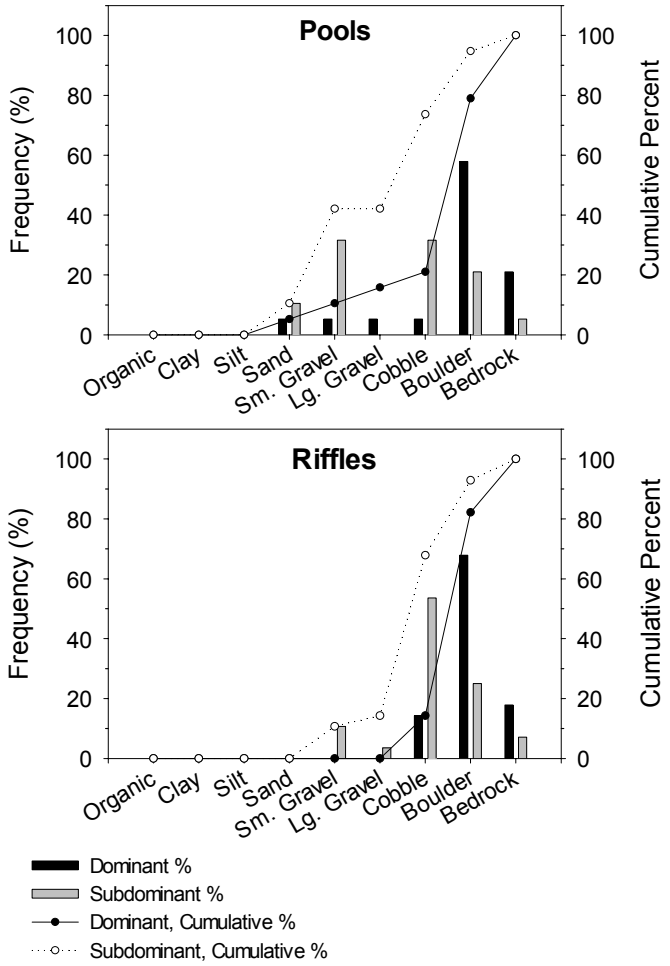
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	2274
< 5 m long, > 55 cm diameter:	1044
>5 m long, 10 cm – 55 cm diameter:	287
> 5 m long, > 55 cm diameter:	14
Total:	3618

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

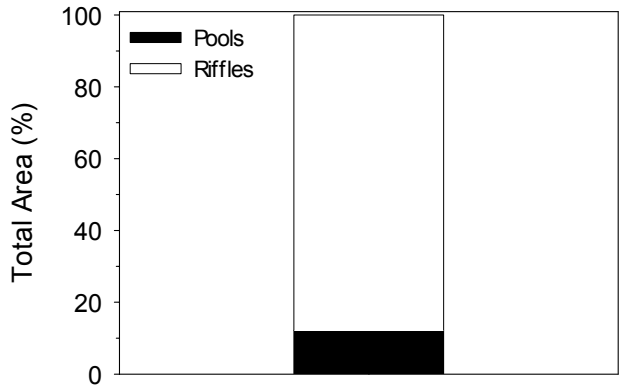
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

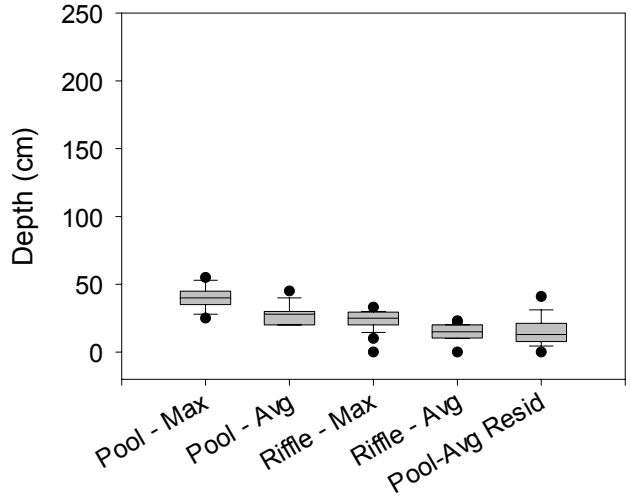
Other Stream Attributes
Mean Bankfull Channel Width (m):
Mean Channel Gradient (%):
Median Water Temperature (C˚):



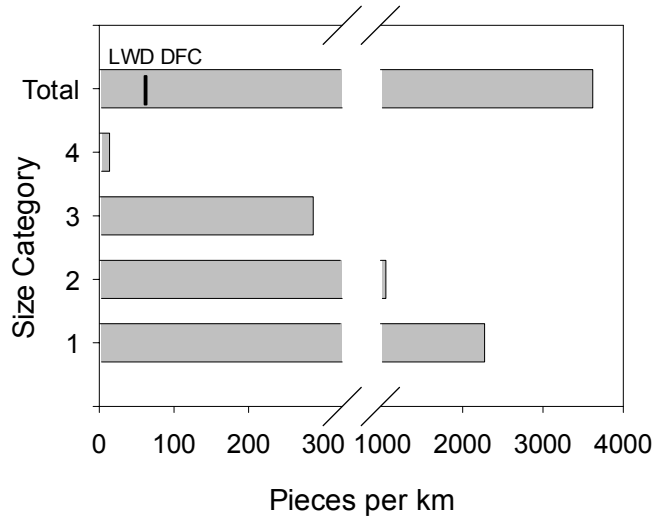
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in West Fork Shut In Creek, summer 2001.



Estimated area of West Fork Shut In Creek in pools and riffles as calculated using BVET techniques, summer 2001.



Maximum and average depths and residual pool depths for pools and riffles in West Fork Shut In Creek, summer 2001. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in West Fork Shut In Creek, summer 2001. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

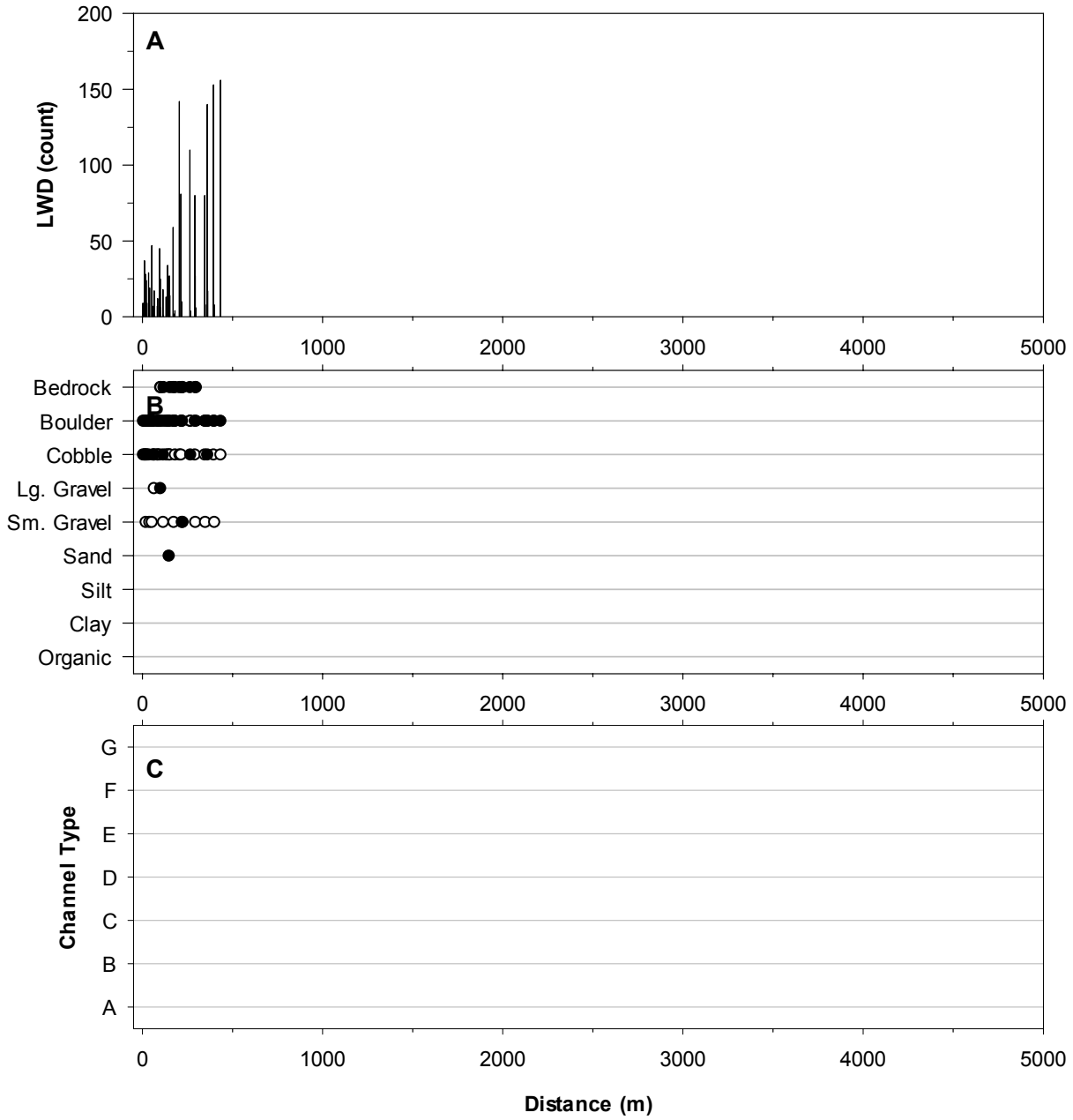
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on West Fork Shut In Creek during BVET habitat survey, summer 2001. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Trib	70.7		trib on left
Trib	172.3		trib on right
Trib	265.1		trib on right

Photos taken of West Fork Shut In Creek during BVET habitat survey, summer 2001. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in West Fork Shut In Creek, summer 2001. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Corner Rock Creek**
District:	Appalachian
USGS Quadrangle:	Barnardsville, Mount Mitchell
Survey Date:	2001
Downstream Starting Point:	confluence with Walker Branch
Total Distance Surveyed (km):	1.0

	Pools	**Riffles**
Percent of Total Stream Area:	14	86
Total Area (m^2):	649±54	3877±137
Correction Factor Applied:	0.99	1.06
Number of Paired Samples:	5	8
Total Count:	28	43
Number per km:	28	43
Mean Area (m^2):	23	90
Mean Maximum Depth (cm):	46	25
Mean Average Depth (cm):	35	17
Mean Residual Depth (cm):	24	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	26
Percent with >35% Fines:		

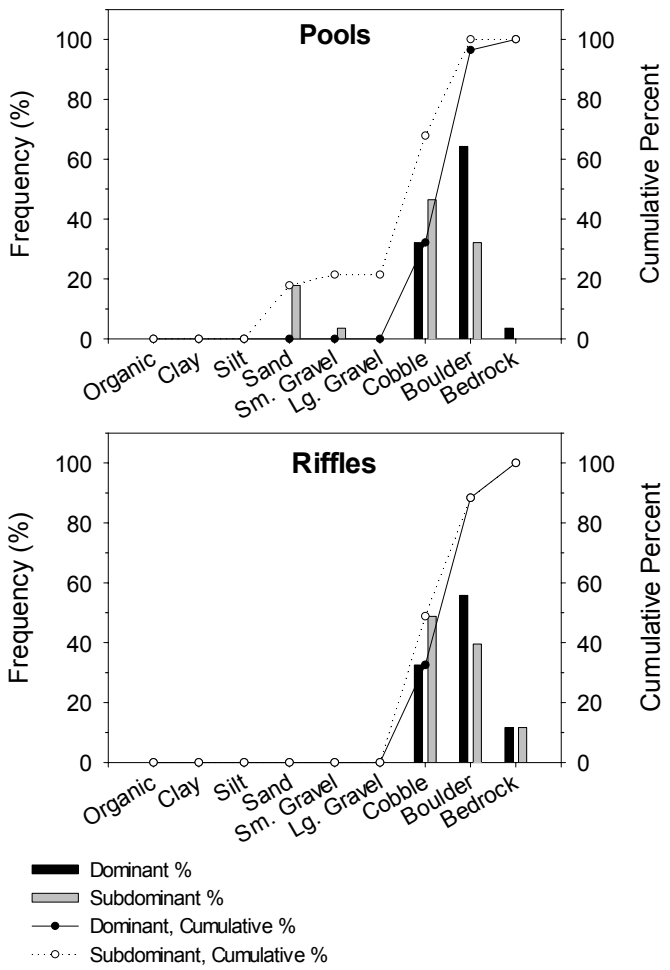
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	516
< 5 m long, > 55 cm diameter:	97
>5 m long, 10 cm – 55 cm diameter:	13
> 5 m long, > 55 cm diameter:	3
Total:	629

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

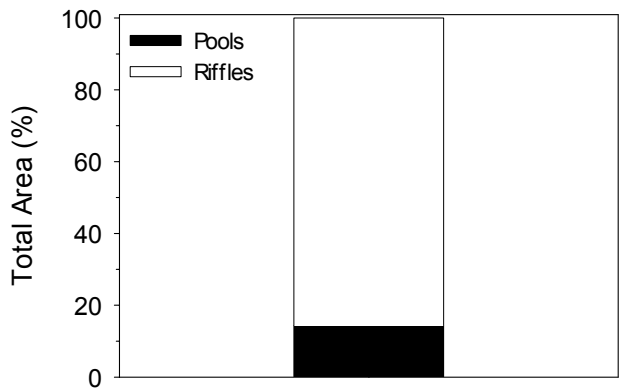
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

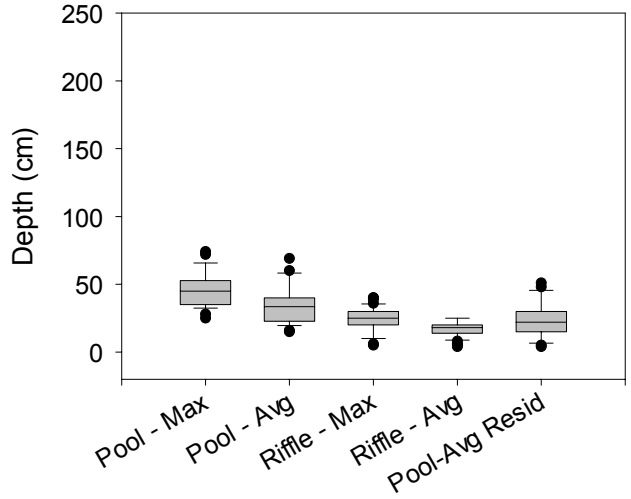
Other Stream Attributes
Mean Bankfull Channel Width (m):
Mean Channel Gradient (%):
Median Water Temperature (C˚):



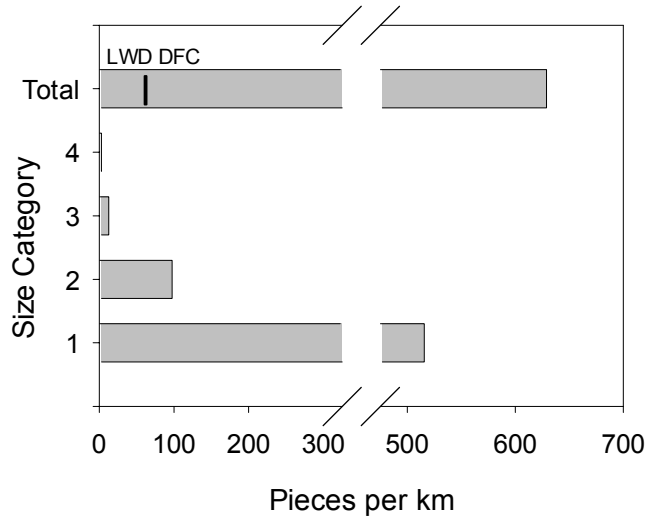
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Corner Rock Creek, summer 2001.



Estimated area of Corner Rock Creek in pools and riffles as calculated using BVET techniques, summer 2001.



Maximum and average depths and residual pool depths for pools and riffles in Corner Rock Creek, summer 2001. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Corner Rock Creek, summer 2001. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

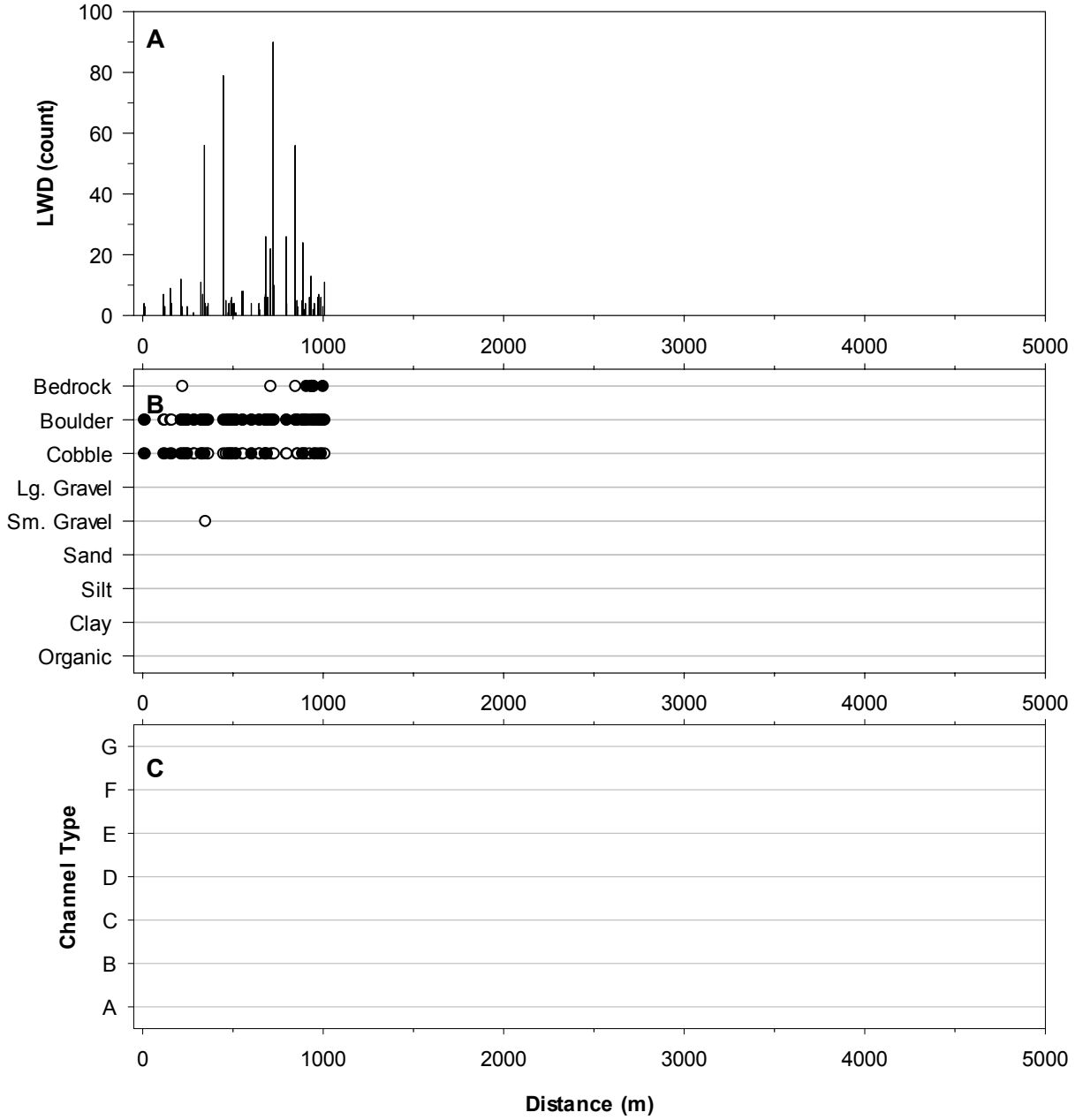
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Corner Rock Creek during BVET habitat survey, summer 2001. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Trib	152.1		Small trib on right
Trib	321.5		Small trib on right
Trail	546.1		Trail xing
Trib	932.1		Trib on left

Photos taken of Corner Rock Creek during BVET habitat survey, summer 2001. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Corner Rock Creek, summer 2001. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Hickory Fork**
District:	Appalachian
USGS Quadrangle:	White Rock/Johnson City
Survey Date:	06/10/03
Downstream Starting Point:	FS boundary
Total Distance Surveyed (km):	2.3

	Pools	**Riffles**
Percent of Total Stream Area:	16	84
Total Area (m^2):	2359±685	12229±4839
Correction Factor Applied:	1.03	1.11
Number of Paired Samples:	3	3
Total Count:	24	29
Number per km:	10	12
Mean Area (m^2):	98	422
Mean Maximum Depth (cm):	85	58
Mean Average Depth (cm):	49	31
Mean Residual Depth (cm):	24	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	7
Percent with >35% Fines:		

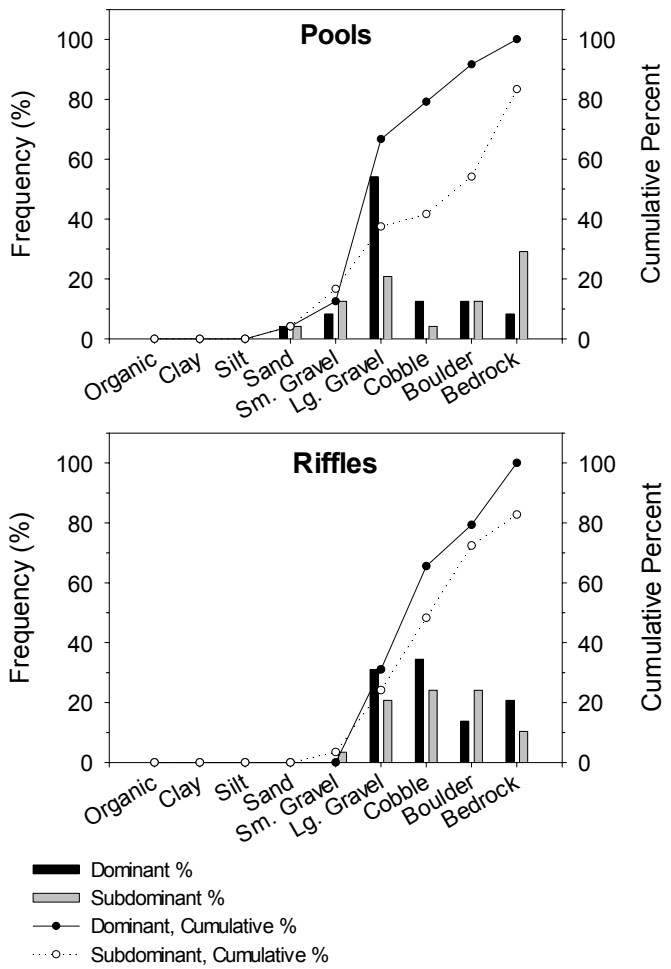
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	152
< 5 m long, > 55 cm diameter:	204
>5 m long, 10 cm – 55 cm diameter:	40
> 5 m long, > 55 cm diameter:	9
Total:	405

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	23	7
Maximum:	29	10
75th Percentile	26	8
25th Percentile	19	4
Minimum	18	4

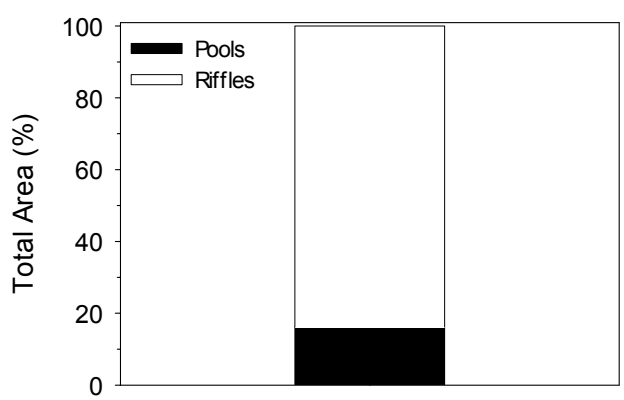
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	0
B:	100
C:	0
D:	0
E:	0
F:	0
G:	0

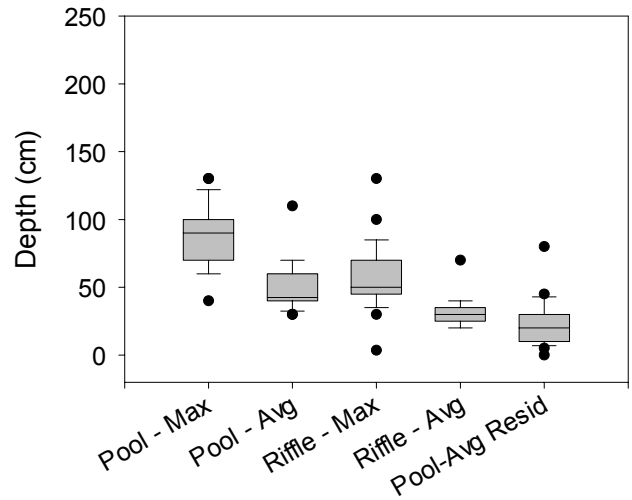
Other Stream Attributes	
Mean Bankfull Channel Width (m):	9
Mean Channel Gradient (%):	3
Median Water Temperature (C˚):	



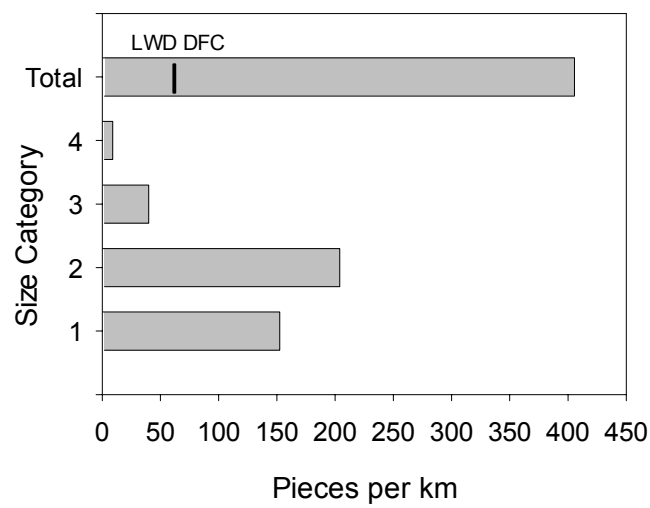
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Hickory Fork, summer 2003.



Estimated area of Hickory Fork in pools and riffles as calculated using BVET techniques, summer 2003.



Maximum and average depths and residual pool depths for pools and riffles in Hickory Fork, summer 2003. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Hickory Fork, summer 2003. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

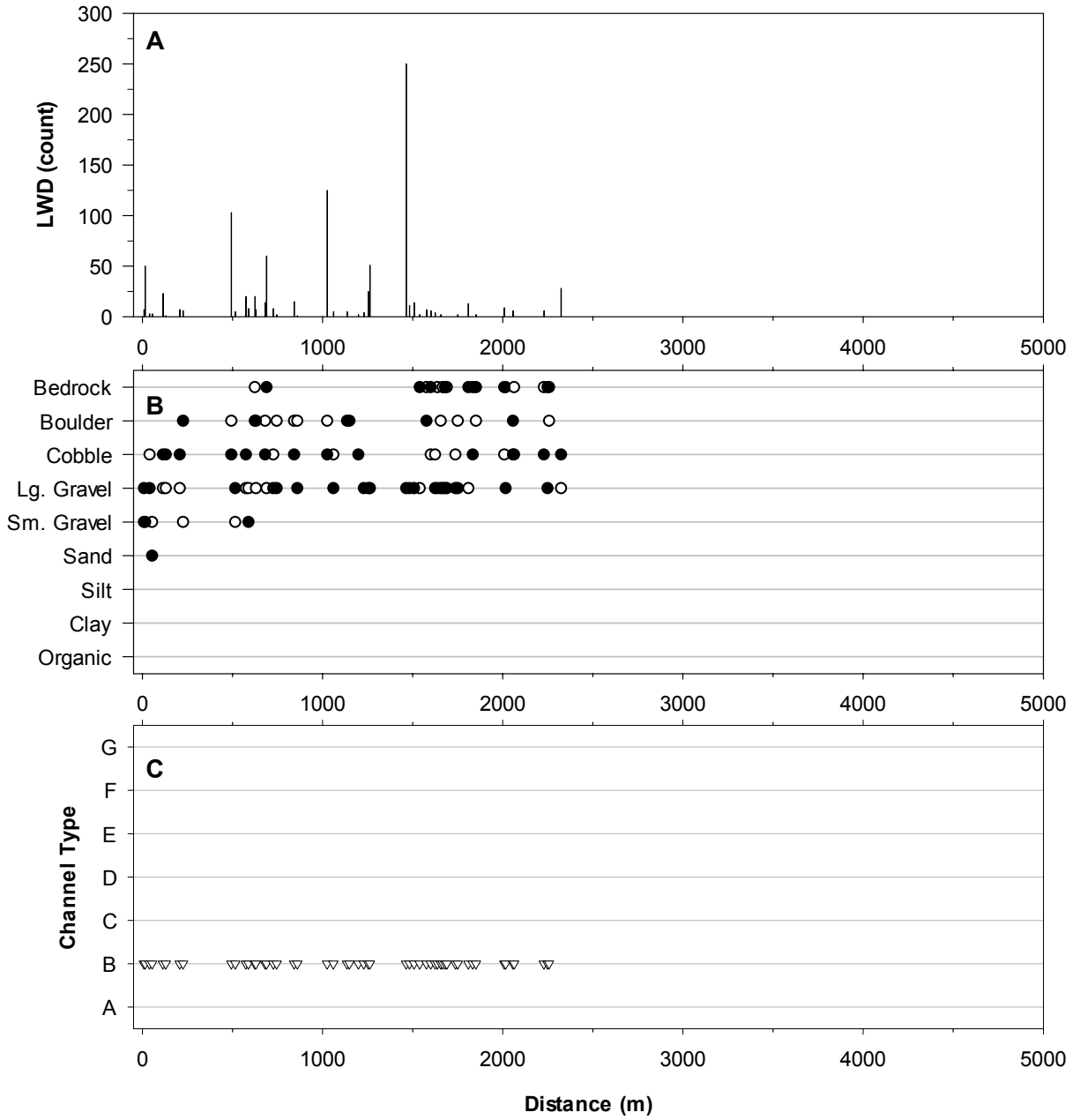
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Hickory Fork during BVET habitat survey, summer 2003. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Side Channel	8.5		Island went with large side
Other	15.1		Debris jam 2/5 of pool
Other	39.3		Leftside large amounts of Island debris
Side Channel	54.1		End island, sch left out
			Washed out foot BRG Lt/ Hick Fork Trail
Trail	129.4		Crossing
Trib	207.2		TRIB, Left iu
Other	493.1		Lake log/ Debris Jam
Road	574		BRG, culvert right
Trib	688.6		Culvert Rt, TRIB Right
Other	726.1		Washed Rd out on Left
Other	745.1		Washed Rd out on Left
Trib	841.8		TRIB on L
Trib	1025.5		Trib. Right
Culvert	1060.1		Culvert left
Trib	1229		Trib rt
Side Channel	1253		SCH on Lt in./Debris both sides
Culvert	1262.5		Culvert.8
Other	1463.6		Log Jam from /SCH out Lt
Other	1600.5		Washed Road out on Lt Creating Steep Bank
Other	1655.7		Land Slide on Lt
Trib	1666.9		TRIB on Lt
Culvert	1808.4		Culvert lt *
Trib	1833.1		TRIB culvert Lt
Culvert	1850.9		Culvert lt
Culvert	2063.1		*Culvert lt
Trib	2228.1		Trib lt
Culvert	2257		Culvert lt
Trib	2323.1		Trib

Photos taken of Hickory Fork during BVET habitat survey, summer 2003. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Hickory Fork, summer 2003. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Groundhog Creek**
District:	Appalachian
USGS Quadrangle:	Waterville
Survey Date:	06/21/04
Downstream Starting Point:	Started at culvert under Interstate 40
Total Distance Surveyed (km):	2.0

	Pools	**Riffles**
Percent of Total Stream Area:	12	88
Total Area (m^2):	2296±1635	16162±6344
Correction Factor Applied:	1.26	1.55
Number of Paired Samples:	4	5
Total Count:	36	53
Number per km:	18	26
Mean Area (m^2):	64	305
Mean Maximum Depth (cm):	85	41
Mean Average Depth (cm):	61	23
Mean Residual Depth (cm):	43	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	42
Percent with >35% Fines:		

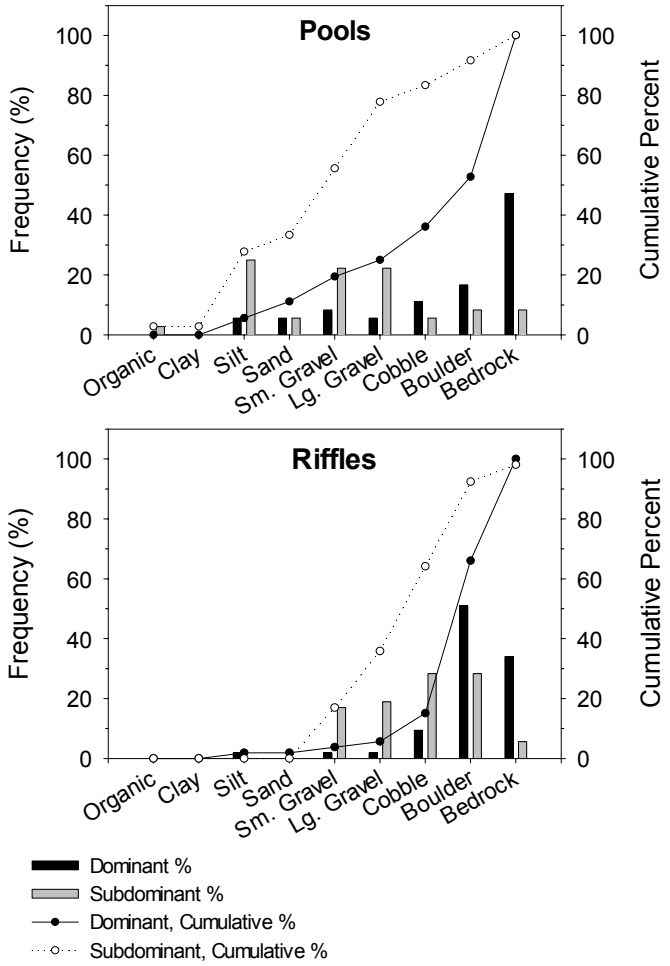
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	109
< 5 m long, > 55 cm diameter:	2
>5 m long, 10 cm – 55 cm diameter:	117
> 5 m long, > 55 cm diameter:	0
Total:	228

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	25	6
Maximum:	40	15
75th Percentile	28	6
25th Percentile	18	4
Minimum	15	2

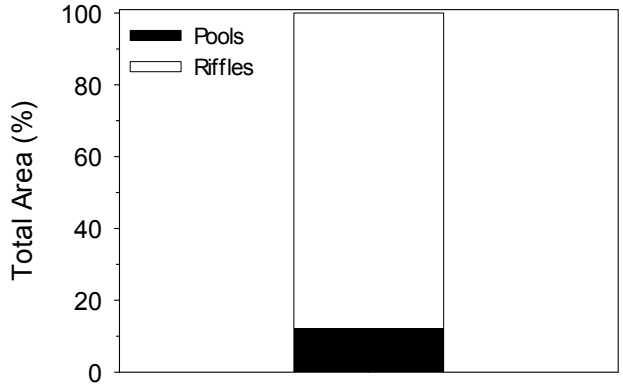
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	0
B:	100
C:	0
D:	0
E:	0
F:	0
G:	0

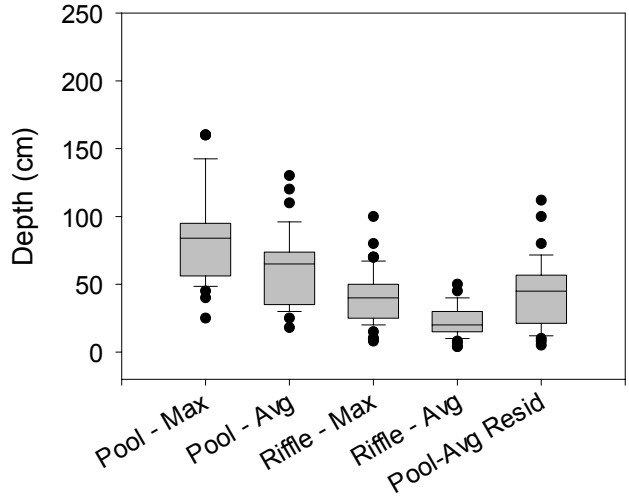
Other Stream Attributes	
Mean Bankfull Channel Width (m):	14
Mean Channel Gradient (%):	7
Median Water Temperature (C˚):	



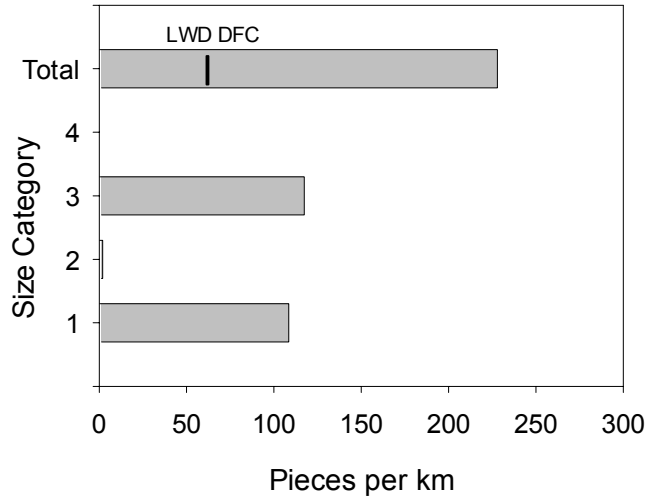
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Groundhog Creek, summer 2004.



Estimated area of Groundhog Creek in pools and riffles as calculated using BVET techniques, summer 2004.



Maximum and average depths and residual pool depths for pools and riffles in Groundhog Creek, summer 2004. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Groundhog Creek, summer 2004. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

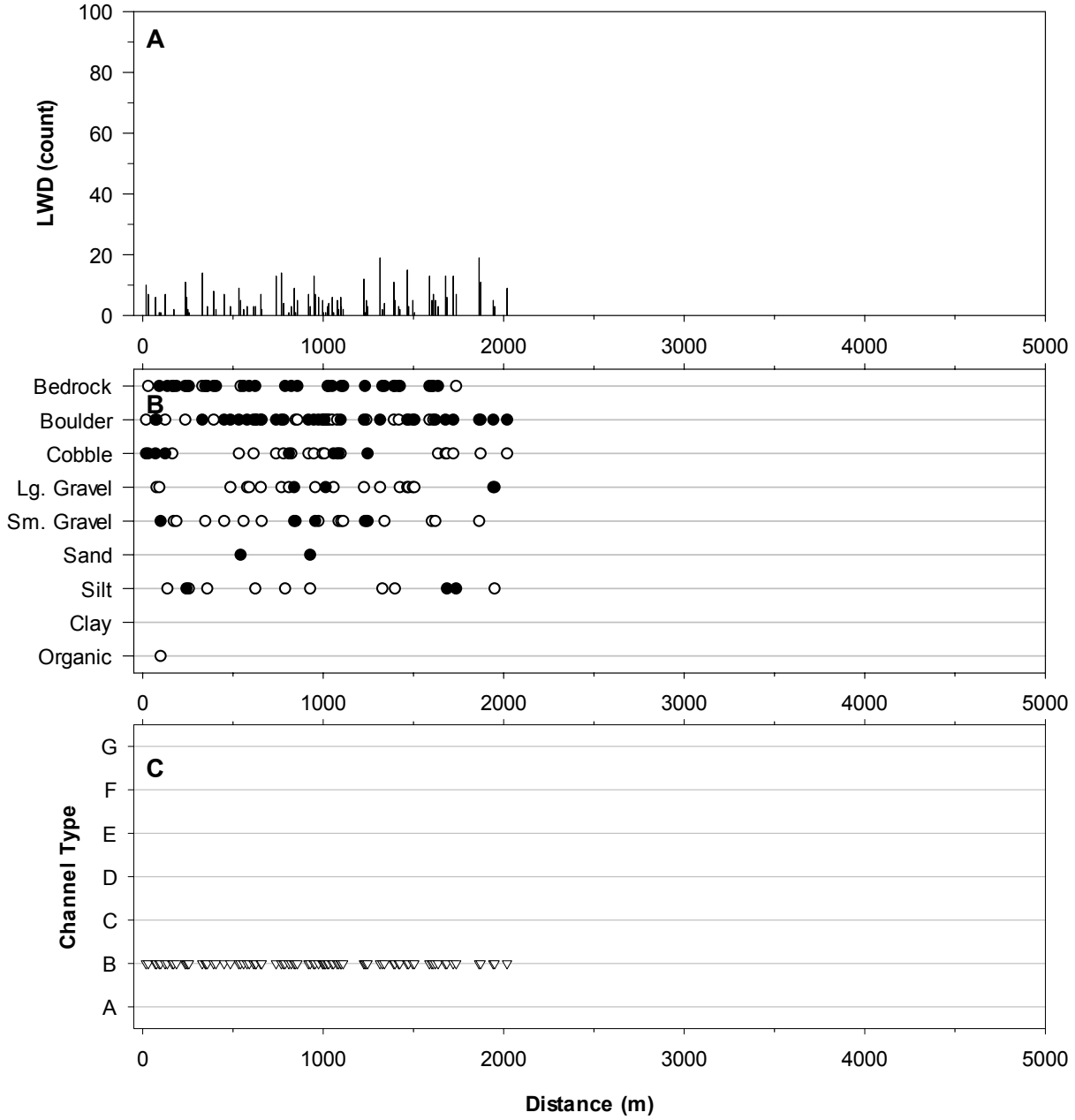
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Groundhog Creek during BVET habitat survey, summer 2004. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Trib	330.4		Trib Dry Branch
Side Channel	739.0		side chan right ends
Side Channel	856.8		Side chanel Right
Side Channel	948.2		Side Chanel Ends
Side Channel	1170.4		Side channel Right E
Side Channel	1231.1		Side channel Right
Side Channel	1327.0		End side channel Right
Trib	1338.9		Trib Left
Braid	1391.5		R-24 Braided
Trail	1636.1		Groundhog cr trail
Side Channel	1720.5		Side channel Right
Side Channel	1736.2		side channel end's
Other	1863.3		Log Jam
Trib	1949.5		Chestnut orchard Br

Photos taken of Groundhog Creek during BVET habitat survey, summer 2004. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Groundhog Creek, summer 2004. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Middle Creek**
District:	Appalachian/Grandfather
USGS Quadrangle:	Celo
Survey Date:	2001
Downstream Starting Point:	FS boundary
Total Distance Surveyed (km):	1.0

	Pools	**Riffles**
Percent of Total Stream Area:	31	69
Total Area (m^2):	1645±54	3654±68
Correction Factor Applied:	1.02	0.98
Number of Paired Samples:	7	9
Total Count:	39	50
Number per km:	38	49
Mean Area (m^2):	42	73
Mean Maximum Depth (cm):	60	33
Mean Average Depth (cm):	41	20
Mean Residual Depth (cm):	28	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	24
Percent with >35% Fines:		

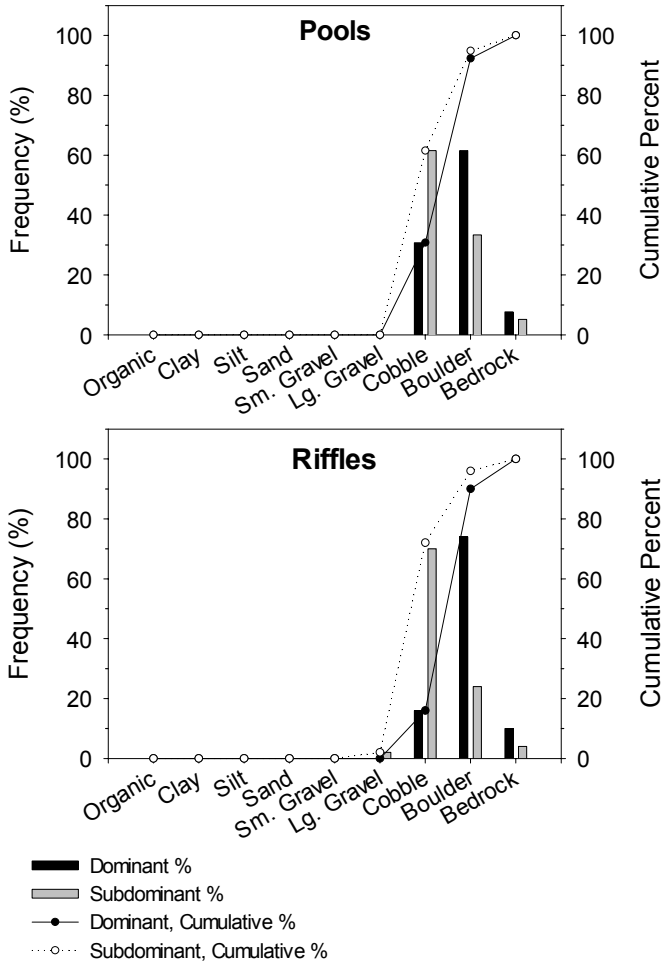
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	647
< 5 m long, > 55 cm diameter:	182
>5 m long, 10 cm – 55 cm diameter:	45
> 5 m long, > 55 cm diameter:	14
Total:	887

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

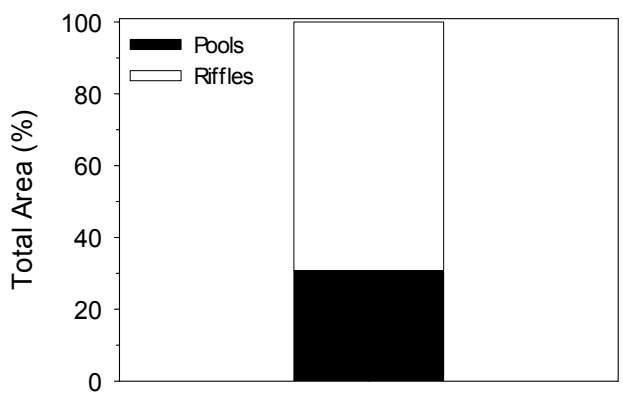
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

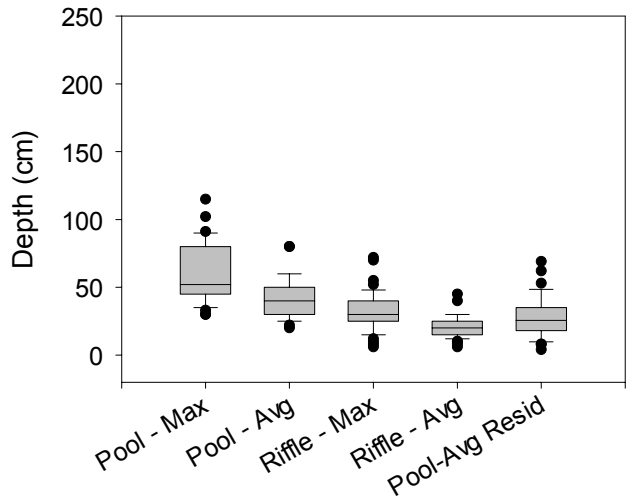
Other Stream Attributes
Mean Bankfull Channel Width (m):
Mean Channel Gradient (%):
Median Water Temperature (C˚):



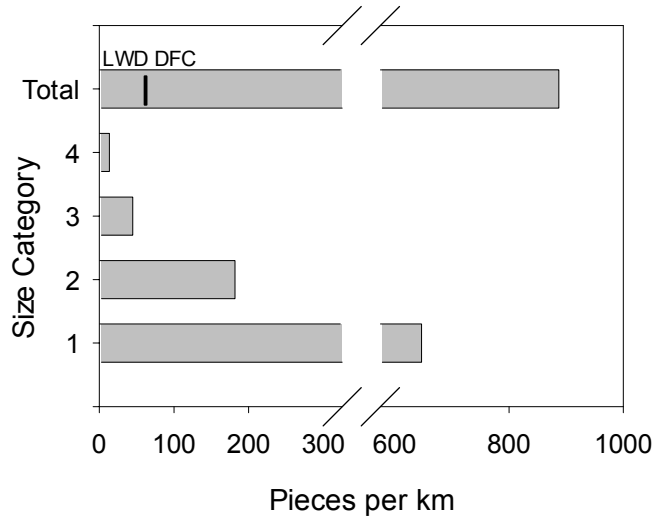
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Middle Creek, summer 2001.



Estimated area of Middle Creek in pools and riffles as calculated using BVET techniques, summer 2001.



Maximum and average depths and residual pool depths for pools and riffles in Middle Creek, summer 2001. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Middle Creek, summer 2001. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

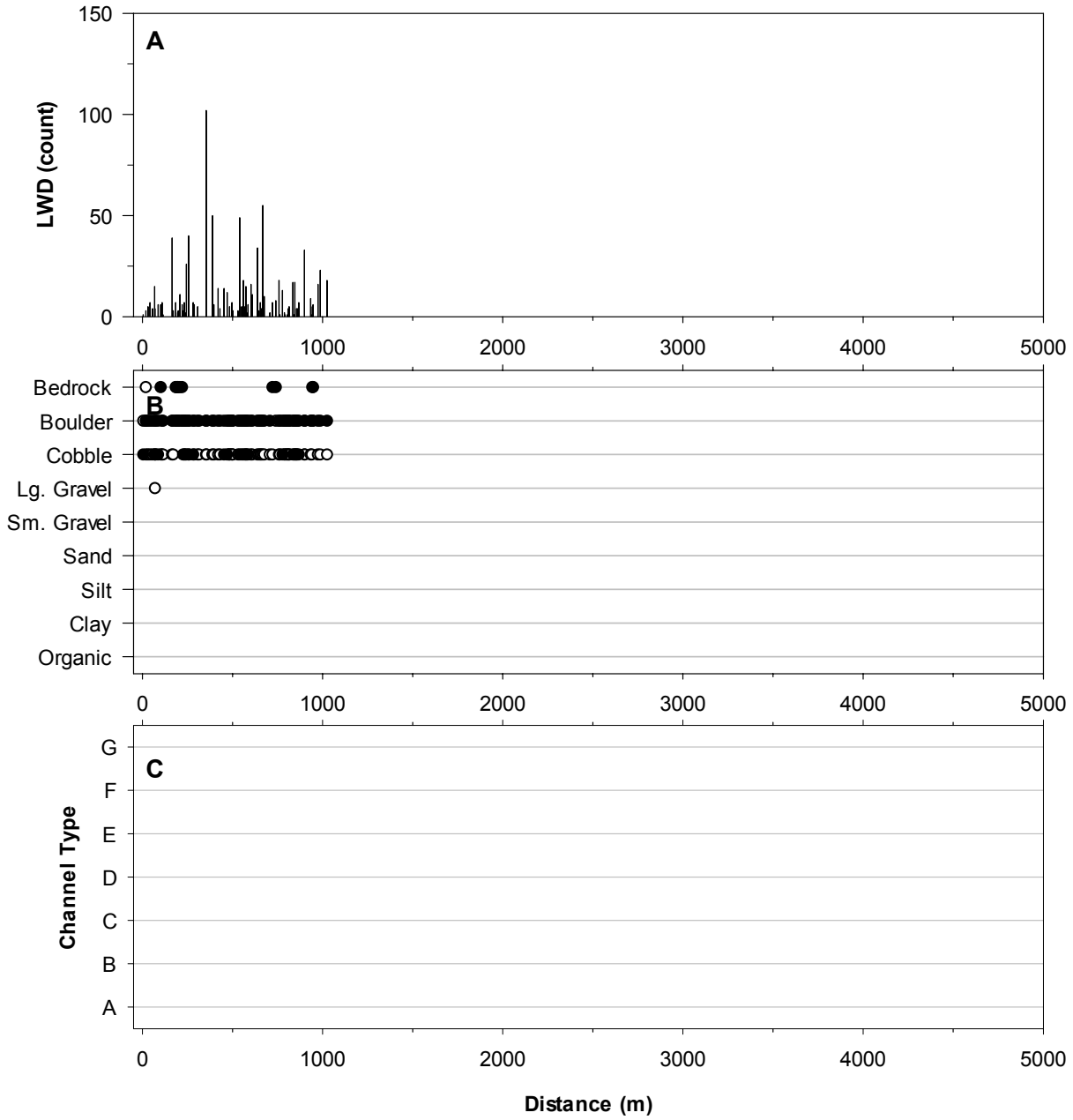
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Middle Creek during BVET habitat survey, summer 2001. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Other	41.3		crosed boundary line
Trib	67.1		trib on left
Trib	313.7		trib on right
Other	353.1		large log jam
Other	387.9		log jam on left
Other	539.6		log jam on left
Trail	707.1		horse trail crosing

Photos taken of Middle Creek during BVET habitat survey, summer 2001. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Middle Creek, summer 2001. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Rock Creek**
District:	Appalachian
USGS Quadrangle:	Celo
Survey Date:	06/20/00
Downstream Starting Point:	FS boundary
Total Distance Surveyed (km):	1.0

	Pools	**Riffles**
Percent of Total Stream Area:	53	47
Total Area (m^2):	3232±159	2852±334
Correction Factor Applied:	0.99	1.00
Number of Paired Samples:	5	6
Total Count:	46	64
Number per km:	45	63
Mean Area (m^2):	70	45
Mean Maximum Depth (cm):	72	29
Mean Average Depth (cm):	47	19
Mean Residual Depth (cm):	32	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	45
Percent with >35% Fines:		

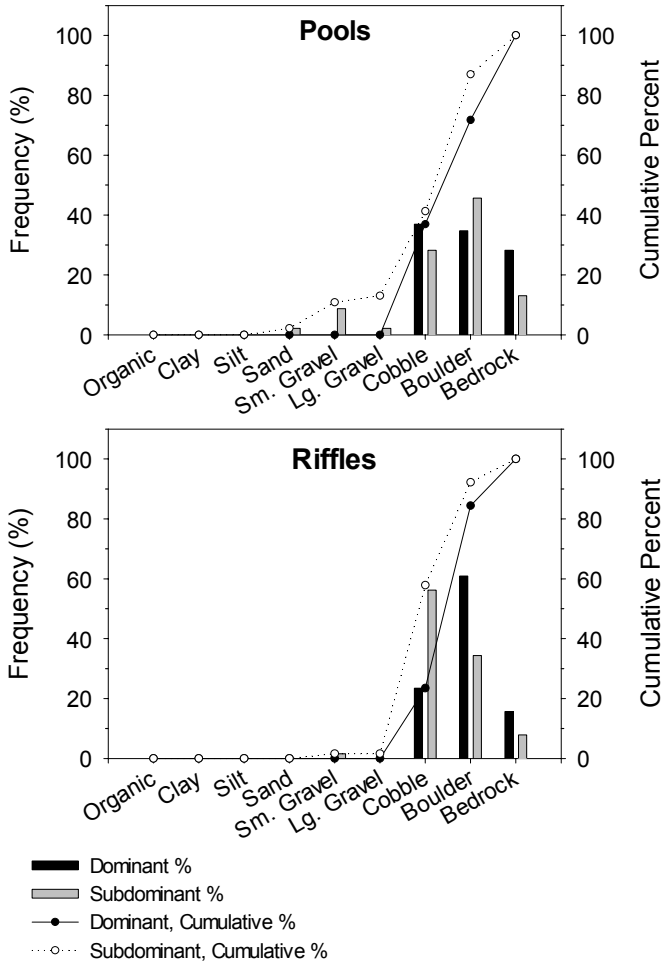
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	191
< 5 m long, > 55 cm diameter:	17
>5 m long, 10 cm – 55 cm diameter:	6
> 5 m long, > 55 cm diameter:	3
Total:	217

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

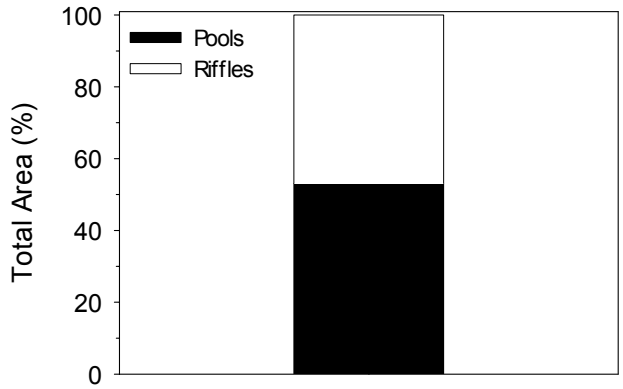
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	0
B:	100
C:	0
D:	0
E:	0
F:	0
G:	0

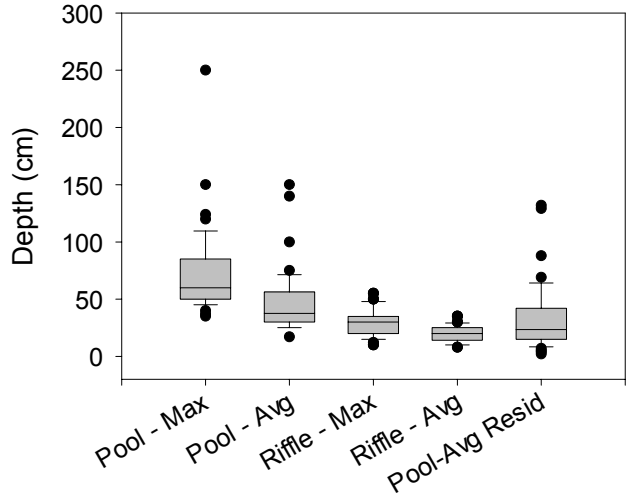
Other Stream Attributes
Mean Bankfull Channel Width (m):
Mean Channel Gradient (%):
Median Water Temperature (C˚):



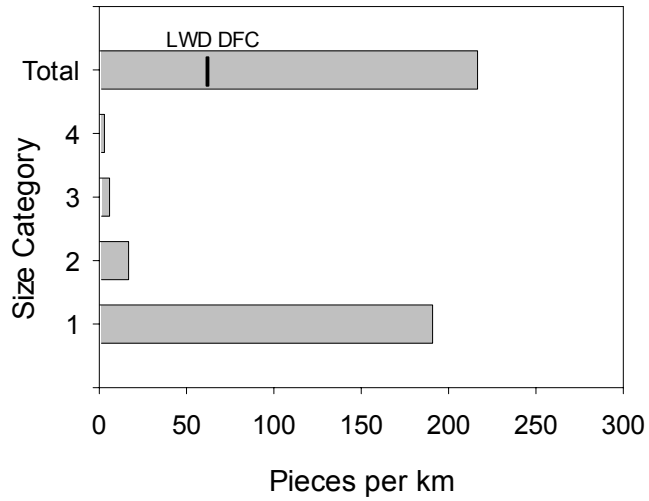
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Rock Creek, summer 2000.



Estimated area of Rock Creek in pools and riffles as calculated using BVET techniques, summer 2000.



Maximum and average depths and residual pool depths for pools and riffles in Rock Creek, summer 2000. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Rock Creek, summer 2000. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

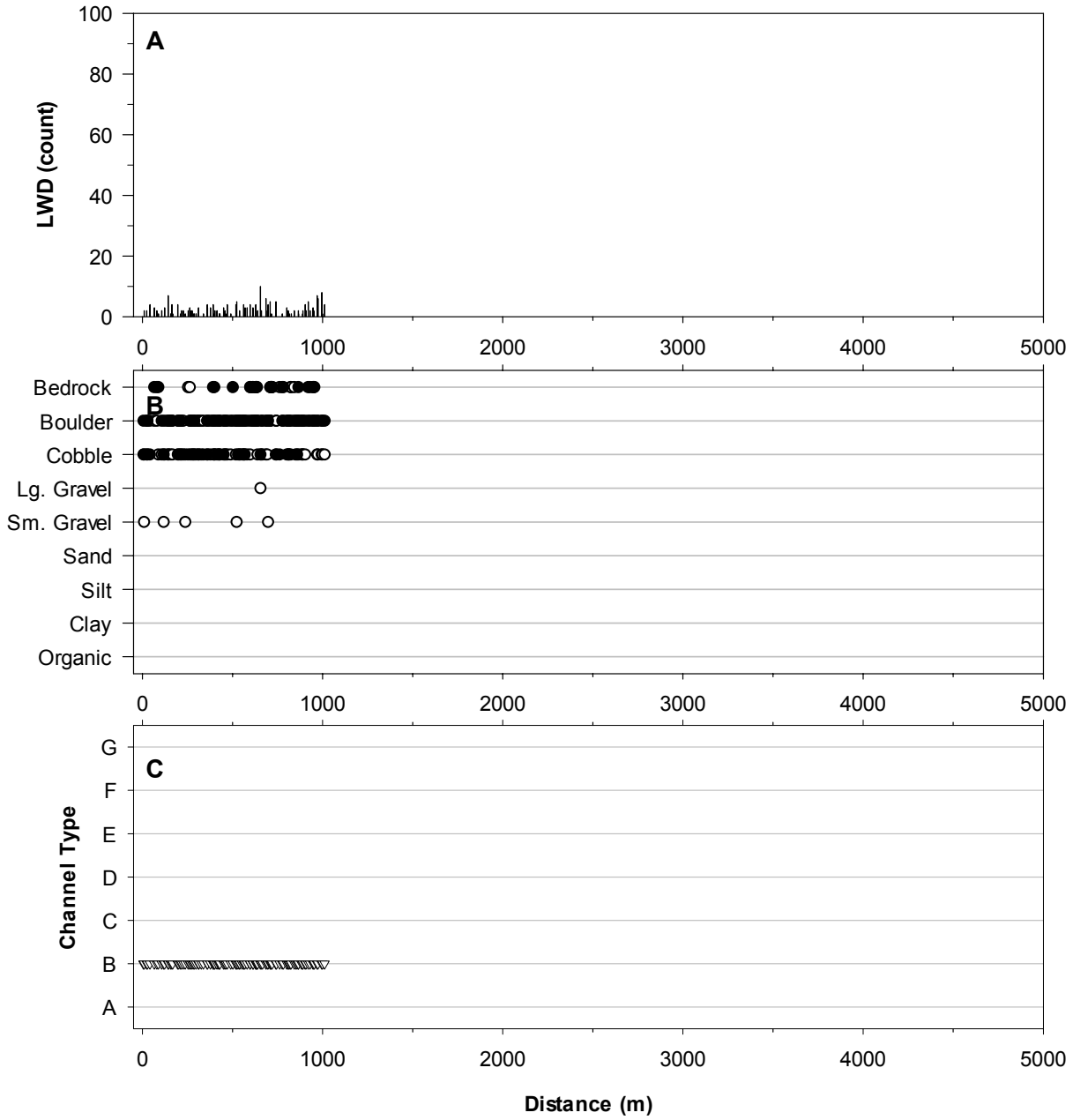
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Rock Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Trib	107.2		trib on right
Bridge	142.4		old bridge over cr
Trib	882.9		2nd trib on right

Photos taken of Rock Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Rock Creek, summer 2000. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Little Santeetlah Creek**
District:	Cheoah
USGS Quadrangle:	Santeetlah Creek
Survey Date:	06/12/00
Downstream Starting Point:	
Total Distance Surveyed (km):	1.1

	Pools	**Riffles**
Percent of Total Stream Area:	11	89
Total Area (m^2):	896±120	7564±308
Correction Factor Applied:	1.08	1.00
Number of Paired Samples:	5	5
Total Count:	24	28
Number per km:	21	25
Mean Area (m^2):	37	270
Mean Maximum Depth (cm):	68	46
Mean Average Depth (cm):	46	28
Mean Residual Depth (cm):	21	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	7
Percent with >35% Fines:		

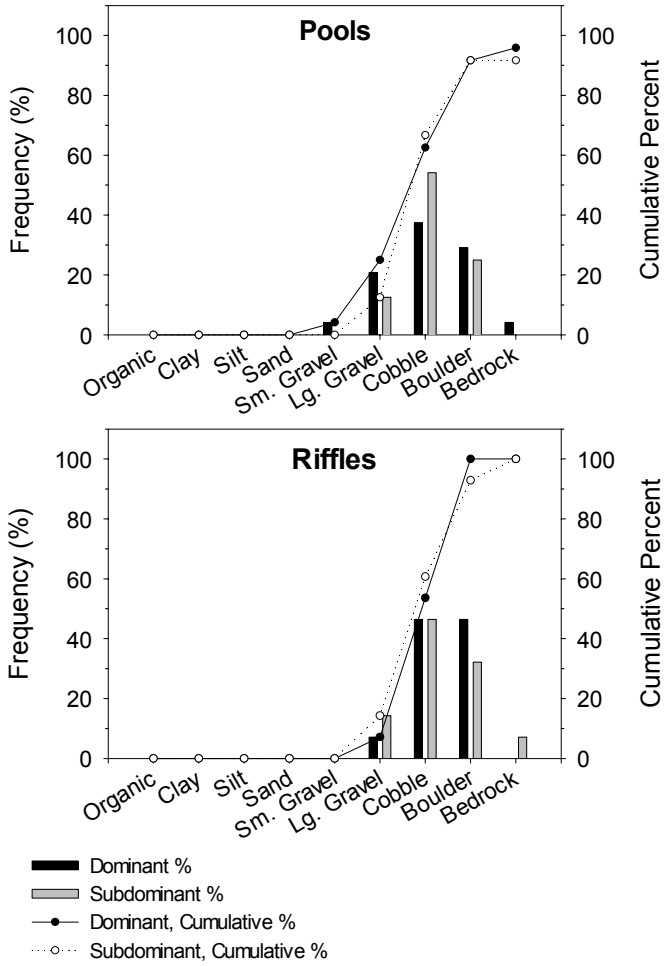
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	19
< 5 m long, > 55 cm diameter:	28
>5 m long, 10 cm – 55 cm diameter:	25
> 5 m long, > 55 cm diameter:	52
Total:	124

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

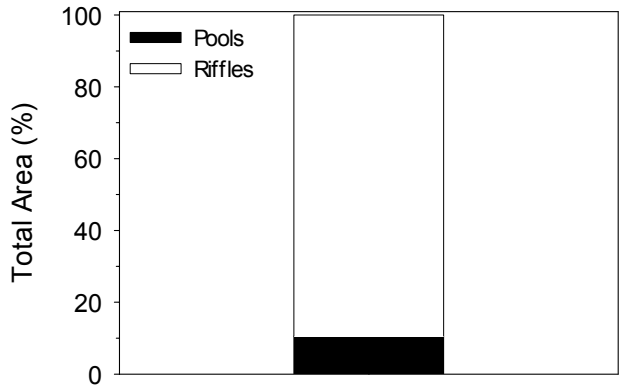
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

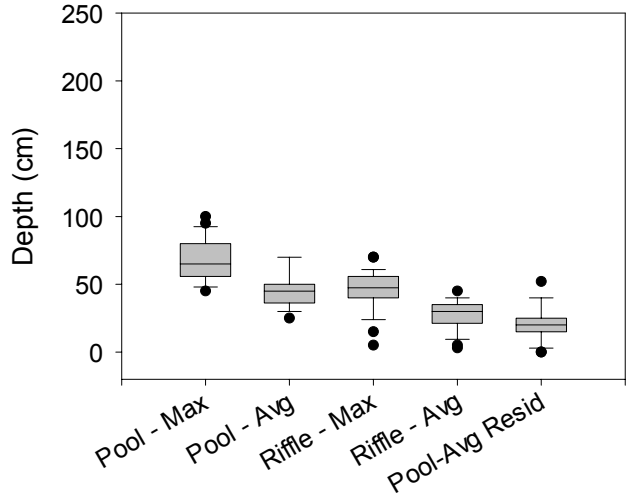
Other Stream Attributes	
Mean Bankfull Channel Width (m):	7
Mean Channel Gradient (%):	5
Median Water Temperature (C˚):	



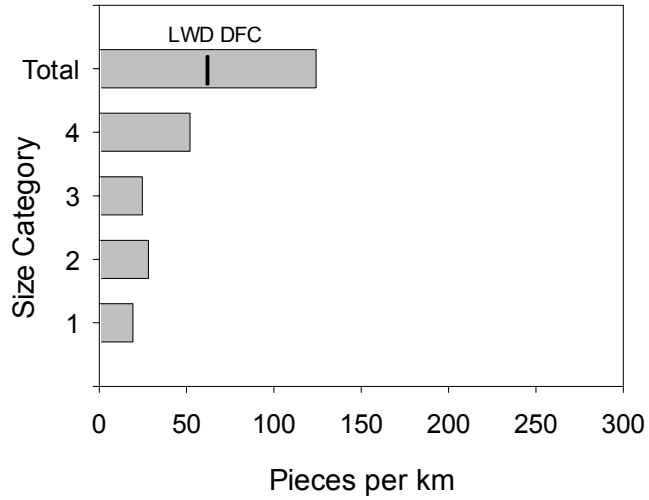
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Little Santeetlah Creek, summer 2000.



Estimated area of Little Santeetlah Creek in pools and riffles as calculated using BVET techniques, summer 2000.



Maximum and average depths and residual pool depths for pools and riffles in Little Santeetlah Creek, summer 2000. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Little Santeetlah Creek, summer 2000. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

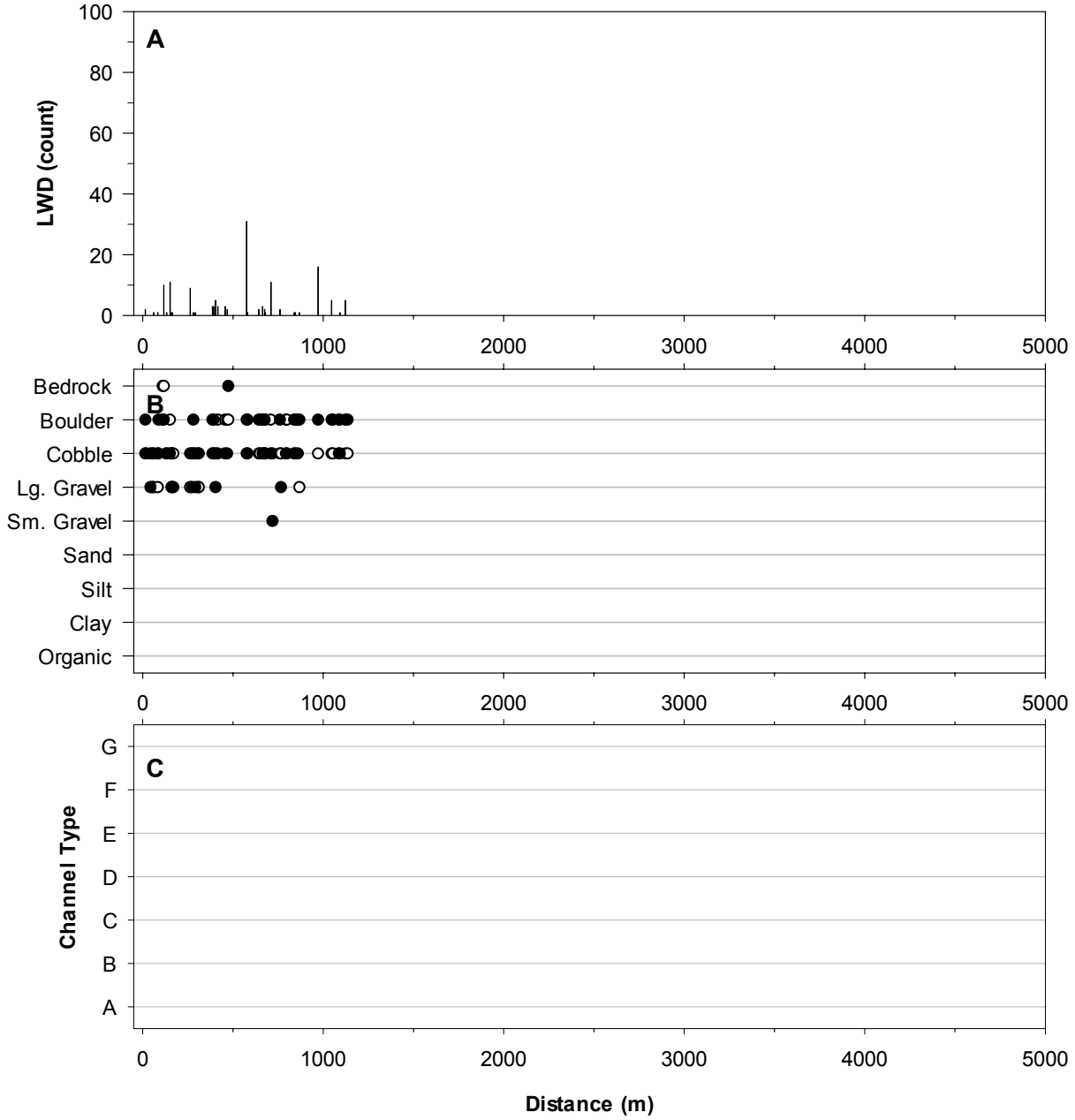
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Little Santeetlah Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Bridge	274.0		Bridge
Trib	293.0		Trib r
Trib	679.0		Trib left
Side Channel	850.0		S channel left
Trail	862.0		Trail crosses
Trib	1135.0		Confluence of indian camp br

Photos taken of Little Santeetlah Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Little Santeetlah Creek, summer 2000. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Little Slickrock Creek**
District:	Cheoah
USGS Quadrangle:	Tapoco
Survey Date:	06/04/00
Downstream Starting Point:	confluence with Slickrock Creek
Total Distance Surveyed (km):	1.6

	Pools	**Riffles**
Percent of Total Stream Area:	10	90
Total Area (m^2):	668±3050	6248
Correction Factor Applied:	0.96	1.25
Number of Paired Samples:	2	2
Total Count:	27	27
Number per km:	17	17
Mean Area (m^2):	25	231
Mean Maximum Depth (cm):	42	31
Mean Average Depth (cm):	26	18
Mean Residual Depth (cm):	15	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	4
Percent with >35% Fines:		

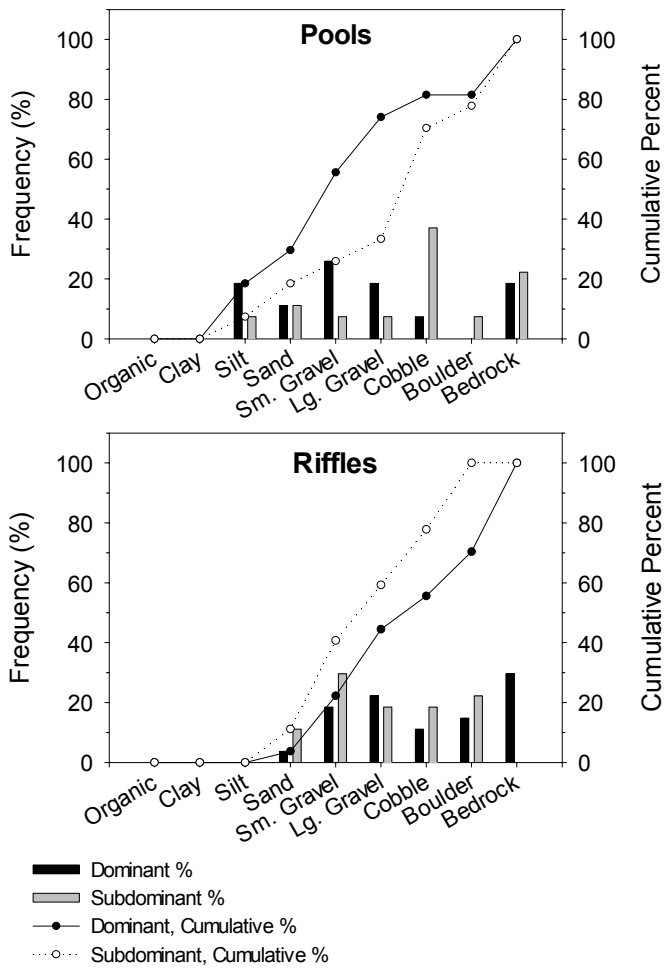
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	17
< 5 m long, > 55 cm diameter:	4
>5 m long, 10 cm – 55 cm diameter:	7
> 5 m long, > 55 cm diameter:	5
Total:	33

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

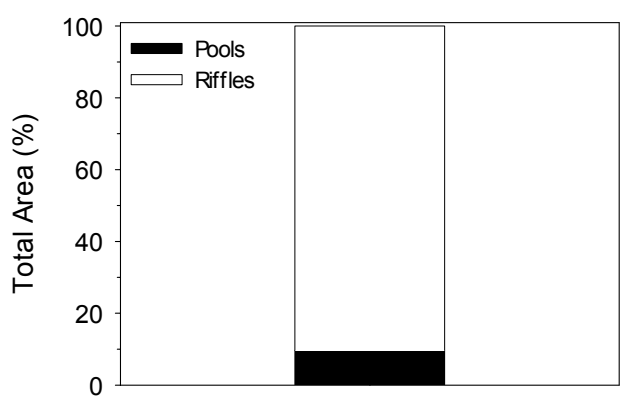
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

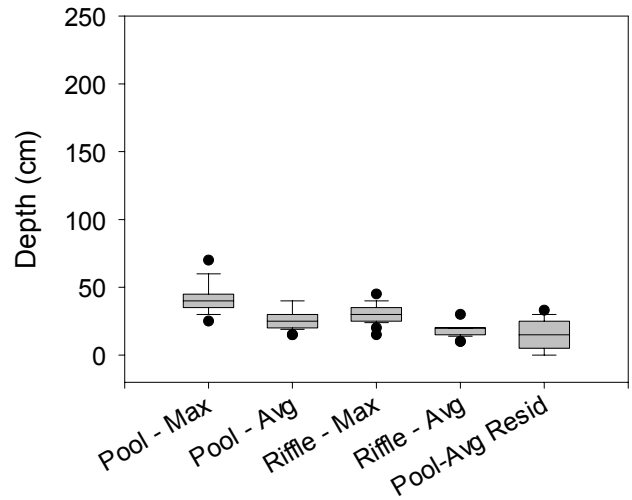
Other Stream Attributes	
Mean Bankfull Channel Width (m):	7
Mean Channel Gradient (%):	5
Median Water Temperature (C˚):	



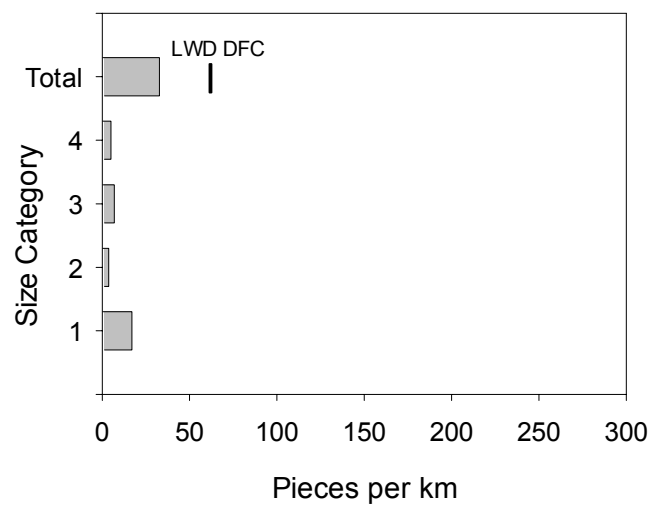
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Little Slickrock Creek, summer 2000.



Estimated area of Little Slickrock Creek in pools and riffles as calculated using BVET techniques, summer 2000.



Maximum and average depths and residual pool depths for pools and riffles in Little Slickrock Creek, summer 2000. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Little Slickrock Creek, summer 2000. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

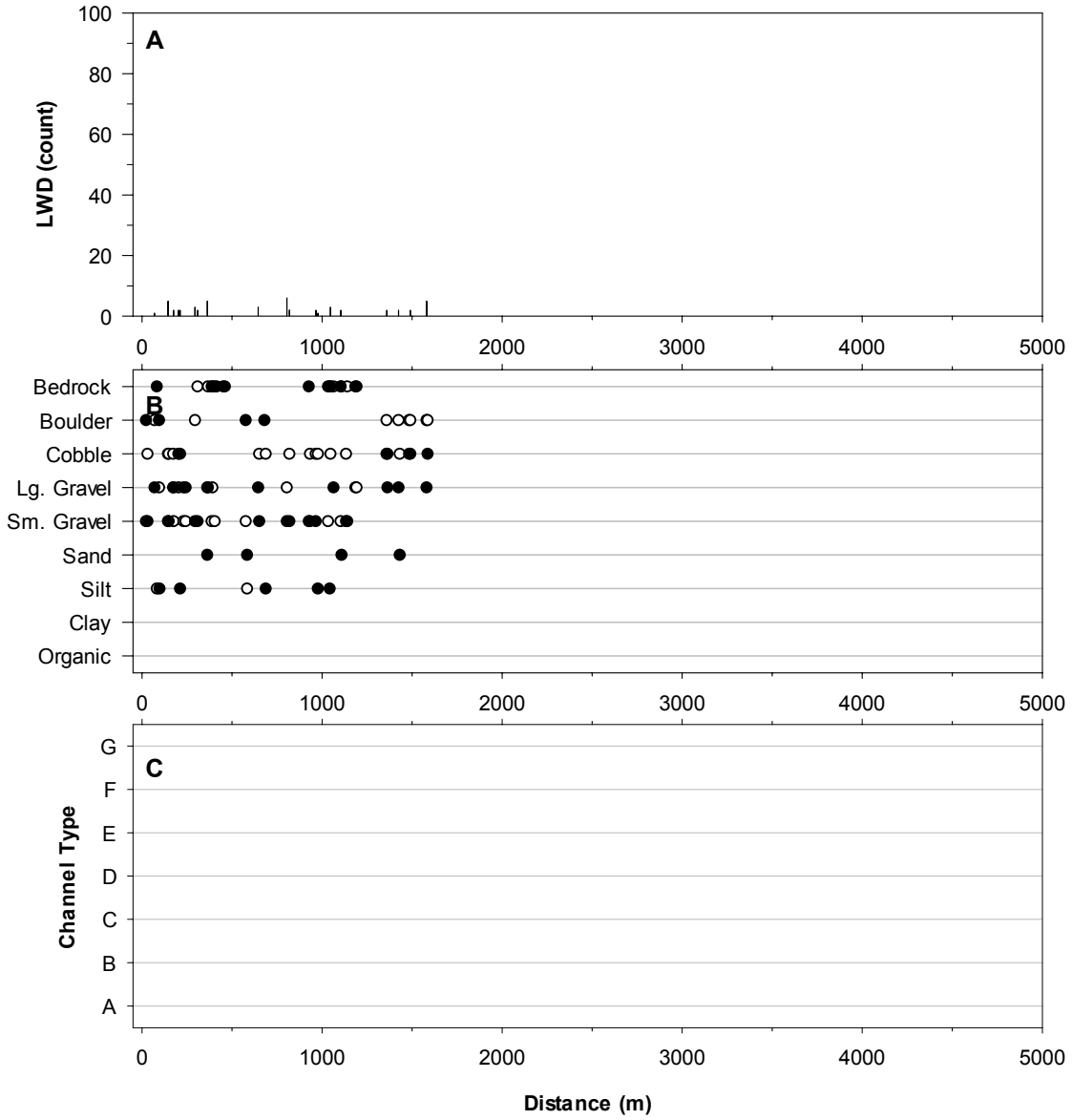
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Little Slickrock Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Trib	1033		Trib l
Trib	1046		Trib l

Photos taken of Little Slickrock Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Little Slickrock Creek, summer 2000. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Shell Stand Creek**
District:	Cheoah
USGS Quadrangle:	Hewitt
Survey Date:	06/01/04
Downstream Starting Point:	confluence with Rock Creek
Total Distance Surveyed (km):	2.4

	Pools	**Riffles**
Percent of Total Stream Area:	9	91
Total Area (m^2):	1646±1450	16097±3012
Correction Factor Applied:	1.18	1.38
Number of Paired Samples:	2	4
Total Count:	23	46
Number per km:	10	19
Mean Area (m^2):	72	350
Mean Maximum Depth (cm):	67	50
Mean Average Depth (cm):	42	27
Mean Residual Depth (cm):	10	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	24
Percent Surveyed as Cascades:	--	0
Percent with >35% Fines:		

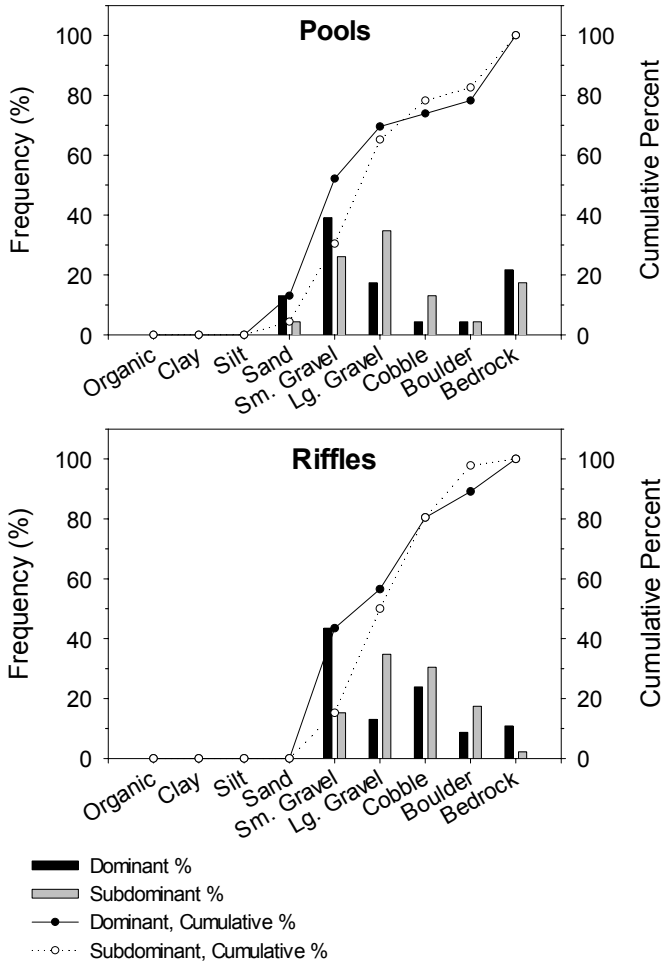
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	41
< 5 m long, > 55 cm diameter:	2
>5 m long, 10 cm – 55 cm diameter:	18
> 5 m long, > 55 cm diameter:	2
Total:	63

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	23	7
Maximum:	30	15
75th Percentile	28	9
25th Percentile	20	4
Minimum	14	1

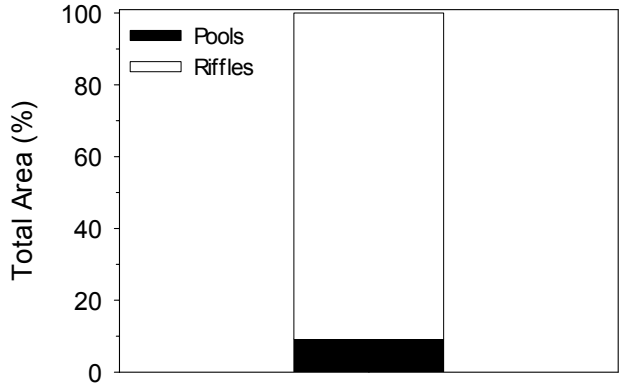
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	0
B:	100
C:	0
D:	0
E:	0
F:	0
G:	0

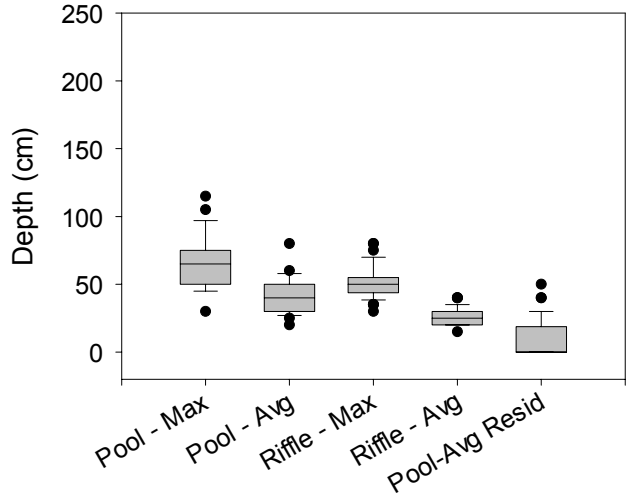
Other Stream Attributes	
Mean Bankfull Channel Width (m):	9
Mean Channel Gradient (%):	2
Median Water Temperature (C˚):	17



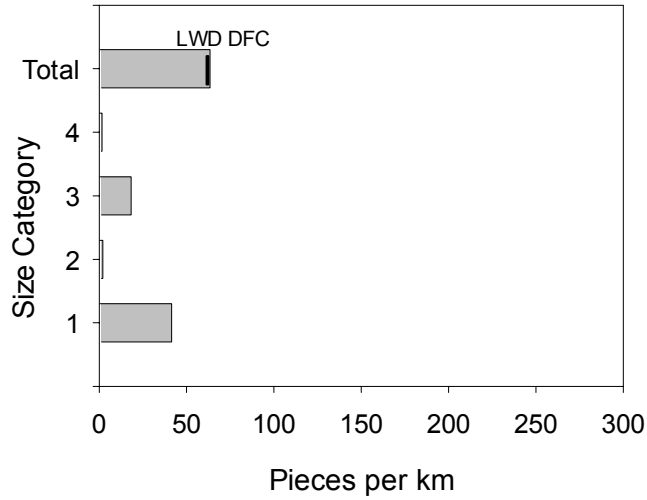
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Shell Stand Creek, summer 2004.



Estimated area of Shell Stand Creek in pools and riffles as calculated using BVET techniques, summer 2004.



Maximum and average depths and residual pool depths for pools and riffles in Shell Stand Creek, summer 2004. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Shell Stand Creek, summer 2004. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

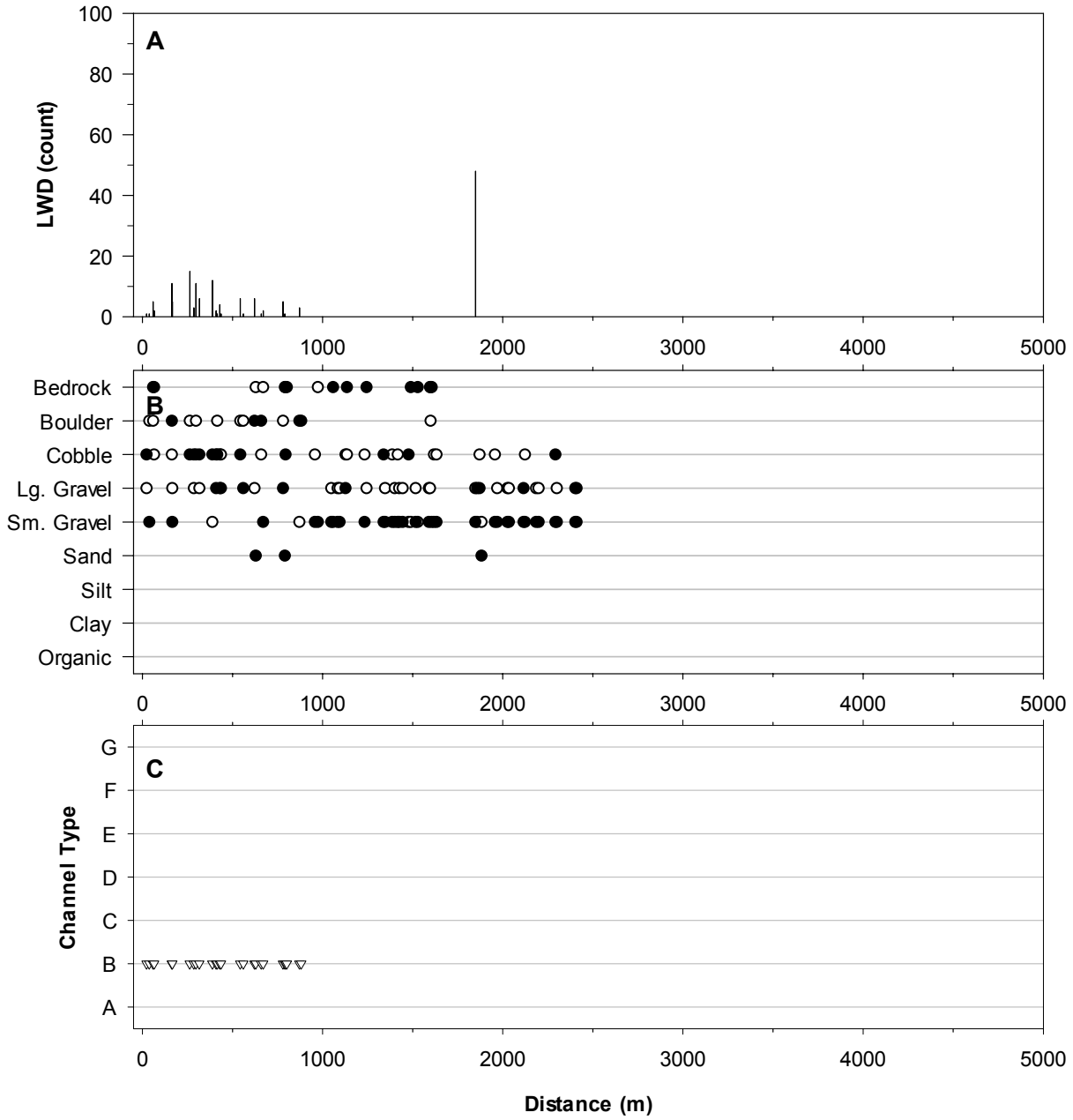
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Shell Stand Creek during BVET habitat survey, summer 2004. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Other	316		Erosion (Bank Slough) occurring on R side slope ~60` long
Seep	670		Right side seep comes in at ford

Photos taken of Shell Stand Creek during BVET habitat survey, summer 2004. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Shell Stand Creek, summer 2004. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Snowbird Creek**
District:	Cheoah
USGS Quadrangle:	Santeetlah
Survey Date:	06/16/00
Downstream Starting Point:	confluence with Owl Camp Branch
Total Distance Surveyed (km):	2.3

	Pools	**Riffles**
Percent of Total Stream Area:	28	72
Total Area (m^2):	7432±3740	19063±10956
Correction Factor Applied:	1.20	0.77
Number of Paired Samples:	4	4
Total Count:	39	40
Number per km:	17	17
Mean Area (m^2):	191	477
Mean Maximum Depth (cm):	110	55
Mean Average Depth (cm):	64	27
Mean Residual Depth (cm):	32	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	
Percent with >35% Fines:		

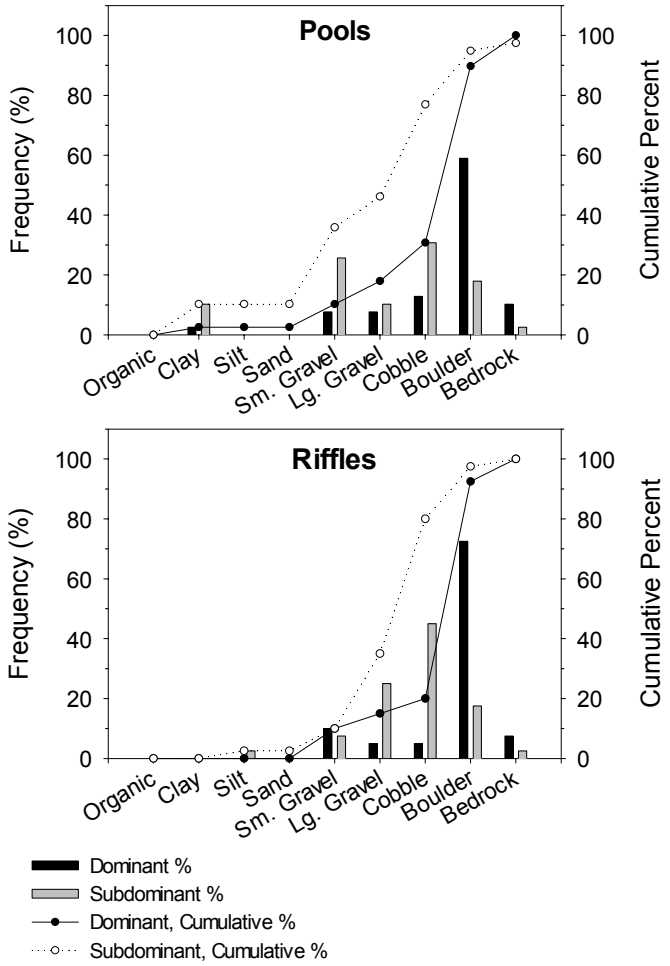
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	8
< 5 m long, > 55 cm diameter:	7
>5 m long, 10 cm – 55 cm diameter:	6
> 5 m long, > 55 cm diameter:	8
Total:	29

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

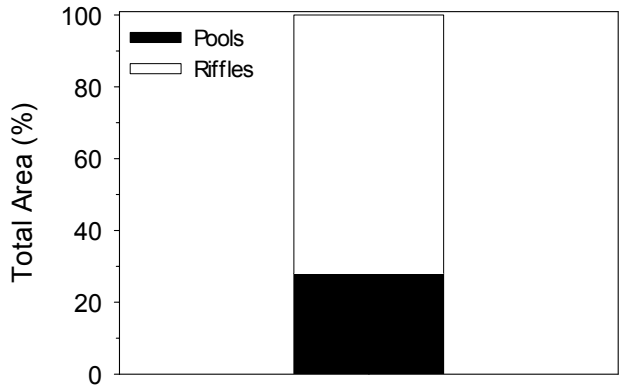
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

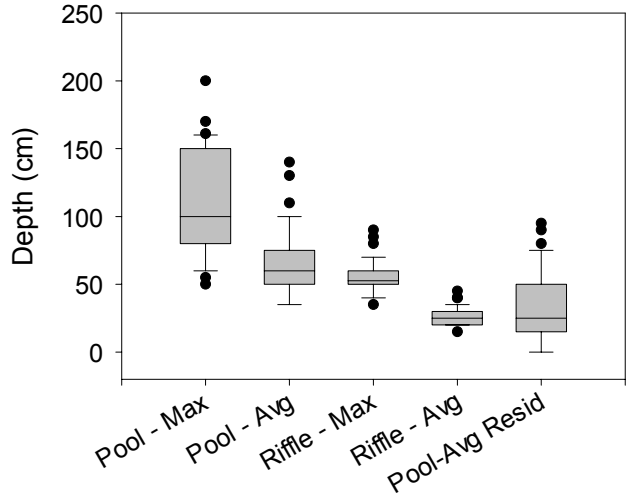
Other Stream Attributes	
Mean Bankfull Channel Width (m):	
Mean Channel Gradient (%):	4
Median Water Temperature (C˚):	



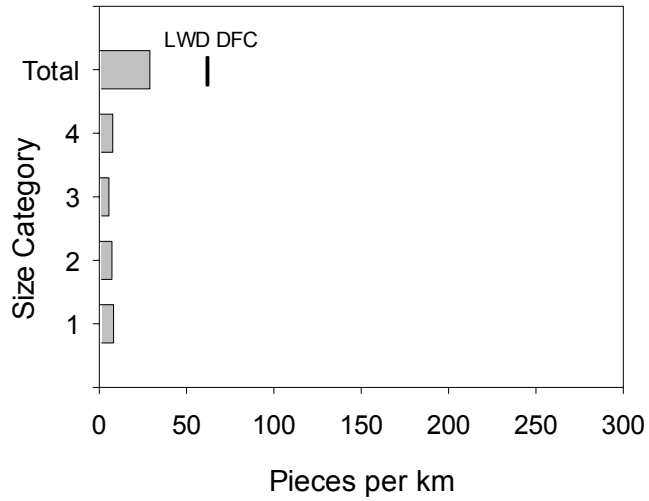
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Snowbird Creek, summer 2000.



Estimated area of Snowbird Creek in pools and riffles as calculated using BVET techniques, summer 2000.



Maximum and average depths and residual pool depths for pools and riffles in Snowbird Creek, summer 2000. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Snowbird Creek, summer 2000. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

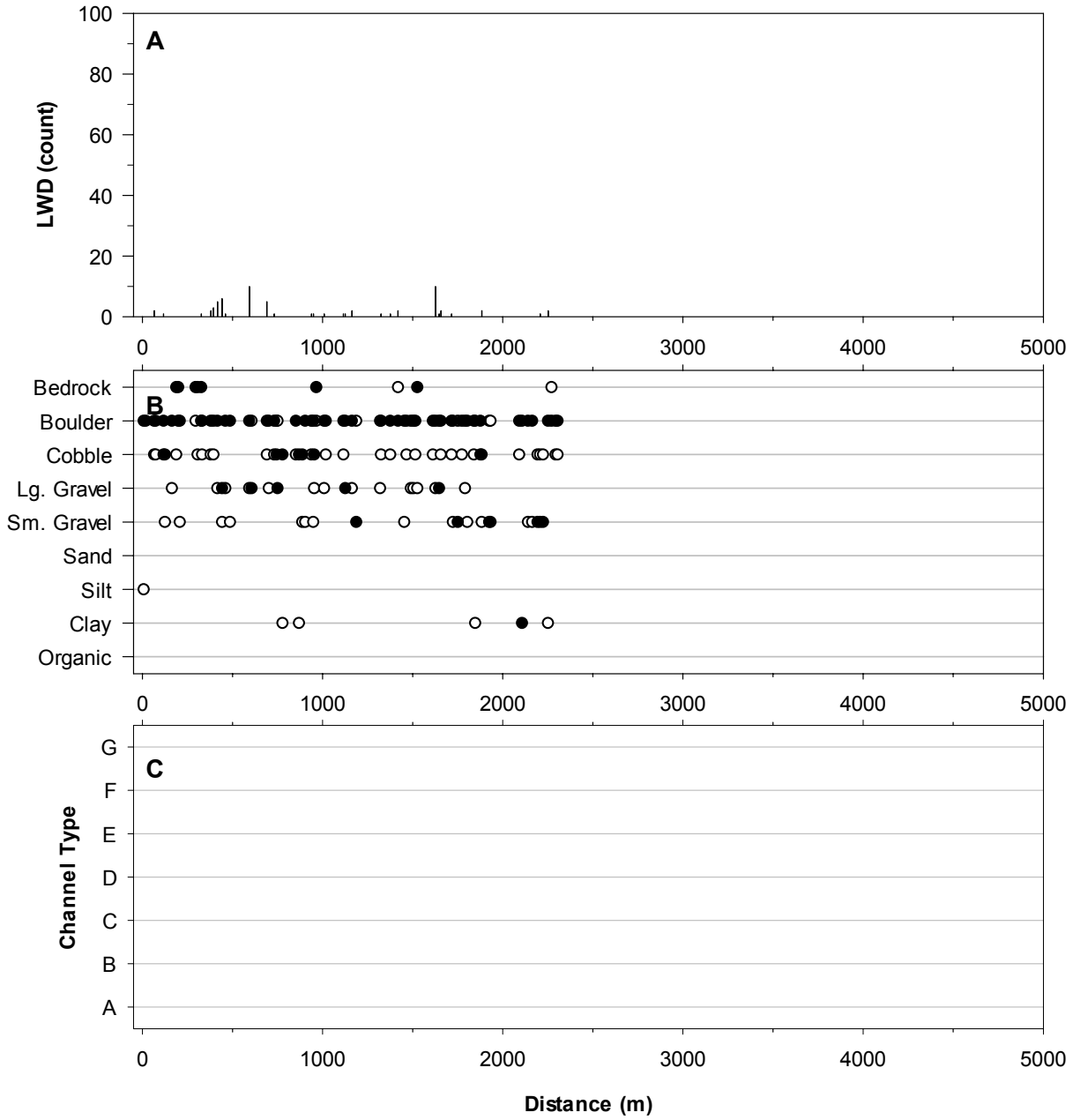
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Snowbird Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Side Channel	65.0		Island begin
Trib	442.0		Trib
Trib	965.0		Tributary Left
Trib	1125.0		Trib.lft
Side Channel	1875.0		Island begins
Side Channel	1883.0		Island ends
Trib	2304.0		Confluence of Indian Camp Branch

Photos taken of Snowbird Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Snowbird Creek, summer 2000. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Santeetlah Creek**
District:	Cheoah
USGS Quadrangle:	Santeetlah
Survey Date:	06/15/00
Downstream Starting Point:	near confluence with Whigg Creek
Total Distance Surveyed (km):	0.9

	Pools	**Riffles**
Percent of Total Stream Area:	16	84
Total Area (m^2):	1236	6643
Correction Factor Applied:	1.13	1.13
Number of Paired Samples:	1	1
Total Count:	17	17
Number per km:	19	19
Mean Area (m^2):	73	391
Mean Maximum Depth (cm):	76	54
Mean Average Depth (cm):	51	34
Mean Residual Depth (cm):	30	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	
Percent with >35% Fines:		

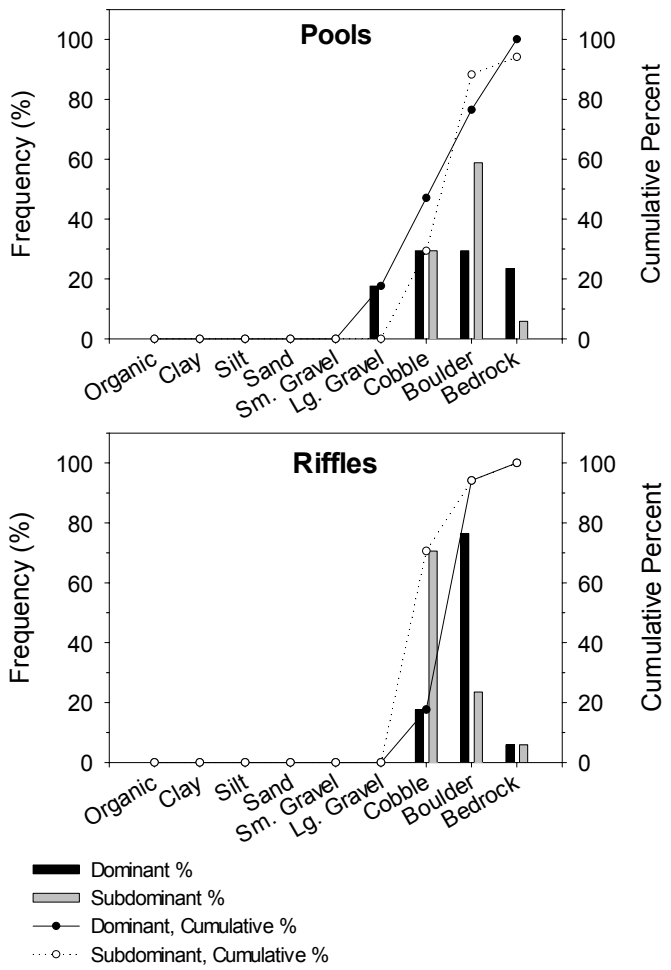
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	7
< 5 m long, > 55 cm diameter:	4
>5 m long, 10 cm – 55 cm diameter:	0
> 5 m long, > 55 cm diameter:	6
Total:	17

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

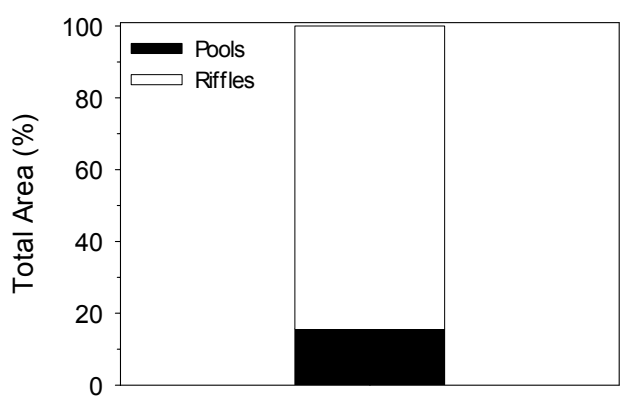
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	100
B:	0
C:	0
D:	0
E:	0
F:	0
G:	0

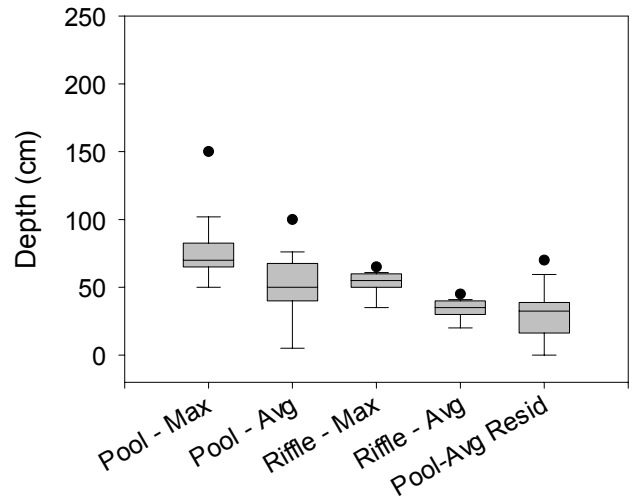
Other Stream Attributes	
Mean Bankfull Channel Width (m):	13
Mean Channel Gradient (%):	6
Median Water Temperature (C˚):	



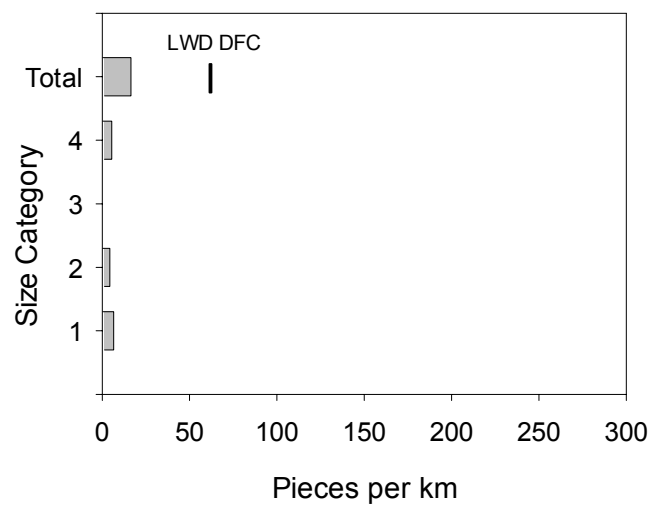
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Santeetlah Creek, summer 2000.



Estimated area of Santeetlah Creek in pools and riffles as calculated using BVET techniques, summer 2000.



Maximum and average depths and residual pool depths for pools and riffles in Santeetlah Creek, summer 2000. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Santeetlah Creek, summer 2000. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

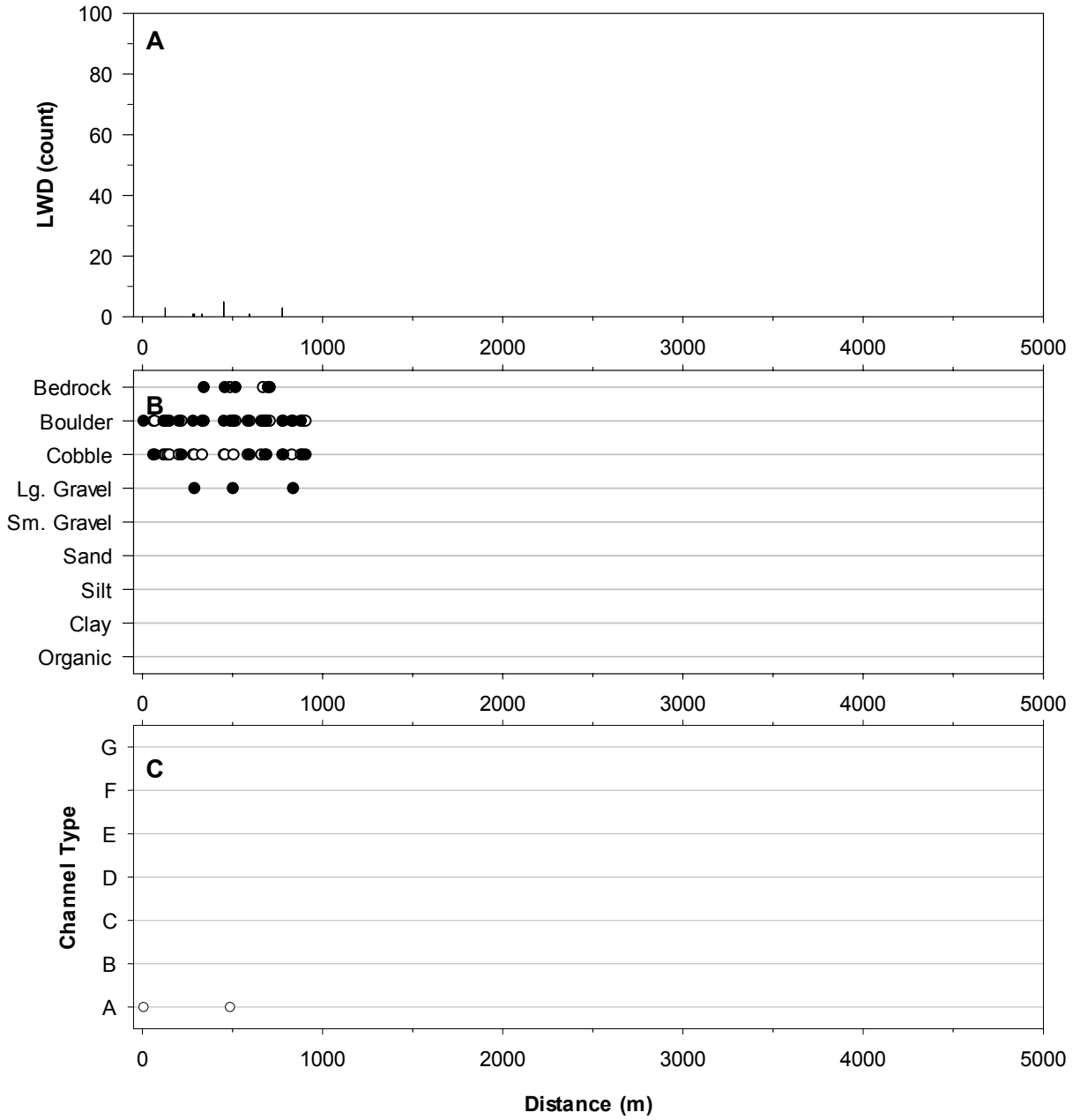
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Santeetlah Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Trib	216.0		Trib l
Trib	280.0		Trib l
Trib	331.0		Trib l
Trib	340.0		Trib l
Side Channel	829.0		Start island
Trib	906.0		Trib l

Photos taken of Santeetlah Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Santeetlah Creek, summer 2000. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Left Fork Steels Creek**
District:	Grandfather
USGS Quadrangle:	Chestnut Mountain
Survey Date:	06/01/98
Downstream Starting Point:	confluence with Steels Creek
Total Distance Surveyed (km):	2.5

	Pools	**Riffles**
Percent of Total Stream Area:	27	73
Total Area (m^2):	2941±824	7801±1815
Correction Factor Applied:	0.90	1.03
Number of Paired Samples:	4	4
Total Count:	78	65
Number per km:	31	26
Mean Area (m^2):	37	113
Mean Maximum Depth (cm):	57	32
Mean Average Depth (cm):	38	19
Mean Residual Depth (cm):	17	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	6
Percent with >35% Fines:		

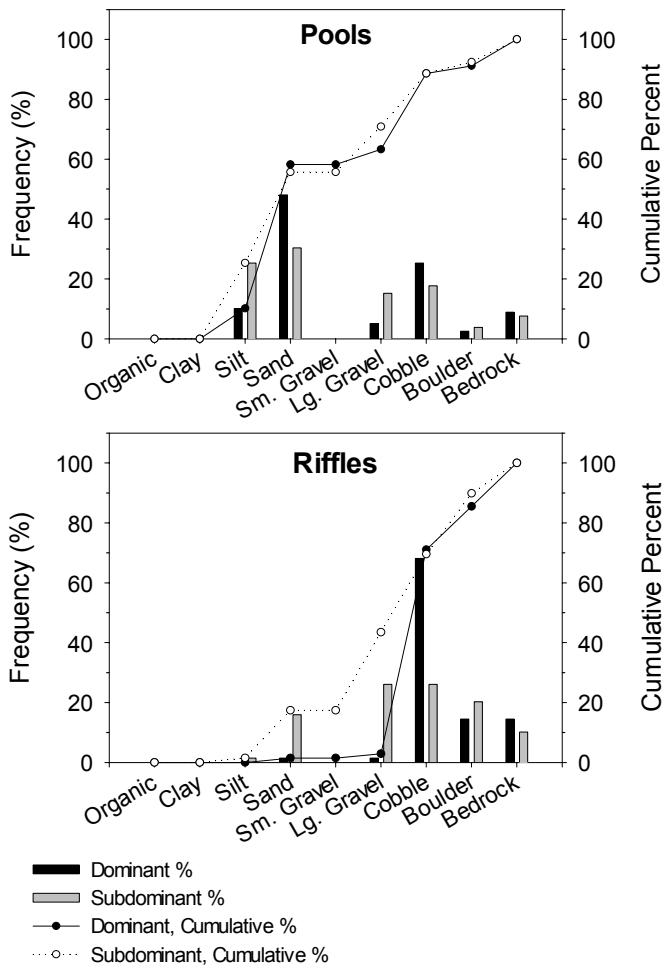
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	14
< 5 m long, > 55 cm diameter:	7
>5 m long, 10 cm – 55 cm diameter:	32
> 5 m long, > 55 cm diameter:	11
Total:	64

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

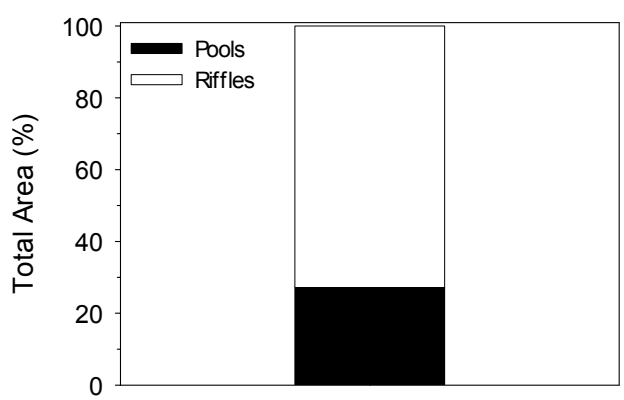
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

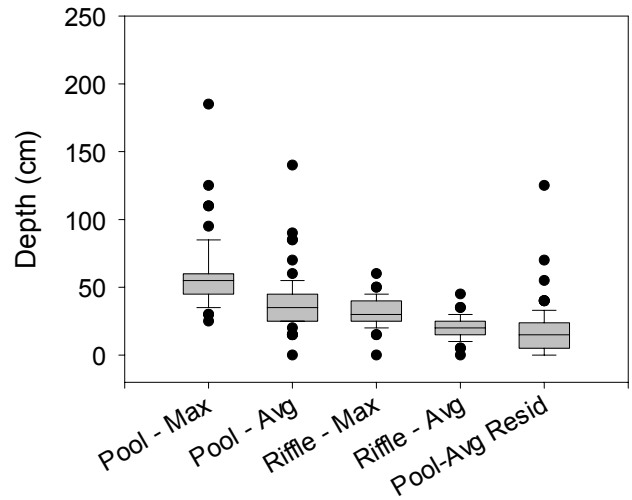
Other Stream Attributes
Mean Bankfull Channel Width (m):
Mean Channel Gradient (%):
Median Water Temperature (C°):



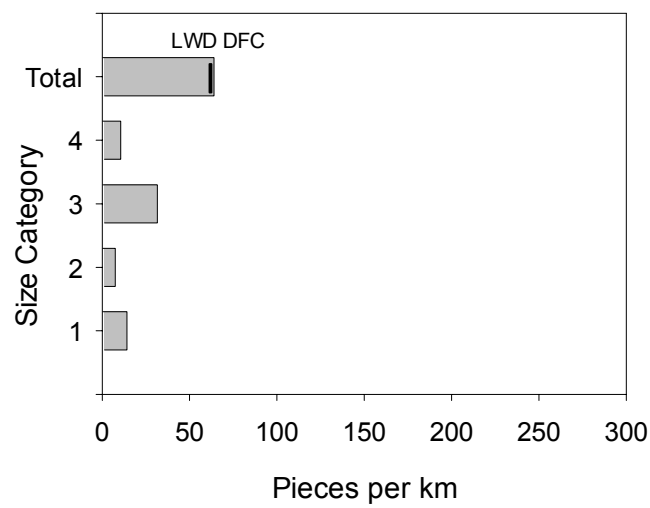
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Left Fork Steels Creek, summer 1998.



Estimated area of Left Fork Steels Creek in pools and riffles as calculated using BVET techniques, summer 1998.



Maximum and average depths and residual pool depths for pools and riffles in Left Fork Steels Creek, summer 1998. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Left Fork Steels Creek, summer 1998. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

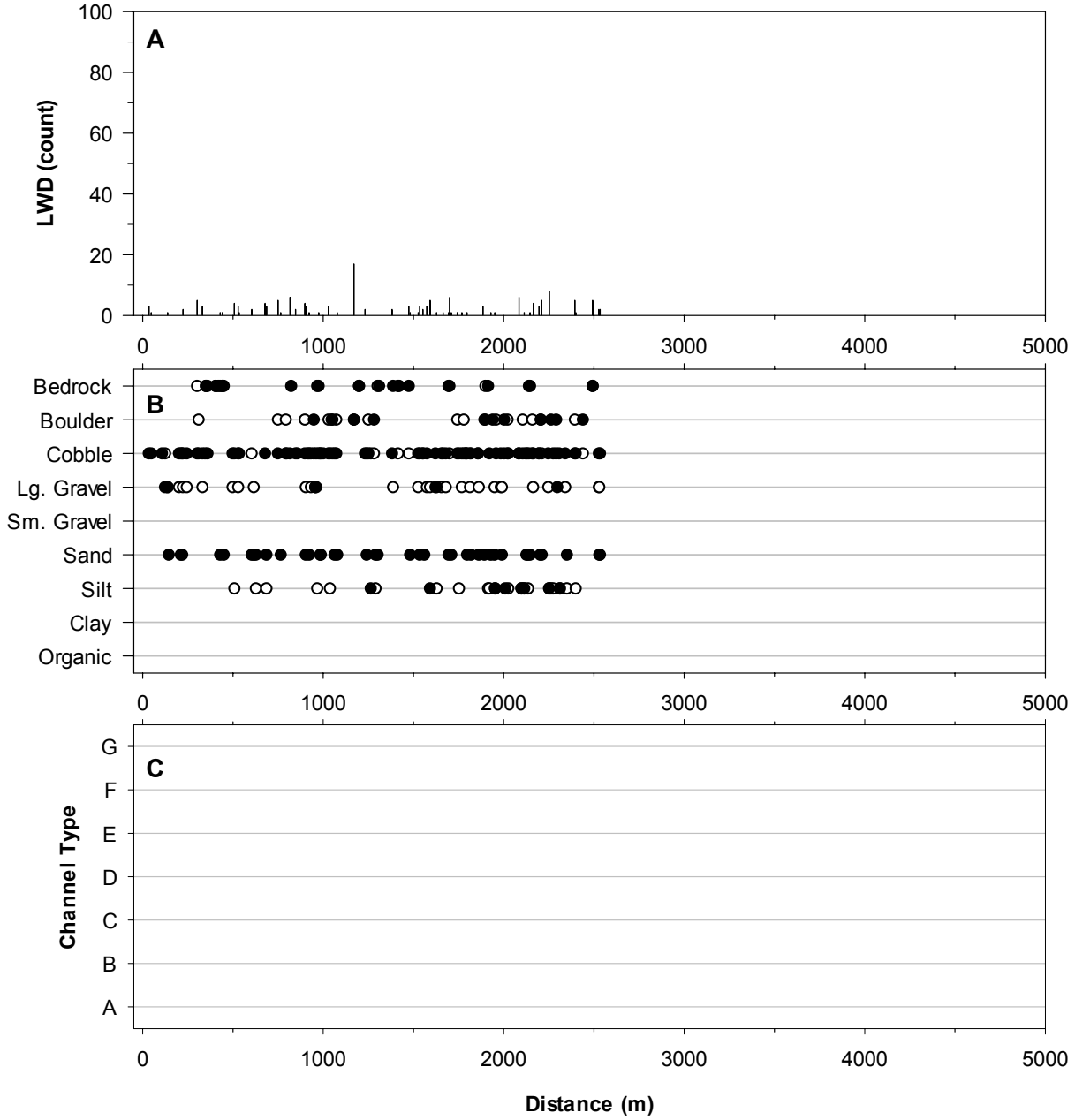
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Left Fork Steels Creek during BVET habitat survey, summer 1998. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Other	507.9		Debris jam
Other	815.7		Debris jam
Other	1534.5		Debris jam

Photos taken of Left Fork Steels Creek during BVET habitat survey, summer 1998. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Left Fork Steels Creek, summer 1998. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Armstrong Creek**
District:	Grandfather
USGS Quadrangle:	Celo
Survey Date:	06/13/00
Downstream Starting Point:	FS boundary
Total Distance Surveyed (km):	1.0

	Pools	**Riffles**
Percent of Total Stream Area:	30	70
Total Area (m^2):	2098±202	4853±484
Correction Factor Applied:	1.00	1.03
Number of Paired Samples:	4	4
Total Count:	34	34
Number per km:	33	33
Mean Area (m^2):	62	143
Mean Maximum Depth (cm):	42	22
Mean Average Depth (cm):	26	14
Mean Residual Depth (cm):	13	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	18
Percent with >35% Fines:		

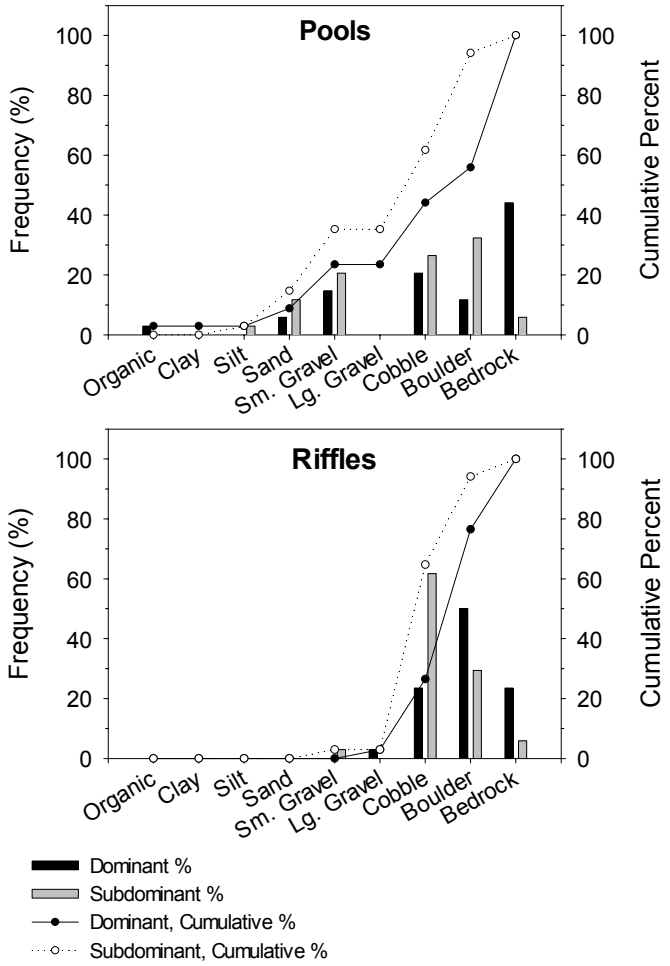
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	259
< 5 m long, > 55 cm diameter:	30
>5 m long, 10 cm – 55 cm diameter:	12
> 5 m long, > 55 cm diameter:	0
Total:	301

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

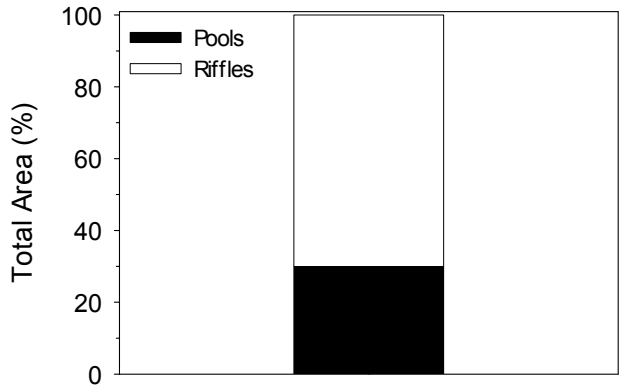
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	0
B:	100
C:	0
D:	0
E:	0
F:	0
G:	0

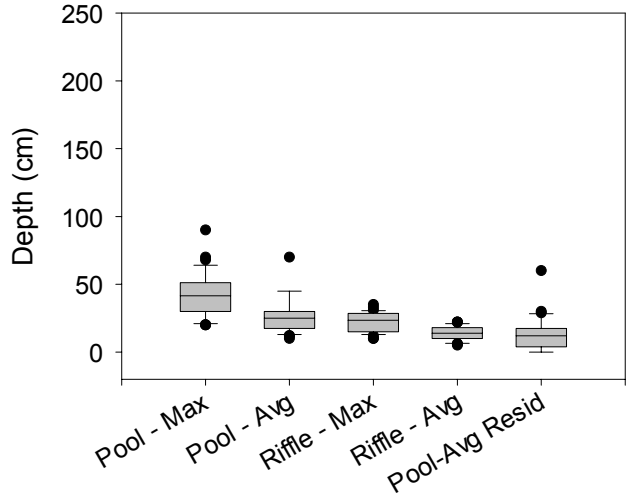
Other Stream Attributes
Mean Bankfull Channel Width (m):
Mean Channel Gradient (%):
Median Water Temperature (C˚):



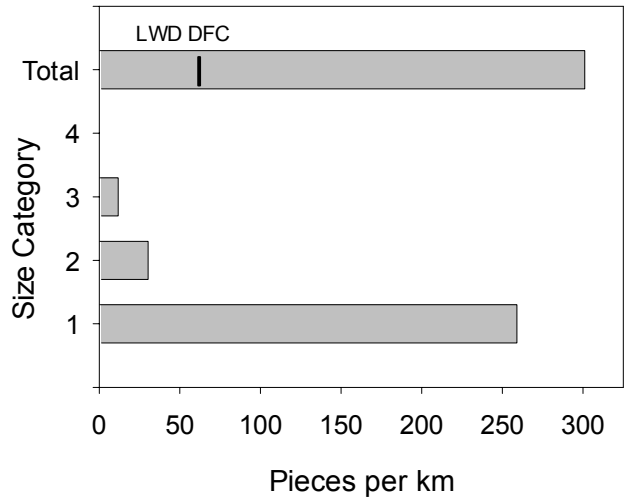
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Armstrong Creek, summer 2000.



Estimated area of Armstrong Creek in pools and riffles as calculated using BVET techniques, summer 2000.



Maximum and average depths and residual pool depths for pools and riffles in Armstrong Creek, summer 2000. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Armstrong Creek, summer 2000. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

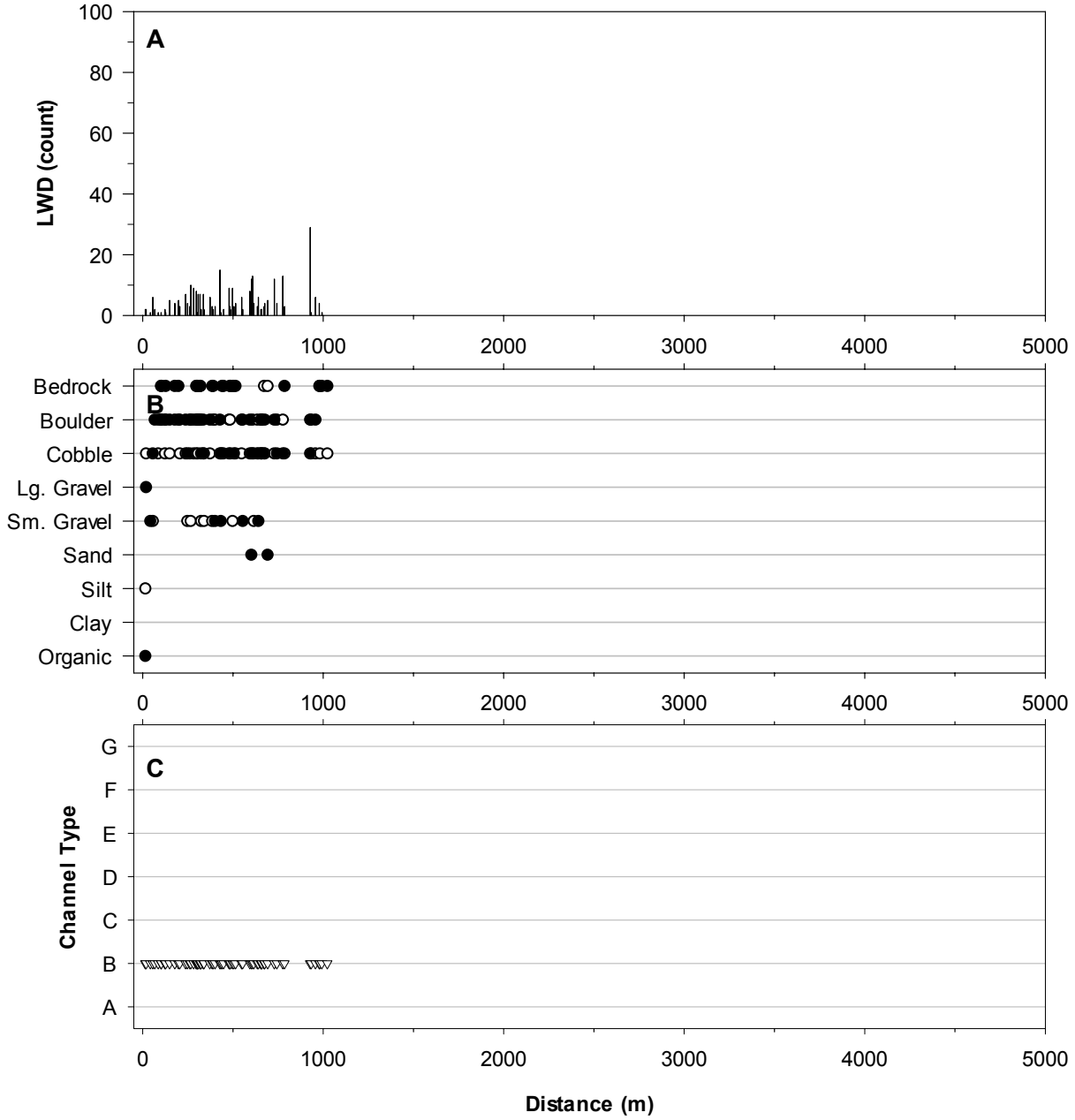
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Armstrong Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Other	307.5		old fish barrier
Ford	339.5		old road at pool
Ford	672.6		road cros at lower end pool

Photos taken of Armstrong Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Armstrong Creek, summer 2000. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Buck Creek**
District:	Grandfather
USGS Quadrangle:	Chestnut Mountain
Survey Date:	6/1/98
Downstream Starting Point:	confluence with Steels Creek
Total Distance Surveyed (km):	3.7

	Pools	**Riffles**
Percent of Total Stream Area:	44	56
Total Area (m^2):	5007±393	6501±1264
Correction Factor Applied:	1.05	1.09
Number of Paired Samples:	5	3
Total Count:	97	94
Number per km:	26	25
Mean Area (m^2):	52	68
Mean Maximum Depth (cm):	67	34
Mean Average Depth (cm):	31	14
Mean Residual Depth (cm):	12	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	
Percent with >35% Fines:		

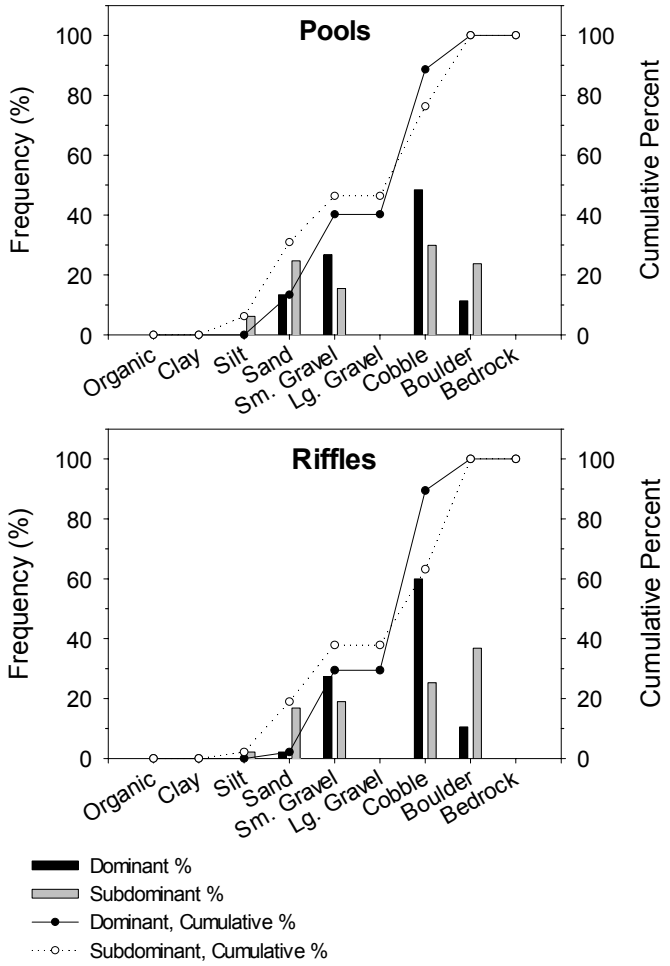
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	18
< 5 m long, > 55 cm diameter:	6
>5 m long, 10 cm – 55 cm diameter:	6
> 5 m long, > 55 cm diameter:	3
Total:	34

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

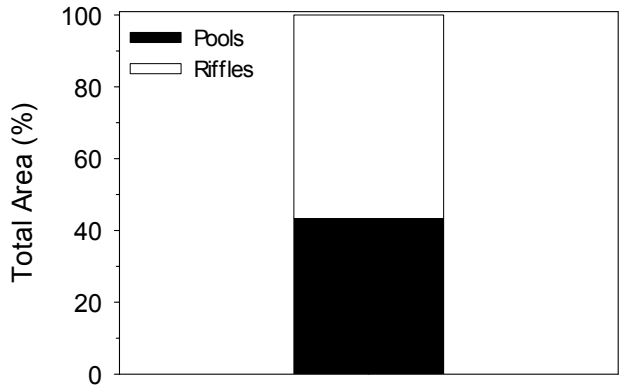
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

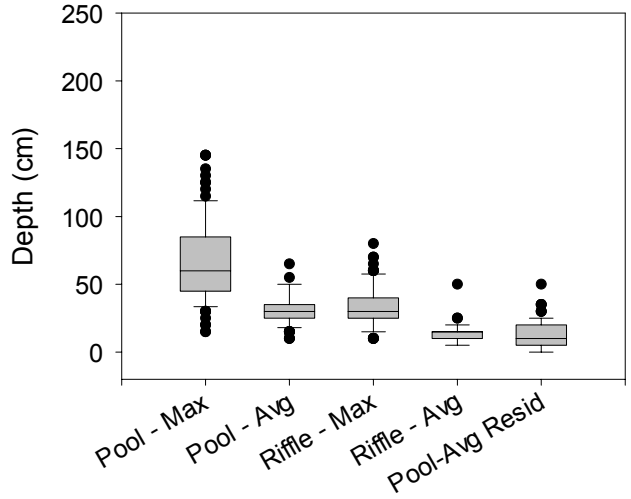
Other Stream Attributes
Mean Bankfull Channel Width (m):
Mean Channel Gradient (%):
Median Water Temperature (C˚):



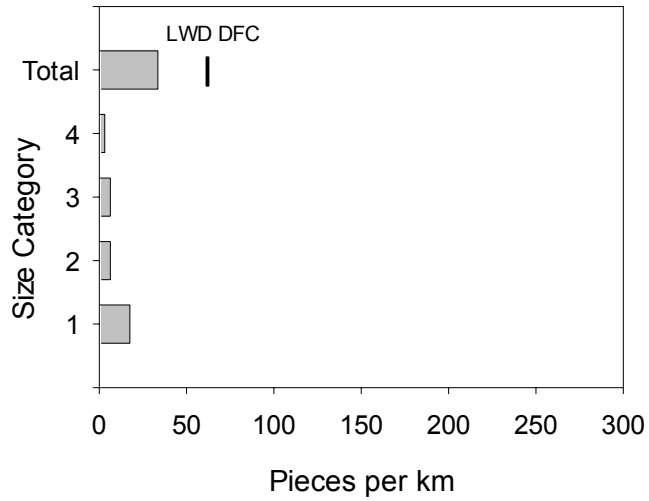
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Buck Creek, summer 1998.



Estimated area of Buck Creek in pools and riffles as calculated using BVET techniques, summer 1998.



Maximum and average depths and residual pool depths for pools and riffles in Buck Creek, summer 1998. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Buck Creek, summer 1998. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

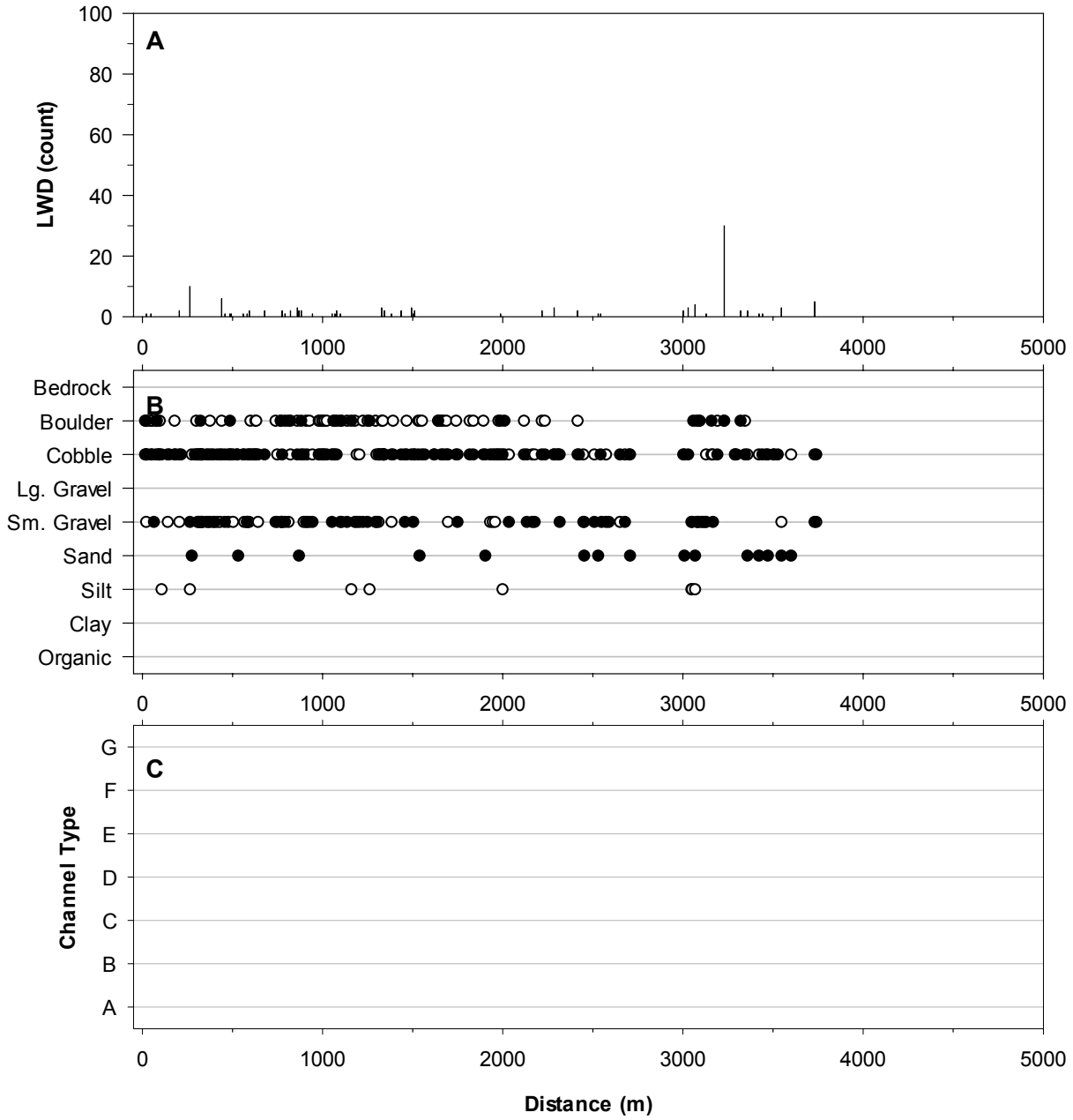
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Buck Creek during BVET habitat survey, summer 1998. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Ford	46.9		trail xing
Other	263.3		debris jam
Seep	327.2		seep on right
Other	439.3		debris jam
Seep	458.1		seep on right
Trib	531.2		trib on right
Seep	791.0		seep on left;cascade
Trib	926.6		trib on right
Seep	1051.8		seep on right
Trib	1327.5		trib on left
Seep	1435.6		seep on left
Trib	1816.4		trib on right
Trib	2415.0		trib on right
Other	3357.9		debris jam
Trib	3421.2		trib on right
Other	3546.2		debris jam
Trib	3730.5		trib on left
Trib	3739.9		trib on left

Photos taken of Buck Creek during BVET habitat survey, summer 1998. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Buck Creek, summer 1998. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Little Fork Steels Creek**
District:	Grandfather
USGS Quadrangle:	Chestnut Mountain
Survey Date:	6/1/98
Downstream Starting Point:	confluence with Steels Creek
Total Distance Surveyed (km):	4.7

	Pools	**Riffles**
Percent of Total Stream Area:	37	63
Total Area (m^2):	8006±1259	13819±3033
Correction Factor Applied:	1.14	1.33
Number of Paired Samples:	9	8
Total Count:	156	148
Number per km:	33	31
Mean Area (m^2):	51	93
Mean Maximum Depth (cm):	50	28
Mean Average Depth (cm):	25	16
Mean Residual Depth (cm):	6	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	
Percent with >35% Fines:		

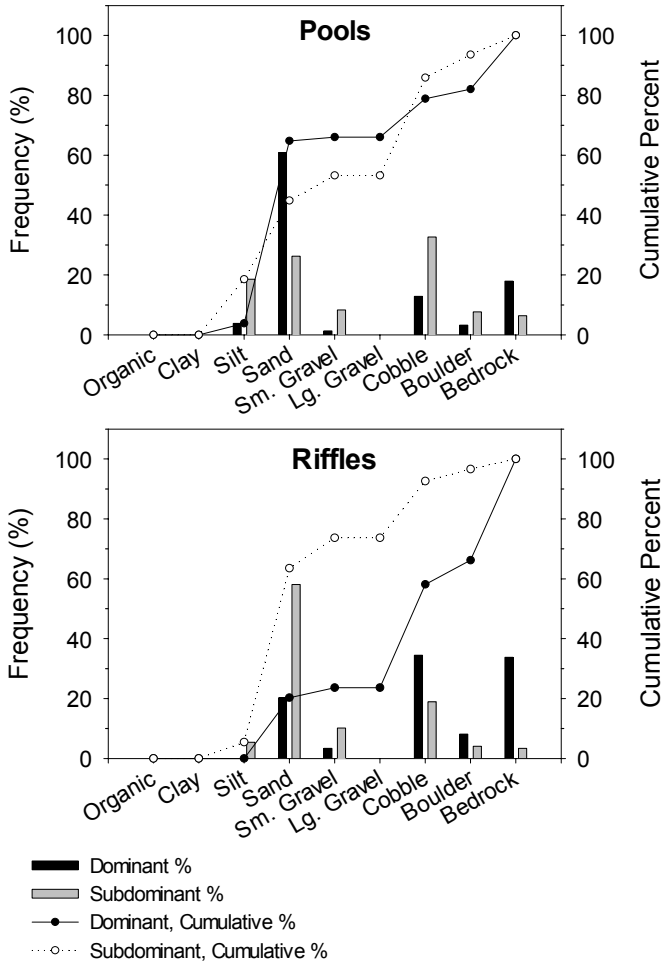
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	10
< 5 m long, > 55 cm diameter:	3
>5 m long, 10 cm – 55 cm diameter:	15
> 5 m long, > 55 cm diameter:	7
Total:	35

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

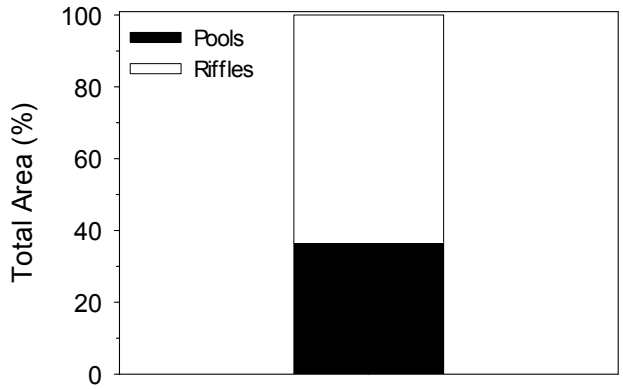
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

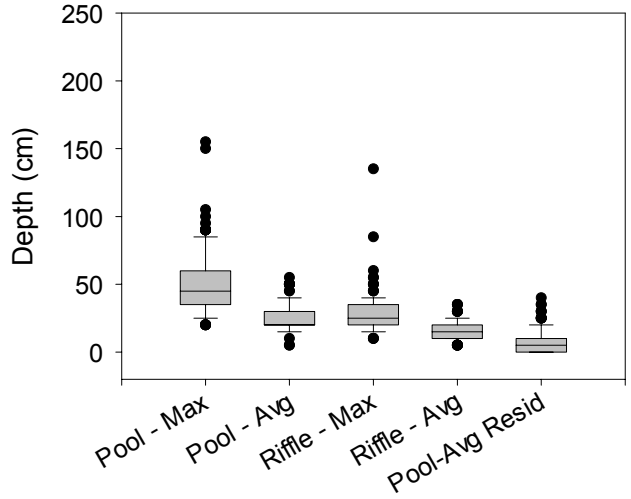
Other Stream Attributes	
Mean Bankfull Channel Width (m):	
Mean Channel Gradient (%):	6
Median Water Temperature (C˚):	



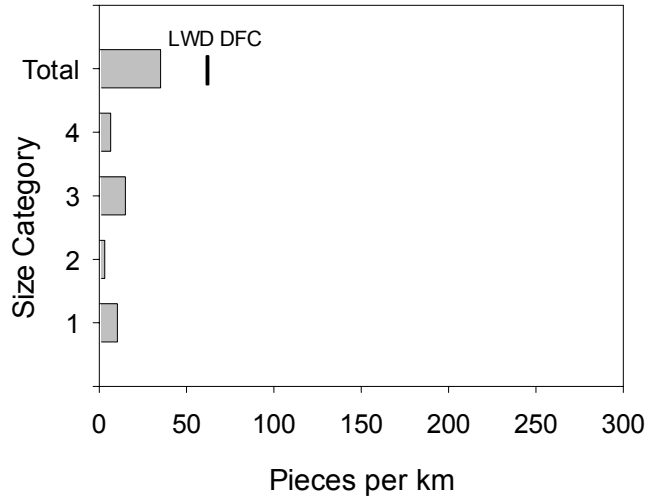
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Little Fork Steels Creek, summer 1998.



Estimated area of Little Fork Steels Creek in pools and riffles as calculated using BVET techniques, summer 1998.



Maximum and average depths and residual pool depths for pools and riffles in Little Fork Steels Creek, summer 1998. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Little Fork Steels Creek, summer 1998. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

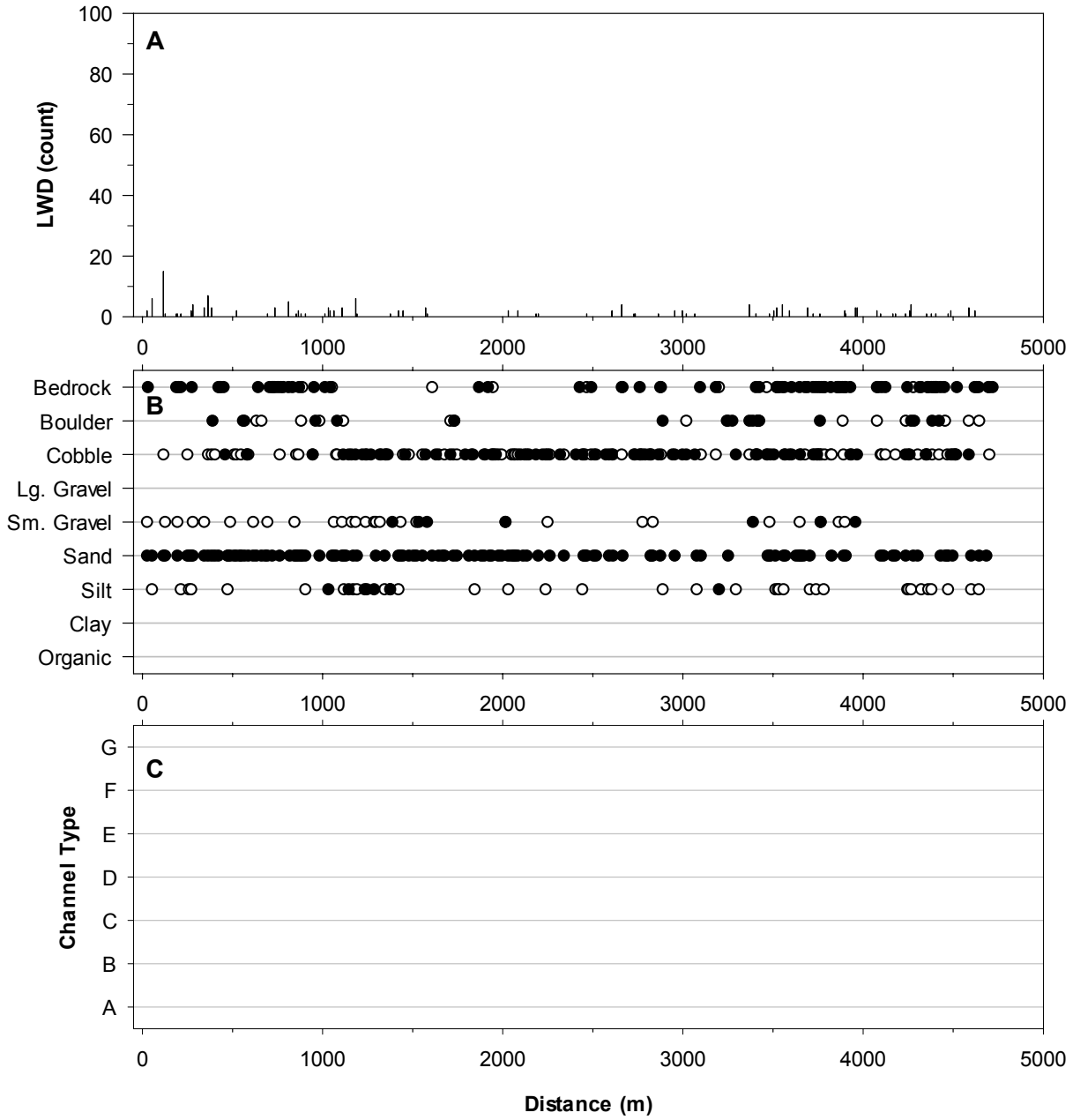
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Little Fork Steels Creek during BVET habitat survey, summer 1998. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Other	53.4		debris jam
Other	116.2		debris jam
Other	279.6		debris jam
Other	1052.5		debris jam
Other	1183.0		sand bar
Other	1295.2		man made cobble dam
Other	1446.3		v-dam/debris jam
Culvert	1628.8		nasty clogged culvert
Culvert	1677.0		culvert
Other	1896.6		debris jam
Other	2069.1		man made v-dam
Other	2144.7		man made v-dam
Ford	2317.7		2304.3 unimproved ford
Other	2612.0		debris jam
Ford	2941.5		trail crossing
Other	2996.5		debris jam
Other	3065.4		debris jam
Other	3368.4		2-debris jam
Other	3550.7		debris jam
Other	3557.7		debris jam
Other	3590.7		debris jam;dense rhodo cover
Other	3677.1		debris jam
Other	3956.8		debris jam
Other	4096.3		debris jam
Other	4265.4		debris jam
Other	4278.3		sand bar
Other	4302.6		small bouler dam
Fall	4378.7		waterfall 5m high

Photos taken of Little Fork Steels Creek during BVET habitat survey, summer 1998. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Little Fork Steels Creek, summer 1998. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Steels Creek**
District:	Grandfather
USGS Quadrangle:	Chestnut Mountain
Survey Date:	06/01/98
Downstream Starting Point:	confluence with Buck Creek
Total Distance Surveyed (km):	11.1

	Pools	**Riffles**
Percent of Total Stream Area:	52	48
Total Area (m^2):	47944±9735	43637±13233
Correction Factor Applied:	0.80	0.91
Number of Paired Samples:	16	10
Total Count:	240	184
Number per km:	22	17
Mean Area (m^2):	200	236
Mean Maximum Depth (cm):	89	47
Mean Average Depth (cm):	62	30
Mean Residual Depth (cm):	32	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	
Percent with >35% Fines:		

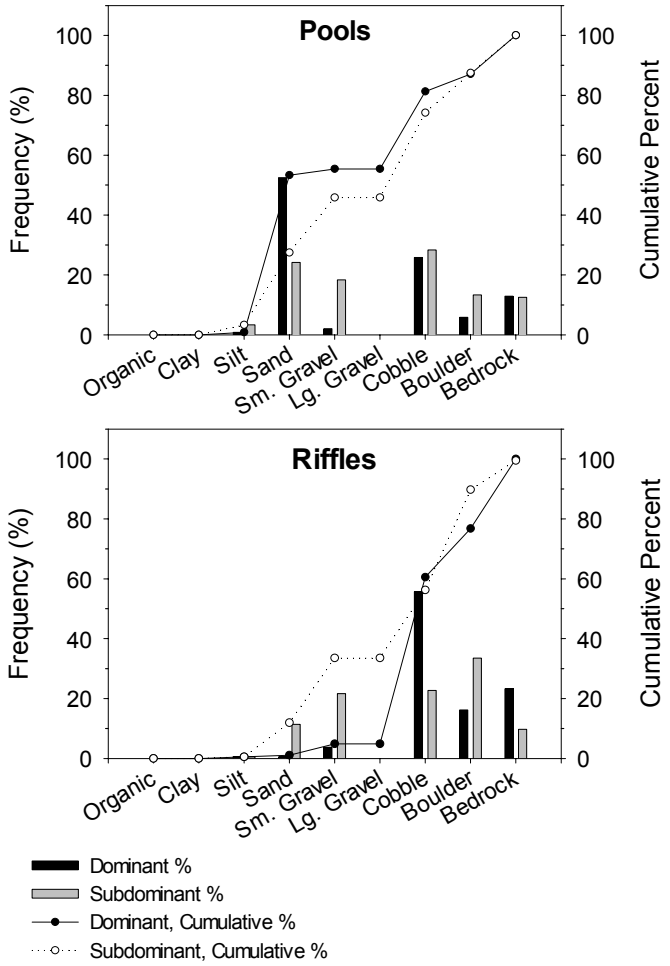
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	25
< 5 m long, > 55 cm diameter:	3
>5 m long, 10 cm – 55 cm diameter:	38
> 5 m long, > 55 cm diameter:	14
Total:	79

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

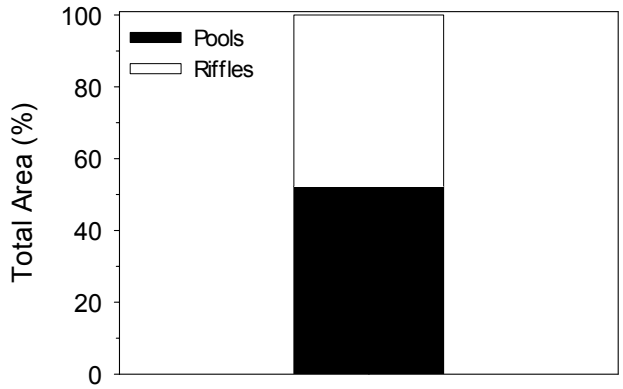
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

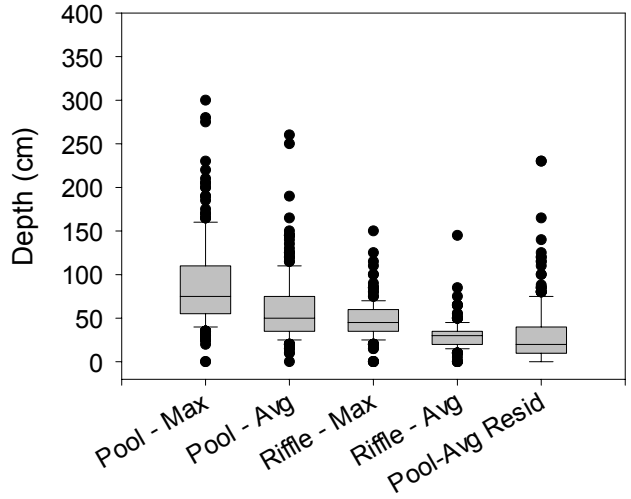
Other Stream Attributes	
Mean Bankfull Channel Width (m):	
Mean Channel Gradient (%):	4
Median Water Temperature (C˚):	



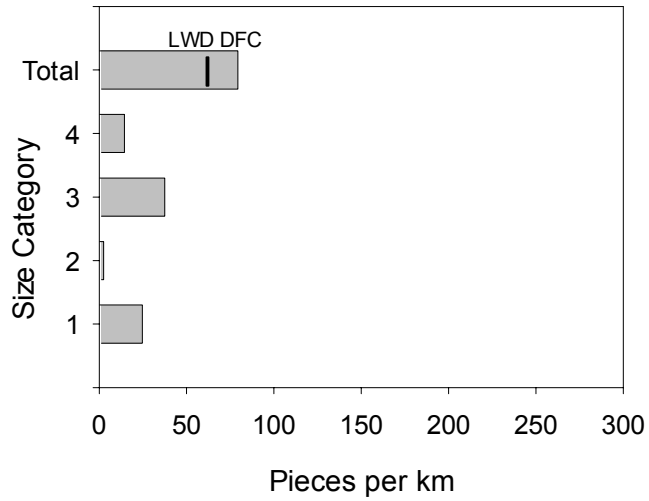
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Steels Creek, summer 1998.



Estimated area of Steels Creek in pools and riffles as calculated using BVET techniques, summer 1998.



Maximum and average depths and residual pool depths for pools and riffles in Steels Creek, summer 1998. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Steels Creek, summer 1998. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

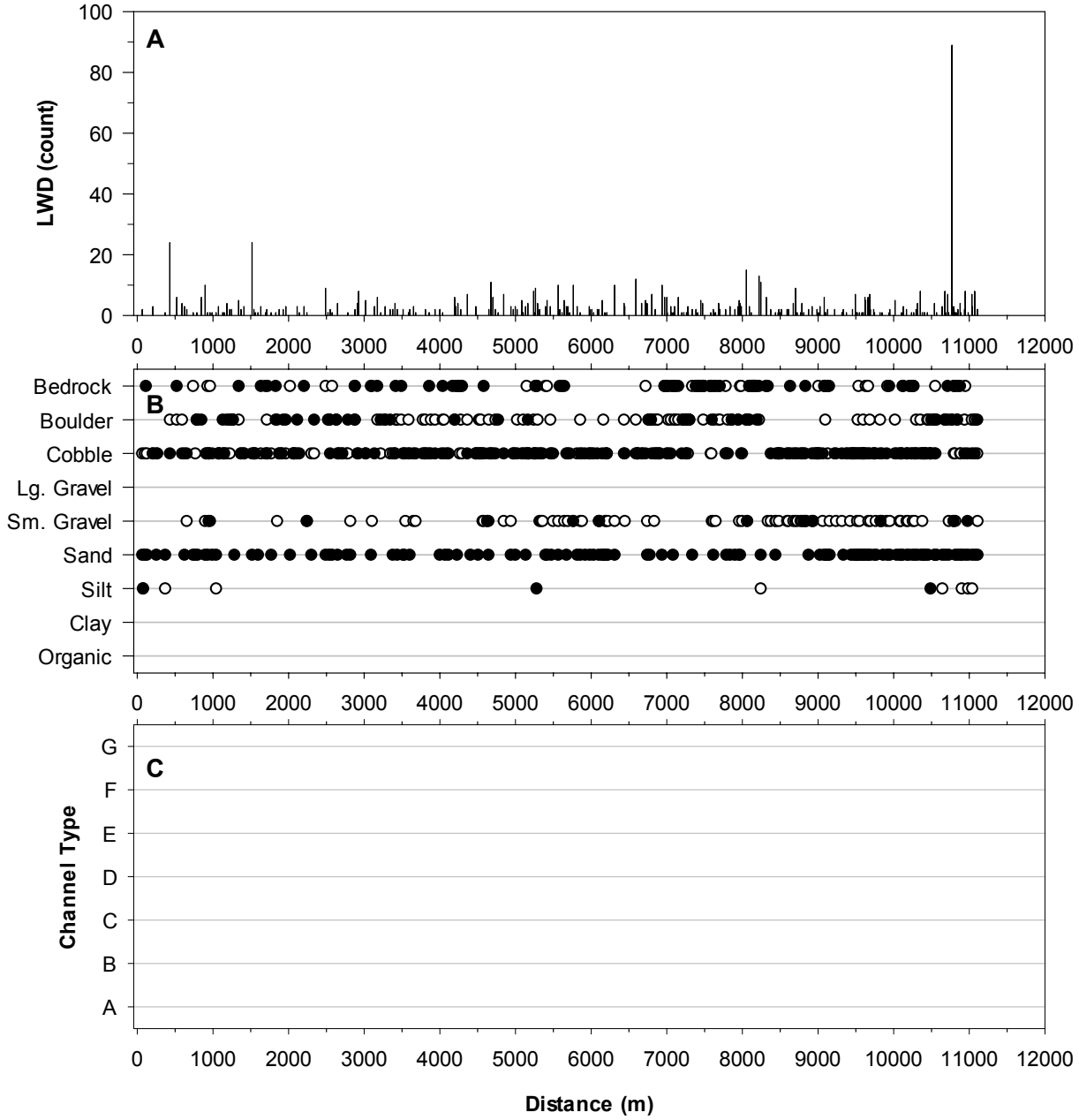
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Steels Creek during BVET habitat survey, summer 1998. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Trib	73.7		Trib on left
Other	959.0		Debris jam on left
Trib	986.8		Trib on right
Other	1516.1		Debris jam
Other	1709.3		Debris jam
Other	3405.9		Debris jam
Other	3649.4		Debris jam
Other	3996.8		Debris jam
Other	5131.9		Debris jam
Other	5162.0		Debris jam
Other	5415.2		Debris jam
Other	5673.7		Debris jam
Other	5763.0		Debris jam
Other	5974.4		Debris jam
Other	6666.9		Debris jam
Other	6935.4		Debris jam
Fall	7408.6		15' waterfall
Fall	7448.9		Cascading waterfall
Fall	7482.7		5 ' waterfall
Other	7645.0		Debris jam right
Other	7685.2		Debris jam left
Other	7968.3		Debris jam right
Fall	8052.9		Begin large waterfall
Fall	8074.6		Waterfall
Fall	8093.6		Waterfall
Fall	8134.0		Waterfall
Fall	8159.1		Waterfall
Other	8218.4		Debris jam
Other	8242.4		Debris jam
Fall	8316.6		Waterfall
Other	8495.2		Debris jam right
Other	8608.6		Debris jam left
Other	8786.4		Debris jam right
Other	8920.5		Debris jam left
Other	9493.2		Debris jam right
Other	9597.9		Debris jam left
Other	9661.8		Debris jam left
Other	9684.2		Debris jam right
Fall	10770.7		Waterfall
Other	10946.7		Debris jam

Photos taken of Steels Creek during BVET habitat survey, summer 1998. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Steels Creek, summer 1998. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Andrews Creek**
District:	Grandfather
USGS Quadrangle:	Grandfather Mountain
Survey Date:	2001
Downstream Starting Point:	Confluence with Stack Rock Creek
Total Distance Surveyed (km):	1.0

	Pools	**Riffles**
Percent of Total Stream Area:	35	65
Total Area (m^2):	1610±112	3016±404
Correction Factor Applied:	1.06	0.99
Number of Paired Samples:	6	9
Total Count:	33	51
Number per km:	33	51
Mean Area (m^2):	49	59
Mean Maximum Depth (cm):	72	28
Mean Average Depth (cm):	49	17
Mean Residual Depth (cm):	37	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	41
Percent with >35% Fines:		

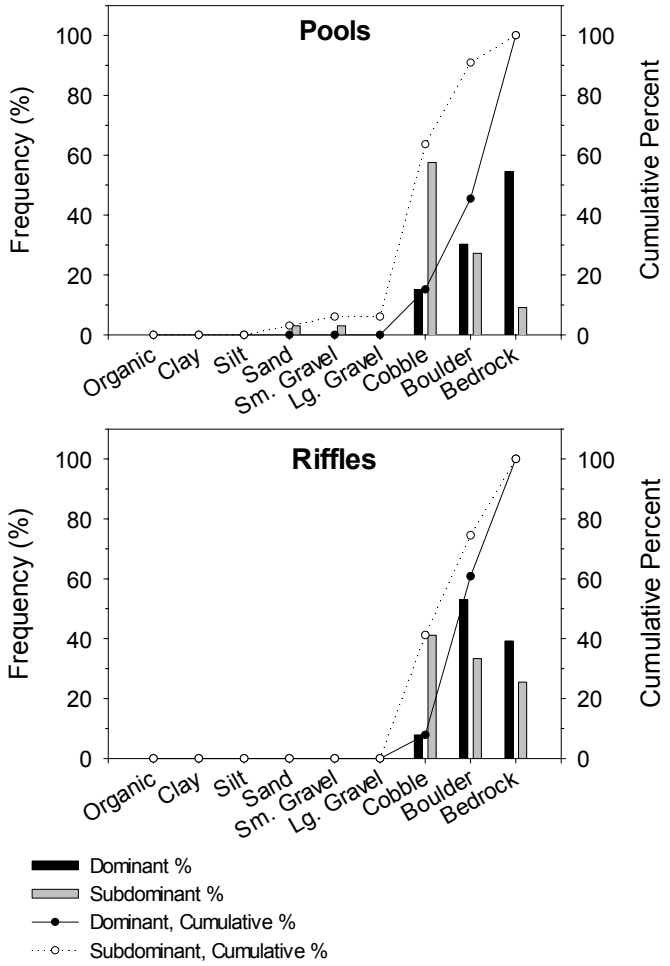
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	870
< 5 m long, > 55 cm diameter:	166
>5 m long, 10 cm – 55 cm diameter:	9
> 5 m long, > 55 cm diameter:	2
Total:	1046

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

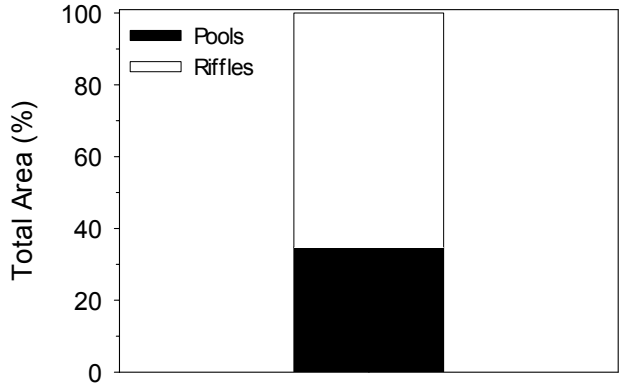
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

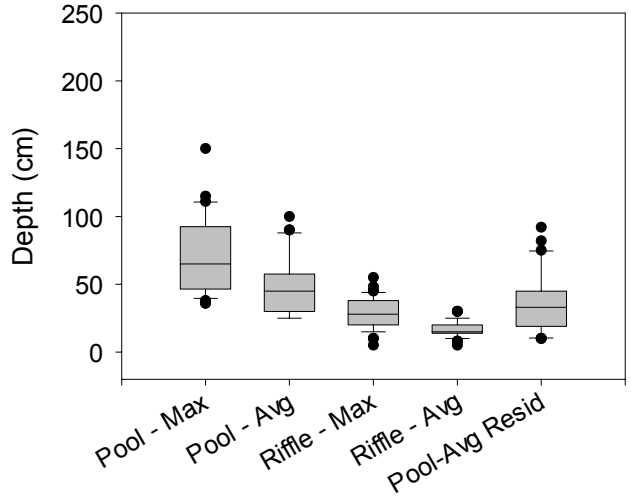
Other Stream Attributes
Mean Bankfull Channel Width (m):
Mean Channel Gradient (%):
Median Water Temperature (C˚):



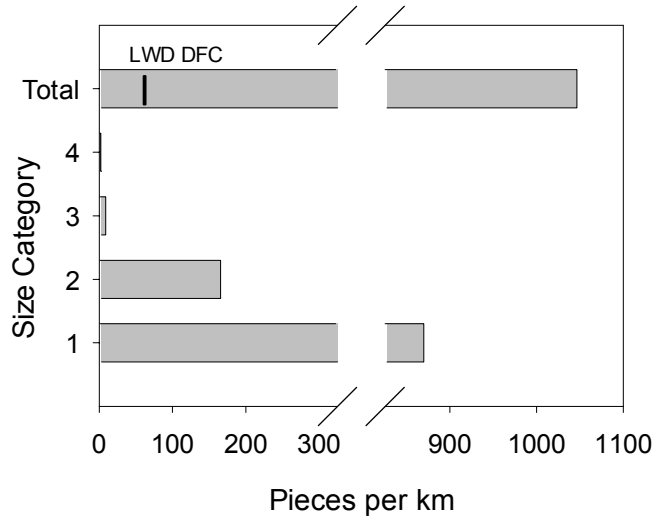
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Andrews Creek, summer 2001.



Estimated area of Andrews Creek in pools and riffles as calculated using BVET techniques, summer 2001.



Maximum and average depths and residual pool depths for pools and riffles in Andrews Creek, summer 2001. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Andrews Creek, summer 2001. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

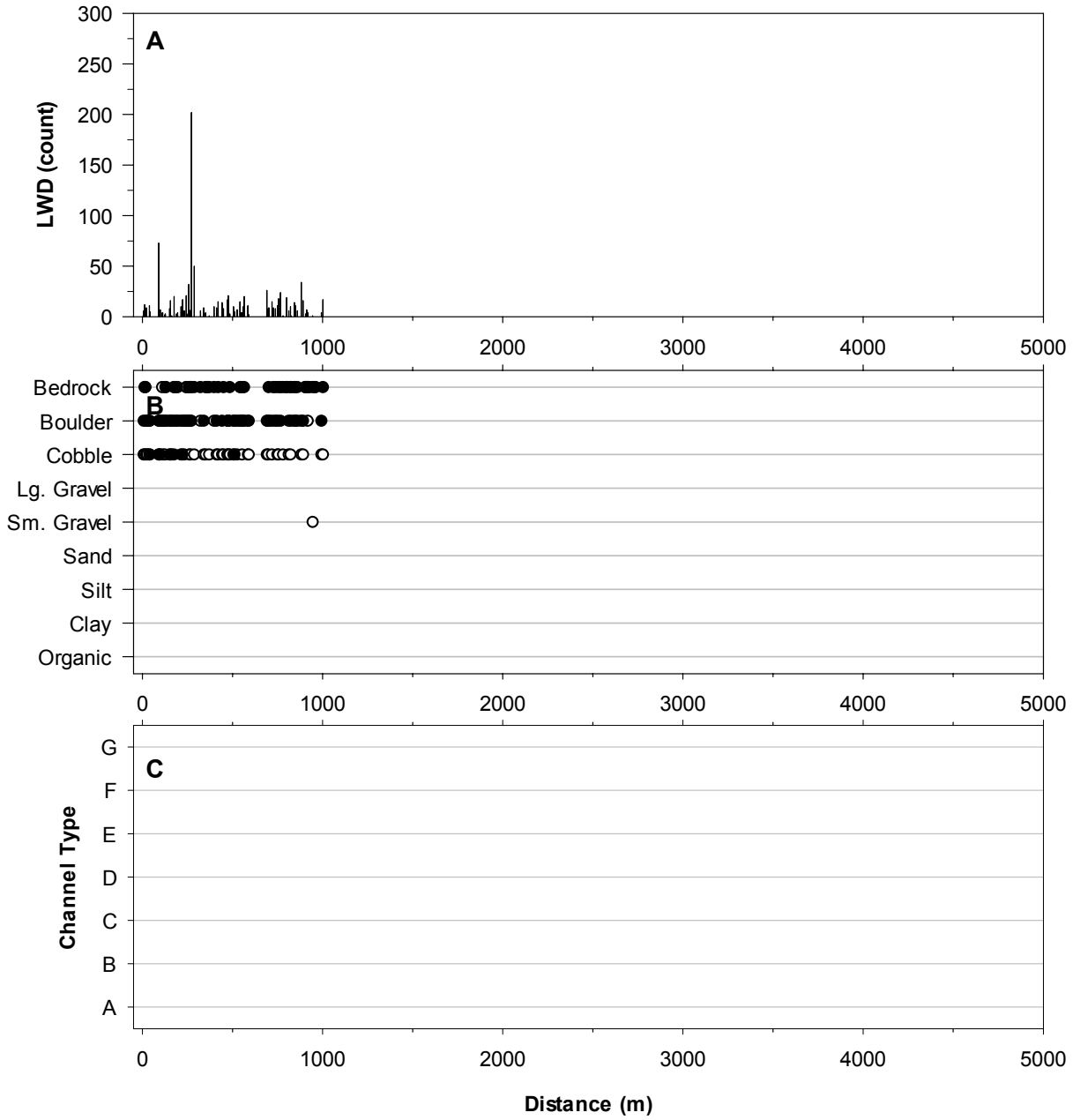
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Andrews Creek during BVET habitat survey, summer 2001. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Trib	38.3		smal trib on left
Side Channel	41.6		stream split
Side Channel	90.3		stream came back toghether
Trib	175.1		trib right
Other	271.5		large log jam
Trib	799.4		trib left

Photos taken of Andrews Creek during BVET habitat survey, summer 2001. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Andrews Creek, summer 2001. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Wilson Creek**
District:	Grandfather
USGS Quadrangle:	Grandfather Mountain
Survey Date:	07/13/00
Downstream Starting Point:	confluence with Bee Branch
Total Distance Surveyed (km):	0.9

	Pools	**Riffles**
Percent of Total Stream Area:	51	49
Total Area (m^2):	2786±164	2640±75
Correction Factor Applied:	1.04	1.01
Number of Paired Samples:	7	10
Total Count:	38	52
Number per km:	42	57
Mean Area (m^2):	73	51
Mean Maximum Depth (cm):	94	32
Mean Average Depth (cm):	65	19
Mean Residual Depth (cm):	51	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	40
Percent with >35% Fines:		

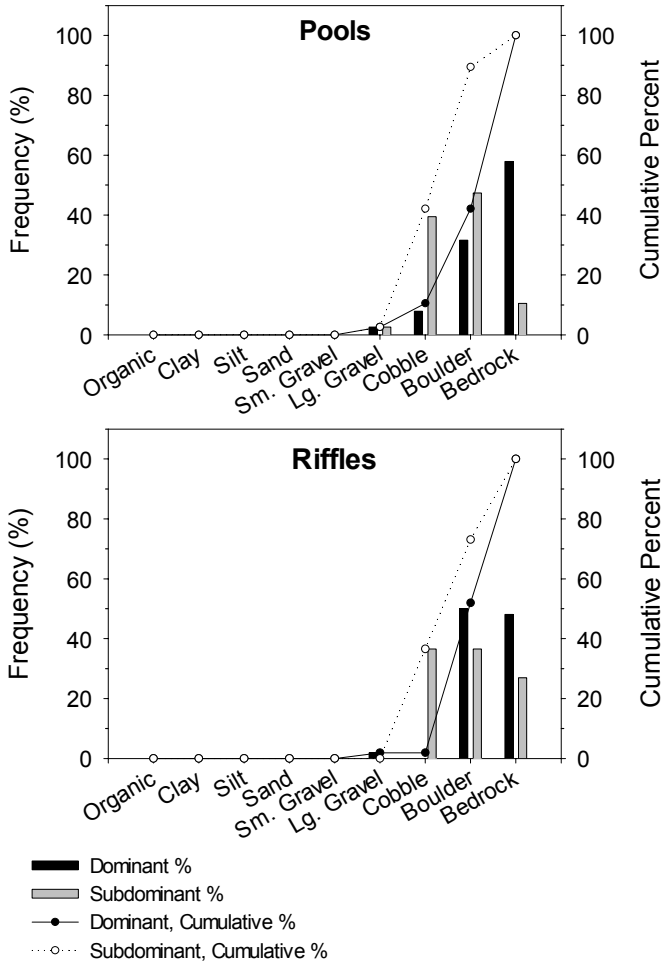
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	512
< 5 m long, > 55 cm diameter:	71
>5 m long, 10 cm – 55 cm diameter:	18
> 5 m long, > 55 cm diameter:	3
Total:	604

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

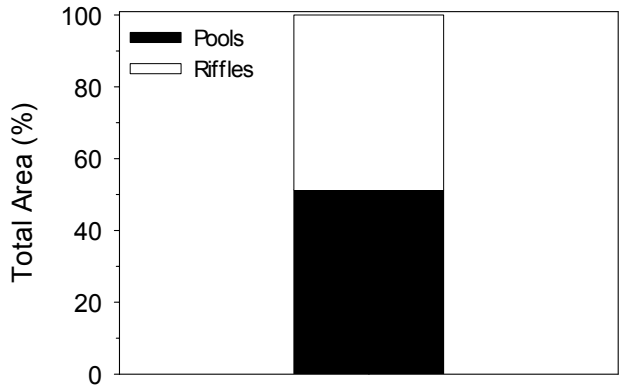
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

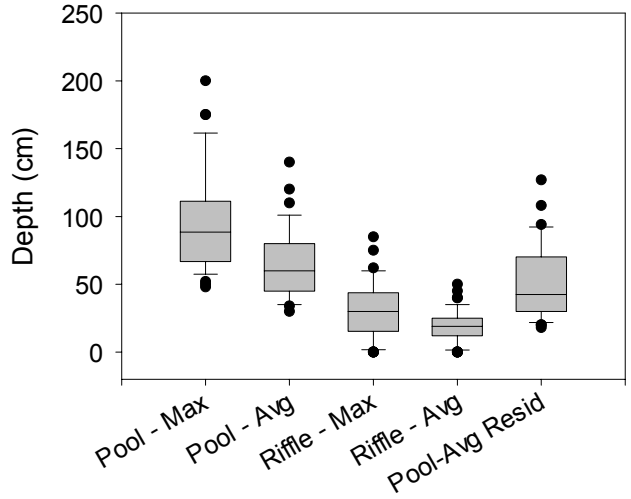
Other Stream Attributes
Mean Bankfull Channel Width (m):
Mean Channel Gradient (%):
Median Water Temperature (C˚):



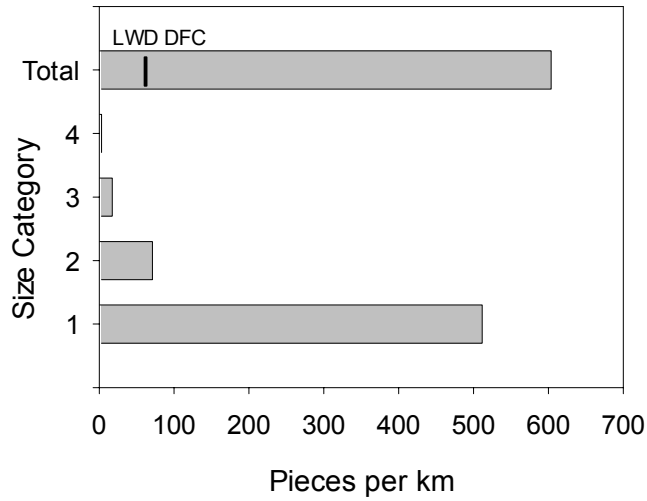
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Wilson Creek, summer 2000.



Estimated area of Wilson Creek in pools and riffles as calculated using BVET techniques, summer 2000.



Maximum and average depths and residual pool depths for pools and riffles in Wilson Creek, summer 2000. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Wilson Creek, summer 2000. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

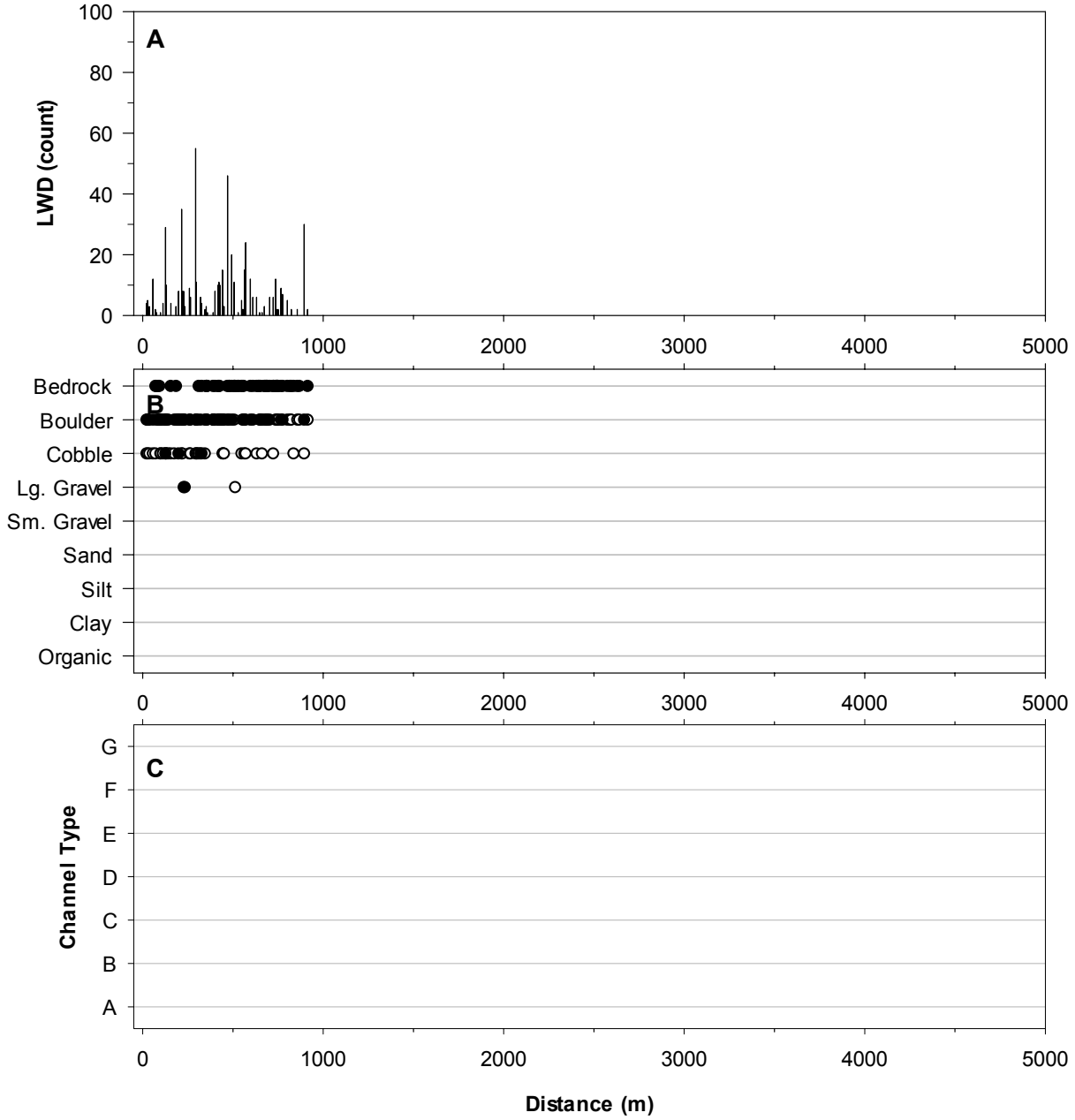
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Wilson Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Side Channel	174.7		stream splits left side
Other	219.3		large log dam nat
Side Channel	292.8		stream came back togher
Trib	610.2		trib on right

Photos taken of Wilson Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Wilson Creek, summer 2000. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Newberry Creek**
District:	Grandfather
USGS Quadrangle:	Old Fort
Survey Date:	06/15/00
Downstream Starting Point:	Forest boundary
Total Distance Surveyed (km):	0.5

	Pools	**Riffles**
Percent of Total Stream Area:	58	42
Total Area (m^2):	1561±83	1151±143
Correction Factor Applied:	1.05	1.04
Number of Paired Samples:	7	5
Total Count:	34	31
Number per km:	70	64
Mean Area (m^2):	46	37
Mean Maximum Depth (cm):	73	41
Mean Average Depth (cm):	52	25
Mean Residual Depth (cm):	16	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	19
Percent with >35% Fines:		

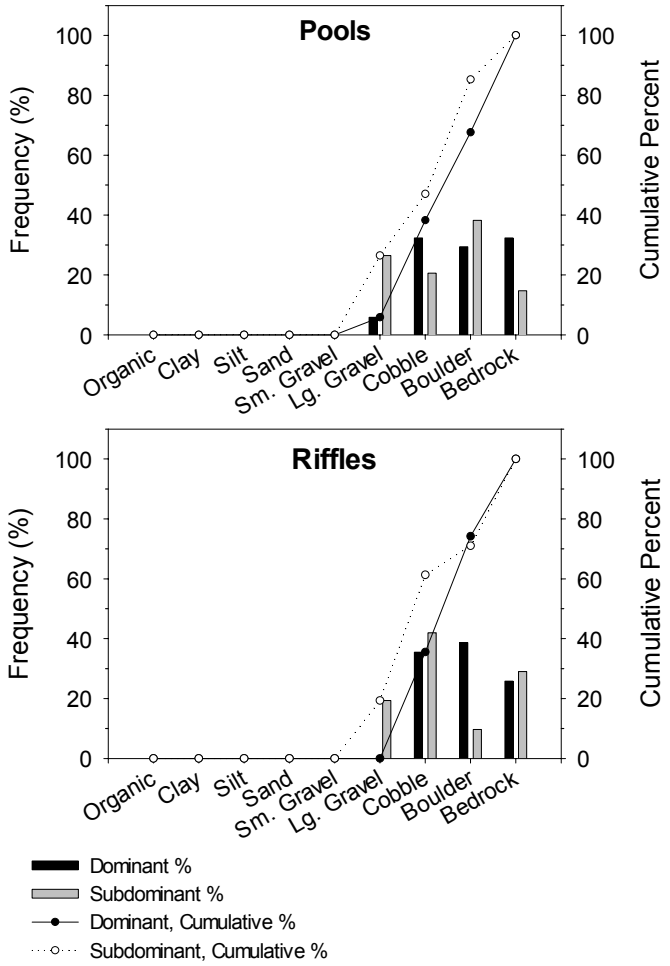
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	23
< 5 m long, > 55 cm diameter:	29
>5 m long, 10 cm – 55 cm diameter:	19
> 5 m long, > 55 cm diameter:	8
Total:	79

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

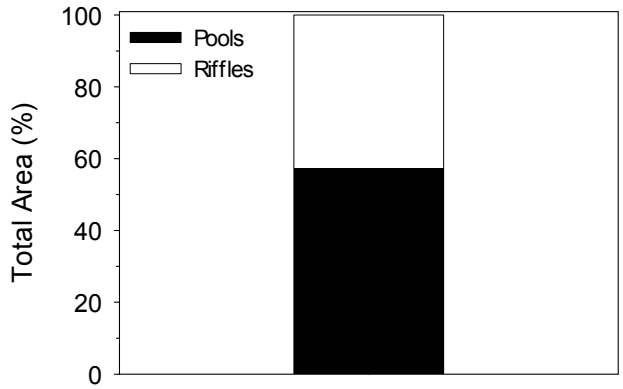
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	35
B:	65
C:	0
D:	0
E:	0
F:	0
G:	0

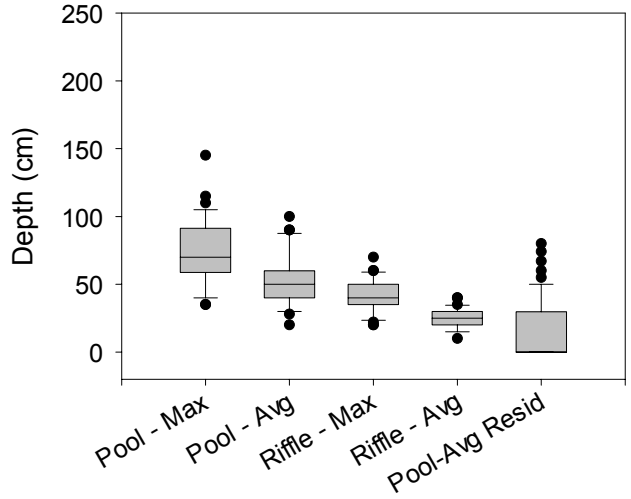
Other Stream Attributes
Mean Bankfull Channel Width (m):
Mean Channel Gradient (%):
Median Water Temperature (C˚):



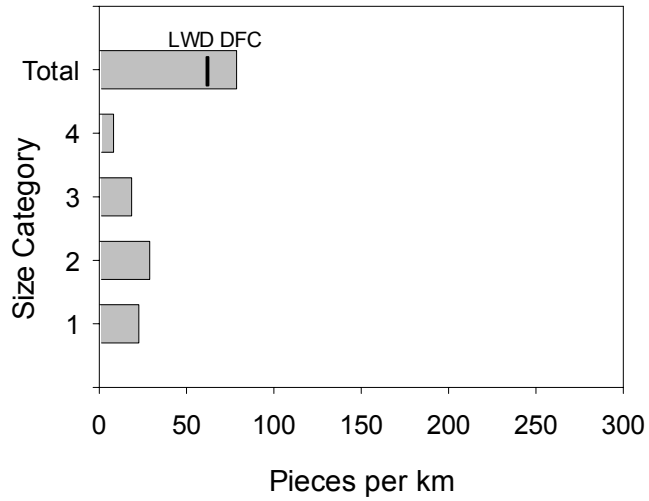
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Newberry Creek, summer 2000.



Estimated area of Newberry Creek in pools and riffles as calculated using BVET techniques, summer 2000.



Maximum and average depths and residual pool depths for pools and riffles in Newberry Creek, summer 2000. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Newberry Creek, summer 2000. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

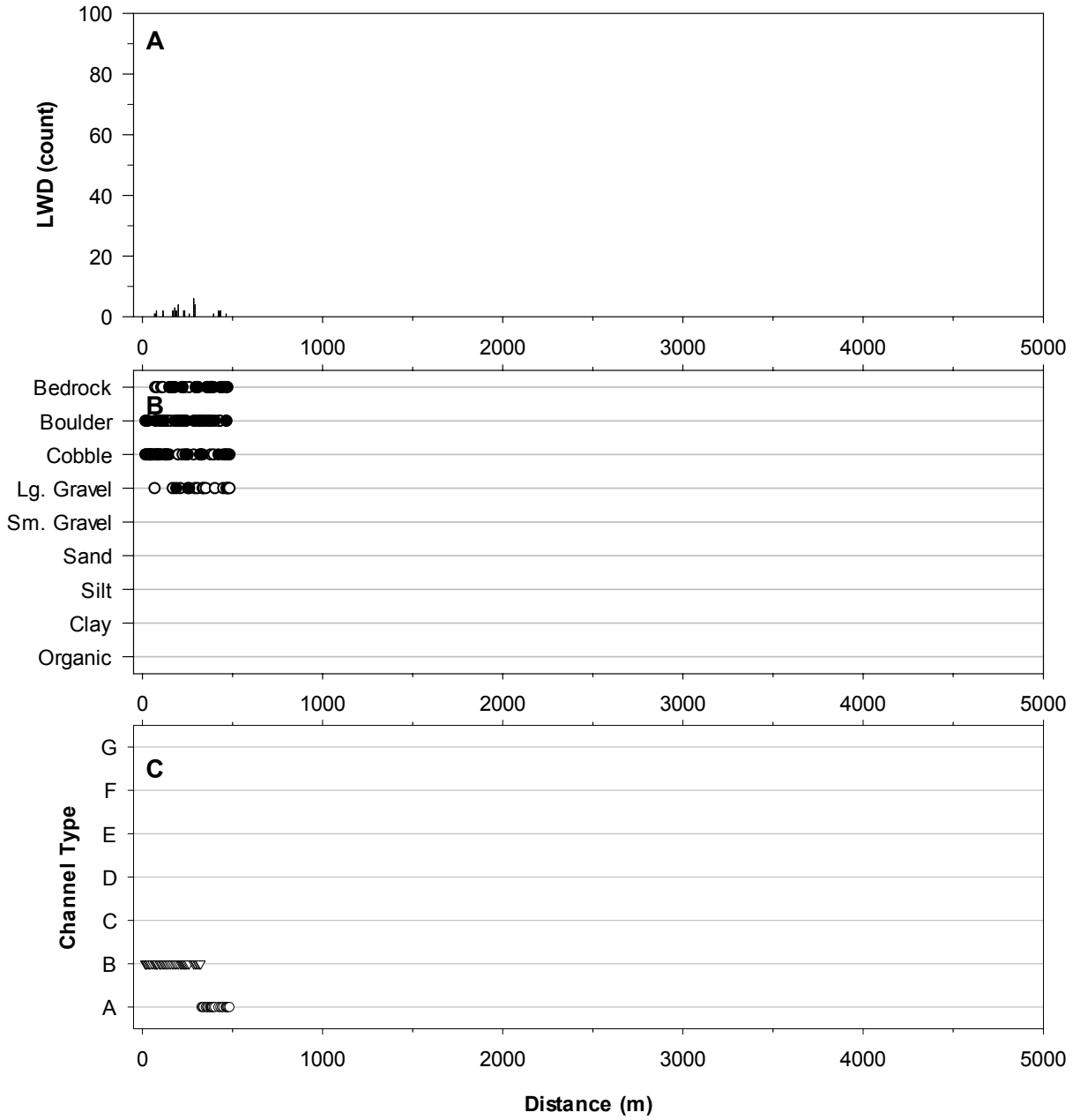
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Newberry Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Other	179.0		small debris jam on left
Bridge	284.6		bridge, debris jam
Other	440.8		campsite on right

Photos taken of Newberry Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Newberry Creek, summer 2000. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Fowlers Creek**
District:	Highlands
USGS Quadrangle:	Cashiers
Survey Date:	06/04/00
Downstream Starting Point:	
Total Distance Surveyed (km):	1.5

	Pools	**Riffles**
Percent of Total Stream Area:	36	64
Total Area (m^2):	4152±4337	7234±3322
Correction Factor Applied:	0.90	1.22
Number of Paired Samples:	2	2
Total Count:	22	21
Number per km:	15	14
Mean Area (m^2):	189	344
Mean Maximum Depth (cm):	69	48
Mean Average Depth (cm):	48	29
Mean Residual Depth (cm):	31	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	
Percent with >35% Fines:		

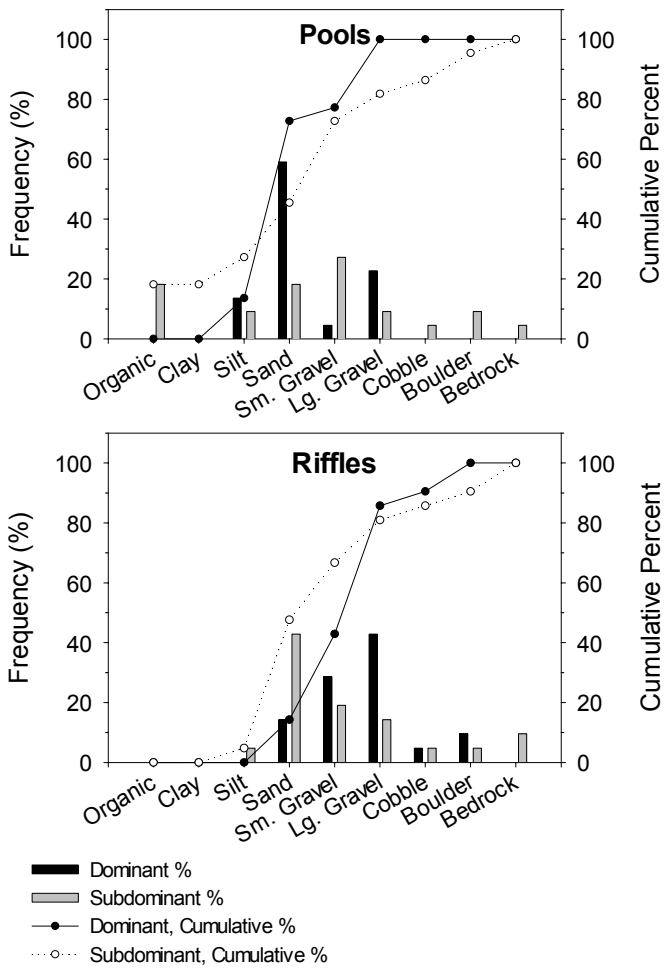
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	66
< 5 m long, > 55 cm diameter:	27
>5 m long, 10 cm – 55 cm diameter:	19
> 5 m long, > 55 cm diameter:	26
Total:	138

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

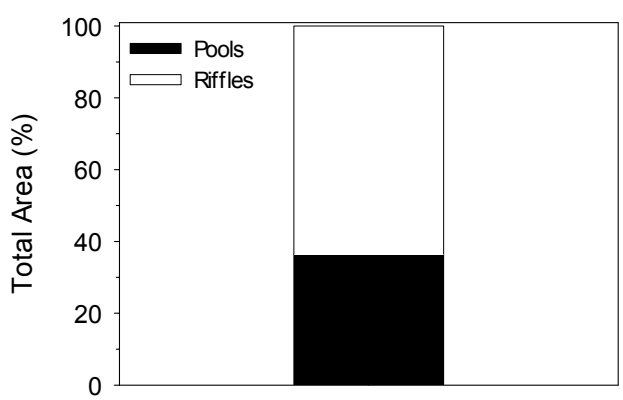
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

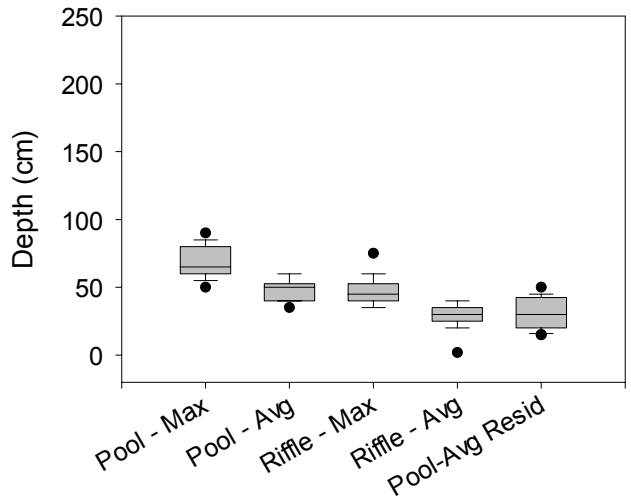
Other Stream Attributes	
Mean Bankfull Channel Width (m):	9
Mean Channel Gradient (%):	5
Median Water Temperature (C°):	



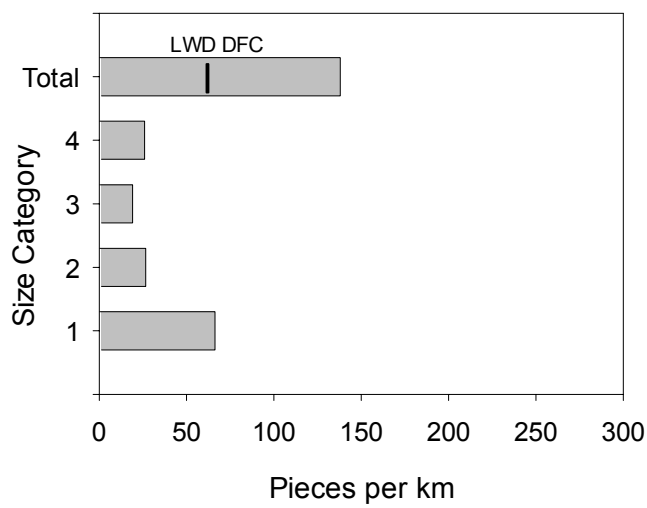
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Fowlers Creek, summer 2000.



Estimated area of Fowlers Creek in pools and riffles as calculated using BVET techniques, summer 2000.



Maximum and average depths and residual pool depths for pools and riffles in Fowlers Creek, summer 2000. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Fowlers Creek, summer 2000. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

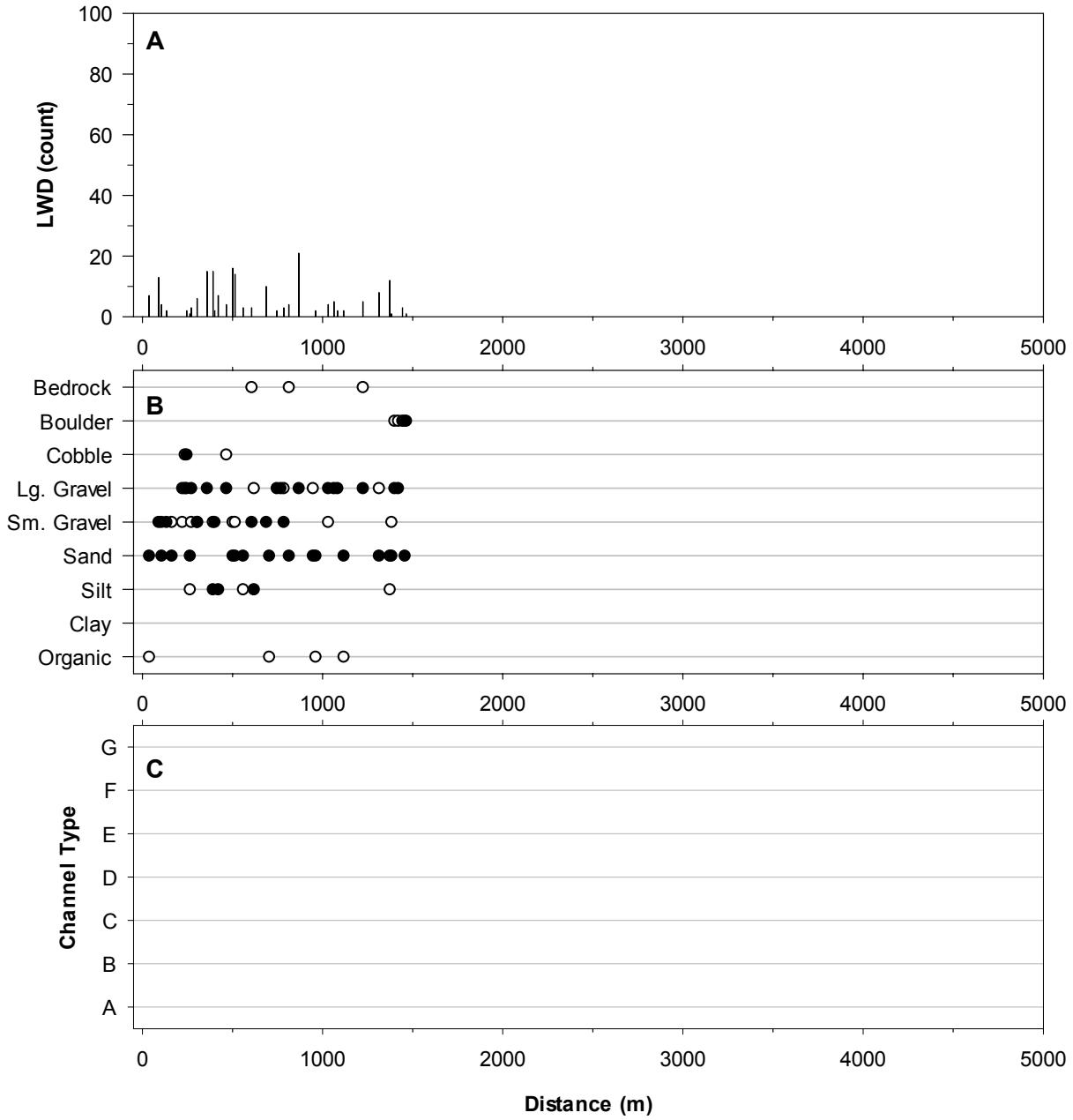
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Fowlers Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Other	89.0		Log jam
Trib	270.0		Trib l
Other	303.0		Deflector
Other	1223.0		Log jam
Ford	1312.0		Crosses road
Trib	1372.0		Trib l
Fall	1463.0		Water fall at sign that says posted water wheel and house just ahead

Photos taken of Fowlers Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Fowlers Creek, summer 2000. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Overflow Creek**
District:	Highlands
USGS Quadrangle:	Highlands
Survey Date:	06/19/00
Downstream Starting Point:	near Georgia line
Total Distance Surveyed (km):	2.4

	Pools	**Riffles**
Percent of Total Stream Area:	29	71
Total Area (m^2):	5147±923	12571±1259
Correction Factor Applied:	0.85	0.91
Number of Paired Samples:	3	3
Total Count:	30	30
Number per km:	13	13
Mean Area (m^2):	172	419
Mean Maximum Depth (cm):	99	66
Mean Average Depth (cm):	72	42
Mean Residual Depth (cm):	44	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	
Percent with >35% Fines:		

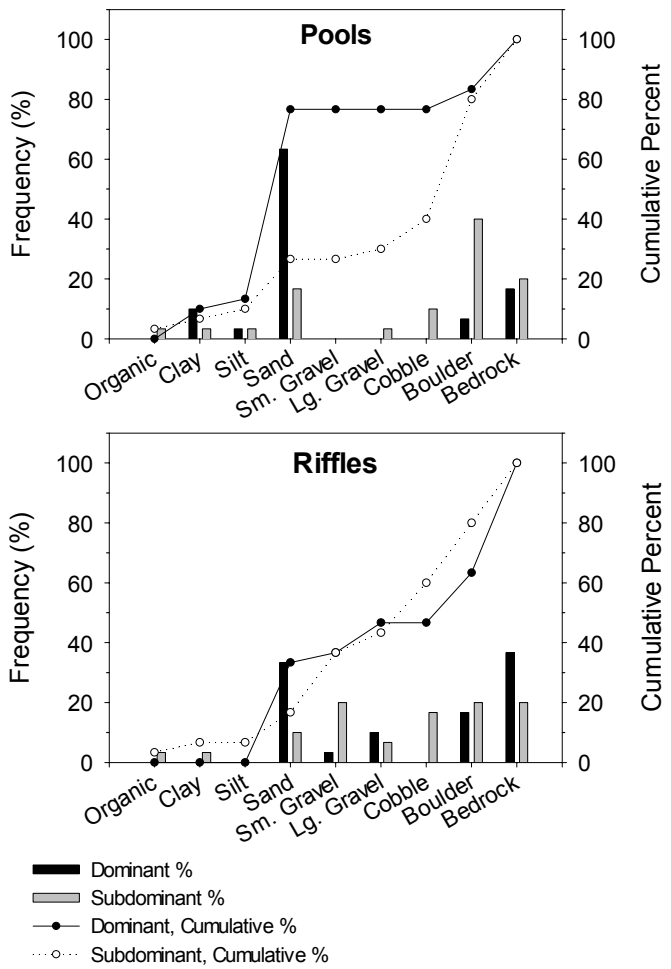
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	37
< 5 m long, > 55 cm diameter:	18
>5 m long, 10 cm – 55 cm diameter:	21
> 5 m long, > 55 cm diameter:	23
Total:	99

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

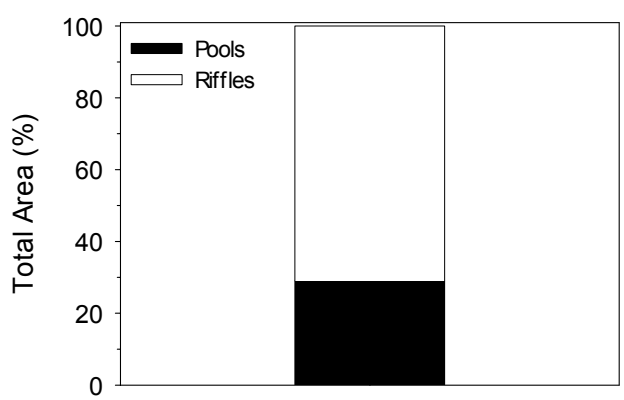
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

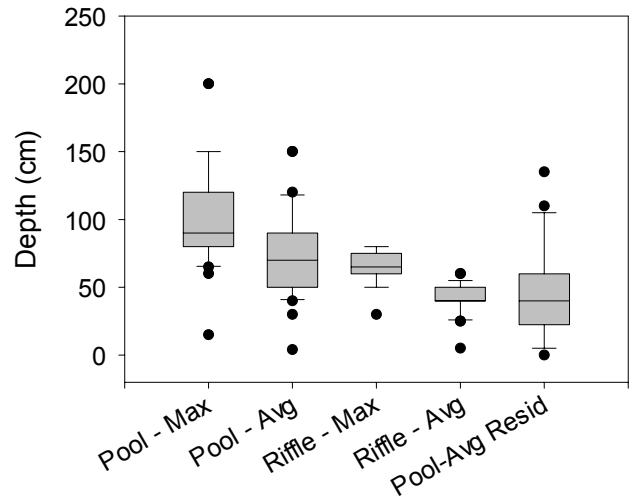
Other Stream Attributes	
Mean Bankfull Channel Width (m):	
Mean Channel Gradient (%):	6
Median Water Temperature (C˚):	



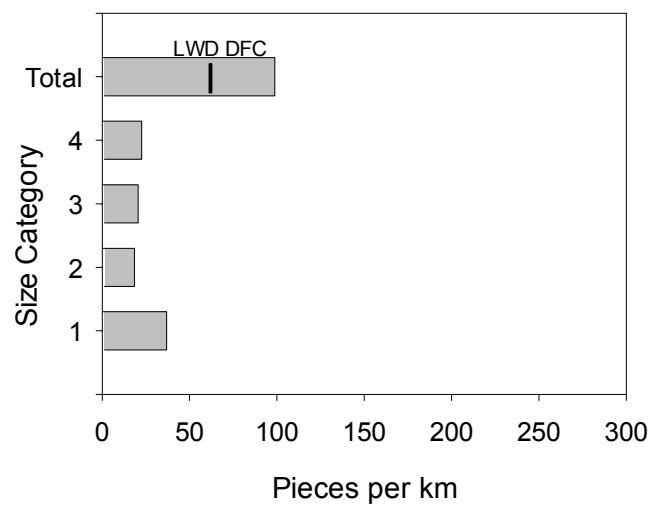
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Overflow Creek, summer 2000.



Estimated area of Overflow Creek in pools and riffles as calculated using BVET techniques, summer 2000.



Maximum and average depths and residual pool depths for pools and riffles in Overflow Creek, summer 2000. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Overflow Creek, summer 2000. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

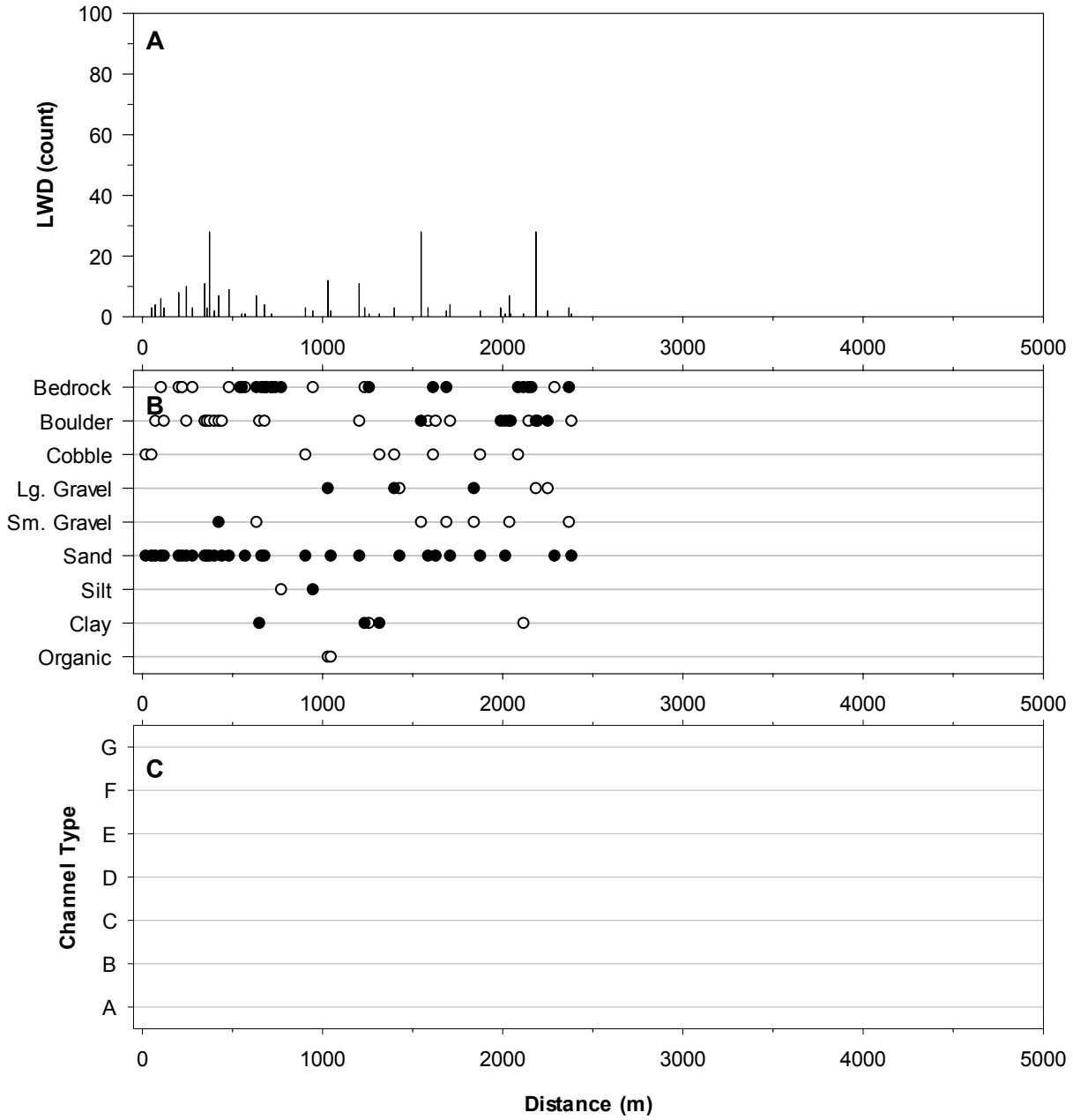
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Overflow Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Trib	345.0		Trib r
Side Channel	358.0		Island l
Other	372.0		Huge log jam
Side Channel	399.0		End island
Other	423.0		Log jam
Trib	648.0		Trib l
Trib	769.0		Trib l
Trib	945.0		Trib l
Side Channel	1923.0		Island r
Side Channel	1960.0		End of Island
Trib	2287.0		Trib r
Trib	2380.0		Trib r, end

Photos taken of Overflow Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Overflow Creek, summer 2000. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Tanassee**
District:	Highlands
USGS Quadrangle:	Sam Knob
Survey Date:	06/20/01
Downstream Starting Point:	SR 1759 bridge
Total Distance Surveyed (km):	2.1

	Pools	**Riffles**
Percent of Total Stream Area:	31	69
Total Area (m^2):	3170±403	6940±385
Correction Factor Applied:	1.08	0.95
Number of Paired Samples:	10	13
Total Count:	49	52
Number per km:	23	25
Mean Area (m^2):	65	133
Mean Maximum Depth (cm):	64	39
Mean Average Depth (cm):	55	26
Mean Residual Depth (cm):	34	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	
Percent with >35% Fines:		

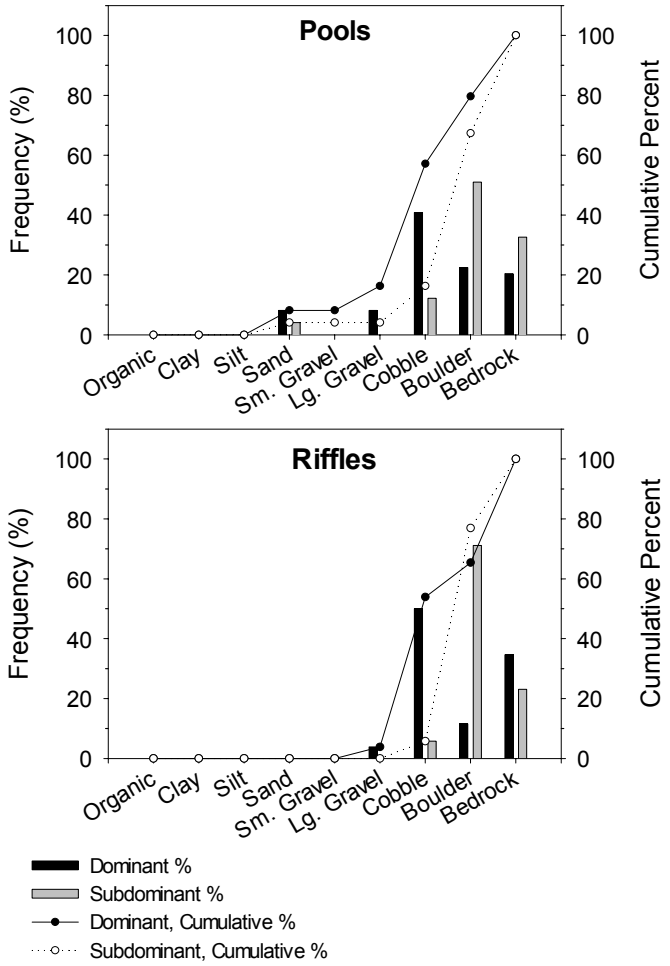
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	14
< 5 m long, > 55 cm diameter:	2
>5 m long, 10 cm – 55 cm diameter:	1
> 5 m long, > 55 cm diameter:	2
Total:	20

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	22	7
Maximum:	32	16
75th Percentile	24	8
25th Percentile	18	4
Minimum	16	2

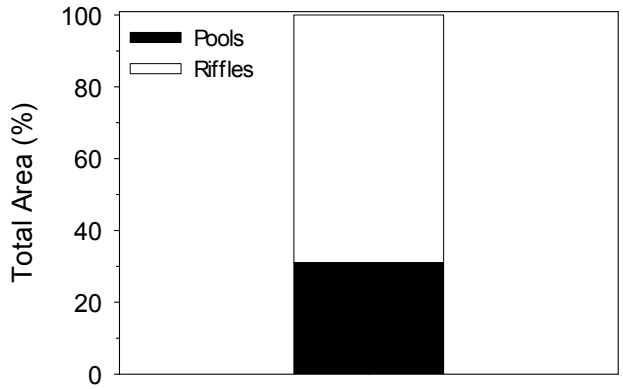
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

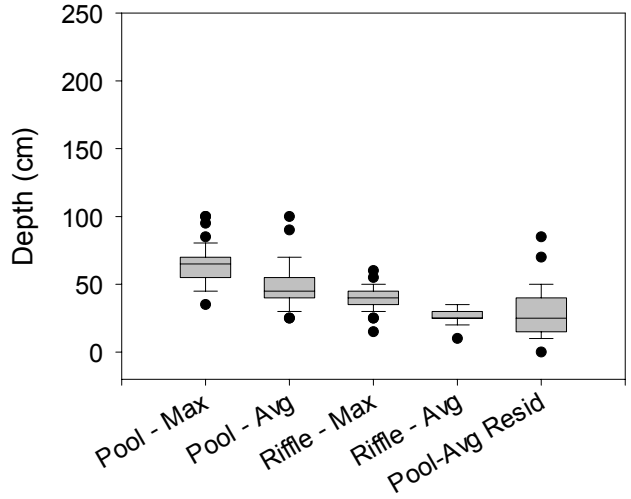
Other Stream Attributes	
Mean Bankfull Channel Width (m):	8
Mean Channel Gradient (%):	6
Median Water Temperature (C˚):	



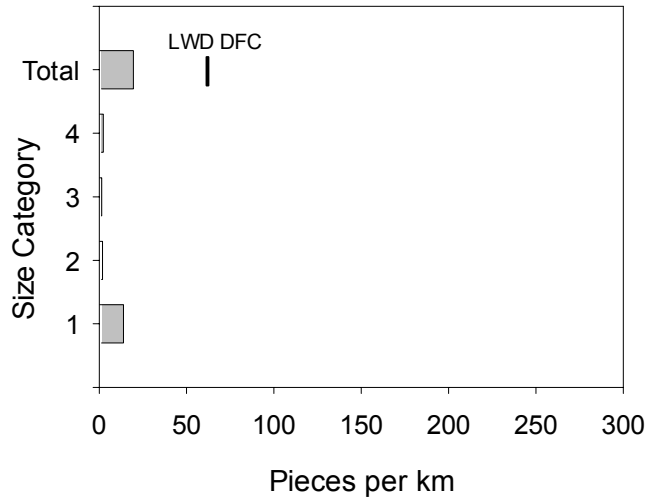
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Tanassee Creek, summer 2001.



Estimated area of Tanassee Creek in pools and riffles as calculated using BVET techniques, summer 2001.



Maximum and average depths and residual pool depths for pools and riffles in Tanassee Creek, summer 2001. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Tanassee Creek, summer 2001. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

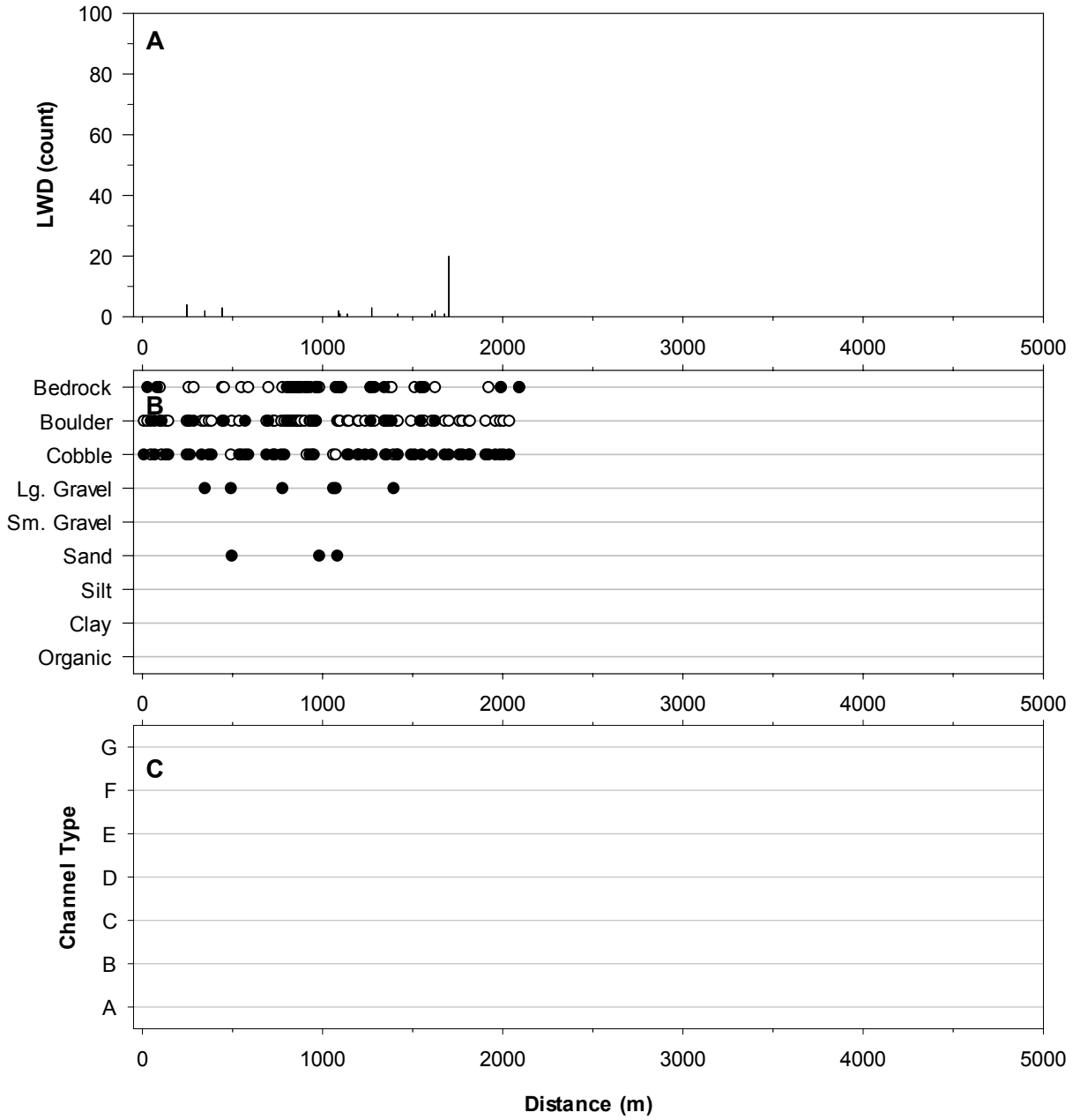
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Tanassee Creek during BVET habitat survey, summer 2001. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Seep	699.0		seep L
Seep	837.0		seep R
Seep	1058.0		seep R
Side Channel	1329.0		island start
Side Channel	1342.0		island end
Seep	1636.0		seep R
Trib	1647.0		trib R
Other	1849.0		log jam
Other	1864.0		log jam
Seep	1936.0		seep R
Trib	2071.0		end @ Camp Creek confluence

Photos taken of Tanassee Creek during BVET habitat survey, summer 2001. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Tanassee Creek, summer 2001. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Wolf Creek**
District:	Highlands
USGS Quadrangle:	Sam Knob
Survey Date:	06/18/01
Downstream Starting Point:	confluence with Balsam Lake
Total Distance Surveyed (km):	1.7

	Pools	**Riffles**
Percent of Total Stream Area:	19	81
Total Area (m^2):	1533±183	6553±1817
Correction Factor Applied:	1.24	0.92
Number of Paired Samples:	3	5
Total Count:	22	22
Number per km:	13	13
Mean Area (m^2):	70	298
Mean Maximum Depth (cm):	56	38
Mean Average Depth (cm):	39	22
Mean Residual Depth (cm):	22	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	
Percent with >35% Fines:		

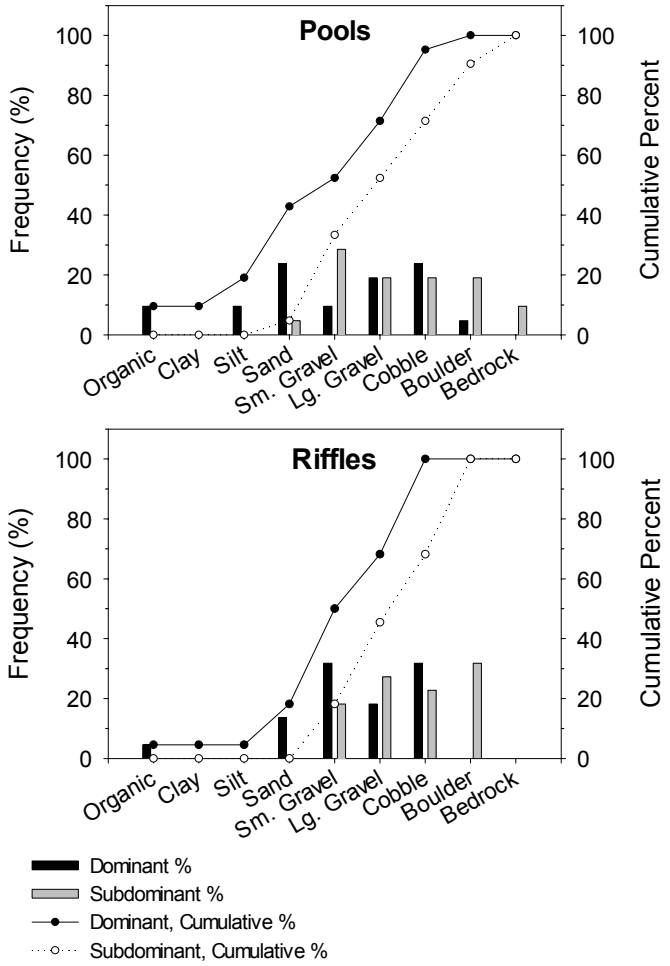
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	20
< 5 m long, > 55 cm diameter:	3
>5 m long, 10 cm – 55 cm diameter:	3
> 5 m long, > 55 cm diameter:	10
Total:	37

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

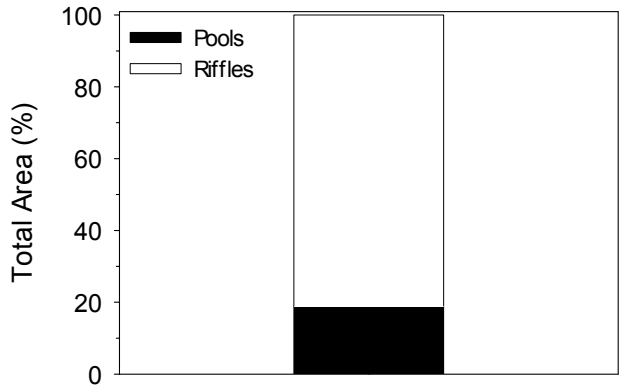
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

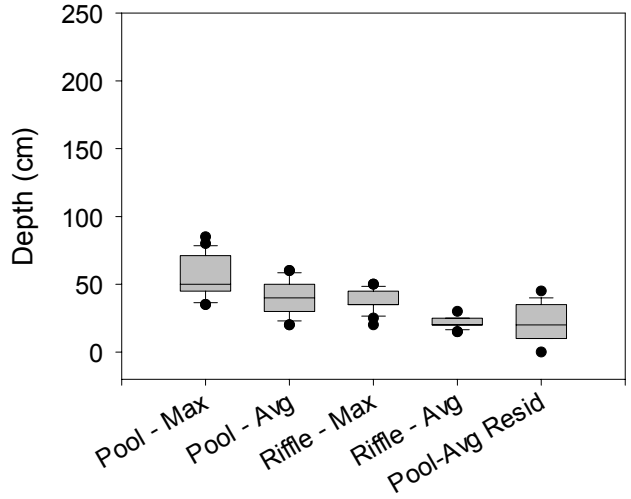
Other Stream Attributes	
Mean Bankfull Channel Width (m):	8
Mean Channel Gradient (%):	6
Median Water Temperature (C˚):	



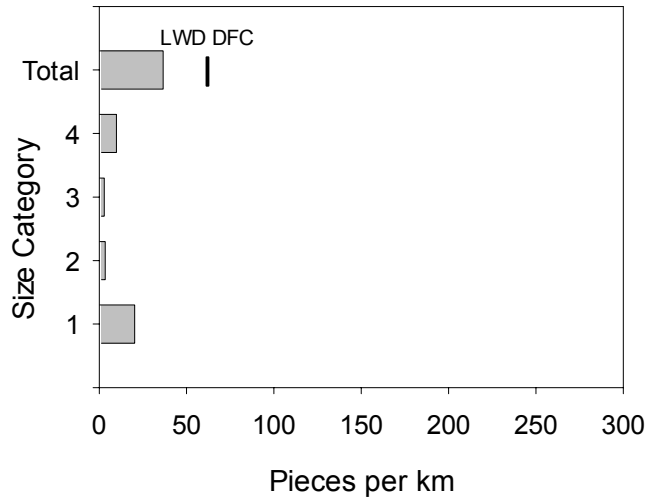
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Wolf Creek, summer 2001.



Estimated area of Wolf Creek in pools and riffles as calculated using BVET techniques, summer 2001.



Maximum and average depths and residual pool depths for pools and riffles in Wolf Creek, summer 2001. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Wolf Creek, summer 2001. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

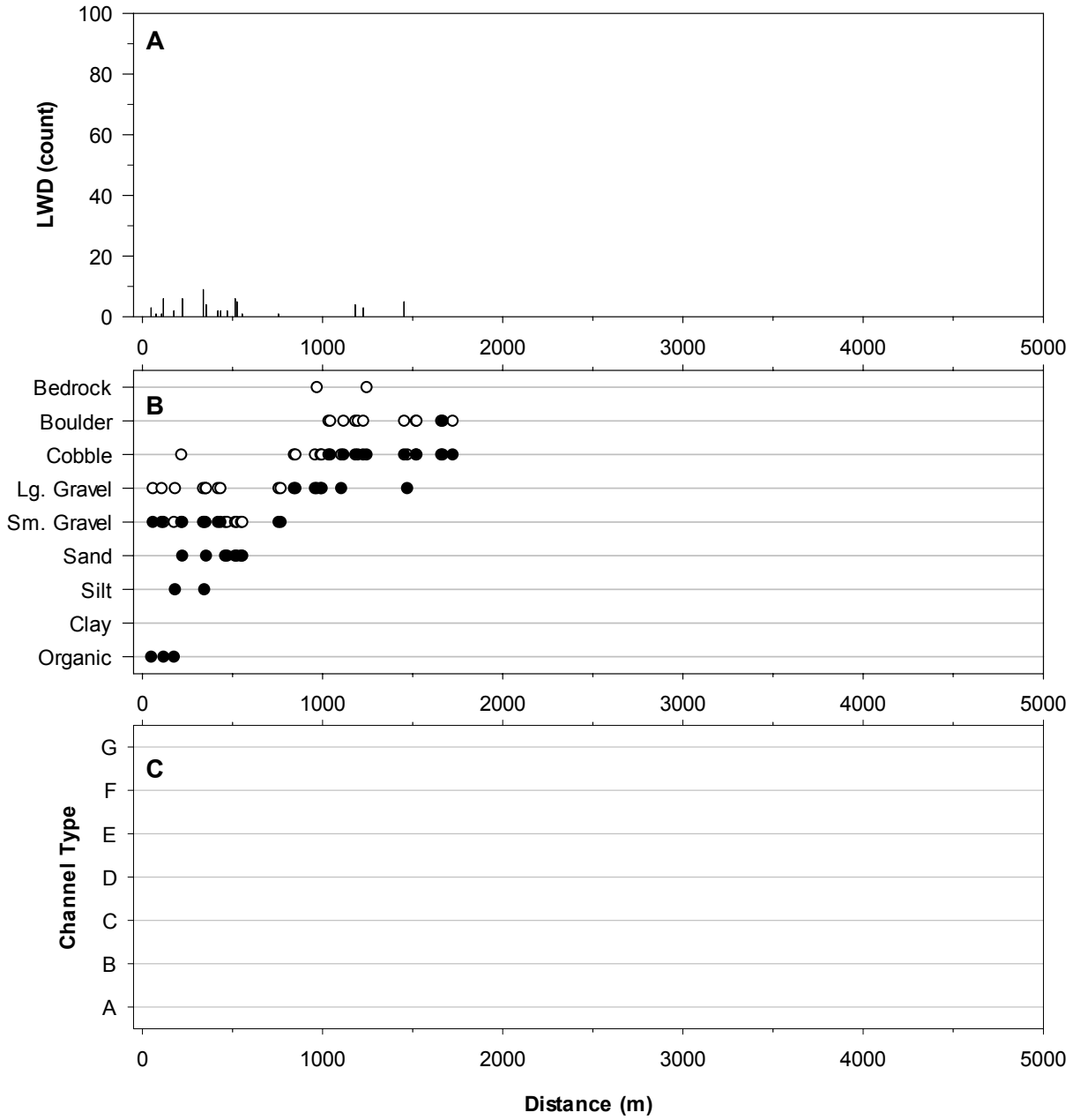
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Wolf Creek during BVET habitat survey, summer 2001. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Side Channel	65.0		island start
Side Channel	106.0		island stop
Other	116.0		log dam
Other	180.0		log dam
Other	221.0		log dam
Seep	258.0		seep R
Seep	280.0		seep L
Side Channel	455.0		island start
Other	488.0		debris jam
Seep	497.0		seep L
Side Channel	500.0		island end
Seep	539.0		seep L
Seep	597.0		seep R
Bridge	866.0		bridge/road
Ford	1177.0		old road crosses
Side Channel	1215.0		island
Trib	1244.0		trib R
Forkd	1325.0		old road crosses
Other	1408.0		barbed wire fence crosses
Trail	1476.0		foot log
Bridge	1538.0		bridge
Bridge	1614.0		foot bridge

Photos taken of Wolf Creek during BVET habitat survey, summer 2001. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Wolf Creek, summer 2001. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Wolf Creek**
District:	Highlands
USGS Quadrangle:	Big Ridge
Survey Date:	06/18/02
Downstream Starting Point:	confluence with Tanassee Creek
Total Distance Surveyed (km):	3.1

	Pools	**Riffles**
Percent of Total Stream Area:	74	26
Total Area (m^2):	14214±3584	5003±402
Correction Factor Applied:	0.98	1.29
Number of Paired Samples:	7	8
Total Count:	75	73
Number per km:	25	24
Mean Area (m^2):	190	69
Mean Maximum Depth (cm):	73	31
Mean Average Depth (cm):	43	16
Mean Residual Depth (cm):	25	--
Percent Surveyed as Glides:	35	--
Percent Surveyed as Runs:	--	33
Percent Surveyed as Cascades:	--	11
Percent with >35% Fines:	0	0

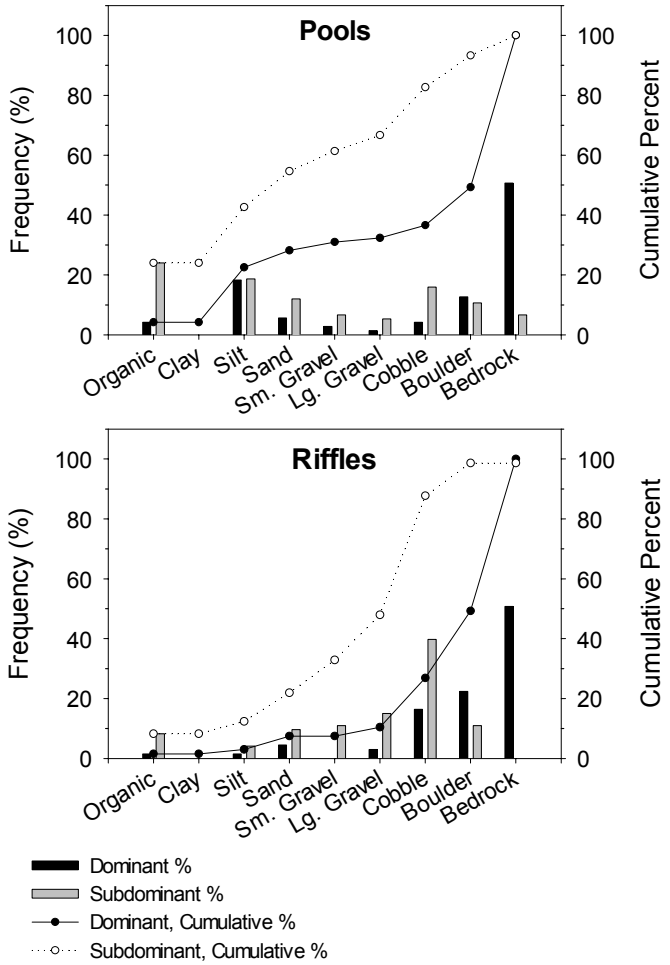
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	123
< 5 m long, > 55 cm diameter:	4
>5 m long, 10 cm – 55 cm diameter:	70
> 5 m long, > 55 cm diameter:	9
Total:	206

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

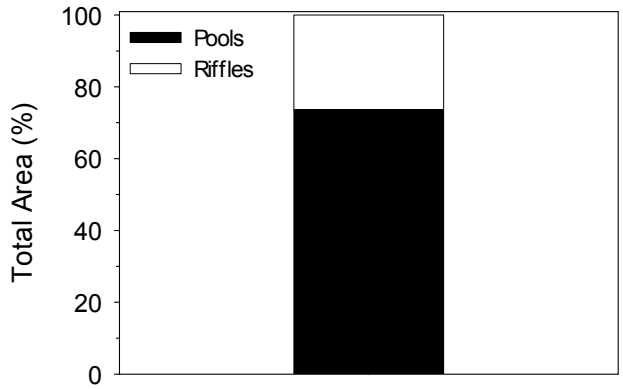
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

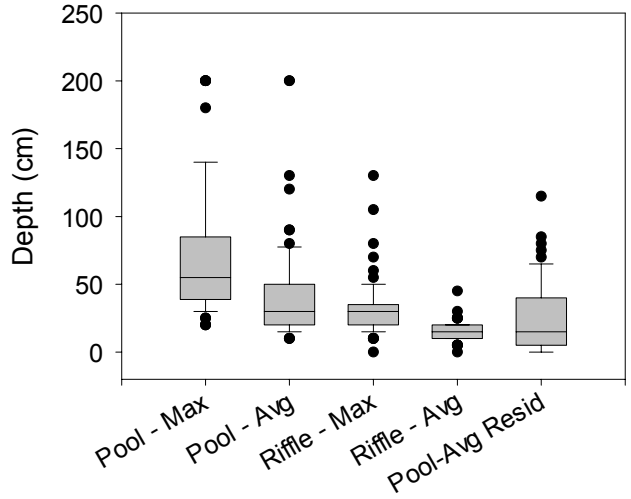
Other Stream Attributes	
Mean Bankfull Channel Width (m):	9
Mean Channel Gradient (%):	4
Median Water Temperature (C˚):	16



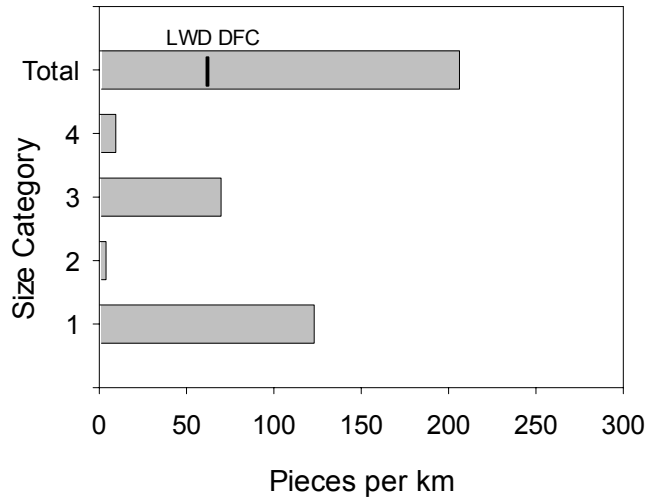
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Wolf Creek, summer 2002.



Estimated area of Wolf Creek in pools and riffles as calculated using BVET techniques, summer 2002.



Maximum and average depths and residual pool depths for pools and riffles in Wolf Creek, summer 2002. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Wolf Creek, summer 2002. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

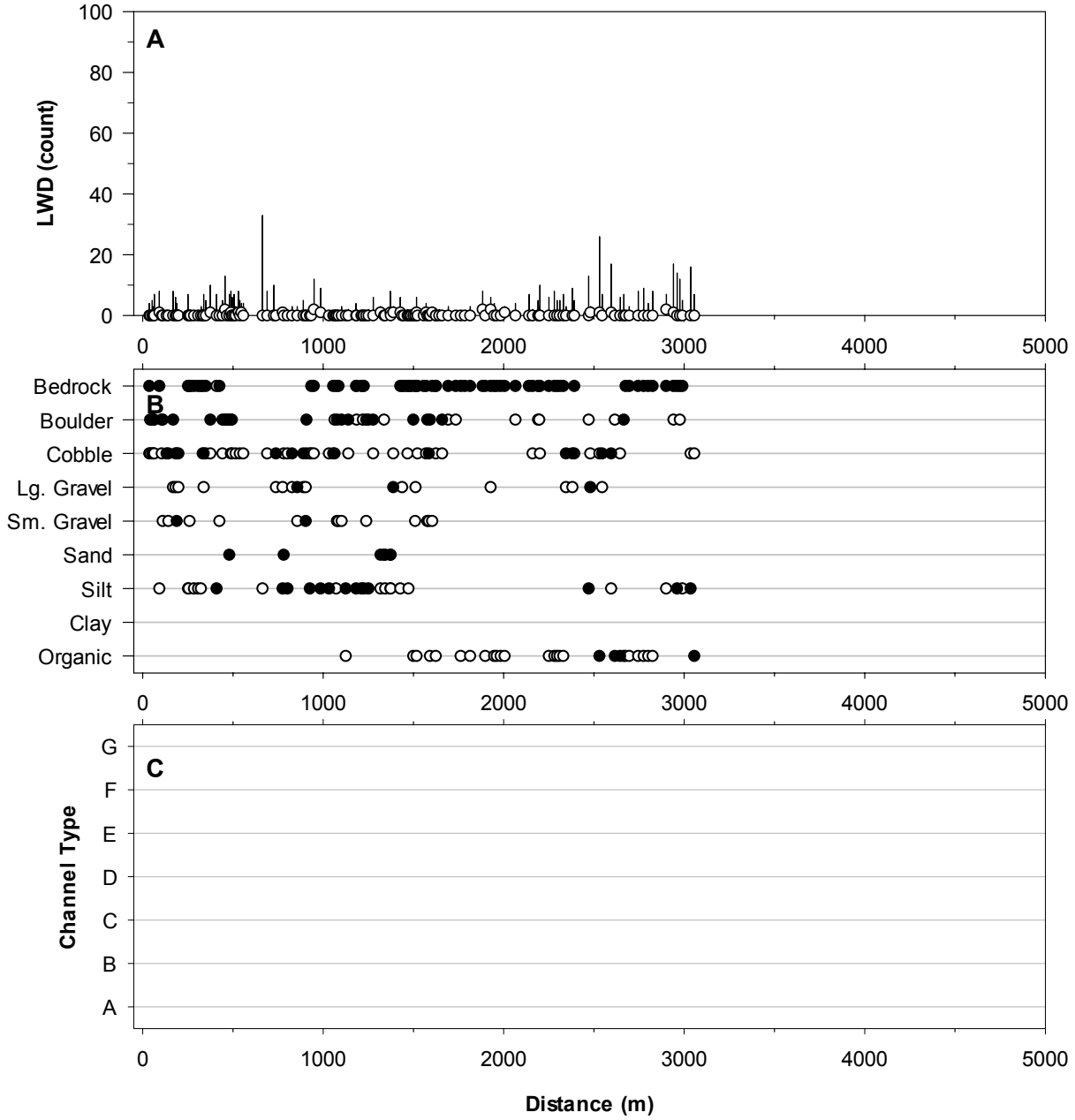
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Wolf Creek during BVET habitat survey, summer 2002. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Other	663.0		small debris dam @ tail of pool
Side Channel	766.3		SCH, in Left
Side Channel	780.9		SCH out
Side Channel	858.7		SCH, in
Side Channel	866.0		SCH out
Side Channel	963.5	1.0	SCH in
Side Channel	985.3		SCH out
Side Channel	1234.2		SCH in
Side Channel	1240.8		SCH out
Trib	1326.4	3	Trib, right
Seep	1343.5		seep
Trib	1373.9	3	Trib, right
Slide	1576.8		slide, left
Other	1585.2		a lot of small woody debris
Side Channel	1594.5	2	SCH in
Side Channel	1598.7		SCH out
Trib	1873.9		Trib
Fall	2005.1		Large Fall
Fall	2140.0		FALL, 30m tall
Other	2390.0		debris dam
Other	2530.0		log jam at base of SLID
Other	2595.0		debris dam
Other	2745.0		debris dam
Other	2940.0		log jam
Other	2960.0		rust/iron in water, N36E
Other	2975.0		rust/iron
Other	2990.0		large amount of rust/iron
Side Channel	3035.0	1	SCH-Right

Photos taken of Wolf Creek during BVET habitat survey, summer 2002. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Wolf Creek, summer 2002. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Scotsman Creek**
District:	Highlands
USGS Quadrangle:	Cashiers
Survey Date:	06/21/00
Downstream Starting Point:	confluence with Chattooga River
Total Distance Surveyed (km):	2.3

	Pools	**Riffles**
Percent of Total Stream Area:	27	73
Total Area (m^2):	4789±1107	13000±7369
Correction Factor Applied:	1.05	1.03
Number of Paired Samples:	3	3
Total Count:	28	36
Number per km:	12	16
Mean Area (m^2):	171	361
Mean Maximum Depth (cm):	74	37
Mean Average Depth (cm):	49	19
Mean Residual Depth (cm):	35	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	25
Percent with >35% Fines:		

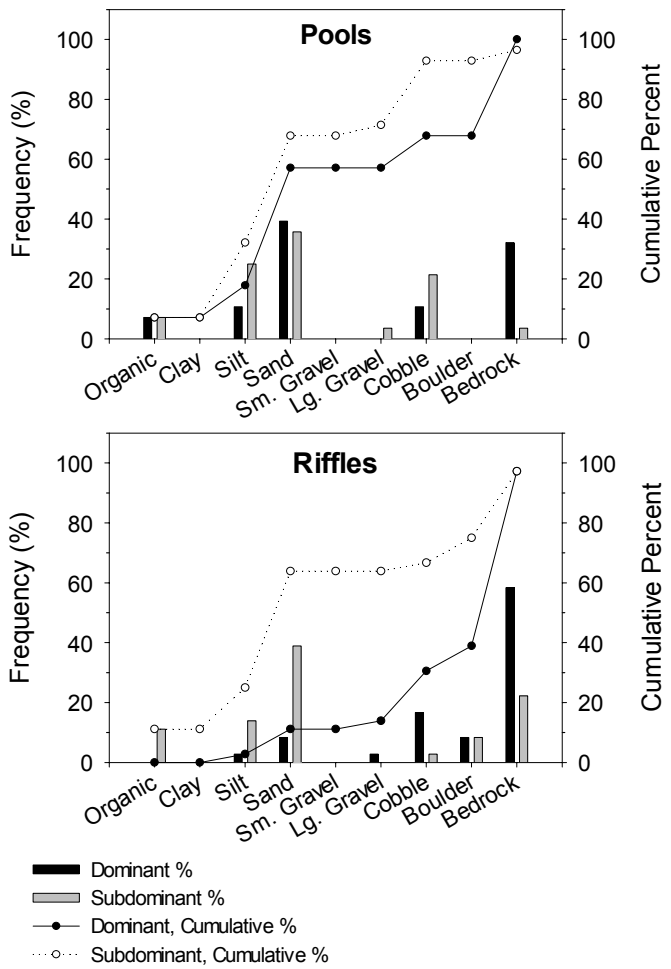
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	28
< 5 m long, > 55 cm diameter:	15
>5 m long, 10 cm – 55 cm diameter:	15
> 5 m long, > 55 cm diameter:	25
Total:	82

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

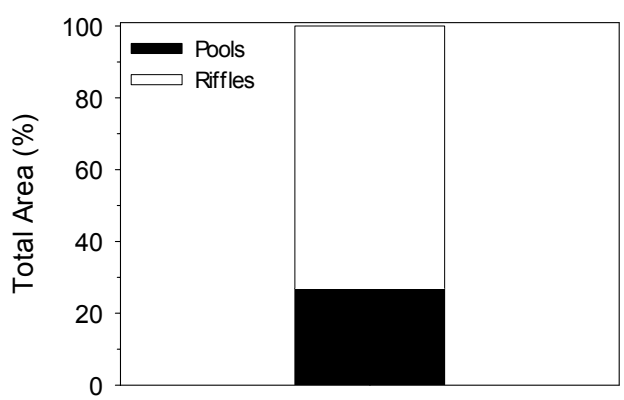
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

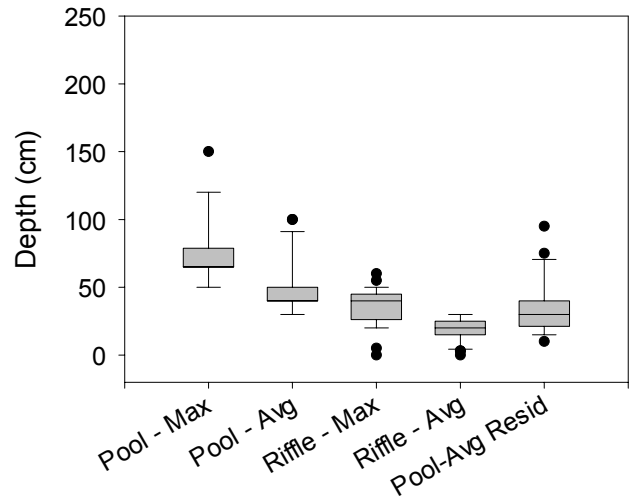
Other Stream Attributes	
Mean Bankfull Channel Width (m):	12
Mean Channel Gradient (%):	
Median Water Temperature (C˚):	



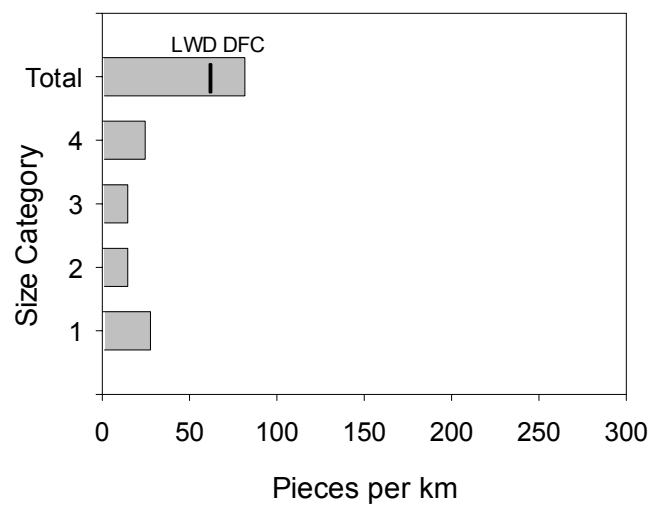
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Scotsman Creek, summer 2000.



Estimated area of Scotsman Creek in pools and riffles as calculated using BVET techniques, summer 2000.



Maximum and average depths and residual pool depths for pools and riffles in Scotsman Creek, summer 2000. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Scotsman Creek, summer 2000. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

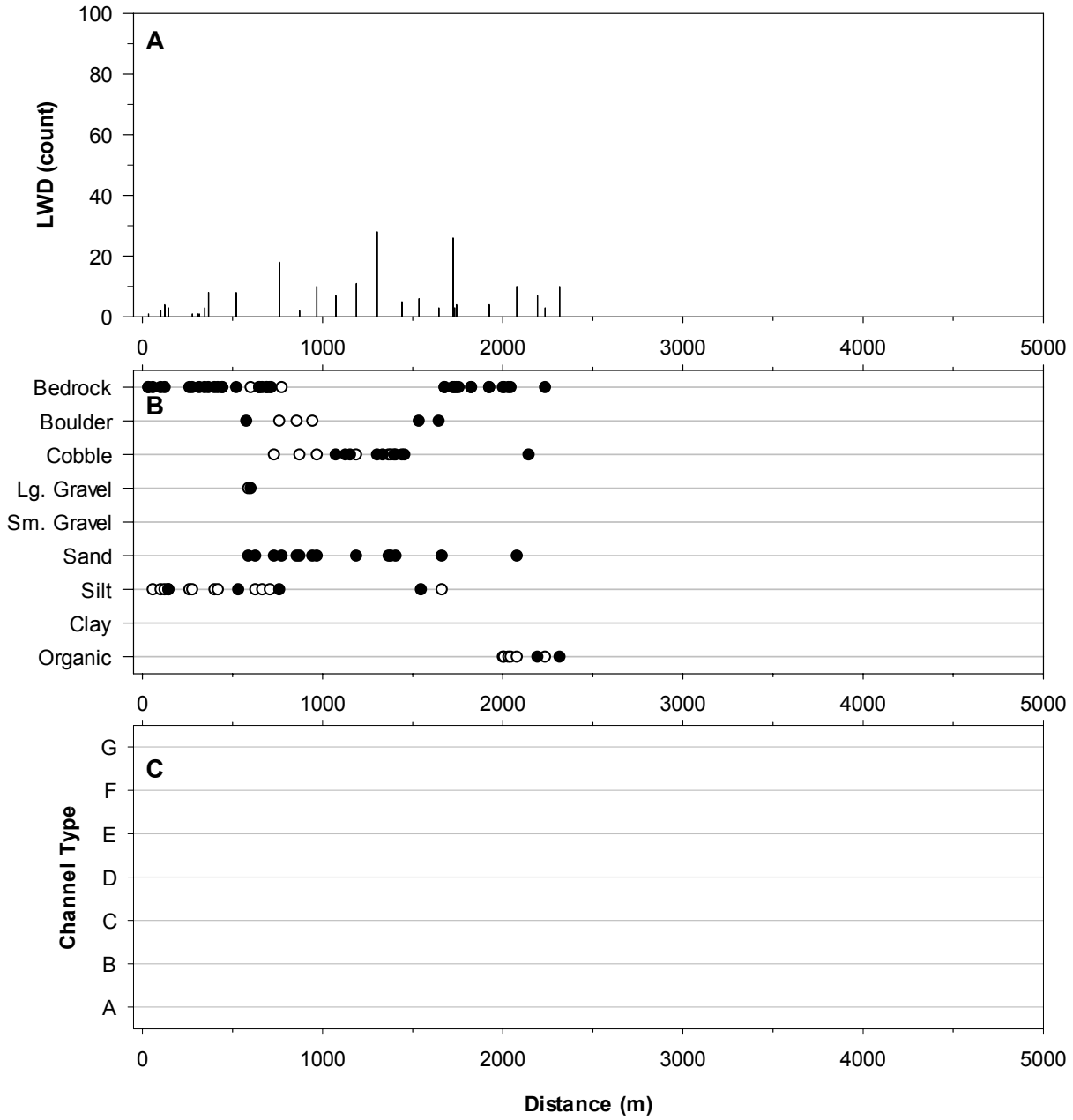
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Scotsman Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Trib	57.0		Trib r
Trib	621.0		Trib r
Other	760.0		Major log jam
Ford	955.0		Crosses road
Other	1396.0		K dam
Side Channel	1519.0		SCH in
Side Channel	1534.0		SCH out
Trib	1538.0		Trib
Side Channel	1611.0		SCH in
Side Channel	1644.0		SCH out
Other	1708.0		Log jam
Other	1723.0		Log jam
Slide	1924.0		Slide
Other	2241.0		Pipe comming from fish hatchery

Photos taken of Scotsman Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Scotsman Creek, summer 2000. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**West Fork Overflow Creek**
District:	Highlands
USGS Quadrangle:	Scaly Mountain
Survey Date:	06/18/00
Downstream Starting Point:	
Total Distance Surveyed (km):	1.1

	Pools	**Riffles**
Percent of Total Stream Area:	28	72
Total Area (m^2):	1769±114	4535
Correction Factor Applied:	1.03	1.00
Number of Paired Samples:	3	1
Total Count:	22	22
Number per km:	19	19
Mean Area (m^2):	80	206
Mean Maximum Depth (cm):	90	50
Mean Average Depth (cm):	64	28
Mean Residual Depth (cm):	46	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	
Percent with >35% Fines:		

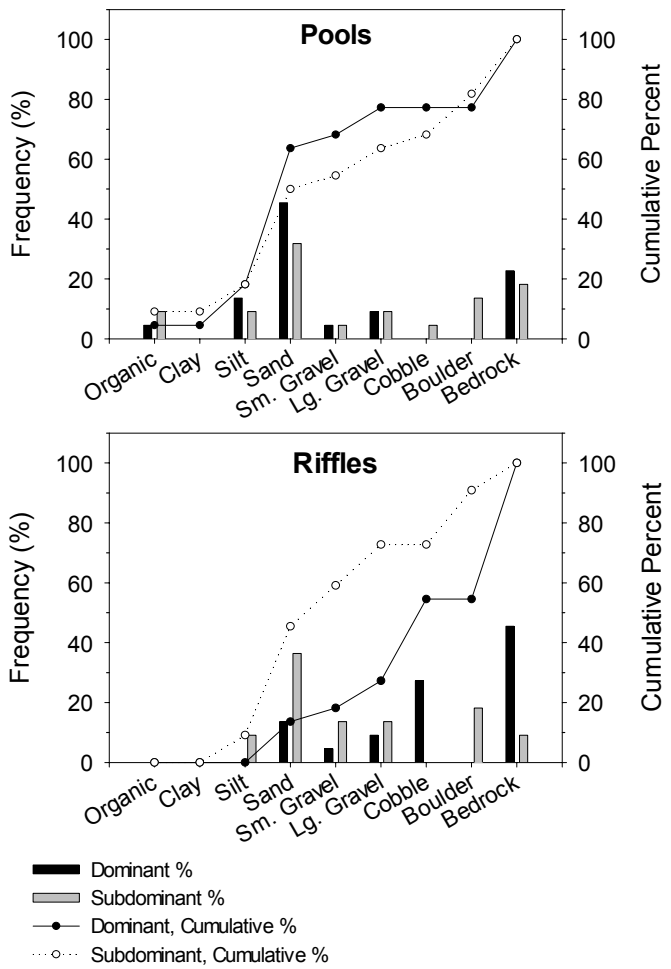
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	38
< 5 m long, > 55 cm diameter:	12
>5 m long, 10 cm – 55 cm diameter:	12
> 5 m long, > 55 cm diameter:	21
Total:	83

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

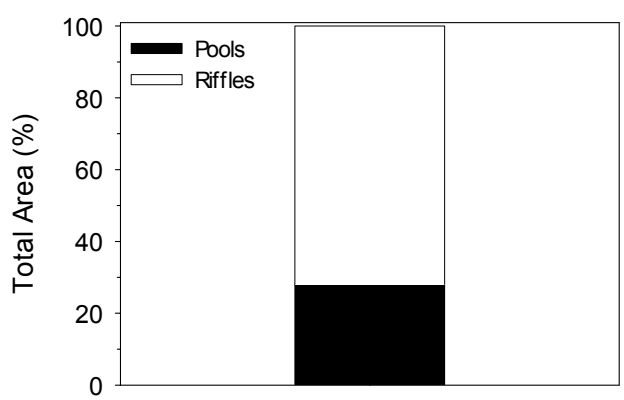
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

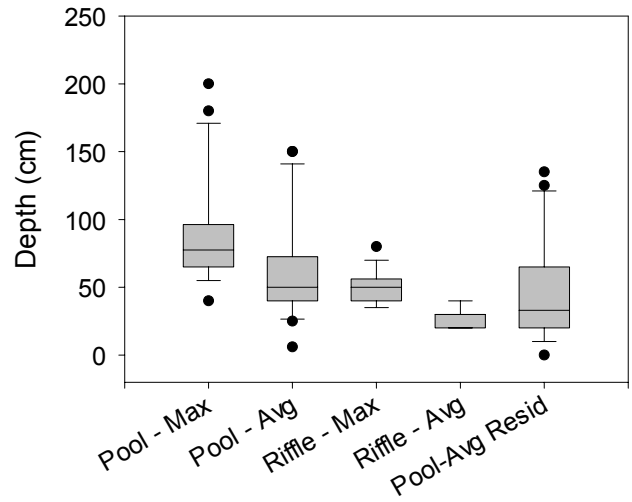
Other Stream Attributes	
Mean Bankfull Channel Width (m):	10
Mean Channel Gradient (%):	
Median Water Temperature (C˚):	



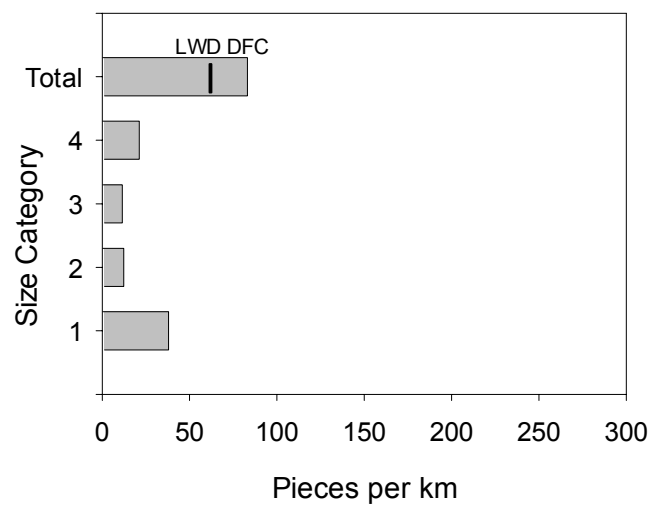
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in West Fork Overflow Creek, summer 2000.



Estimated area of West Fork Overflow Creek in pools and riffles as calculated using BVET techniques, summer 2000.



Maximum and average depths and residual pool depths for pools and riffles in West Fork Overflow Creek, summer 2000. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in West Fork Overflow Creek, summer 2000. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

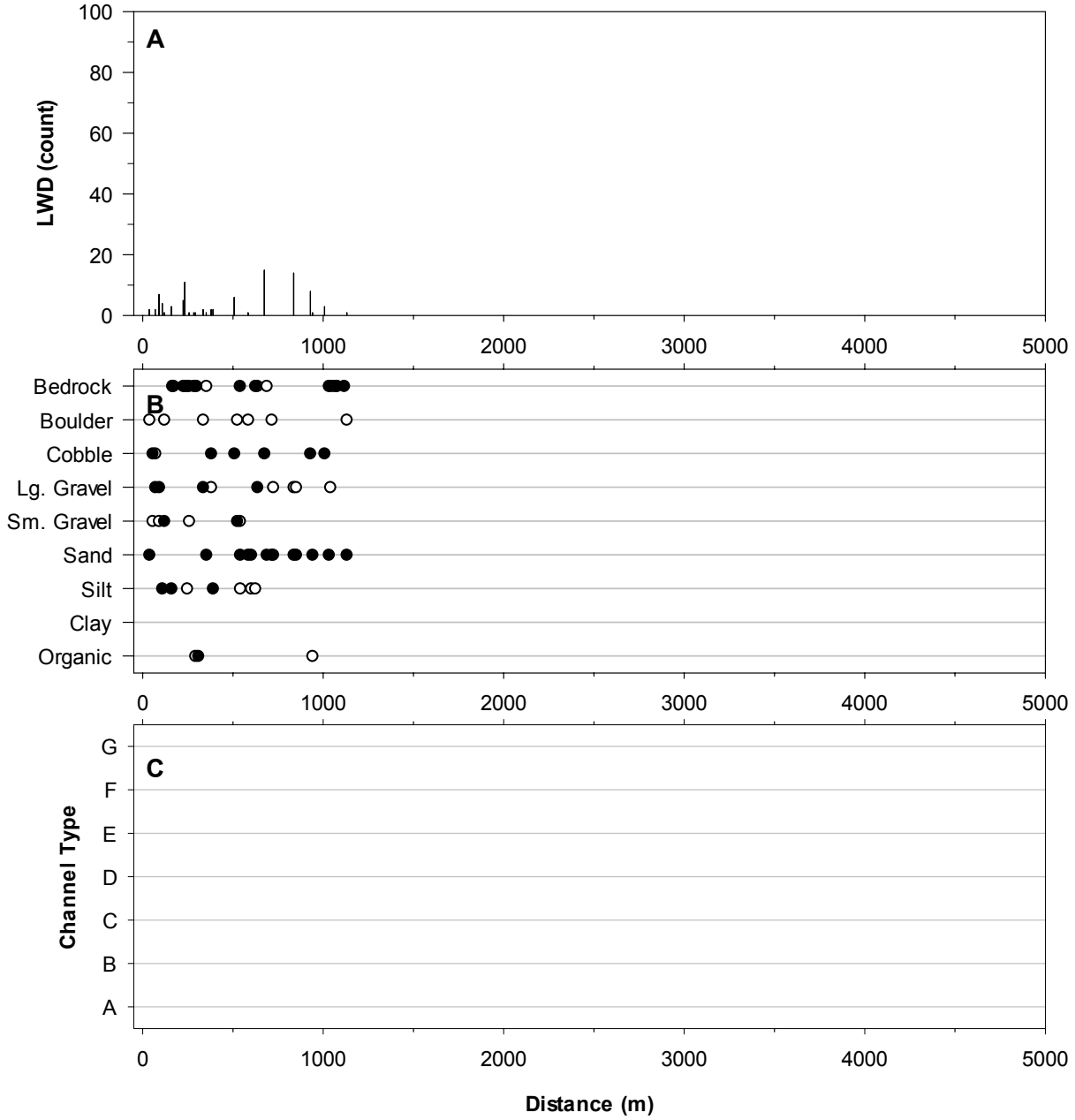
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on West Fork Overflow Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Other	87.0		Log jam
Other	414.0		Log jam
Other	673.0		Log jam
Trib	805.0		Trib r
Trib	1130.0		Trib r

Photos taken of West Fork Overflow Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in West Fork Overflow Creek, summer 2000. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	Davidson River
District:	Pisgah
USGS Quadrangle:	Pisgah Forest
Survey Date:	05/19/03
Downstream Starting Point:	FS boundary
Total Distance Surveyed (km):	17.7

	Pools	Riffles
Percent of Total Stream Area:	34	66
Total Area (m^2):	88560±9080	169126±19249
Correction Factor Applied:	1.19	1.10
Number of Paired Samples:	23	17
Total Count:	119	154
Number per km:	7	9
Mean Area (m^2):	744	1098
Mean Maximum Depth (cm):	113	63
Mean Average Depth (cm):	67	36
Mean Residual Depth (cm):	29	--
Percent Surveyed as Glides:	24	--
Percent Surveyed as Runs:	--	17
Percent Surveyed as Cascades:	--	3
Percent with >35% Fines:		

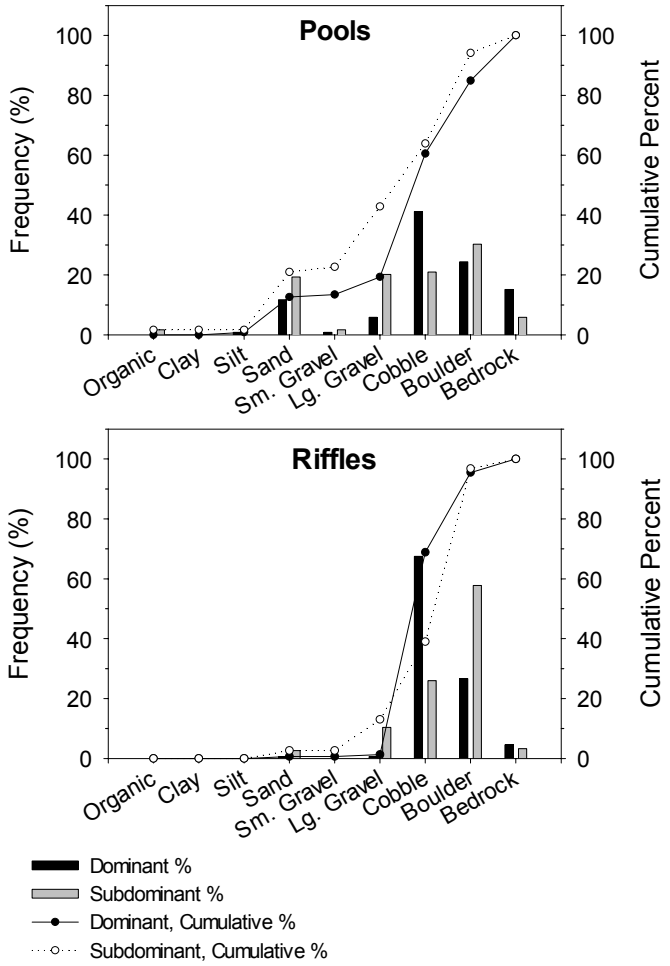
Large Woody Debris Size	Pieces per km
< 5 m long, 10 cm – 55 cm diameter:	51
< 5 m long, > 55 cm diameter:	11
>5 m long, 10 cm – 55 cm diameter:	70
> 5 m long, > 55 cm diameter:	14
Total:	146

Riparian Width	Total Width* (m)	Left & Right Width** (m)
Mean:	31	6
Maximum:	77	38
75th Percentile	35	6
25th Percentile	21	1
Minimum	19	0

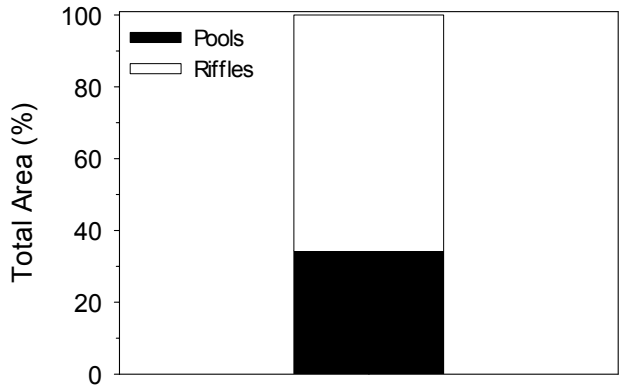
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	Frequency (%)
A:	0
B:	68
C:	4
D:	0
E:	4
F:	24
G:	0

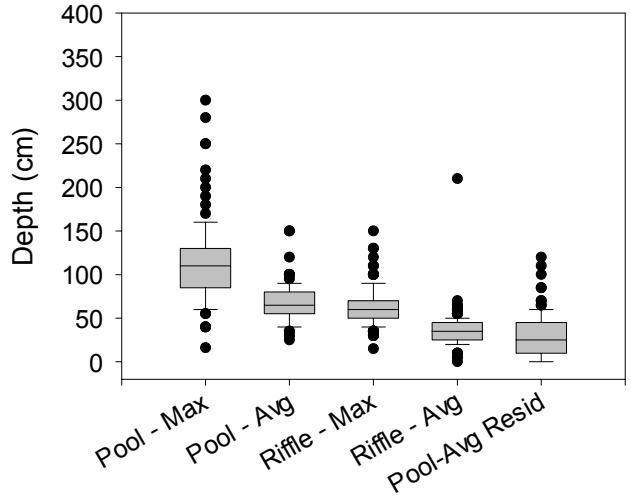
Other Stream Attributes	
Mean Bankfull Channel Width (m):	19
Mean Channel Gradient (%):	6
Median Water Temperature (C°):	



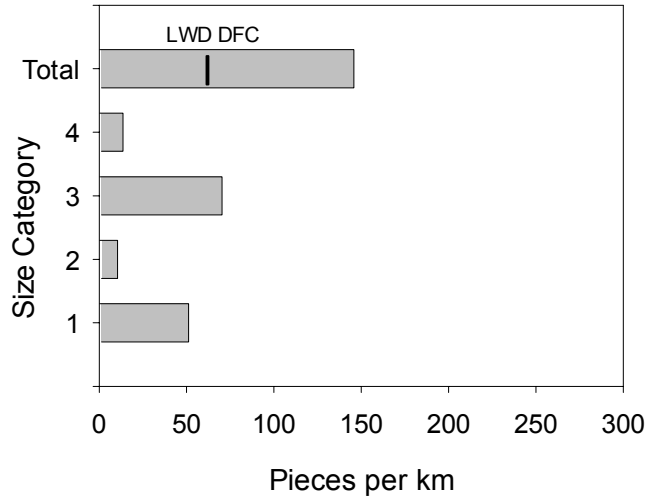
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Davidson River, summer 2003.



Estimated area of Davidson River in pools and riffles as calculated using BVET techniques, summer 2003.



Maximum and average depths and residual pool depths for pools and riffles in Davidson River, summer 2003. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Davidson River, summer 2003. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Davidson River during BVET habitat survey, summer 2003. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Other	169.6		Erosion, (Sycamore Flats) on right
Seep	445.7		Seep on left under trail bridge
Other	886.5		(Powerline)
Other	678.8		Trail erosion on left
Trib	680.0		Trib on right (Starens Br.)
Bridge	490.0		Bridge
Other	1311.1		Bank erosion on left
Other	2955.7		English Chapel
Bridge	3023.2		Bridge
Other	3127.0		Erosion on left
Other	3268.9		Campground swimming hole
Other	3461.8		Campsite
Braid	3630.2		BRD on left
Other	3983.4		Erosion on right
Seep	4385.7		Seep on lef
Braid	4783.6		BRD on left
Braid	4908.7		BRD on right
Other	5151.1		Erosion on right
Other	5269.2		Debris Jam
Braid	5411.9		Small BRD on left
Braid	5507.6		BRD on left
Other	6027.5		Old cement wall
Seep	6085.1		Seep on left
Trib	6301.7		Trib. on left
Seep	6478.1		Seep on left
Trib	6849.7		Trib. on left
Braid	7211.7		BRD on left
Braid	7256.7		BRD on left
Braid	7318.7		BRD on left
Braid	7407.7		Sm. BRD on left
Braid	7486.2		Sm. BRD on left
Braid	7879.7		Lg. BRD on right
Other	7925.0		Erosion on right
Braid	8034.7		BRD on right
Trib	8709.7		Trib. on right
Other	8835.7		Erosion on left
Other	8892.7		Campsite on right
Other	8938.7		Erosion on right
Other	9093.7		Erosion on left
Side Channel	9312.7		Island
Braid	9357.7		BRD on left
Braid	9400.9		BRD on left
Other	9446.1		Campsite on right
Seep	9526.7		Seep on left
Other	9752.3		Erosion on right
Trib	9960.7		Trib.. On right

Stream features found on Davidson River during BVET habitat survey, summer 2003. Distance is meters from start of survey. (cont)

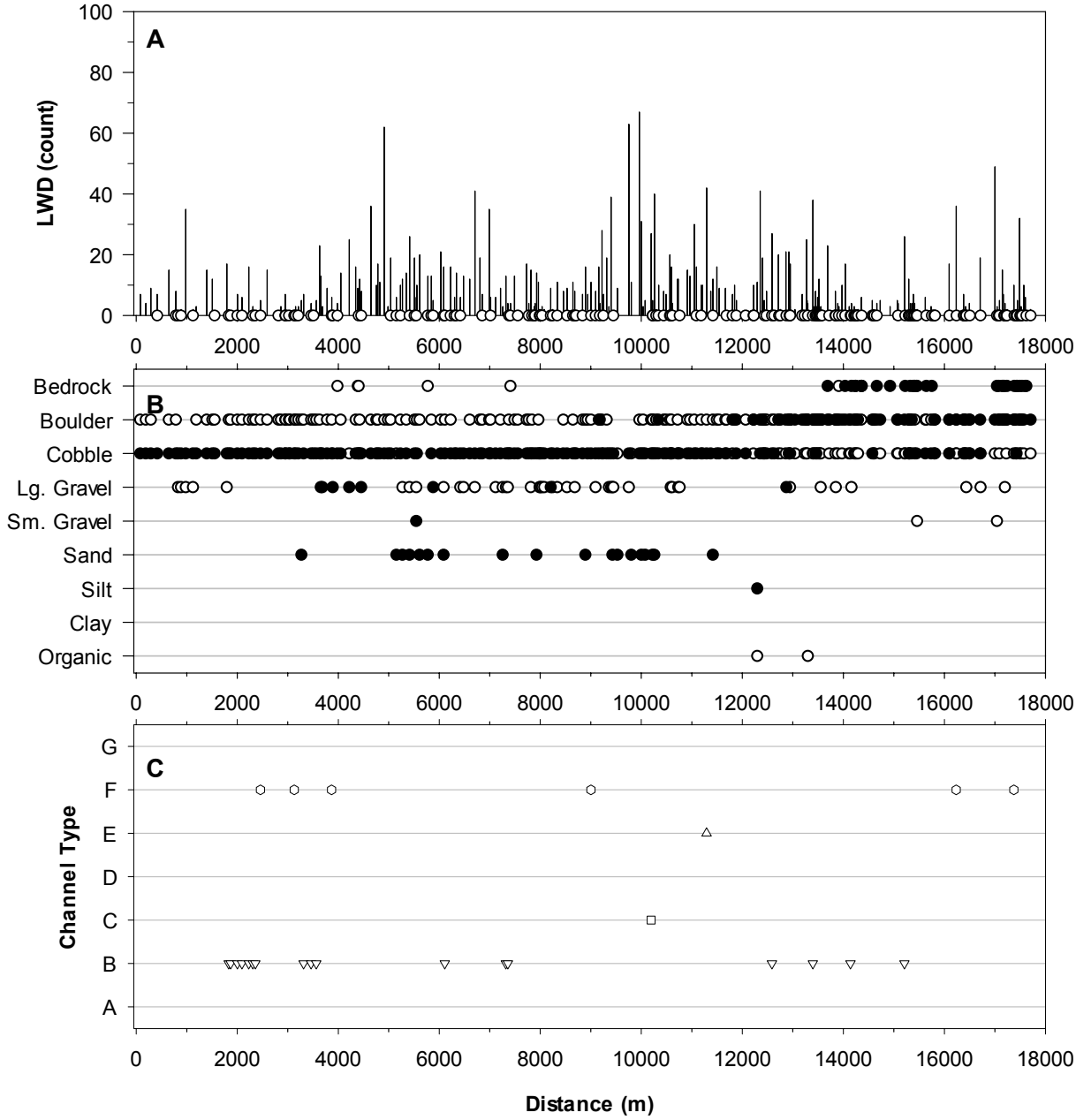
Stream Feature	Distance (m)	Width (m)	Comments
Seep	10034.0		Seep on left
Other	10257.7		Campsite on left
Other	10440.7		Campsite, erosion, rock dam, on right
Trib	10563.8		Trib.. On right(Fate O'steen)
Braid	10717.5		BRD on left
Seep	10758.6		Seep on left
Braid	10910.7		BRD on right
Braid	10962.7		BRD on right
Trib	11048.7		Trib. On left
Trib	11292.7	4	Trib. On left (4m cedar rock)
Side Channel	11372.9		SCH out on right
Other	11494.5		Debris jam
Bridge	11539.4		Bridge
Seep	12219.5		Seep on right
Other	12229.0		Hatchery Dam
Side Channel	12585.2		Island
Braid	12943.4		BRD on right
Braid	12946.5		BRD on right
Seep	13182.5		Seep on right
Side Channel	13234.5		Island
Seep	13270.2		Seep on left
Side Channel	13281.2		Island
Seep	13296.9		Seep on left
Seep	13395.6		Seep on left
Seep	13516.5		Seep on right
Seep	13687.5		Seep on left @ 2127.4
Seep	13721.5		Seep on left
Seep	13910.5		Seep on left
Seep	13972.5		Seep on left
Seep	14036.5		Seep on right
Seep	14141.0		Seep on left
Seep	14160.6		Seep on left
Trib	14361.9		Trib. On right
Other	14573.2		Campsite on right
Trib	14614.1		Trib. On right
Other	14661.4		Erosion on left
Trib	14727.3		Trib. On left
Seep	14925.2		Seep on left
Seep	15064.7		Seep on left
Trib	15295.1	2	Trib. On right (2m)
Trib	15622.1		Trib. On left
Braid	15644.0		BRD on right
Bridge	15798.8		Bridge
Other	16094.9		Erosion on right
Other	16098.9		Erosion on left
Other	16379.1		Erosion on right

Stream features found on Davidson River during BVET habitat survey, summer 2003. Distance is meters from start of survey (cont.).

Stream Feature	Distance (m)	Width (m)	Comments
Other	16493.2		Landslide on left
Other	16708.1		Old concrete dam
Seep	17041.0		Seep on left
Trib	17146.9	0.25	Trib. On left
Other	17198.8		Dam 5 (2.5m high)
Seep	17376.2		Seep on left
Other	17417.5		Dam
Seep	17600.8		Seep on right
Seep	17706.6		Seep on right

Photos taken of Davidson River during BVET habitat survey, summer 2003. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Davidson River, summer 2003. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Cove Creek**
District:	Pisgah
USGS Quadrangle:	Shining Rock
Survey Date:	06/27/00
Downstream Starting Point:	confluence with Caney Bottom Creek
Total Distance Surveyed (km):	0.6

	Pools	**Riffles**
Percent of Total Stream Area:	49	51
Total Area (m^2):	1274±93	1344±157
Correction Factor Applied:	1.04	0.94
Number of Paired Samples:	2	3
Total Count:	20	18
Number per km:	36	32
Mean Area (m^2):	64	75
Mean Maximum Depth (cm):	71	33
Mean Average Depth (cm):	46	18
Mean Residual Depth (cm):	32	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	28
Percent with >35% Fines:		

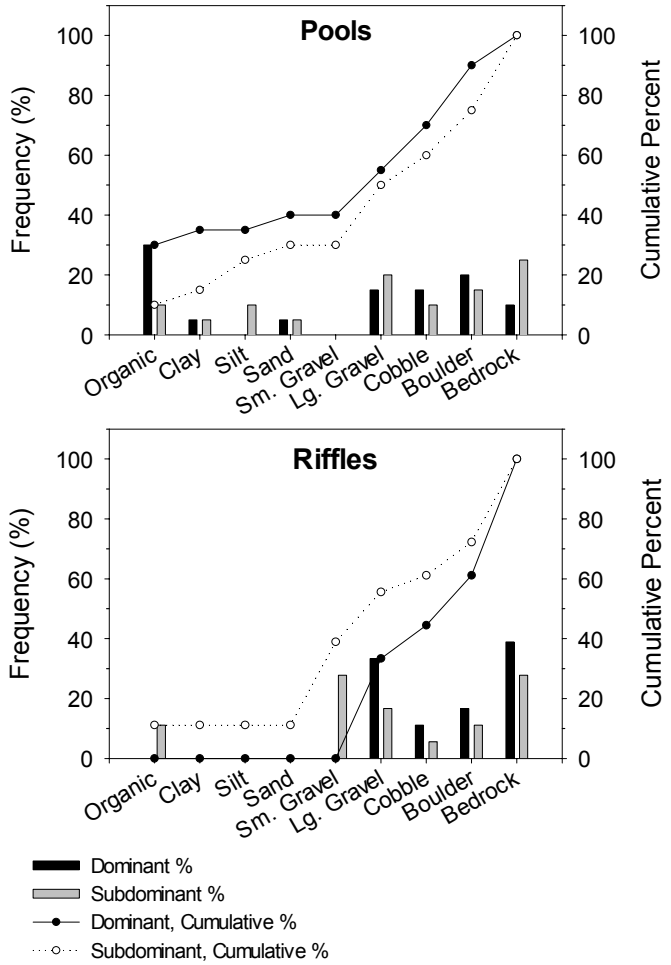
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	186
< 5 m long, > 55 cm diameter:	66
>5 m long, 10 cm – 55 cm diameter:	28
> 5 m long, > 55 cm diameter:	12
Total:	293

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

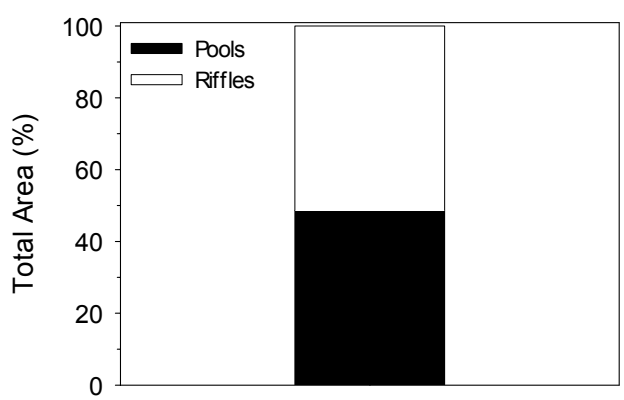
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

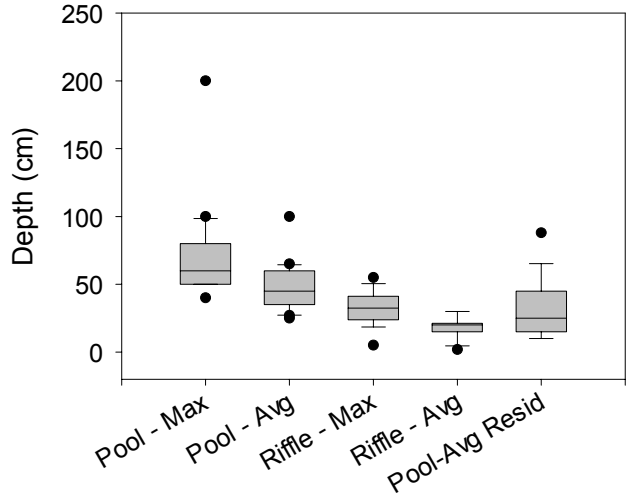
Other Stream Attributes
Mean Bankfull Channel Width (m):
Mean Channel Gradient (%):
Median Water Temperature (C˚):



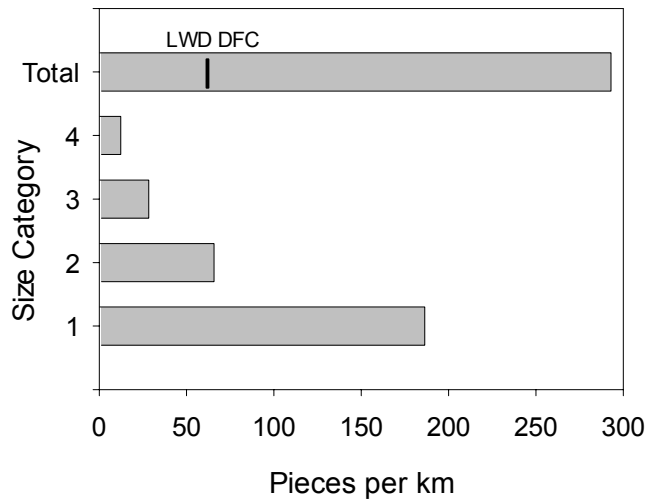
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Cove Creek, summer 2000.



Estimated area of Cove Creek in pools and riffles as calculated using BVET techniques, summer 2000.



Maximum and average depths and residual pool depths for pools and riffles in Cove Creek, summer 2000. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Cove Creek, summer 2000. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

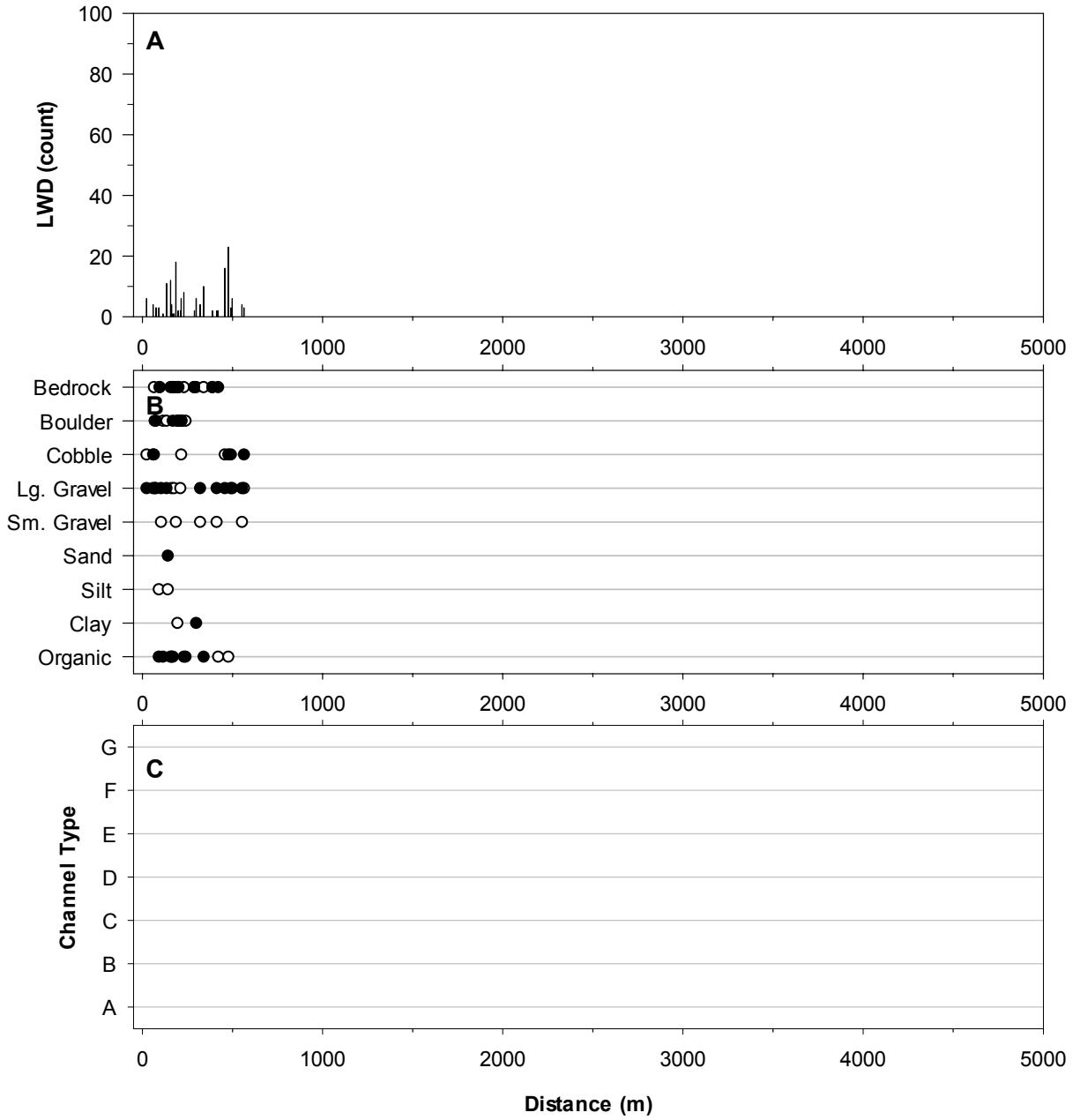
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Cove Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments

Photos taken of Cove Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Cove Creek, summer 2000. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Little East Fork Pigeon River**
District:	Pisgah
USGS Quadrangle:	Sam Knob/Waynesville
Survey Date:	2001
Downstream Starting Point:	FS boundary
Total Distance Surveyed (km):	1.0

	Pools	**Riffles**
Percent of Total Stream Area:	28	72
Total Area (m^2):	1784±50	4683±280
Correction Factor Applied:	1.02	1.06
Number of Paired Samples:	7	12
Total Count:	39	63
Number per km:	39	63
Mean Area (m^2):	46	74
Mean Maximum Depth (cm):	70	36
Mean Average Depth (cm):	51	25
Mean Residual Depth (cm):	32	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	43
Percent with >35% Fines:		

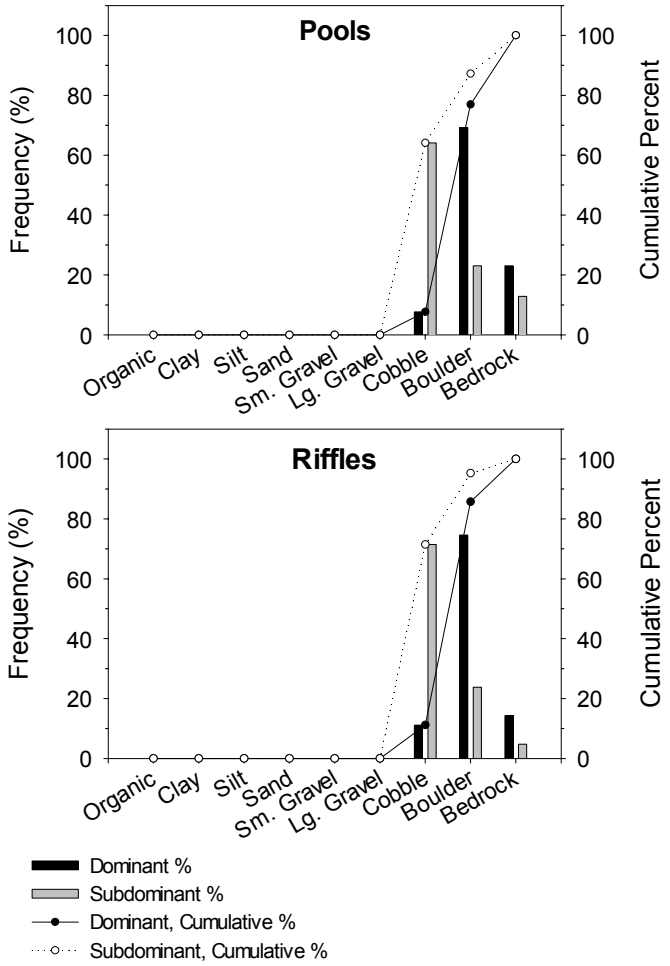
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	588
< 5 m long, > 55 cm diameter:	171
>5 m long, 10 cm – 55 cm diameter:	12
> 5 m long, > 55 cm diameter:	0
Total:	771

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

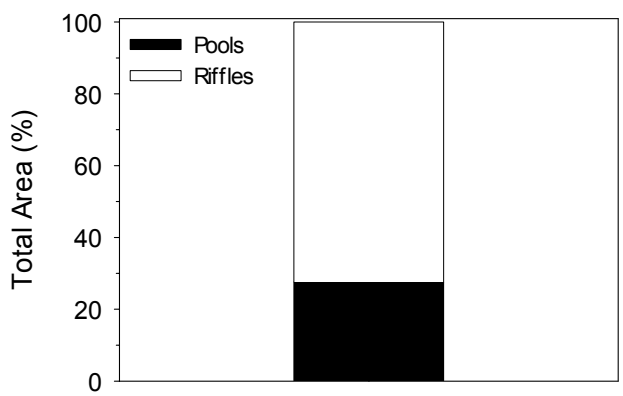
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

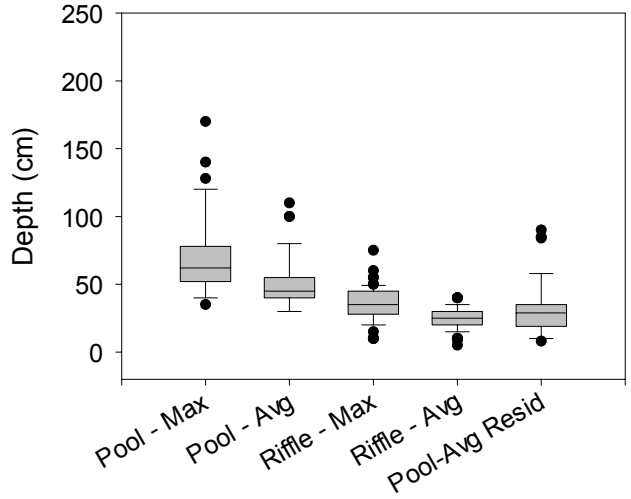
Other Stream Attributes
Mean Bankfull Channel Width (m):
Mean Channel Gradient (%):
Median Water Temperature (C˚):



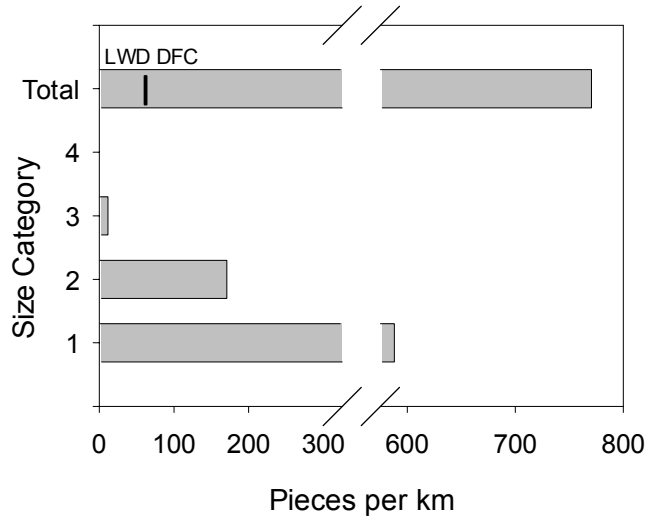
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Little East Fork Pigeon River, summer 2001.



Estimated area of Little East Fork Pigeon River in pools and riffles as calculated using BVET techniques, summer 2001.



Maximum and average depths and residual pool depths for pools and riffles in Little East Fork Pigeon River, summer 2001. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Little East Fork Pigeon River, summer 2001. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

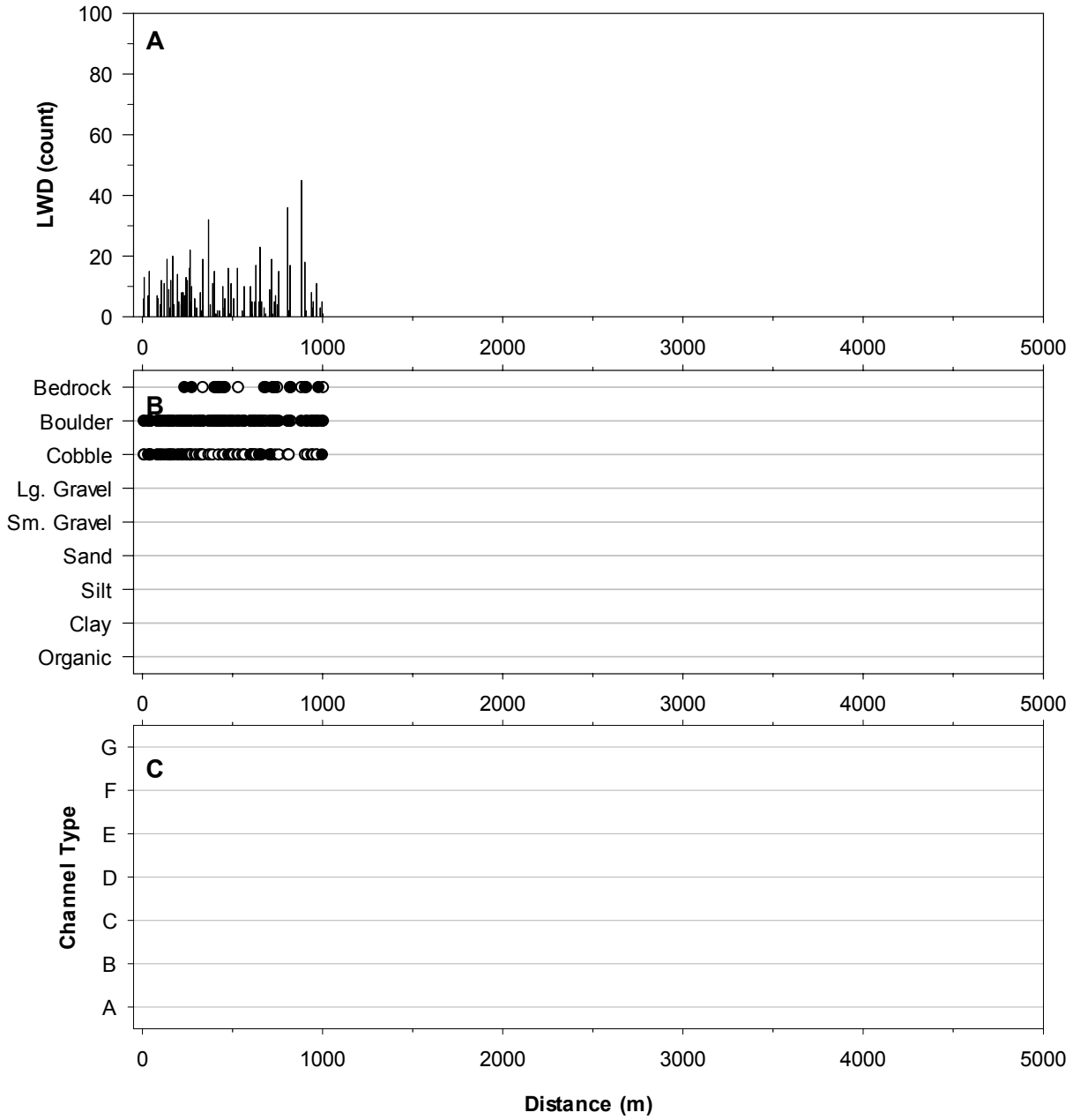
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Little East Fork Pigeon River during BVET habitat survey, summer 2001. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Other	120.8		man made rock dam
Trib	225.8		trib on right
Other	389.5		man made pool
Trib	986.2		trib on left

Photos taken of Little East Fork Pigeon River during BVET habitat survey, summer 2001. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Little East Fork Pigeon River, summer 2001. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Gipp Creek**
District:	Tusquitee
USGS Quadrangle:	Andrews
Survey Date:	07/03/00
Downstream Starting Point:	FS boundary
Total Distance Surveyed (km):	1.4

	Pools	**Riffles**
Percent of Total Stream Area:	35	65
Total Area (m^2):	2212±408	4176±1349
Correction Factor Applied:	1.02	1.11
Number of Paired Samples:	2	2
Total Count:	19	21
Number per km:	14	15
Mean Area (m^2):	116	199
Mean Maximum Depth (cm):	64	39
Mean Average Depth (cm):	46	22
Mean Residual Depth (cm):	33	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	
Percent with >35% Fines:		

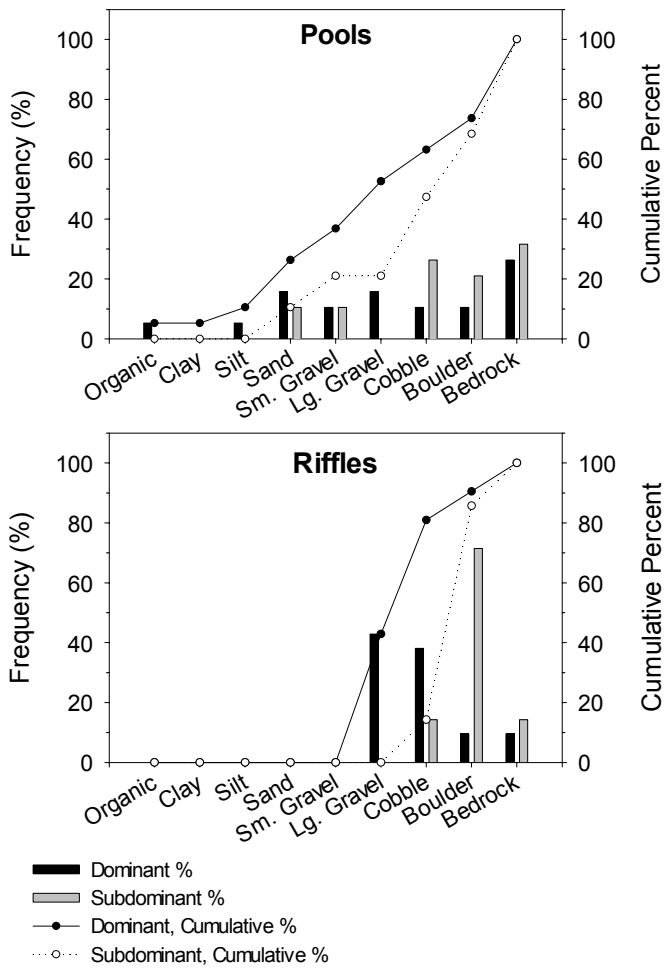
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	50
< 5 m long, > 55 cm diameter:	37
>5 m long, 10 cm – 55 cm diameter:	17
> 5 m long, > 55 cm diameter:	13
Total:	116

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

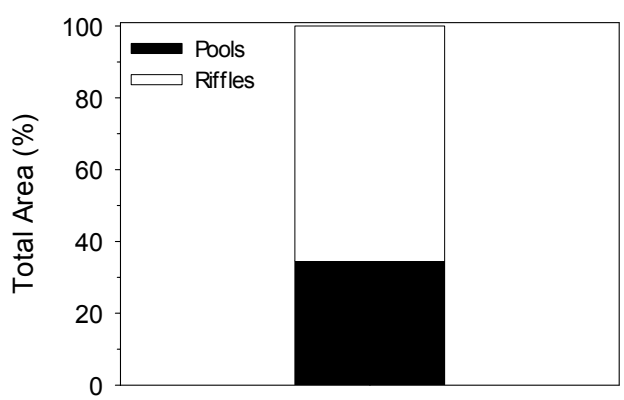
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

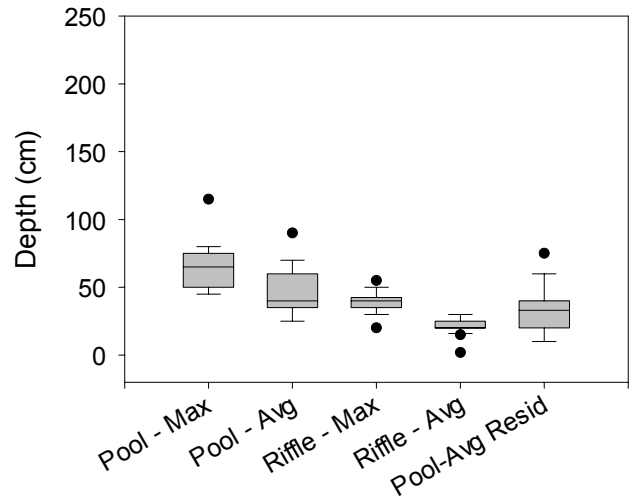
Other Stream Attributes	
Mean Bankfull Channel Width (m):	6
Mean Channel Gradient (%):	5
Median Water Temperature (C°):	



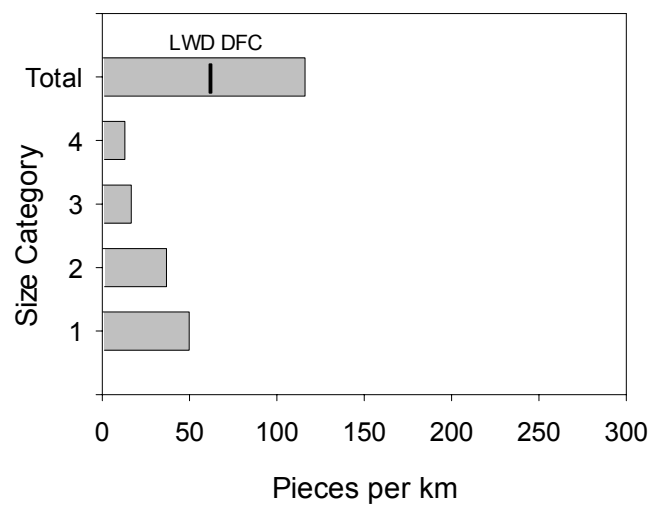
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Gipp Creek, summer 2000.



Estimated area of Gipp Creek in pools and riffles as calculated using BVET techniques, summer 2000.



Maximum and average depths and residual pool depths for pools and riffles in Gipp Creek, summer 2000. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Gipp Creek, summer 2000. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

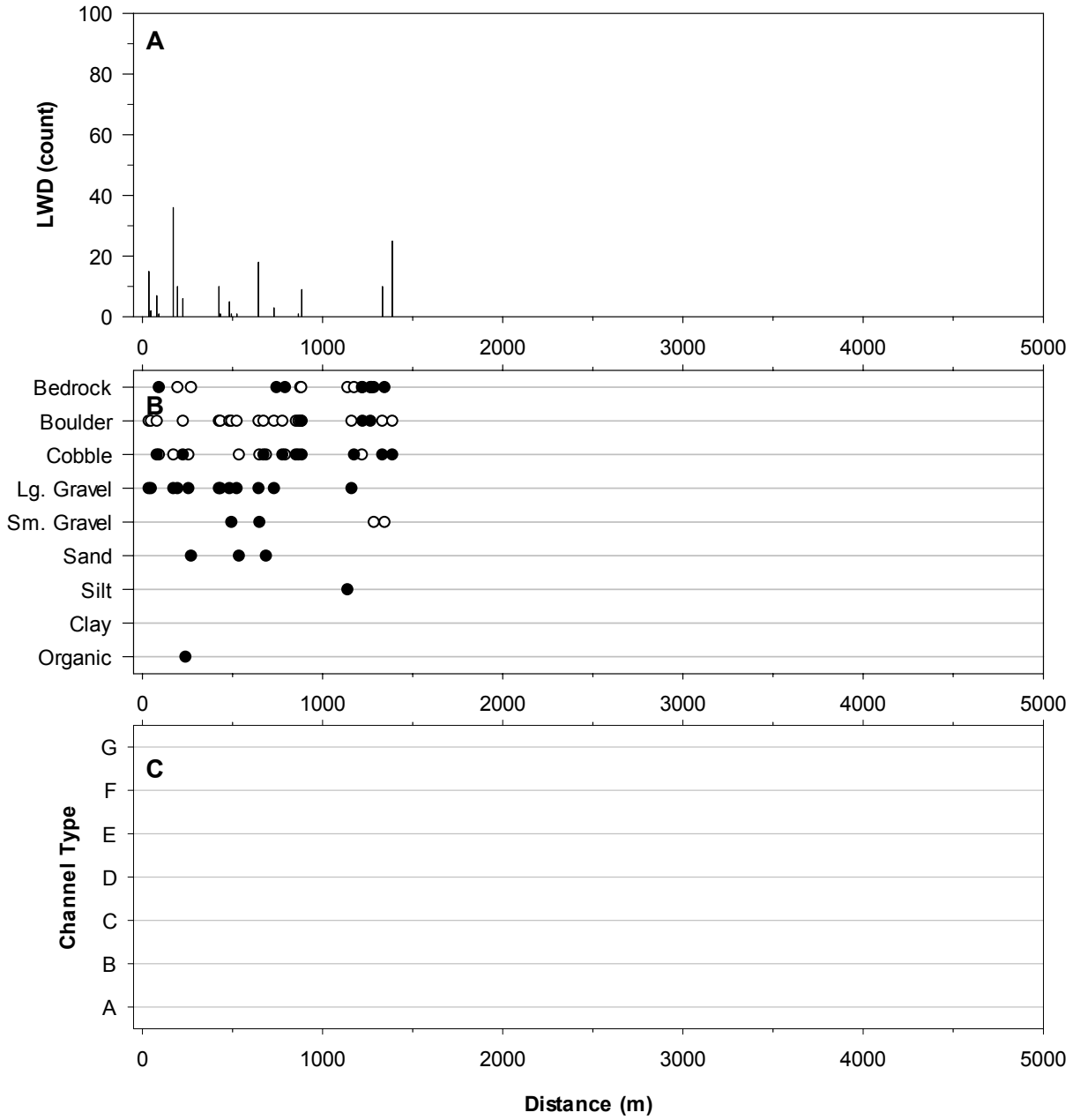
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Gipp Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Other	20.0		Log jam at 20
Other	94.0		Log jam at 94
Other	148.0		Log jam at 148
Other	204.0		Log jam at 204
Seep	377.0		Seep l at 377
Other	643.0		Log jam
Side channel	820.0		Island l start
Side channel	845.0		Island l end
Falls	866.0		Falls r at 866
Seep	952.0		Seep l at 952
Seep	1284.0		Seep r at 1284
Other	1372.0		Log jam at 1372
Trib	1386.0		Trib l at 1386

Photos taken of Gipp Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Gipp Creek, summer 2000. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Long Branch**
District:	Tusquitee
USGS Quadrangle:	Andrews
Survey Date:	07/06/00
Downstream Starting Point:	confluence
Total Distance Surveyed (km):	2.4

	Pools	**Riffles**
Percent of Total Stream Area:	12	88
Total Area (m^2):	1322±127	10070±1403
Correction Factor Applied:	1.08	1.07
Number of Paired Samples:	4	4
Total Count:	45	88
Number per km:	19	46
Mean Area (m^2):	29	219
Mean Maximum Depth (cm):	55	37
Mean Average Depth (cm):	40	24
Mean Residual Depth (cm):	27	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	2
Percent with >35% Fines:		

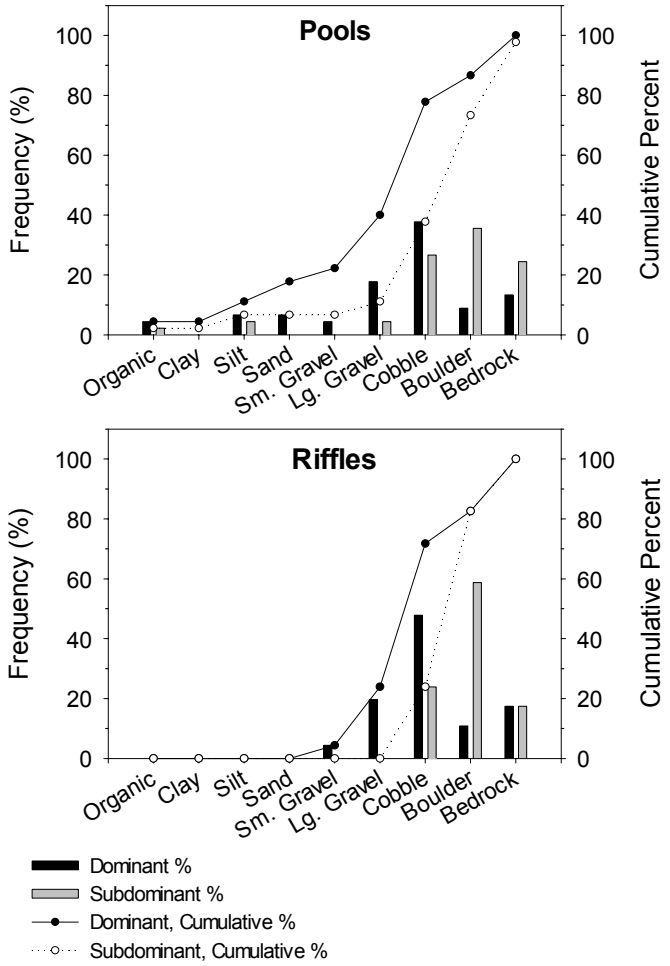
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	40
< 5 m long, > 55 cm diameter:	19
>5 m long, 10 cm – 55 cm diameter:	16
> 5 m long, > 55 cm diameter:	8
Total:	83

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

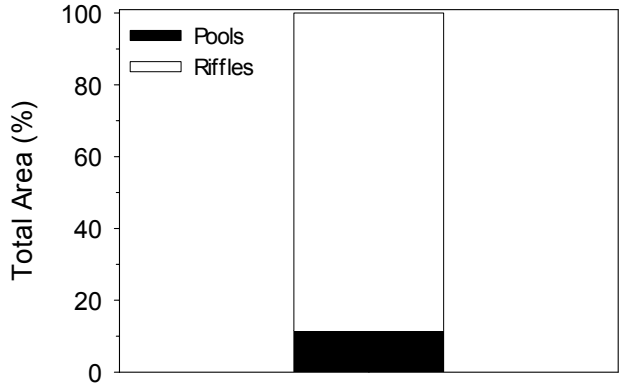
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

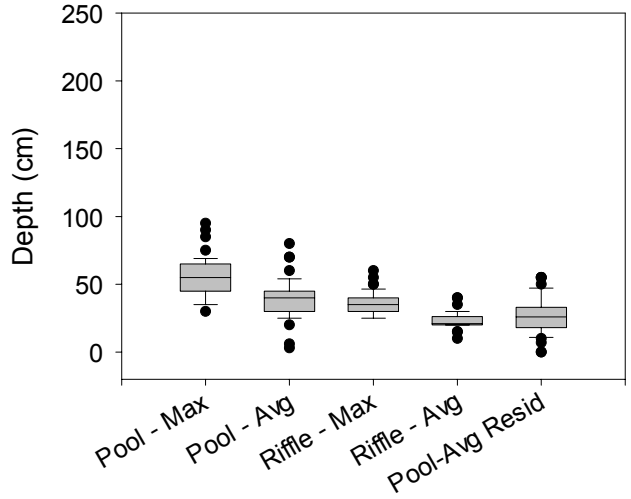
Other Stream Attributes	
Mean Bankfull Channel Width (m):	6
Mean Channel Gradient (%):	
Median Water Temperature (C˚):	



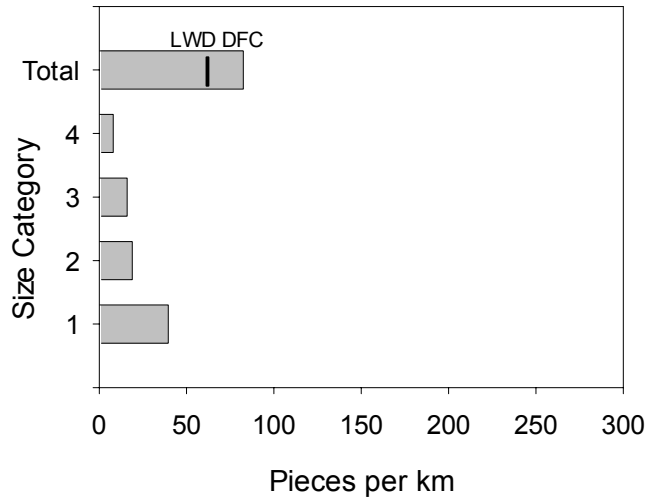
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Long Branch, summer 2000.



Estimated area of Long Branch in pools and riffles as calculated using BVET techniques, summer 2000.



Maximum and average depths and residual pool depths for pools and riffles in Long Branch, summer 2000. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Long Branch, summer 2000. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

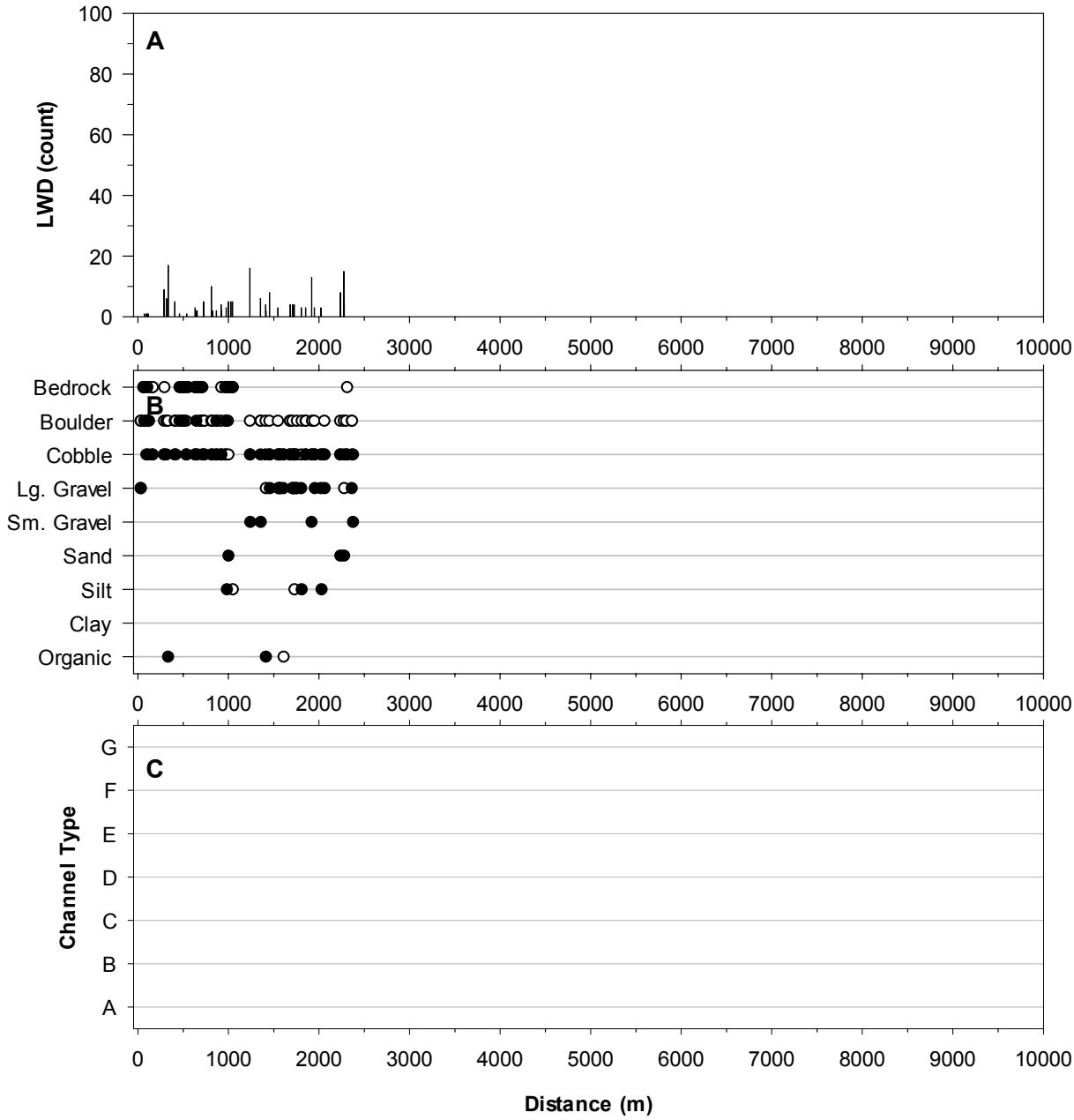
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Long Branch during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Other	322.0		Blow down
Seep	335.0		Seep l
Trib	613.0		Trib l
Seep	689.0		Seep r
Other	773.0		Log jam
Trib	899.0		Trib r
Seep	1212.0		Seep r
Trib	1403.0		Trib l
Other	1413.0		Debri jam
Other	1678.0		Wedge dam
Other	1811.0		Log jam
Seep	1869.0		Seep l
Other	1895.0		Log jam
Other	2027.0		Wedge dam
Other	2123.0		V dam
Trib	2133.0		Trib l
Trib	2141.0		Trib L
Seep	2227.0		Seep L
Other	2234.0		V dam
Trib	2375.0		Confluence of short branch

Photos taken of Long Branch during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Long Branch, summer 2000. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Muskrat Branch**
District:	Tusquitee
USGS Quadrangle:	Rainbow Springs
Survey Date:	07/07/00
Downstream Starting Point:	Culvert at Highway 64
Total Distance Surveyed (km):	1.3

	Pools	**Riffles**
Percent of Total Stream Area:	11	89
Total Area (m^2):	677±61	5663±1244
Correction Factor Applied:	1.07	1.16
Number of Paired Samples:	3	2
Total Count:	34	35
Number per km:	27	27
Mean Area (m^2):	20	162
Mean Maximum Depth (cm):	53	31
Mean Average Depth (cm):	54	20
Mean Residual Depth (cm):	44	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	
Percent with >35% Fines:		

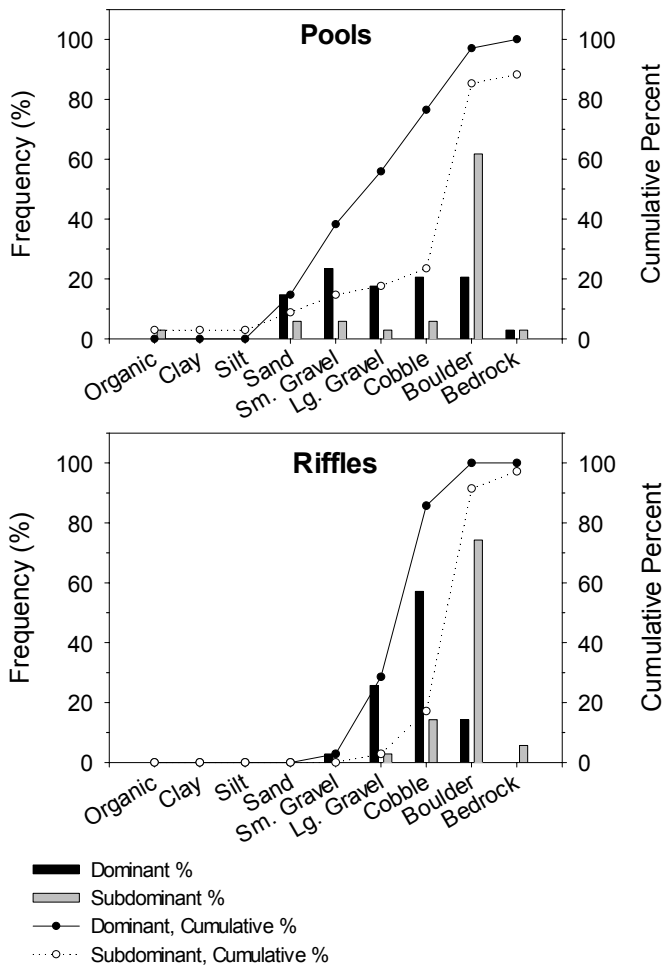
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	56
< 5 m long, > 55 cm diameter:	5
>5 m long, 10 cm – 55 cm diameter:	5
> 5 m long, > 55 cm diameter:	7
Total:	73

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

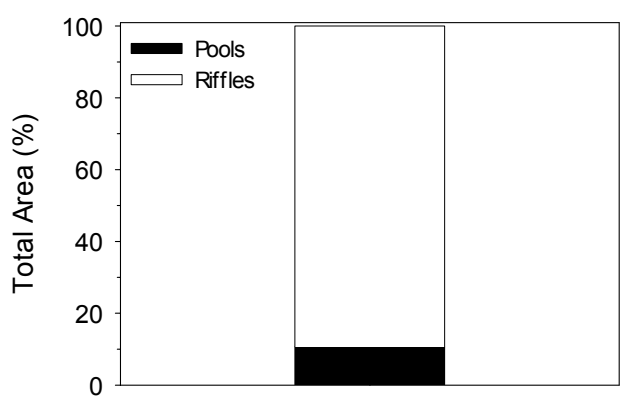
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

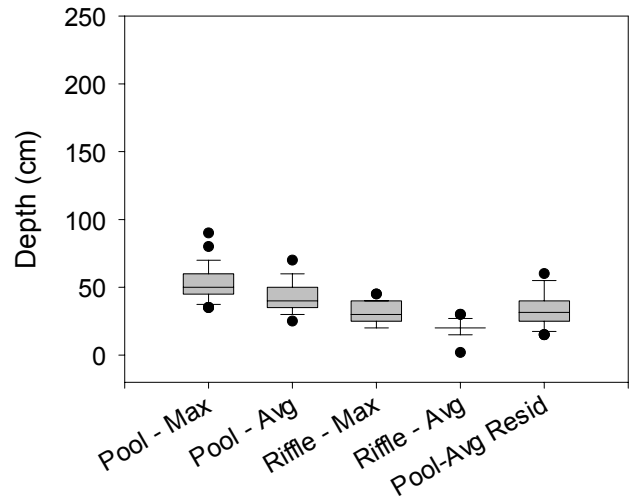
Other Stream Attributes	
Mean Bankfull Channel Width (m):	6
Mean Channel Gradient (%):	
Median Water Temperature (C˚):	



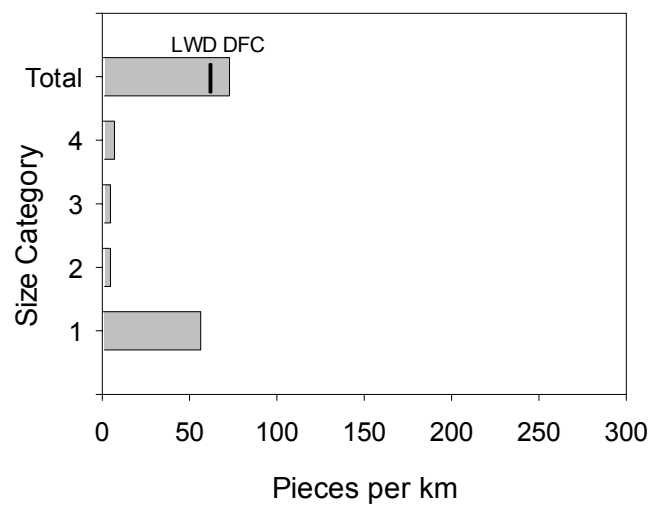
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Muskrat Branch, summer 2000.



Estimated area of Muskrat Branch in pools and riffles as calculated using BVET techniques, summer 2000.



Maximum and average depths and residual pool depths for pools and riffles in Muskrat Branch, summer 2000. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Muskrat Branch, summer 2000. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

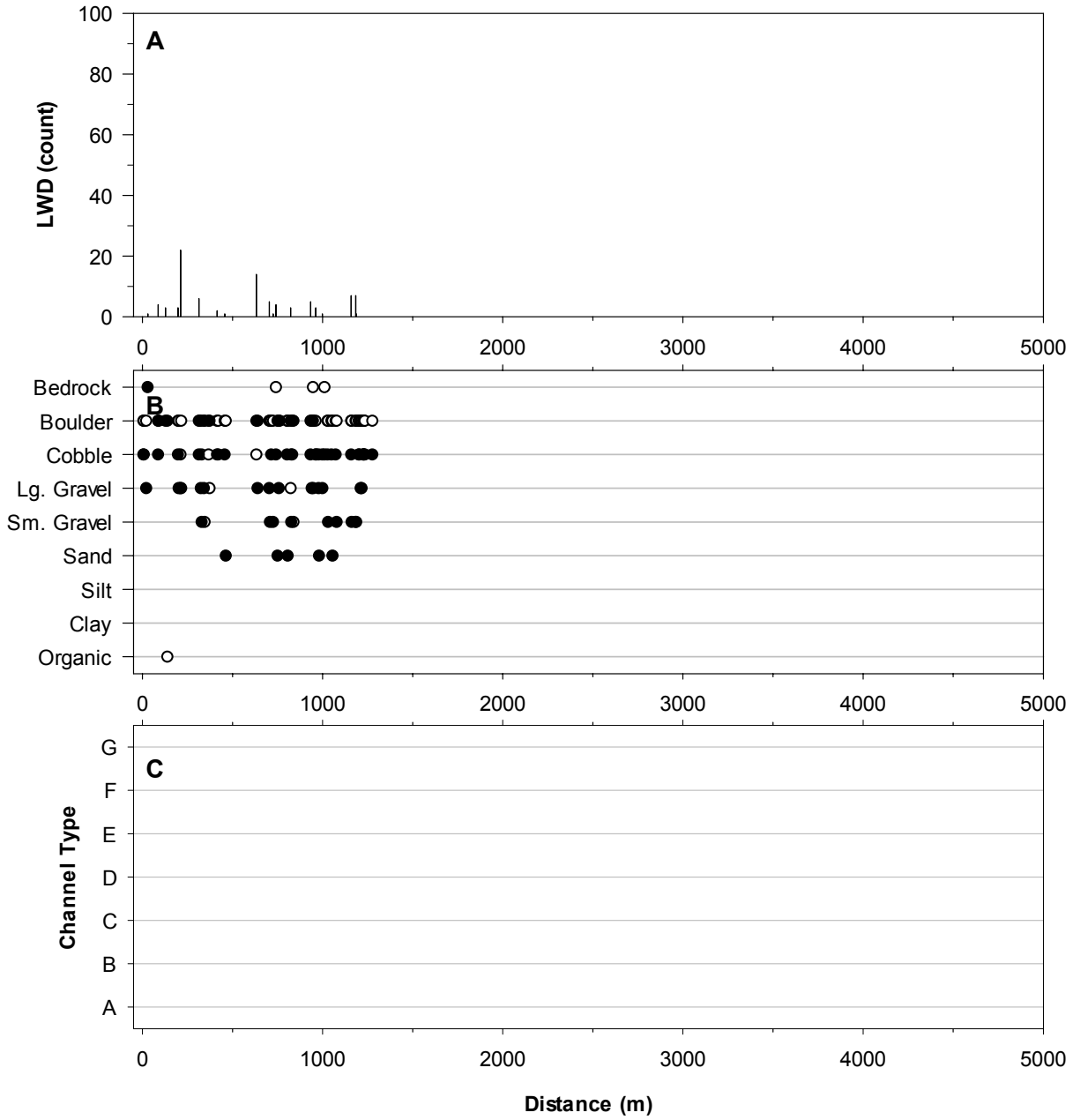
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Muskrat Branch during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Trib	2.0		Trib l
Trib	29.0		Trib r
Seep	162.0		Seep
Trib	175.0		Trib l
Seep	178.0		Seep r
Seep	250.0		Seep l
Seep	460.0		Seep r
Side Channel	565.0		Island r
Trib	577.0		Trib L
Side Channel	597.0		
Seep	617.0		Seep r
Seep	704.0		Seep r
Side Channel	802.0		Island l
Side Channel	822.0		End island l
Trib	1066.0		Trib l
Ford	1122.0		Cross road also seep r
Trib	1240.0		Trib r
Trib	1271.0		Trib l

Photos taken of Muskrat Branch during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Muskrat Branch, summer 2000. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Pounding Mill Creek**
District:	Tusquitee
USGS Quadrangle:	
Survey Date:	07/05/00
Downstream Starting Point:	
Total Distance Surveyed (km):	1.3

	Pools	**Riffles**
Percent of Total Stream Area:	17	83
Total Area (m^2):	763±226	3823±380
Correction Factor Applied:	0.90	0.95
Number of Paired Samples:	5	5
Total Count:	48	50
Number per km:	36	37
Mean Area (m^2):	16	76
Mean Maximum Depth (cm):	42	23
Mean Average Depth (cm):	21	10
Mean Residual Depth (cm):	7	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	
Percent with >35% Fines:		

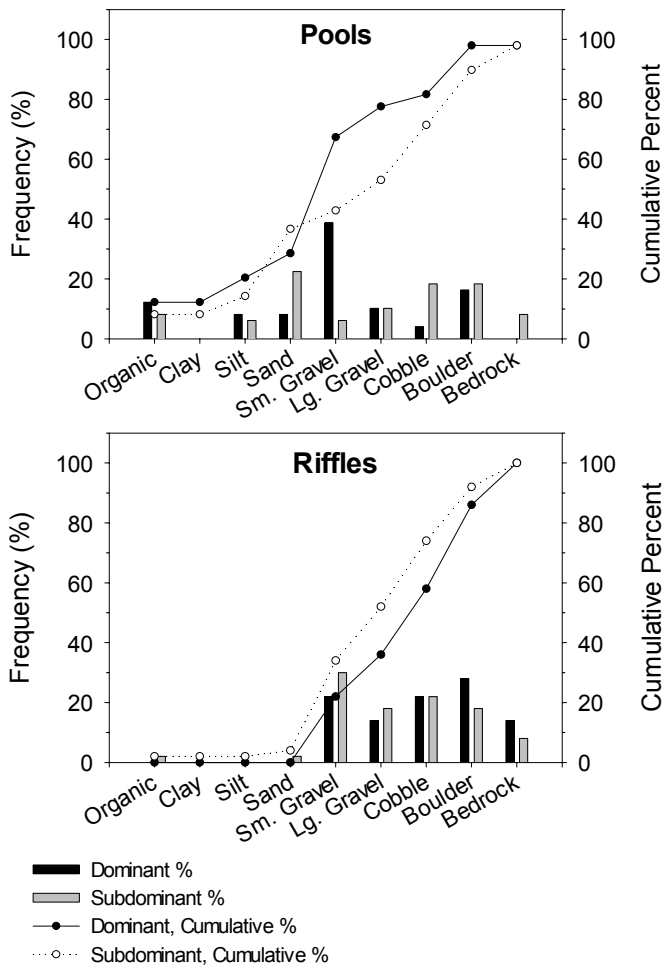
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	33
< 5 m long, > 55 cm diameter:	15
>5 m long, 10 cm – 55 cm diameter:	7
> 5 m long, > 55 cm diameter:	10
Total:	66

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

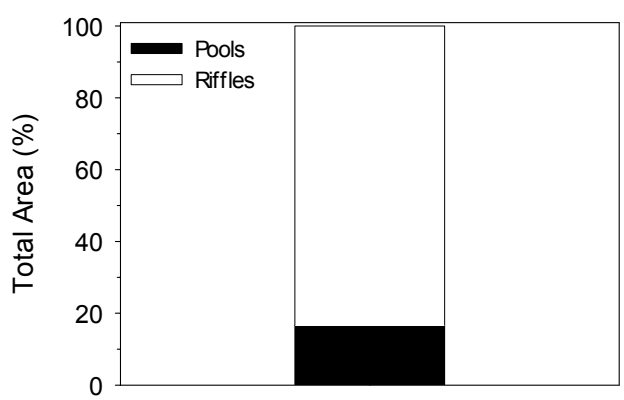
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

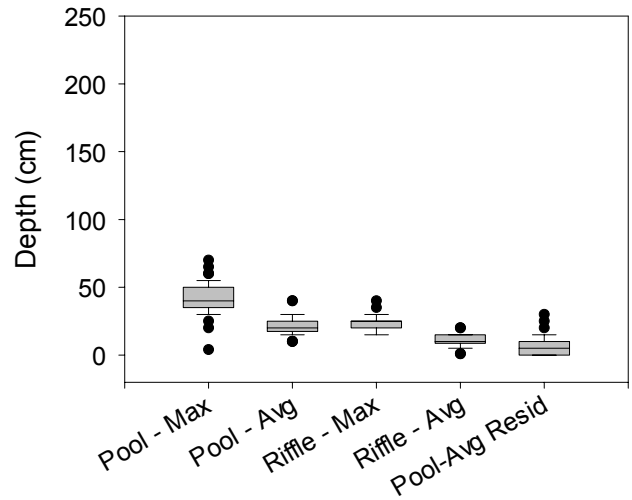
Other Stream Attributes	
Mean Bankfull Channel Width (m):	6
Mean Channel Gradient (%):	
Median Water Temperature (C˚):	



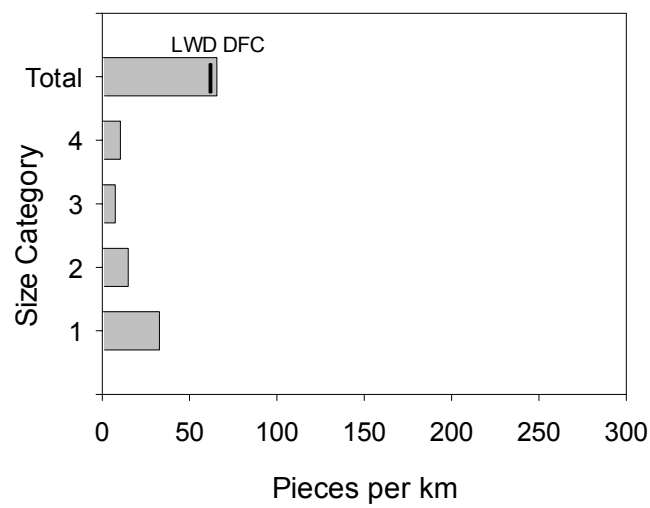
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Pounding Mill Creek, summer 2000.



Estimated area of Pounding Mill Creek in pools and riffles as calculated using BVET techniques, summer 2000.



Maximum and average depths and residual pool depths for pools and riffles in Pounding Mill Creek, summer 2000. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Pounding Mill Creek, summer 2000. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

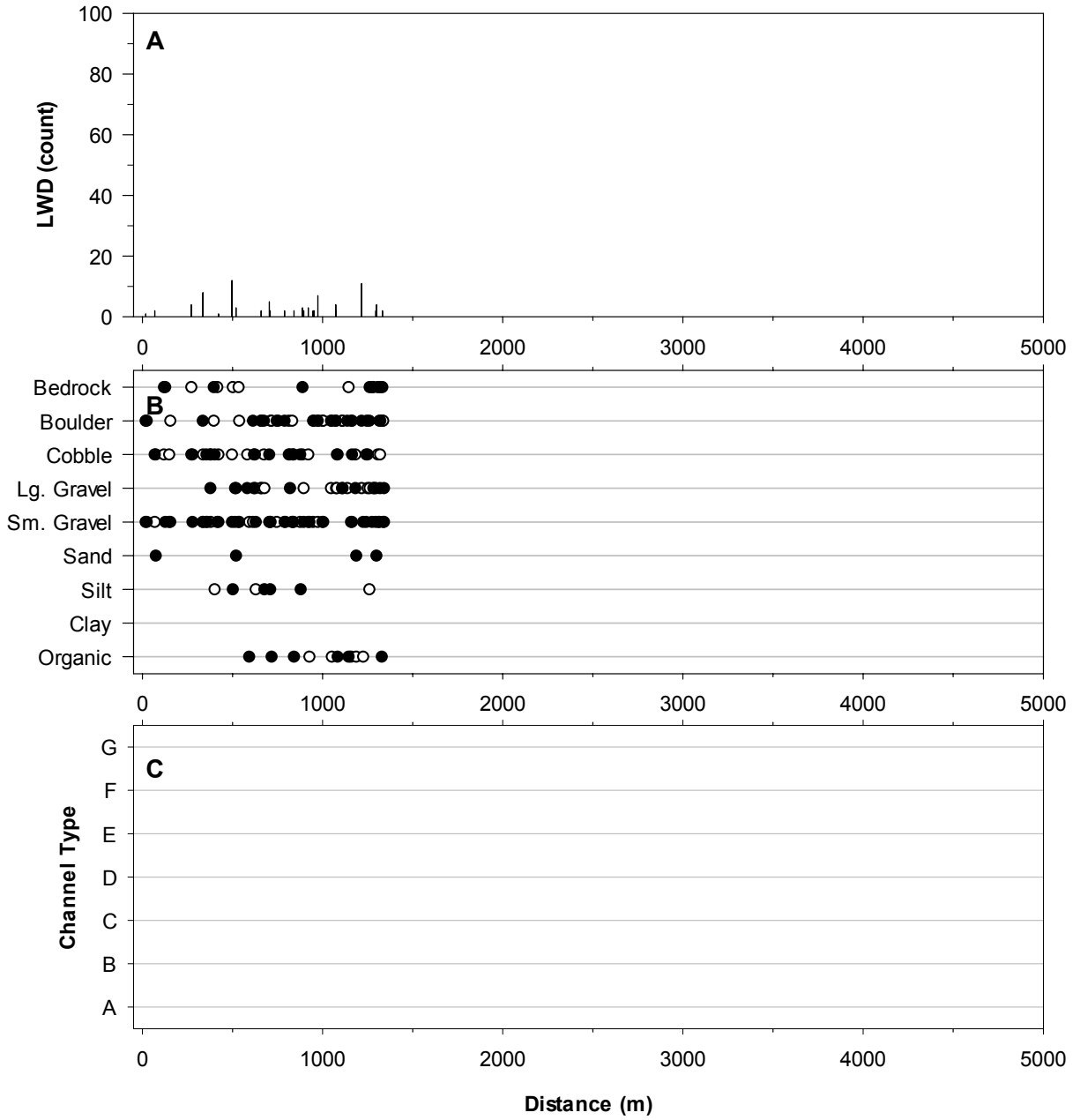
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Pounding Mill Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Trib	64.0		Trib r
Trib	209.0		Trib r
Ford	271.0		Road crosses
Ford	374.0		Road
Ford	417.0		Road crosses
Side Channel	434.0		Island l
Side Channel	442.0		Island l end
Trib	532.0		Trib l
Ford	776.0		Road crosses
Seep	789.0		Right
Side Channel	863.0		Island l
Side Channel	870.0		Island l end
Trib	874.0		Right
Side Channel	888.0		Island r
Side Channel	895.0		Island end
Side Channel	1012.0		Island L
Side Channel	1046.0		Island l end
Seep	1170.0		Seep
Ford	1178.0		
Other	1203.0		Log jam
Ford	1285.0		Old road crossing
Ford	1292.0		Road crossing
Trib	1322.0		Confluence dark cove

Photos taken of Pounding Mill Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Pounding Mill Creek, summer 2000. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	Big Laurel Creek
District:	Wayah
USGS Quadrangle:	Wayah Bald
Survey Date:	06/26/00
Downstream Starting Point:	
Total Distance Surveyed (km):	1.4

	Pools	Riffles
Percent of Total Stream Area:	13	87
Total Area (m^2):	1085±19	7213±7675
Correction Factor Applied:	0.93	0.86
Number of Paired Samples:	2	2
Total Count:	22	28
Number per km:	15	19
Mean Area (m^2):	49	258
Mean Maximum Depth (cm):	61	37
Mean Average Depth (cm):	42	23
Mean Residual Depth (cm):	25	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	14
Percent with >35% Fines:		

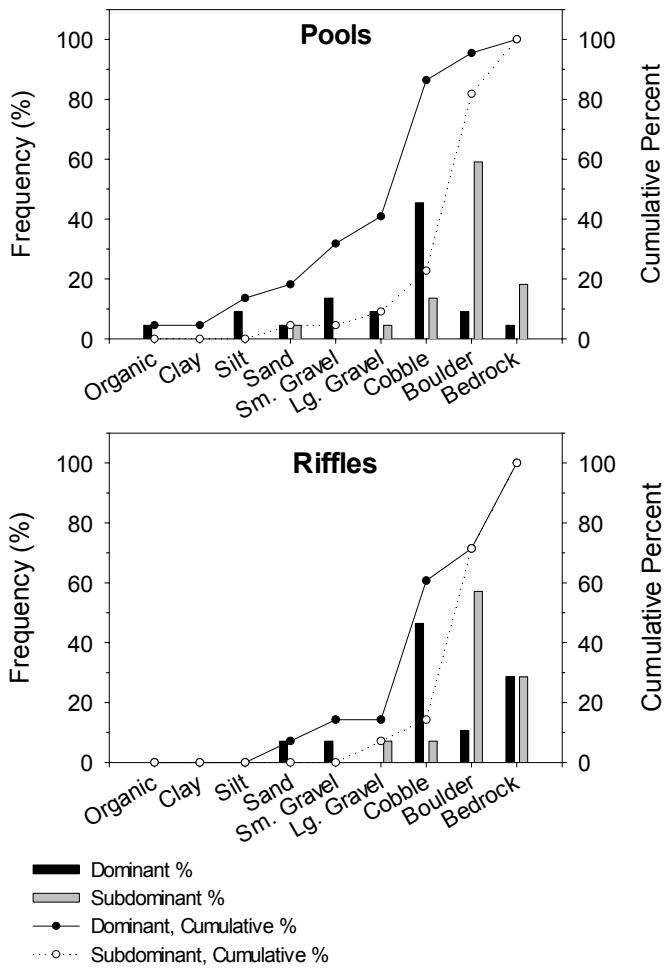
Large Woody Debris Size	Pieces per km
< 5 m long, 10 cm – 55 cm diameter:	70
< 5 m long, > 55 cm diameter:	39
>5 m long, 10 cm – 55 cm diameter:	33
> 5 m long, > 55 cm diameter:	50
Total:	191

Riparian Width	Total Width* (m)	Left & Right Width** (m)
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

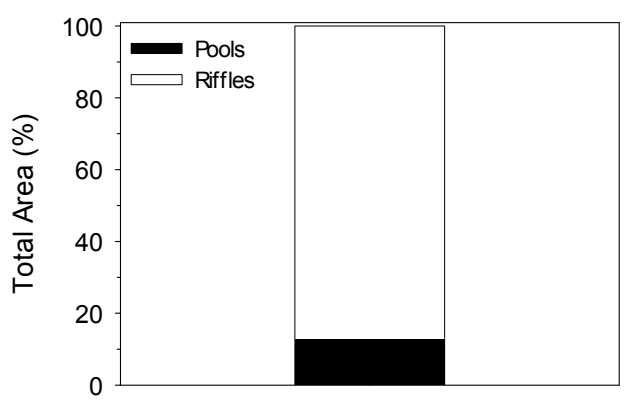
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	Frequency (%)
A:	
B:	
C:	
D:	
E:	
F:	
G:	

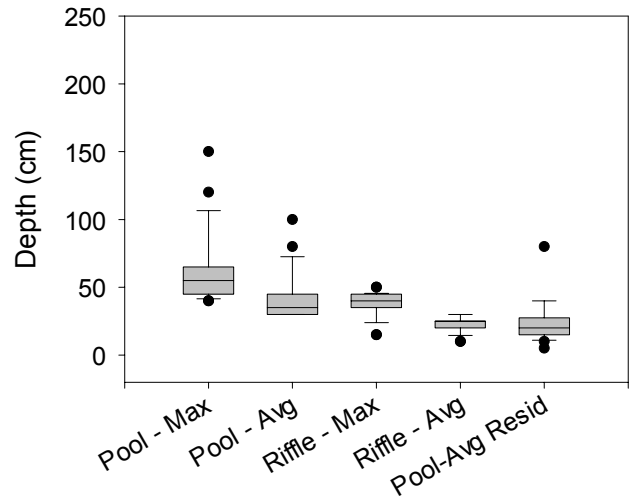
Other Stream Attributes	
Mean Bankfull Channel Width (m):	6
Mean Channel Gradient (%):	
Median Water Temperature (C°):	



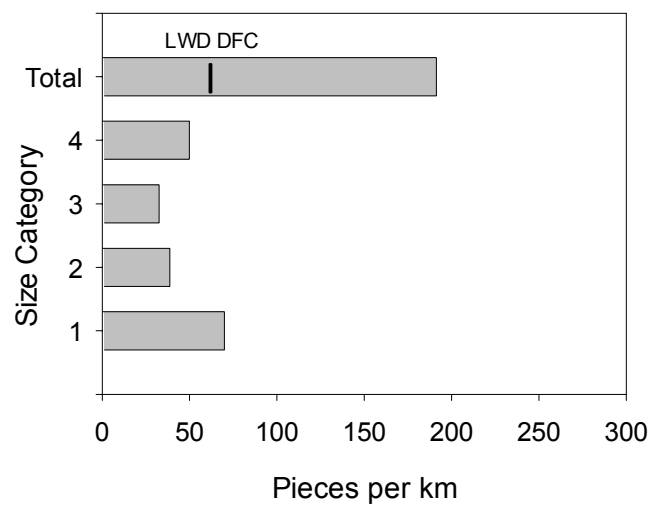
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Big Laurel Creek, summer 2000.



Estimated area of Big Laurel Creek in pools and riffles as calculated using BVET techniques, summer 2000.



Maximum and average depths and residual pool depths for pools and riffles in Big Laurel Creek, summer 2000. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Big Laurel Creek, summer 2000. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

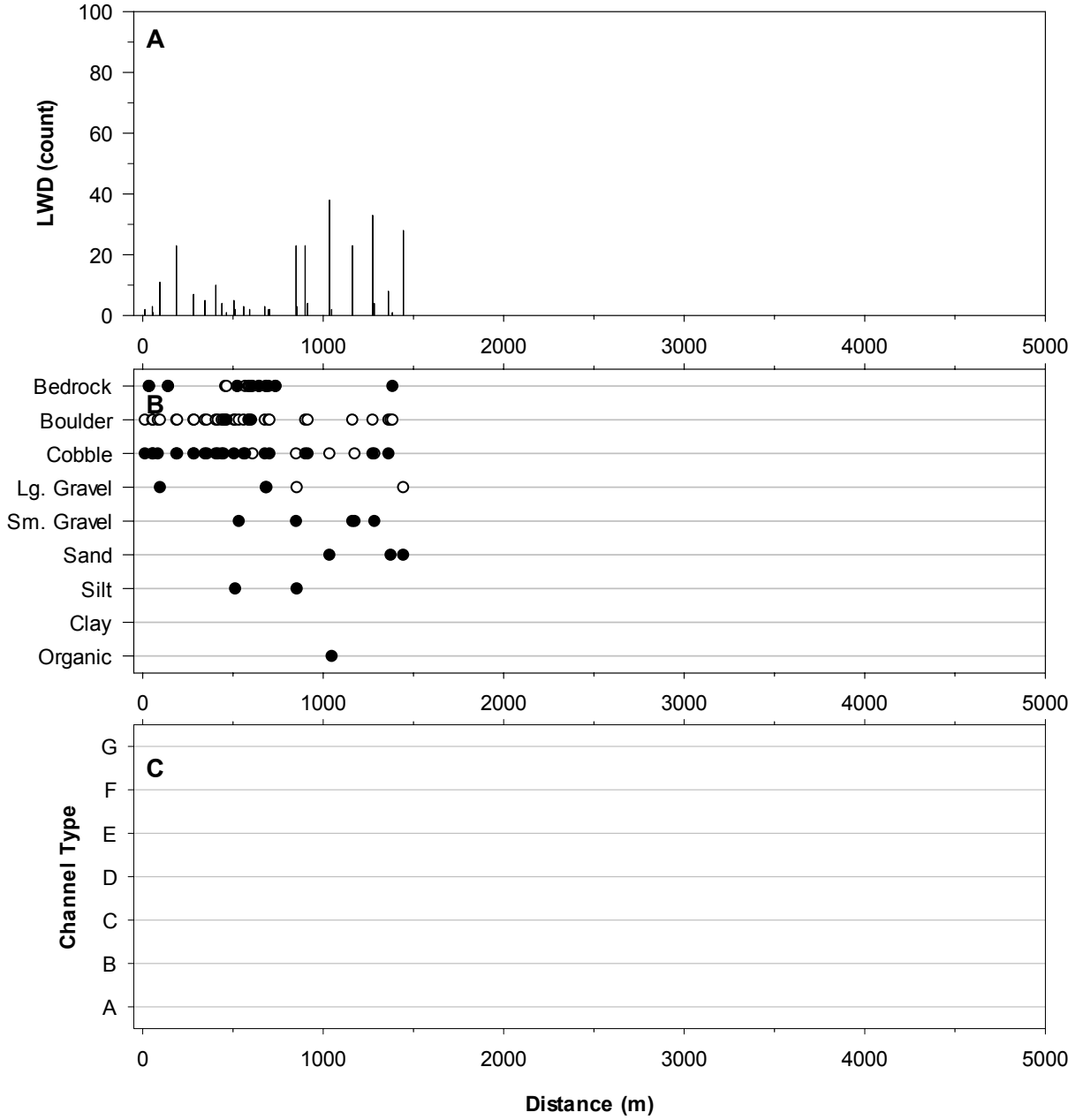
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Big Laurel Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Side Channel	50.0		Island start
Side Channel	72.0		Island end
Other	87.0		Log jam
Other	146.0		Log jam
Other	215.0		Log jam
Side Channel	247.0		Island start
Side Channel	258.0		Island end
Side Channel	281.0		Island start
Side Channel	311.0		Island end
Other	384.0		Lg jam
Side Channel	476.0		Island start l
Side Channel	505.0		Island end
Side Channel	818.0		ISLAND R start
Side Channel	825.0		Island L start
Side Channel	846.0		Island R end
Side Channel	860.0		Island L end
Side Channel	853.0		ISLAND R start
Side Channel	877.0		Island R end
Side Channel	955.0		ISLAND R start
Side Channel	1034.0		Island R end
Side Channel	1072.0		ISLAND R start
Side Channel	1101.0		Island R end
Side Channel	1120.0		ISLAND R start
Side Channel	1127.0		Island R end
Bridge	1173.0		Trail foot bridge at1173
Side Channel	1210.0		ISLAND R start
Side Channel	1219.0		Island R end
Other	1283.0		Log jam
Trib	1443.0		Confluence of gulf branch

Photos taken of Big Laurel Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Big Laurel Creek, summer 2000. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Devils Prong**
District:	Wayah
USGS Quadrangle:	Rainbow Springs
Survey Date:	07/21/98
Downstream Starting Point:	
Total Distance Surveyed (km):	0.9

	Pools	**Riffles**
Percent of Total Stream Area:	22	78
Total Area (m^2):	416±144	1485±139
Correction Factor Applied:	1.18	0.99
Number of Paired Samples:	2	2
Total Count:	33	34
Number per km:	36	37
Mean Area (m^2):	13	44
Mean Maximum Depth (cm):	42	21
Mean Average Depth (cm):	20	12
Mean Residual Depth (cm):	6	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	
Percent with >35% Fines:		

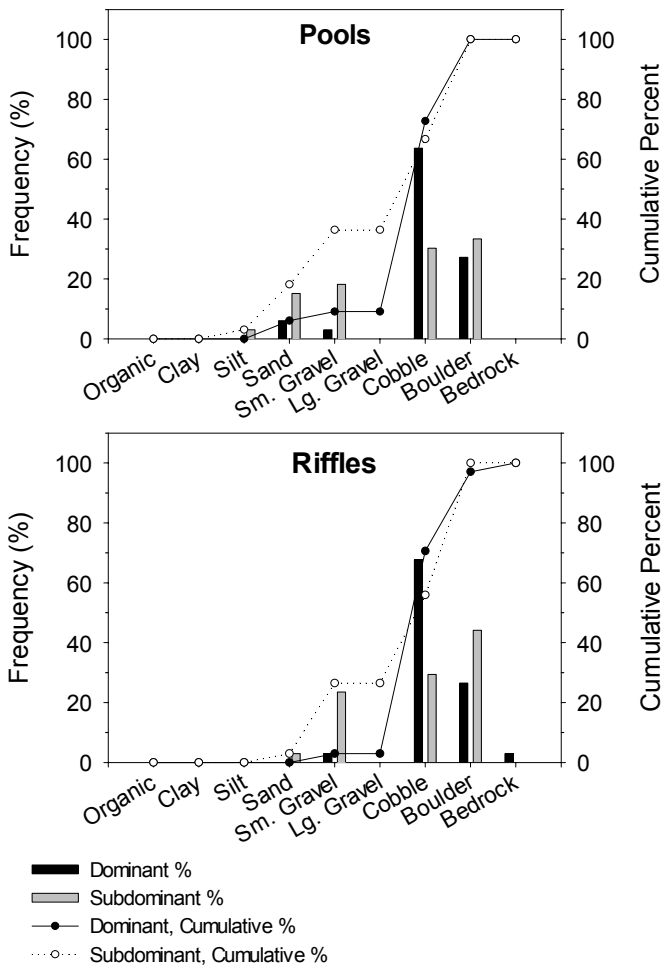
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	40
< 5 m long, > 55 cm diameter:	21
>5 m long, 10 cm – 55 cm diameter:	39
> 5 m long, > 55 cm diameter:	10
Total:	109

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

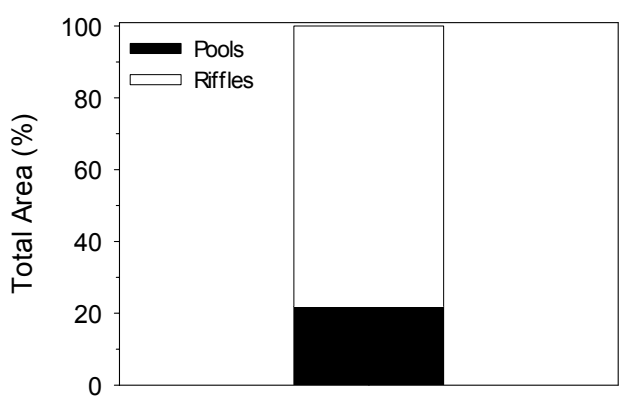
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

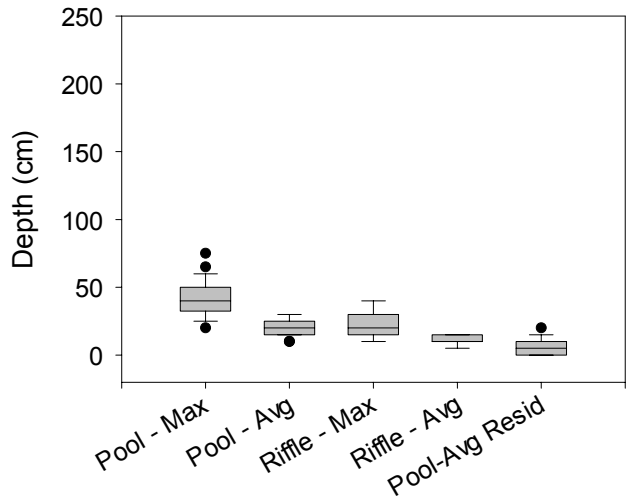
Other Stream Attributes	
Mean Bankfull Channel Width (m):	
Mean Channel Gradient (%):	7
Median Water Temperature (C˚):	



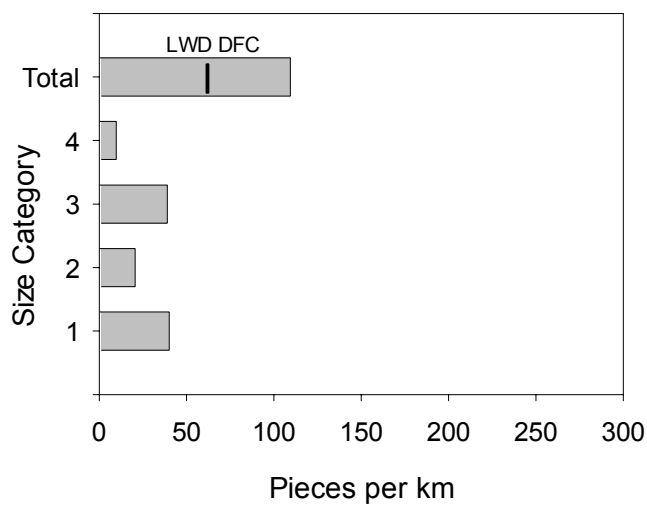
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Devils Prong, summer 1998.



Estimated area of Devils Prong in pools and riffles as calculated using BVET techniques, summer 1998.



Maximum and average depths and residual pool depths for pools and riffles in Devils Prong, summer 1998. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Devils Prong, summer 1998. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

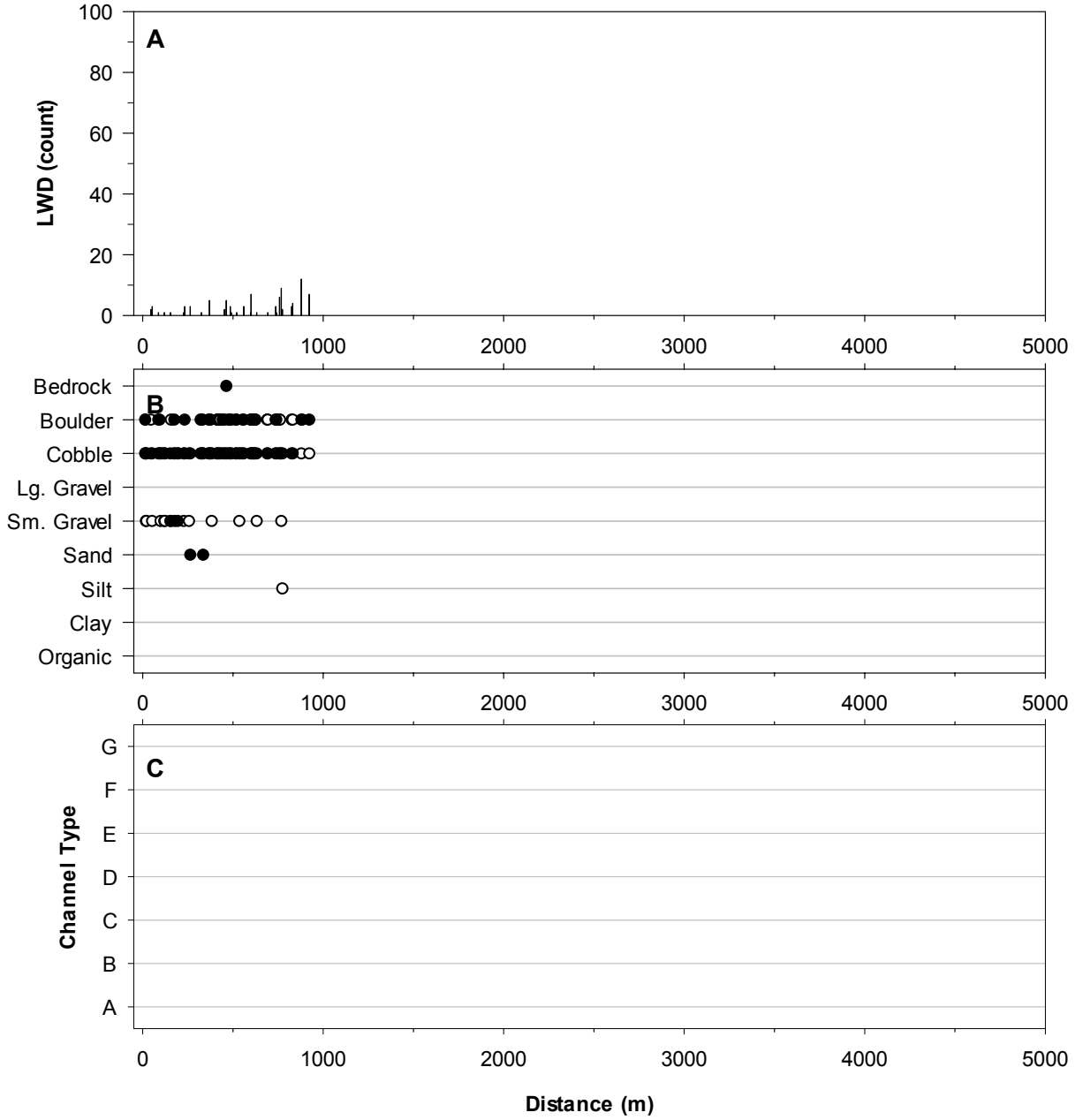
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Devils Prong during BVET habitat survey, summer 1998. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Bridge	60.1		Foot bridge
Fork	99.6		Road x-ing
Other	153.5		Dj
Trib	156.8	0.5	Right
Seep	194.9		Seep left
Seep	332.3		Seep right
Seep	559.4		Seep right (dry)
Other	597.9		Dj; sandbar
Trib	570.6	0.5	Left
Seep	736.8		Seep left

Photos taken of Devils Prong during BVET habitat survey, summer 1998. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Devils Prong, summer 1998. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Jarrett Creek**
District:	Wayah
USGS Quadrangle:	Wayah Bald/Topton
Survey Date:	09/14/00
Downstream Starting Point:	
Total Distance Surveyed (km):	1.6

	Pools	**Riffles**
Percent of Total Stream Area:	14	86
Total Area (m^2):	1808±591	11209±2424
Correction Factor Applied:	1.00	1.03
Number of Paired Samples:	4	4
Total Count:	49	50
Number per km:	30	31
Mean Area (m^2):	37	224
Mean Maximum Depth (cm):	51	28
Mean Average Depth (cm):	31	15
Mean Residual Depth (cm):	15	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	8
Percent with >35% Fines:		

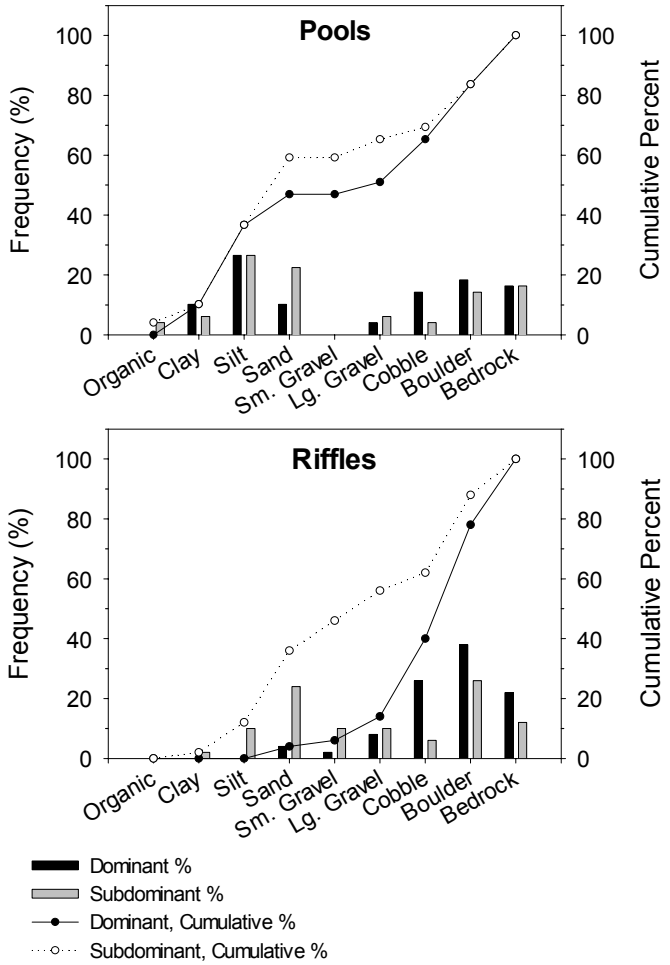
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	92
< 5 m long, > 55 cm diameter:	56
>5 m long, 10 cm – 55 cm diameter:	51
> 5 m long, > 55 cm diameter:	36
Total:	235

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

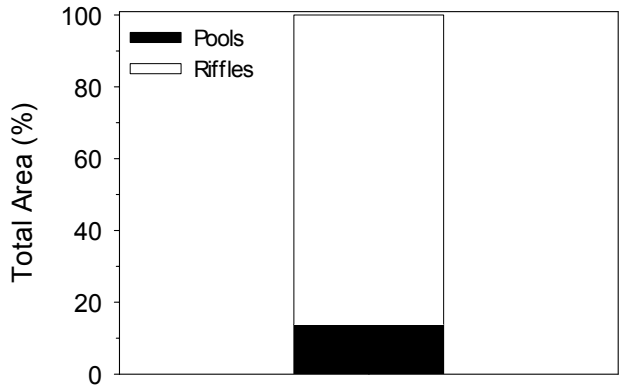
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

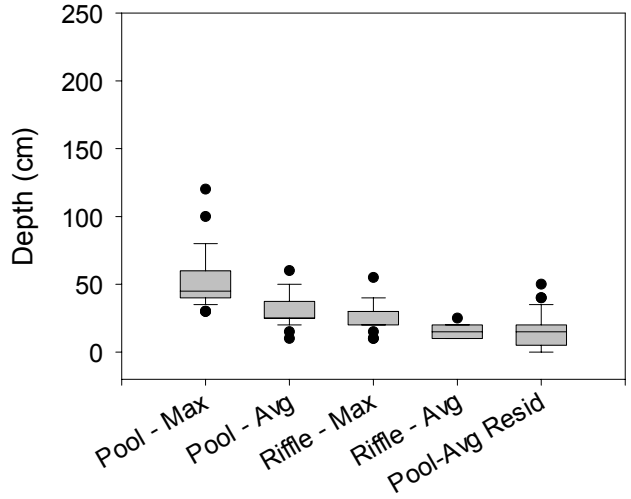
Other Stream Attributes
Mean Bankfull Channel Width (m):
Mean Channel Gradient (%):
Median Water Temperature (C˚):



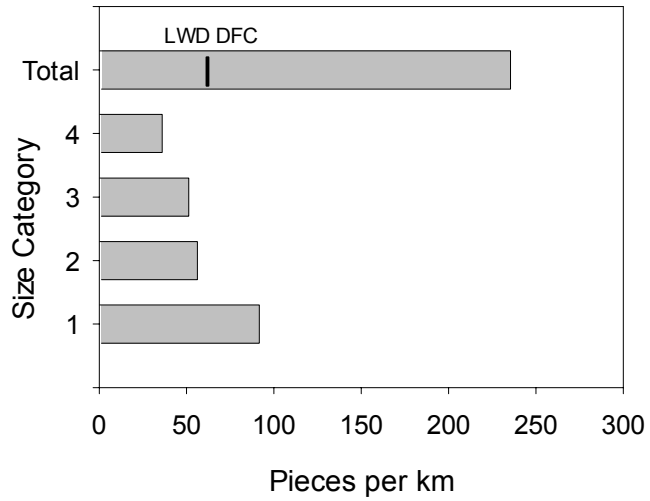
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Jarrett Creek, summer 2000.



Estimated area of Jarrett Creek in pools and riffles as calculated using BVET techniques, summer 2000.



Maximum and average depths and residual pool depths for pools and riffles in Jarrett Creek, summer 2000. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Jarrett Creek, summer 2000. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

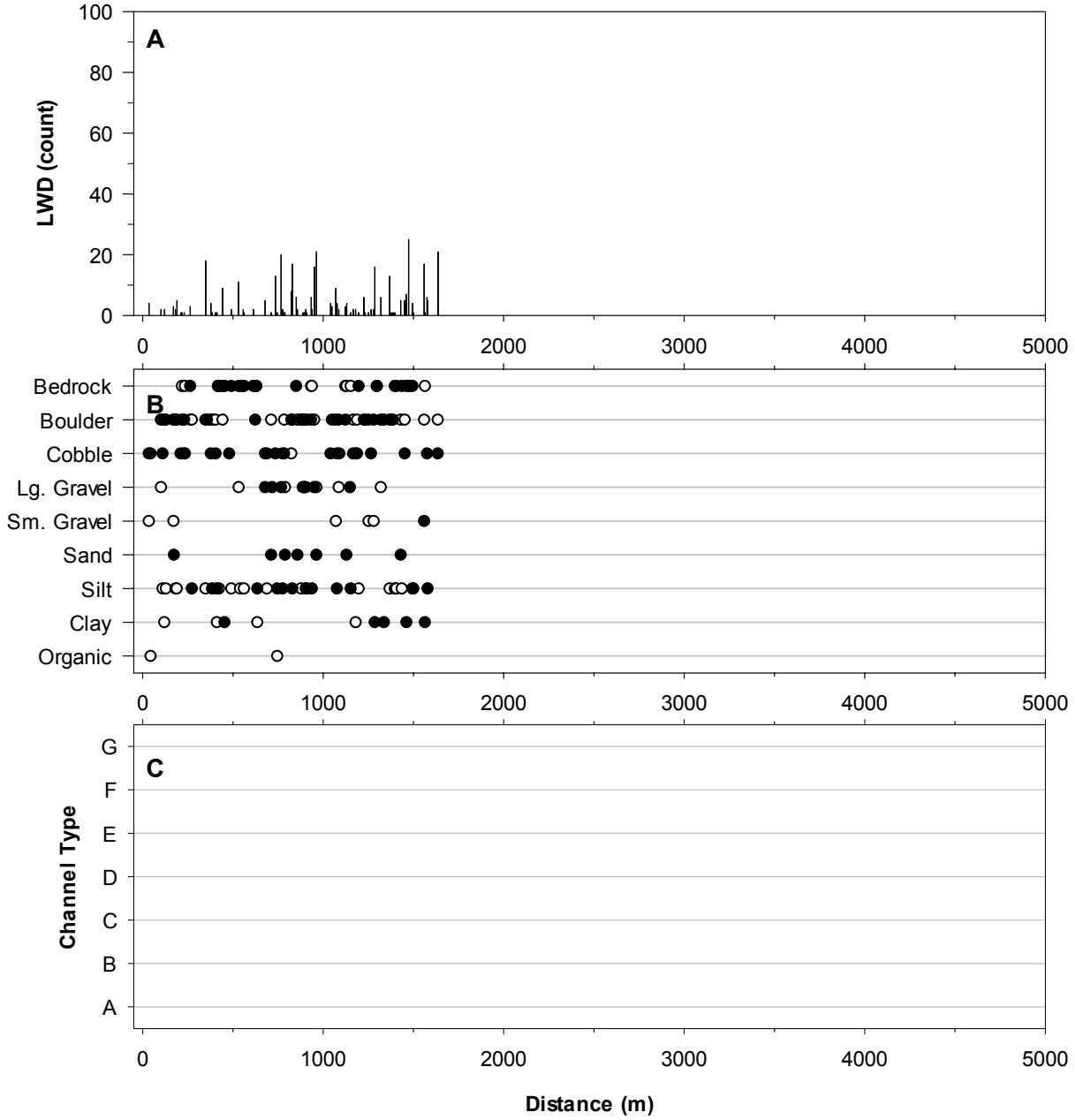
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Jarrett Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Side Channel	806.0		Channel splits at 806
Other	943.0		Log jam at 943
Trib	1386.0		Trib on right
Other	1473.0		Log jam
Braid	1559.0		Braided

Photos taken of Jarrett Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Jarrett Creek, summer 2000. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Kilby Creek**
District:	Wayah
USGS Quadrangle:	Rainbow Springs
Survey Date:	06/30/98
Downstream Starting Point:	0
Total Distance Surveyed (km):	1.0

	Pools	**Riffles**
Percent of Total Stream Area:	20	80
Total Area (m^2):	792±945	3231
Correction Factor Applied:	1.04	1.55
Number of Paired Samples:	2	1
Total Count:	28	26
Number per km:	28	26
Mean Area (m^2):	28	124
Mean Maximum Depth (cm):	55	34
Mean Average Depth (cm):	32	19
Mean Residual Depth (cm):	17	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	
Percent with >35% Fines:		

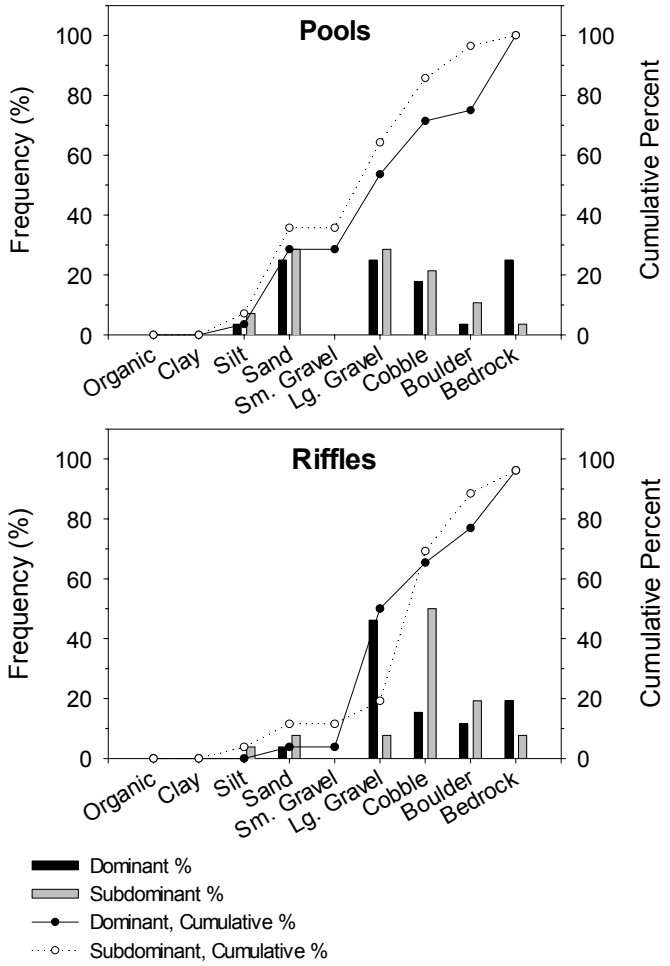
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	56
< 5 m long, > 55 cm diameter:	28
>5 m long, 10 cm – 55 cm diameter:	35
> 5 m long, > 55 cm diameter:	56
Total:	174

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

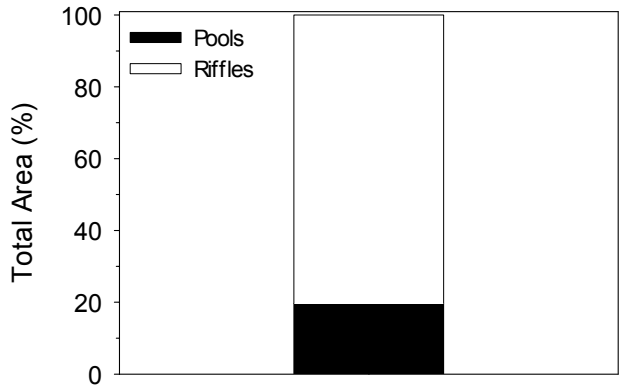
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

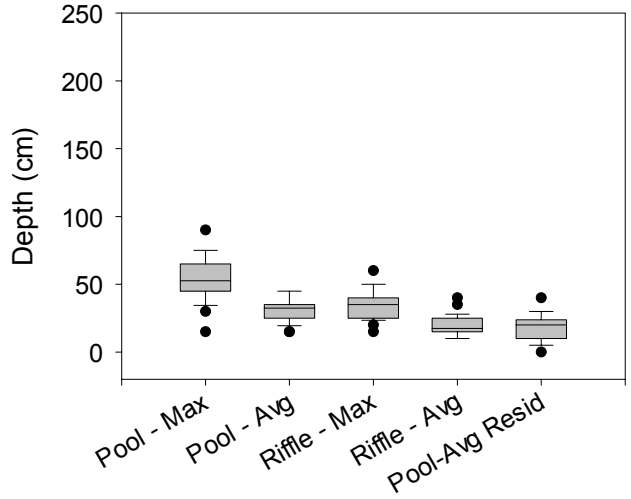
Other Stream Attributes
Mean Bankfull Channel Width (m):
Mean Channel Gradient (%):
Median Water Temperature (C˚):



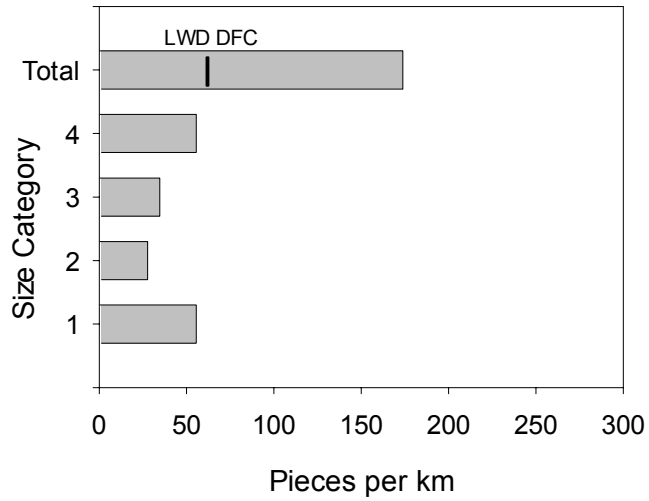
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Kilby Creek, summer 1998.



Estimated area of Kilby Creek in pools and riffles as calculated using BVET techniques, summer 1998.



Maximum and average depths and residual pool depths for pools and riffles in Kilby Creek, summer 1998. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Kilby Creek, summer 1998. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

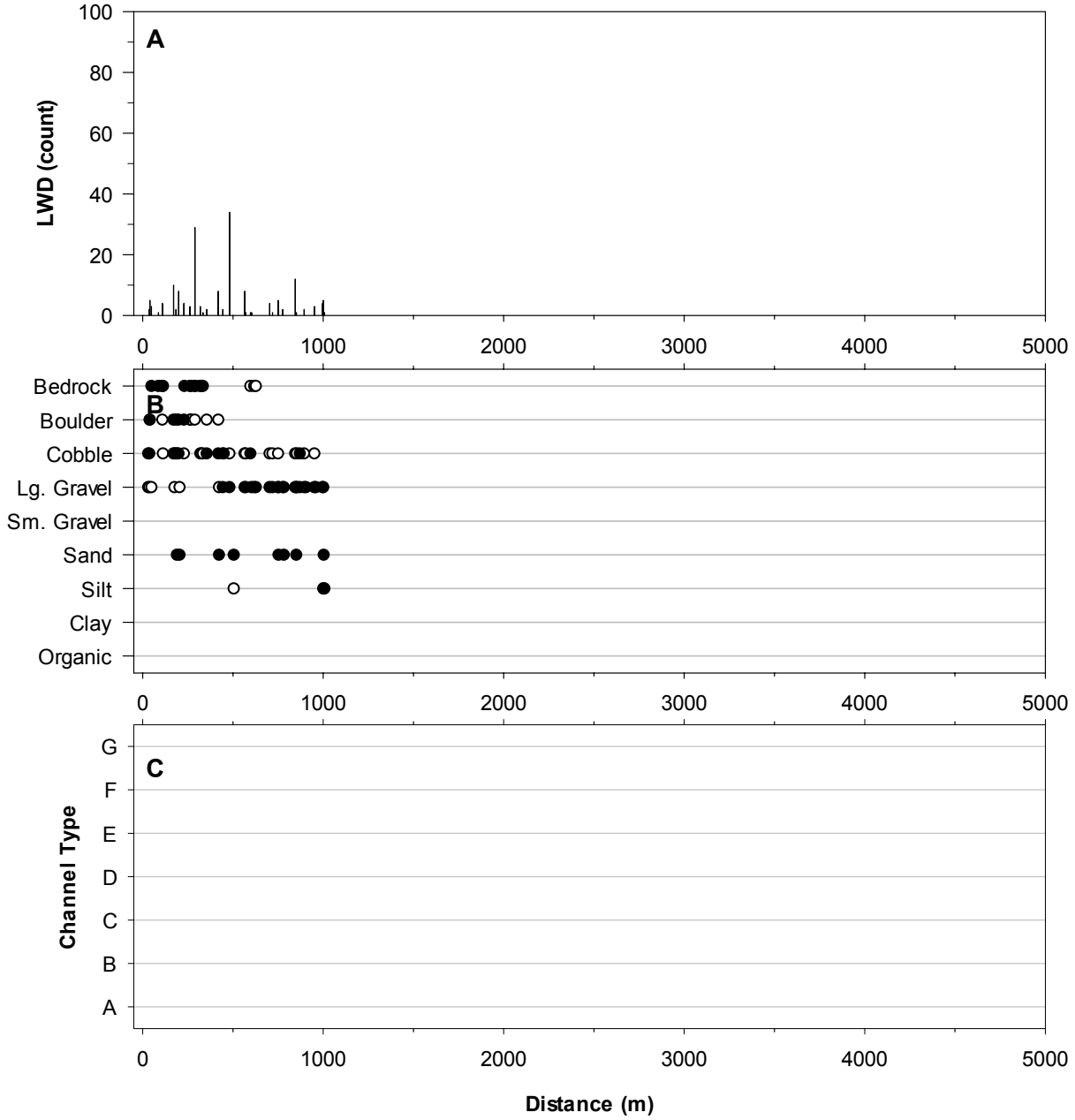
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Kilby Creek during BVET habitat survey, summer 1998. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments

Photos taken of Kilby Creek during BVET habitat survey, summer 1998. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Kilby Creek, summer 1998. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Kimsey Creek**
District:	Wayah
USGS Quadrangle:	Rainbow Springs
Survey Date:	07/15/98
Downstream Starting Point:	
Total Distance Surveyed (km):	4.9

	Pools	**Riffles**
Percent of Total Stream Area:	9	91
Total Area (m^2):	1838±433	17956±1477
Correction Factor Applied:	1.12	1.25
Number of Paired Samples:	4	4
Total Count:	67	70
Number per km:	14	14
Mean Area (m^2):	27	257
Mean Maximum Depth (cm):	47	31
Mean Average Depth (cm):	23	15
Mean Residual Depth (cm):	6	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	
Percent with >35% Fines:		

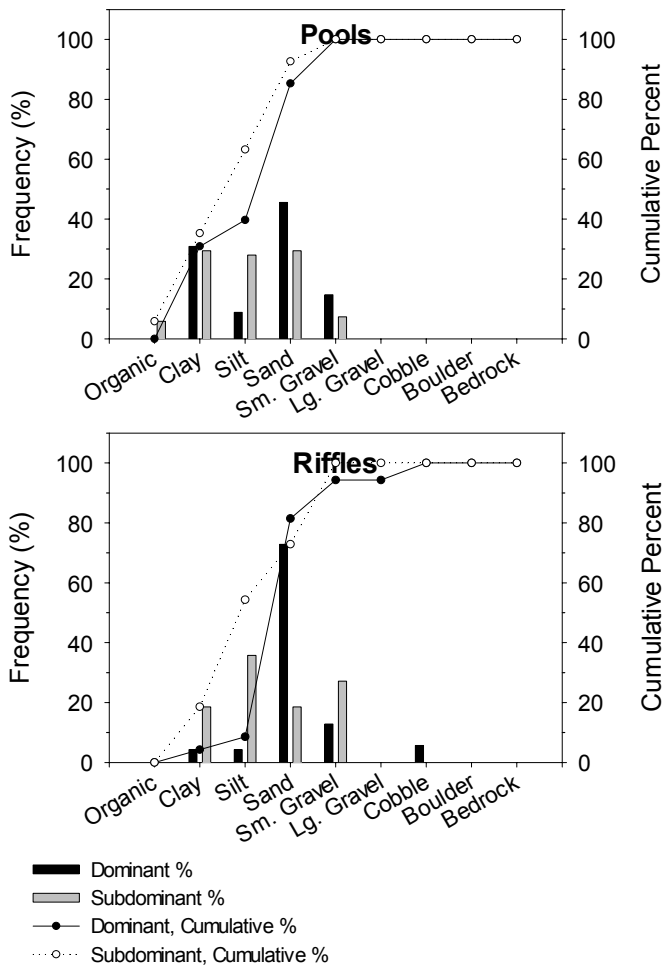
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	24
< 5 m long, > 55 cm diameter:	17
>5 m long, 10 cm – 55 cm diameter:	16
> 5 m long, > 55 cm diameter:	15
Total:	71

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

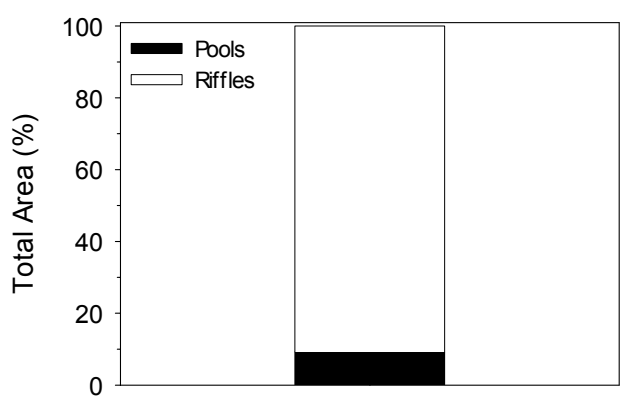
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

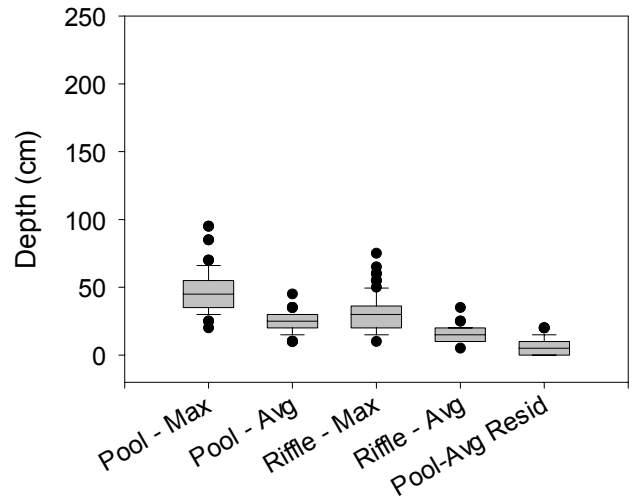
Other Stream Attributes	
Mean Bankfull Channel Width (m):	
Mean Channel Gradient (%):	4
Median Water Temperature (C˚):	



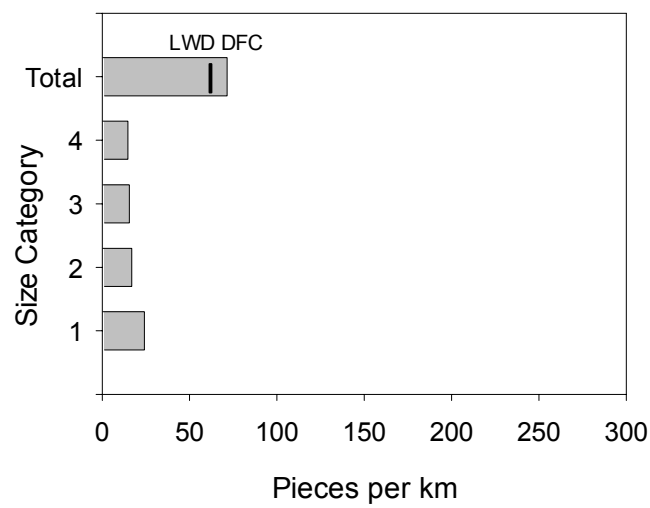
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Kimsey Creek, summer 1998.



Estimated area of Kimsey Creek in pools and riffles as calculated using BVET techniques, summer 1998.



Maximum and average depths and residual pool depths for pools and riffles in Kimsey Creek, summer 1998. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Kimsey Creek, summer 1998. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Kimsey Creek during BVET habitat survey, summer 1998. Distance is meters from start of survey.

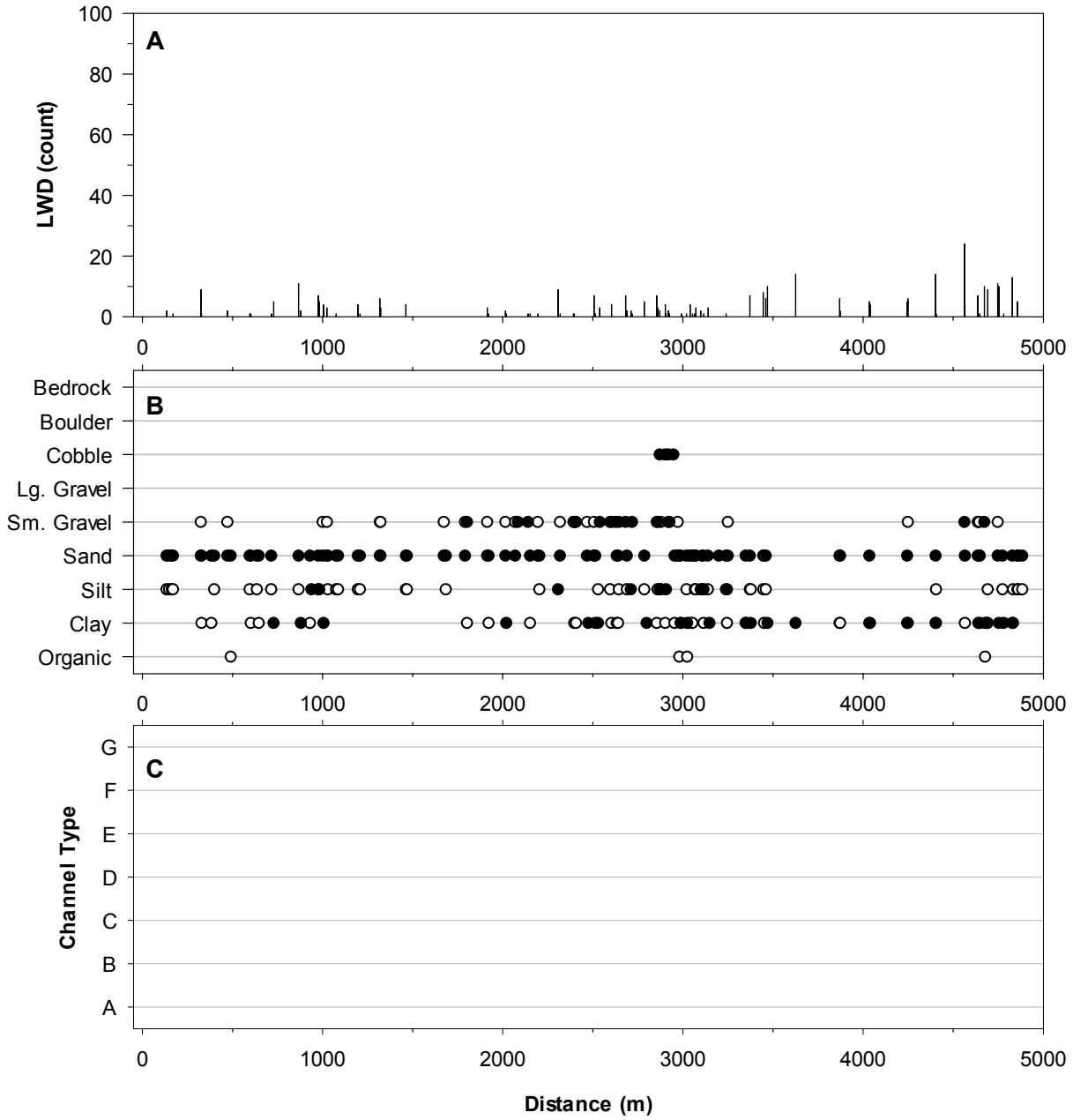
Stream Feature	Distance (m)	Width (m)	Comments
Bridge	104.5		Trail x-ing; bridge gravel road
Bridge	147.4		Cobble dam/foot bridge
Ford	323.7		Trail x-ing; cobble jams
Other	471.7		V-dam forming cobble dams
Bridge	502.2		Foot bridge
Other	600.9		Spigot close to stream
Other	645.9		Fish/ feed bucket setup overhead
Ford	675.7		Road x-ing; cobble dam
Other	727.7		V-dam
Other	866.3		2 v-dams/ 1deflection structure
Seep	252.0		Seep r
Other	975.7		V-dams
Other	981.1		V-dam
Other	1004.9		V-dam
Other	1023.7		M shaped dam
Other	1074.8		Trail erosion right
Ford	1086.2		Road x-ing
Bridge	1195.4		Foot bridge
Other	1317.5		Dam/ trail drainage
Other	1321.1		Dam
Other	1462.0		V-dam
Seep	1790.7		Rhodo cover; seep 1144.8 on left
Seep	1920.8		Seep l
Other	2139.5		Trail drain on left
Other	2194.6		Man made dam
Seep	2306.2		Seep l; road x-ing
Seep	2406.6		Seep l
Bridge	2681.5		FOOT BRIDGE SHORT FALL 2m
Fall	2710.6		Short fall 4m
Seep	2717.0		Seep l
Seep	2785.2		Seep r; debris jam; cobble bar
Trail	2946.8		Trail to creek bank
Seep	2979.2		Seep right
Other	3039.0		Debris jam
Seep	3110.4		Seep r
Seep	3248.9		Seep l
Other	3347.0		Plastic bank support
Other	3352.5		Wire cable in stream
Other	3370.9		Debris jam
Other	3459.2		V-dam
Other	3468.7		Dj; fish
Other	3624.7		Dj;sandbar; fish
Seep	3869.4		Seep r; man made trail drain r
Seep	4034.0		Dry seep r
Seep	4037.9		Seep l; fish
Seep	4401.7		Seep r
Seep	4562.2		Seep l

Stream features found on Kimsey Creek during BVET habitat survey, summer 1998. Distance is meters from start of survey (cont.)

Stream Feature	Distance (m)	Width (m)	Comments
Seep	4636.1		Fish; seep r
Seep	4746.5		Fish; seep l
Other	4752.7		Dj
Other	4827.8		Dj
Other	4856.2		Dj; sandbar
Ford	4882.9		Road x-ing (logging)

Photos taken of Kimsey Creek during BVET habitat survey, summer 1998. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Kimsey Creek, summer 1998. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Long Branch**
District:	Wayah
USGS Quadrangle:	Rainbow Springs
Survey Date:	07/30/98
Downstream Starting Point:	0
Total Distance Surveyed (km):	1.9

	Pools	**Riffles**
Percent of Total Stream Area:	15	85
Total Area (m^2):	733±1144	4115±81
Correction Factor Applied:	1.12	1.15
Number of Paired Samples:	2	2
Total Count:	33	33
Number per km:	18	18
Mean Area (m^2):	22	125
Mean Maximum Depth (cm):	43	23
Mean Average Depth (cm):	22	13
Mean Residual Depth (cm):	7	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	
Percent with >35% Fines:		

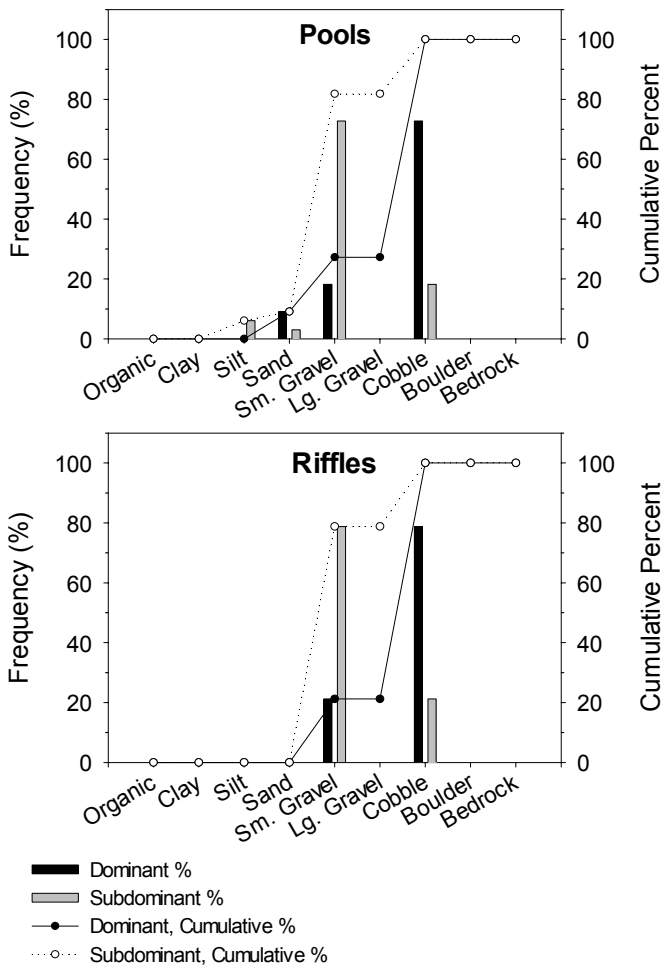
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	29
< 5 m long, > 55 cm diameter:	12
>5 m long, 10 cm – 55 cm diameter:	25
> 5 m long, > 55 cm diameter:	9
Total:	75

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

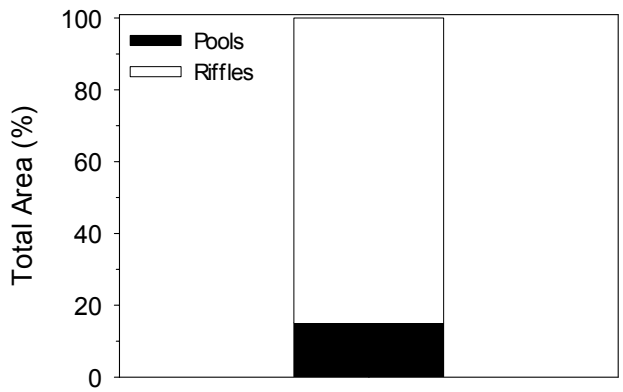
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

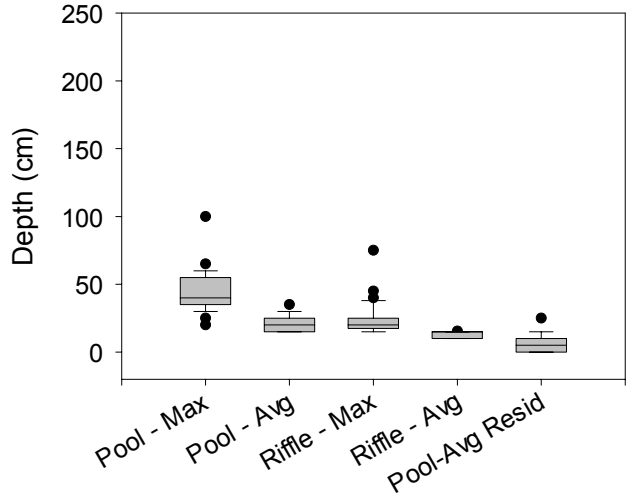
Other Stream Attributes	
Mean Bankfull Channel Width (m):	
Mean Channel Gradient (%):	3
Median Water Temperature (C˚):	



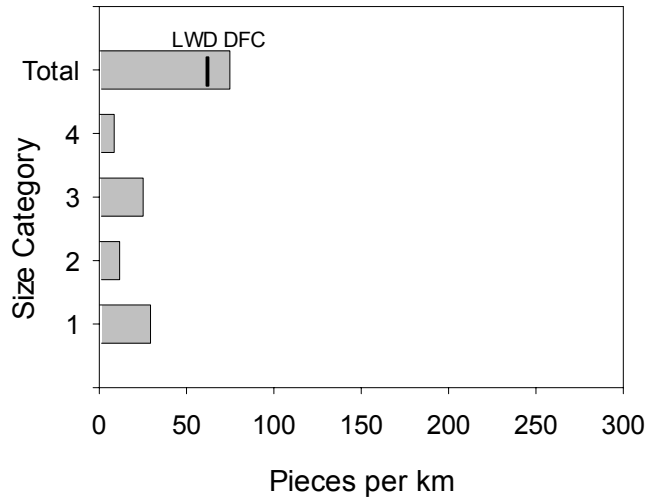
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Long Branch, summer 1998.



Estimated area of Long Branch in pools and riffles as calculated using BVET techniques, summer 1998.



Maximum and average depths and residual pool depths for pools and riffles in Long Branch, summer 1998. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Long Branch, summer 1998. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

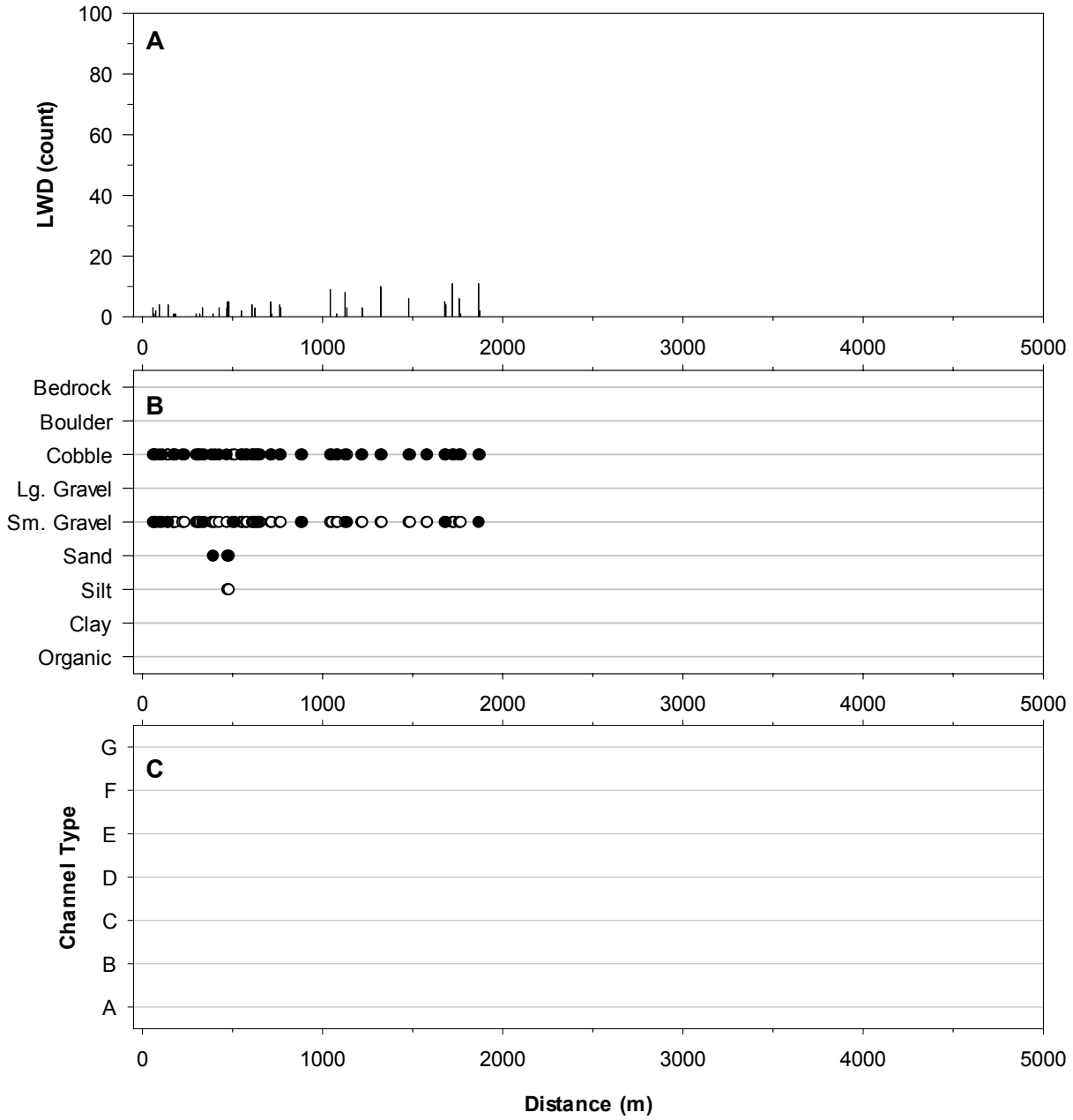
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Long Branch during BVET habitat survey, summer 1998. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Other	142.0		Debris jam ls
Other	471.8		Debris jam cntr large
Other	607.7		Log dam
Bridge	767.7		Remains of old bridge
Other	1124.0		Debris jam cntr.
Other	1219.7		End of p27 v-dam intact
Other	1327.0		Fish; lots of channel narrowing
Ford	1440.6		Trail crossing
Other	1484.4		Stream structures

Photos taken of Long Branch during BVET habitat survey, summer 1998. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Long Branch, summer 1998. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Mooney Creek**
District:	Wayah
USGS Quadrangle:	Rainbow Springs
Survey Date:	07/28/98
Downstream Starting Point:	0
Total Distance Surveyed (km):	2.3

	Pools	**Riffles**
Percent of Total Stream Area:	23	77
Total Area (m^2):	1980±2351	6649±7976
Correction Factor Applied:	1.13	1.00
Number of Paired Samples:	3	3
Total Count:	50	49
Number per km:	22	22
Mean Area (m^2):	40	136
Mean Maximum Depth (cm):	60	34
Mean Average Depth (cm):	38	22
Mean Residual Depth (cm):	19	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	
Percent with >35% Fines:		

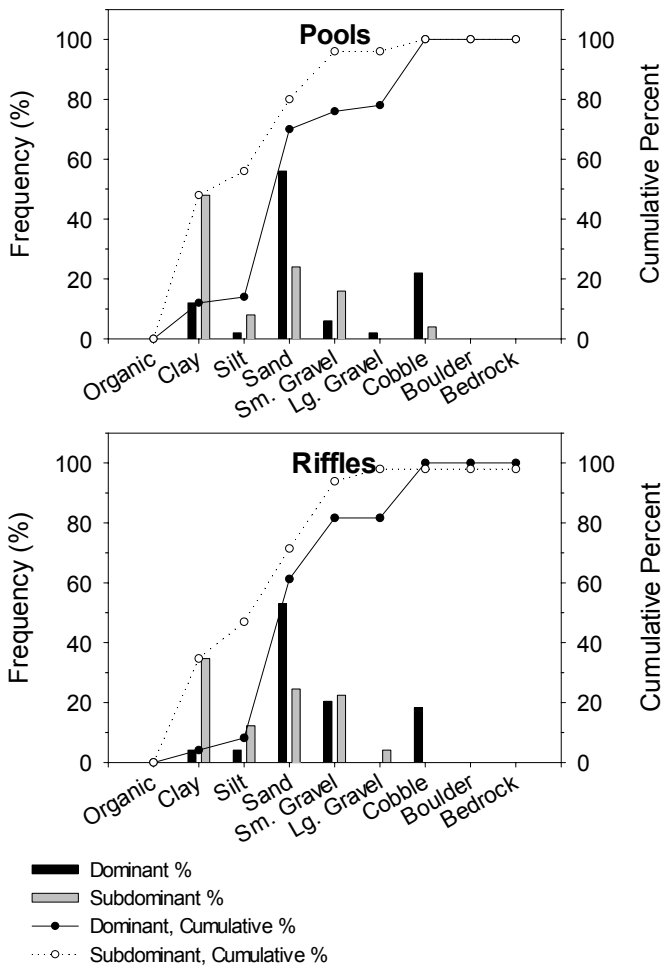
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	22
< 5 m long, > 55 cm diameter:	34
>5 m long, 10 cm – 55 cm diameter:	11
> 5 m long, > 55 cm diameter:	22
Total:	89

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

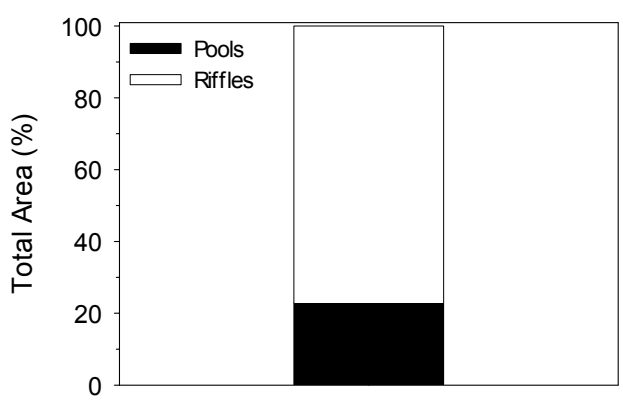
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

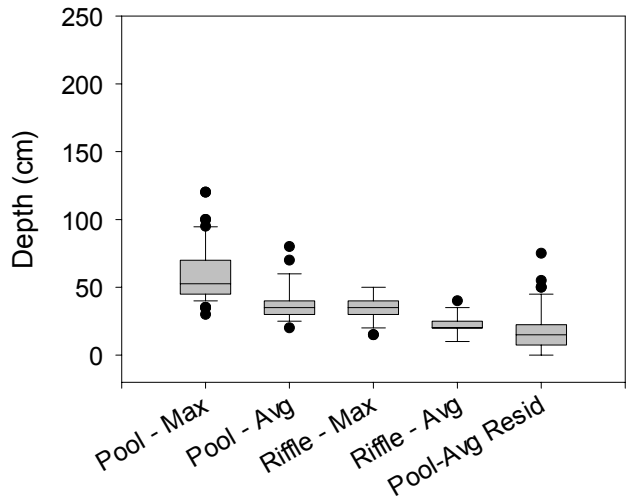
Other Stream Attributes
Mean Bankfull Channel Width (m):
Mean Channel Gradient (%):
Median Water Temperature (C˚):



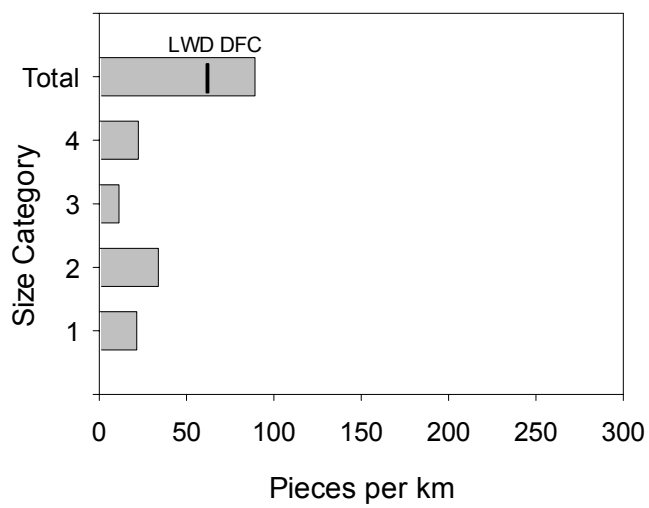
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Mooney Creek, summer 1998.



Estimated area of Mooney Creek in pools and riffles as calculated using BVET techniques, summer 1998.



Maximum and average depths and residual pool depths for pools and riffles in Mooney Creek, summer 1998. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Mooney Creek, summer 1998. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

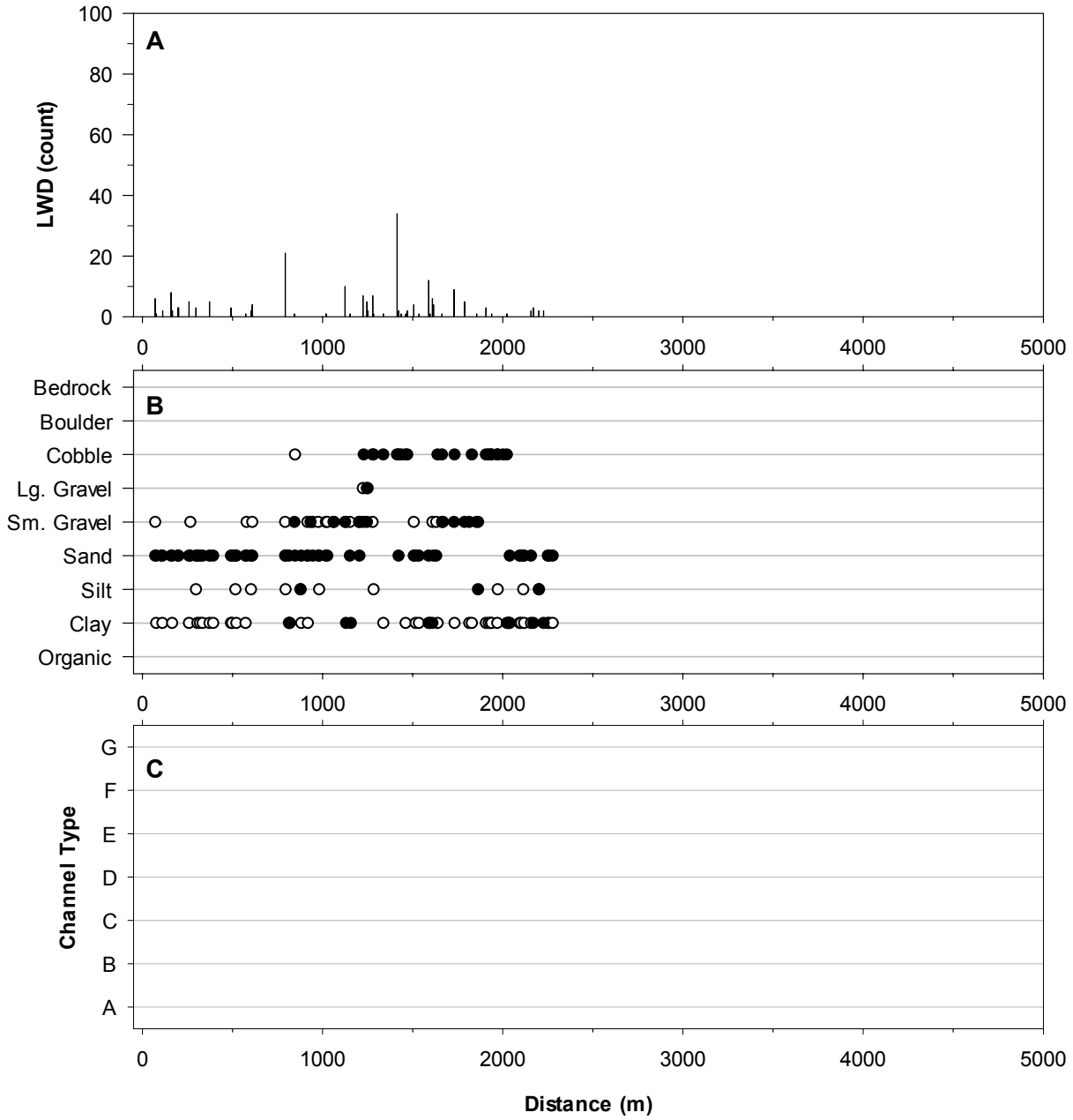
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Mooney Creek during BVET habitat survey, summer 1998. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Other	70.6		Cable overhead
Bridge	165.4		Footbridge
Ford	197.3		Trail x-ing
Other	318.7		Campsite l
Seep	491.6		Seep l; rhodo cover
Seep	497.8		Seep r; rhodo cover
Seep	791.9		Seep l
Seep	794.4		Seep r
Seep	843.3		Seep r (dry)
Braid	1060.7		Braided channel
Other	1063.0		Metal bars in water
Seep	1201.8		Seep l
Seep	1421.3		Seep l
Seep	1588.4		Debris jam; sand bar; rhodo cover
Seep	1787.4		Seep l
Seep	1862.4		Seepl; fish
Seep	2022.2		Seep l;aquatic plants thcik
Trib	2276.4		Stream forks,yellow branch

Photos taken of Mooney Creek during BVET habitat survey, summer 1998. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Mooney Creek, summer 1998. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Nantahala River**
District:	Wayah
USGS Quadrangle:	Rainbow Springs
Survey Date:	06/30/98
Downstream Starting Point:	0
Total Distance Surveyed (km):	11.7

	Pools	**Riffles**
Percent of Total Stream Area:	16	84
Total Area (m^2):	20400±2947	110010±22077
Correction Factor Applied:	0.86	0.80
Number of Paired Samples:	10	7
Total Count:	108	102
Number per km:	9	9
Mean Area (m^2):	189	1079
Mean Maximum Depth (cm):	51	30
Mean Average Depth (cm):	76	55
Mean Residual Depth (cm):	51	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	
Percent with >35% Fines:		

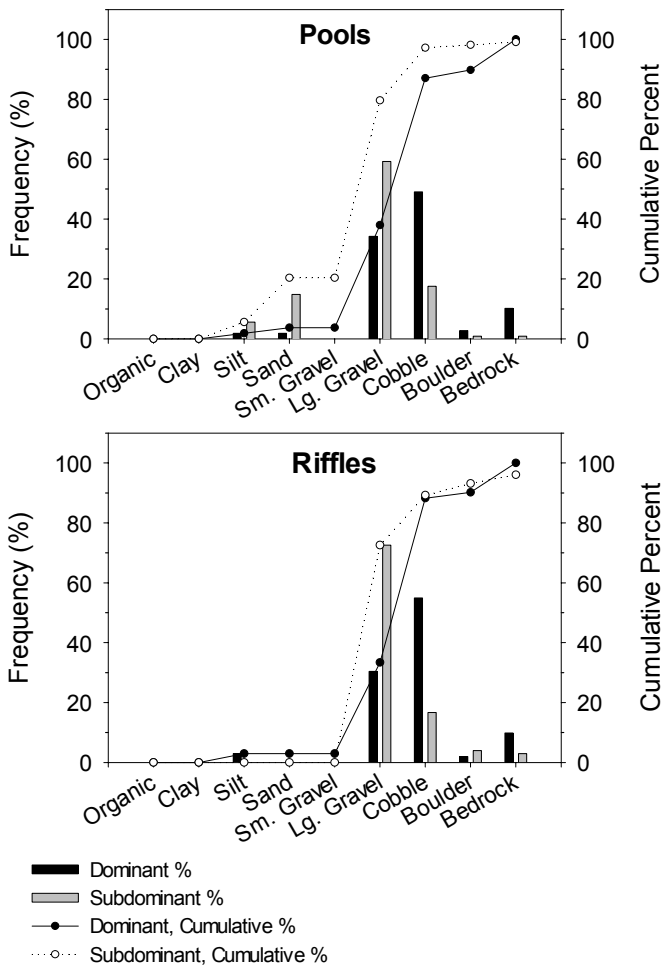
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	9
< 5 m long, > 55 cm diameter:	8
>5 m long, 10 cm – 55 cm diameter:	18
> 5 m long, > 55 cm diameter:	12
Total:	47

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

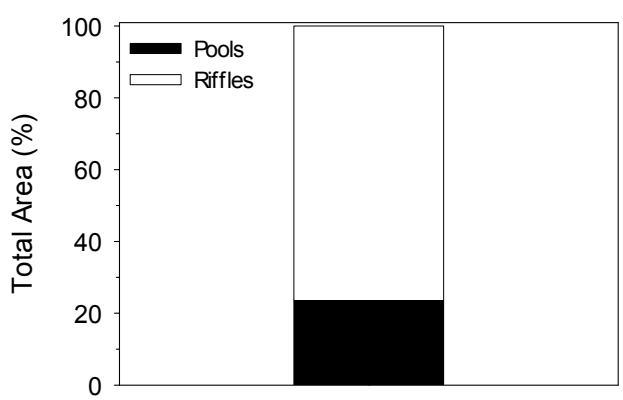
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

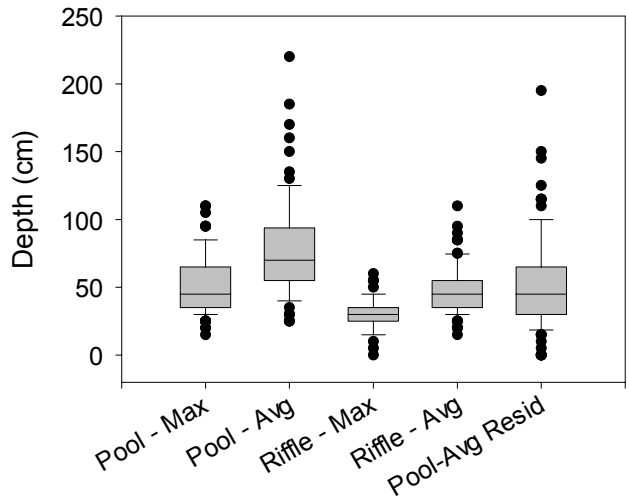
Other Stream Attributes
Mean Bankfull Channel Width (m):
Mean Channel Gradient (%):
Median Water Temperature (C˚):



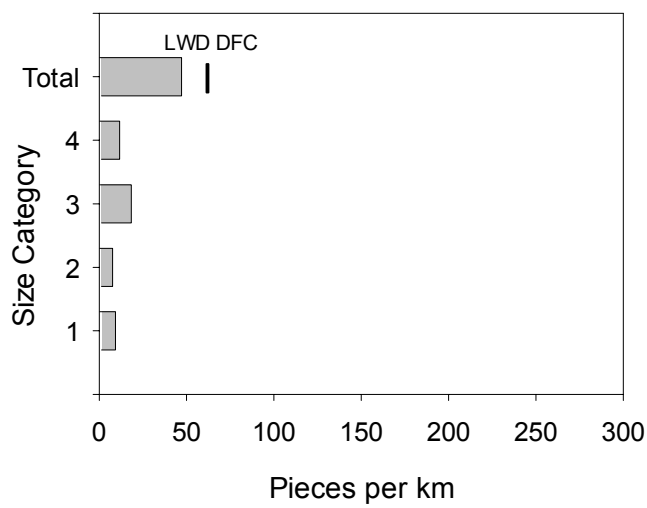
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Nantahala River, summer 1998.



Estimated area of Nantahala River in pools and riffles as calculated using BVET techniques, summer 1998.



Maximum and average depths and residual pool depths for pools and riffles in Nantahala River, summer 1998. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Nantahala River, summer 1998. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

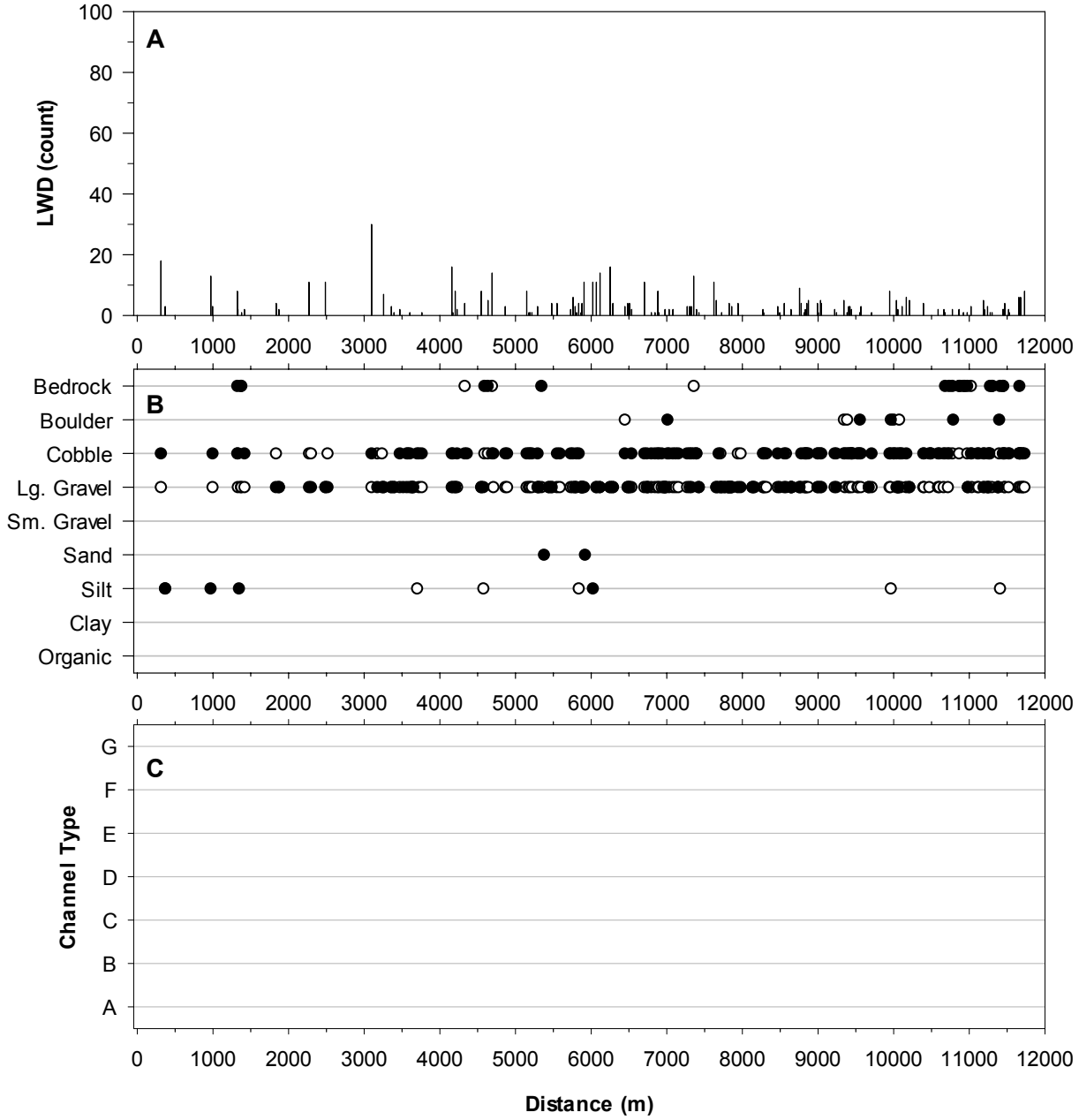
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Nantahala River during BVET habitat survey, summer 1998. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Other	992.5		Dj, left
Other	1414.5		Log structure,1395.3
Other	3096.6		Stream structure, right
Other	3254.3		Stream structure, v dam
Other	4201.9		Dj right
Other	4327.9		Dj left
Other	4545.8		Dj left
Other	4706.9		Dj right
Other	5290.4		Dj left
Other	5834.8		Blowdown, left
Other	5877.5		Dj right
Other	6115.4		Dj left
Other	7355.9		Dj left
Other	7621.6		Dj left
Other	8777.2		Dj right
Other	8871.8		Dj right
Other	9567.6		Dj left
Other	11729.0		Dj left

Photos taken of Nantahala River during BVET habitat survey, summer 1998. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Nantahala River, summer 1998. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Park Creek**
District:	Wayah
USGS Quadrangle:	Rainbow Springs
Survey Date:	06/30/98
Downstream Starting Point:	0
Total Distance Surveyed (km):	3.2

	Pools	**Riffles**
Percent of Total Stream Area:	11	89
Total Area (m^2):	1163±209	9135±2856
Correction Factor Applied:	1.22	1.15
Number of Paired Samples:	3	3
Total Count:	40	41
Number per km:	12	13
Mean Area (m^2):	29	223
Mean Maximum Depth (cm):	52	29
Mean Average Depth (cm):	22	14
Mean Residual Depth (cm):	6	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	
Percent with >35% Fines:		

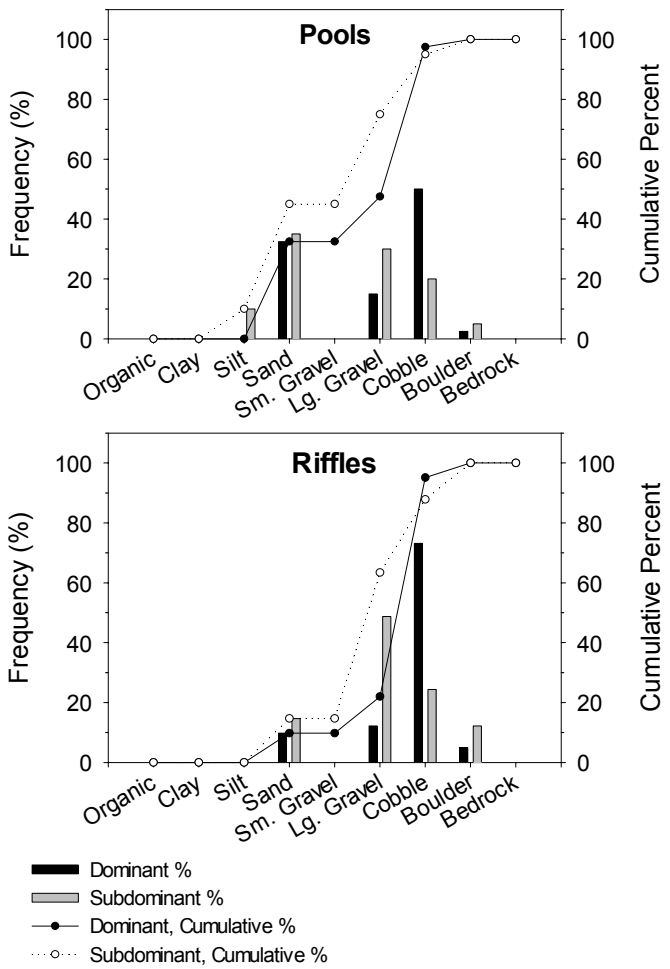
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	35
< 5 m long, > 55 cm diameter:	23
>5 m long, 10 cm – 55 cm diameter:	10
> 5 m long, > 55 cm diameter:	6
Total:	73

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

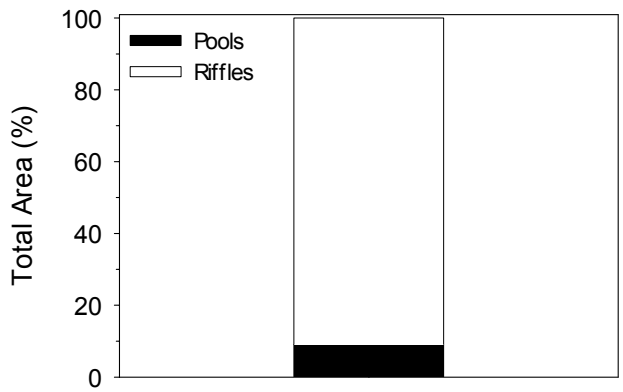
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

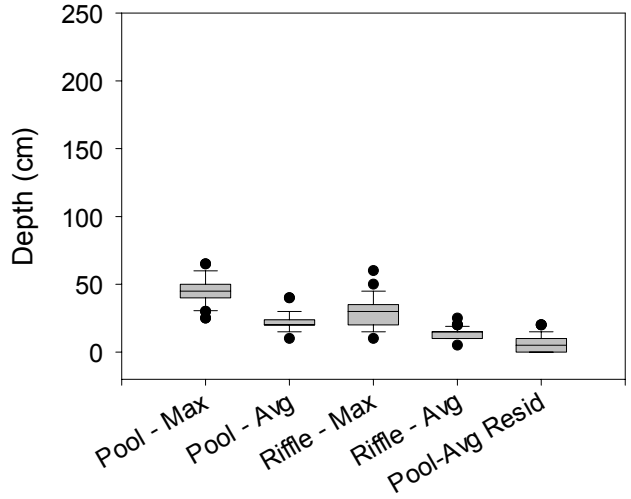
Other Stream Attributes	
Mean Bankfull Channel Width (m):	
Mean Channel Gradient (%):	3
Median Water Temperature (C˚):	



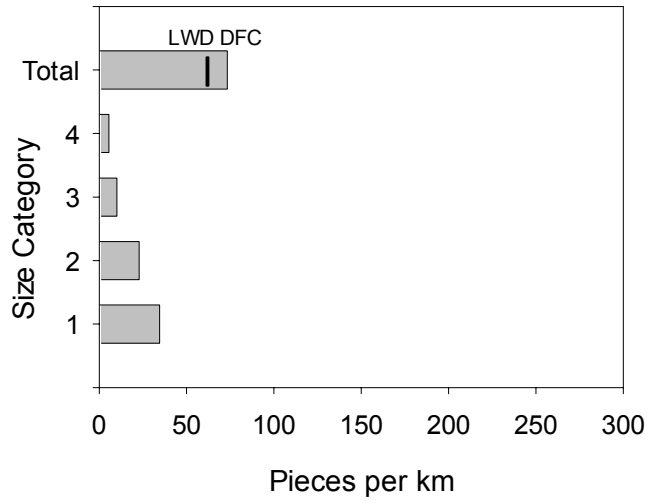
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Park Creek, summer 1998.



Estimated area of Park Creek in pools and riffles as calculated using BVET techniques, summer 1998.



Maximum and average depths and residual pool depths for pools and riffles in Park Creek, summer 1998. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Park Creek, summer 1998. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

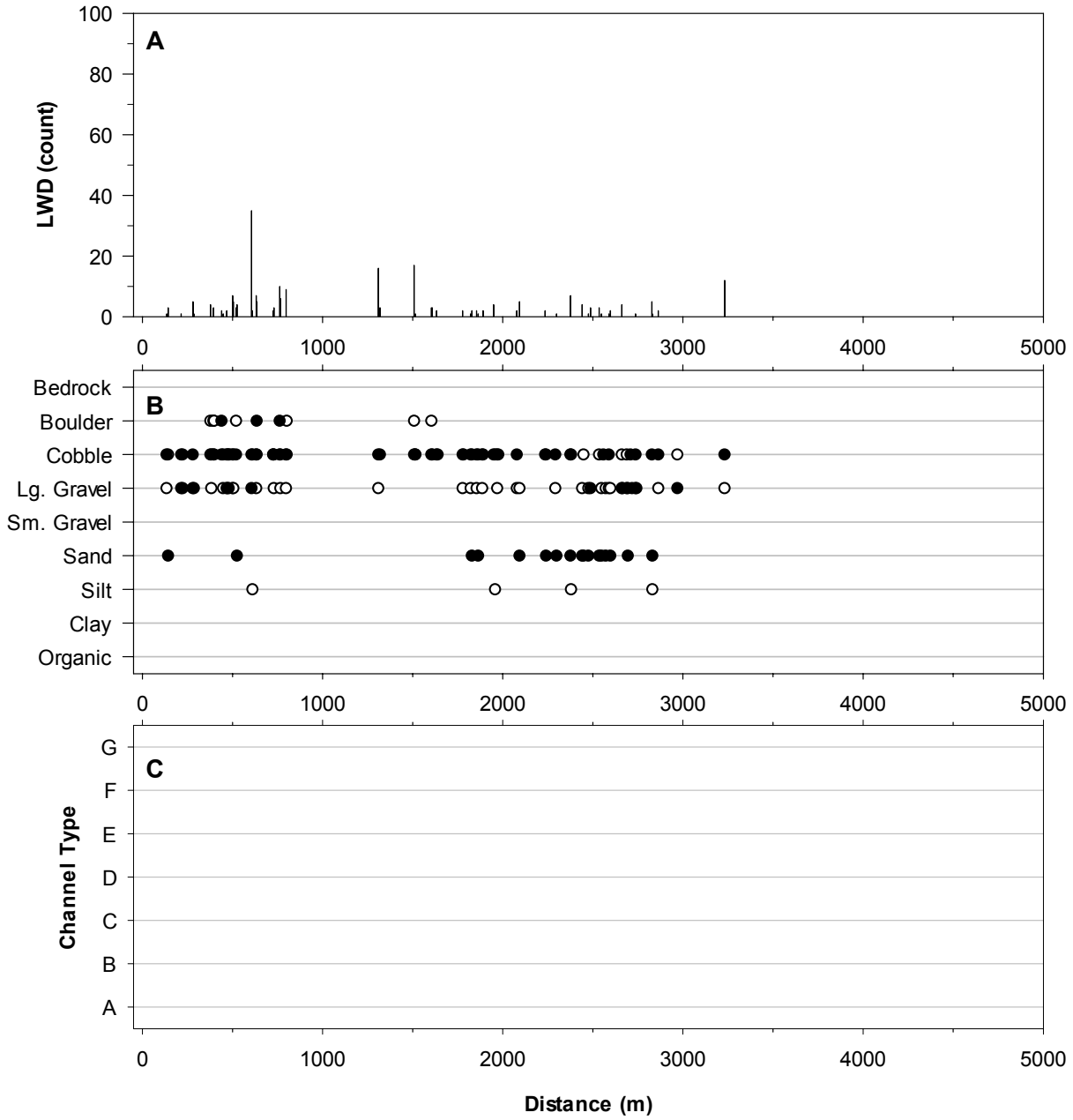
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Park Creek during BVET habitat survey, summer 1998. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Ford	239.9		Road x-ing
Ford	292.5		Road x-ing
Ford	438.9		Road x-ing
Other	448.1		V-dam
Other	504.3		V-dam
Other	519.6		Channel deflector left
Other	524.3		Channel deflector right
Other	729.3		V-dam
Ford	1240.5		Trail x-ing
Bridge	1507.5		Old trail bridge
Ford	2375.1		Trail x-ing
Braid	2440.1		Braid
Braid	2687.9		Braid
Braid	2693.0		Braid
Braid	2708.2		Braid
Ford	2827.0		Trail x-ing

Photos taken of Park Creek during BVET habitat survey, summer 1998. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Park Creek, summer 1998. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Wesser Creek**
District:	Wayah
USGS Quadrangle:	Wesser
Survey Date:	06/27/00
Downstream Starting Point:	Forest boundary
Total Distance Surveyed (km):	1.1

	Pools	**Riffles**
Percent of Total Stream Area:	13	87
Total Area (m^2):	591±173	3841±1189
Correction Factor Applied:	1.00	0.83
Number of Paired Samples:	3	3
Total Count:	29	29
Number per km:	26	26
Mean Area (m^2):	20	132
Mean Maximum Depth (cm):	51	37
Mean Average Depth (cm):	40	23
Mean Residual Depth (cm):	26	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	
Percent with >35% Fines:		

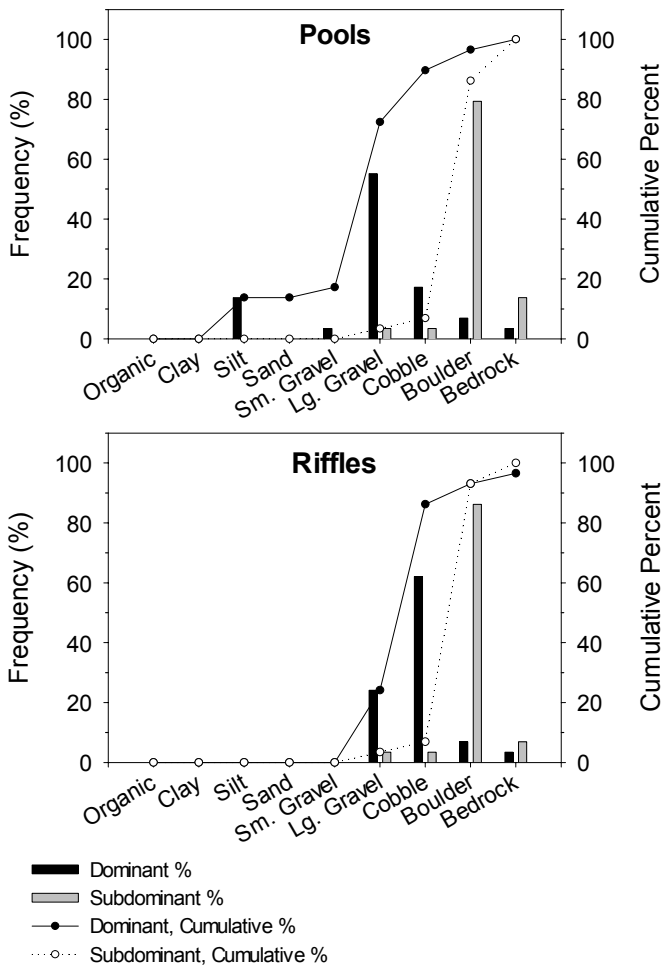
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	31
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	8
> 5 m long, > 55 cm diameter:	7
Total:	39

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

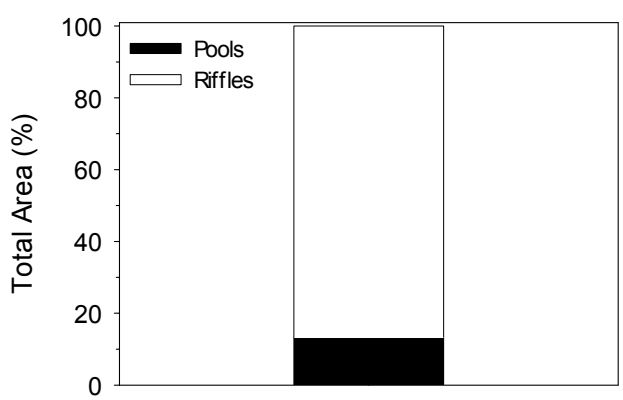
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

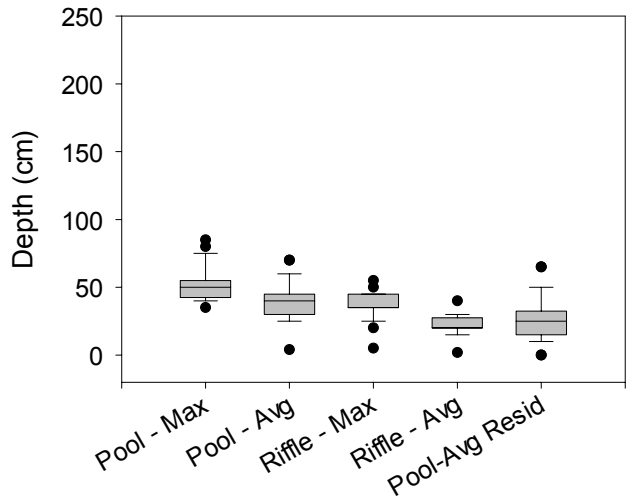
Other Stream Attributes	
Mean Bankfull Channel Width (m):	7
Mean Channel Gradient (%):	
Median Water Temperature (C˚):	



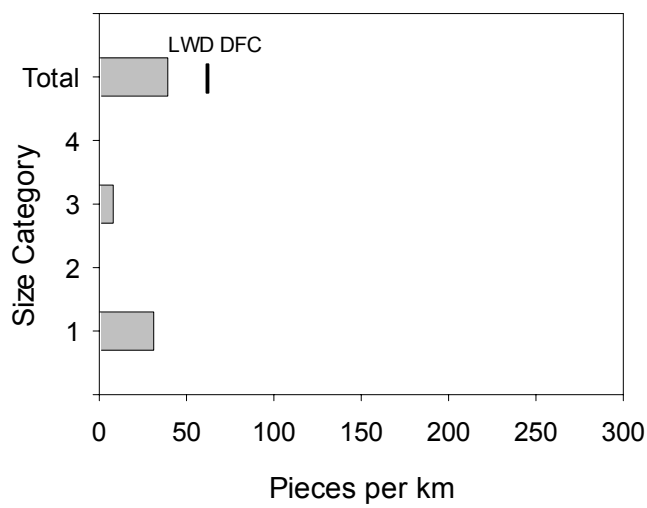
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Wesser Creek, summer 2000.



Estimated area of Wesser Creek in pools and riffles as calculated using BVET techniques, summer 2000.



Maximum and average depths and residual pool depths for pools and riffles in Wesser Creek, summer 2000. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Wesser Creek, summer 2000. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

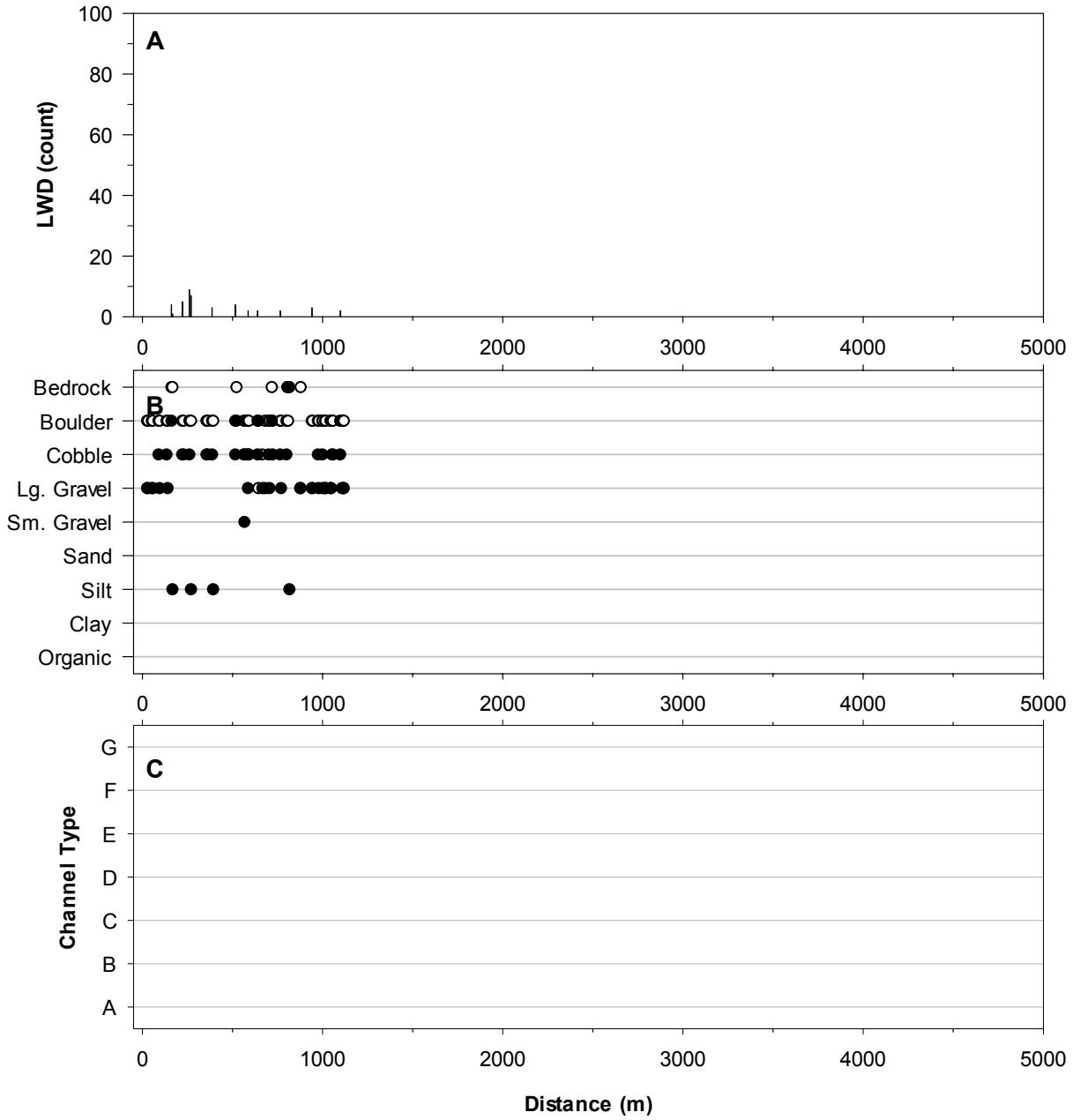
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Wesser Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Side Channel	15.0		Island start l
Side Channel	27.0		Island end
Side Channel	379.0		Island start r
Side Channel	450.0		Island ends
Side Channel	459.0		Island start r
Side Channel	478.0		Island ends r
Ford	579.0		Trail crosses
Trib	591.0		Dry wash l
Trib	768.0		Dry wash
Side Channel	850.0		Island r
Side Channel	965.0		Idland to r ends

Photos taken of Wesser Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Wesser Creek, summer 2000. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Ray Branch**
District:	Wayah
USGS Quadrangle:	Wayah Bald
Survey Date:	08/06/03
Downstream Starting Point:	Forest boundary
Total Distance Surveyed (km):	3.9

	Pools	**Riffles**
Percent of Total Stream Area:	5	95
Total Area (m^2):	564±51	10712±1571
Correction Factor Applied:	1.03	1.03
Number of Paired Samples:	4	7
Total Count:	43	74
Number per km:	11	19
Mean Area (m^2):	13	145
Mean Maximum Depth (cm):	49	33
Mean Average Depth (cm):	33	19
Mean Residual Depth (cm):	11	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	12
Percent Surveyed as Cascades:	--	27
Percent with >35% Fines:		

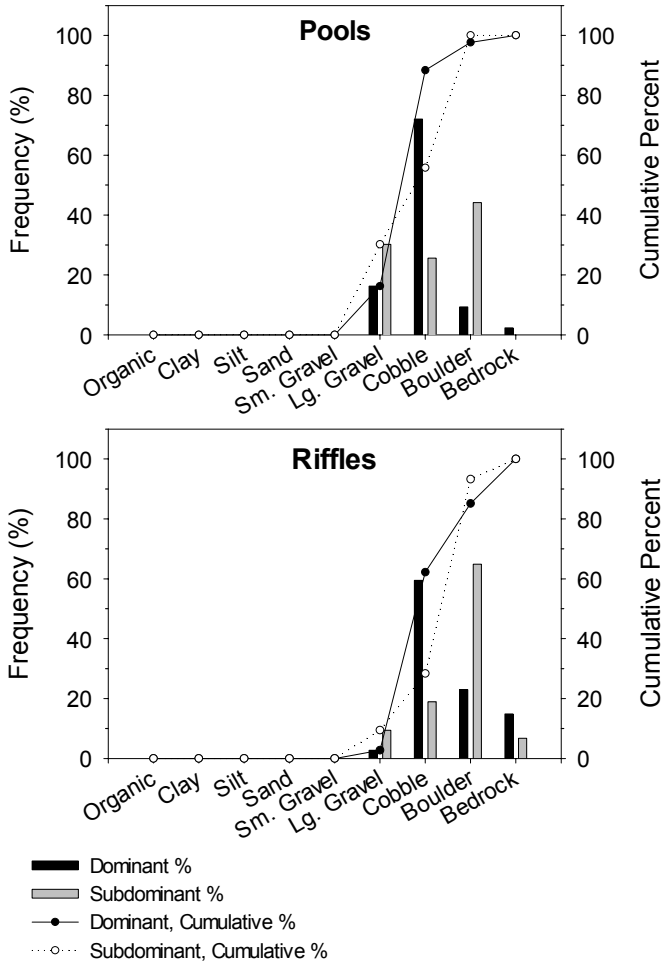
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	61
< 5 m long, > 55 cm diameter:	19
>5 m long, 10 cm – 55 cm diameter:	26
> 5 m long, > 55 cm diameter:	28
Total:	133

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	11	3
Maximum:	20	8
75th Percentile	12	5
25th Percentile	8	2
Minimum	4	1

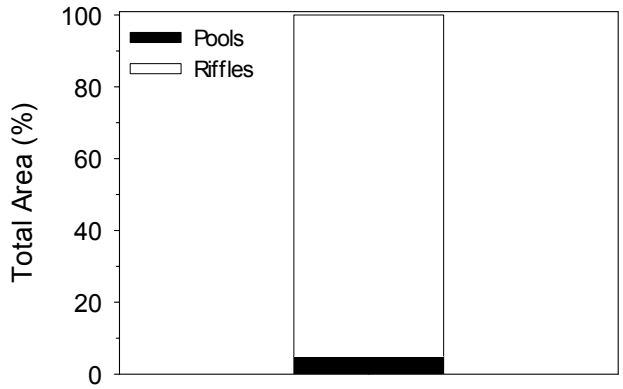
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	0
B:	100
C:	0
D:	0
E:	0
F:	0
G:	0

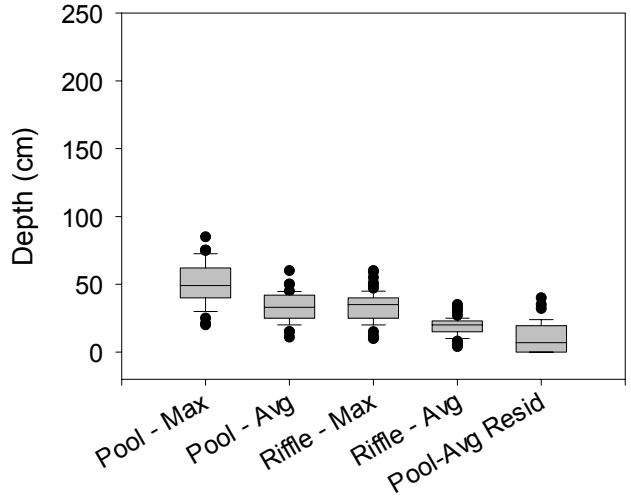
Other Stream Attributes	
Mean Bankfull Channel Width (m):	4
Mean Channel Gradient (%):	8
Median Water Temperature (C˚):	16



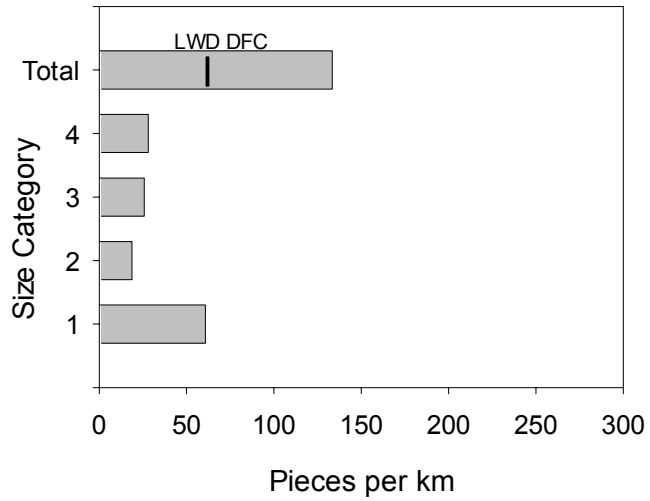
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Ray Branch, summer 2003.



Estimated area of Ray Branch in pools and riffles as calculated using BVET techniques, summer 2003.



Maximum and average depths and residual pool depths for pools and riffles in Ray Branch, summer 2003. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Ray Branch, summer 2003. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

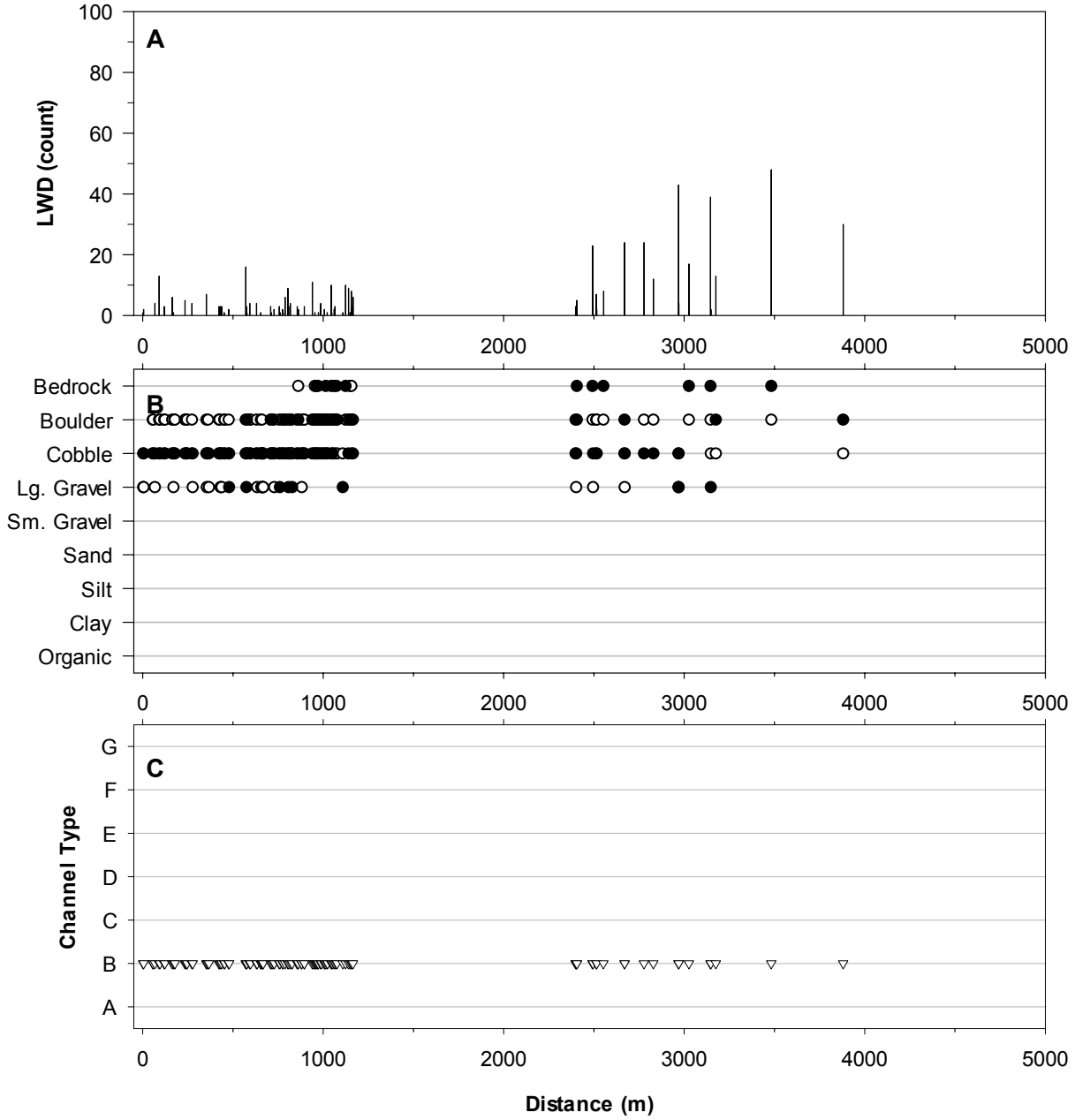
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Ray Branch during BVET habitat survey, summer 2003. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Ford	213.2		
Trib	228.4		
Trib	291.5		
Side Channel	549.0		In on left
Side Channel	563.0		Out on Left
Side Channel	596.4		In from right
Side Channel	631.6		Out on right
Side Channel	655.0		In from left
Side Channel	671.5		Out on left
Ford	695.0		Old road or trail
Side Channel	702.0		In from right
Side Channel	733.8		
Side Channel	873.0		In from right
Side Channel	916.8		Out on right
Culvert	1076.2		Culvert under road #7279 Begin
Culvert	1094.5		7 ft metal 13.3m End
Trib	1099.9	1.0	In from left 1m
Ford	1123.8	4.0	Old Road
Side Channel	2535.1	1.5	In from left
Side Channel	2553.0	1.0	Out on left
Trib	2568.9	1.5	In from left
Ford	2582.0	2.0	Old trail/old rad dirt
Side Channel	2628.7	1.5	In from left
Side Channel	2654.7	2.0	Out on left
Side Channel	2661.6	1.0	In from right
Side Channel	2681.4	1.0	Out on right
Ford	2858.1	3.0	In on left only, then up creek
Ford	3025.5	2.0	Old dirt trail or road
Side Channel	3103.4	0.5	In on right
Side Channel	3159.4	1.5	Out on right
Trib	3254.4	1.0	In on left

Photos taken of Ray Branch during BVET habitat survey, summer 2003. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Ray Branch, summer 2003. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**East Fork Dicks Creek**
District:	Wayah
USGS Quadrangle:	Sylva
Survey Date:	07/08/04
Downstream Starting Point:	Forest boundary
Total Distance Surveyed (km):	2.1

	Pools	**Riffles**
Percent of Total Stream Area:	14	86
Total Area (m^2):	936±245	5570±496
Correction Factor Applied:	1.21	1.05
Number of Paired Samples:	5	6
Total Count:	54	69
Number per km:	25	32
Mean Area (m^2):	17	81
Mean Maximum Depth (cm):	45	37
Mean Average Depth (cm):	28	16
Mean Residual Depth (cm):	13	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	52
Percent with >35% Fines:		

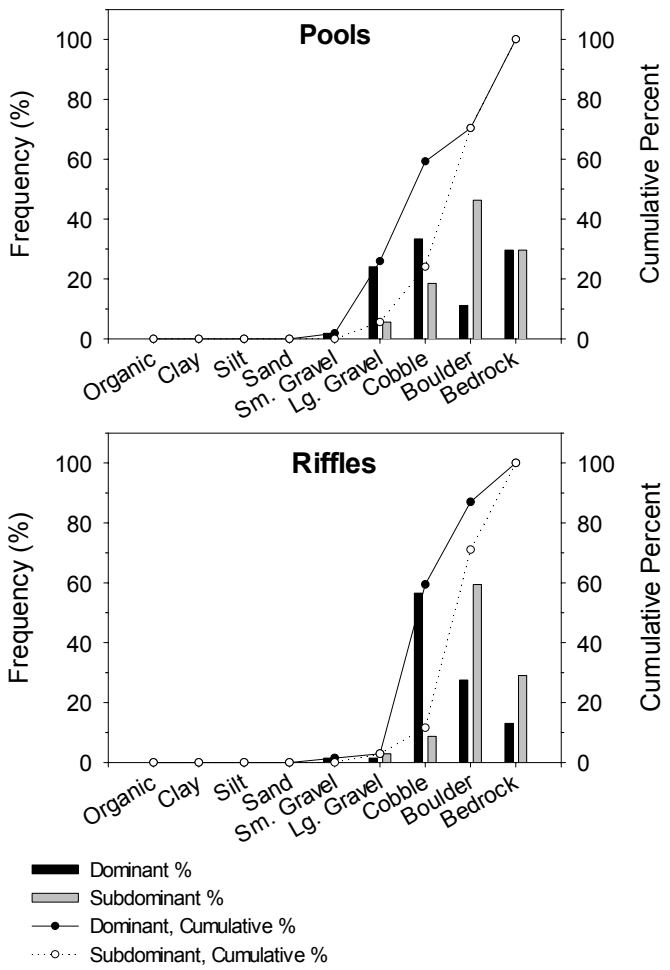
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	7
< 5 m long, > 55 cm diameter:	38
>5 m long, 10 cm – 55 cm diameter:	10
> 5 m long, > 55 cm diameter:	0
Total:	55

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	10	3
Maximum:	21	15
75th Percentile	11	3
25th Percentile	7	2
Minimum	5	1

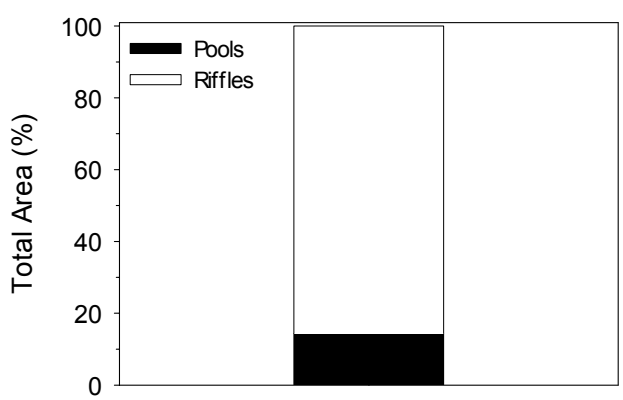
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	0
B:	100
C:	0
D:	0
E:	0
F:	0
G:	0

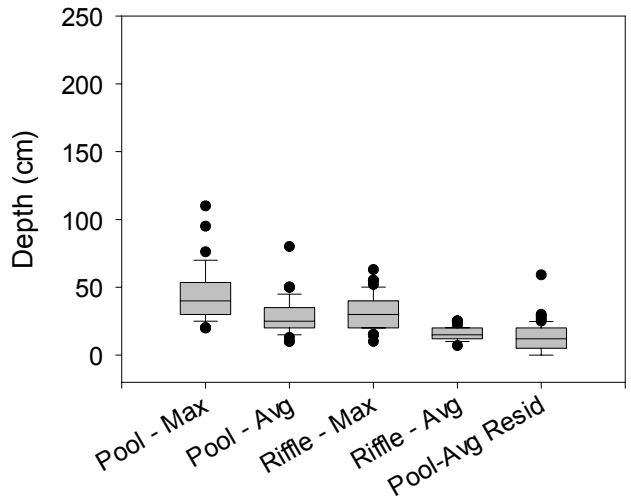
Other Stream Attributes	
Mean Bankfull Channel Width (m):	4
Mean Channel Gradient (%):	12
Median Water Temperature (C˚):	14



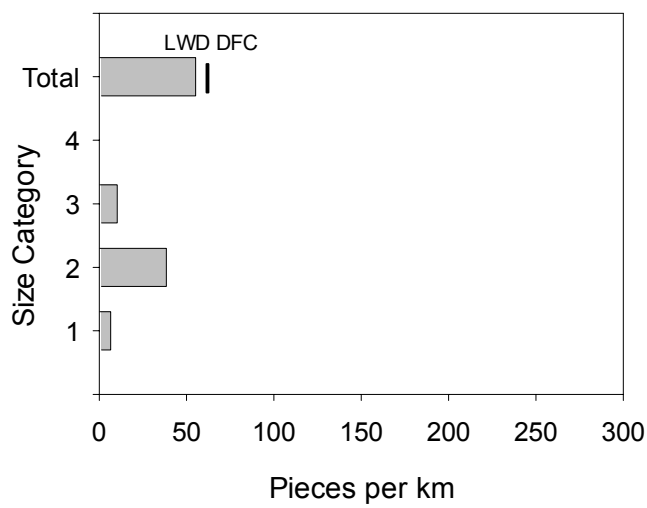
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in East Fork Dicks Creek, summer 2004.



Estimated area of East Fork Dicks Creek in pools and riffles as calculated using BVET techniques, summer 2004.



Maximum and average depths and residual pool depths for pools and riffles in East Fork Dicks Creek, summer 2004. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in East Fork Dicks Creek, summer 2004. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

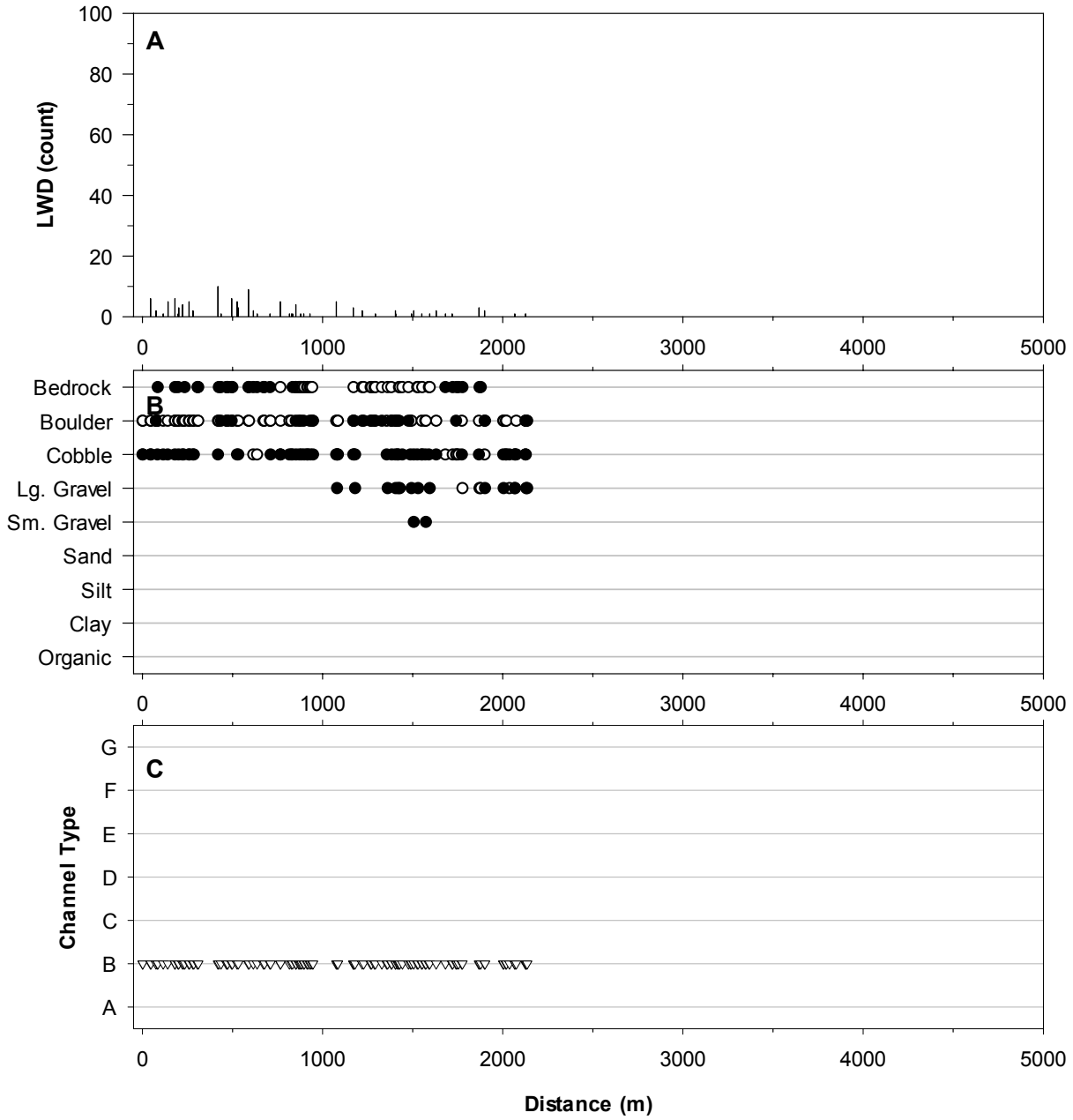
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on East Fork Dicks Creek during BVET habitat survey, summer 2004. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Side Channel	13.0	2.0	In on Right
Side Channel	22.0	2.0	Out on Right
Bridge	165.0		old fallen wood bridge
Fall	436.0		14' in 2 sections
Fall	615.0		40' in 2 sections
Fall	636.0		25' high
Bridge	657.0		Old remains of wooden bridge
Side Channel	795.0	1.0	In from right
Side Channel	827.0	1.0	out on right
TRIB	947.0	1.0	In on Right
TRIB	967.0	1.0	In on Left
Side Channel	1013.0	0.5	In on Left
Side Channel	1033.0	0.8	In on Left
Side Channel	1074.0	1.0	Out on Left
FORD	1121.0		Old Road 6m wide
FORD	1221.0	5.0	Old Road
Seep	1370.0	0.3	
Dam	1506.0		
Fall	1648.0	8.0	Falls, 8m high in 2 sections
Trib	1697.0	1.0	In on left
Seep	1755.0	0.5	In on Right
Seep	1774.0	0.5	In on Right
Seep	1791.0	0.5	In on Right
Side Channel	1920.0	1.0	In on Right
Trib	1920.0	1.0	In on Left
Side Channel	1976.0	1.0	Out on Right
Ford	2040.0	2.5	Old Road 7-22-04
Trib	2080.0	0.5	In on Right

Photos taken of East Fork Dicks Creek during BVET habitat survey, summer 2004. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in East Fork Dicks Creek, summer 2004. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Big Creek**
District:	Appalachian
USGS Quadrangle:	Greystone
Survey Date:	06/28/00
Downstream Starting Point:	Wildcat Hollow
Total Distance Surveyed (km):	0.8

	Pools	**Riffles**
Percent of Total Stream Area:	29	71
Total Area (m^2):	1772±3740	4359±573
Correction Factor Applied:	1.00	1.01
Number of Paired Samples:	2	2
Total Count:	21	20
Number per km:	26	25
Mean Area (m^2):	84	218
Mean Maximum Depth (cm):	66	38
Mean Average Depth (cm):	40	23
Mean Residual Depth (cm):	19	--
Percent Surveyed as Glides:		--
Percent Surveyed as Runs:	--	
Percent Surveyed as Cascades:	--	1
Percent with >35% Fines:		

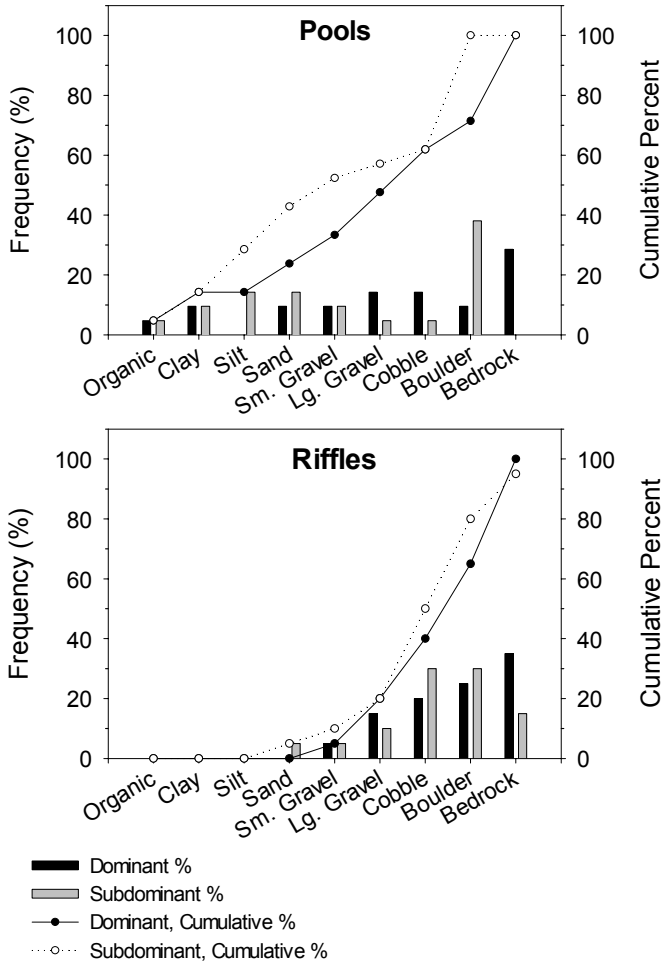
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	238
< 5 m long, > 55 cm diameter:	68
>5 m long, 10 cm – 55 cm diameter:	29
> 5 m long, > 55 cm diameter:	4
Total:	338

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

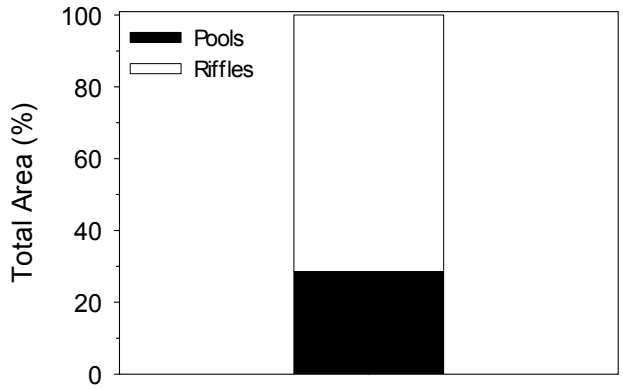
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

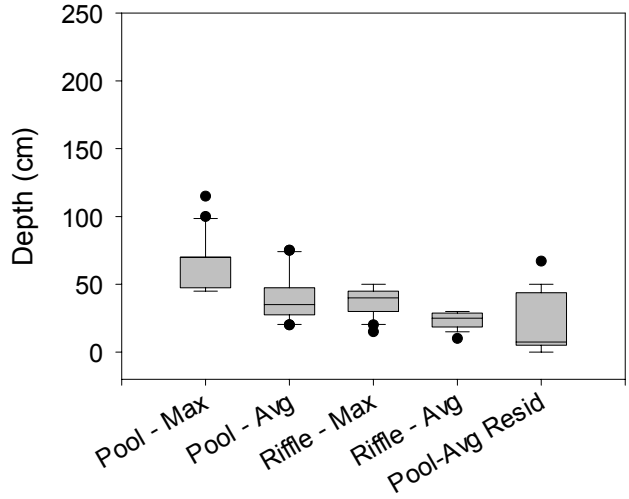
Other Stream Attributes
Mean Bankfull Channel Width (m):
Mean Channel Gradient (%):
Median Water Temperature (C˚):



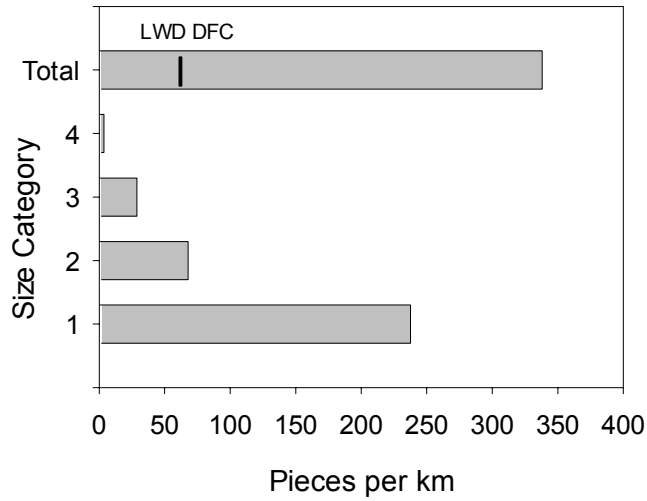
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Big Creek, summer 2000.



Estimated area of Big Creek in pools and riffles as calculated using BVET techniques, summer 2000.



Maximum and average depths and residual pool depths for pools and riffles in Big Creek, summer 2000. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Big Creek, summer 2000. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

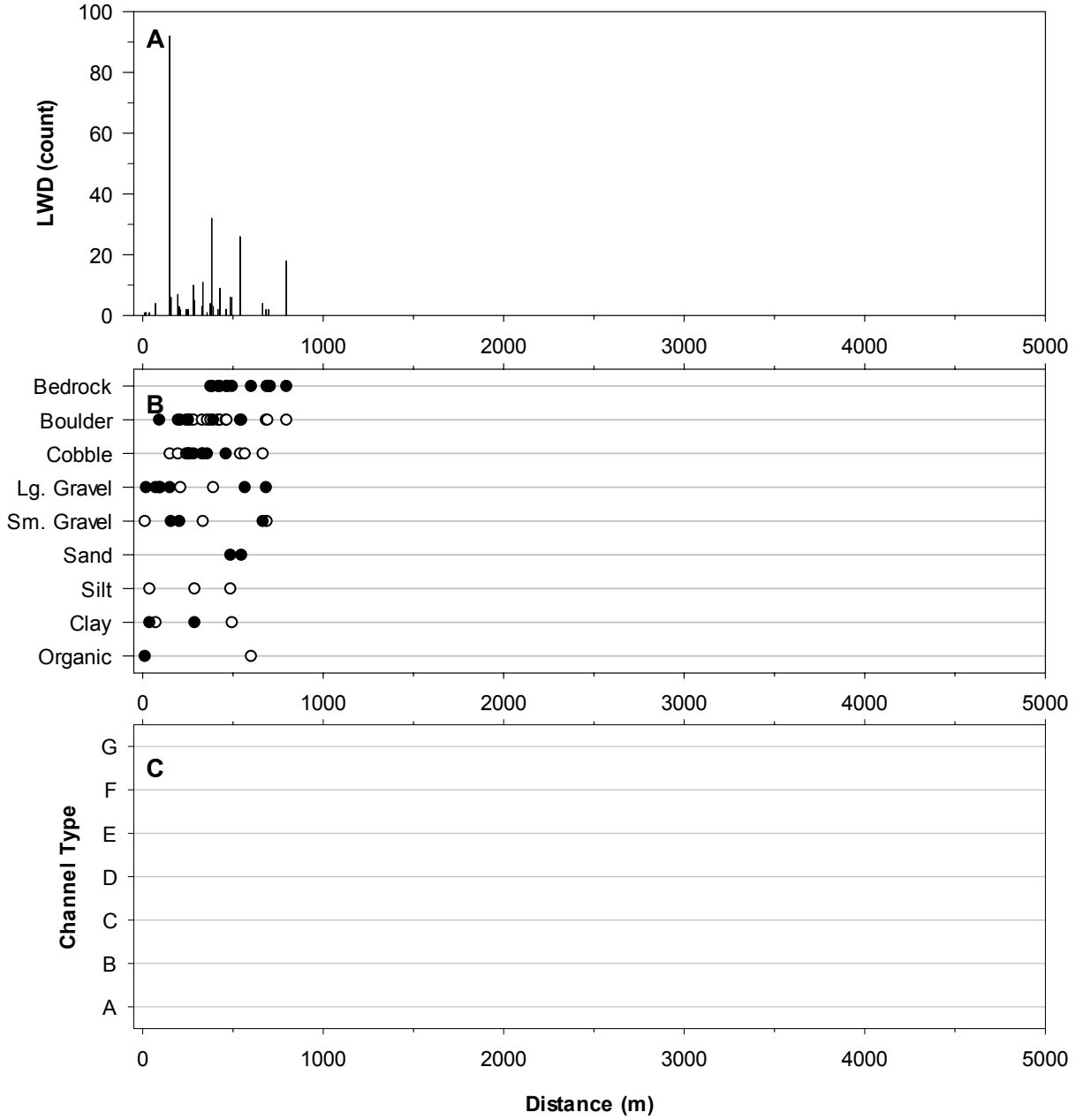
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Big Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Other	332.4		Debris jam
Other	382.1		Big debris jam
Bridge	545.8		At first bridge

Photos taken of Big Creek during BVET habitat survey, summer 2000. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Big Creek, summer 2000. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream Channel and Habitat Attributes in the National Forests in North Carolina Before and After the Hurricane Flooding Events of 2004

Appendix C: 2005 Stream Summaries

2005 Stream Summaries – Index by Ranger District

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Stream:	**Big Lost Cove Creek**
District:	Appalachian
USGS Quadrangle:	Old Fort
Survey Date:	06/08/05
Downstream Starting Point:	FS boundary
Total Distance Surveyed (km):	2.1

	Pools	**Riffles**
Percent of Total Stream Area:	10	90
Total Area (m^2):	1147±691	10188±3164
Correction Factor Applied:	1.28	1.37
Number of Paired Samples:	3	4
Total Count:	34	43
Number per km:	16	21
Mean Area (m^2):	34	237
Mean Maximum Depth (cm):	73	52
Mean Average Depth (cm):	41	24
Mean Residual Depth (cm):	15	--
Percent Surveyed as Glides:	3	--
Percent Surveyed as Runs:	--	16
Percent Surveyed as Cascades:	--	44
Percent with >35% Fines:	9	0

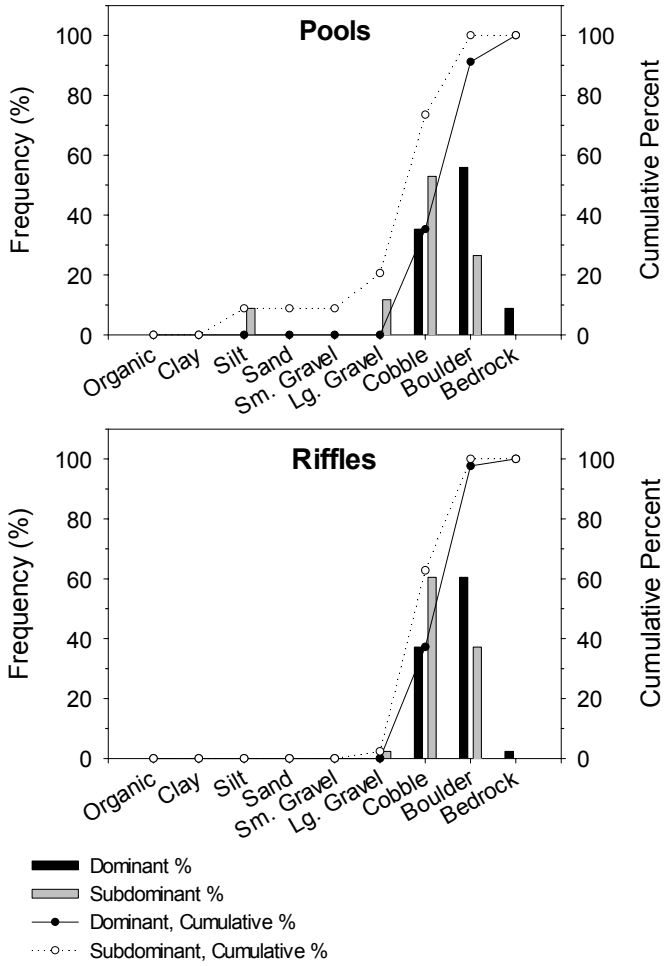
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	0
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	26
> 5 m long, > 55 cm diameter:	0
Total:	27

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	9	1
Maximum:	10	3
75th Percentile	9	2
25th Percentile	8	1
Minimum	7	1

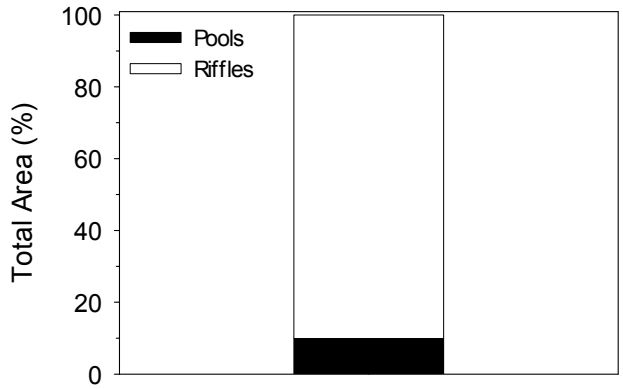
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

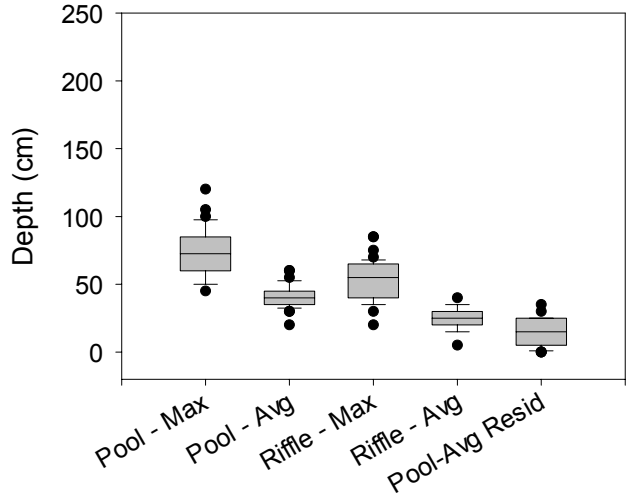
Other Stream Attributes	
Mean Bankfull Channel Width (m):	6
Mean Channel Gradient (%):	11
Median Water Temperature (C˚):	12.5



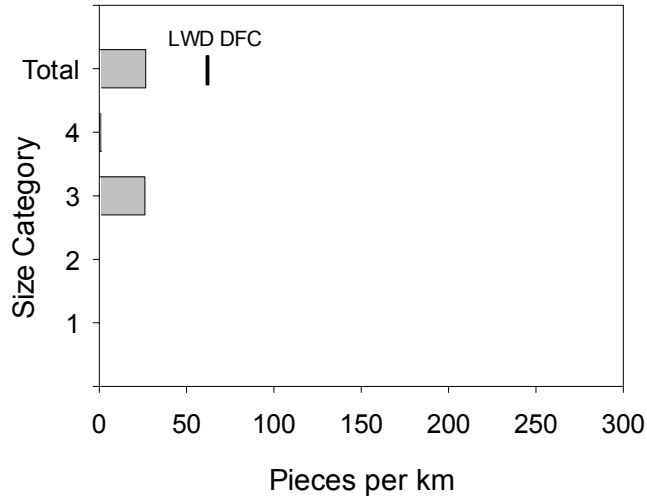
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Big Lost Cove Creek, summer 2005.



Estimated area of Big Lost Cove Creek in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Big Lost Cove Creek, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Big Lost Cove Creek, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

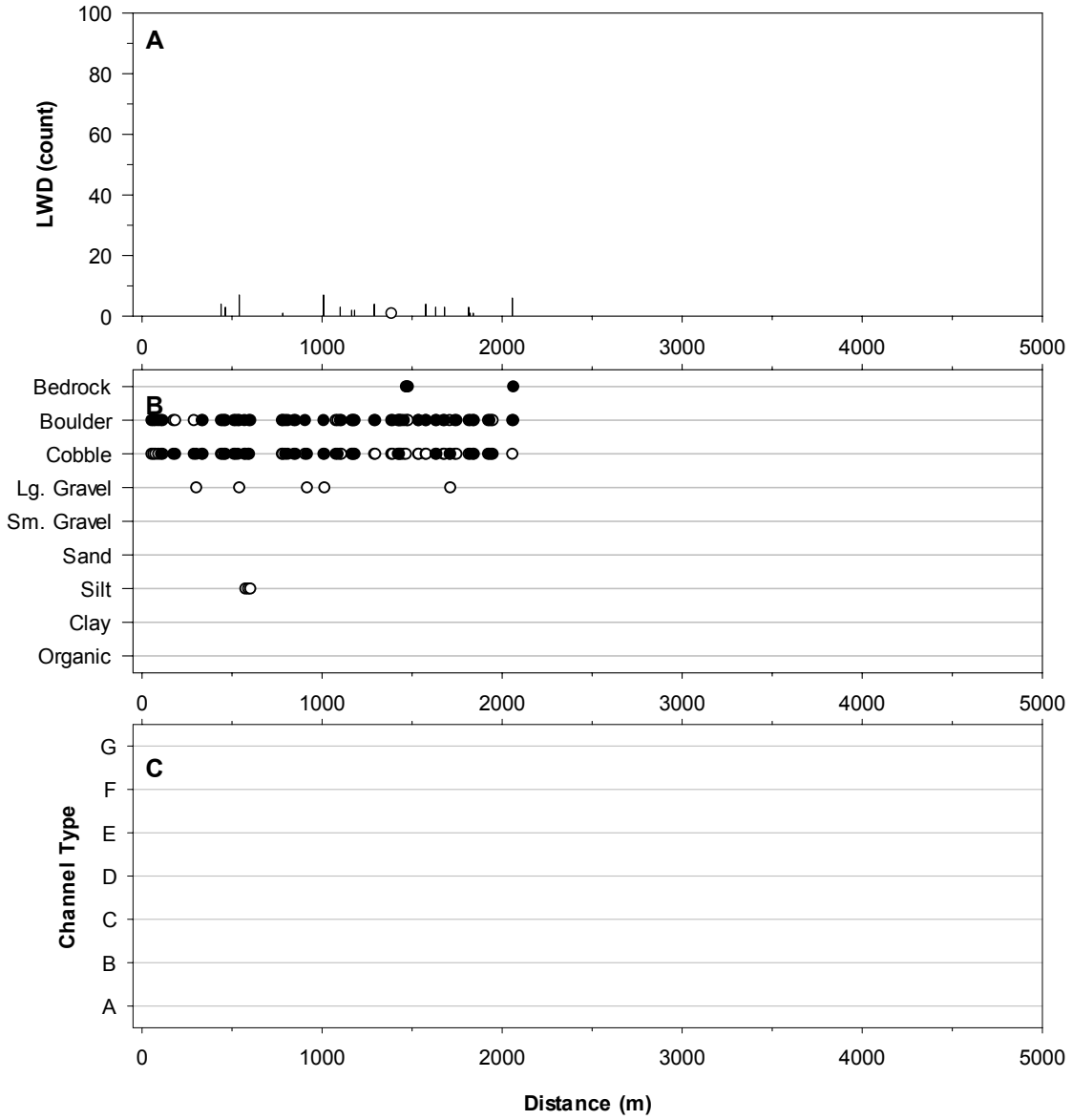
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Big Lost Cove Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Trib	289.0	1.0	unnamed trib in on left
Bridge	292.4	10.0	concrete road 440,3 m high, yoy bkt seen
Trib	300.2	4.0	neals creek, in on left, parallels road 440
Other	336.0		manmade stone and concrete cascade, possibly once a dam
Seep	473.3		minute flow
Side Channel	498.9		in on right
Side Channel	531.8		
Side Channel	563.7		in on right
Side Channel	618.0		out on left, appears majority of flash went down sch and scoured it out
Trib	703.1	4.0	unnamed trib, from blue ridge
Side Channel	820.0		in on right
Side Channel	839.0		out on right
Trib	1014.0	0.5	in on r'ight unnamed
Side Channel	1200.8		in on left
Side Channel	1209.9		out on left
Seep	1476.2		miniscule flow
Trib	1514.3	1.0	unnamed in on left
Trib	1570.1	0.5	unnamed in in right
Trib	1616.5		left
Seep	1681.2		little flow
Side Channel	1893.0		in on right
Side Channel	1921.8	2.0	out on left
Side Channel	1965.1		on left
Side Channel	1990.3		

Photos taken of Big Lost Cove Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
R	13	568.5	Max 65, ave 45
R	23	1099.6	Max 45, ave 30



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Big Lost Cove Creek, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Hemphill Creek**
District:	Appalachian
USGS Quadrangle:	Montreat
Survey Date:	06/08/05
Downstream Starting Point:	confluence with Left Prong South Toe River
Total Distance Surveyed (km):	0.8

	Pools	**Riffles**
Percent of Total Stream Area:	21	79
Total Area (m^2):	456±211	1697±841
Correction Factor Applied:	1.03	1.11
Number of Paired Samples:	4	4
Total Count:	29	30
Number per km:	35	36
Mean Area (m^2):	16	57
Mean Maximum Depth (cm):	60	28
Mean Average Depth (cm):	38	11
Mean Residual Depth (cm):	16	--
Percent Surveyed as Glides:	7	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	87
Percent with >35% Fines:	14	3

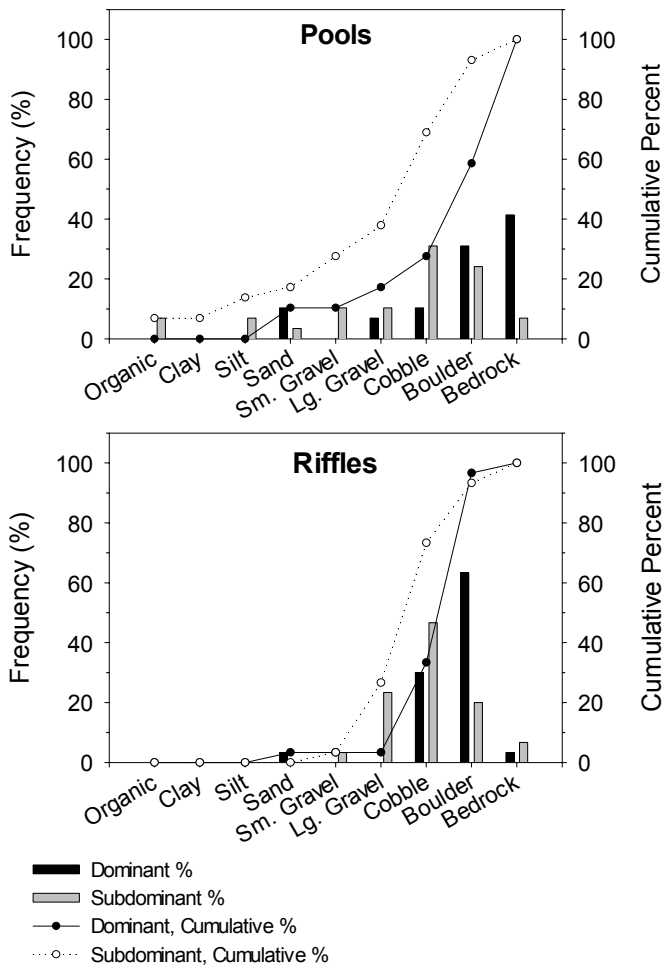
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	115
< 5 m long, > 55 cm diameter:	1
>5 m long, 10 cm – 55 cm diameter:	124
> 5 m long, > 55 cm diameter:	4
Total:	244

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	10	2
Maximum:	12	5
75th Percentile	10	2
25th Percentile	9	1
Minimum	8	0

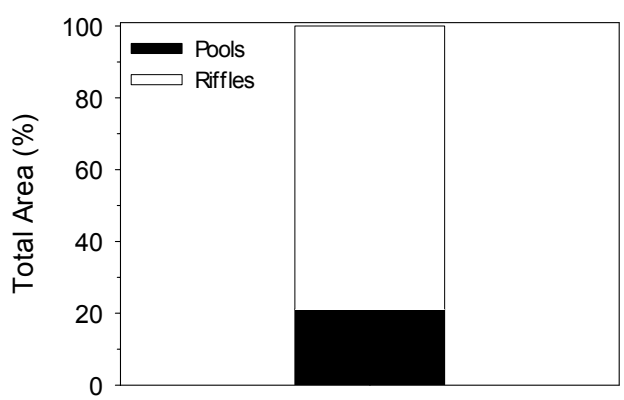
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	54
B:	46
C:	0
D:	0
E:	0
F:	0
G:	0

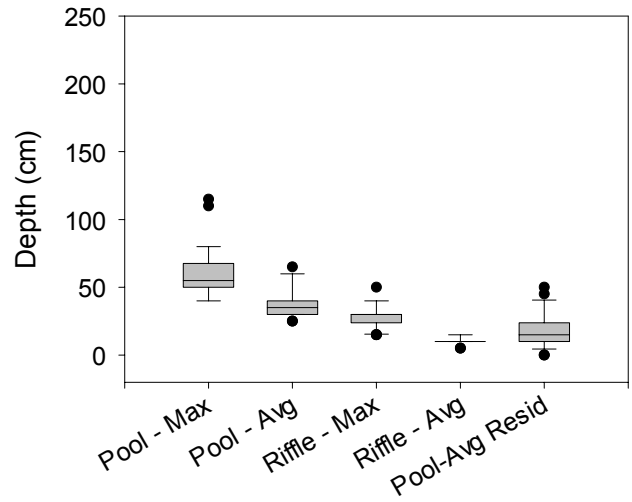
Other Stream Attributes	
Mean Bankfull Channel Width (m):	6
Mean Channel Gradient (%):	15
Median Water Temperature (C˚):	13



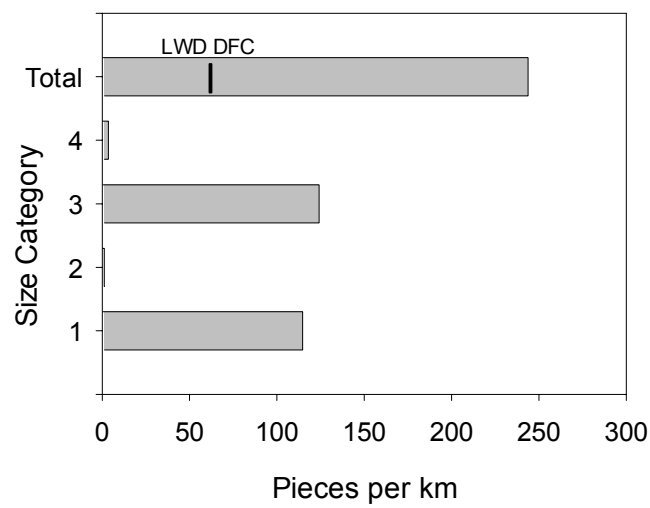
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Hemphill Creek, summer 2005.



Estimated area of Hemphill Creek in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Hemphill Creek, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Hemphill Creek, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

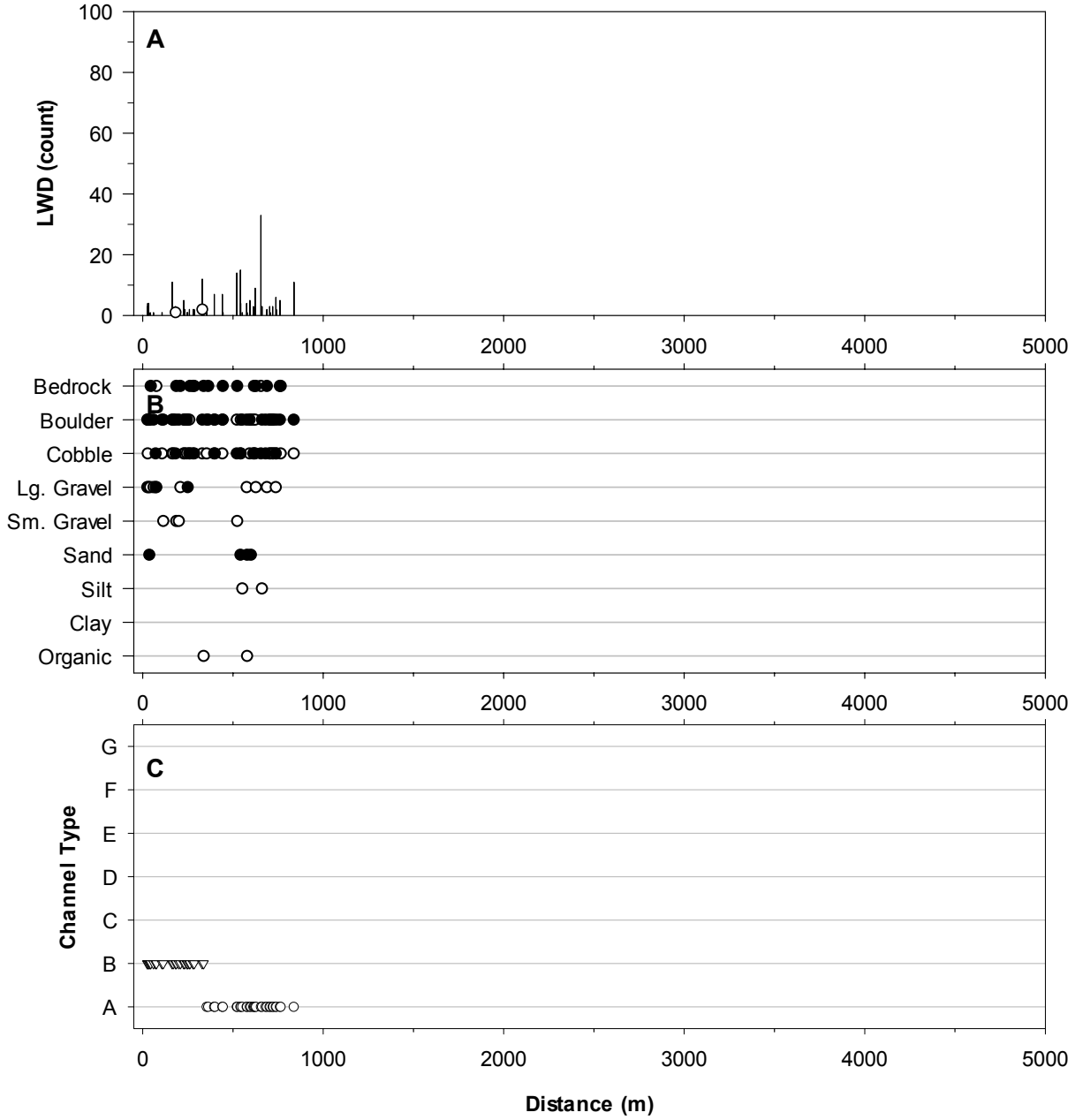
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Hemphill Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Culvert	62.1	2.0	2 pipe, ford on top
Other	89.0		Campsite on left
Seep	107.0		Left

Photos taken of Hemphill Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
V		62.1	2 pipe, ford on top
R	5	72.0	
C	10	227.0	
C	15	354.0	



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Hemphill Creek, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Left Prong South Toe River**
District:	Appalachian
USGS Quadrangle:	Old Fort/Montreat
Survey Date:	06/08/05
Downstream Starting Point:	confluence with Right Prong South Toe River
Total Distance Surveyed (km):	2.8

	Pools	**Riffles**
Percent of Total Stream Area:	24	76
Total Area (m^2):	2996±389	9388±3735
Correction Factor Applied:	1.13	1.31
Number of Paired Samples:	6	7
Total Count:	80	70
Number per km:	29	25
Mean Area (m^2):	37	134
Mean Maximum Depth (cm):	74	45
Mean Average Depth (cm):	45	20
Mean Residual Depth (cm):	20	--
Percent Surveyed as Glides:	8	--
Percent Surveyed as Runs:	--	3
Percent Surveyed as Cascades:	--	80
Percent with >35% Fines:	11	0

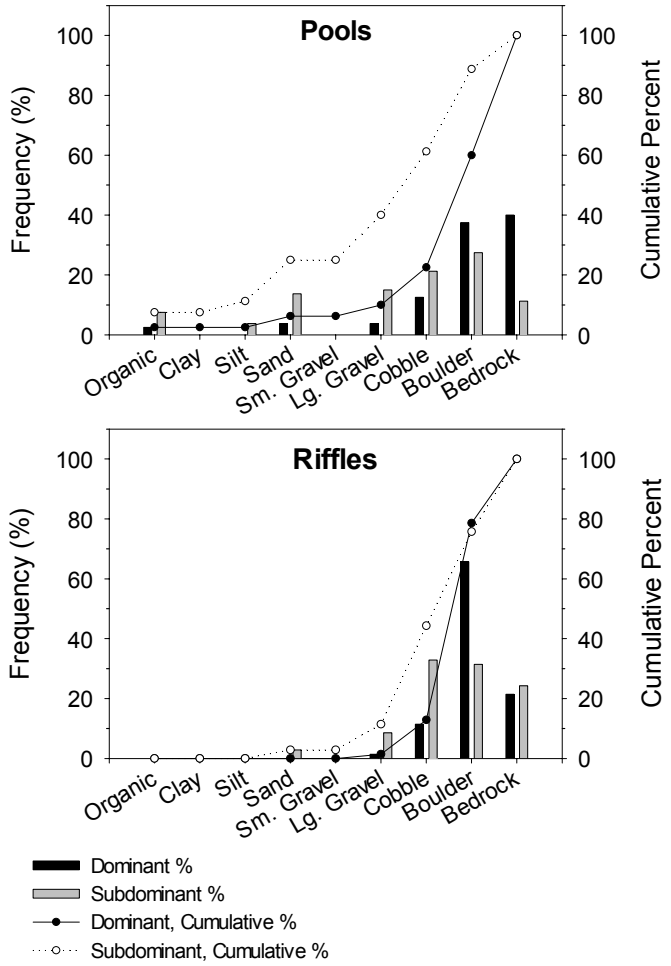
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	55
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	57
> 5 m long, > 55 cm diameter:	1
Total:	113

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	13	3
Maximum:	23	13
75th Percentile	16	3
25th Percentile	11	0
Minimum	6	0

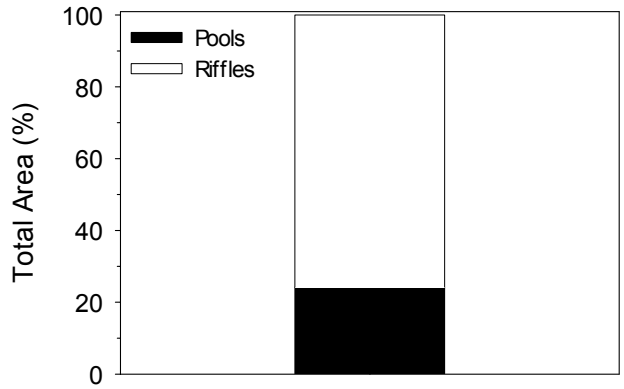
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	35
B:	65
C:	0
D:	0
E:	0
F:	0
G:	0

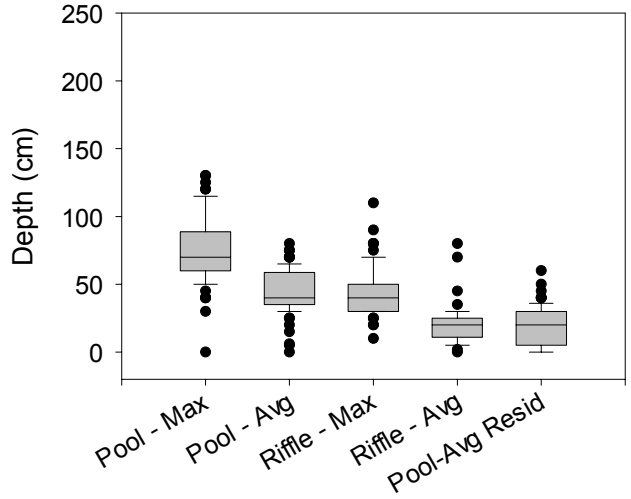
Other Stream Attributes	
Mean Bankfull Channel Width (m):	8
Mean Channel Gradient (%):	17
Median Water Temperature (C°):	12



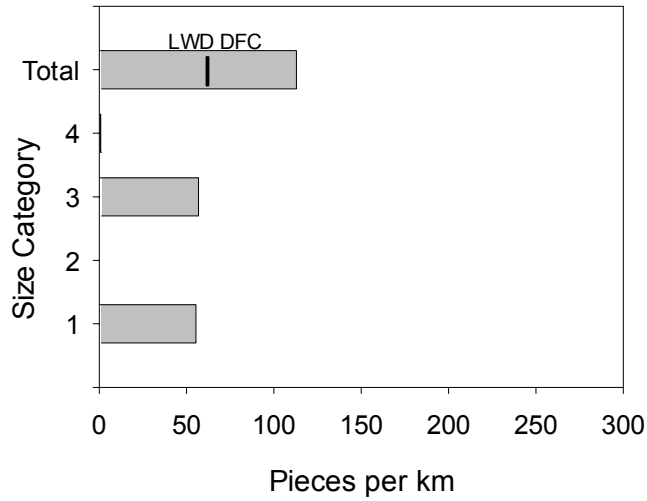
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Left Prong South Toe River, summer 2005.



Estimated area of Left Prong South Toe River in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Left Prong South Toe River, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Left Prong South Toe River, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

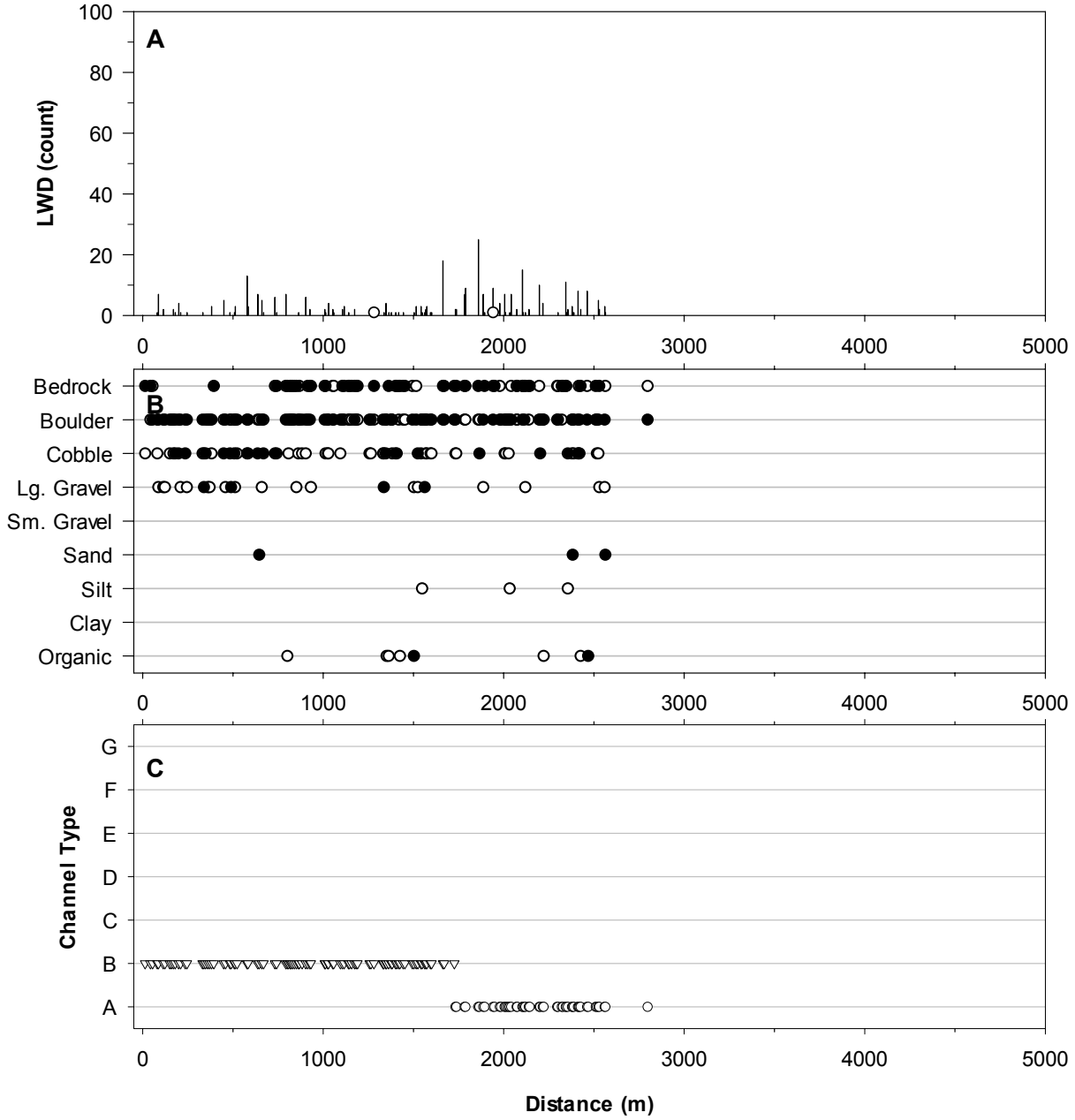
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Left Prong South Toe River during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Seep	25.0		Left side
Side Channel	252.0	3.0	In on left
Side Channel	277.0	2.0	Out on left
Seep	400.0		On right, trickle
Side Channel	518.0	2.0	
Spring	530.0		On right
Side Channel	566.0	2.0	Out on left
Side Channel	566.0	2.0	In on right
Side Channel	577.0	2.0	In on left
Side Channel	609.0	2.0	Out on left
Side Channel	637.0	1.0	Out on right
Side Channel	655.0	1.0	In on right
Seep	671.0		On left
Side Channel	685.0	0.1	Out on right
Trib	921.0	1.0	In on left, unnamed
Trib	1056.0	0.1	In on left
Trib	1253.0	1.5	In on left
Seep	1351.0		On left
Fall	1453.0		
Trib	1473.0	2.0	Hemphill spring in on left
Culvert	1494.0	8.0	Culvert with ford on top, concrete

Photos taken of Left Prong South Toe River during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
C	9	332.0	Brook trout
C	19	793.0	
R	29	1095.0	
C	39	1494.0	
C	49	1886.0	
C	59	2216.0	



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Left Prong South Toe River, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Neals Creek**
District:	Appalachian
USGS Quadrangle:	Old Fort
Survey Date:	06/09/05
Downstream Starting Point:	confluence with Big Lost Cove Creek
Total Distance Surveyed (km):	1.8

	Pools	**Riffles**
Percent of Total Stream Area:	14	86
Total Area (m^2):	880±76	5367±2488
Correction Factor Applied:	1.16	1.12
Number of Paired Samples:	3	3
Total Count:	36	38
Number per km:	20	21
Mean Area (m^2):	24	141
Mean Maximum Depth (cm):	71	53
Mean Average Depth (cm):	42	24
Mean Residual Depth (cm):	16	--
Percent Surveyed as Glides:	0	--
Percent Surveyed as Runs:	--	5
Percent Surveyed as Cascades:	--	47
Percent with >35% Fines:	11	0

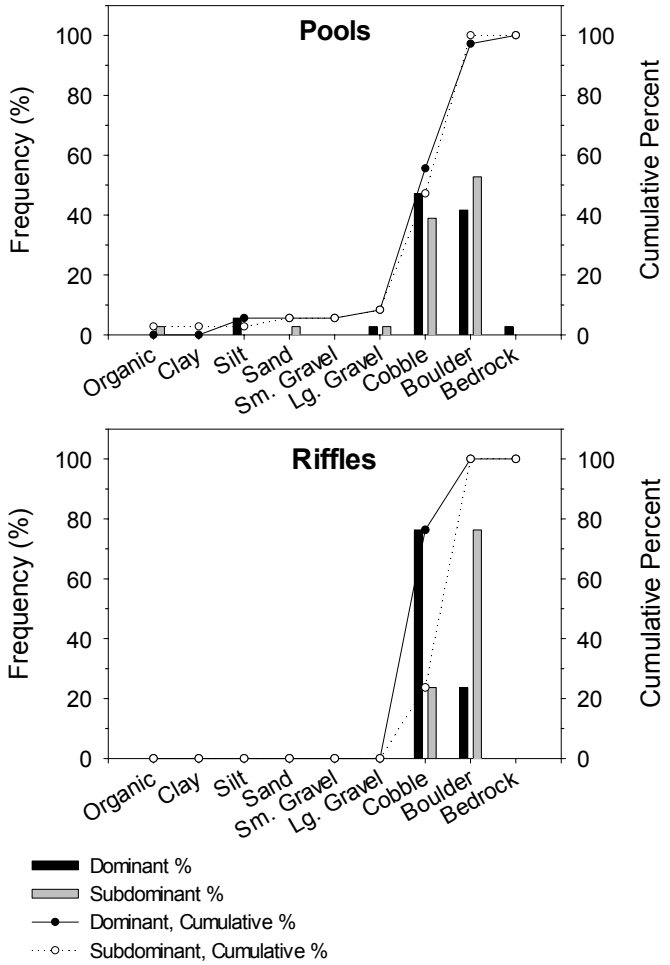
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	0
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	39
> 5 m long, > 55 cm diameter:	2
Total:	41

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	7	1
Maximum:	7	1
75th Percentile	7	1
25th Percentile	7	1
Minimum	7	1

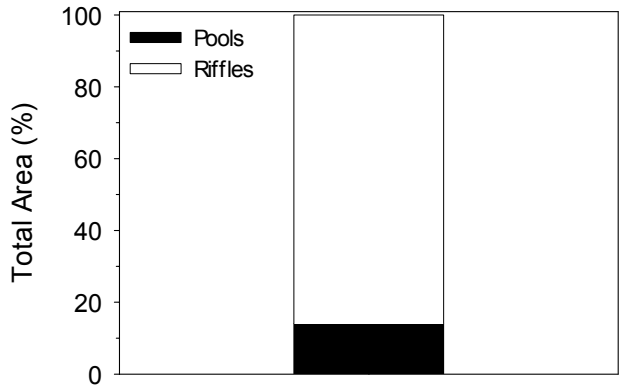
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

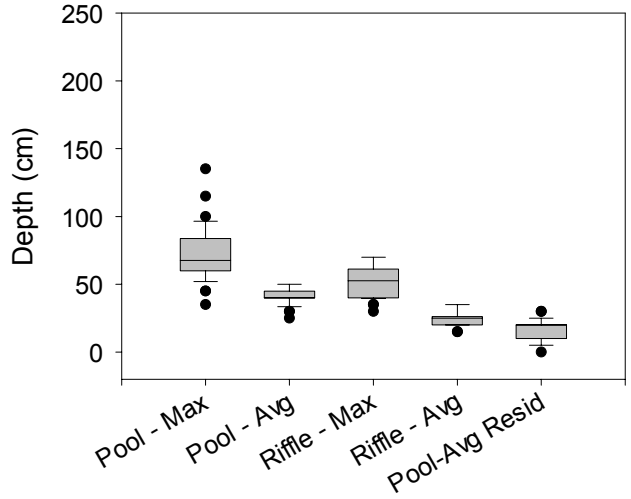
Other Stream Attributes	
Mean Bankfull Channel Width (m):	6
Mean Channel Gradient (%):	8
Median Water Temperature (C°):	12



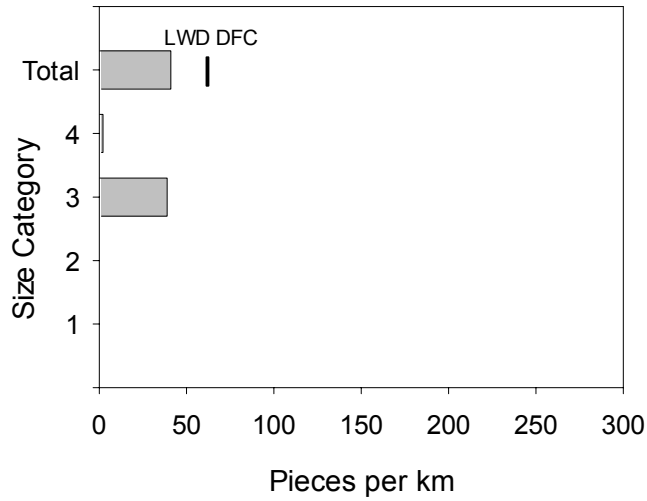
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Neals Creek, summer 2005.



Estimated area of Neals Creek in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Neals Creek, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Neals Creek, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

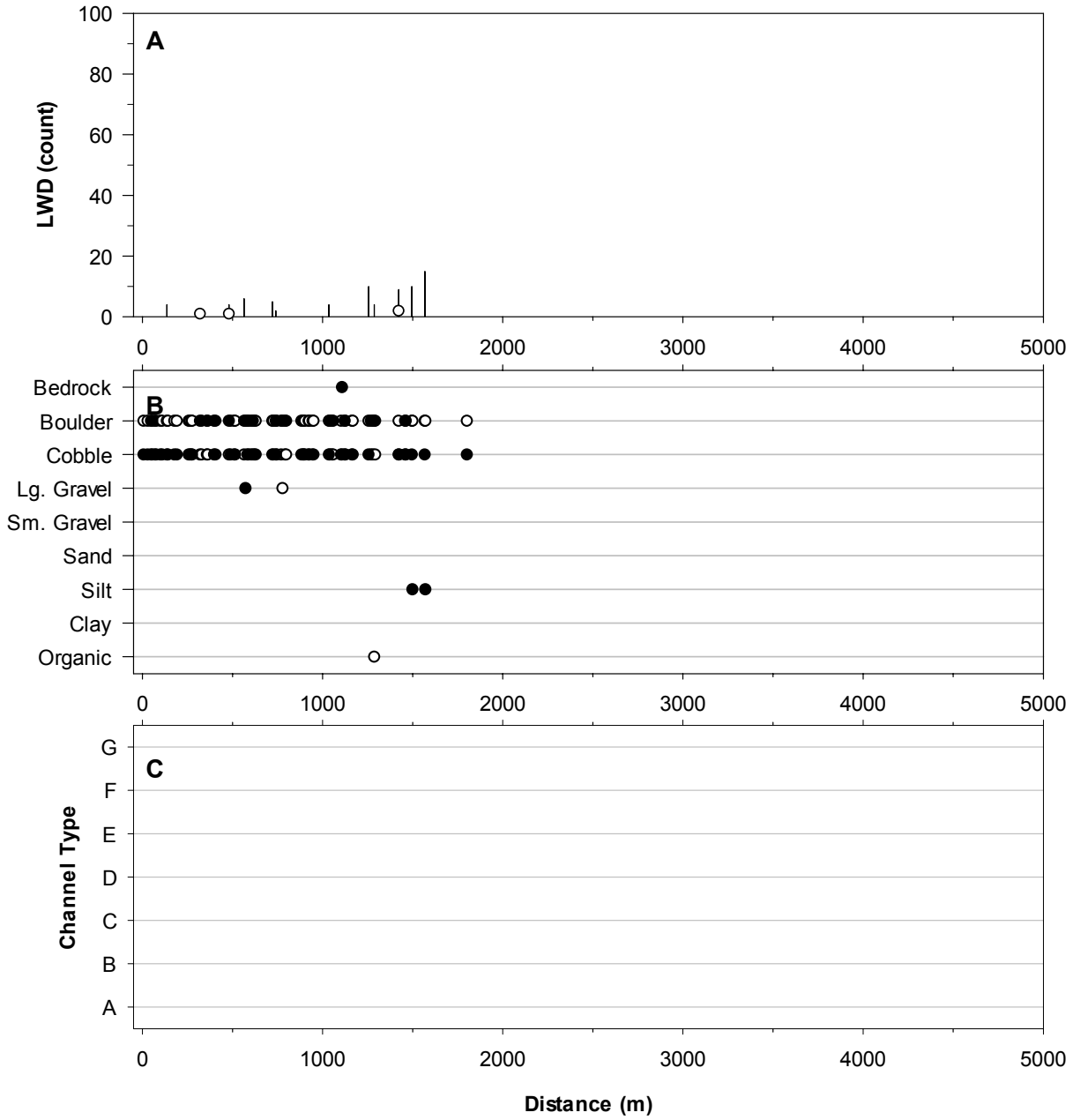
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Neals Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Side Channel	8.0		In on right
Side Channel	69.4		Out on right
Trib	114.0	0.5	Unnamed in on left
Trib	266.6	1.0	Unnamed in on right
Side Channel	706.8		In on right
Side Channel	757.8		
Bridge	798.1	6.0	Stone and concrete, 3 m heigh
Side Channel	892.0		In on right
Side Channel	922.1		
Trib	1009.7	1.0	Unnamed in on right
Side Channel	1181.9		In on right
Side Channel	1213.1		
Trib	1229.0	0.5	In on right
Side Channel	1440.3		In onright
Trib	1448.6	1.0	Unnamed in on right
Side Channel	1450.9		
Side Channel	1588.0		In on right
Side Channel	1614.6		Out on right

Photos taken of Neals Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
R	13	135.3	No good bankfull indicators
R	33	943.7	Max 75, ave 45



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Neals Creek, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Right Prong South Toe River**
District:	Appalachian
USGS Quadrangle:	Montreat
Survey Date:	06/07/05
Downstream Starting Point:	confluence
Total Distance Surveyed (km):	2.5

	Pools	**Riffles**
Percent of Total Stream Area:	48	52
Total Area (m^2):	6784±354	7298±1370
Correction Factor Applied:	1.09	1.41
Number of Paired Samples:	5	5
Total Count:	53	48
Number per km:	21	19
Mean Area (m^2):	128	149
Mean Maximum Depth (cm):	95	62
Mean Average Depth (cm):	53	18
Mean Residual Depth (cm):	22	--
Percent Surveyed as Glides:	8	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	96
Percent with >35% Fines:	0	0

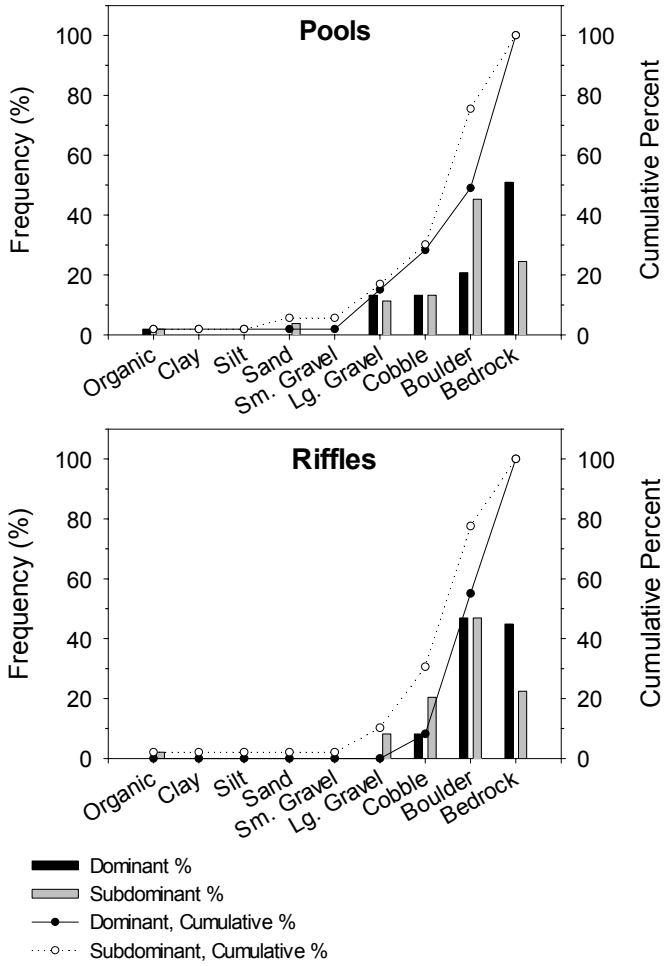
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	92
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	88
> 5 m long, > 55 cm diameter:	0
Total:	180

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	16	3
Maximum:	24	14
75th Percentile	17	4
25th Percentile	12	1
Minimum	11	0

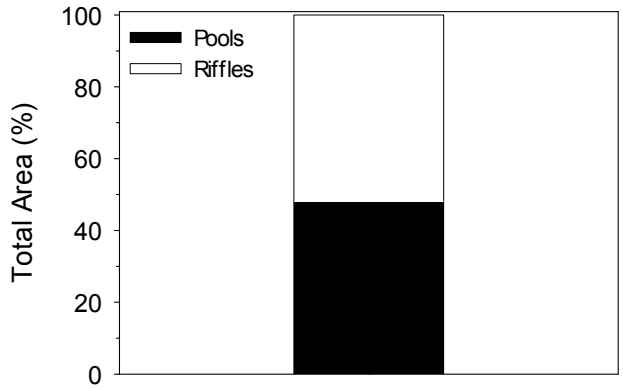
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	73
B:	27
C:	0
D:	0
E:	0
F:	0
G:	0

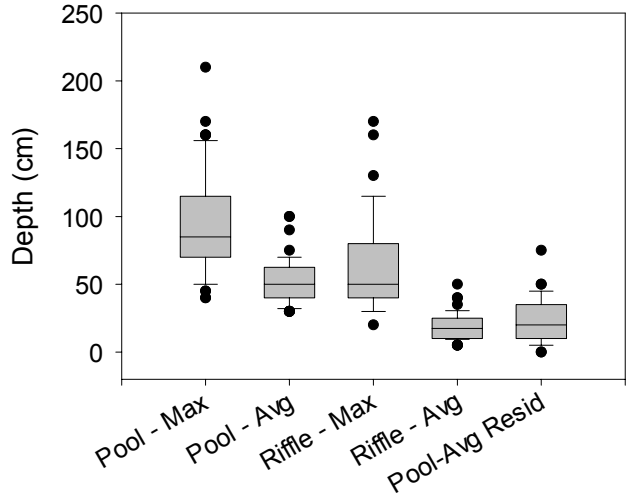
Other Stream Attributes	
Mean Bankfull Channel Width (m):	9
Mean Channel Gradient (%):	18
Median Water Temperature (C˚):	12



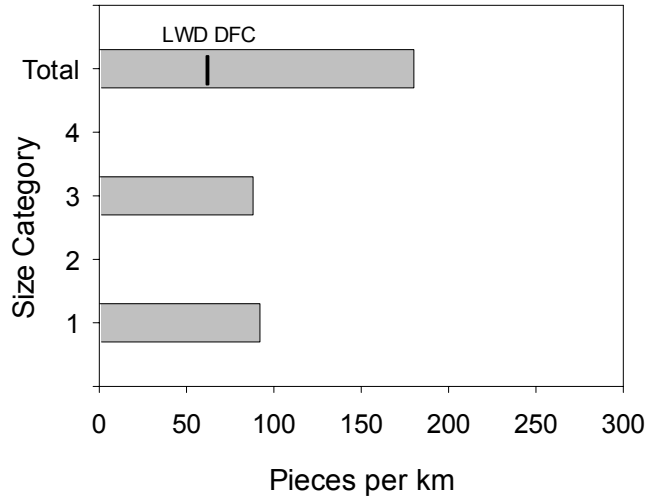
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Right Prong South Toe River, summer 2005.



Estimated area of Right Prong South Toe River in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Right Prong South Toe River, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Right Prong South Toe River, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

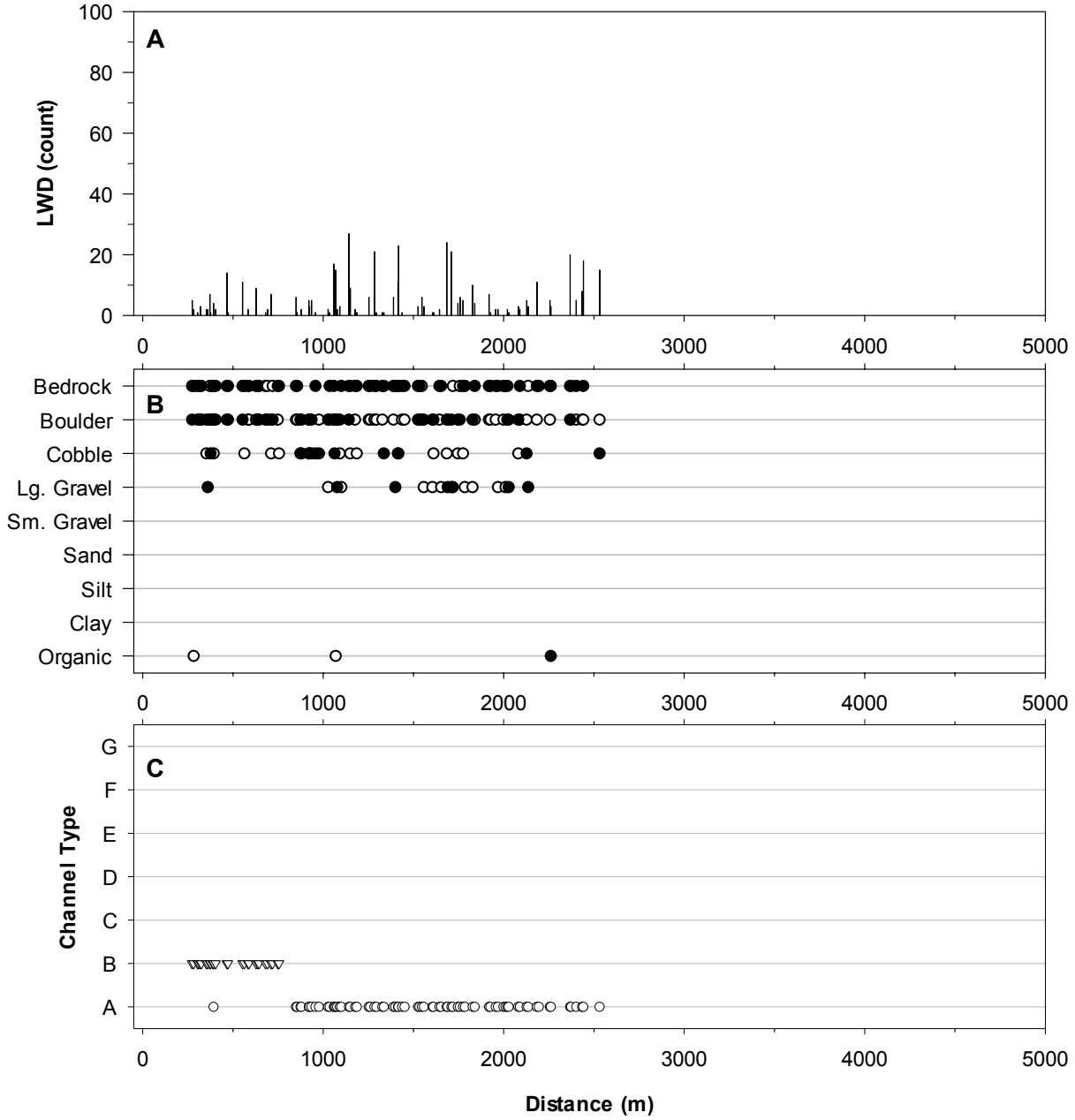
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Right Prong South Toe River during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Side Channel	490.0	3.0	In on right
Side Channel	540.0	4.0	Out on right
Side Channel	589.0	4.0	In on right
Side Channel	620.0	5.0	Out on right
Trib	806.0	3.0	In on left from bald knob ridge
Fall	1035.0		~8 meters high
Side Channel	1041.0	1.5	In on left
Side Channel	1075.0	3.0	Out on left
Seep	1142.0		In on right minor flow
Seep	1250.0		Minor from left
Slide	1450.0		Slide on right
Seep	1492.0		Minor flow on right
Side Channel	1653.0	0.5	In on right
Side Channel	1689.0	1.0	Out on right
Seep	1702.0		Moderate flow on right
Trib	1746.0	0.5	Unnamed on right
Fall	1839.0		
Trib	1975.0	4.0	Unnamed on left
Seep	1989.0		Small on left
Side Channel	2406.0	1.5	In on left
Side Channel	2434.0	1.5	Out on left

Photos taken of Right Prong South Toe River during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
C	9	352.7	
C	18	748.0	Fall that i missed on sheet
C	19	849.0	
FALL		1035.0	~8 meters high
C	29	1252.2	
SLID		1450.0	Slide on right
C	39	1684.0	Not a good location for rosgens, area appears to be blown out by flood
FALL		1839.0	
C	49	2127.3	



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Right Prong South Toe River, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Bear Drive Branch**
District:	Grandfather
USGS Quadrangle:	Old Fort
Survey Date:	06/01/05
Downstream Starting Point:	confluence with Curtis Creek
Total Distance Surveyed (km):	1.4

	Pools	**Riffles**
Percent of Total Stream Area:	9	91
Total Area (m^2):	309±1958	3077±1294
Correction Factor Applied:	0.71	1.49
Number of Paired Samples:	2	3
Total Count:	21	19
Number per km:	15	13
Mean Area (m^2):	15	162
Mean Maximum Depth (cm):	59	39
Mean Average Depth (cm):	43	15
Mean Residual Depth (cm):	31	--
Percent Surveyed as Glides:	0	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	32
Percent with >35% Fines:	5	5

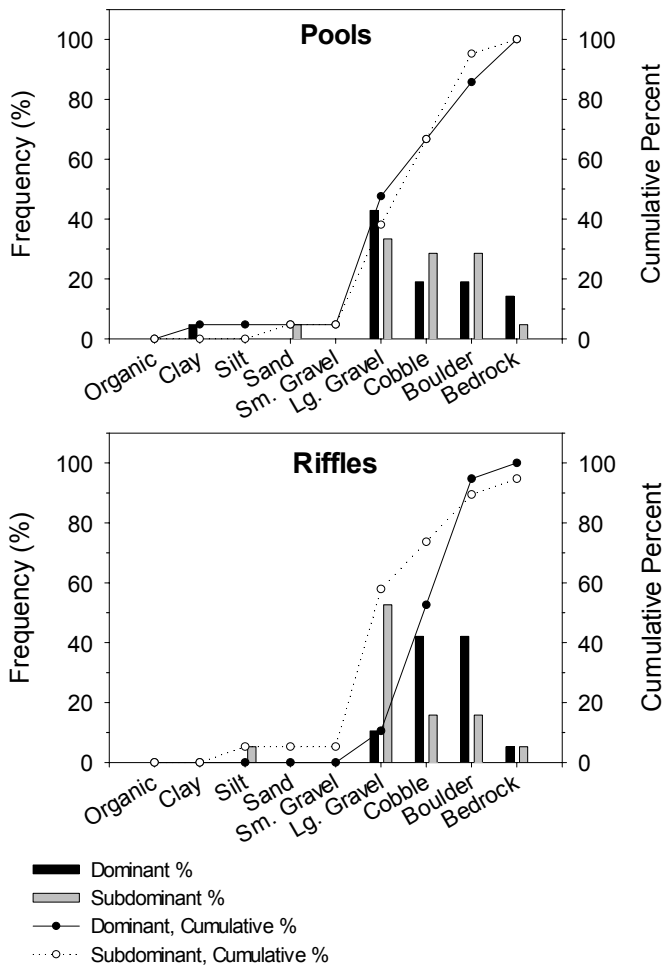
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	57
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	38
> 5 m long, > 55 cm diameter:	2
Total:	98

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

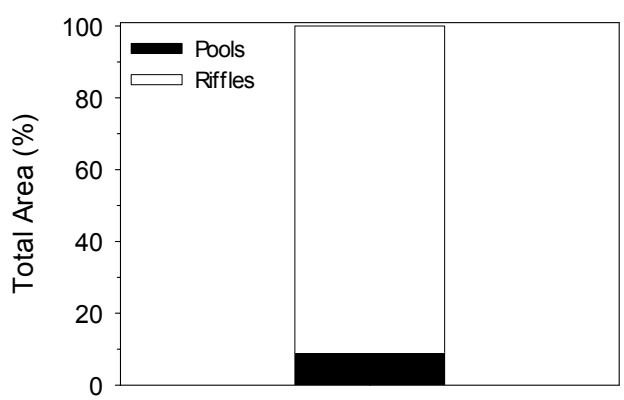
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

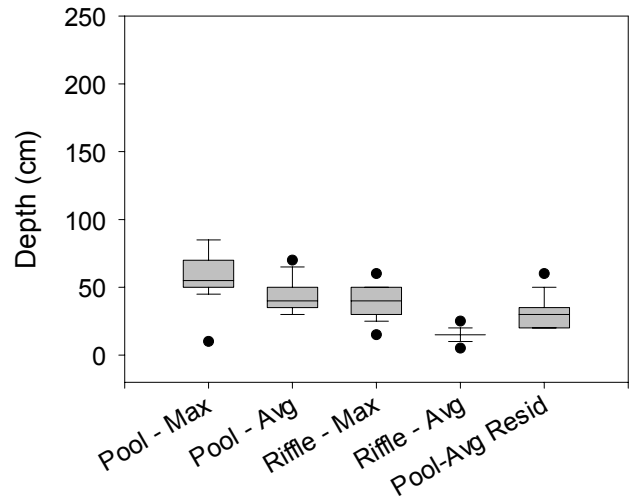
Other Stream Attributes	
Mean Bankfull Channel Width (m):	
Mean Channel Gradient (%):	12
Median Water Temperature (C°):	13



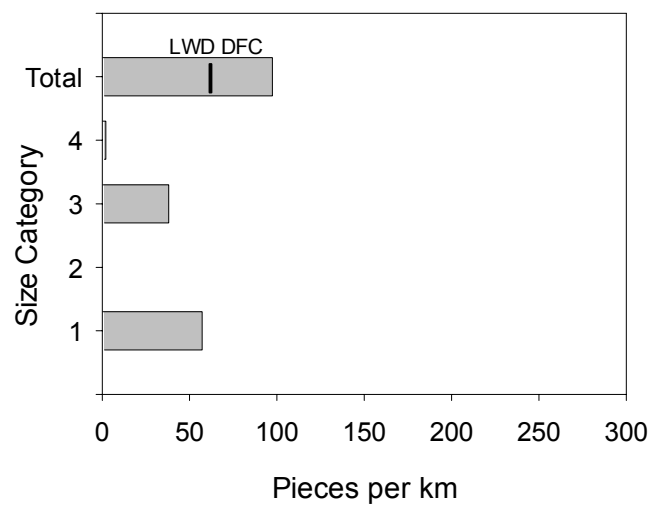
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Bear Drive Branch, summer 2005.



Estimated area of Bear Drive Branch in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Bear Drive Branch, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Bear Drive Branch, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

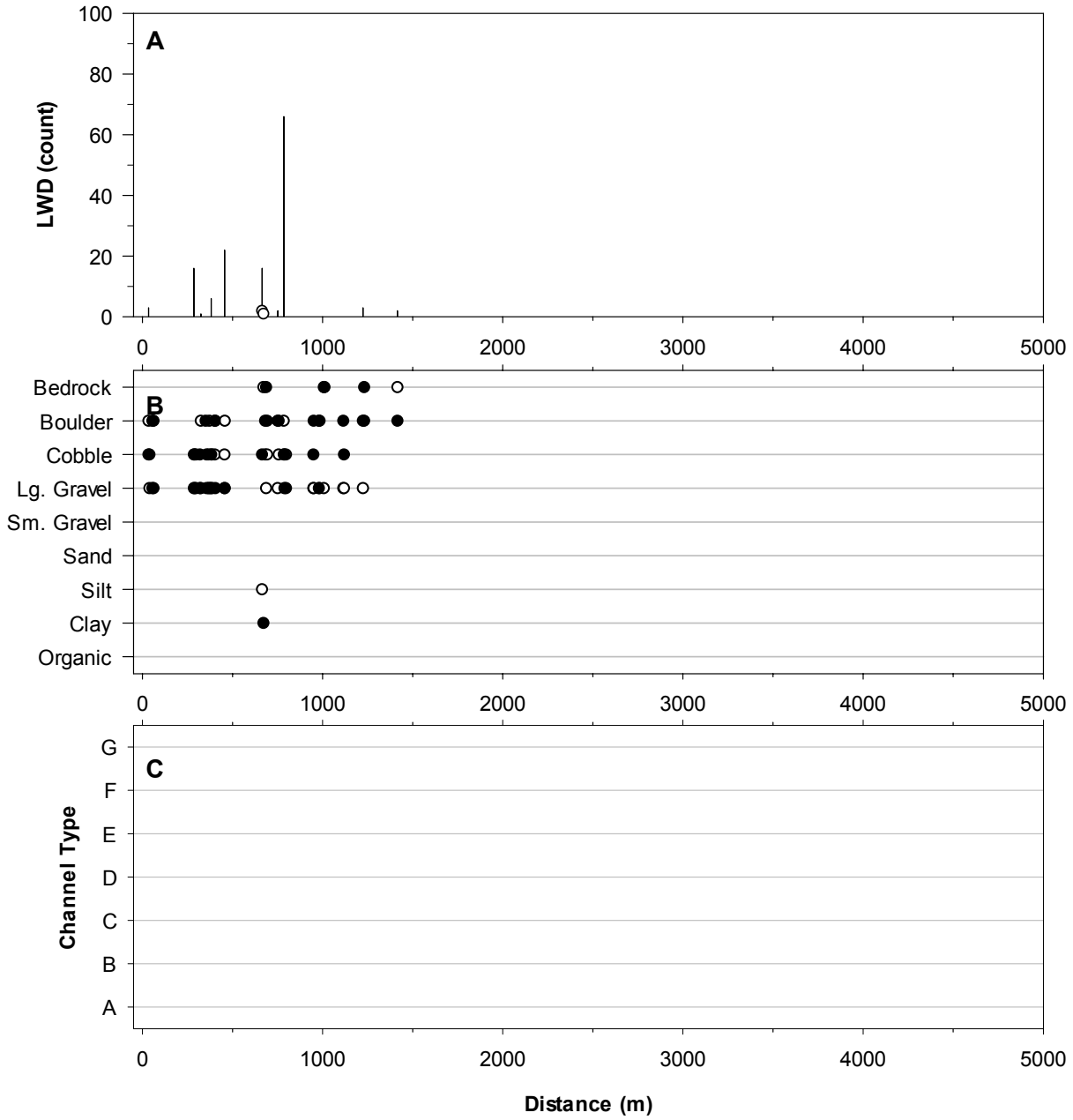
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Bear Drive Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Bridge	293.6	4.5	Height = 2M. STONE AND CONCRETE. ROAD BRIDGE FOR FS RD482.
Side Channel	404.5		In on right .
Side Channel	412.0		In on left.
Tributary	1404.0	1.0	In on right. Unmapped. Unnamed.

Photos taken of Bear Drive Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
R	3	285.2	Massive lwd on right crosses bridge.
Bridge		293.6	H=2m. Stone and concrete. Road bridge for fs rd482.
R	5	350.0	Destroyed. No bank full.
R	10	663.7	Tons of iron oxide. Very red. Lots of silt. No bank full indicators.
P	10	671.9	
C	20	1223.5	No bank full.
P	20	1230.6	
TRIB		1404.0	In on right. Unmapped. Unnamed.



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Bear Drive Branch, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	Big Camp Rock Branch
District:	Grandfater
USGS Quadrangle:	Old Fort
Survey Date:	05/31/05
Downstream Starting Point:	confluence with Curtis Creek
Total Distance Surveyed (km):	2.3

	Pools	Riffles
Percent of Total Stream Area:	19	81
Total Area (m^2):	1251	5227
Correction Factor Applied:	0.73	1.41
Number of Paired Samples:	5	4
Total Count:	60	50
Number per km:	26	22
Mean Area (m^2):	21	105
Mean Maximum Depth (cm):	59	35
Mean Average Depth (cm):	43	17
Mean Residual Depth (cm):	25	--
Percent Surveyed as Glides:	0	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	86
Percent with >35% Fines:	7	0

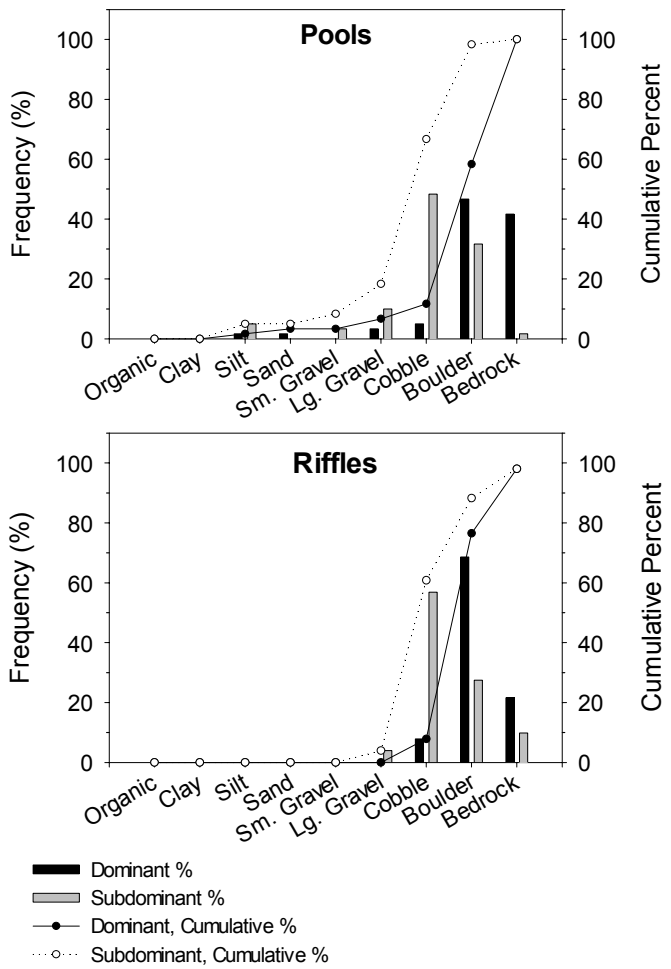
Large Woody Debris Size	Pieces per km
< 5 m long, 10 cm – 55 cm diameter:	86
< 5 m long, > 55 cm diameter:	6
>5 m long, 10 cm – 55 cm diameter:	120
> 5 m long, > 55 cm diameter:	6
Total:	219

Riparian Width	Total Width* (m)	Left & Right Width** (m)
Mean:	5	2
Maximum:	8	3
75th Percentile	7	2
25th Percentile	3	1
Minimum	0	1

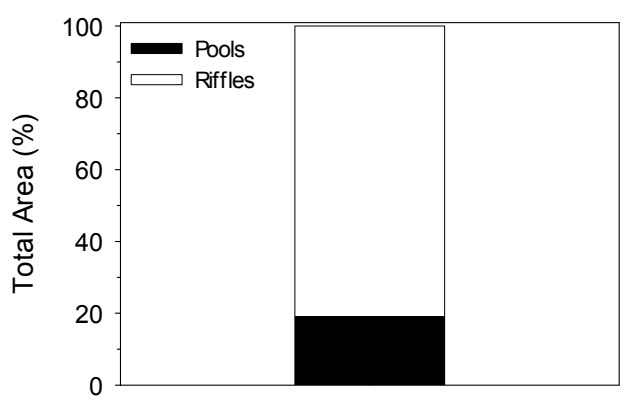
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	Frequency (%)
A:	100
B:	0
C:	0
D:	0
E:	0
F:	0
G:	0

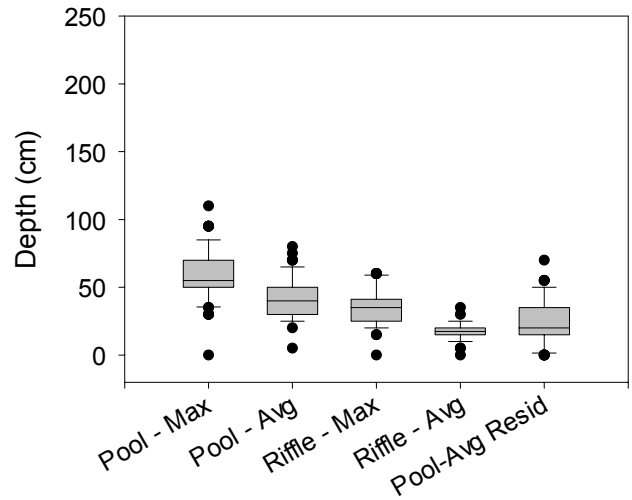
Other Stream Attributes	
Mean Bankfull Channel Width (m):	5
Mean Channel Gradient (%):	19
Median Water Temperature (C°):	13



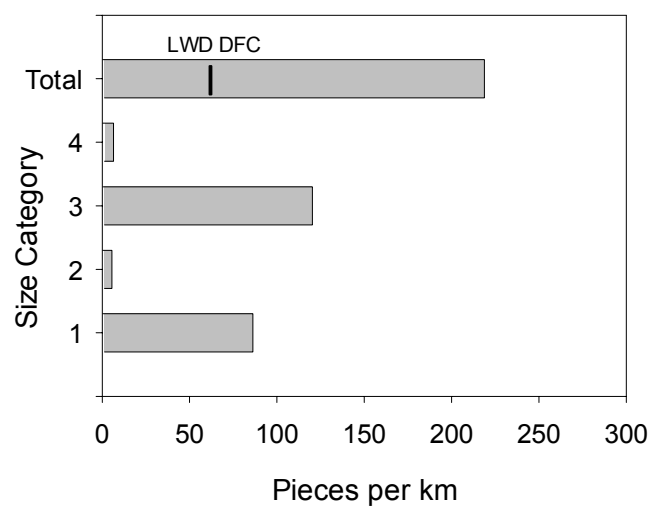
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Big Camp Rock Branch, summer 2005.



Estimated area of Big Camp Rock Branch in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Big Camp Rock Branch, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Big Camp Rock Branch, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

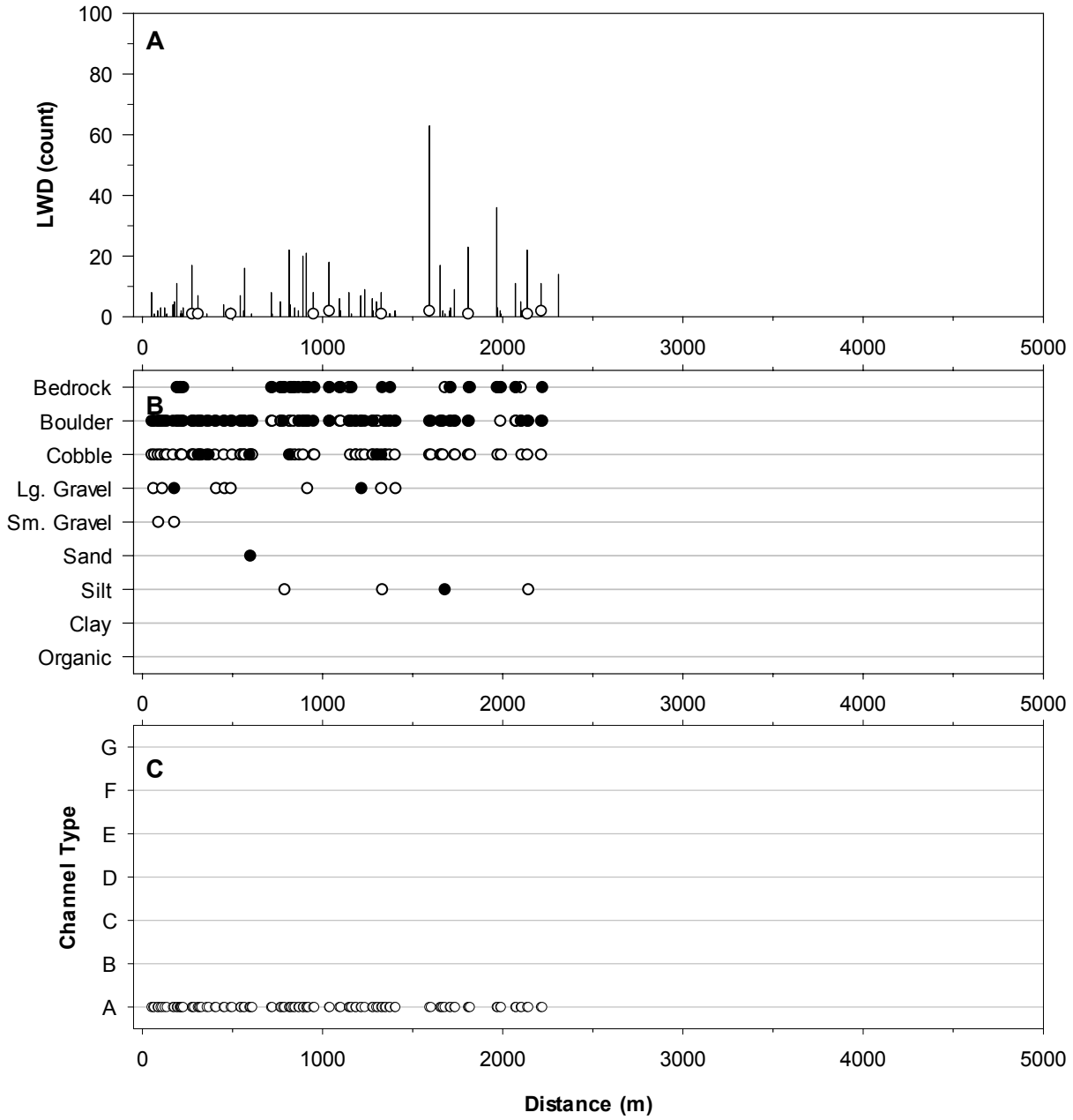
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Big Camp Rock Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Bridge	93.4	10	Height=3M. FOREST ROAD 482. CONCRETE.
Side Channel	251.0	0.5	Out on right side. Starts at 274m.
Seep	286.5		Right
Side Channel	517.0	1.0	In on left.
Side Channel	535.0	1.0	In on right.
Side Channel	902.7	1.5	In on left
Side Channel	1172.0		In on right
Fall	1279.0		Height=1M
Fall	1306.0		Height=1M
Fall	1382.0		Height=1.3M
Seep	1587.0		High flow. Left.
Seep	1588.0		Low flow. Right.
Seep	1808.0		Low flow. Right.
Side Channel	1840.0	1.0	On left.
Trib	2251.1	0.5	In on right.

Photos taken of Big Camp Rock Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
R	9	274.4	Deep pocket water at260m.
R	19	765.0	Most habitats are cascades, just cant see each other over lomg distances and cant get a long gradient measurement.
C	29	1145.7	
FALL		1279.0	H=1m
FALL		1306.0	H=1m
FALL		1382.0	H=1.3m
C	39	1652.0	Within the cascade there are many divides in the flow and stram, but none are side channels. Therefor no bankfull indicators. When it becomes full in one pace it flows over another above the one before.
C	49	2211.8	Too much debris and damage still a channel. Cant find bankfull



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Big Camp Rock Branch, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Chute Branch**
District:	Grandfather
USGS Quadrangle:	Old Fort
Survey Date:	05/27/05
Downstream Starting Point:	confluence with Newberry Creek
Total Distance Surveyed (km):	1.3

	Pools	**Riffles**
Percent of Total Stream Area:	14	86
Total Area (m^2):	777	4813
Correction Factor Applied:	0.99	1.40
Number of Paired Samples:	3	3
Total Count:	35	33
Number per km:	27	26
Mean Area (m^2):	22	146
Mean Maximum Depth (cm):	60	41
Mean Average Depth (cm):	39	14
Mean Residual Depth (cm):	18	--
Percent Surveyed as Glides:	20	--
Percent Surveyed as Runs:	--	6
Percent Surveyed as Cascades:	--	85
Percent with >35% Fines:	3	0

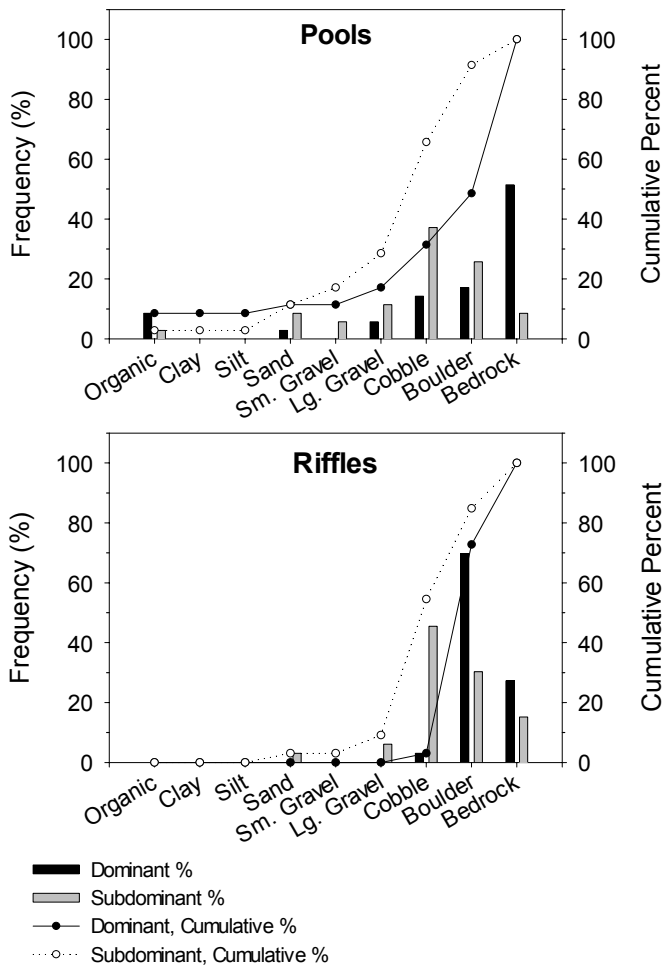
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	83
< 5 m long, > 55 cm diameter:	7
>5 m long, 10 cm – 55 cm diameter:	105
> 5 m long, > 55 cm diameter:	8
Total:	204

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	10	2
Maximum:	16	6
75th Percentile	13	3
25th Percentile	7	1
Minimum	5	1

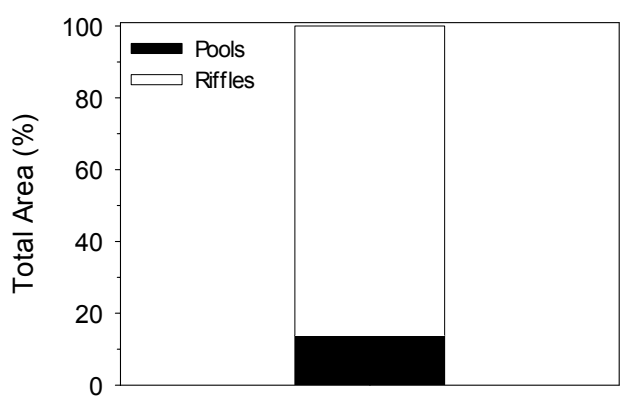
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	10
B:	90
C:	0
D:	0
E:	0
F:	0
G:	0

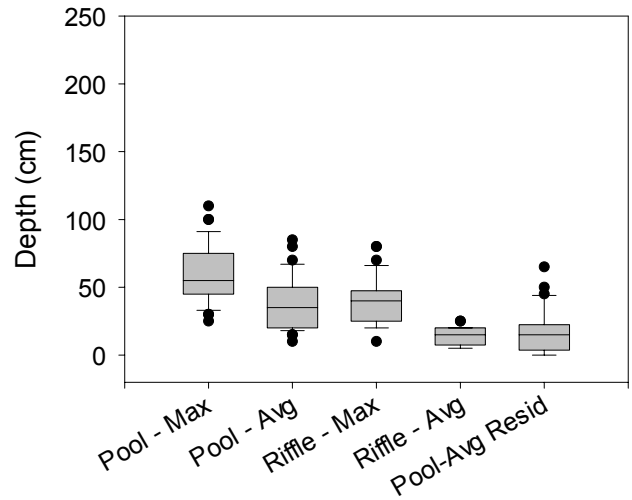
Other Stream Attributes	
Mean Bankfull Channel Width (m):	6
Mean Channel Gradient (%):	15
Median Water Temperature (C˚):	13



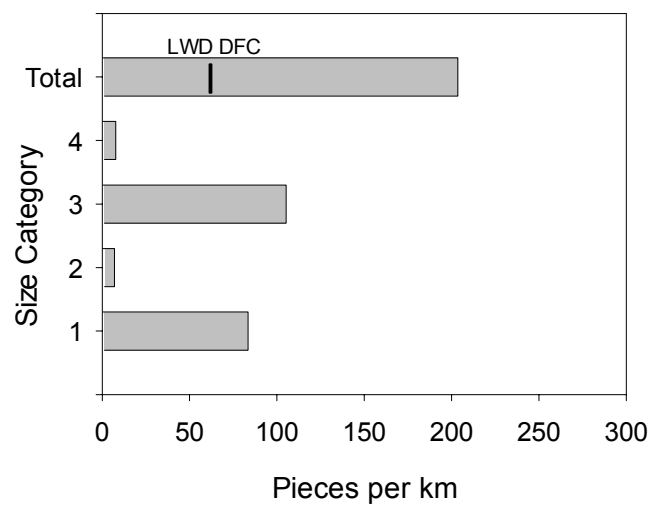
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Chute Branch, summer 2005.



Estimated area of Chute Branch in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Chute Branch, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Chute Branch, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

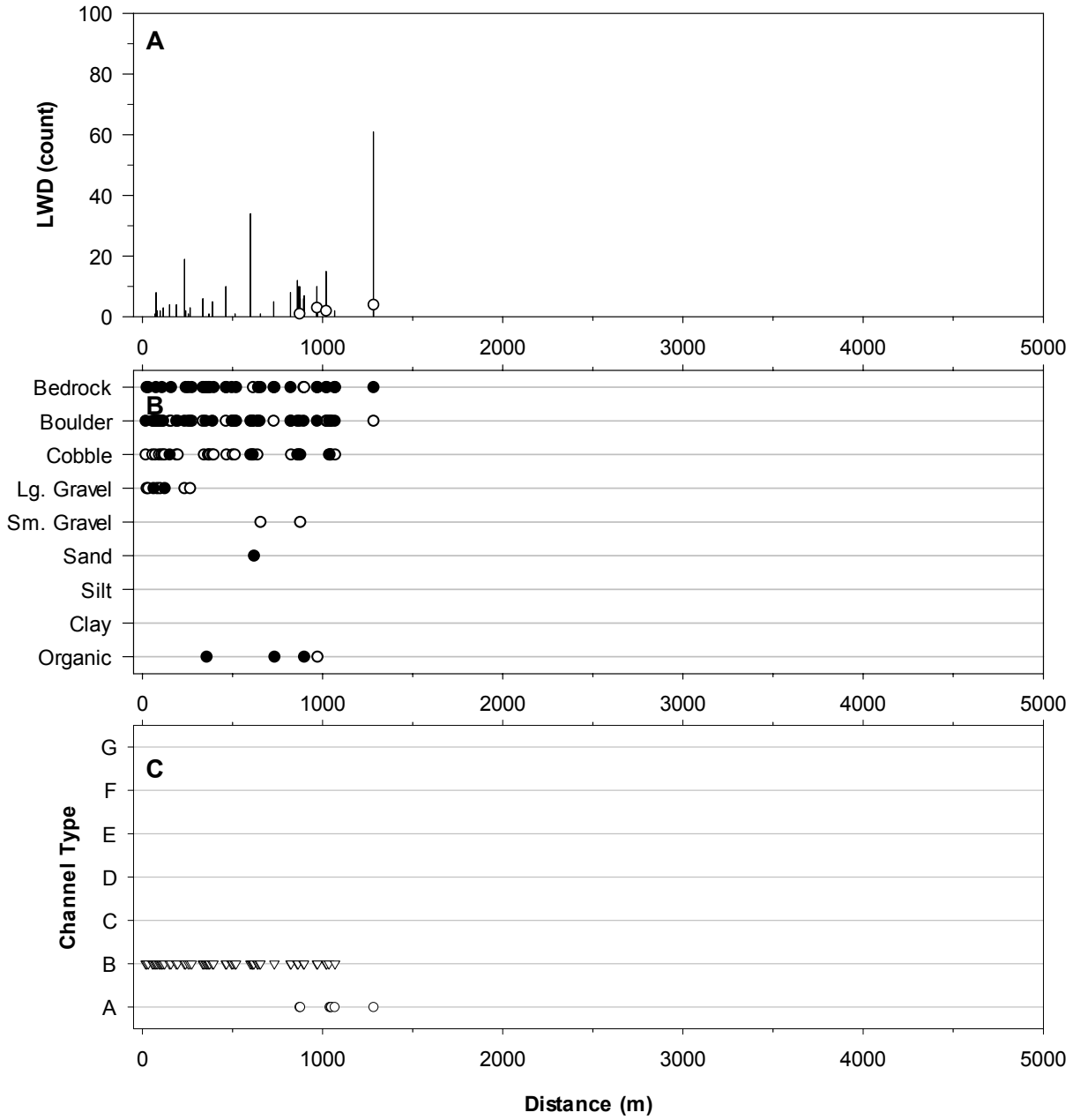
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Chute Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Ford	12.9	7.0	Fs road 828a
Side Channel	100.0	1.0	In right
Side Channel	143.0	0.5	Out right , possibly a spring that feeds into sch
Seep	266.0	0.1	Weak seep
Seep	342.0	0.5	Right
Side Channel	350.0	2.0	In left
Trib	388.0	2.0	Out left
Side Channel	530.0	3.0	In right
Side Channel	550.0	3.0	Out right
Trib	617.0	3.5	Unnamed trib from right, has more water and flow

Photos taken of Chute Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
FORD		12.9	Fs road 828a
RN	9	195.3	Right next to road
TRIB		617.0	Unnamed trib from right, has more water and flow
C	29	407.4	



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Chute Branch, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Curtis Creek, lower**
District:	Grandfather
USGS Quadrangle:	Old Fort
Survey Date:	05/25/05
Downstream Starting Point:	Forest boundary
Total Distance Surveyed (km):	2.3

	Pools	**Riffles**
Percent of Total Stream Area:	23	77
Total Area (m^2):	6396±7853	21295±3637
Correction Factor Applied:	1.04	1.32
Number of Paired Samples:	3	3
Total Count:	29	24
Number per km:	13	10
Mean Area (m^2):	221	887
Mean Maximum Depth (cm):	96	60
Mean Average Depth (cm):	68	33
Mean Residual Depth (cm):	26	--
Percent Surveyed as Glides:	10	--
Percent Surveyed as Runs:	--	8
Percent Surveyed as Cascades:	--	4
Percent with >35% Fines:	31	0

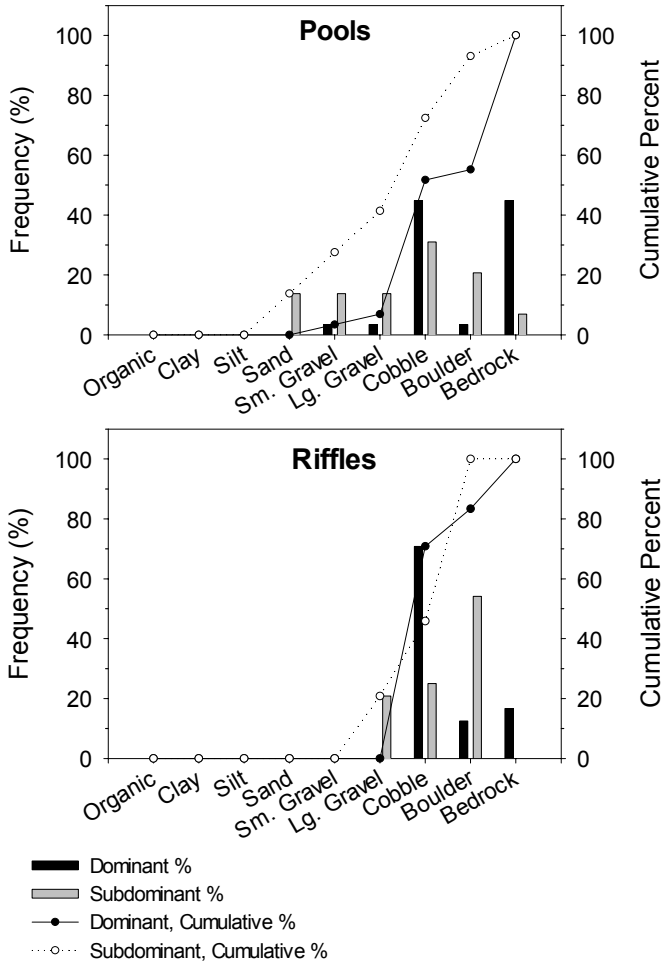
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	6
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	32
> 5 m long, > 55 cm diameter:	1
Total:	40

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	19	2
Maximum:	22	5
75th Percentile	20	3
25th Percentile	18	1
Minimum	16	1

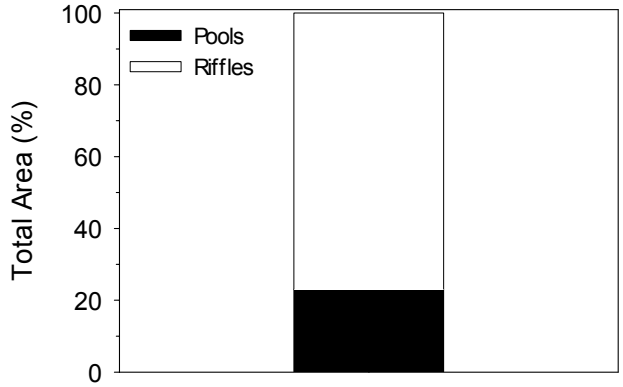
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	0
B:	100
C:	0
D:	0
E:	0
F:	0
G:	0

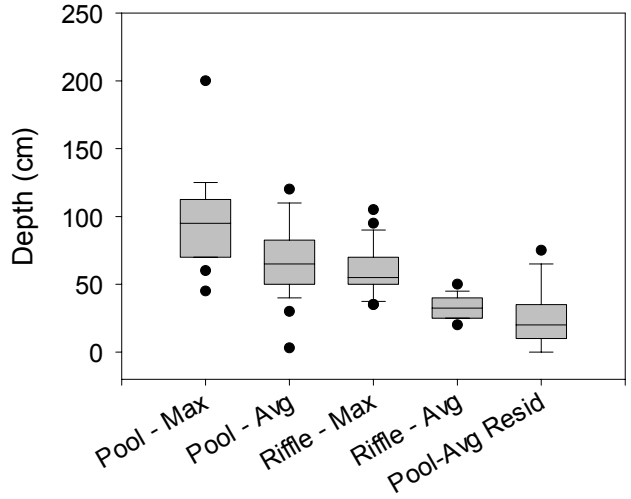
Other Stream Attributes	
Mean Bankfull Channel Width (m):	15
Mean Channel Gradient (%):	5
Median Water Temperature (C°):	12



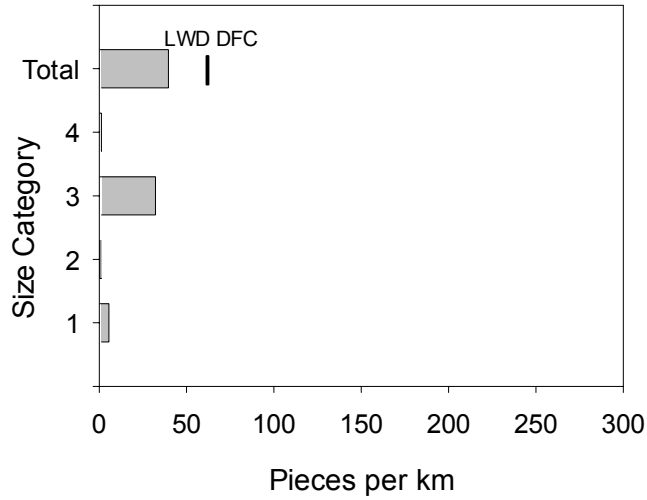
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Curtis Creek, lower, summer 2005.



Estimated area of Curtis Creek, lower in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Curtis Creek, lower, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Curtis Creek, lower, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

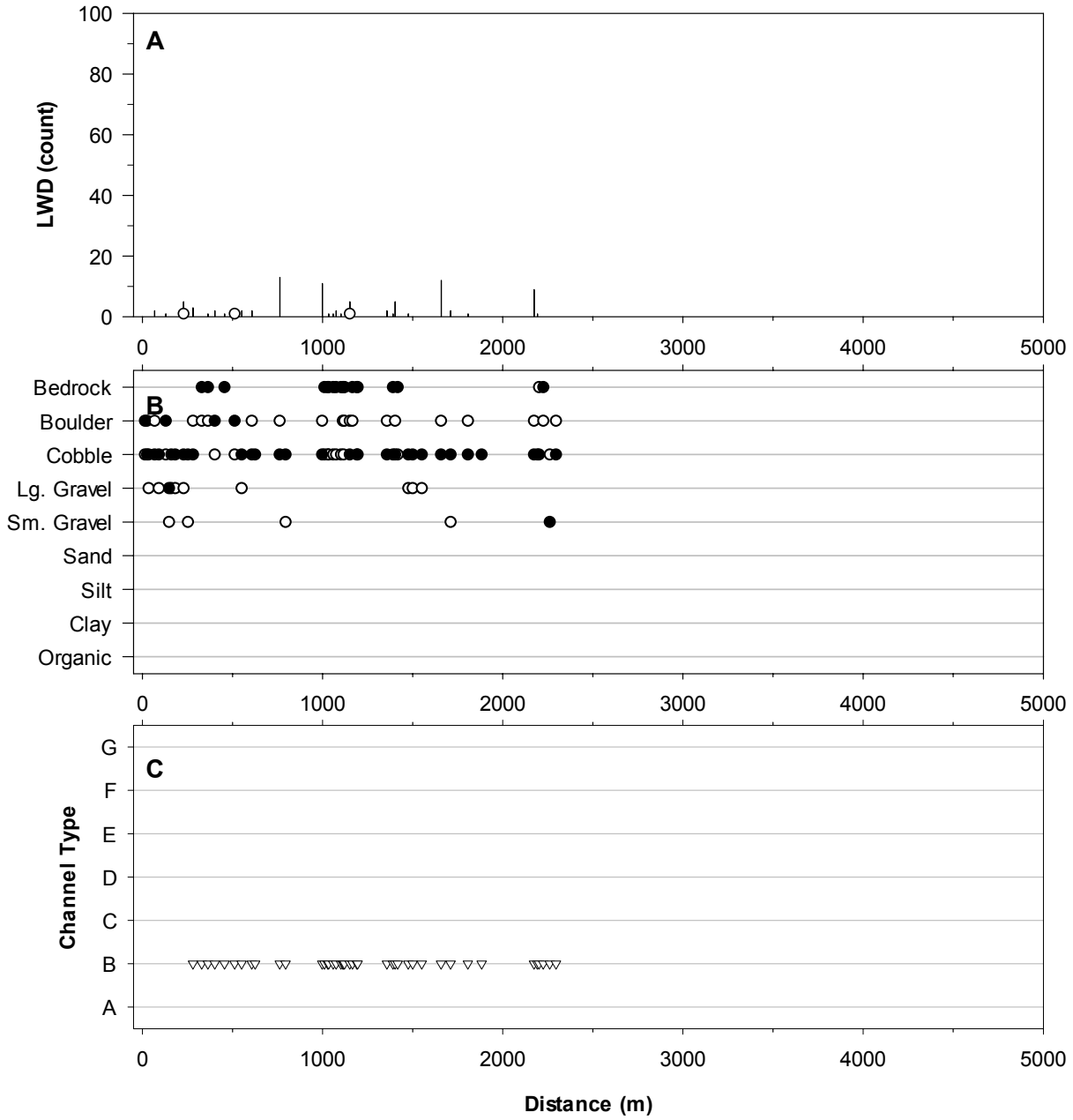
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Curtis Creek, lower during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Trib	30.0	1.0	Unnamed trib on right
Trib	229.1	0.5	Unamed trib on right
Trib	665.2	0.5	Unnamed trib on left
Bridge	929.0		3 m in height; 15 m in width; road number 4030; concrete
Fishing Pier	1058.7		New wooden fishing pier on left of stream
Seep	1101.6		Seep left of stream; miniscule flow
Side Channel	1272.0	0.5	Side channel in on right
Side Channel	1342.0	0.5	Side channel out on right
Trib	1371.8	1.5	Paddys branch tributary
Trib	1475.3	1.0	Possible unnamed tributary on right
Trib	1688.9	0.5	Tributary from jerdon mountain; in on left
Culvert	2040.0	0.5	Metal pipe running under road 4027; substrate is silt; perch is .5 meters; located on right of stream
Braid	2188.5	3.0	In on right
Braid	2218.0	3.0	Out on right
Trib	2248.9	1.0	Deep branch tributary in on left
Fishing Pier	2275.0		New wooden fishing pier on left of stream

Photos taken of Curtis Creek, lower during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
Trib		30.0	unnamed trib on right
R	4	60.0	Unable to determine rosgen
Trib		229.1	Unamed trib on right
Trib		665.2	Unnamed trib on left
Brg		929.0	3 m in height; 15 m in width; road number 4030; concrete
R	14	1101.6	
Trib		1371.8	Paddys branch tributary
Trib		1688.9	Tributary from jerdon mountain; in on left
V		2040.0	Metal pipe running under road 4027; substrate is silt; perch is .5 meters; located on right of stream
C	24	2224.2	Unable to determine bankfull
Otr			New wooden fishing pier on left of stream
Trib		2248.9	Deep branch tributary in on left



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Curtis Creek, lower, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Deep Branch**
District:	Grandfather
USGS Quadrangle:	Old Fort
Survey Date:	05/26/05
Downstream Starting Point:	confluence with Curtis Creek
Total Distance Surveyed (km):	1.4

	Pools	**Riffles**
Percent of Total Stream Area:	12	88
Total Area (m^2):	254±118	1866±1297
Correction Factor Applied:	0.70	0.90
Number of Paired Samples:	2	2
Total Count:	24	24
Number per km:	17	17
Mean Area (m^2):	11	78
Mean Maximum Depth (cm):	32	23
Mean Average Depth (cm):	25	13
Mean Residual Depth (cm):	13	--
Percent Surveyed as Glides:	0	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	8
Percent with >35% Fines:	8	0

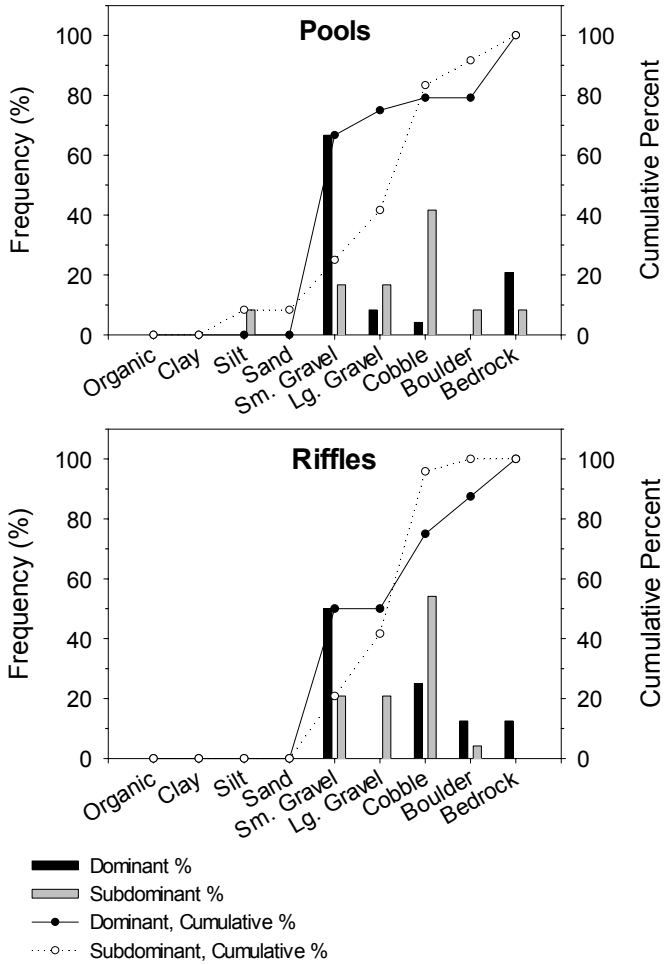
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	47
< 5 m long, > 55 cm diameter:	1
>5 m long, 10 cm – 55 cm diameter:	66
> 5 m long, > 55 cm diameter:	6
Total:	120

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	8	2
Maximum:	8	4
75th Percentile	8	3
25th Percentile	8	1
Minimum	8	0

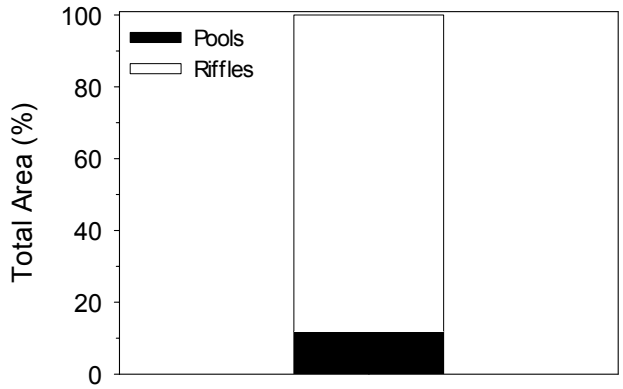
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	0
B:	91
C:	0
D:	0
E:	0
F:	4
G:	4

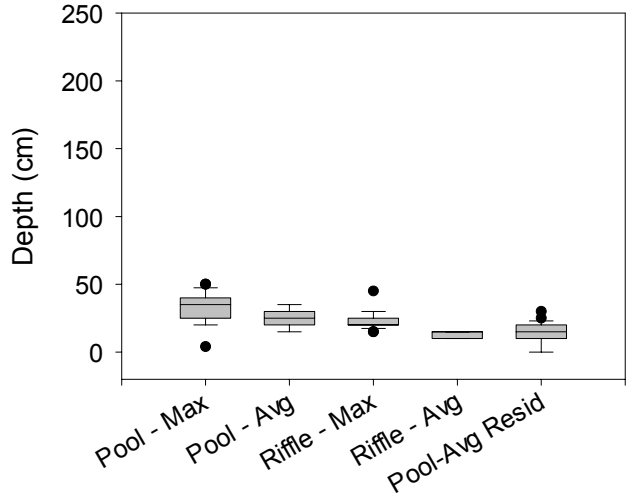
Other Stream Attributes	
Mean Bankfull Channel Width (m):	4
Mean Channel Gradient (%):	8
Median Water Temperature (C˚):	12



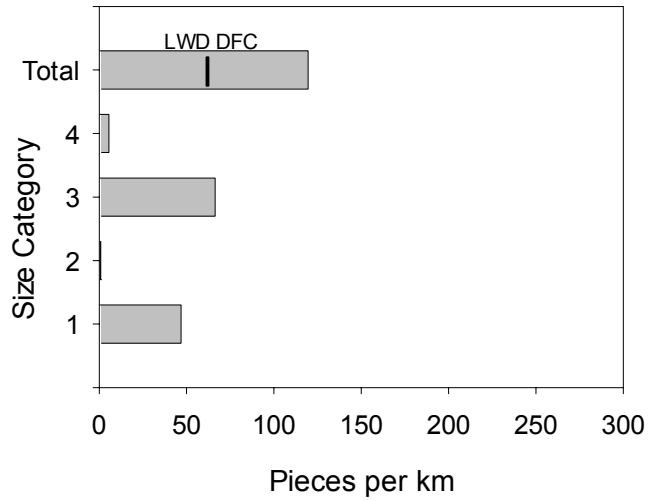
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Deep Branch, summer 2005.



Estimated area of Deep Branch in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Deep Branch, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Deep Branch, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

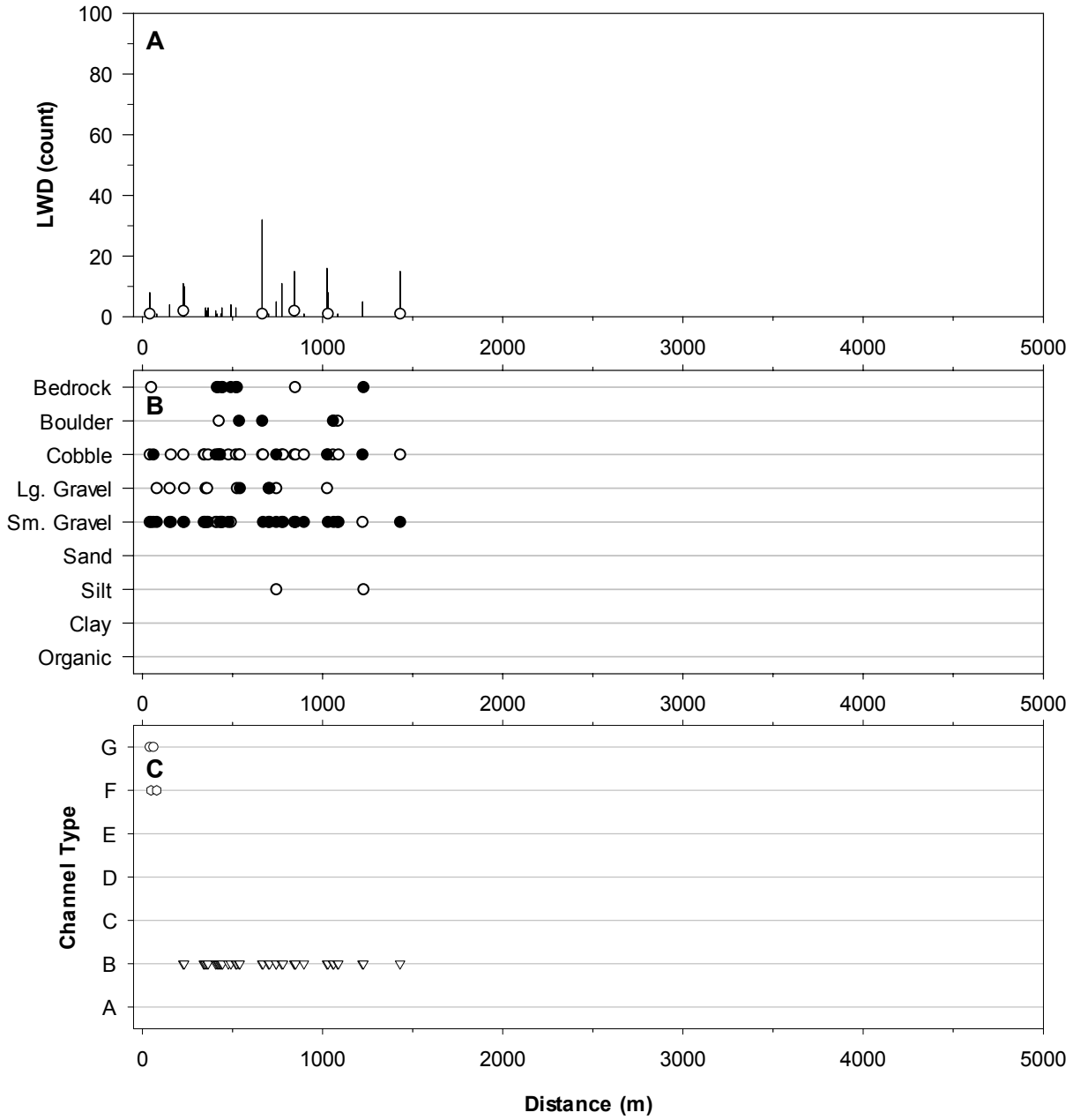
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Deep Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Bridge	167.3		H=1.1m w= .85m no trail just access for shed on othrt side of stream. Wood.
Ford	402.9	3.0	Vehicle water ford. Unnamed unmaoed road(may come from house/farm downstream).
Seep	588.7		On right. Low flow, dripping.
Ford	592.0	3.0	Road bed ford. Possibly old logging road. Probably continues from 1st road down stream.unknown named and unmapped.
Trib	815.0	1.0	Unnamed, unmapped trib on right side side of stream. Coming out of a drainage on the east side of lost cove knob.
Trib	879.3	1.0	Unnamed, unmapped trib on right side side of stream. Coming off a drainage on the southeast side of lost cove knob.
Trib	916.0	0.5	Unnamed, unmapped trib on left side side of stream. Coming out of a drainage on the east side of lost cove knob.
Seep	1234.0		From right low flow.
Seep	1413.0		Left side with low- moderate flow.
Ford	1430.0		Poor condition small road or trail. Unamed unmapped. 2.5 m wide. End survey

Photos taken of Deep Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
Bridge		167.3	
Ford		402.9	
R	9	430.5	Left bank erosion.
R	14	664.0	At 563m two large trees fallen over. Caused erosion and pulled a mound of dirt up with threir roots. Fell from right to left. Bank tall 15 ft. Made of clay. Took two pictures 1st of left bank 2nd of right bank.) Brown water snake.
Trib		815.0	
R	19	896.8	
Trib		879.3	
Trib		916.0	



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Deep Branch, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Hickory Branch**
District:	Grandfather
USGS Quadrangle:	Old Fort
Survey Date:	05/31/05
Downstream Starting Point:	confluence with Curtis Creek
Total Distance Surveyed (km):	1.0

	Pools	**Riffles**
Percent of Total Stream Area:	14	86
Total Area (m^2):	375±212	2214±808
Correction Factor Applied:	0.90	1.23
Number of Paired Samples:	3	3
Total Count:	29	29
Number per km:	28	28
Mean Area (m^2):	13	76
Mean Maximum Depth (cm):	58	23
Mean Average Depth (cm):	27	6
Mean Residual Depth (cm):	10	--
Percent Surveyed as Glides:	21	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	10
Percent with >35% Fines:	31	0

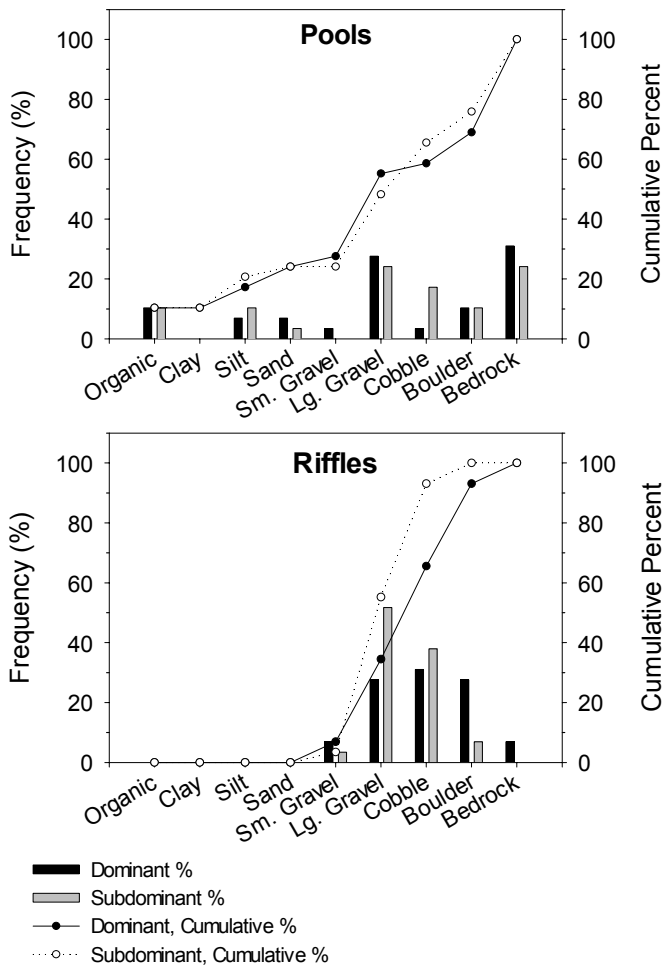
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	129
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	66
> 5 m long, > 55 cm diameter:	0
Total:	195

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	8	1
Maximum:	9	3
75th Percentile	9	2
25th Percentile	8	1
Minimum	7	0

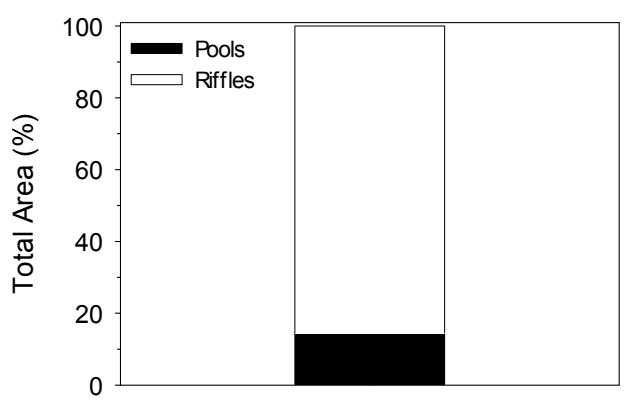
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	0
B:	100
C:	0
D:	0
E:	0
F:	0
G:	0

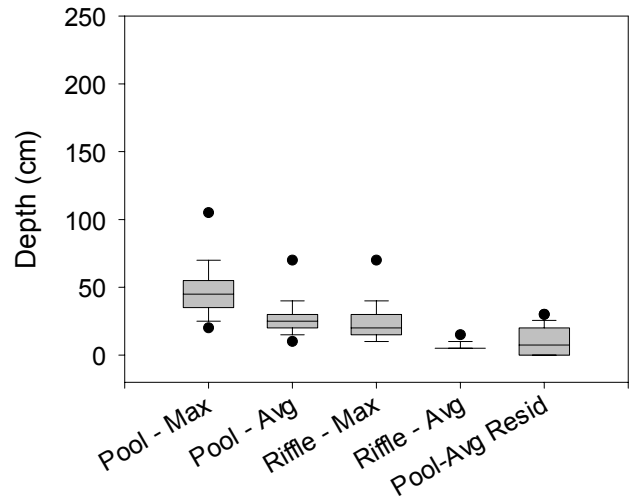
Other Stream Attributes	
Mean Bankfull Channel Width (m):	6
Mean Channel Gradient (%):	13
Median Water Temperature (C˚):	14



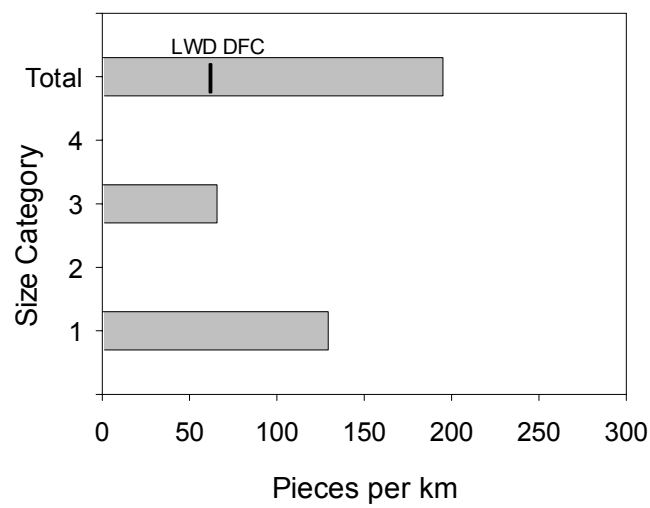
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Hickory Branch, summer 2005.



Estimated area of Hickory Branch in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Hickory Branch, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Hickory Branch, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

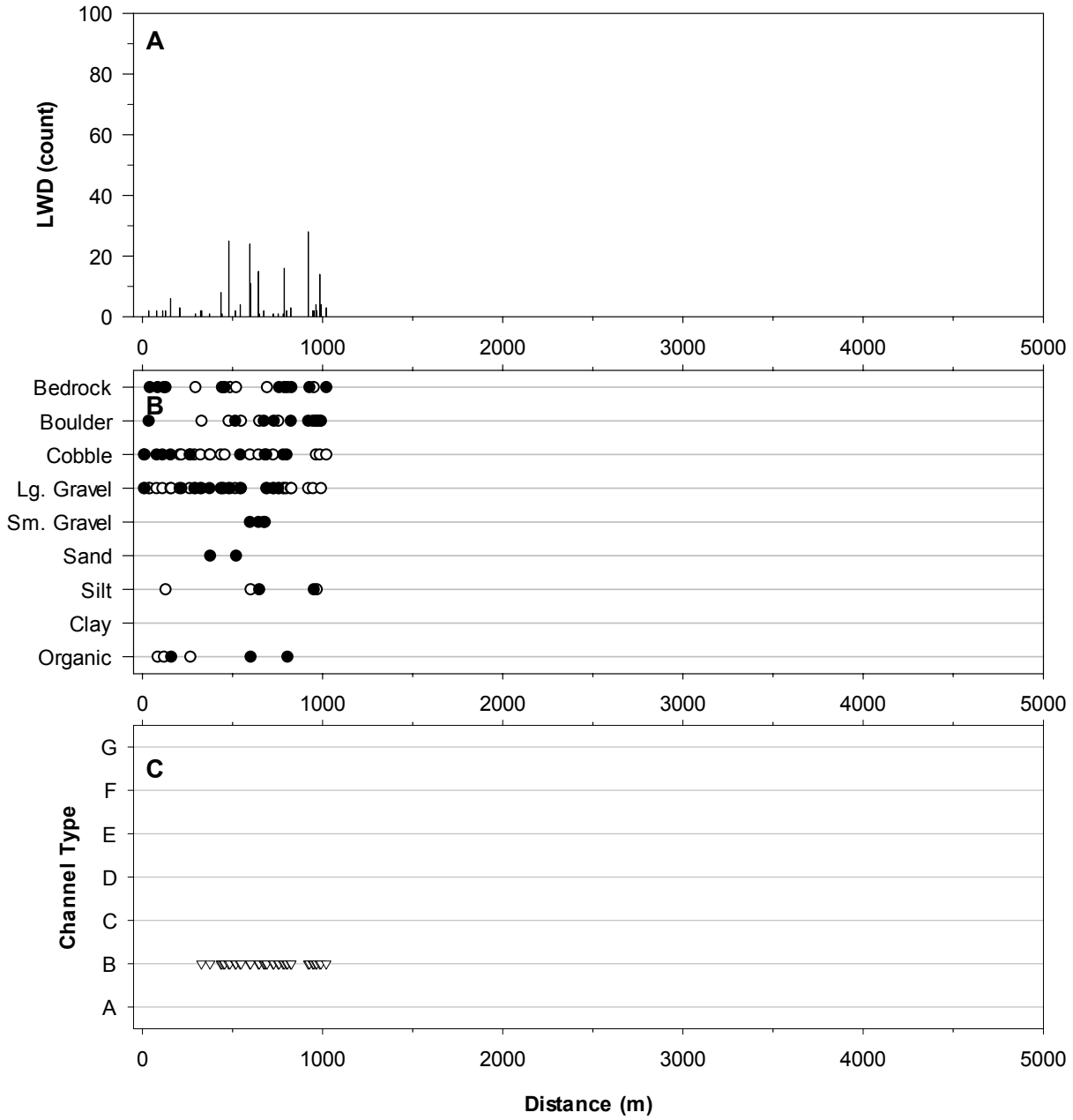
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Hickory Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Other	177.0		Possible campsite on right
Ford	207.0	0.5	Trail crossing distinguished on map
Other	337.0		Eroded bank
Side Channel	400.0	1.5	In on left
Side Channel	426.0	1.5	Out on left
Trib	430.0	0.5	In on left
Ford	547.4	0.5	Hickory branch trail
Trib	905.0		Underground on left
Trib	963.0	0.2	In on left
Fall	991.0		12 meters high

Photos taken of Hickory Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
P	9	293.7	
R	9	322.0	
OTR		337.0	Eroded bank
P	21	729.0	
R	21	753.0	
P	29	991.0	
FALL		991.0	12 meters high
C	29	1020.0	



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Hickory Branch, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Horse Branch**
District:	Grandfather
USGS Quadrangle:	Old Fort
Survey Date:	05/28/05
Downstream Starting Point:	Forest boundary
Total Distance Surveyed (km):	0.7

	Pools	**Riffles**
Percent of Total Stream Area:	14	86
Total Area (m^2):	203±534	1205±2564
Correction Factor Applied:	1.26	1.04
Number of Paired Samples:	2	2
Total Count:	22	22
Number per km:	30	30
Mean Area (m^2):	9	55
Mean Maximum Depth (cm):	35	18
Mean Average Depth (cm):	20	6
Mean Residual Depth (cm):	10	--
Percent Surveyed as Glides:	36	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	5
Percent with >35% Fines:	95	23

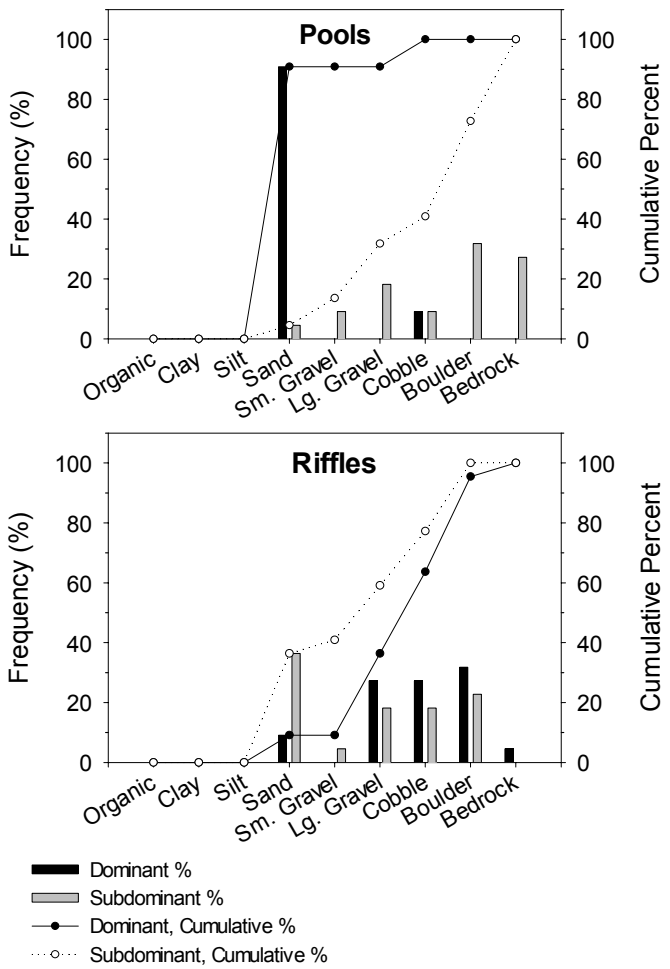
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	105
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	109
> 5 m long, > 55 cm diameter:	3
Total:	216

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	6	1
Maximum:	6	1
75th Percentile	6	1
25th Percentile	5	0
Minimum	5	0

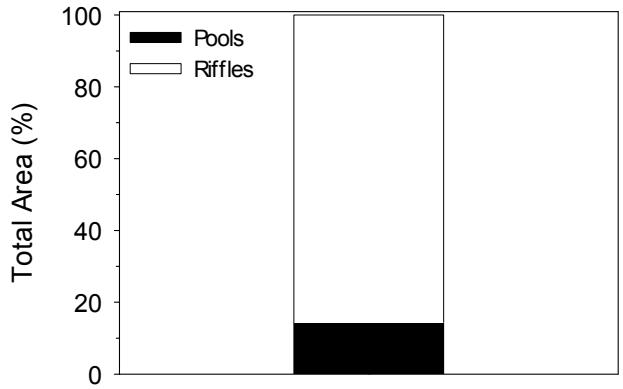
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	86
B:	14
C:	0
D:	0
E:	0
F:	0
G:	0

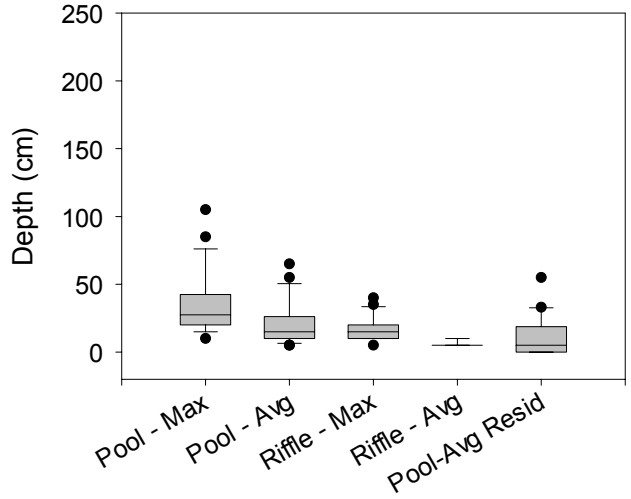
Other Stream Attributes	
Mean Bankfull Channel Width (m):	4
Mean Channel Gradient (%):	9
Median Water Temperature (C˚):	13



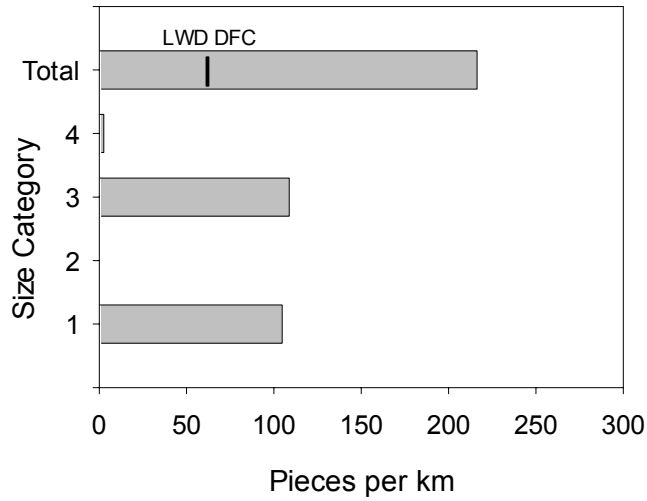
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Horse Branch, summer 2005.



Estimated area of Horse Branch in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Horse Branch, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Horse Branch, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

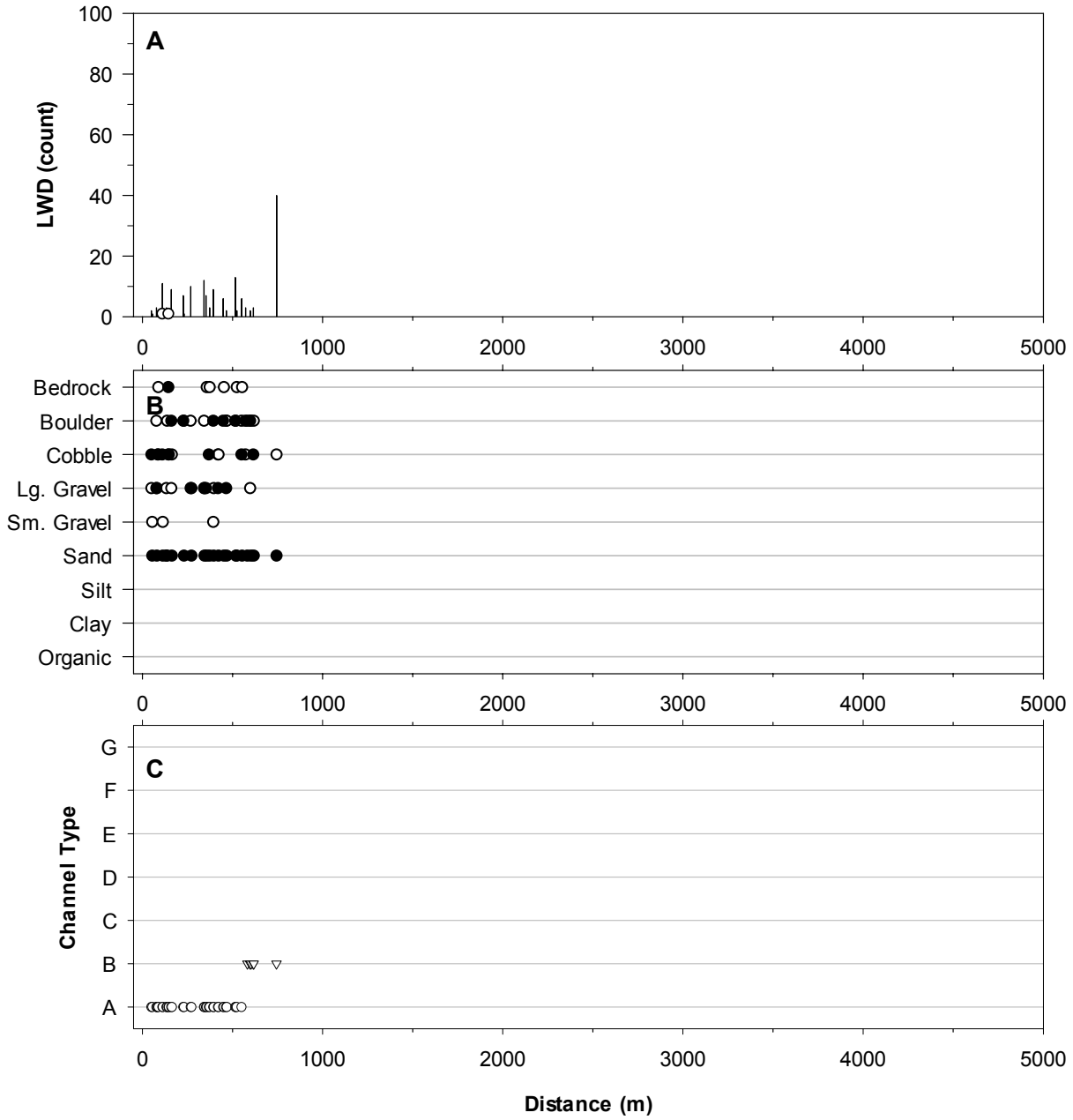
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Horse Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Spring	95.0		Spring house, cement
Seep	405.0		In on left
Other	432.0		Campsite on left confirmed by camp soap
Seep	563.0		In on left
Trib	628.0	0.5	Unnamed in on left
Side Channel	636.0	1.0	In on left
Side Channel	674.0		Out on left, underground
Trib	707.8	0.5	In on left

Photos taken of Horse Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
SPG		95.0	Spring house, cement
R	9	267.4	Moderate to heavy damage, dense laurel
R	19	571.9	



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Horse Branch, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Laurel Log Branch**
District:	Grandfather
USGS Quadrangle:	Old Fort
Survey Date:	05/27/05
Downstream Starting Point:	confluence with Left Prong
Total Distance Surveyed (km):	1.0

	Pools	**Riffles**
Percent of Total Stream Area:	15	85
Total Area (m^2):	336	1901
Correction Factor Applied:	1.00	0.93
Number of Paired Samples:	2	2
Total Count:	22	21
Number per km:	23	22
Mean Area (m^2):	15	91
Mean Maximum Depth (cm):	63	39
Mean Average Depth (cm):	45	13
Mean Residual Depth (cm):	19	--
Percent Surveyed as Glides:	5	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	100
Percent with >35% Fines:	0	0

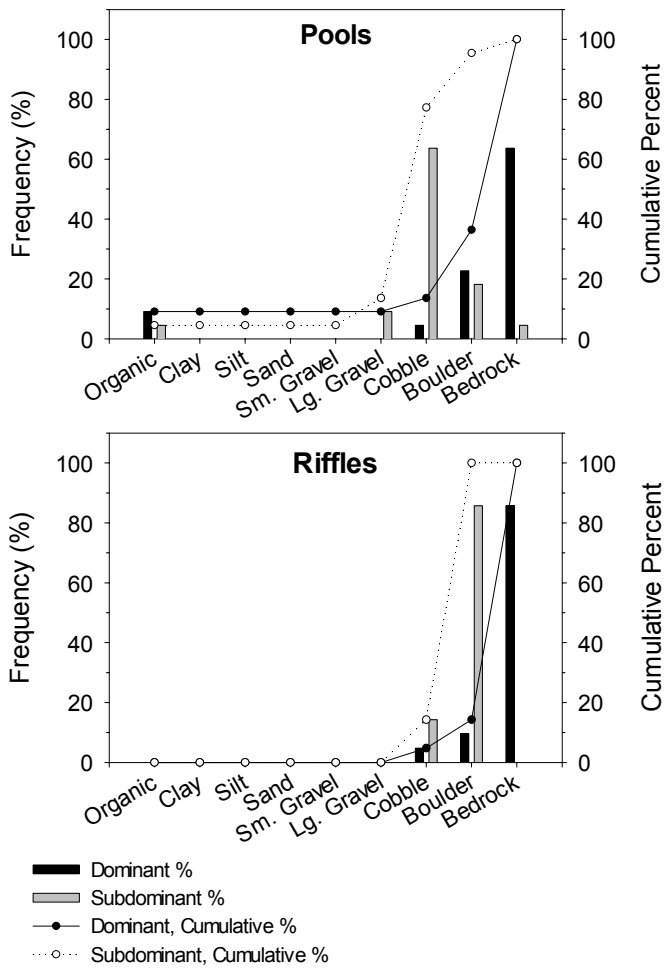
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	127
< 5 m long, > 55 cm diameter:	1
>5 m long, 10 cm – 55 cm diameter:	67
> 5 m long, > 55 cm diameter:	2
Total:	197

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	11	3
Maximum:	14	6
75th Percentile	12	3
25th Percentile	9	2
Minimum	7	1

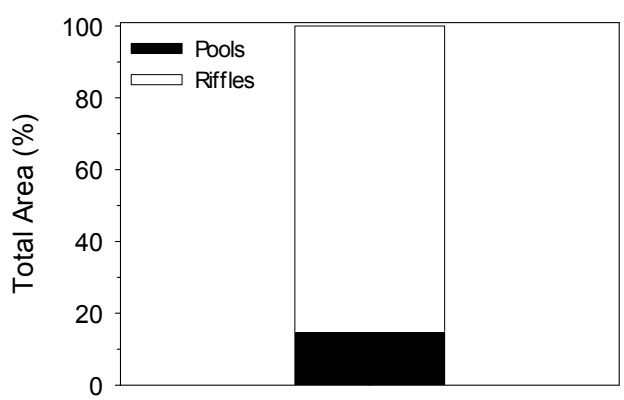
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	100
B:	0
C:	0
D:	0
E:	0
F:	0
G:	0

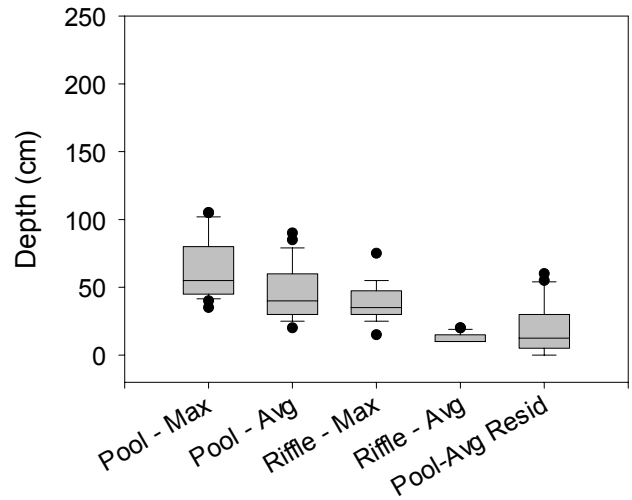
Other Stream Attributes	
Mean Bankfull Channel Width (m):	5
Mean Channel Gradient (%):	27
Median Water Temperature (C˚):	12



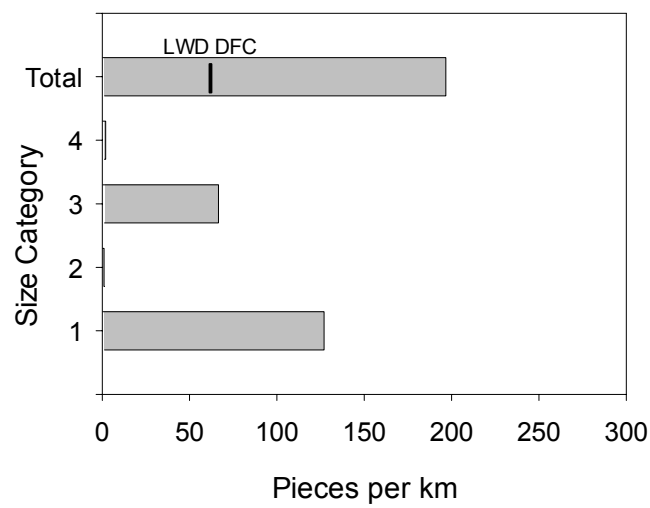
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Laurel Log Branch, summer 2005.



Estimated area of Laurel Log Branch in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Laurel Log Branch, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Laurel Log Branch, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

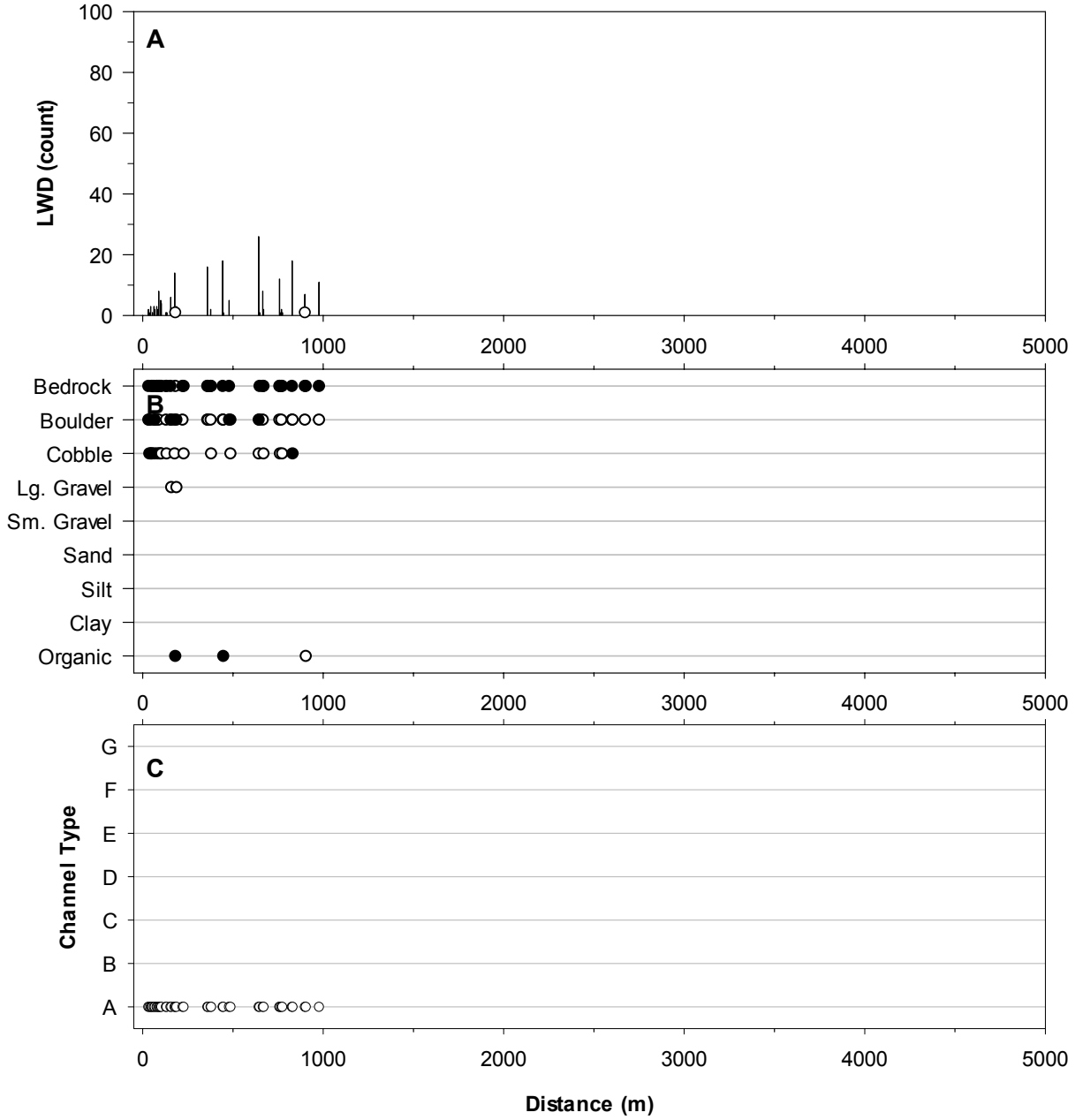
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Laurel Log Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Seep	36.0	0.1	Left, extreme gradient
Seep	49.2	0.1	Trickle on right
Ford	316.5	0.5	Same trail as before
Side Channel	316.5	1.0	In left
Side Channel	358.1	0.5	Out left
Trib	481.0	2.0	In left, unnamed and coming in between the l and l in laurel log on thw quad
Side Channel	495.0	2.0	In left
Side Channel	534.0	2.0	Out left, slope increasing
Trib	750.0	1.0	In left
Ford	821.0	0.2	Trail crossing

Photos taken of Laurel Log Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
C	4	77.0	Steep slope.
C	14	401.0	Bad place to measure Rosgens



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Laurel Log Branch, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Left Prong**
District:	Grandfather
USGS Quadrangle:	Old Fort
Survey Date:	05/28/05
Downstream Starting Point:	confluence with Laurel Log Branch
Total Distance Surveyed (km):	1.1

	Pools	**Riffles**
Percent of Total Stream Area:	23	77
Total Area (m^2):	608±48	2057±1195
Correction Factor Applied:	1.11	0.68
Number of Paired Samples:	3	3
Total Count:	25	25
Number per km:	23	23
Mean Area (m^2):	24	82
Mean Maximum Depth (cm):	65	45
Mean Average Depth (cm):	49	18
Mean Residual Depth (cm):	23	--
Percent Surveyed as Glides:	0	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	92
Percent with >35% Fines:	20	0

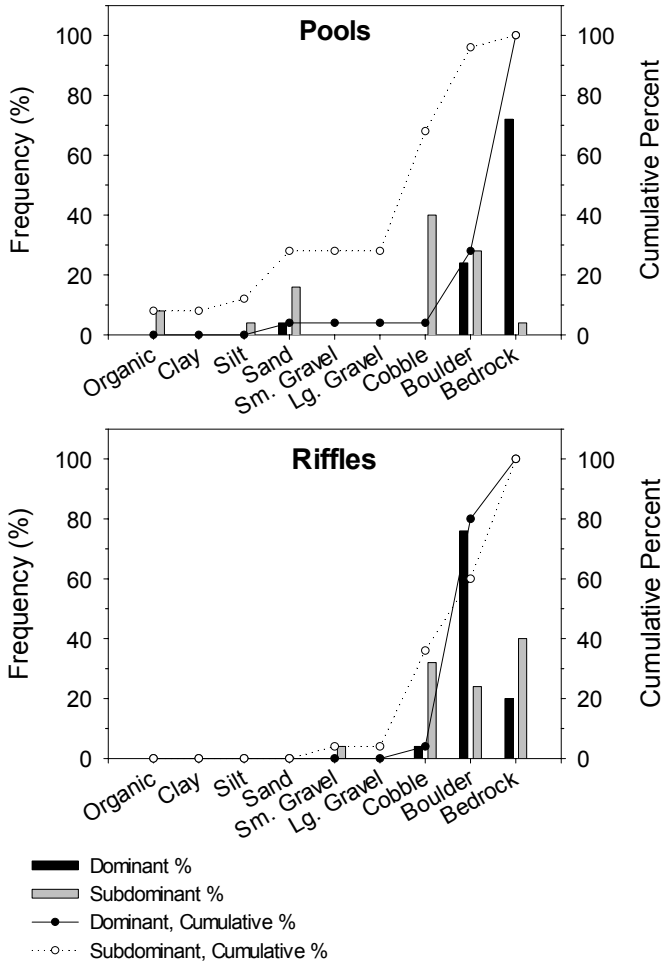
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	94
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	112
> 5 m long, > 55 cm diameter:	4
Total:	210

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	8	2
Maximum:	10	5
75th Percentile	9	3
25th Percentile	8	0
Minimum	8	0

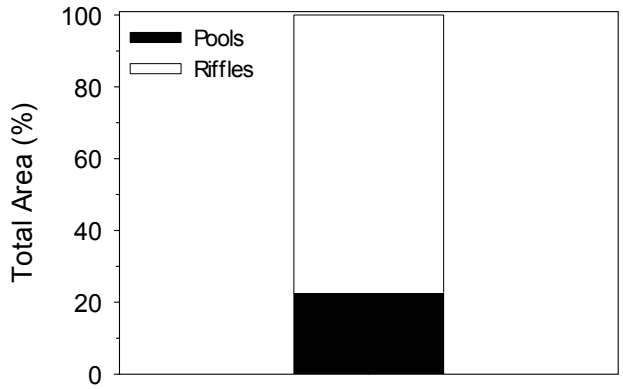
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	100
B:	0
C:	0
D:	0
E:	0
F:	0
G:	0

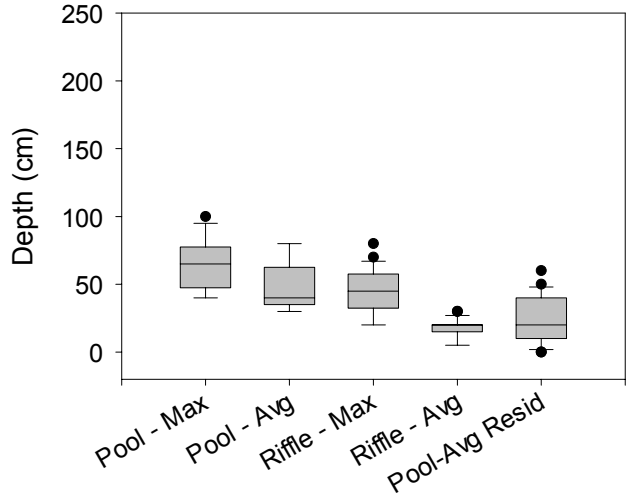
Other Stream Attributes	
Mean Bankfull Channel Width (m):	5
Mean Channel Gradient (%):	26
Median Water Temperature (C˚):	12



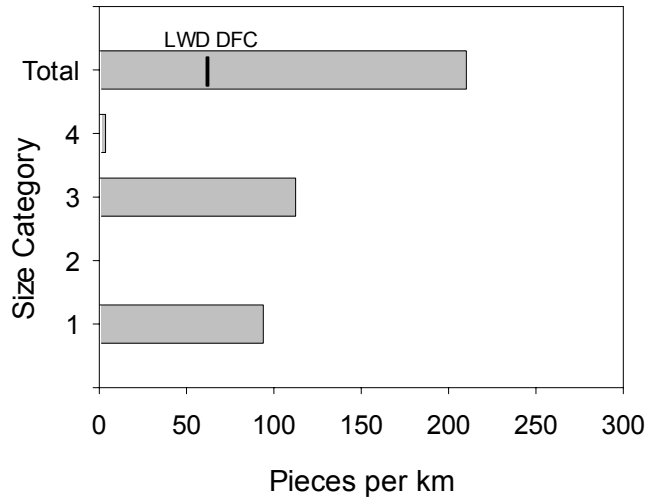
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Left Prong, summer 2005.



Estimated area of Left Prong in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Left Prong, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Left Prong, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

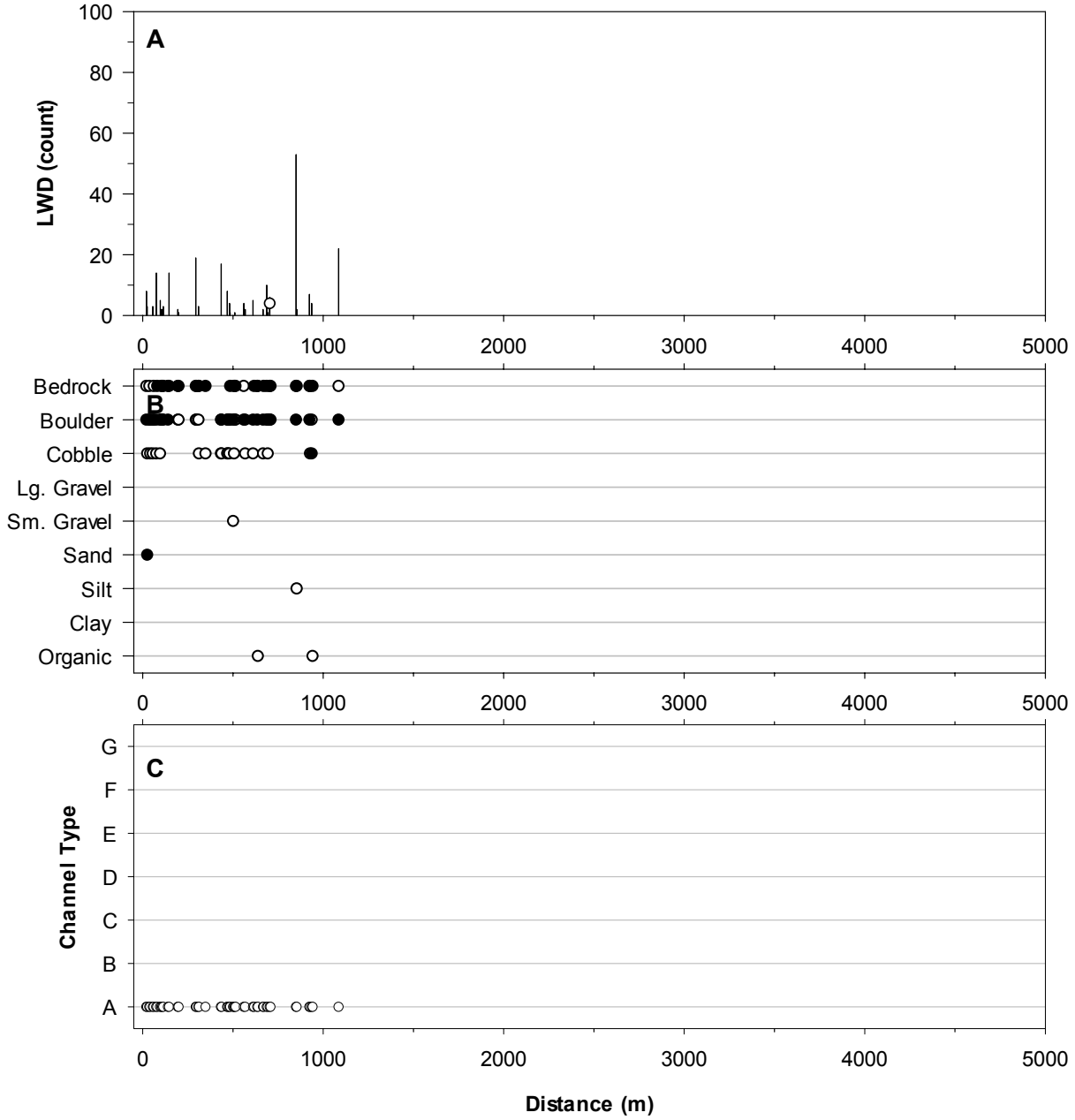
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Left Prong during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Fall	340.1	2.0	10m high
Side Channel	382.0	2.0	In on right
Side Channel	416.6	2.0	Out right
Brd	465.3	8.0	
Side Channel	539.7	1.5	In right
Side Channel	616.7	1.0	On right
Side Channel	635.0	0.5	Out left
Trib	1034.0	0.5	In left

Photos taken of Left Prong during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
C	5	96.3	High gradient, extreme terrain, very dangerous walking due to rain
C	8	194.1	Steep cascade
C	9	293.7	cascade
FALL		340.1	10m high
C	15	509.6	
C	25	1085.0	End survey, old trail on left of stream, stream is consistantly 1 m and rising in elevation



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Left Prong, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Lick Log Branch**
District:	Grandfather
USGS Quadrangle:	Old Fort
Survey Date:	06/01/05
Downstream Starting Point:	confluence with Curtis Creek
Total Distance Surveyed (km):	0.9

	Pools	**Riffles**
Percent of Total Stream Area:	15	85
Total Area (m^2):	347±442	1987±13072
Correction Factor Applied:	0.88	1.07
Number of Paired Samples:	2	2
Total Count:	20	19
Number per km:	22	21
Mean Area (m^2):	17	105
Mean Maximum Depth (cm):	55	43
Mean Average Depth (cm):	32	13
Mean Residual Depth (cm):	16	--
Percent Surveyed as Glides:	15	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	84
Percent with >35% Fines:	30	0

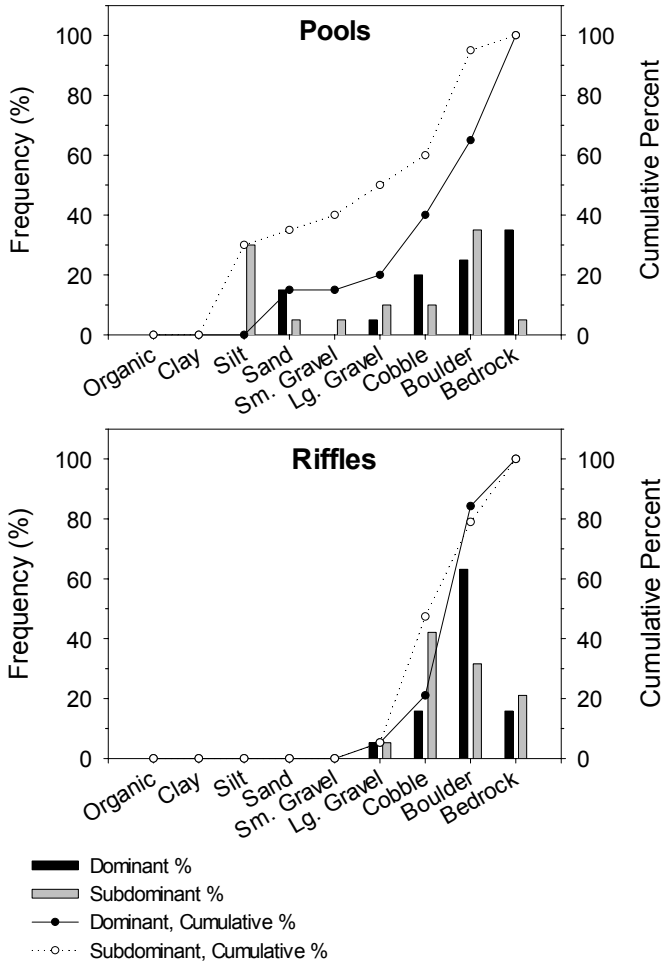
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	129
< 5 m long, > 55 cm diameter:	4
>5 m long, 10 cm – 55 cm diameter:	256
> 5 m long, > 55 cm diameter:	1
Total:	391

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	12	3
Maximum:	16	7
75th Percentile	14	4
25th Percentile	10	1
Minimum	8	0

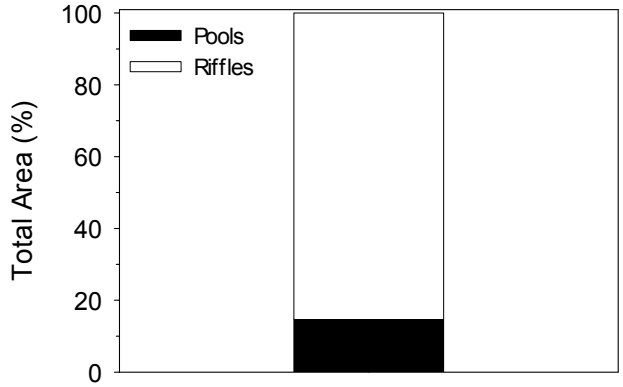
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

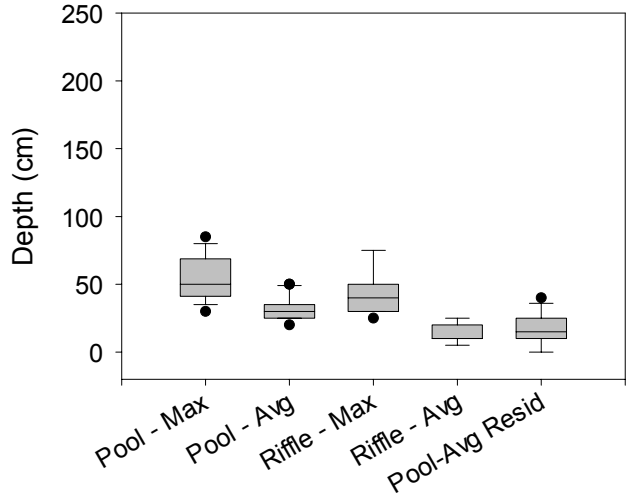
Other Stream Attributes	
Mean Bankfull Channel Width (m):	6
Mean Channel Gradient (%):	24
Median Water Temperature (C˚):	13



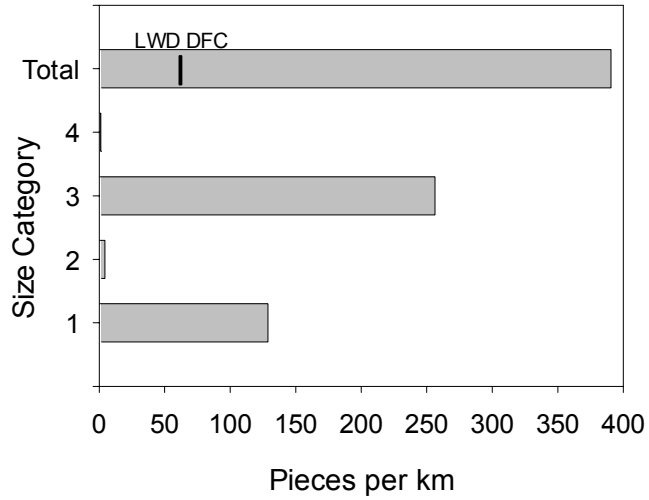
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Licklog Branch, summer 2005.



Estimated area of Licklog Branch in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Licklog Branch, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Licklog Branch, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

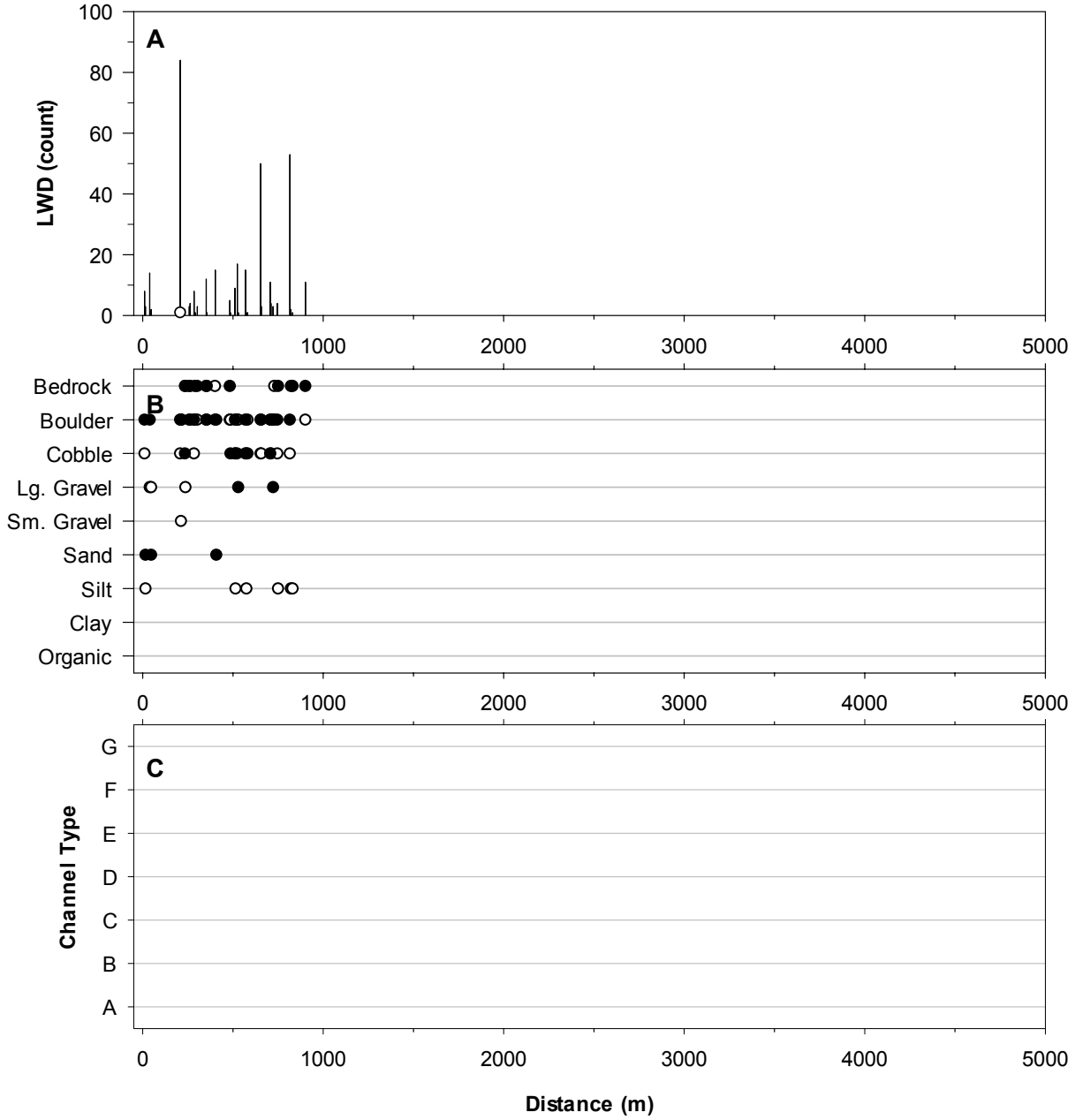
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Licklog Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Culvert	48.5	2.0	Cocncrete box culvert with 1 meter perch, blockrd massive log jam from hurricane
Ford	55.0		Fs 482
Other	80.0		Debris jam caused by road, approx 100 peices
Other	619.0		Large pileup on right with eroded banks on left

Photos taken of Licklog Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
V		48.5	
OTR		80.0	
C	9	401.0	
OTR		619.0	



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Licklog Branch, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Long Branch**
District:	Grandfather
USGS Quadrangle:	Old Fort
Survey Date:	05/30/05
Downstream Starting Point:	Confluence with Curtis Creek
Total Distance Surveyed (km):	0.5

	Pools	**Riffles**
Percent of Total Stream Area:	15	85
Total Area (m^2):	277±78	1632±
Correction Factor Applied:	0.99	2.30
Number of Paired Samples:	2	1
Total Count:	19	17
Number per km:	35	31
Mean Area (m^2):	15	96
Mean Maximum Depth (cm):	45	24
Mean Average Depth (cm):	31	9
Mean Residual Depth (cm):	19	--
Percent Surveyed as Glides:	5	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	0
Percent with >35% Fines:	5	0

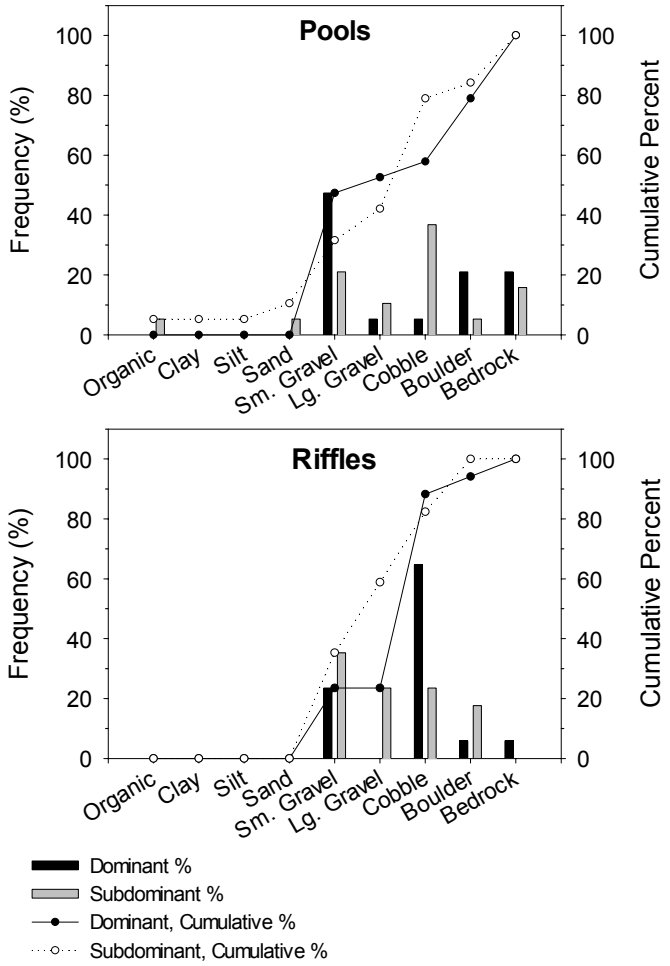
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	91
< 5 m long, > 55 cm diameter:	2
>5 m long, 10 cm – 55 cm diameter:	91
> 5 m long, > 55 cm diameter:	2
Total:	185

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	8	1
Maximum:	8	1
75th Percentile	8	1
25th Percentile	8	1
Minimum	8	1

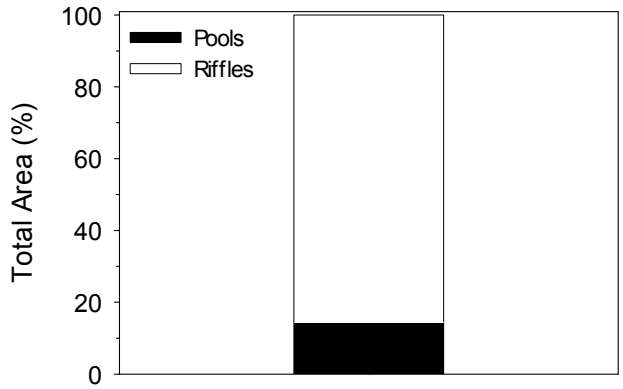
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

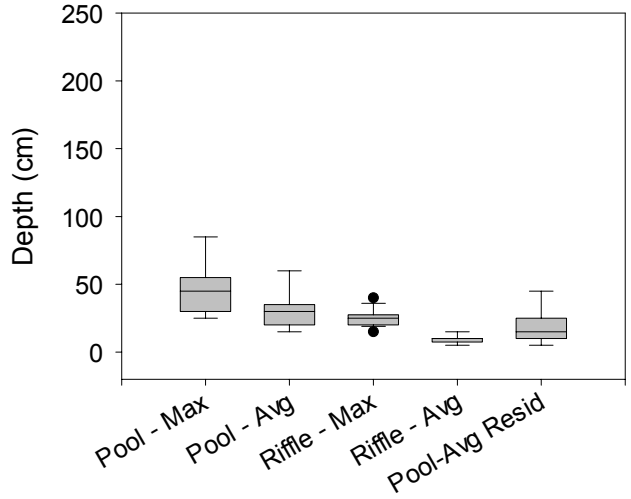
Other Stream Attributes	
Mean Bankfull Channel Width (m):	7
Mean Channel Gradient (%):	11
Median Water Temperature (C˚):	14



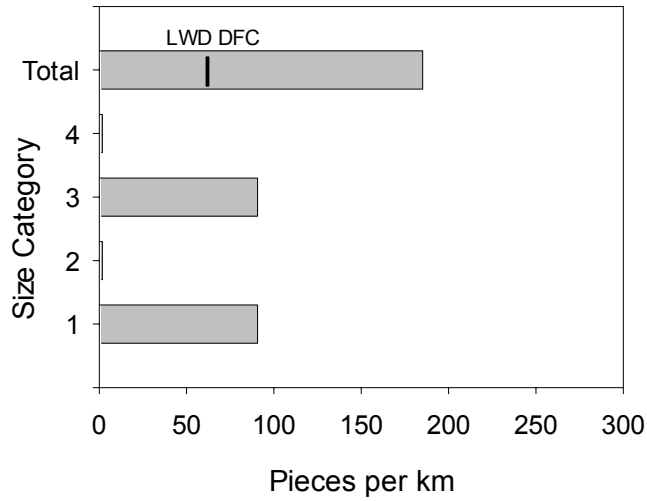
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Long Branch, summer 2005.



Estimated area of Long Branch in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Long Branch, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Long Branch, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

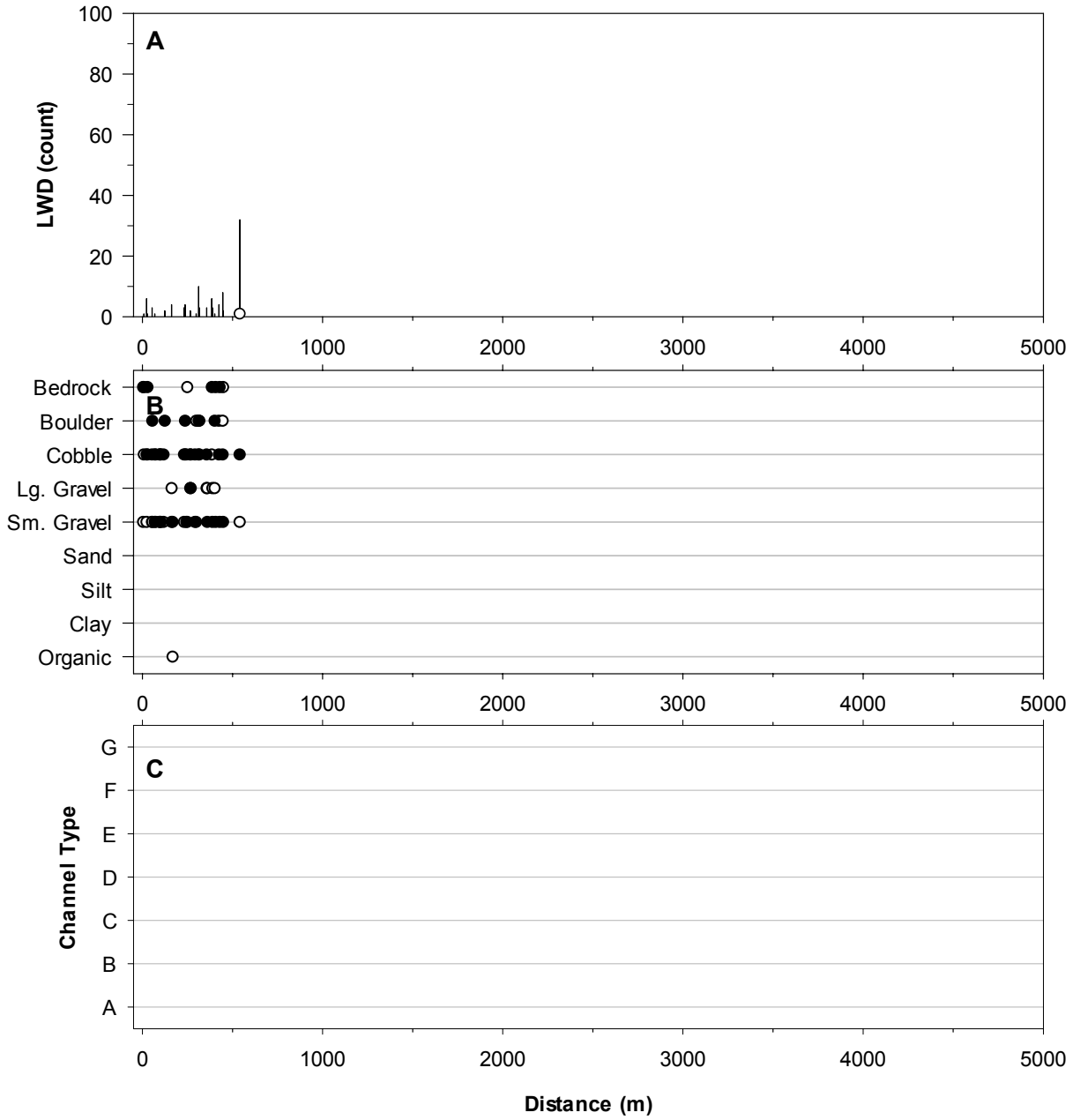
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Long Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Trib	339.0	0.5	Trib right from moses ridge
Other	463.3		Flood dramage, log jam and highly eroded banks

Photos taken of Long Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
R	9	264.8	Problems with rosgen, could be due to blown out area on right with a small side channel on right
TRIB		339.0	Trib right from moses ridge
OTR		463.3	Flood dramage, log jam and highly eroded banks



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Long Branch, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Newberry Creek**
District:	Grandfather
USGS Quadrangle:	Old Fort
Survey Date:	05/25/05
Downstream Starting Point:	Forest boundary
Total Distance Surveyed (km):	3.3

	Pools	**Riffles**
Percent of Total Stream Area:	23	77
Total Area (m^2):	4280±538	14236±1462
Correction Factor Applied:	0.92	1.01
Number of Paired Samples:	9	8
Total Count:	93	81
Number per km:	28	24
Mean Area (m^2):	46	176
Mean Maximum Depth (cm):	88	57
Mean Average Depth (cm):	51	25
Mean Residual Depth (cm):	19	--
Percent Surveyed as Glides:	14	--
Percent Surveyed as Runs:	--	1
Percent Surveyed as Cascades:	--	49
Percent with >35% Fines:	0	0

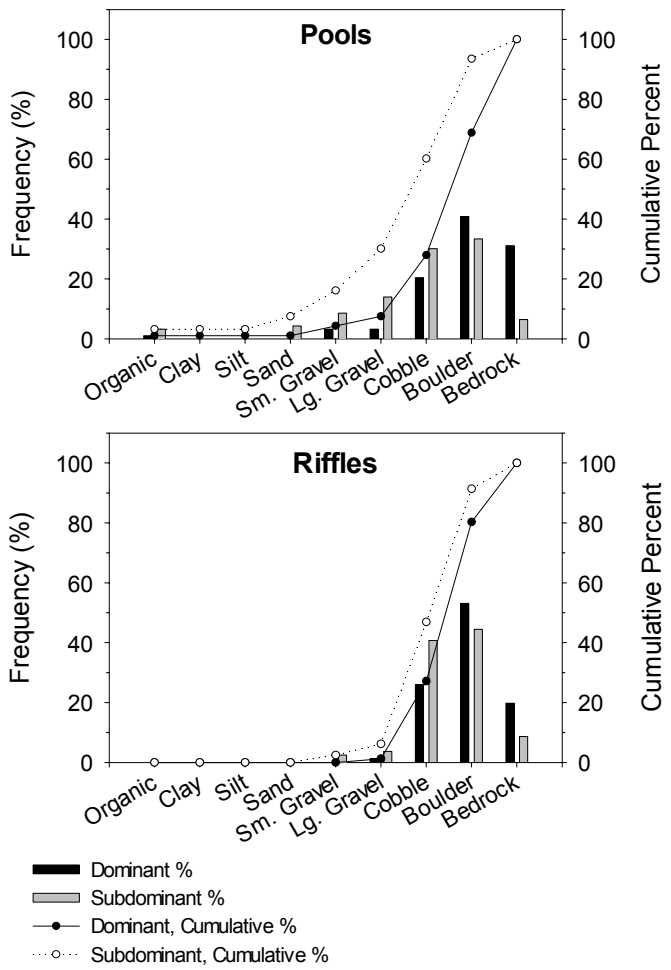
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	39
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	47
> 5 m long, > 55 cm diameter:	1
Total:	86

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	11	2
Maximum:	16	4
75th Percentile	12	2
25th Percentile	10	1
Minimum	6	0

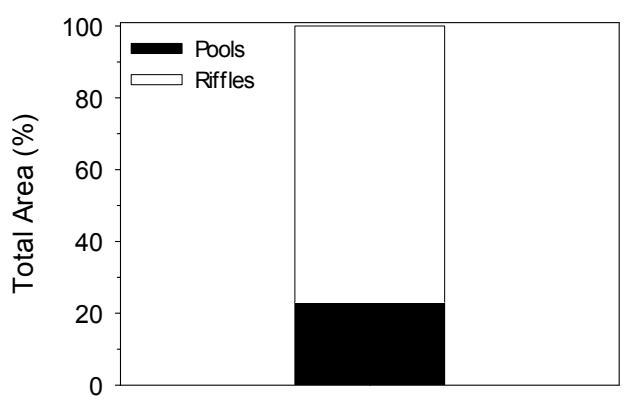
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	47
B:	53
C:	0
D:	0
E:	0
F:	0
G:	0

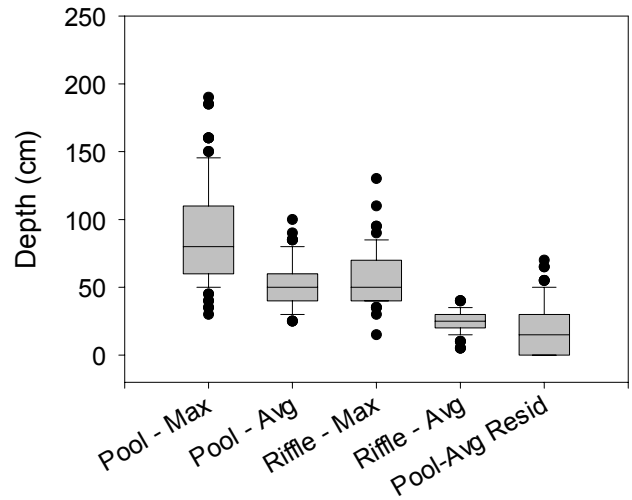
Other Stream Attributes	
Mean Bankfull Channel Width (m):	8
Mean Channel Gradient (%):	16
Median Water Temperature (C˚):	11.5



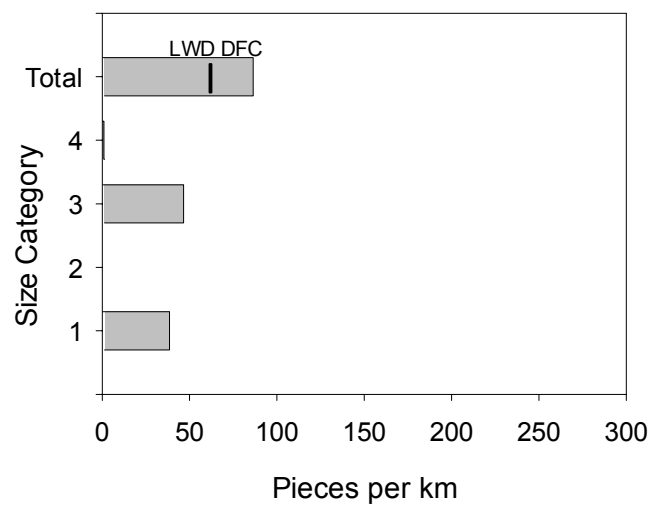
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Newberry Creek, summer 2005.



Estimated area of Newberry Creek in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Newberry Creek, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Newberry Creek, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

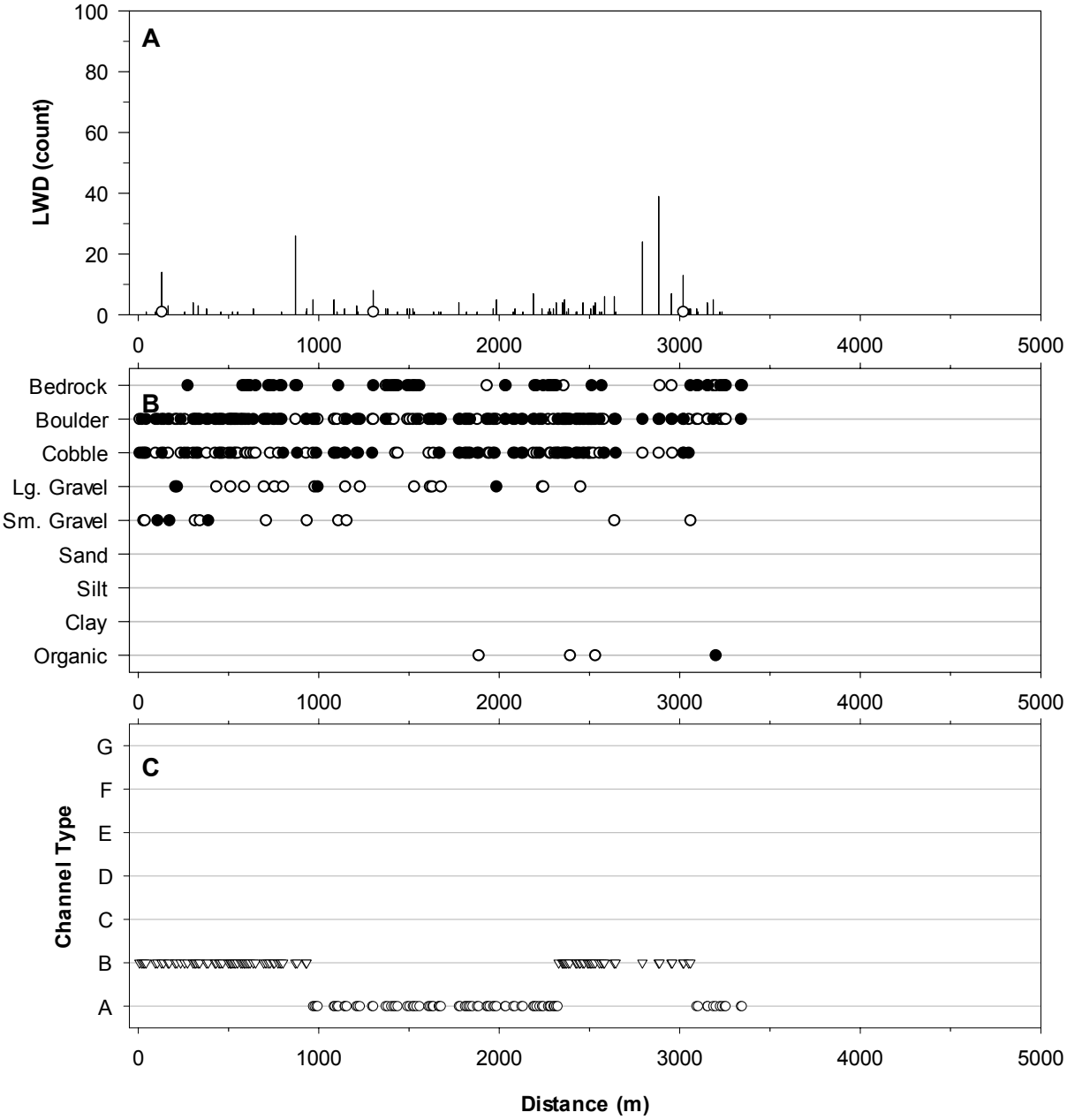
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Newberry Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Side Channel	181.5	2.5	Comes in on left
Side Channel	195.0		Goes out on left
Trib	316.0	1.5	Trib comes in on right, first unnamed
Bridge	621.0		Fs 828a 3 meters above stream
Side Channel	840.0	4.0	In on left
Side Channel	870.0	5.0	Out on left
Trib	1050.0	0.2	Left from rocky mtn
Seep	1170.0		Trickle from left
Trib	1186.0	1.0	Second major trib from start point on left
Fall	1502.0		1.1 meter high
Bridge	1610.0		4.5 meters high
Side Channel	1734.0	3.0	Brook trout spotted, in on left
Side Channel	1753.0	6.0	Out on left
Side Channel	1797.0	4.0	Out on left
Side Channel	1825.0	3.0	Out on left
Trib	1926.0	1.5	Left side
Trib	2226.0	5.0	In on left
Side Channel	2329.0	3.0	In on left
Side Channel	2343.7	0.5	Out on left
Fall	2565.9		3 meters high
Ford	2636.9	0.5	Trail crossing, crossing at aprox elevation at 2680, good shape with blazes on both sides of stream
Trib	2709.7	0.5	In on left, coming from the four in the road sign 482 a, off of big fork ridge
Side Channel	2758.7	2.0	In on left
Side Channel	2835.7	1.0	Out left
Ford	2961.7	5.0	Trail crossing, dirt
Side Channel	2972.7	2.0	Out on right
Side Channel	2987.1	2.0	In on right
Trib	3073.7		In on right, unmarked
Trib	3154.7	1.0	In on left, unnamed

Photos taken of Newberry Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
C	9	304.0	Stream makes abrupt left at 290
C	19	592.0	High grade b
R	29	968.0	
C	39	1490.0	
FALL		1502.0	1.1 meter high
C	49	1929.7	
C	59	2323.2	Still in very high grade b channel
P	69	2329.0	
P	79	2531.0	
C	69	2554.2	
FALL		2565.9	3 meters high
C		3248.7	Stream makes abrupt left at 290



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Newberry Creek, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Paddys Branch**
District:	Grandfather
USGS Quadrangle:	Old Fort
Survey Date:	05/25/05
Downstream Starting Point:	confluence with Curtis Creek
Total Distance Surveyed (km):	1.8

	Pools	**Riffles**
Percent of Total Stream Area:	8	92
Total Area (m^2):	380±54	4386±8717
Correction Factor Applied:	1.10	1.65
Number of Paired Samples:	3	3
Total Count:	27	31
Number per km:	15	17
Mean Area (m^2):	14	141
Mean Maximum Depth (cm):	41	25
Mean Average Depth (cm):	27	12
Mean Residual Depth (cm):	16	--
Percent Surveyed as Glides:	0	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	55
Percent with >35% Fines:	26	0

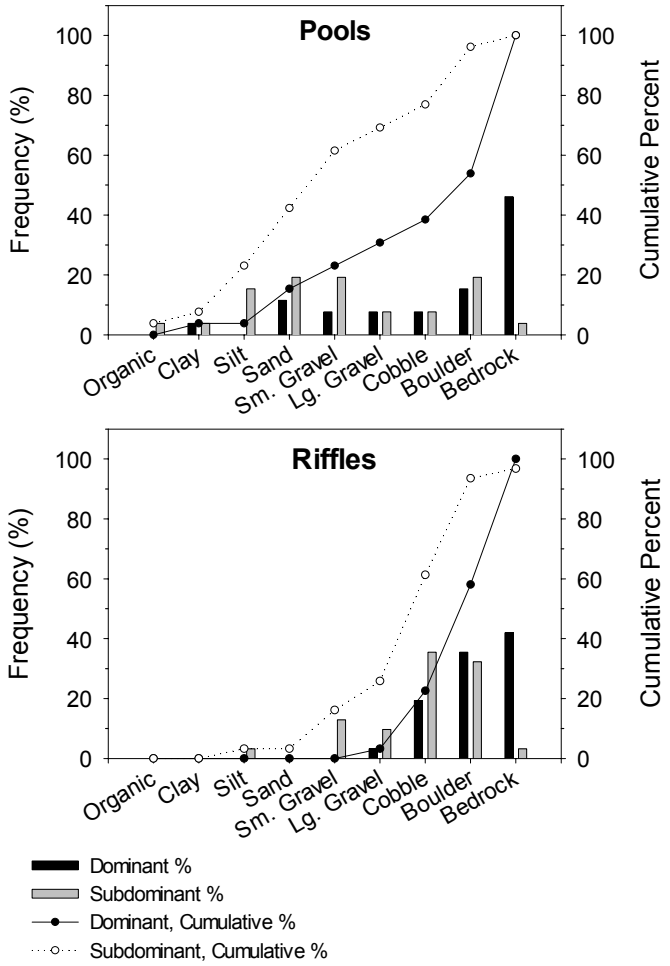
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	49
< 5 m long, > 55 cm diameter:	1
>5 m long, 10 cm – 55 cm diameter:	103
> 5 m long, > 55 cm diameter:	12
Total:	164

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	5	1
Maximum:	6	1
75th Percentile	5	1
25th Percentile	4	0
Minimum	4	0

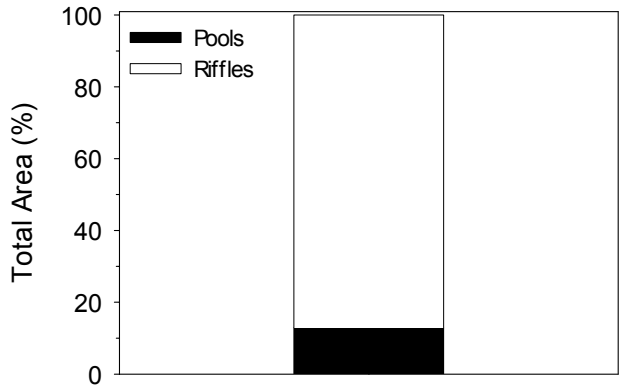
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	88
B:	0
C:	0
D:	0
E:	0
F:	12
G:	0

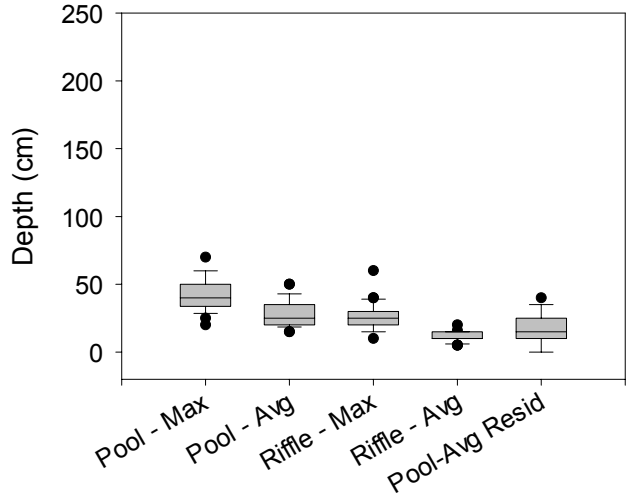
Other Stream Attributes	
Mean Bankfull Channel Width (m):	4
Mean Channel Gradient (%):	7
Median Water Temperature (C˚):	12



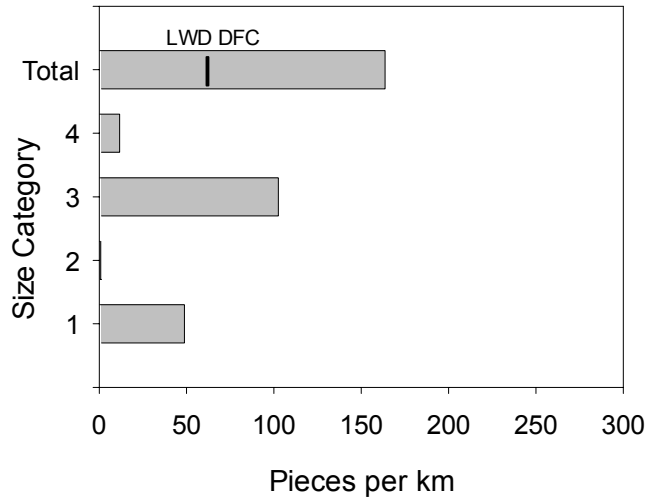
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Paddys Branch, summer 2005.



Estimated area of Paddys Branch in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Paddys Branch, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Paddys Branch, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

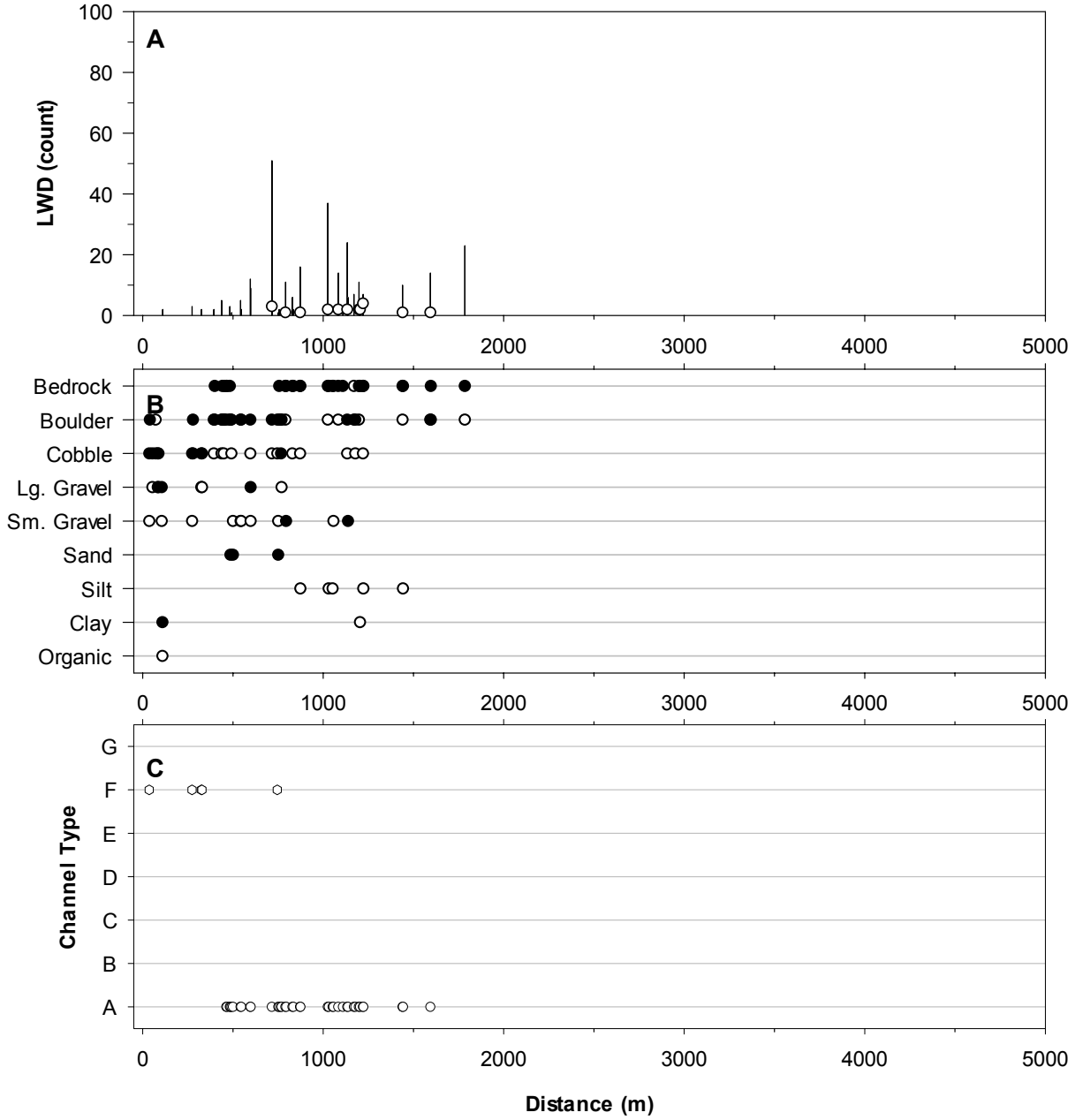
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Paddys Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Trib	114.2	1.0	Enters left, starts in forest 50m away form seep
Culvert	278.7		Metal pipe, 1.2 meter, runs under road secondary state road 1227, no natuarl substrate, perch 25 cm
Seep	451.0		Low amount of flow, on left
Trib	618.0	0.5	Comes in on the left
Seep	995.0		Low flow, on right side
Seep	1060.0		Low flow, on right
Trib	1455.0	1.0	Unnamed trib comes out of a culvert about 20 meters awayfrom main branch right side
Culvert	1477.5		Pipe, metal, perch .2, size .7 meters, no natuaral substrate, trail from forest service road 4027
Culvert	1784.0		Metal pipe, no natural substrate, perch = 0, size .7 meters, black plastic pipes in picture are not functional.

Photos taken of Paddys Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
P	4	109.9	Large pool 10m by 10m has been formed by fallen tree (lwd), pool is also altering stream flow like a dam
R	5	273.7	Lots of small woody debris pocket water
V		278.7	Metal pipe, 1.2 meter, runs under road secondary state road 1227, no natuarl substrate, perch 25 cm
R	15	715.1	Large log jam separating the pool and the riffle, lots of sand bars spread throughout this riffle, lots of pocket water,lwd pile at meter 697, lots of largetrees have slid down the left bank
C	25	1133.0	The entire riffle looked like the picture, there were no goodbankful indicators to many log jams
TRIB		1455.0	Unnamed trib comes out of a culvert about 20 meters awayfrom main branch ight side
V		1477.5	Pipe, metal, perch .2, size .7 meters, no natuaral substrate, trail from forest service road 4027
V		1784.0	Metal pipe, no natural substrate, perch = 0, size .7 meters, black plastic pipes in picture are not functional.



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Paddys Branch, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Slick Falls Branch**
District:	Grandfather
USGS Quadrangle:	Old Fort
Survey Date:	05/31/05
Downstream Starting Point:	confluence with Curtis Creek
Total Distance Surveyed (km):	1.2

	Pools	**Riffles**
Percent of Total Stream Area:	30	70
Total Area (m^2):	401±	951±
Correction Factor Applied:	0.74	0.60
Number of Paired Samples:	1	1
Total Count:	16	16
Number per km:	13	13
Mean Area (m^2):	25	59
Mean Maximum Depth (cm):	50	30
Mean Average Depth (cm):	31	8
Mean Residual Depth (cm):	17	--
Percent Surveyed as Glides:	19	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	81
Percent with >35% Fines:	31	6

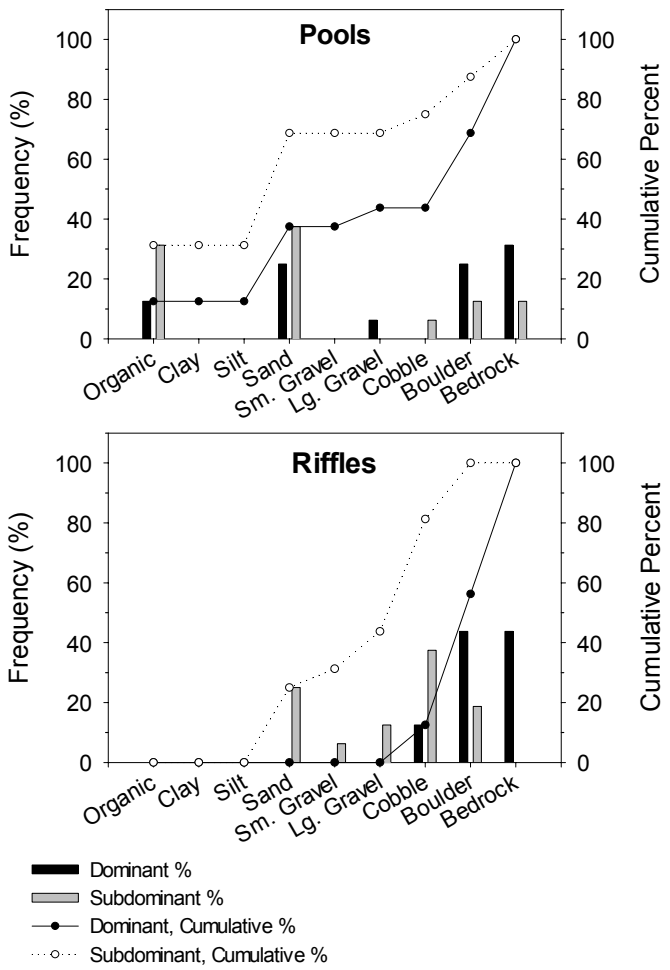
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	72
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	45
> 5 m long, > 55 cm diameter:	5
Total:	122

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	7	1
Maximum:	7	1
75th Percentile	7	1
25th Percentile	7	1
Minimum	7	1

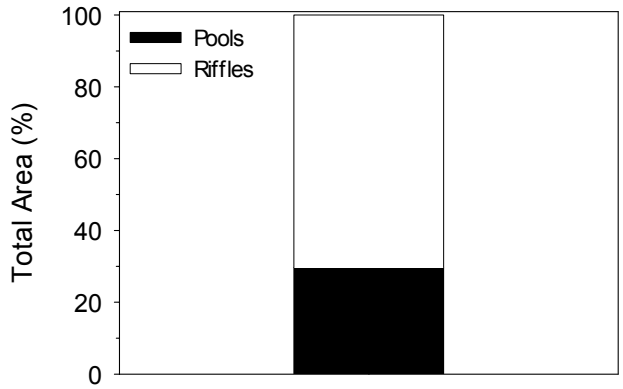
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	22
B:	78
C:	0
D:	0
E:	0
F:	0
G:	0

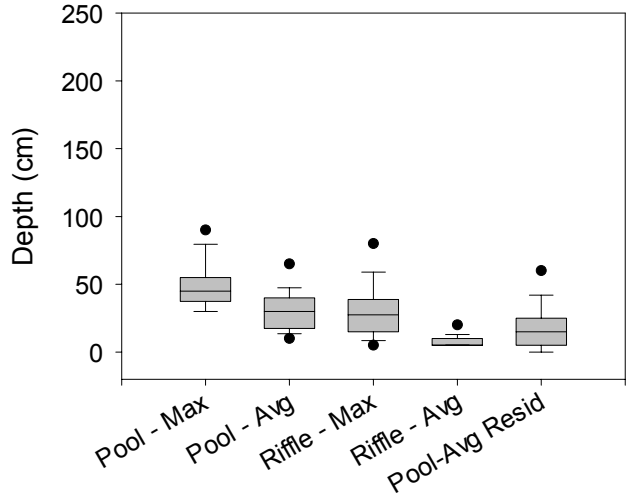
Other Stream Attributes	
Mean Bankfull Channel Width (m):	5
Mean Channel Gradient (%):	13
Median Water Temperature (C˚):	14



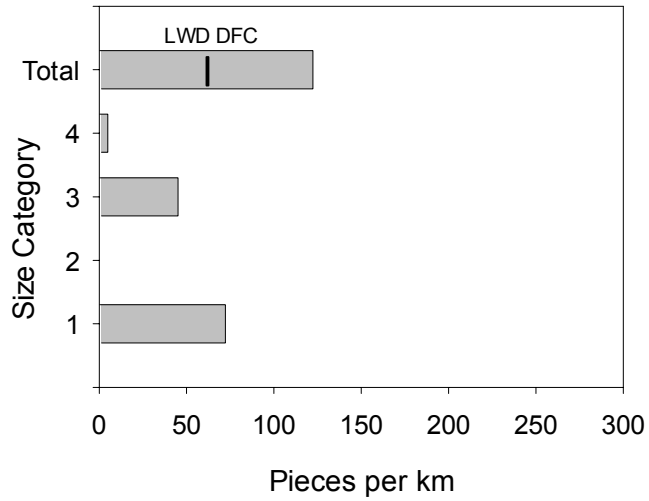
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Slick Falls Branch, summer 2005.



Estimated area of Slick Falls Branch in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Slick Falls Branch, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Slick Falls Branch, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

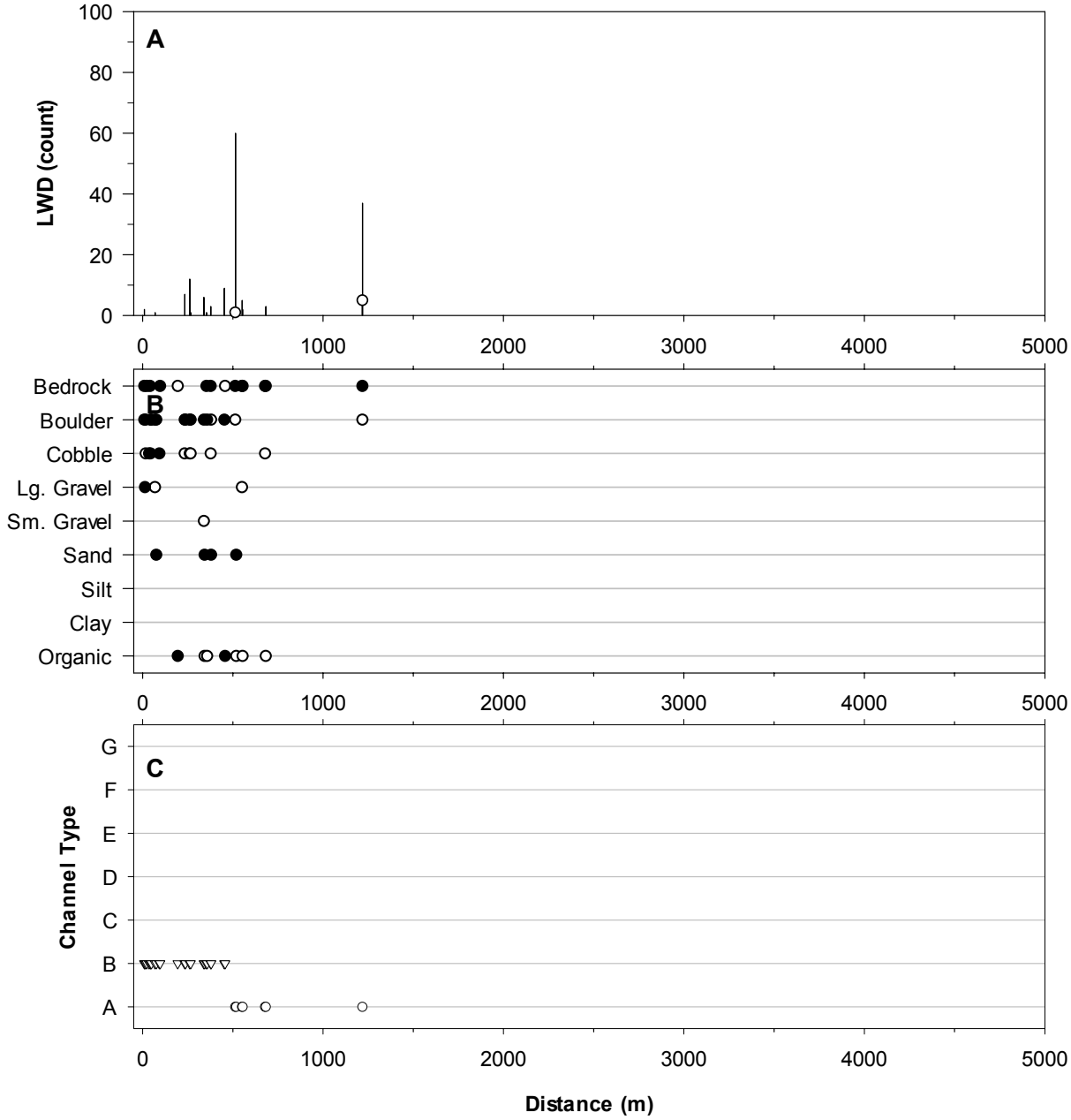
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Slick Falls Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Culvert	30.0	1.5	Single pipe, 1.5 wide, .2m perch
Trib	92.2	0.5	Unmarked on right side
Braid	186.7	2.5	Probably flood damage
Side Channel	208.5	0.5	
Ford	373.0	1.0	Foot trail crossing
Braid	434.4	1.2	In left
Side Channel	491.6	1.0	In right,transition between an a channel and a b

Photos taken of Slick Falls Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
P	7	194.6	
C	7	233.1	
C	15	678.4	Bedrock cascade



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Slick Falls Branch, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**unnamed trib to Curtis Creek**
District:	Pisgah
USGS Quadrangle:	Old Fort
Survey Date:	06/01/05
Downstream Starting Point:	confluence with Curtis Creek
Total Distance Surveyed (km):	0.5

	Pools	**Riffles**
Percent of Total Stream Area:	47	53
Total Area (m^2):	753±1632	858±154
Correction Factor Applied:	2.06	1.04
Number of Paired Samples:	2	2
Total Count:	9	9
Number per km:	17	17
Mean Area (m^2):	84	95
Mean Maximum Depth (cm):	51	47
Mean Average Depth (cm):	40	21
Mean Residual Depth (cm):	18	--
Percent Surveyed as Glides:	11	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	67
Percent with >35% Fines:	56	0

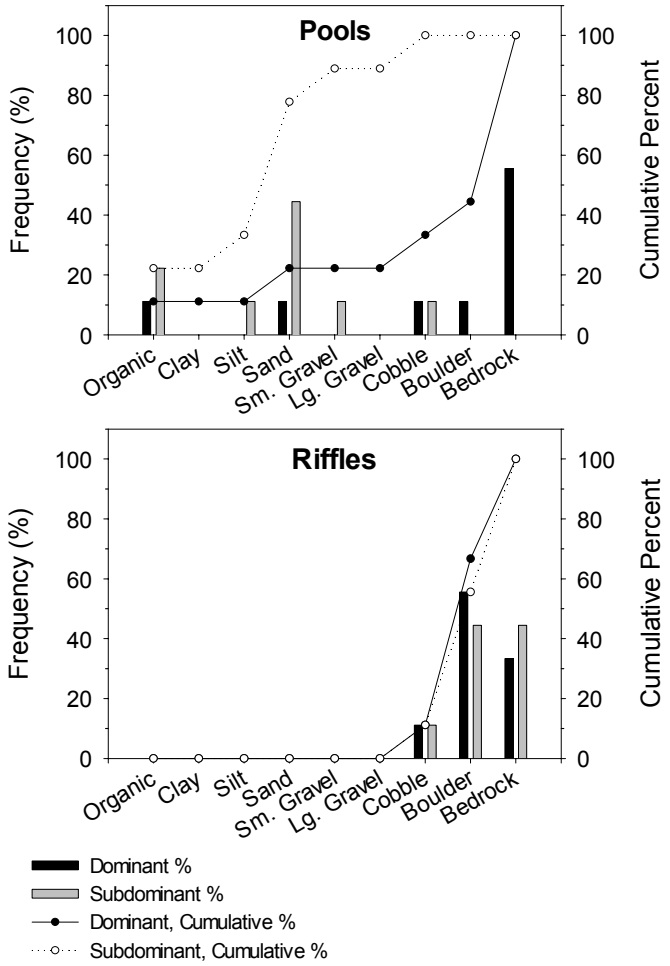
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	37
< 5 m long, > 55 cm diameter:	11
>5 m long, 10 cm – 55 cm diameter:	175
> 5 m long, > 55 cm diameter:	4
Total:	226

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		
Maximum:		
75th Percentile		
25th Percentile		
Minimum		

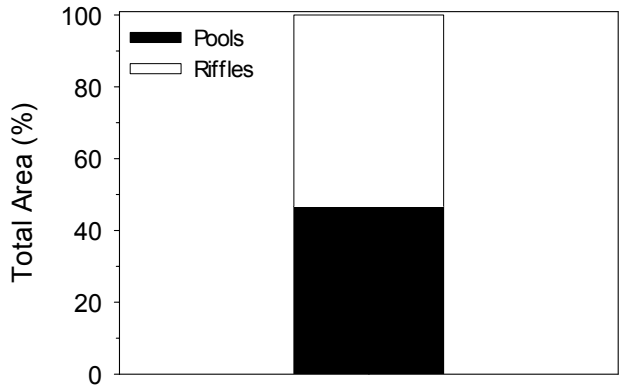
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	100
B:	0
C:	0
D:	0
E:	0
F:	0
G:	0

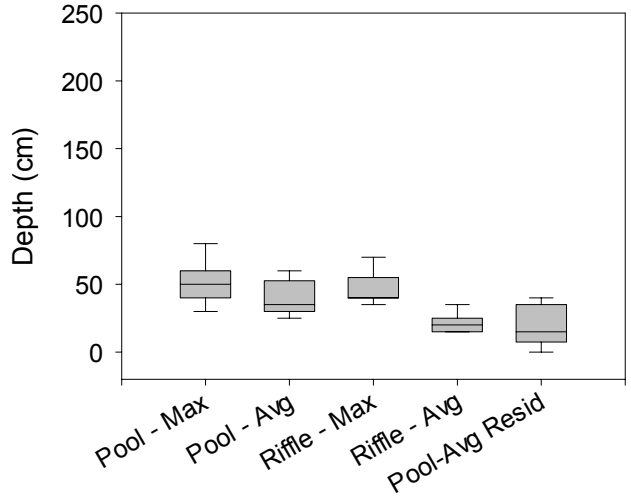
Other Stream Attributes	
Mean Bankfull Channel Width (m):	
Mean Channel Gradient (%):	16
Median Water Temperature (C°):	14



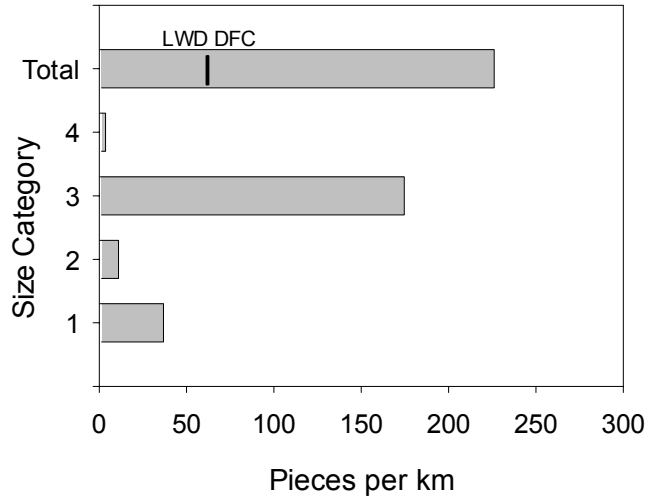
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in unnamed trib to Curtis Creek, summer 2005.



Estimated area of unnamed trib to Curtis Creek in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in unnamed trib to Curtis Creek, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in unnamed trib to Curtis Creek, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

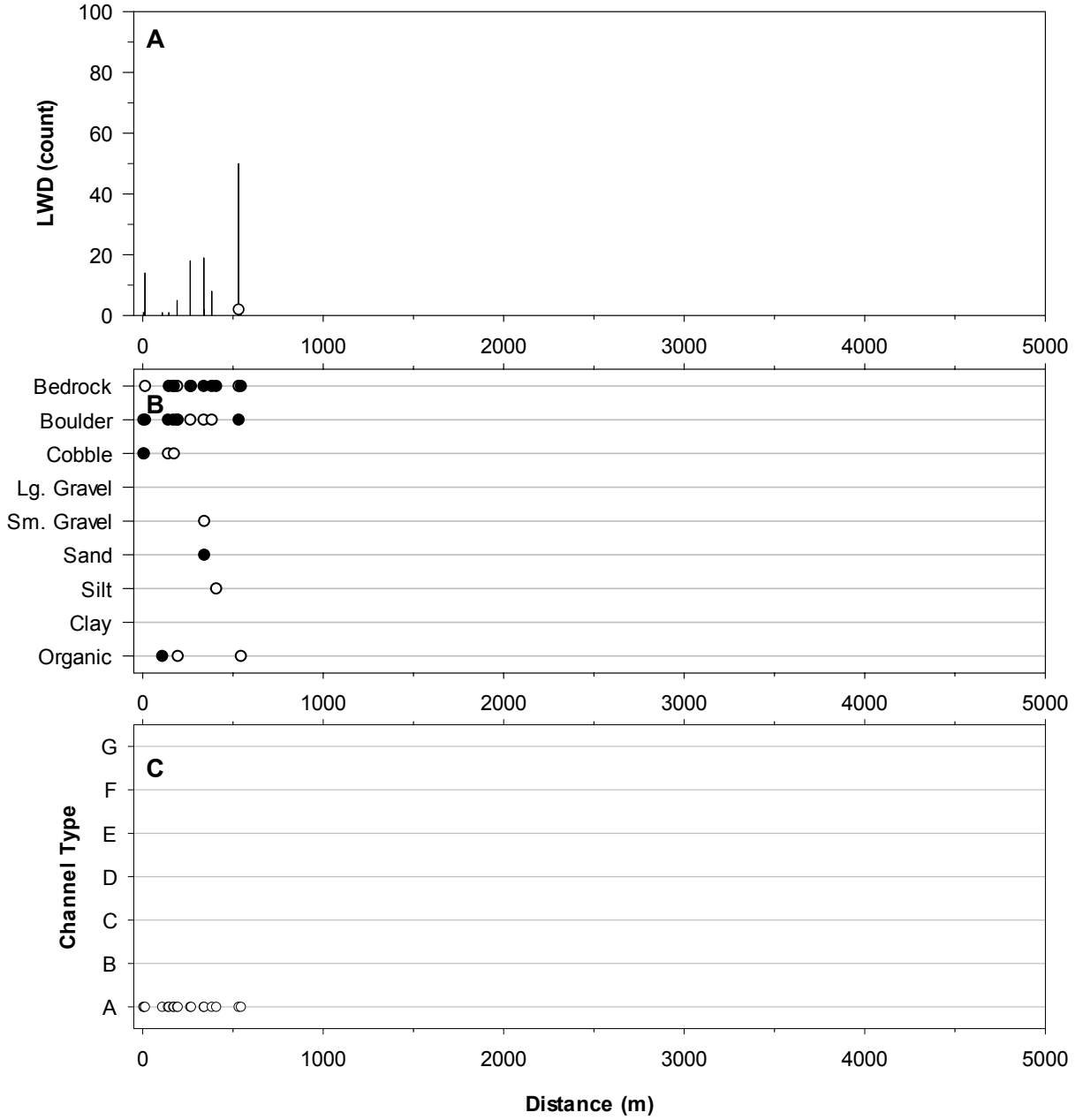
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on unnamed trib to Curtis Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Side Channel	172.9		Side channel in on right
Side Channel	190.3		Side channel out on right
Side Channel	190.3		Side channel in on left
Side Channel	305.0		Side channel in on right
Side Channel	320.4		Side channel out on left
Side Channel	337.9		Side channel out on right
Side Channel	364.5		Side channel in on right

Photos taken of unnamed trib to Curtis Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
R	5	190.3	Unable to determine bankfull due to flood damage; characteristics indicate a typical "a" channel
C	10	531.4	
P	10	544.0	End survey at 1215 hours on june 1, 2005; conditions too hazardous too continue



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in unnamed trib to Curtis Creek, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Andy Cove**
District:	Pisgah
USGS Quadrangle:	Pisgah Forest
Survey Date:	06/15/05
Downstream Starting Point:	confluence with Davidson River
Total Distance Surveyed (km):	0.8

	Pools	**Riffles**
Percent of Total Stream Area:	8	92
Total Area (m^2):	38±0	455±59
Correction Factor Applied:	1.00	0.96
Number of Paired Samples:	3	3
Total Count:	8	9
Number per km:	10	11
Mean Area (m^2):	5	51
Mean Maximum Depth (cm):	28	21
Mean Average Depth (cm):	15	9
Mean Residual Depth (cm):	5	--
Percent Surveyed as Glides:	38	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	22
Percent with >35% Fines:	88	44

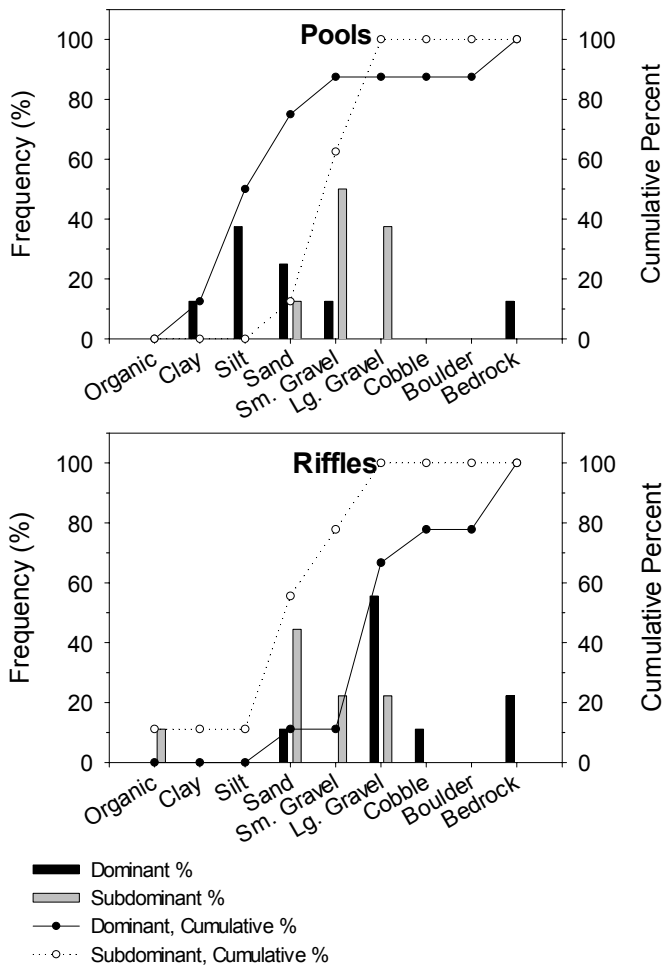
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	0
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	45
> 5 m long, > 55 cm diameter:	1
Total:	47

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	3	1
Maximum:	3	1
75th Percentile	3	1
25th Percentile	3	0
Minimum	3	0

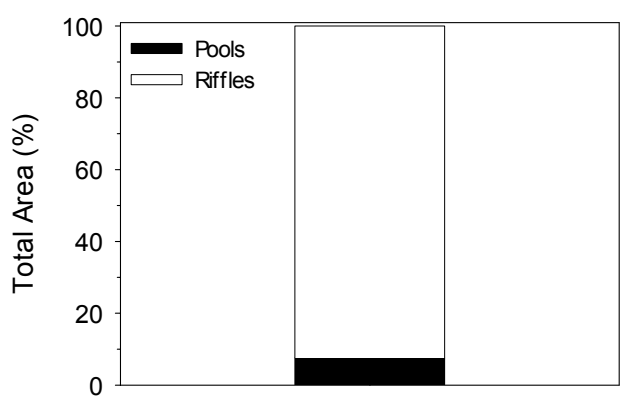
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	100
B:	0
C:	0
D:	0
E:	0
F:	0
G:	0

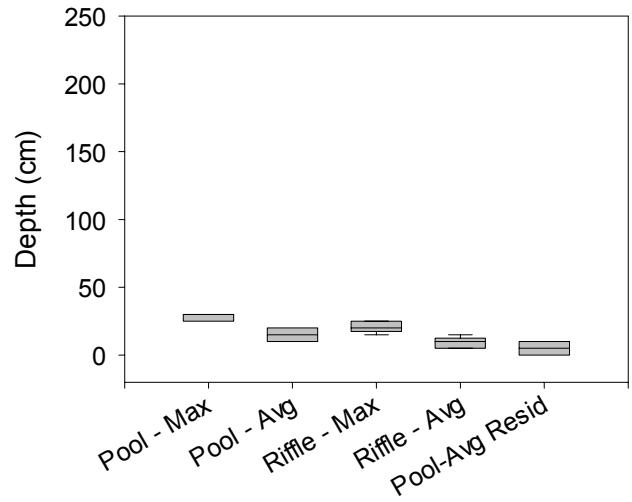
Other Stream Attributes	
Mean Bankfull Channel Width (m):	2
Mean Channel Gradient (%):	7
Median Water Temperature (C˚):	14



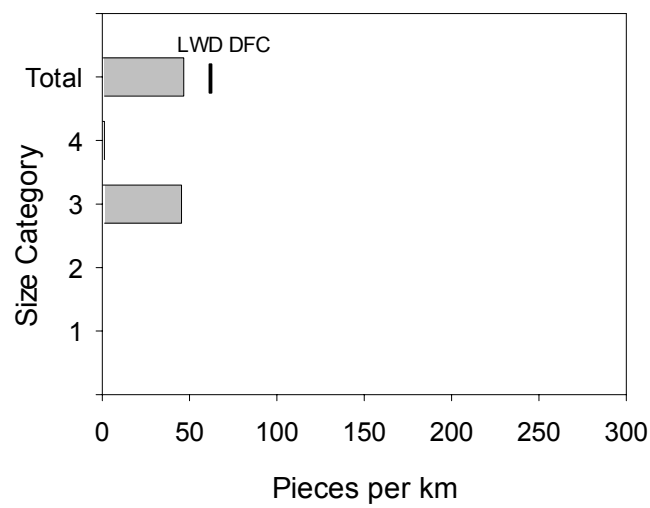
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Andy Cove, summer 2005.



Estimated area of Andy Cove in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Andy Cove, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Andy Cove, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

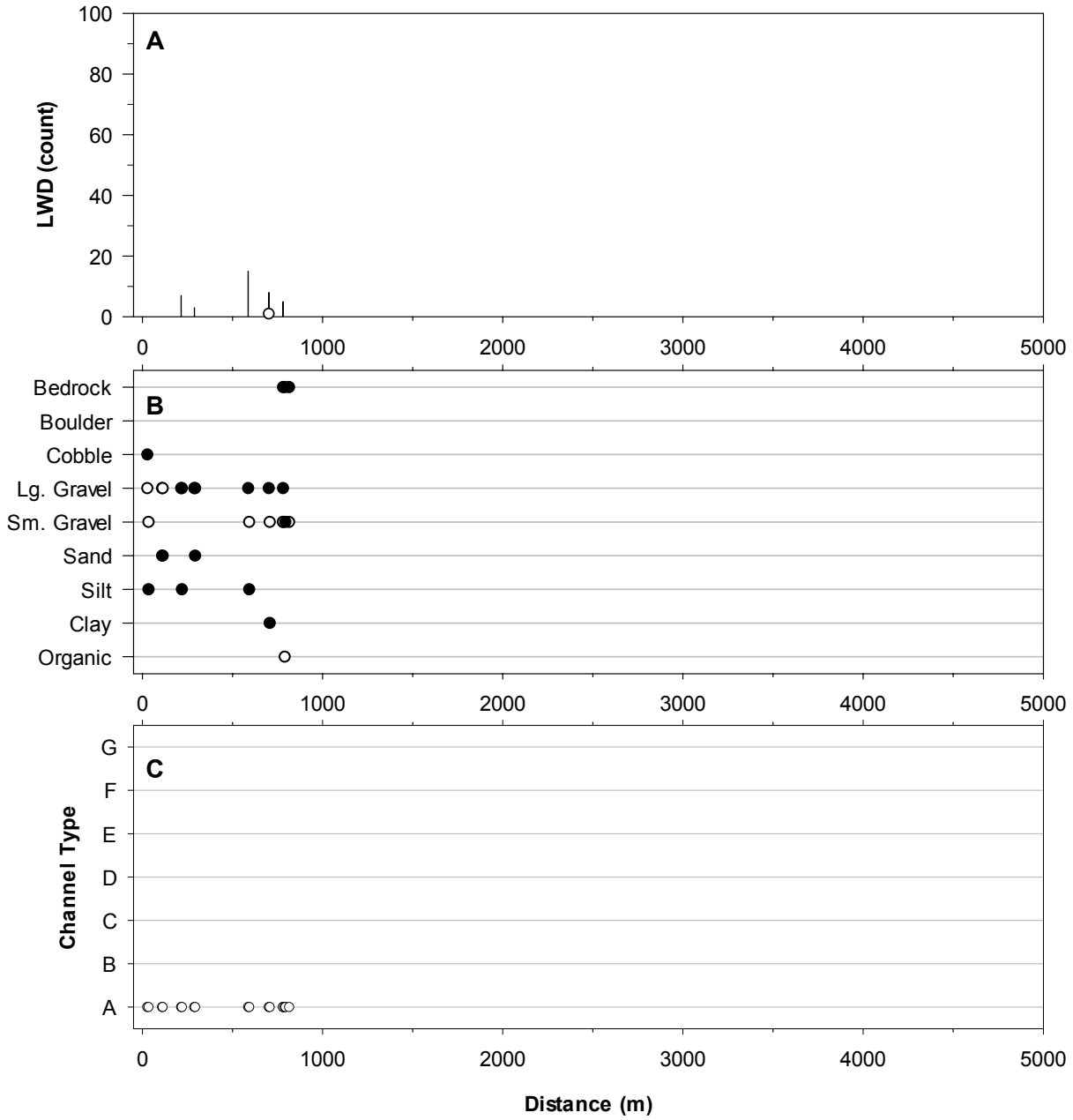
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Andy Cove during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Culvert	3.0	1.5	2 m tall, concrete, gravel substrate, runs under road 276
Bridge	56.4	3.0	1.5 m tall; wooden; unnamed trail crossing
Bridge	163.0	1.5	1 m tall wooden
Trib	280.0	1.0	In on right, unnamed
Trib	296.8		Wooden; 1 m tall; ampatheater on left
Trib	400.0		In on left

Photos taken of Andy Cove during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
V		3.0	2 m tall, concrete, gravel substrate, runs under road 276
R	1	27.2	Ave 25, max 35
BRG		56.4	1.5 m tall; wooden; unnamed trail crossing
R	4	288.3	Ave 25 max 35
C	8	789.7	



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Andy Cove, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Avery Creek**
District:	Pisgah
USGS Quadrangle:	Pisgah Forest
Survey Date:	06/16/05
Downstream Starting Point:	confluence with Davidson River
Total Distance Surveyed (km):	5.7

	Pools	**Riffles**
Percent of Total Stream Area:	24	76
Total Area (m^2):	10138	31830
Correction Factor Applied:	1.11	1.21
Number of Paired Samples:	6	6
Total Count:	67	64
Number per km:	12	11
Mean Area (m^2):	151	497
Mean Maximum Depth (cm):	83	50
Mean Average Depth (cm):	50	27
Mean Residual Depth (cm):	21	--
Percent Surveyed as Glides:	12	--
Percent Surveyed as Runs:	--	8
Percent Surveyed as Cascades:	--	3
Percent with >35% Fines:	36	0

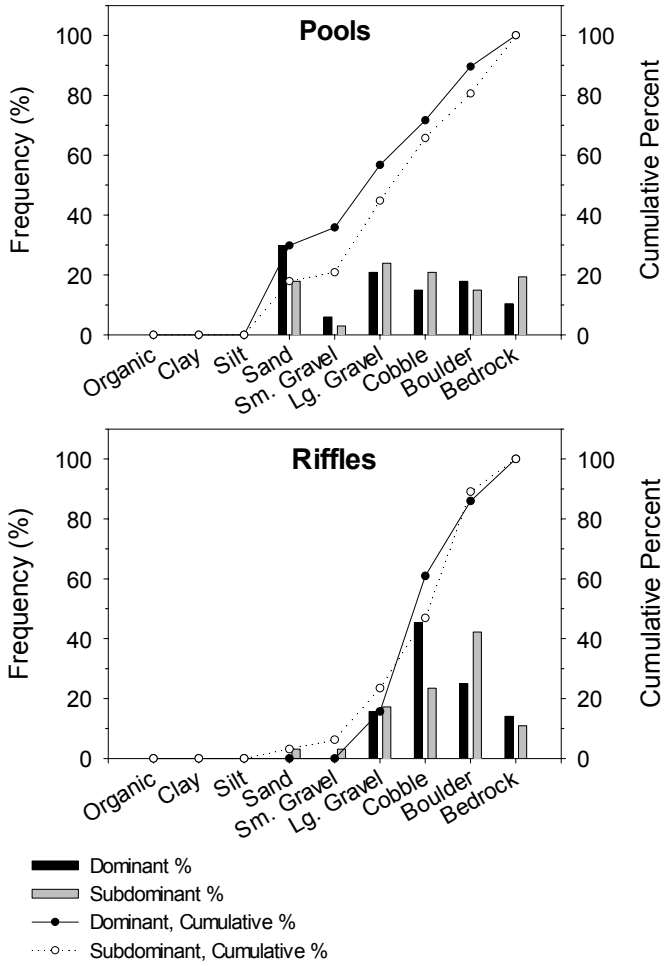
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	22
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	31
> 5 m long, > 55 cm diameter:	0
Total:	54

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	17	5
Maximum:	26	17
75th Percentile	20	8
25th Percentile	13	1
Minimum	11	0

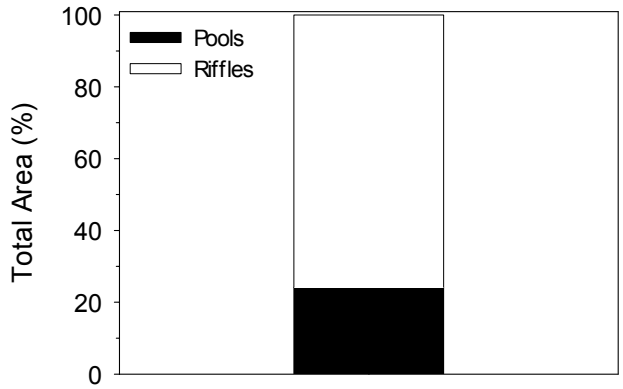
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	0
B:	100
C:	0
D:	0
E:	0
F:	0
G:	0

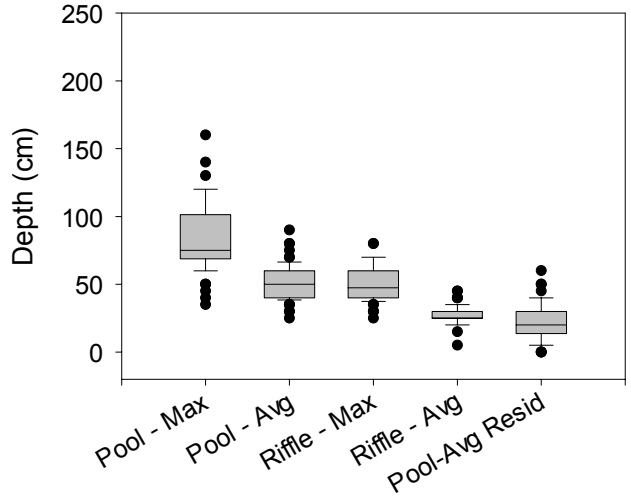
Other Stream Attributes	
Mean Bankfull Channel Width (m):	8
Mean Channel Gradient (%):	5
Median Water Temperature (C°):	15



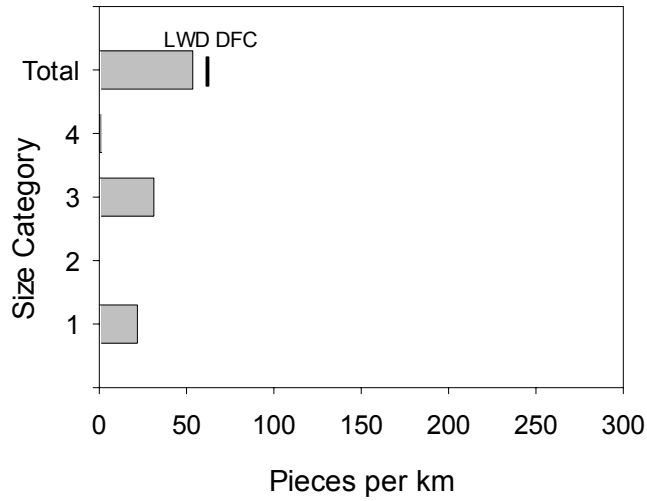
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Avery Creek, summer 2005.



Estimated area of Avery Creek in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Avery Creek, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Avery Creek, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

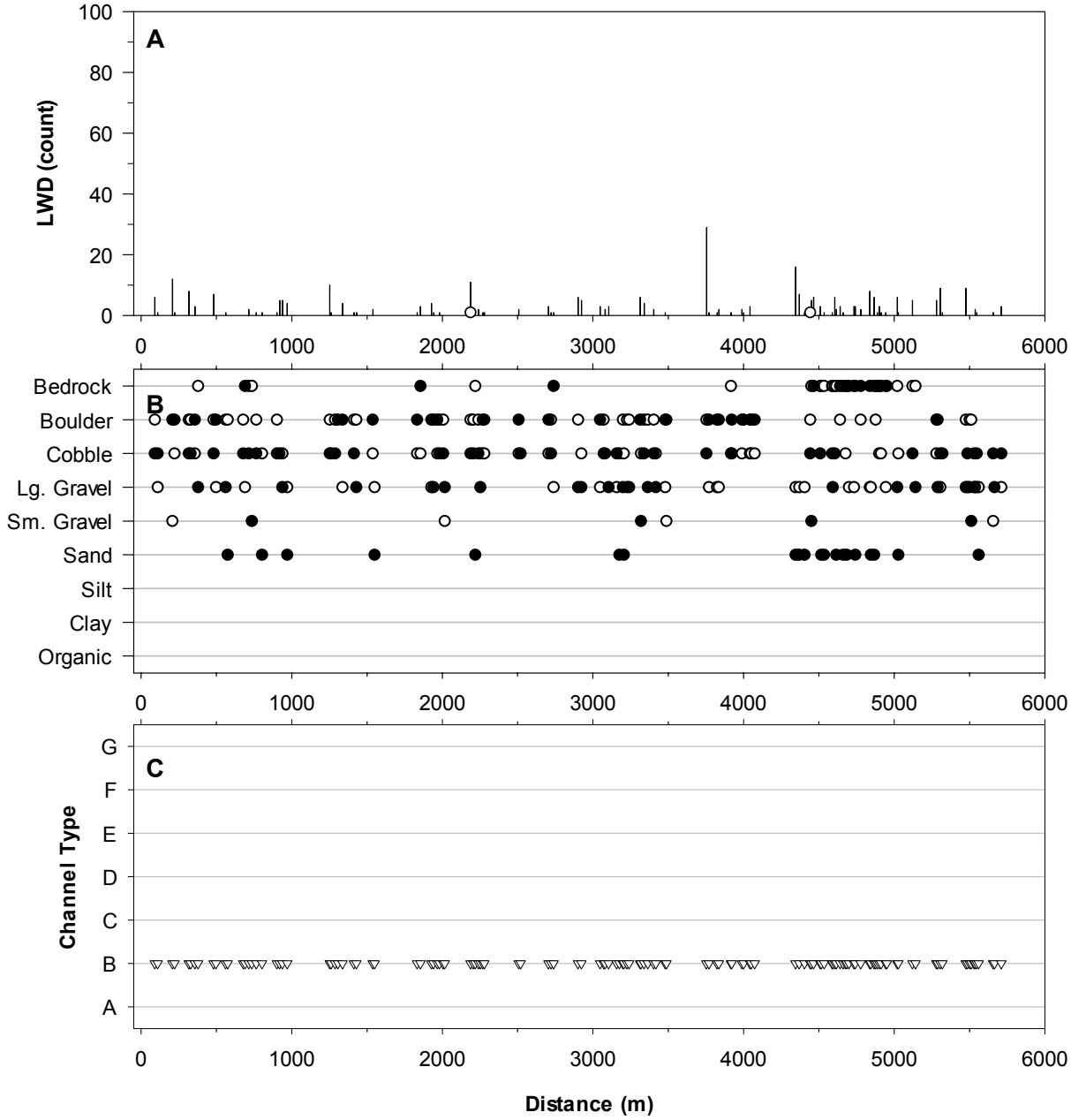
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Avery Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Bridge	110.0	15.0	3 box culvert, right channel is a velocity barrier
Side Channel	326.0	1.0	In on left
Side Channel	357.0	1.5	Out on left
Seep	357.0		In on right
Bridge	461.0		Access road to campground
Trib	497.0	1.0	In on left
Bridge	572.4		1.5 meters above water
Trib	742.0	1.5	In on right
Trib	819.0	2.0	In on right
Trib	851.0	1.5	In on left
Bridge	977.0		Foot bridge, 2 meters high
Trib	1004.0	1.5	In on left
Bridge	1734.0		
Bridge	2200.0		Fs 477, avery creek road
Trib	2367.0	1.5	In on right side
Bridge	2420.0		1 meter above water, avery creek road
Other	2704.0		Metal barrier causing height and velocity barrier
Other	2704.0		Power line crossing
Trib	2753.0	1.0	In on right
Trib	2901.0	1.0	In on right
Side Channel	2940.0	1.5	In on left
Braid	3017.0	35.0	
Side Channel	3181.0	2.0	In on left
Bridge	3236.5	3.0	3 meters high, avery creek road
Side Channel	3293.9	4.0	In on right
Side Channel	3339.0	3.0	Out on right
Other	3375.0		Power line crossing
Trib	3509.0	0.2	In on left
Side Channel	3661.0	1.0	In on right
Side Channel	3715.0	0.1	Out on right
Trib	3838.0	0.1	In on left
Trib	4003.0	0.2	In on right
Braid	4140.0	45.0	
Other	4323.0		Huge beaver pond
Bridge	4415.0		Log bridge for trail, avery creek trail, 1 meter high
Trib	4575.0	1.5	In on left
Seep	4661.0		In from right
Seep	4775.0		On left side
Seep	4848.0		On right side
Fall	4867.0		4 meters high
Trib	4925.0	0.2	In on right
Trib	4968.0	1.5	In on right
Trib	5143.0	0.2	In on left
Trib	5212.0	0.3	In on left
Bridge	5581.0		Log crossing, buckhorn gap trail, 1.5 meters above water
Trib	5621.0	3.5	In on right, henry's branch

Photos taken of Avery Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
BRG		110.0	3 box culvert, right channel is a velocity barrier
OTR		683.0	Drain pipe in on left
R	9	615.0	not a good location for rosgens
BRG		1734.0	
R	19	1966.0	
BRG		2200.0	Fs 477, avery creek road
BRG		2420.0	1 meter above water, avery creek road, low helicopter spotted
RN	29	3104.0	
BRG		3236.5	3 meters high, avery creek road
R	39	3916.1	
BRG		4415.0	Log bridge for trail, avery creek trail, high,pic from upstream
R	49	4733.2	
FALL		4867.0	4 meters high
R	59	5475.0	
BRG		5581.0	Log crossing, buckhorn gap trail, 1.5 meters above water



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Avery Creek, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Big Bear Pen Branch**
District:	Pisgah
USGS Quadrangle:	Shinning Rock
Survey Date:	07/27/05
Downstream Starting Point:	confluence with Looking Glass Creek
Total Distance Surveyed (km):	0.6

	Pools	**Riffles**
Percent of Total Stream Area:		
Total Area (m^2):	288±746	
Correction Factor Applied:	0.94	
Number of Paired Samples:	2	0
Total Count:	6	6
Number per km:	10	10
Mean Area (m^2):	48	
Mean Maximum Depth (cm):	68	47
Mean Average Depth (cm):	48	28
Mean Residual Depth (cm):		--
Percent Surveyed as Glides:	17	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	0
Percent with >35% Fines:	33	0

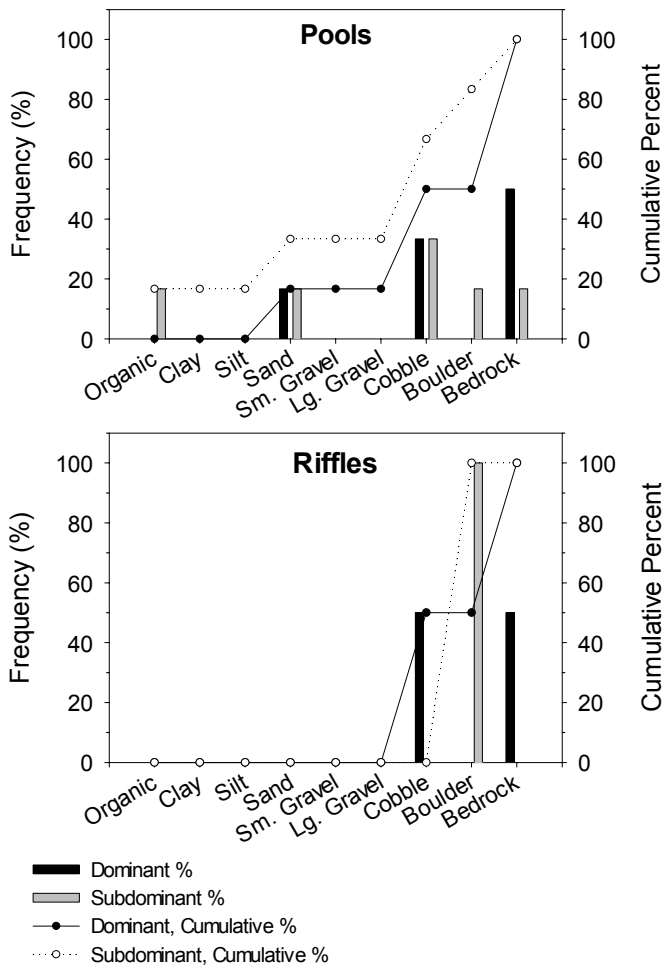
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	45
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	54
> 5 m long, > 55 cm diameter:	0
Total:	98

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		1
Maximum:		1
75th Percentile		1
25th Percentile		0
Minimum		0

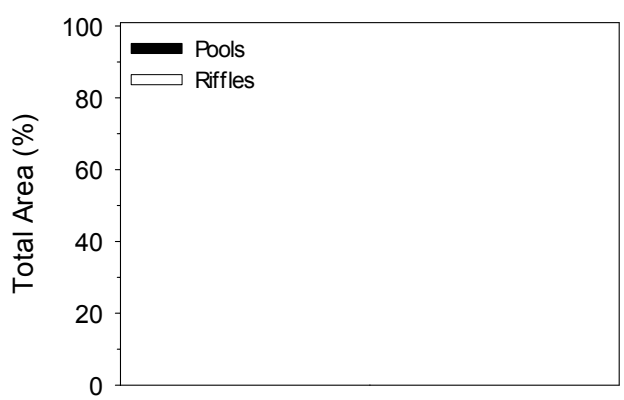
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	100
B:	0
C:	0
D:	0
E:	0
F:	0
G:	0

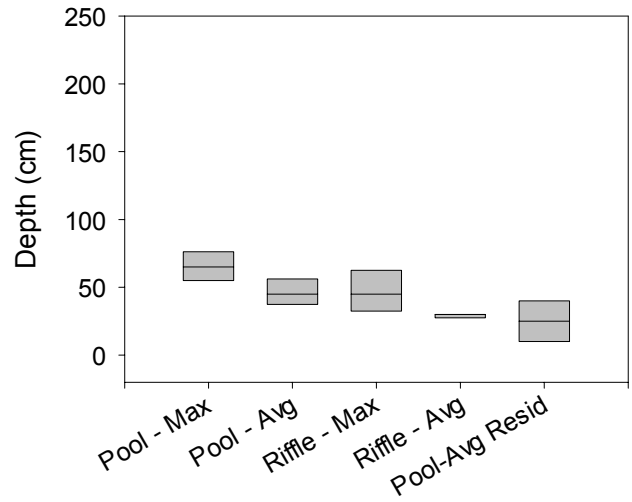
Other Stream Attributes	
Mean Bankfull Channel Width (m):	5
Mean Channel Gradient (%):	
Median Water Temperature (C˚):	



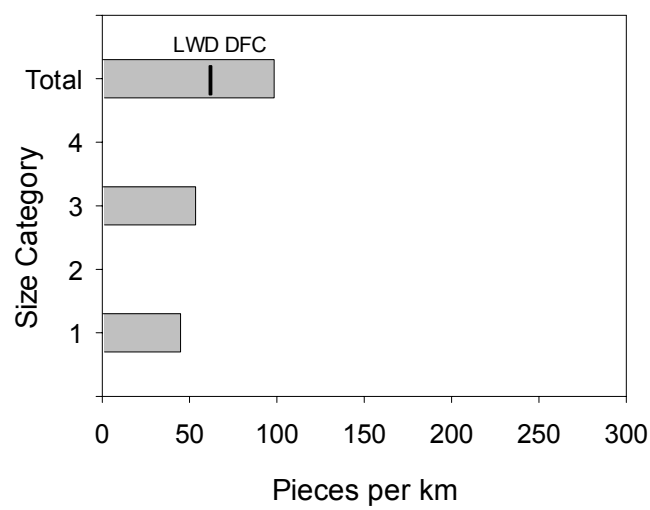
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Big Bear Pen Branch, summer 2005.



Estimated area of Big Bear Pen Branch in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Big Bear Pen Branch, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Big Bear Pen Branch, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

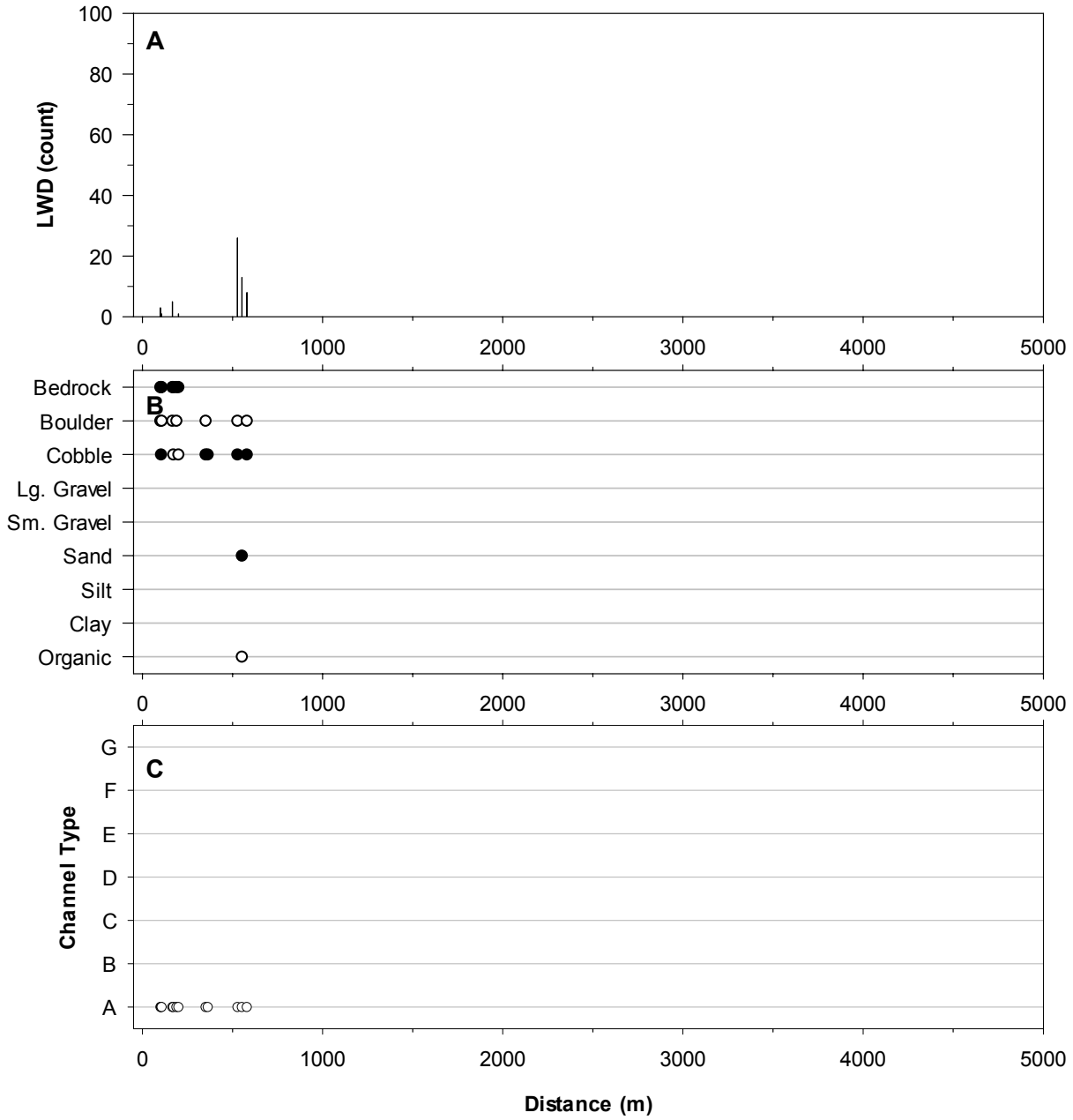
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Big Bear Pen Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Trib	259.7	0.5	Unmapped off ridge to left.
Trib	362.1	2.0	Right. Log hollow branch

Photos taken of Big Bear Pen Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Big Bear Pen Branch, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Cedar Rock Creek**
District:	Pisgah
USGS Quadrangle:	Shining Rock
Survey Date:	08/03/05
Downstream Starting Point:	confluence with Davidson River
Total Distance Surveyed (km):	2.9

	Pools	**Riffles**
Percent of Total Stream Area:	19	81
Total Area (m^2):	2554±550	10695±1764
Correction Factor Applied:	1.02	1.01
Number of Paired Samples:	4	5
Total Count:	55	65
Number per km:	19	23
Mean Area (m^2):	46	165
Mean Maximum Depth (cm):	62	38
Mean Average Depth (cm):	38	18
Mean Residual Depth (cm):	14	--
Percent Surveyed as Glides:	18	--
Percent Surveyed as Runs:	--	20
Percent Surveyed as Cascades:	--	11
Percent with >35% Fines:	38	5

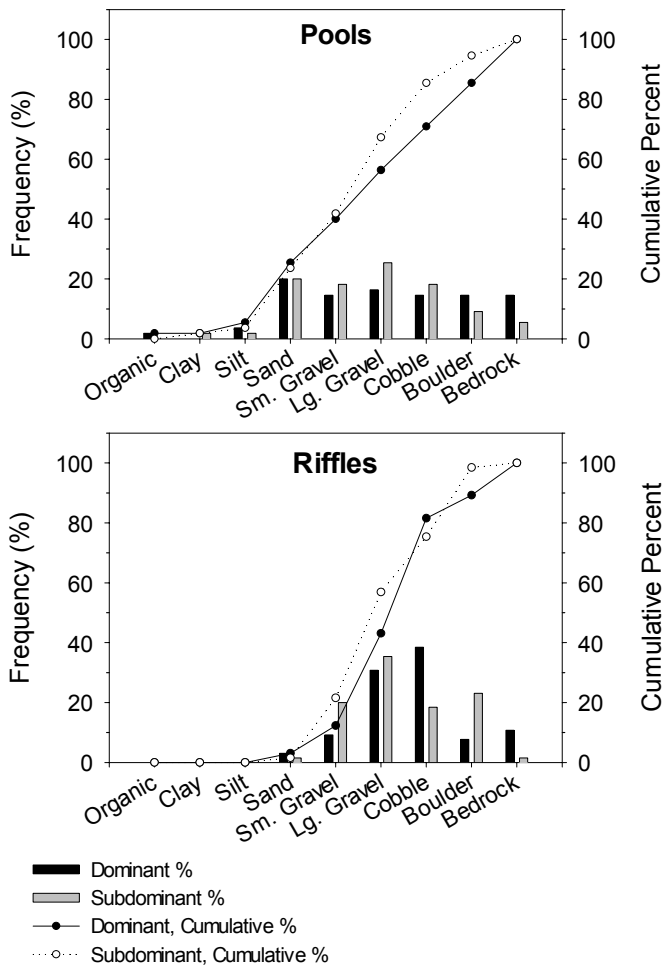
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	0
< 5 m long, > 55 cm diameter:	2
>5 m long, 10 cm – 55 cm diameter:	23
> 5 m long, > 55 cm diameter:	1
Total:	26

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	14	5
Maximum:	18	15
75th Percentile	16	8
25th Percentile	12	1
Minimum	8	1

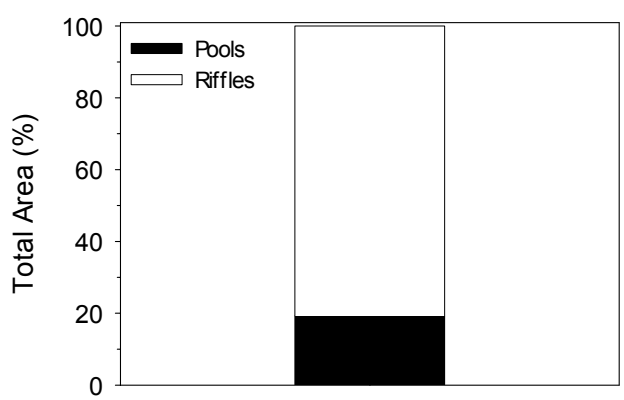
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	0
B:	100
C:	0
D:	0
E:	0
F:	0
G:	0

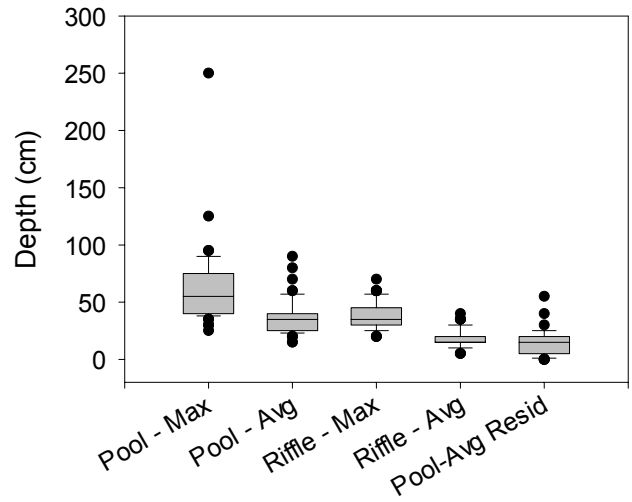
Other Stream Attributes	
Mean Bankfull Channel Width (m):	6
Mean Channel Gradient (%):	4
Median Water Temperature (C˚):	14



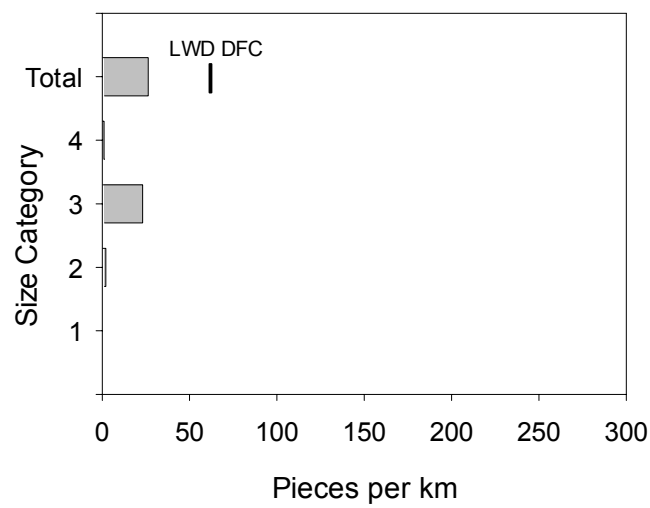
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Cedar Rock Creek, summer 2005.



Estimated area of Cedar Rock Creek in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Cedar Rock Creek, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Cedar Rock Creek, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

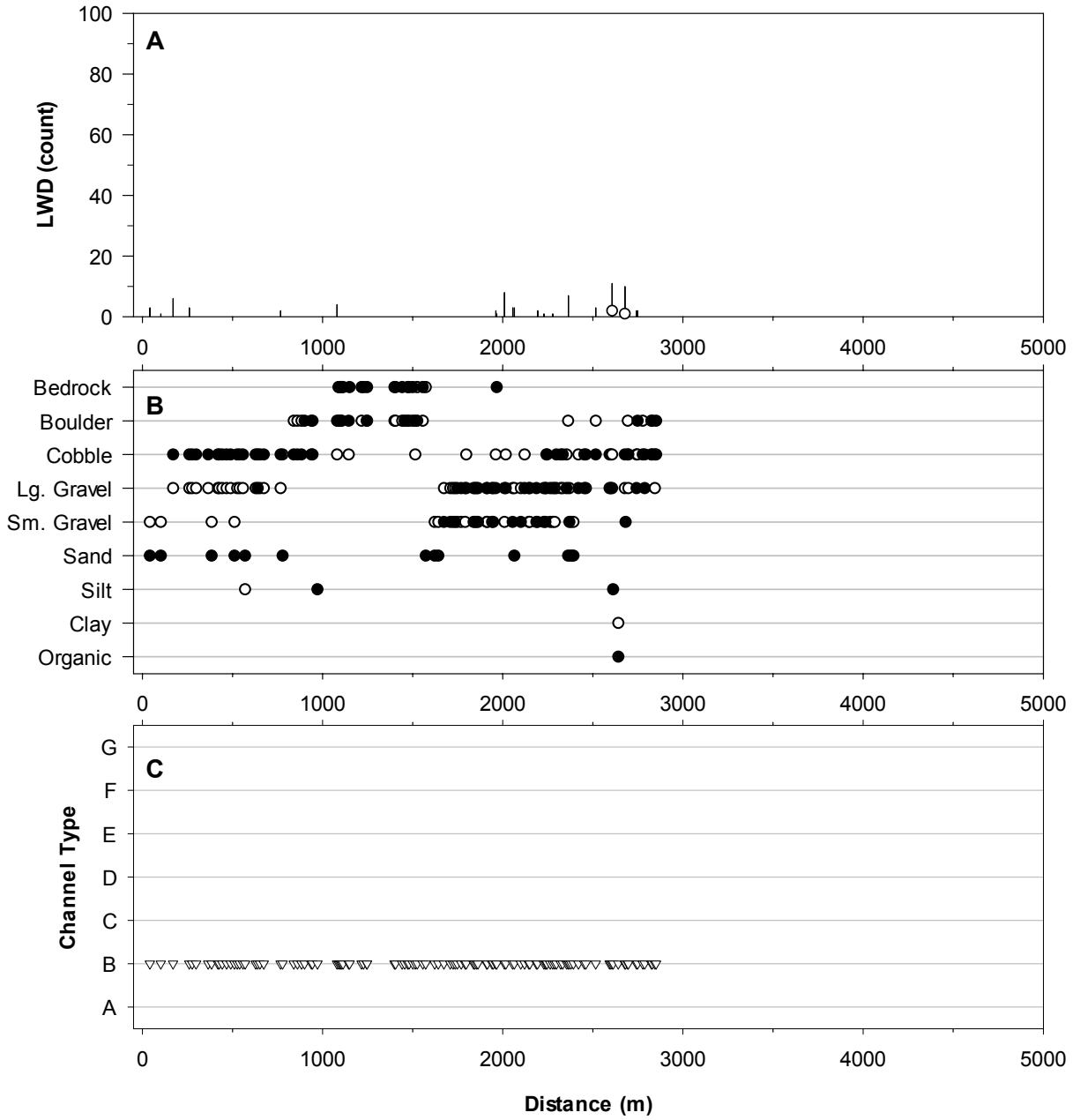
Stream features found on Cedar Rock Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Trib	49.0	0.5	Wooden, 2m heigh, foot bridge
Bridge	59.0	5.0	
Side Channel	159.0		In on left, bkt
Side Channel	176.0		
Bridge	268.0	6.0	Wooden, 3m heigh, fs road 475
Bridge	334.0	6.0	Wood and metal, 2 m heigh
Bridge	348.0		Wood and metal, 2 m heigh, educational area
Side Channel	380.0		In on left
Bridge	386.0	4.0	1.5m heigh, wood and metal
Bridge	419.0	5.0	1.5m heigh, wood and metal
Bridge	434.0	2.5	1.2m heigh, wooden, foot bridge
Culvert	563.0		
Side Channel	640.0		Out on left
Trib	698.0		In on left
Seep	784.0		In on left, little flow
Bridge	815.0	6.0	1.5m high, wooden
Dam	944.0		Concrete, 4m heigh
Trib	977.0	1.0	John rock branch, in on left
Trib	991.0	1.0	Unnamed trib, in on left
Side Channel	1123.0		In on left
Side Channel	1130.0		In on right
Side Channel	1145.0		Out on right
Side Channel	1145.0		Out on left
Trib	1235.0	2.0	In on right
Seep	1350.0		Miniscule flow, on right
Side Channel	1372.0		In on left
Side Channel	1420.0		Out on left
Fall	1442.0		8m heigh, continued survey approx 30 m above fall
Bridge	1616.0	3.5	1.5m heigh, wooden
Trib	1622.0	2.0	In on right
Trib	1756.0	0.5	In on right
Trib	1898.0	0.5	In on right, unnamed trib
Side Channel	1908.0		In on right
Side Channel	1923.0		Out on right
Bridge	1933.0	3.5	Hemlock log wooden bridge, 0.9m heigh, fs trail 120 crossing
Trib	1937.0	0.5	In on right, unnamed trib
Seep	1982.0		In on left, moderate flow
Side Channel	2049.0		In on left
Side Channel	2055.0		Out on left
Trib	2110.0	0.5	In on left
Trib	2251.0	1.5	In on right, unnamed trib
Trib	2288.0	1.0	In on left
Seep	2430.0		In on left, moderate flow
Trib	2483.0	0.5	In on left, unnamed trib
Trib	2501.0	1.0	In on right, unnamed trib
Trib	2526.0	2.0	Unnamed trib, in on left
Trib	2592.0	1.0	Unnamed trib, in on right
Trib	2667.0	1.0	Unnamed trib, in on left
Trib	2702.0	1.5	Unnamed trib, in on right
Trib	2742.0	0.5	Unnamed trib, in on left

Seep	2833.0		In on left, moderate flow
Features cont.			
Trib	2834.0		Unnamed trib, in on left
Trib	2851.0	0.5	Unnamed trib, in on left

Photos taken of Cedar Rock Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
R	4	276.0	
Rn	14	673.0	
Brg		815.0	1.5m heigh, wooden
Dam		944.0	Concrete, 4m heigh
Trib		1235.0	In on right
Brg		1616.0	1.5m heigh, wooden
Rn	34	1724.0	
Trib		1756.0	In on right
R	45	2121.0	



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Cedar Rock Creek, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Clawhammer Cove**
District:	Pisgah
USGS Quadrangle:	Shining Rock
Survey Date:	07/25/05
Downstream Starting Point:	confluence with Avery Creek
Total Distance Surveyed (km):	0.8

	Pools	**Riffles**
Percent of Total Stream Area:	10	90
Total Area (m^2):	203±124	1853±52
Correction Factor Applied:	1.33	1.61
Number of Paired Samples:	3	3
Total Count:	12	12
Number per km:	15	15
Mean Area (m^2):	17	154
Mean Maximum Depth (cm):	48	24
Mean Average Depth (cm):	34	15
Mean Residual Depth (cm):	23	--
Percent Surveyed as Glides:	0	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	0
Percent with >35% Fines:	8	0

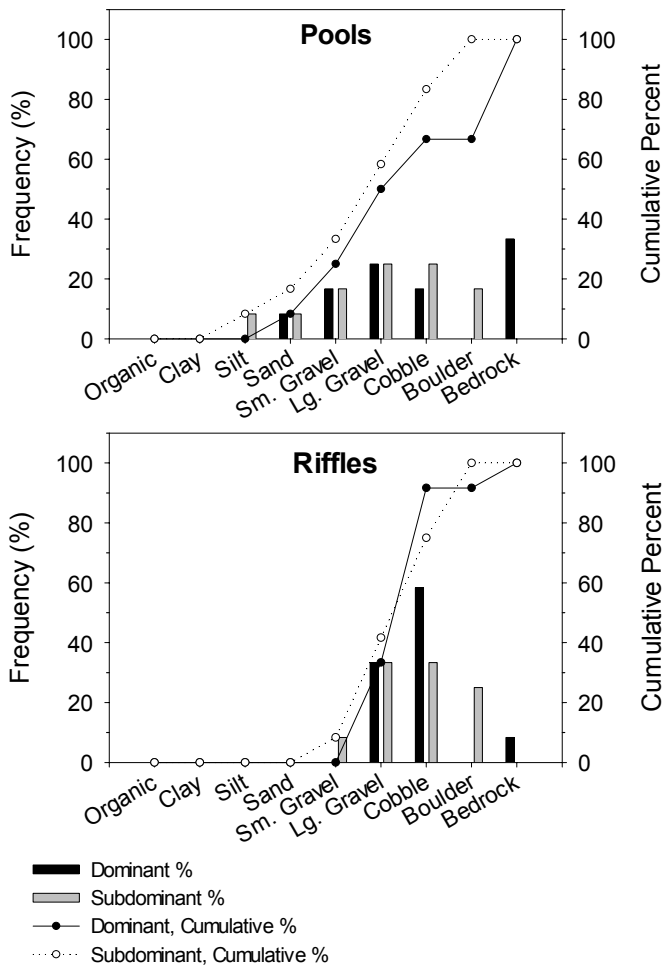
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	73
< 5 m long, > 55 cm diameter:	4
>5 m long, 10 cm – 55 cm diameter:	65
> 5 m long, > 55 cm diameter:	1
Total:	143

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	4	0
Maximum:	4	1
75th Percentile	4	1
25th Percentile	4	0
Minimum	4	0

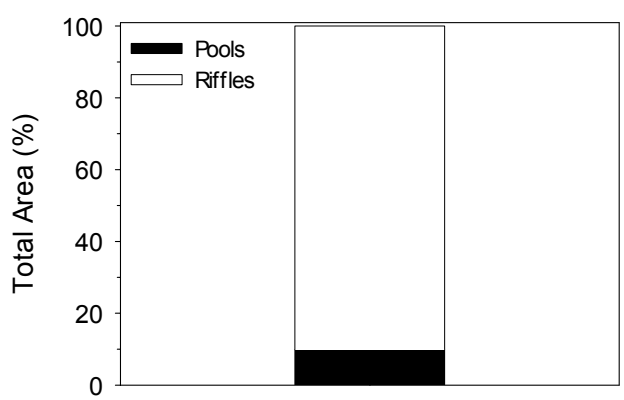
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	100
B:	0
C:	0
D:	0
E:	0
F:	0
G:	0

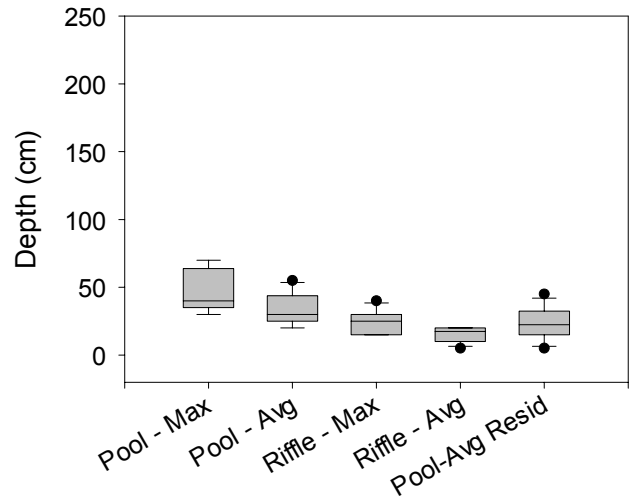
Other Stream Attributes	
Mean Bankfull Channel Width (m):	3
Mean Channel Gradient (%):	12
Median Water Temperature (C˚):	18



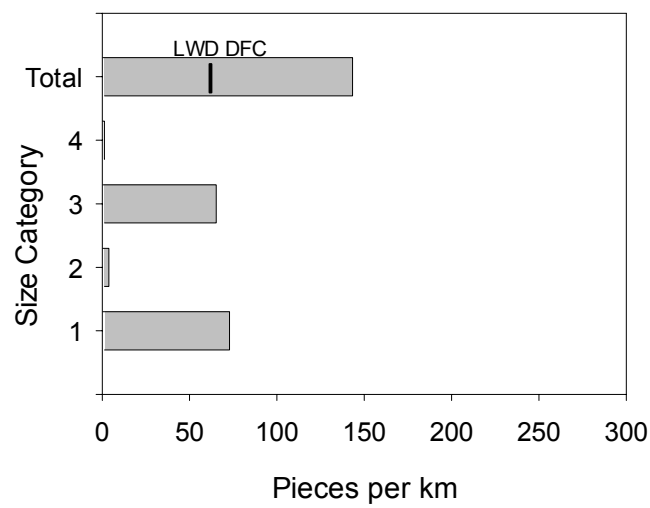
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Clawhammer Cove, summer 2005.



Estimated area of Clawhammer Cove in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Clawhammer Cove, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Clawhammer Cove, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

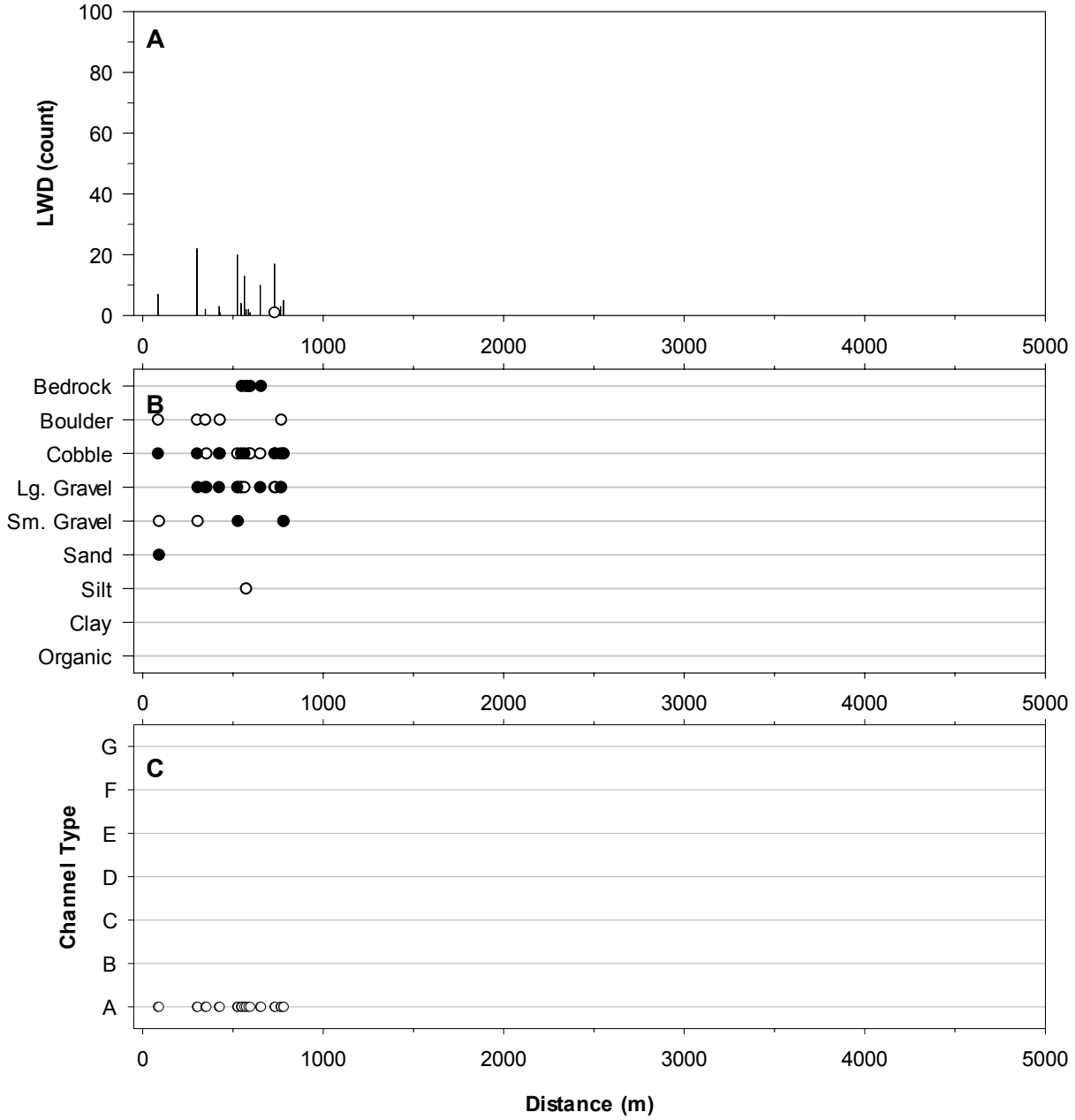
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Clawhammer Cove during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Trib	356.6	0.75	Right. Unmapped off black mountain.
Trib	396.3	0.5	Right. Unmapped off black mountain.
Side Channel	542.1	0.5	Right in: 564.4
Trib	570.9		
Trib	770.0	0.5	Right. Unmapped off black mountain.

Photos taken of Clawhammer Cove during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Clawhammer Cove, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Coontree Creek**
District:	Pisgah
USGS Quadrangle:	Shining Rock
Survey Date:	07/28/05
Downstream Starting Point:	confluence with Davidson River
Total Distance Surveyed (km):	1.7

	Pools	**Riffles**
Percent of Total Stream Area:	21	79
Total Area (m^2):	780±51	3005±1186
Correction Factor Applied:	1.08	1.06
Number of Paired Samples:	4	3
Total Count:	18	18
Number per km:	10	10
Mean Area (m^2):	43	167
Mean Maximum Depth (cm):	43	26
Mean Average Depth (cm):	31	13
Mean Residual Depth (cm):	21	--
Percent Surveyed as Glides:	0	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	17
Percent with >35% Fines:	6	0

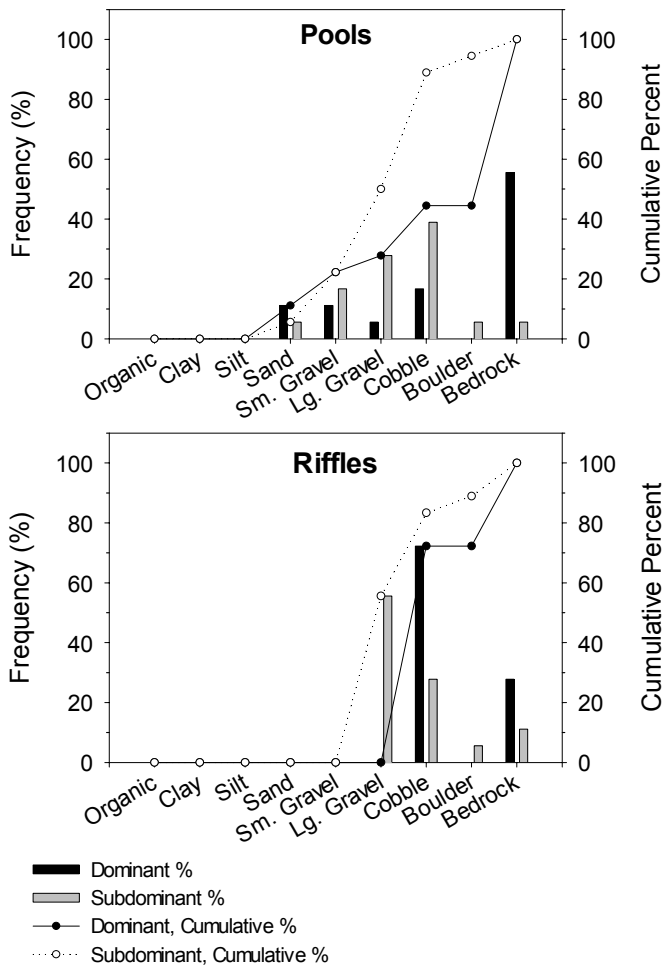
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	62
< 5 m long, > 55 cm diameter:	1
>5 m long, 10 cm – 55 cm diameter:	73
> 5 m long, > 55 cm diameter:	1
Total:	138

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	4	0
Maximum:	6	1
75th Percentile	5	0
25th Percentile	3	0
Minimum	3	0

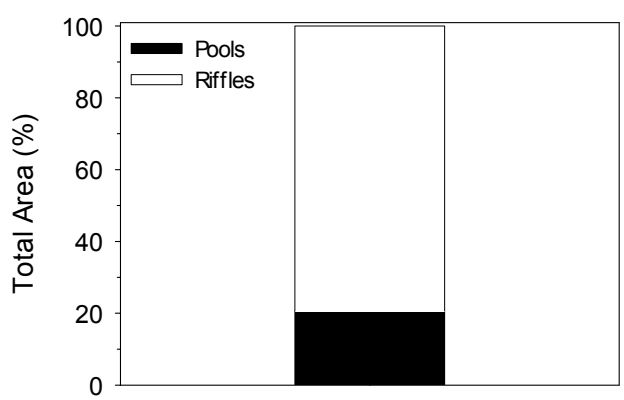
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	100
B:	0
C:	0
D:	0
E:	0
F:	0
G:	0

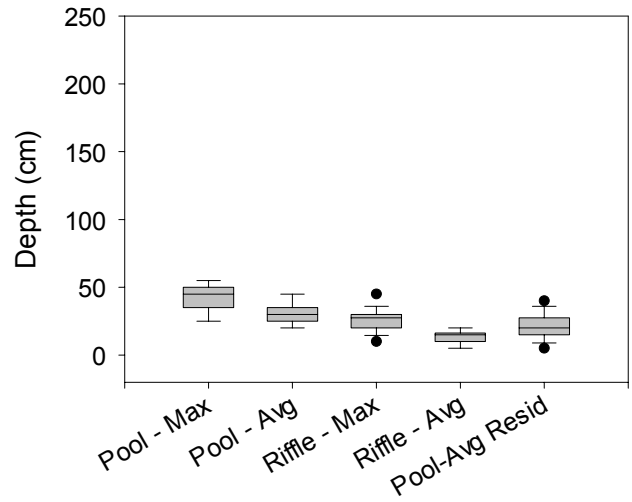
Other Stream Attributes	
Mean Bankfull Channel Width (m):	3
Mean Channel Gradient (%):	7
Median Water Temperature (C˚):	16



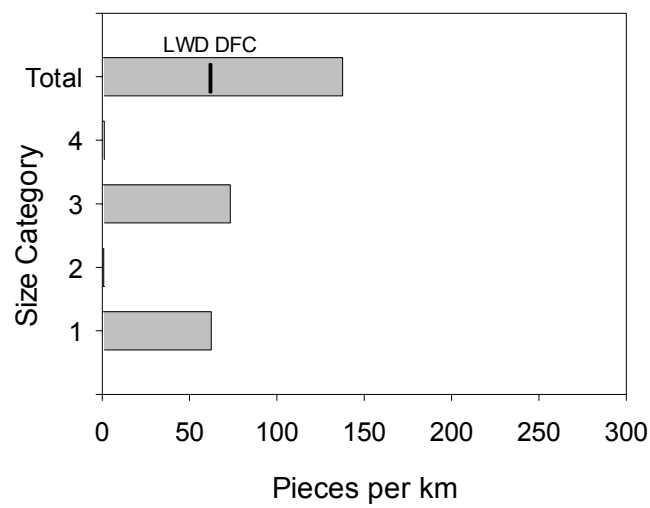
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Coontree Creek, summer 2005.



Estimated area of Coontree Creek in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Coontree Creek, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Coontree Creek, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

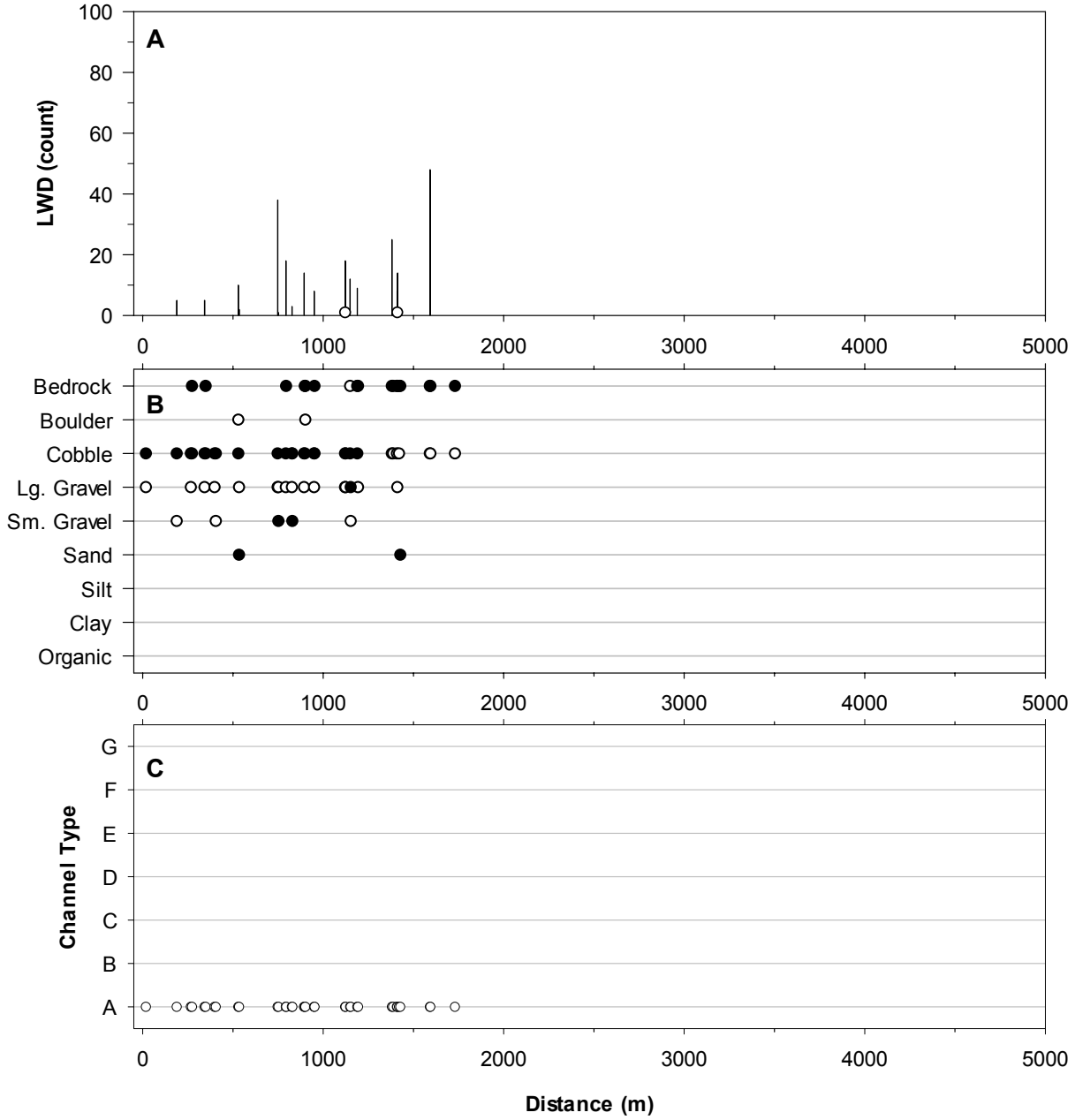
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Coontree Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Ford	10.0	1.0	Footpath trail number 144
Culvert	73.6	1.5	Two equal size quare culverts side by side, going under highway 276. Concrete. H=1.5 no perch water .15m deep.
Seep	222.8		Right high flow
Seep	269.7		
Bridge	355.2	0.8	Wood h=1.15 trail number 144
Trib	411.7	1.5	Unknown tributary on map to right
Bridge	436.9	0.6	Wood bridge. Trail number 144. H=1.15
Trib	626.6		Right. Unmapped tributary off bearpen mountain
Seep	672.4		Left middle flow
Ford	698.3	1.0	Footpath trail number 144
Seep	763.8		Right low flow
Seep	785.5		Left middle flow
Seep	930.0	0.5	Right high flow
Trib	986.0	0.5	Unmapped tributary on left off south ridge off coontree mountain
Seep	1130.1		Left middle flow
Seep	1213.0		Right high flow
Bridge	1253.2	1.1	Wood. Trail number 144. H=.9
Seep	1279.0		Left low flow
Side Channel	1307.1	0.5	Right in: 1341.4
Ford	1458.5	1.5	Hiking trail number 144
Trib	1490.8	1.0	Right off bearpen mountain. Unmapped
Trib	1560.0	0.5	Unmapped on left off south ridge off coontree mountain
Seep	1656.0		Right low flow
Trib	1721.1	0.5	Unmapped tributary on left off south ridge off coontree mountain

Photos taken of Coontree Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
R	9	893.8	
P	14	1193.1	



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Coontree Creek, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Cove Creek**
District:	Pisgah
USGS Quadrangle:	Shining Rock
Survey Date:	06/15/05
Downstream Starting Point:	confluence with Davidson River
Total Distance Surveyed (km):	4.3

	Pools	**Riffles**
Percent of Total Stream Area:	21	79
Total Area (m^2):	3663±312	13948±1967
Correction Factor Applied:	0.94	1.02
Number of Paired Samples:	7	7
Total Count:	69	69
Number per km:	16	16
Mean Area (m^2):	53	202
Mean Maximum Depth (cm):	74	62
Mean Average Depth (cm):	40	21
Mean Residual Depth (cm):	14	--
Percent Surveyed as Glides:	12	--
Percent Surveyed as Runs:	--	6
Percent Surveyed as Cascades:	--	17
Percent with >35% Fines:	4	1

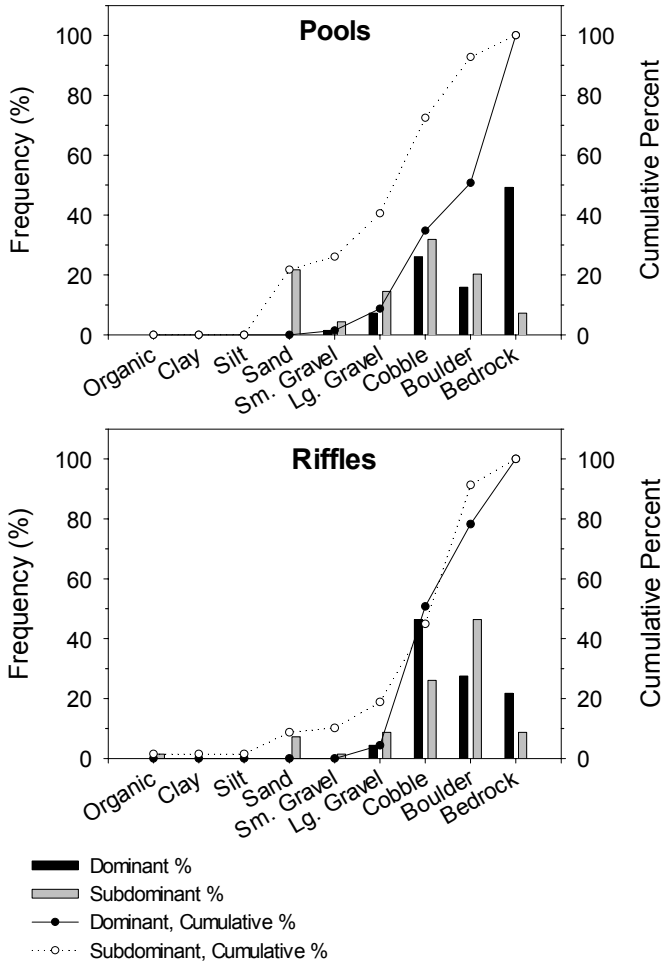
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	42
< 5 m long, > 55 cm diameter:	1
>5 m long, 10 cm – 55 cm diameter:	43
> 5 m long, > 55 cm diameter:	2
Total:	88

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	14	4
Maximum:	26	15
75th Percentile	20	4
25th Percentile	9	1
Minimum	4	0

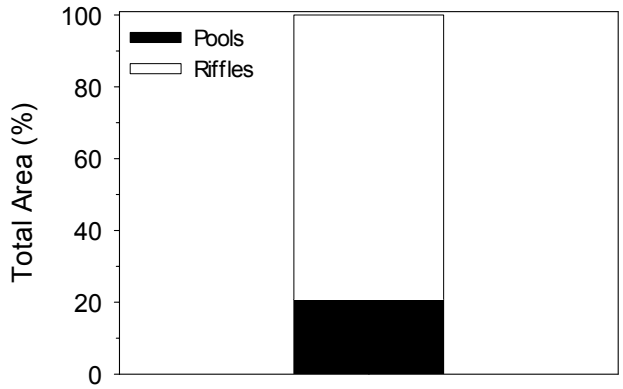
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	11
B:	47
C:	0
D:	0
E:	0
F:	42
G:	0

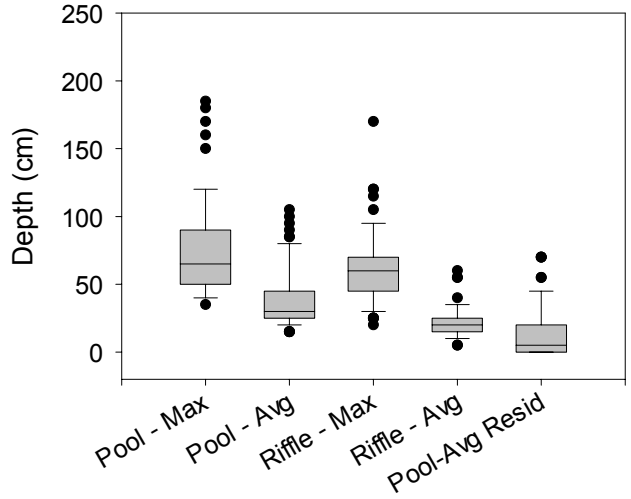
Other Stream Attributes	
Mean Bankfull Channel Width (m):	7
Mean Channel Gradient (%):	7
Median Water Temperature (C˚):	14



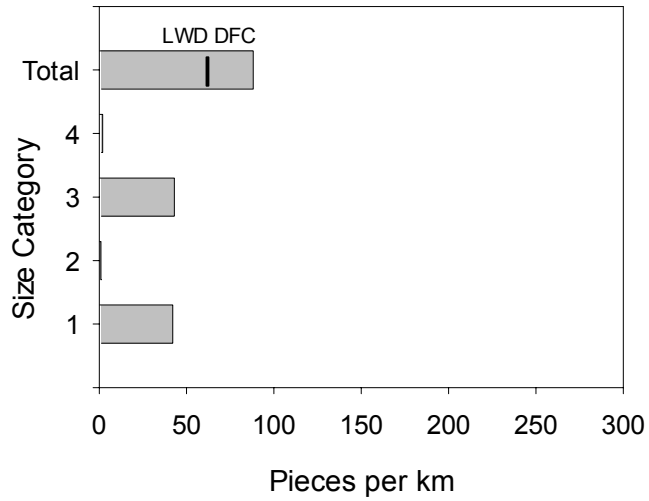
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Cove Creek, summer 2005.



Estimated area of Cove Creek in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Cove Creek, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Cove Creek, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

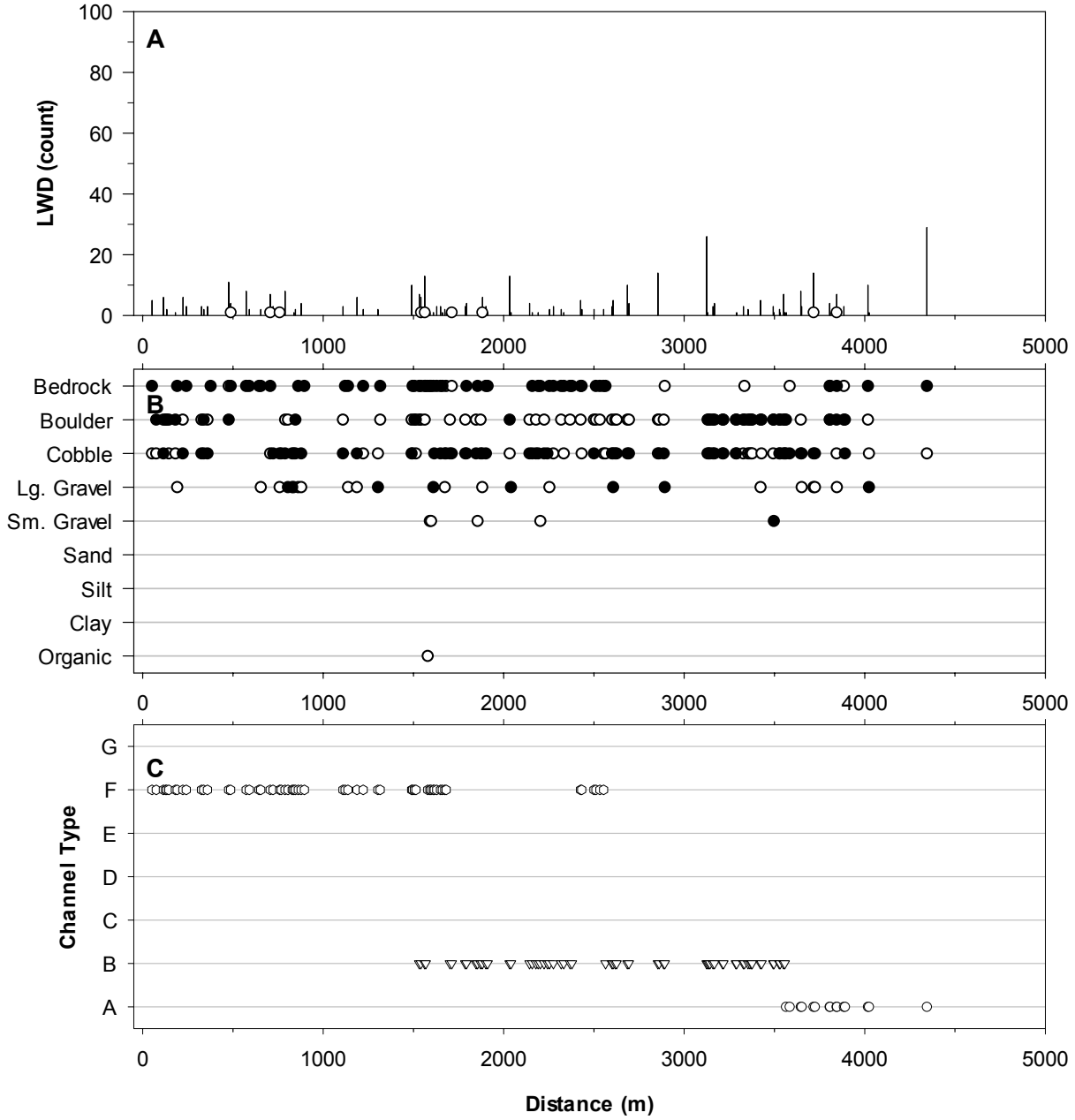
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Cove Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Bridge	114.3	5.0	Concrete, open bottom
Ford	276.6	4.0	Poor photo
Bridge	304.0	9.0	2 m above stream, foot bridge
Side Channel	397.7	3.0	In on right
Side Channel	450.0	1.0	Out left
Side Channel	450.0	4.0	In right
Side Channel	487.0	1.5	Out right
Seep	515.0		Left
Trib	986.0	3.5	Caney bottom creek
Bridge	1017.0	8.0	1 m high, foot traffic
Bridge	1266.0	8.0	Trail crossing,1m high, side trail off ofcaney creek trail
Other	1342.0		Campsite on right
Trib	1419.0	0.2	Left
Fall	1568.0	14.0	~40m high
Seep	2275.0		In lef
Seep	2304.0		Right
Trib	2414.0	1.5	Right, unnamed coming from trail 361
Seep	2524.0		Left
Fall	2553.0	3.0	9 m high
Trib	2564.0	0.5	In left
Ford	2876.0	0.5	361 trail
Side Channel	2903.0	0.5	In left
Side Channel	2924.0	0.3	Out left
Side Channel	2974.0	0.2	In left
Seep	2979.0		Right
Seep	3026.0		Right
Other	3089.0		Firepit on right
Seep	3089.0		Left
Bridge	3376.0	4.5	Bad shape , not in use, fs 225
Trib	3474.0	1.0	Left
Side Channel	3687.0	2.0	In left
Side Channel	3710.0	1.0	Out left
Seep	3808.0		Right

Photos taken of Cove Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
Brg		114.3	Concrete, open bottom
Ford		276.6	Poor photo
Brg		304.0	2 m above stream, foot bridge
R	9	358.4	
C	12	644.9	
Rn	20	1121.0	Changing rosgen due to large riparian
Fall		1568.0	~40m high



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Cove Creek, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Curtis Creek, upper**
District:	Pisgah
USGS Quadrangle:	Old Fort
Survey Date:	05/26/05
Downstream Starting Point:	FS boundary
Total Distance Surveyed (km):	2.2

	Pools	**Riffles**
Percent of Total Stream Area:	18	82
Total Area (m^2):	3949±2228	18246±2192
Correction Factor Applied:	1.08	1.48
Number of Paired Samples:	3	5
Total Count:	38	55
Number per km:	17	25
Mean Area (m^2):	104	332
Mean Maximum Depth (cm):	73	52
Mean Average Depth (cm):	47	32
Mean Residual Depth (cm):	14	--
Percent Surveyed as Glides:	11	--
Percent Surveyed as Runs:	--	31
Percent Surveyed as Cascades:	--	0
Percent with >35% Fines:	16	4

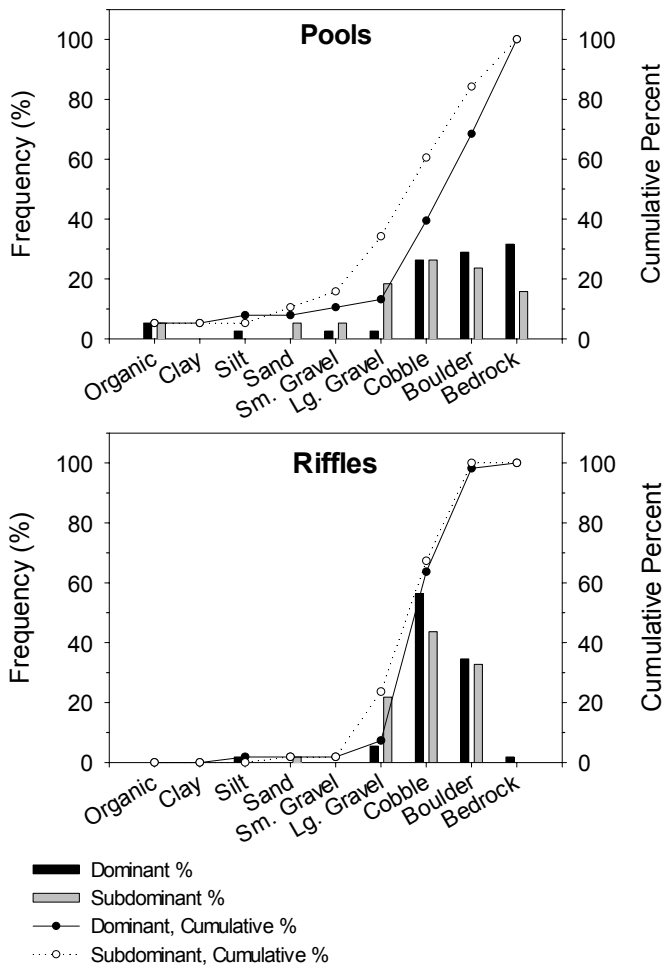
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	0
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	68
> 5 m long, > 55 cm diameter:	0
Total:	69

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	17	3
Maximum:	21	5
75th Percentile	20	5
25th Percentile	15	2
Minimum	14	1

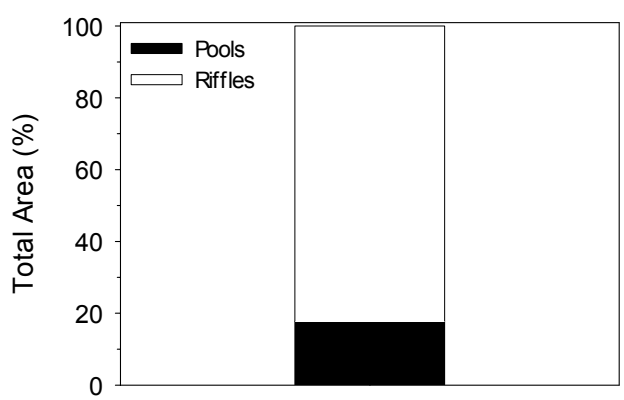
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	0
B:	71
C:	29
D:	0
E:	0
F:	0
G:	0

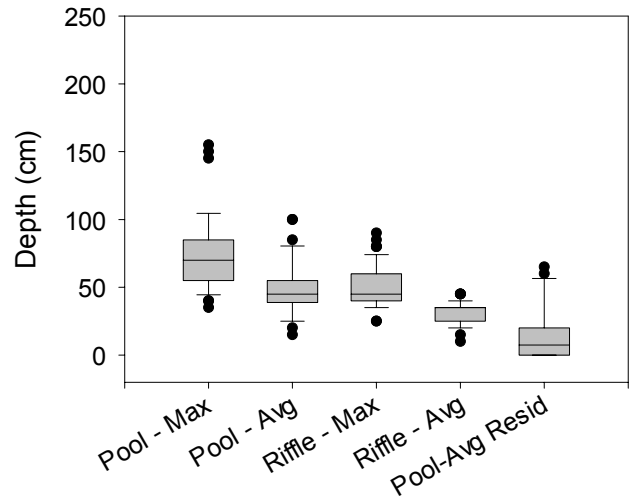
Other Stream Attributes	
Mean Bankfull Channel Width (m):	12
Mean Channel Gradient (%):	4
Median Water Temperature (C˚):	14



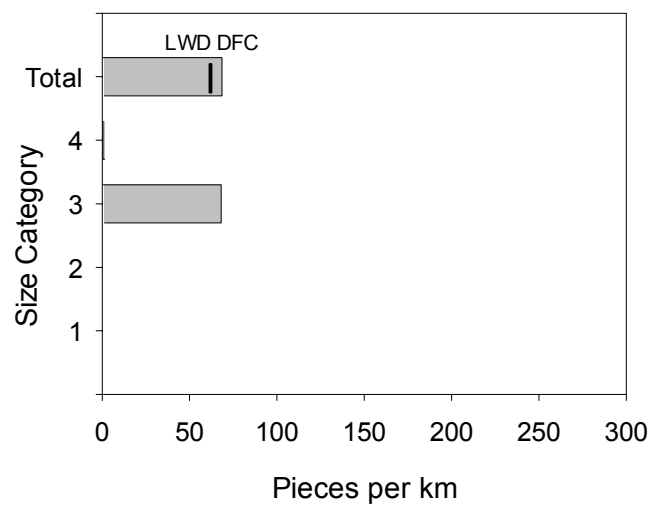
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Curtis Creek, upper, summer 2005.



Estimated area of Curtis Creek, upper in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Curtis Creek, upper, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Curtis Creek, upper, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

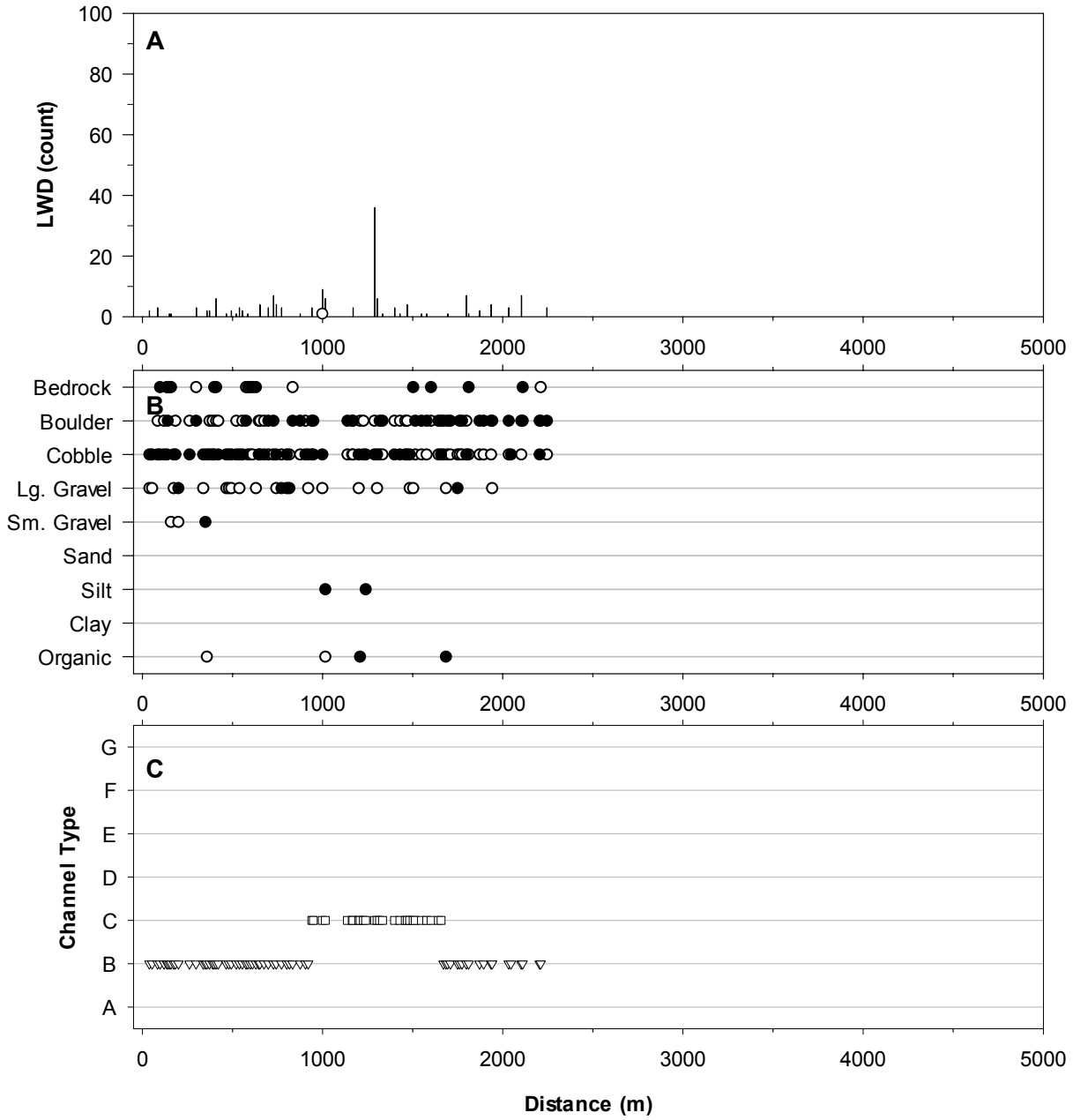
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Curtis Creek, upper during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Culvert	139.0		Height 5,perch .5, metal, on left of channel,substrate 1
Side Channel	204.5	1.0	In on left
Side Channel	260.9	2.5	Out on left
Seep	277.5		On left;moderate flow
Trib	398.3	1.0	Unnamed trib in on right next to road number 482
Other	421.0		Pvc pipe, from under road, on left
Side Channel	421.0	1.0	
Trib	574.1	0.5	Slick falls branch tributary;in on left
Trib	637.7	0.5	Started at 1030 hours on 05/27/05; unnamed tributary, in on right
Side Channel	642.5	1.0	In on right
Side Channel	842.5	1.0	In on right
Seep	913.6		On left, little flow
Side Channel	960.0	2.5	Out on right
Trib	1124.5	0.5	Hickory branch? In on right
Trib	1218.9	1.0	Unnamed trib on left next to campsite
Trib	1245.4	1.0	Unnamed tributary, on left
Trib	1502.1	4.0	Unknown trib in on right; road 482 to left paralleling stream <50 m away
Ford	1534.1		Unnamed trail crossing; all natural material/stone
Trib	1599.2	0.5	Unnamed trib in on right
Bridge	1743.6	9.0	Concrete, height 6m; road 482
Trib	1919.5	1.5	Slick falls branch in on left; road 482 directly on right some bank erosion
Culvert	1994.6		Culvert, metal; substrate 4, 40 cm diameter, .5 m height
Side Channel	2138.9		In on left
Side Channel	2196.2		Out on left

Photos taken of Curtis Creek, upper during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
R	4	120.0	Perfect b channel
SCH		204.5	In on left
TRIB		398.3	Unnamed trib in on right next to road number 482
RN	14	554.4	
TRIB		574.1	Slick falls branch tributary;in on left
G	20	742.8	Camp site, some erosion
SCH		842.5	In on right
R	21	875.5	Bank highly eroded on left, road runs parallel, 2 pvc pipes at top end
R	24	940.3	Campground on left may have influenced rosgen channel typing
TRIB		1124.5	Hickory branch? In on right
TRIB		1218.9	Unnamed trib on left next to campsite
TRIB		1245.4	Unnamed tributary, on left
RN	34	1332.2	Left bank on upper end highly eroded
TRIB		1502.1	Unknown trib in on right; road 482 to left paralleling stream <50 m away
FORD		1534.1	Unnamed trail crossing; all natural material/stone
TRIB		1599.2	Unnamed trib in on right
R	44	1670.8	



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Curtis Creek, upper, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Daniel Ridge Creek**
District:	Pisgah
USGS Quadrangle:	Shining Rock
Survey Date:	08/09/05
Downstream Starting Point:	confluence with Right Fork
Total Distance Surveyed (km):	1.3

	Pools	**Riffles**
Percent of Total Stream Area:	35	65
Total Area (m^2):	1180±389	2232±1299
Correction Factor Applied:	1.06	0.60
Number of Paired Samples:	3	3
Total Count:	29	24
Number per km:	22	18
Mean Area (m^2):	41	93
Mean Maximum Depth (cm):	101	64
Mean Average Depth (cm):	71	32
Mean Residual Depth (cm):	46	--
Percent Surveyed as Glides:	0	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	71
Percent with >35% Fines:	0	0

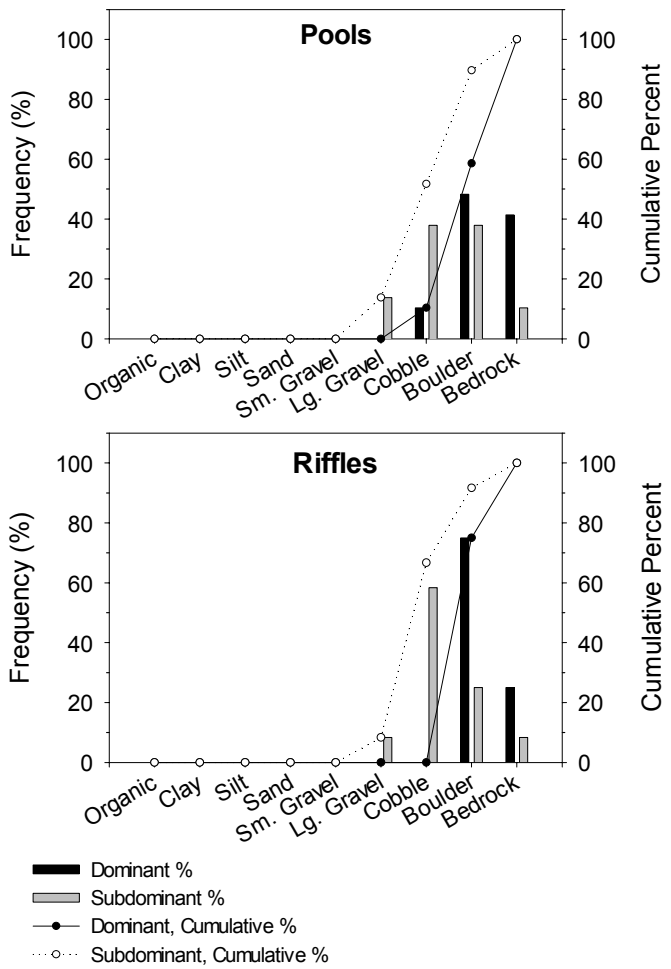
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	38
< 5 m long, > 55 cm diameter:	8
>5 m long, 10 cm – 55 cm diameter:	36
> 5 m long, > 55 cm diameter:	8
Total:	89

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	7	1
Maximum:	7	1
75th Percentile	7	1
25th Percentile	6	0
Minimum	6	0

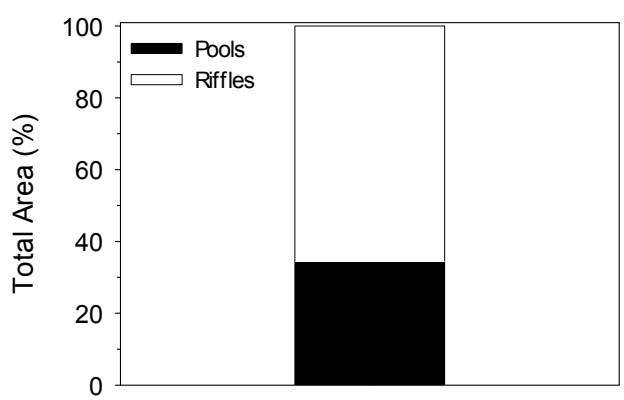
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	79
B:	0
C:	0
D:	0
E:	0
F:	0
G:	21

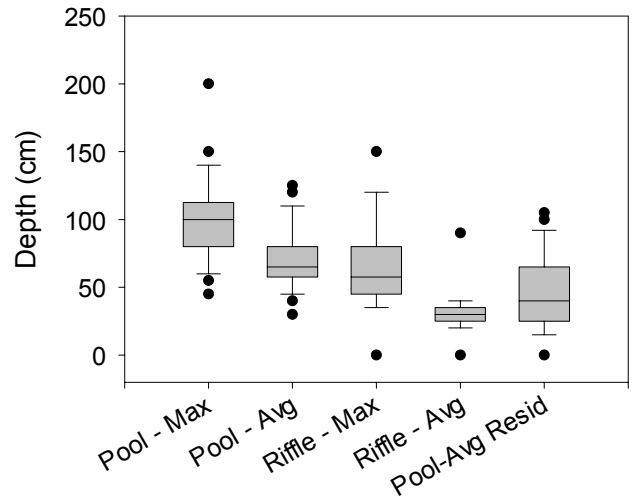
Other Stream Attributes	
Mean Bankfull Channel Width (m):	5
Mean Channel Gradient (%):	20
Median Water Temperature (C°):	15



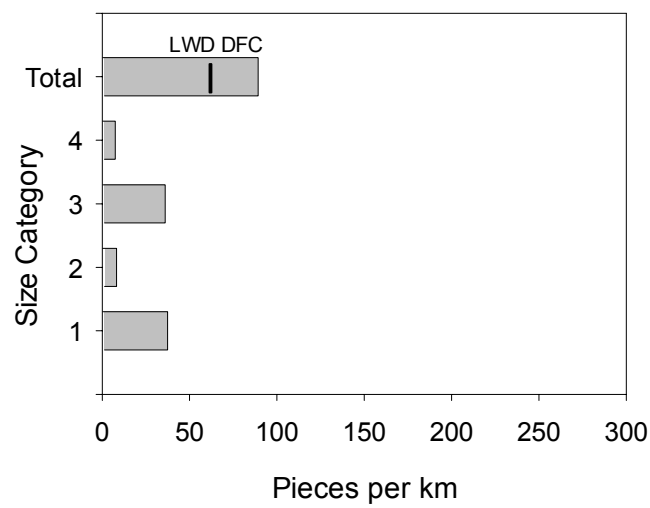
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Daniel Ridge Creek, summer 2005.



Estimated area of Daniel Ridge Creek in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Daniel Ridge Creek, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Daniel Ridge Creek, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

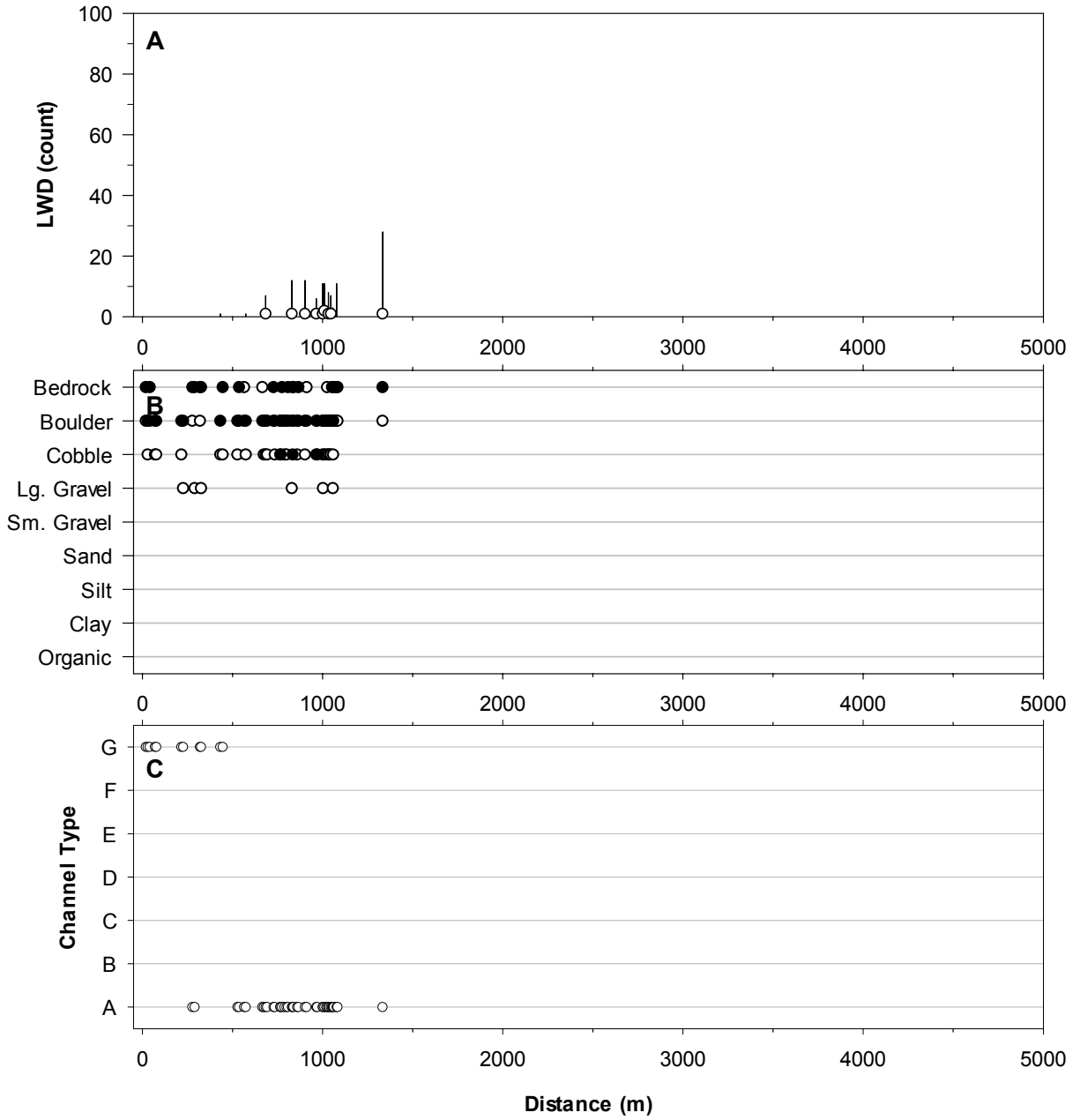
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Daniel Ridge Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Trib	283.6	0.5	Left side off of daniel ridge
Trib	585.0	1.5	On left side, shuck ridge creek
Trib	774.5	0.5	On right off of, fork river ridge
Fall	788.1		Height 1.4
Fall	838.3		Height 1.2
Side Channel	989.0	1.5	On right side, back in at 1008
Fall	1020.3		Height 1.4
Seep	1025.0		Right side low flow
Fall	1082.8		Height 1.7

Photos taken of Daniel Ridge Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Daniel Ridge Creek, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Davidson River**
District:	Pisgah
USGS Quadrangle:	Pisgah Forest/Shining Rock
Survey Date:	06/16/05
Downstream Starting Point:	FS boundary
Total Distance Surveyed (km):	17.9

	Pools	**Riffles**
Percent of Total Stream Area:	18	82
Total Area (m^2):	40386±5617	184171±17458
Correction Factor Applied:	0.78	0.64
Number of Paired Samples:	5	6
Total Count:	53	64
Number per km:	3	4
Mean Area (m^2):	762	2878
Mean Maximum Depth (cm):	180	104
Mean Average Depth (cm):	119	52
Mean Residual Depth (cm):	69	--
Percent Surveyed as Glides:	9	--
Percent Surveyed as Runs:	--	13
Percent Surveyed as Cascades:	--	2
Percent with >35% Fines:	17	0

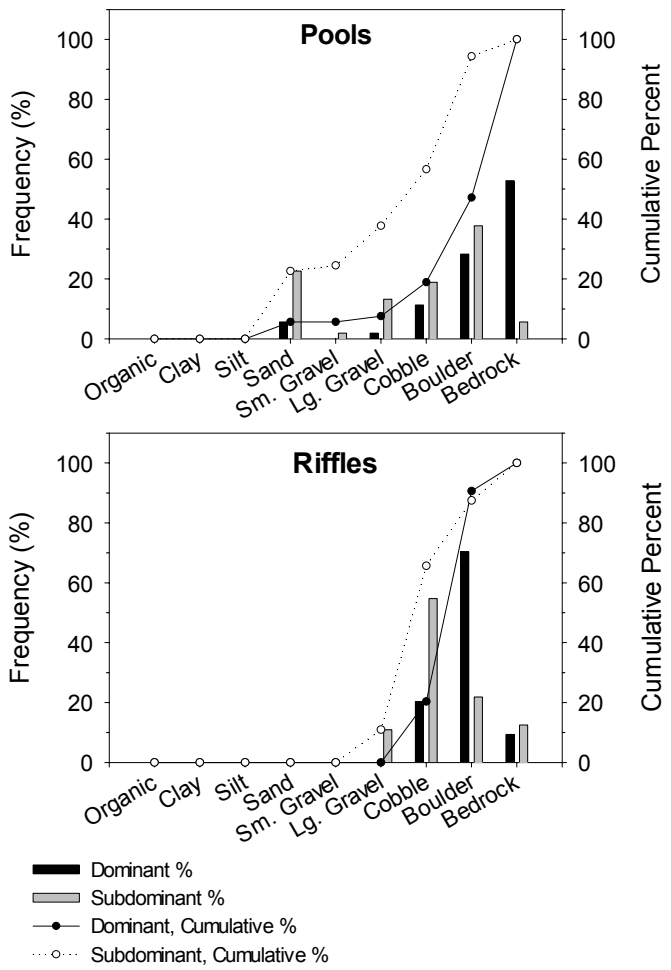
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	8
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	17
> 5 m long, > 55 cm diameter:	1
Total:	27

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	26	4
Maximum:	41	16
75th Percentile	28	3
25th Percentile	21	2
Minimum	14	0

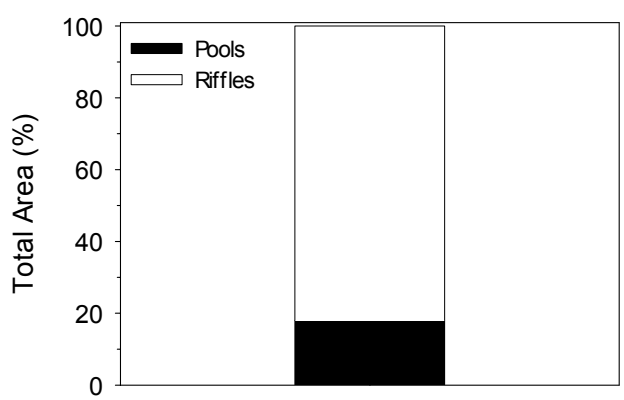
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	0
B:	0
C:	32
D:	0
E:	0
F:	61
G:	7

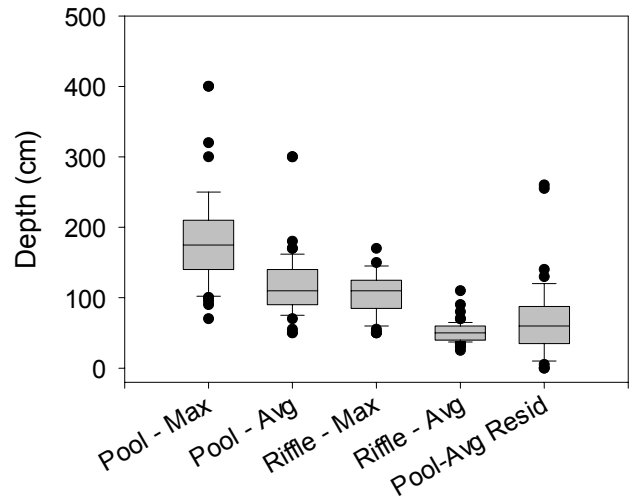
Other Stream Attributes	
Mean Bankfull Channel Width (m):	19
Mean Channel Gradient (%):	3
Median Water Temperature (C˚):	15



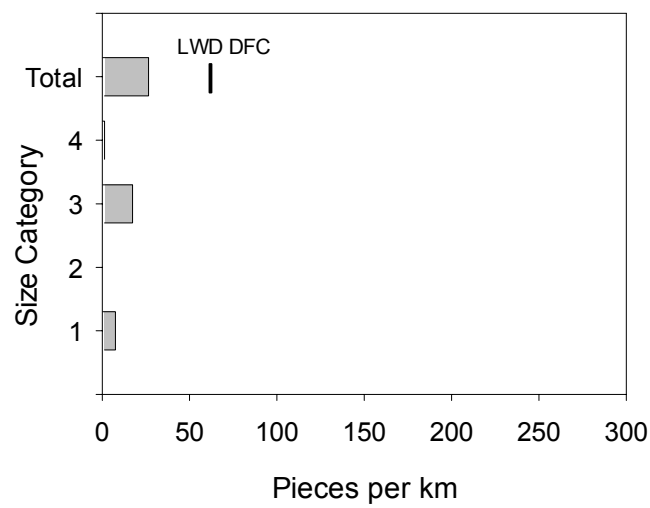
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Davidson River, summer 2005.



Estimated area of Davidson River in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Davidson River, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Davidson River, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

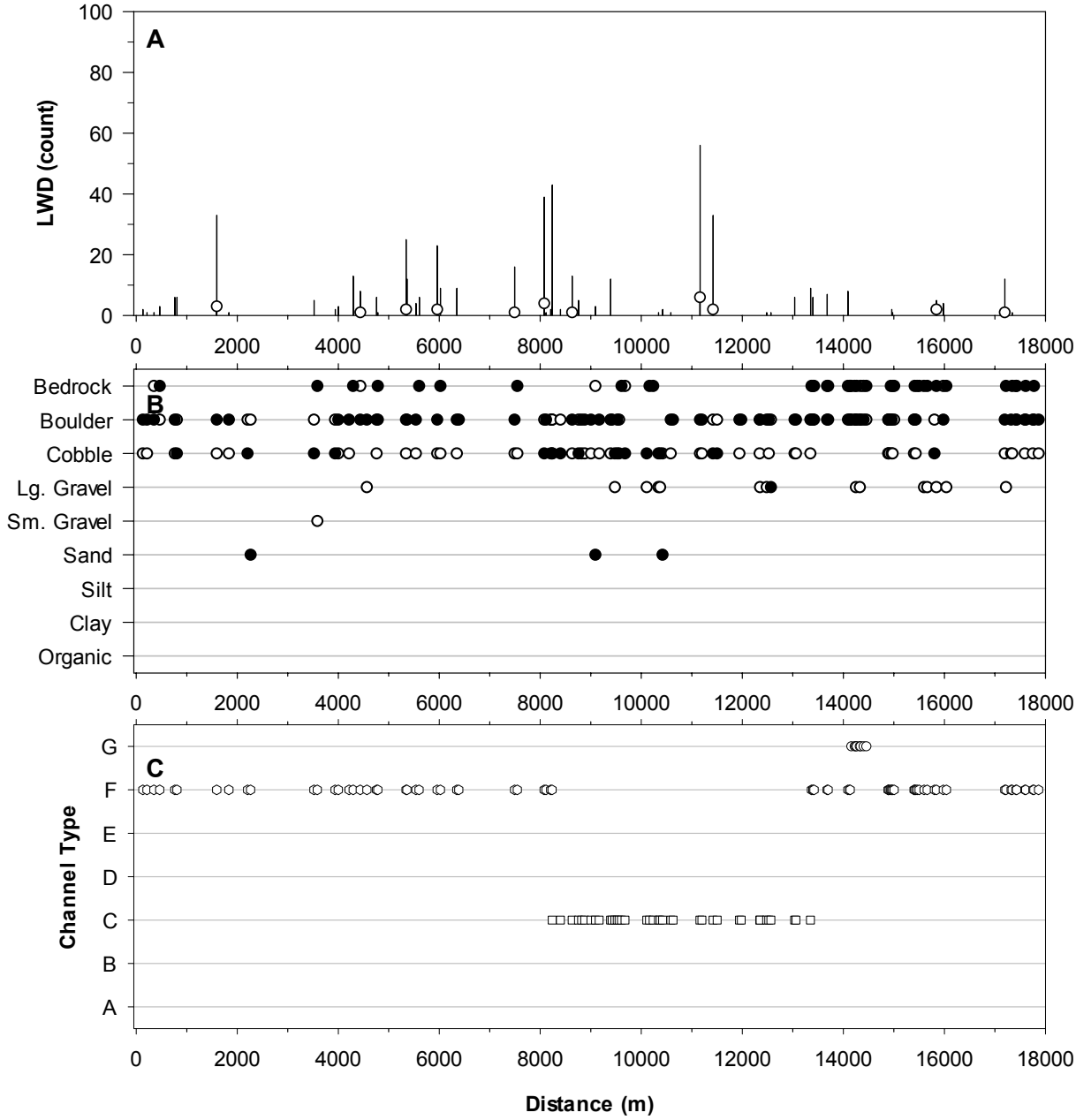
Stream features found on Davidson River during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Seep	651.0	0.2	On left, low flow
Trib	829.5	2.0	In on left,
Side Channel	967.3	5.0	Out on right, comes back in on the right at meter 1035.8
Trib	1600.0		
Bridge	2235.5	7.0	Height 3.5 meters, forest service road 454,
Trib	2289.0	0.5	On left, unnamed trib off north slope ridge, also for some strange reason there a large culvert encasing the trib and there is a rebar screen, the culvert is a metal pipe about 1 meter wide abd is touching the crest of the main branch
Trib	2964.0	0.9	On left, unnamed unmapped trib off of north ridge, this trib is also flowwing out of a metal pipe culvert
Trib	3025.0	1.5	In on right; andy cove ; flows thru culvert under hwy 276
Bridge	3296.0	4.0	H=4m. Trusselwith wooden road bed and steel frame. Fs road 454 at english chapel.
Trib	3758.8	2.5	Trib on right, name avery creek, at this confluence davidson river switches from hatchery supported to catch and release wild/naturalized trout
Trib	4076.0	0.3	In on left, unnamed trib off of north slope ridge
Trib	4970.0	0.5	In on right off of bearpen mountain
Trib	5060.0	0.3	In on right off of bearpen mountain
Side Channel	5106.0	4.0	On left side, in
Side Channel	5172.0	2.5	On right side, in
Side Channel	5200.0	4.0	On left side, out
Side Channel	5230.0	2.5	On right side, out
Trib	6513.0	0.5	On left,off ofshut-in ridge
Trib	6640.0	4.0	On left, stream name shut-in branch
Trib	7416.0	0.5	On left off of chestnut knob
Trib	7460.0	1.5	On left, stream name stillwater branch
Trib	8010.0	0.5	On right, unnamed trib off of bearpen mountain
Side Channel	8170.0	5.0	In on right, trib coontree creek comes into this side channel,
Dam	8204.8		Height 50 cm man made with cobble there is no trail crossing this dam
Side Channel	8235.0	5.0	Out on righthas trib coon tree creek running into it
Trib	8879.0	7.0	On left, looking glass creek, a brdge crosses this trib, no batteries for camera
Trib	9132.0	0.2	On right, unnamed trib off of looking glass rock
Trib	9145.1	0.5	On left, stream named chestnut creek
Seep	9166.0		Low flow on left side
Trib	9412.0	0.5	Trib on right,unnamed trib off of looking glass rock, trib comes out of a culvert
Trib	9475.0	1.0	Trib on right, unnamed off of looking glass

Features conts.			rock
Side Channel	10677.0	4.0	Out on right side, finally comes in at 11437
Side Channel	10892.0	2.0	Out on right, back in at 11037
Trib	11327.0	4.0	In on left, stream name horse cove
Bridge	11663.0	25.0	Height 2.5 meters
Dam	12351.0		Height 1.5 meters, no trail or road crosses the dam, concrete dam
Trib	12406.8	4.0	Rockhouse creek in on right, at start of the trib there is a beaver dam
Seep	12453.0		In on left, low flow
Side Channel	12592.0	7.0	Out, back in at 12692
Side Channel	13340.0	5.0	Out on right, back in at 13395 meter
Seep	13361.0		On left side, low flow
Seep	13376.0		Low flow, on left
Trib	13786.0	4.0	Searcy creek on left
Trib	14473.4	5.0	In on right, cove creek
Side Channel	14779.0	2.0	In on left, out at 14879
Side Channel	14870.0	5.0	In on right, there is another side channel running into this that sch stars at 14895, the main sch back in at 14981
Trib	14942.0	5.0	On left, long branch
Side Channel	15334.0	2.0	In on right
Seep	15450.0		On right low flow
Fall	15503.0		Height 1.5,
Trib	15661.0	4.0	Laurel fork in on left
Bridge	15669.0	10.0	Height 3.05 meters, forest service road 475, concrete bridges
Trib	15715.0	3.0	In on right, unnamed trib off of lanning ridge
Trib	15846.0	1.0	In on right, unnamed trib off of lanning ridge
Bridge	15966.9	20.0	Concrete, height 2 meter, forest service road 137, the majority of the water is going through the broken part of the bridge
Dam	16860.5		No trail, looks to be out of use also it maybe something else but not sure
Trib	16980.0	1.0	Unnamed trib off of lanning ridge

Photos taken of Davidson River during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
Trib		829.5	In on left,
Brg		2235.5	Height 3.5 meters, forest service road 454,
Trib		2289.0	On left, unnamed trib off north slope ridge, also for some strange reason there a large culvert encasing the trib and there is a rebar screen, the culvert is a metal pipe about 1 meter wide abd is touching the crest of the main branch
Trib		2964.0	On left, unnamed unmapped trib off of north ridge, this trib is also flowwing out of a metal pipe culvert
Trib		3025.0	In on right; andy cove ; flows thru culvert under hwy 276
Brg		3296.0	H=4m. Trusselwith wooden road bed and steel frame. Fs road 454 at english chapel.
Trib		3758.8	Trib on right, name avery creek, at this confluence
R	10	4213.0	
Trib		4970.0	In on right off of bearpen mountain
Trib		5060.0	In on right off of bearpen mountain
Trib		6513.0	On left,off ofshut-in ridge
Trib		6640.0	On left, stream name shut-in branch
Trib		7416.0	On left off of chestnut knob
Trib		7460.0	On left, stream name stillwater branch
R	20	8235.0	Large log jam at meter 8227
Trib		9475.0	Trib on right, unnamed off of looking glass rock
R	30	10340.0	
Trib		11327.0	In on left, stream name horse cove
Brg		11663.0	Height 2.5 meters
Dam		12351.0	Height 1.5 meters, no trail or road crosses the dam, concrete dam
Trib		12406.8	Rockhouse creek in on right, at start of the trib there is a beaver dam
R	40	13395.0	Bankful was not measured due to the side-channel running parallal with the main stem, however rosgen was determined at the next riffle
Trib		13786.0	Searcy creek on left
Trib		15715.0	In on right, unnamed trib off of lanning ridge
Trib		15846.0	In on right, unnamed trib off of lanning ridge
Brg		15966.9	Concrete, height 2 meter, forest service road 137, the majority of the water is going through the broken part of the bridge
Dam		16860.5	No trail, looks to be out of use also it maybe something else but not sure
Trib		16980.0	Unnamed trib off of lanning ridge
R	60	17417.4	There are no bankful indicators, on this riffle, at meter 17390



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Davidson River, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**East Horse Cove**
District:	Pisgah
USGS Quadrangle:	Shining Rock
Survey Date:	07/26/05
Downstream Starting Point:	confluence with Horse Cove
Total Distance Surveyed (km):	1.1

	Pools	**Riffles**
Percent of Total Stream Area:	7	93
Total Area (m^2):	138±13	1717±505
Correction Factor Applied:	1.03	1.11
Number of Paired Samples:	5	3
Total Count:	13	11
Number per km:	11	10
Mean Area (m^2):	11	156
Mean Maximum Depth (cm):	44	27
Mean Average Depth (cm):	33	17
Mean Residual Depth (cm):	22	--
Percent Surveyed as Glides:	0	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	18
Percent with >35% Fines:	8	0

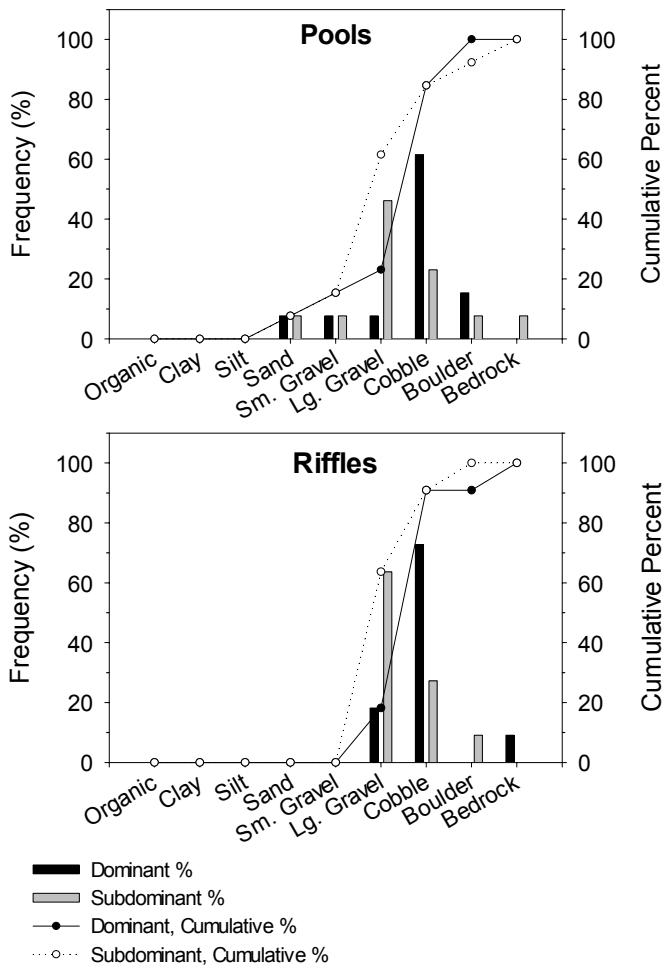
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	90
< 5 m long, > 55 cm diameter:	1
>5 m long, 10 cm – 55 cm diameter:	97
> 5 m long, > 55 cm diameter:	8
Total:	195

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	4	1
Maximum:	4	2
75th Percentile	4	1
25th Percentile	4	0
Minimum	4	0

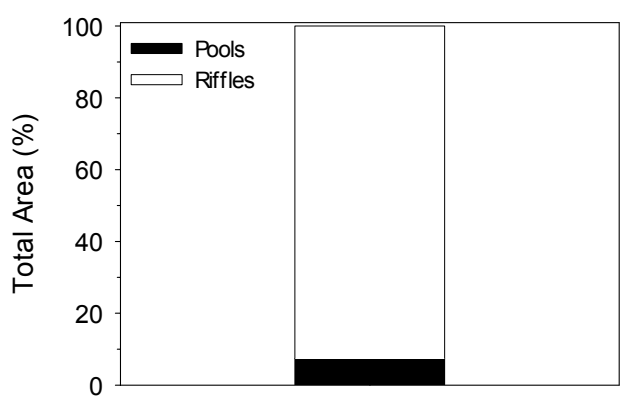
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	100
B:	0
C:	0
D:	0
E:	0
F:	0
G:	0

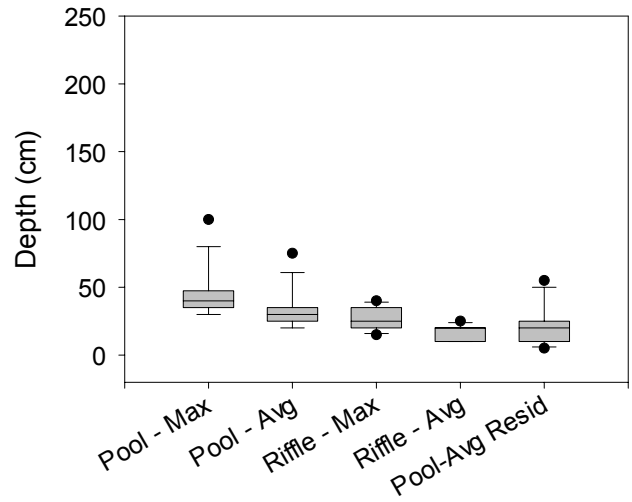
Other Stream Attributes	
Mean Bankfull Channel Width (m):	3
Mean Channel Gradient (%):	10
Median Water Temperature (C˚):	16



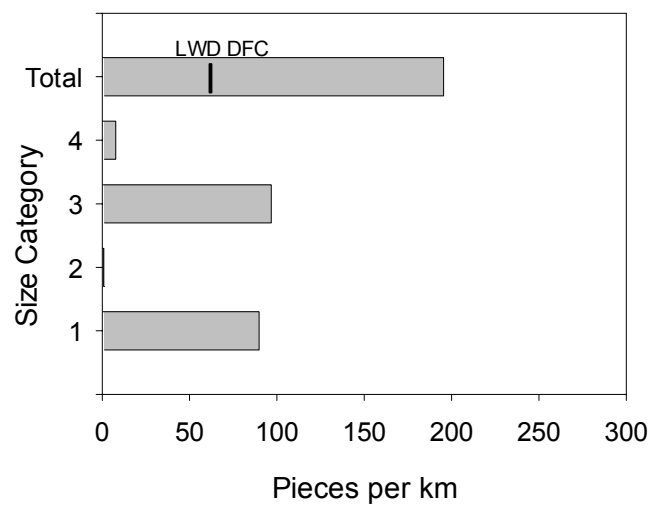
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in East Horse Cove, summer 2005.



Estimated area of East Horse Cove in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in East Horse Cove, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in East Horse Cove, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

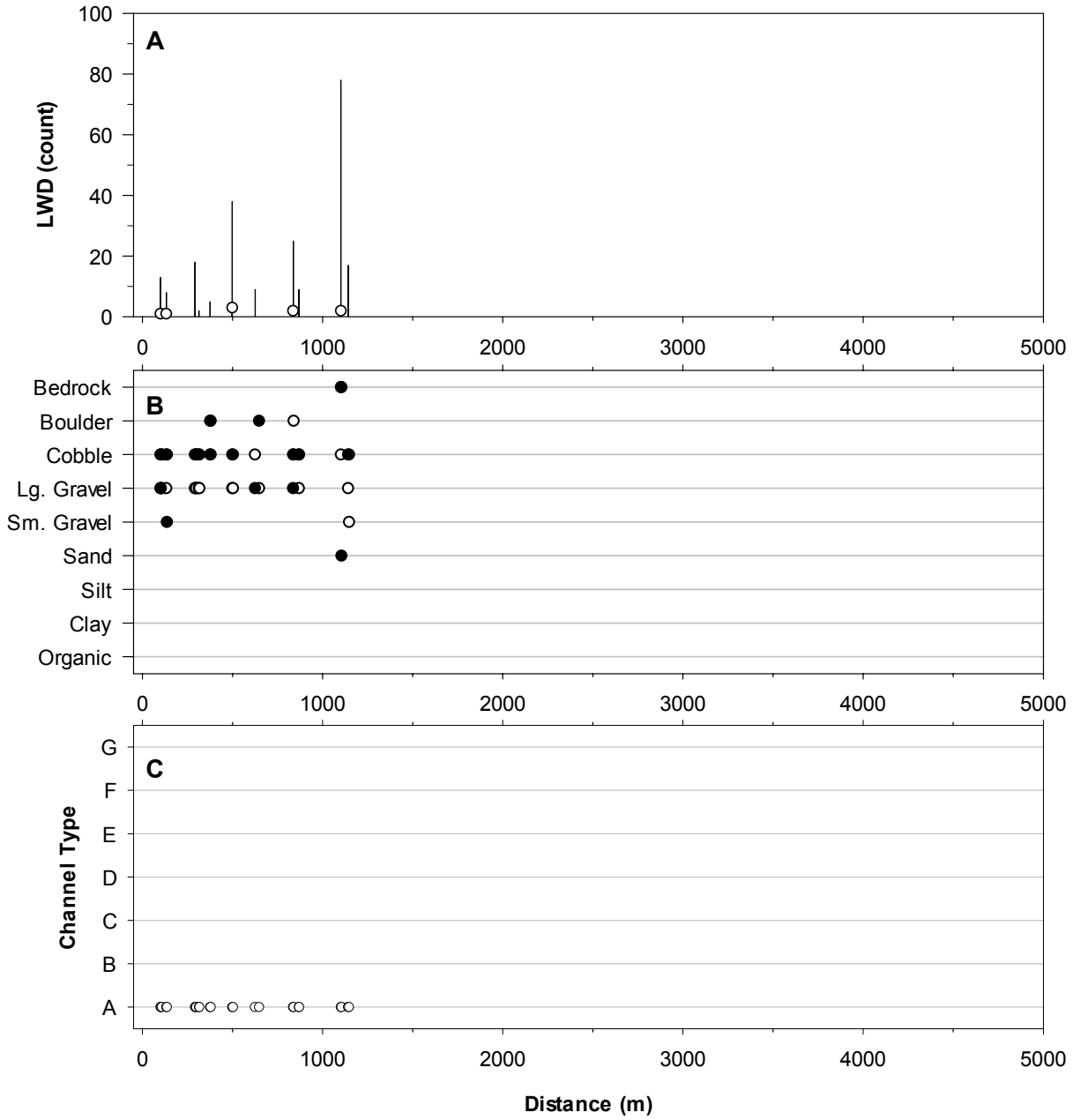
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on East Horse Cove during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Seep	295.0		Right low flow
Seep	377.0		Left medium flow
Culvert	502.0	1.3	Perch=.1 metal pipe culvert with stone aroun it. Under fs road 475 c.
Side Channel	590.0	0.5	Left in: 600
Side Channel	600.0	0.5	Right in: 623.7
Side Channel	625.0	0.5	Left in: 645
Side Channel	654.6	0.5	Left in: 660
Seep	850.0	0.5	Left medium flow.
Side Channel	985.0		
Seep	1137.4		Left high flow

Photos taken of East Horse Cove during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in East Horse Cove, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Fate Osteen Branch**
District:	Pisgah
USGS Quadrangle:	Shining Rock
Survey Date:	07/25/05
Downstream Starting Point:	confluence with Davidson River
Total Distance Surveyed (km):	0.5

	Pools	**Riffles**
Percent of Total Stream Area:	6	94
Total Area (m^2):	26±4	442±132
Correction Factor Applied:	1.18	0.99
Number of Paired Samples:	3	3
Total Count:	5	6
Number per km:	10	12
Mean Area (m^2):	5	74
Mean Maximum Depth (cm):	37	23
Mean Average Depth (cm):	27	7
Mean Residual Depth (cm):	22	--
Percent Surveyed as Glides:	0	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	0
Percent with >35% Fines:	40	33

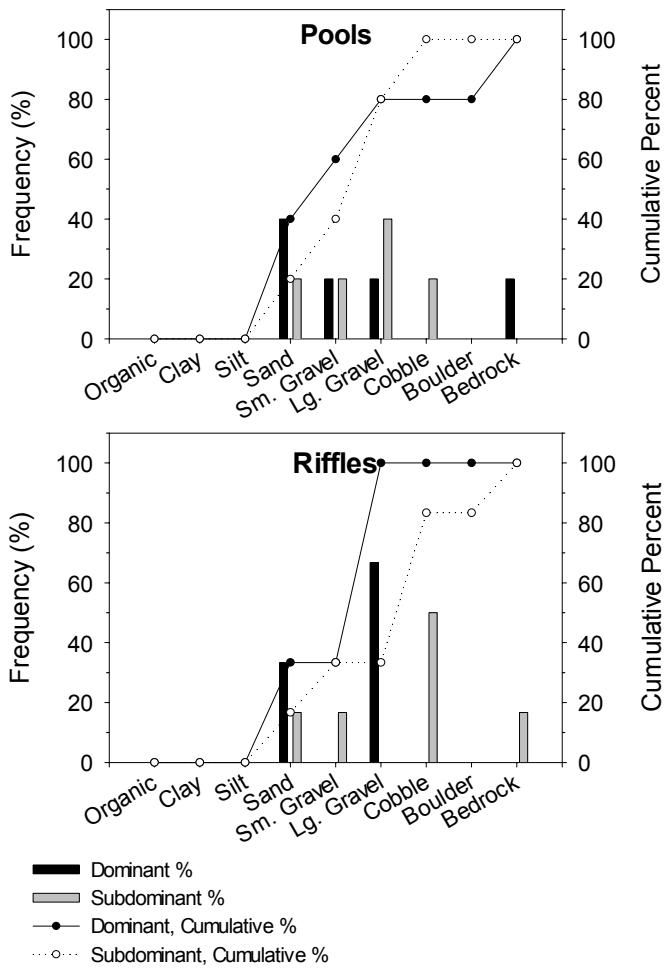
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	14
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	28
> 5 m long, > 55 cm diameter:	0
Total:	42

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	2	0
Maximum:	3	1
75th Percentile	3	0
25th Percentile	2	0
Minimum	2	0

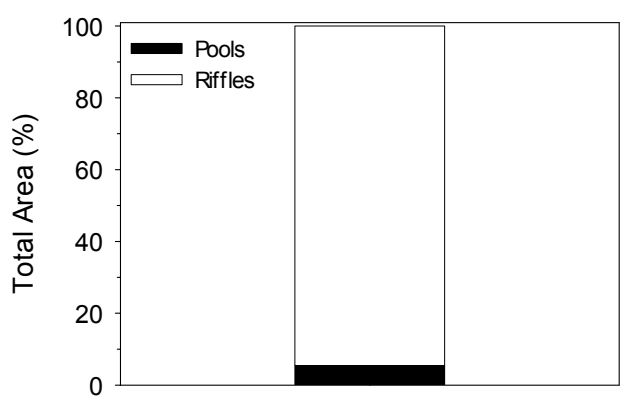
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	0
B:	82
C:	0
D:	0
E:	0
F:	0
G:	18

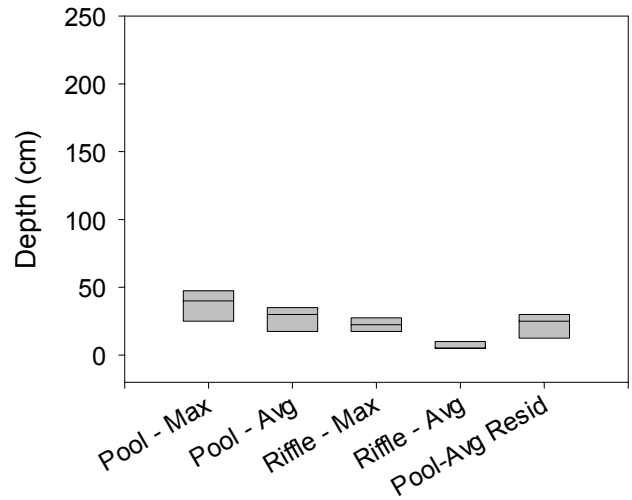
Other Stream Attributes	
Mean Bankfull Channel Width (m):	2
Mean Channel Gradient (%):	5
Median Water Temperature (C˚):	16



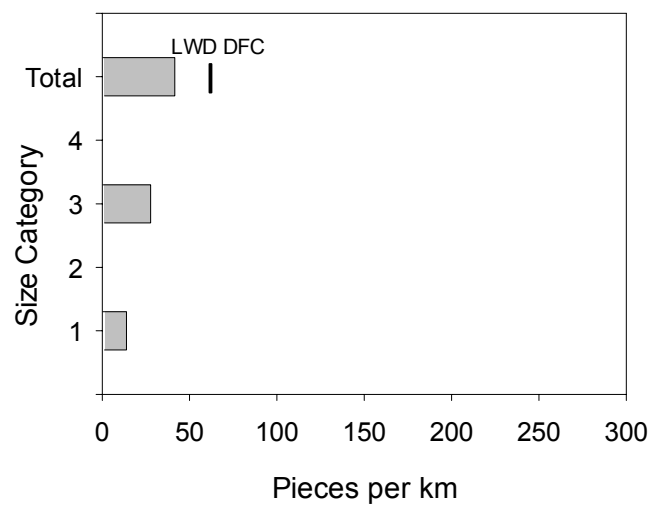
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Fate Osteen Branch, summer 2005.



Estimated area of Fate Osteen Branch in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Fate Osteen Branch, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Fate Osteen Branch, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

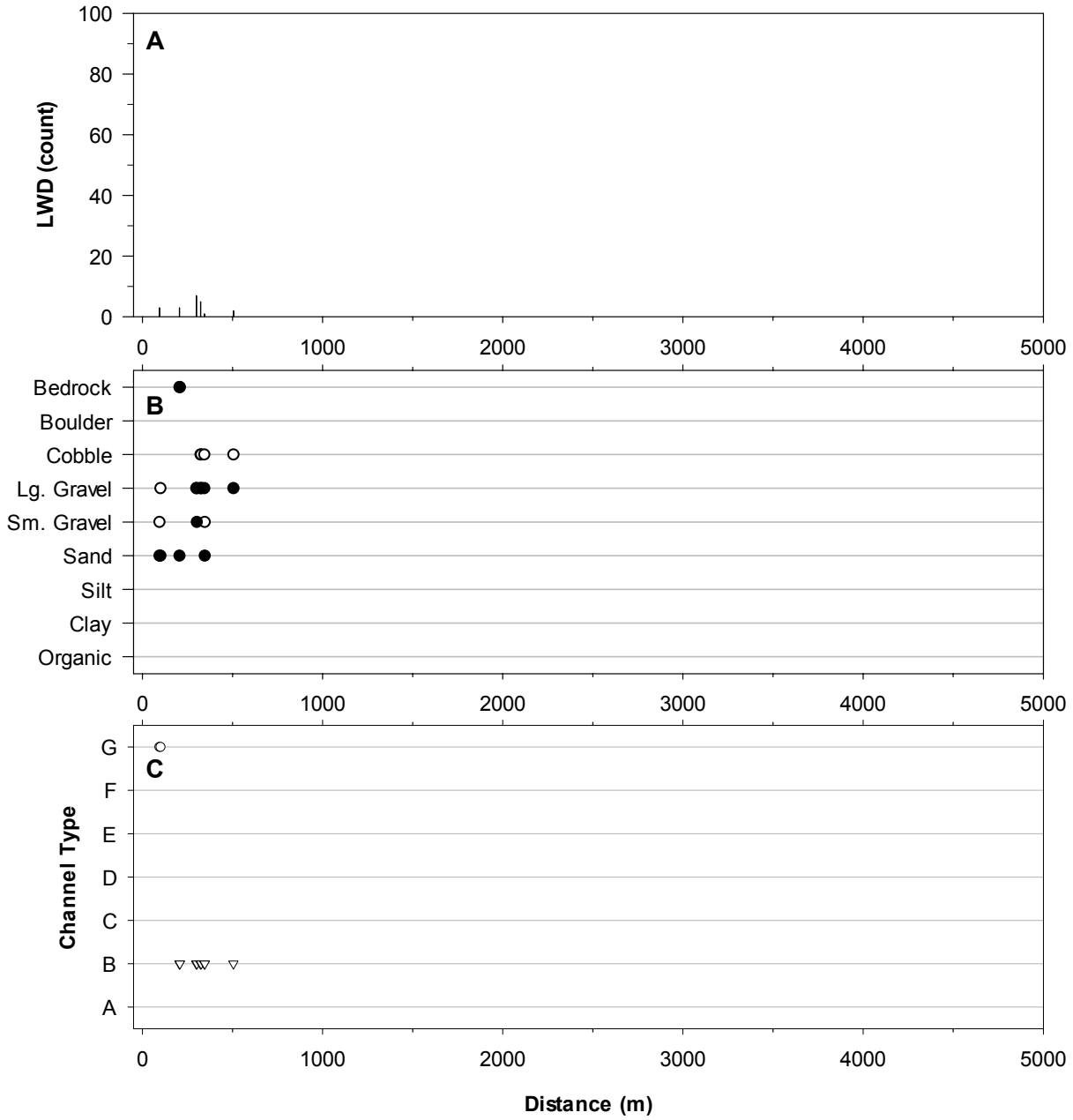
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Fate Osteen Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Side Channel	124.0	0.4	Left in:130.9
Ford	146.0	1.0	Hiking trail number 151.
Side Channel	240.0	0.3	Right in: 283
Ford	300.0	0.5	Unknown very lightly traveled foot path.
Culvert	327.1	1.0	Metal pipe. Under fs road 475. Perch=20. Natural substrate=dirt.

Photos taken of Fate Osteen Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
R	1	94.4	
FORD		146	Hiking trail number 151.



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Fate Osteen Branch, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Grogan Creek**
District:	Pisgah
USGS Quadrangle:	Shining Rock
Survey Date:	08/02/05
Downstream Starting Point:	confluence with Cedar Rock Creek
Total Distance Surveyed (km):	3.2

	Pools	**Riffles**
Percent of Total Stream Area:	29	71
Total Area (m^2):	2769±578	6640±792
Correction Factor Applied:	0.86	0.96
Number of Paired Samples:	6	4
Total Count:	62	48
Number per km:	19	15
Mean Area (m^2):	45	138
Mean Maximum Depth (cm):	54	31
Mean Average Depth (cm):	34	13
Mean Residual Depth (cm):	13	--
Percent Surveyed as Glides:	35	--
Percent Surveyed as Runs:	--	15
Percent Surveyed as Cascades:	--	0
Percent with >35% Fines:	65	4

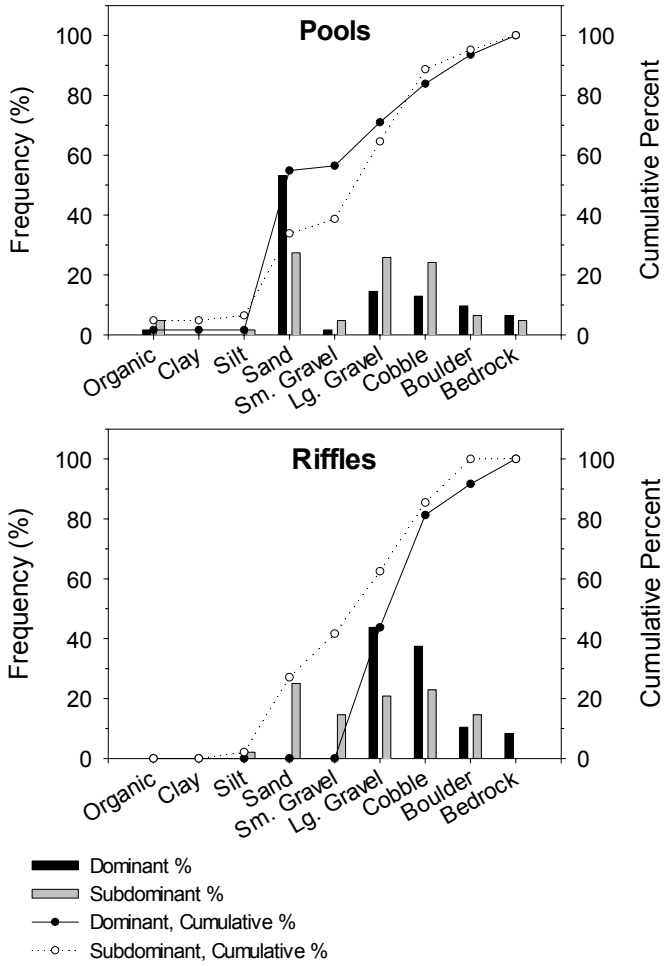
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	87
< 5 m long, > 55 cm diameter:	4
>5 m long, 10 cm – 55 cm diameter:	73
> 5 m long, > 55 cm diameter:	0
Total:	164

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	24	9
Maximum:	44	23
75th Percentile	27	12
25th Percentile	16	5
Minimum	13	0

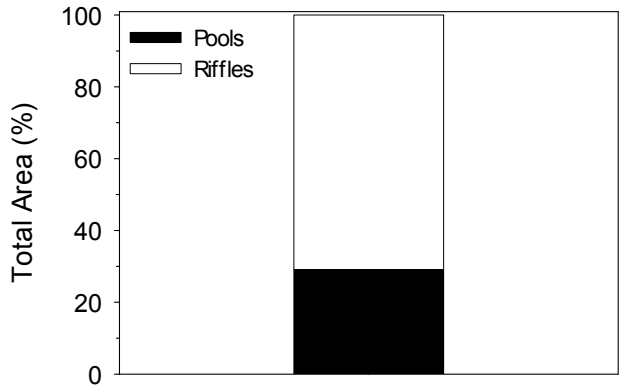
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	0
B:	75
C:	25
D:	0
E:	0
F:	0
G:	0

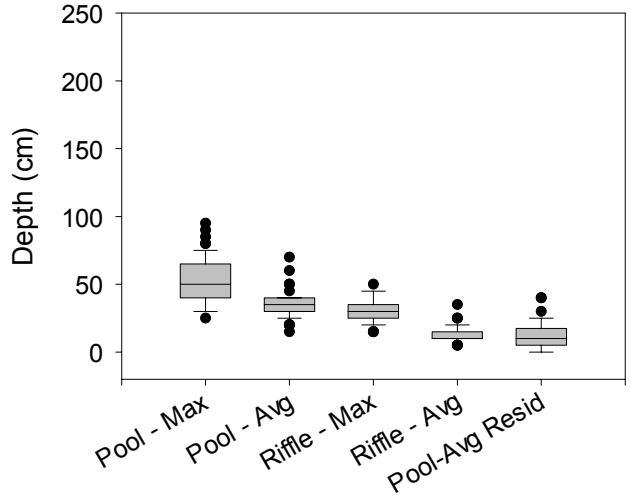
Other Stream Attributes	
Mean Bankfull Channel Width (m):	6
Mean Channel Gradient (%):	2
Median Water Temperature (C˚):	



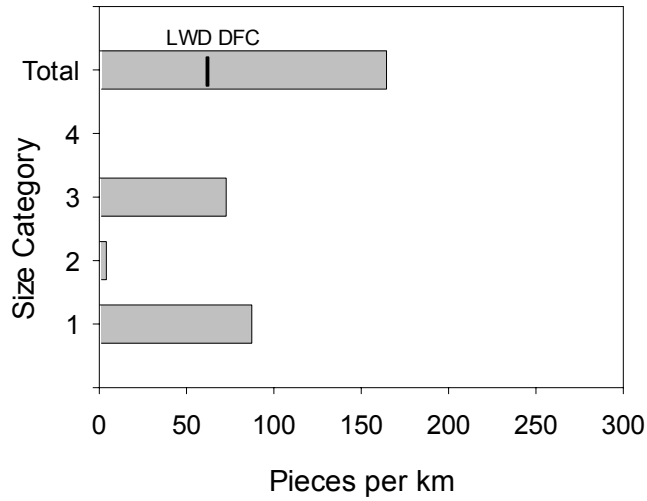
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Grogan Creek, summer 2005.



Estimated area of Grogan Creek in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Grogan Creek, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Grogan Creek, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

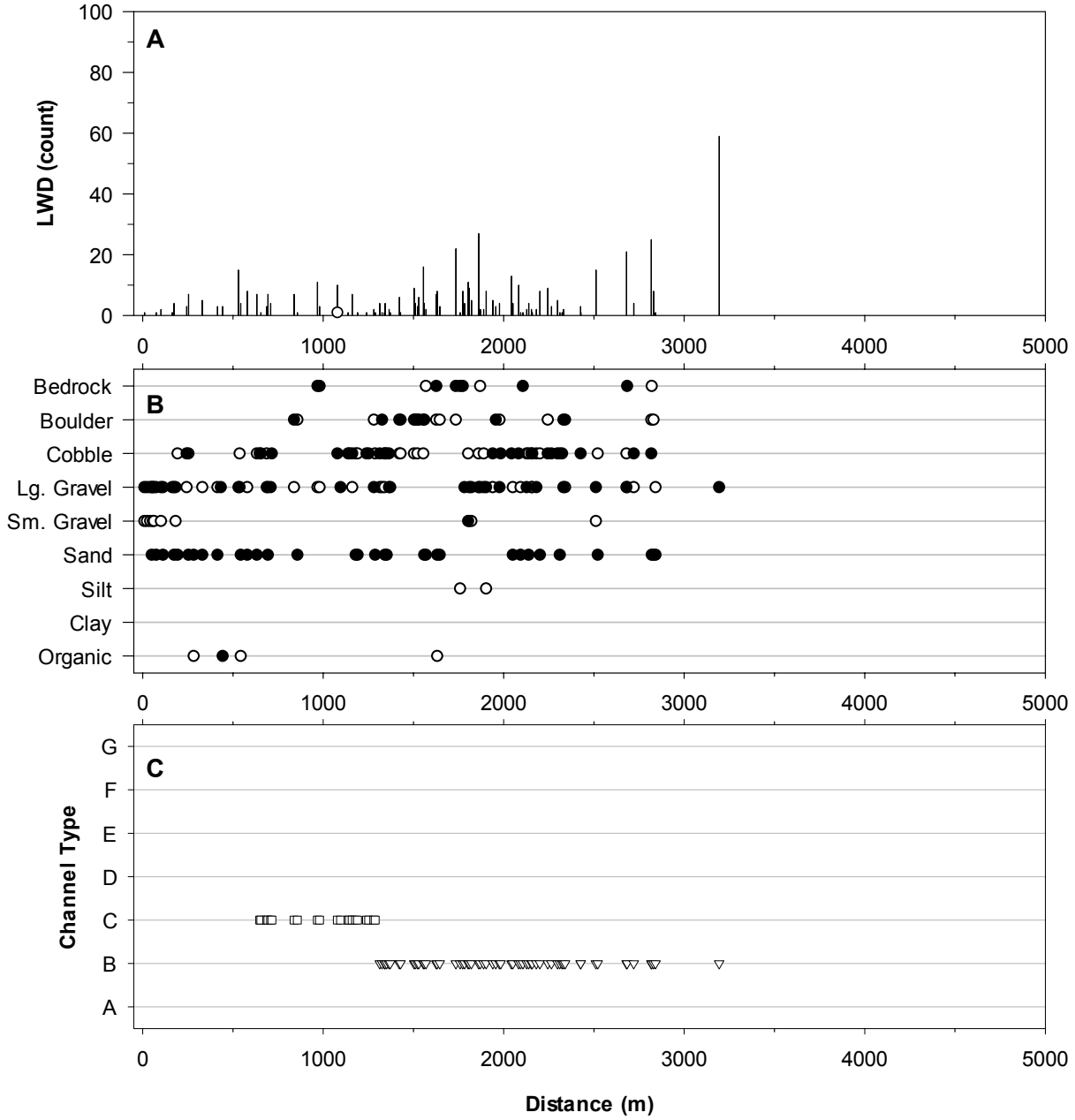
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Grogan Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Trib	78.5	0.4	In on left
Ford	215.0		Foot bridge with ford underneath,not listed on map
Other	292.0		Unusual channel coming in on left in a braid, probably caused by beaver disturbance
Other	400.0	50.0	Beaver pond
Trib	670.0	0.3	In on right
Trib	701.0	0.2	In on right
Side Channel	1476.0	2.0	In on left
Trib	1631.0	0.2	In on left
Fall	1735.0	9.0	8 meters high
Side Channel	1956.0	1.0	In on right
Side Channel	1965.0	0.2	Out on right
Trib	2043.0	1.0	In on left
Seep	2127.0		In on right, moderate flow
Trib	2340.0	2.0	Thick vegetation, in on left from butter gap, only blue line trib on map from left
Other	2726.0		Massive rootwad
Trib	2726.0	0.8	In on right
Trib	2901.0	0.3	In on right
Other	3193.0		End survey, trib and main stem arent distinguishable, both are.5 meter wide for approx 300 meters

Photos taken of Grogan Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
Rn	9	648.3	
R	19	1312.8	
Fall		1735.0	8 meters high
R	29	1783.0	
R	39	2181.0	
Otr		2726.0	Massive rootwad



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Grogan Creek, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Gumstand Creek**
District:	Pisgah
USGS Quadrangle:	Shining Rock
Survey Date:	06/15/05
Downstream Starting Point:	confluence with Looking Glass Creek
Total Distance Surveyed (km):	0.8

	Pools	**Riffles**
Percent of Total Stream Area:	10	90
Total Area (m^2):	181±0	1640±0
Correction Factor Applied:	1.00	1.00
Number of Paired Samples:	3	3
Total Count:	11	12
Number per km:	14	16
Mean Area (m^2):	16	137
Mean Maximum Depth (cm):	38	35
Mean Average Depth (cm):	25	12
Mean Residual Depth (cm):	6	--
Percent Surveyed as Glides:	36	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	50
Percent with >35% Fines:	82	8

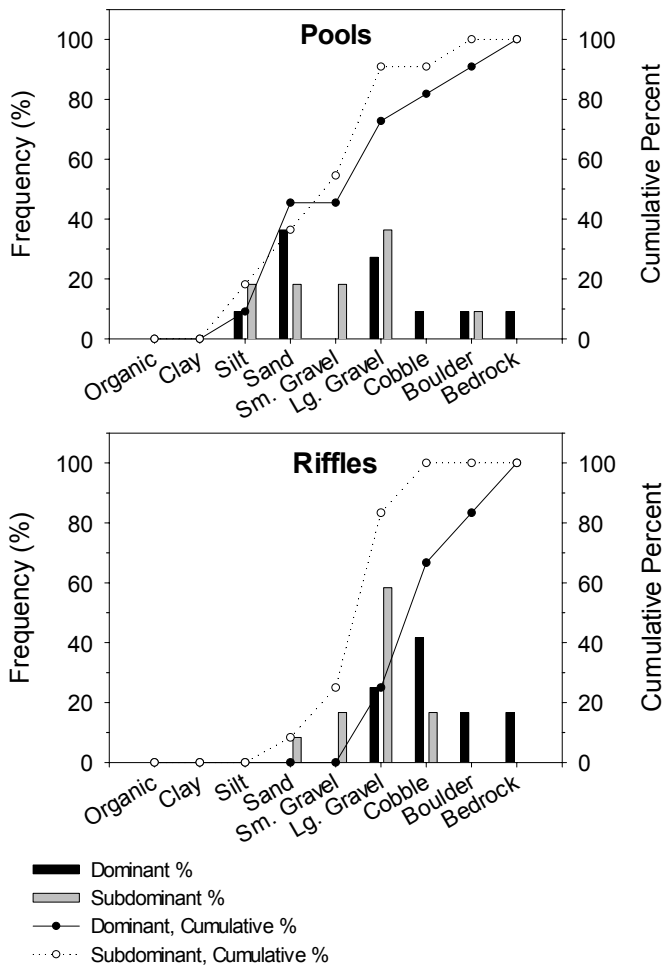
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	0
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	146
> 5 m long, > 55 cm diameter:	0
Total:	146

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	10	3
Maximum:	17	7
75th Percentile	12	6
25th Percentile	7	1
Minimum	5	1

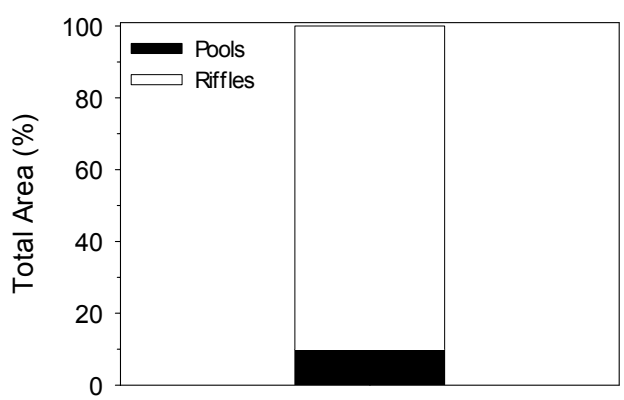
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	65
B:	35
C:	0
D:	0
E:	0
F:	0
G:	0

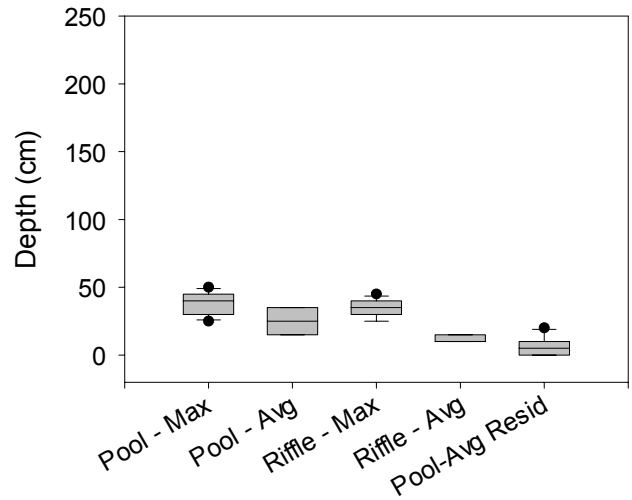
Other Stream Attributes	
Mean Bankfull Channel Width (m):	3
Mean Channel Gradient (%):	9
Median Water Temperature (C°):	12



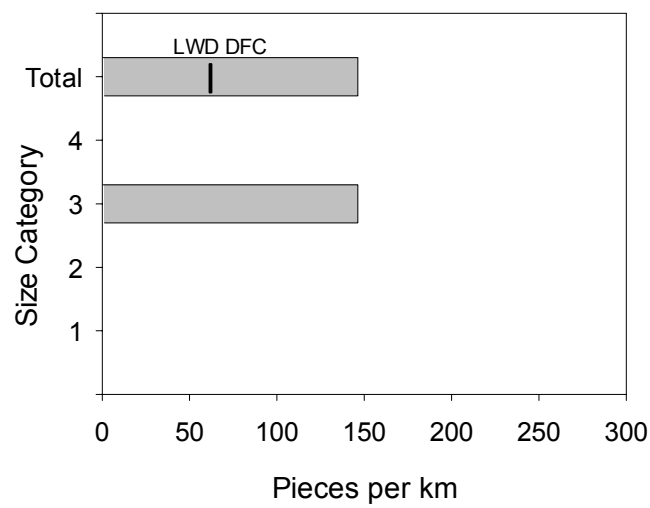
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Gumstand Branch, summer 2005.



Estimated area of Gumstand Branch in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Gumstand Branch, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Gumstand Branch, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

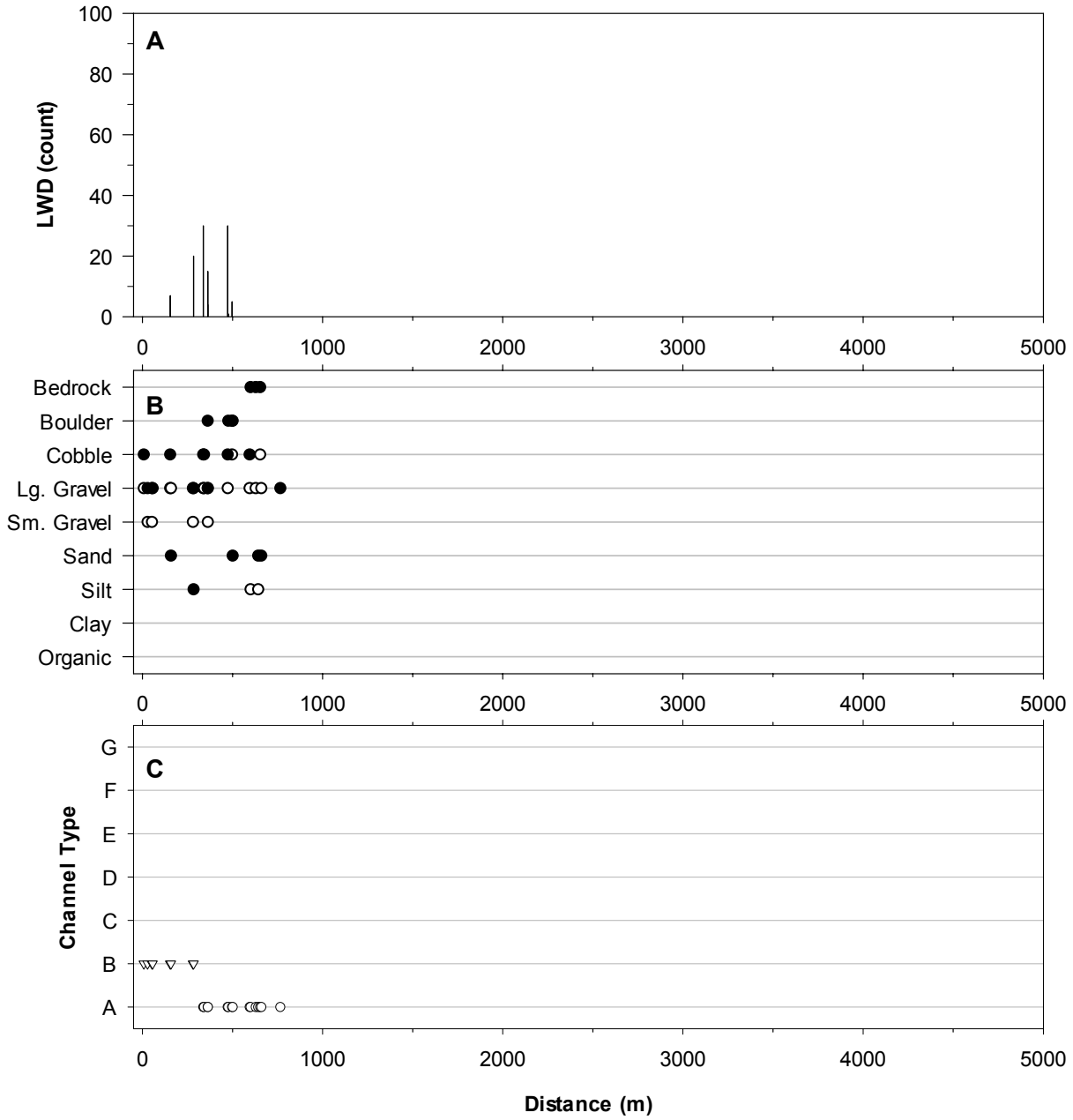
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Gumstand Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Side Channel	21.1		In on right
Side Channel	42.9		Out on right
Side Channel	70.9		In on left
Side Channel	97.3		Out on left
Side Channel	150.3		In on right
Side Channel	239.3		Out on right
Seep	313.4		In on left, little flow
Trib	399.2	1.0	In on left

Photos taken of Gumstand Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
C	10	629.0	



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Gumstand Branch, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Horse Cove**
District:	Pisgah
USGS Quadrangle:	Shining Rock
Survey Date:	07/26/05
Downstream Starting Point:	confluence with Davidson River
Total Distance Surveyed (km):	1.5

	Pools	**Riffles**
Percent of Total Stream Area:	17	83
Total Area (m^2):	880±68	4212±9749
Correction Factor Applied:	1.19	1.20
Number of Paired Samples:	3	3
Total Count:	18	18
Number per km:	12	12
Mean Area (m^2):	49	234
Mean Maximum Depth (cm):	58	34
Mean Average Depth (cm):	42	18
Mean Residual Depth (cm):	27	--
Percent Surveyed as Glides:	11	--
Percent Surveyed as Runs:	--	11
Percent Surveyed as Cascades:	--	0
Percent with >35% Fines:	39	6

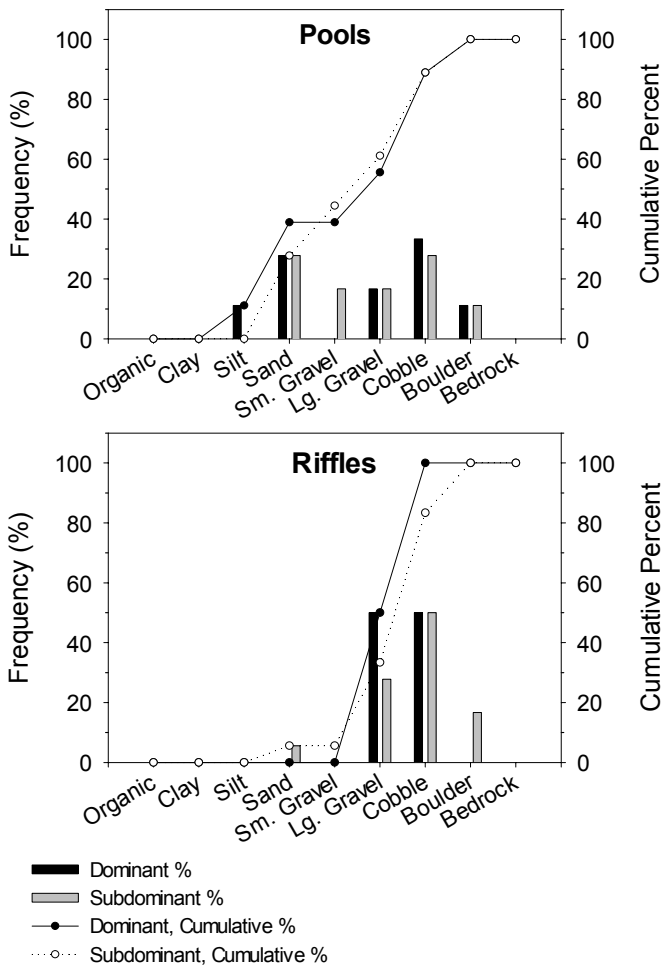
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	72
< 5 m long, > 55 cm diameter:	1
>5 m long, 10 cm – 55 cm diameter:	60
> 5 m long, > 55 cm diameter:	3
Total:	136

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	5	1
Maximum:	6	2
75th Percentile	6	1
25th Percentile	5	0
Minimum	4	0

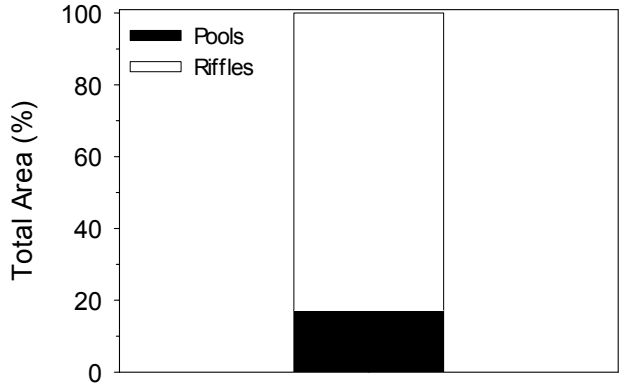
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	29
B:	32
C:	6
D:	0
E:	0
F:	32
G:	0

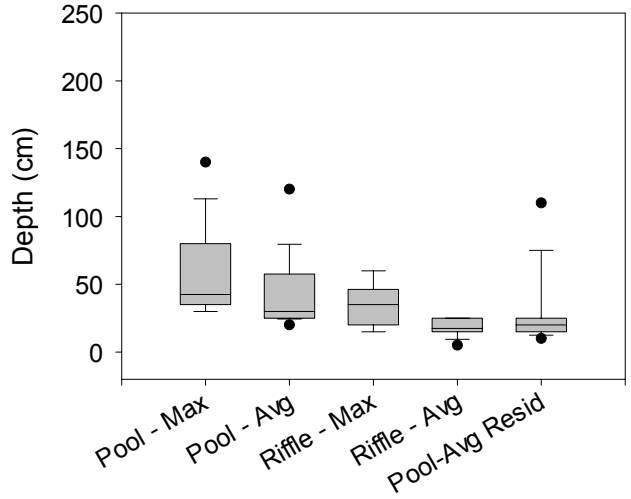
Other Stream Attributes	
Mean Bankfull Channel Width (m):	4
Mean Channel Gradient (%):	7
Median Water Temperature (C°):	15



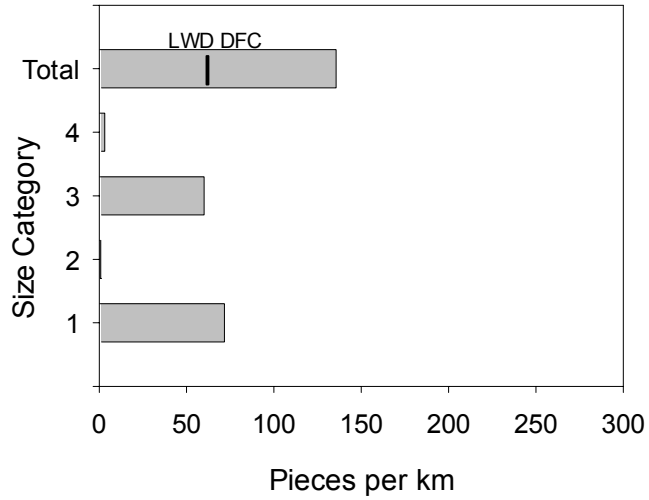
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Horse Cove Creek, summer 2005.



Estimated area of Horse Cove Creek in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Horse Cove Creek, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Horse Cove Creek, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

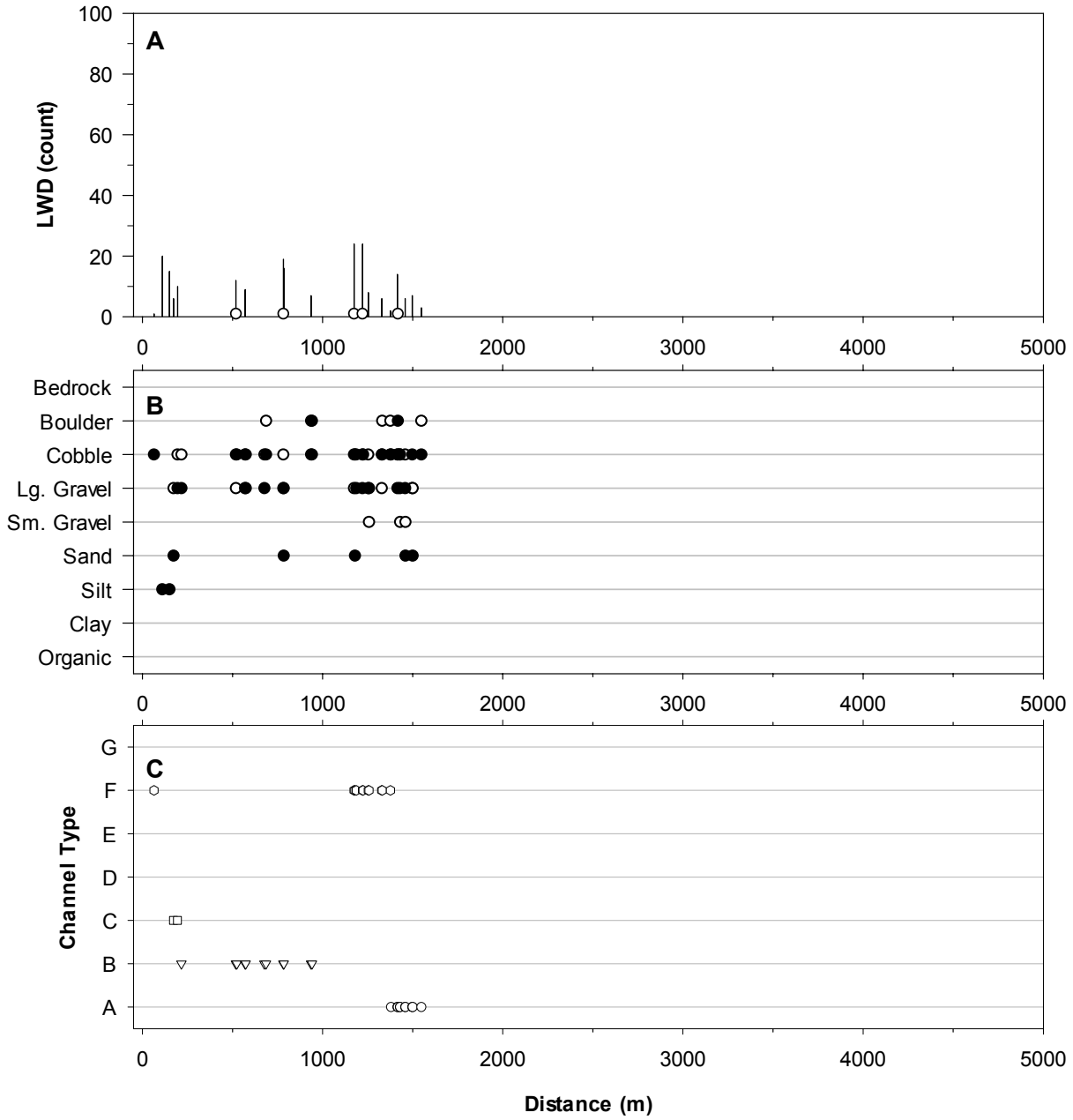
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Horse Cove Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Beaver Dam	63.7	5.0	Beaver dam. H=1.5m.
Beaver Dam	110.0	6.0	Beaver dam. H=1.5m.
Bog	150.0		Bog starts at 150.
Beaver Dam	150.0	8.0	Beaver dam h=2m.
Trib	265.3	0.5	Left off northern ridge of chesnut knob. Unmapped
Trib	279.4	0.4	Right off john rock unmapped
Side Channel	486.7	0.5	Right in: 390.5
Trib	508.9	1.5	East horse cove creek onleft.
Side Channel	766.7	1.0	Left in: 639
Trib	786.0	0.5	Left off chesnut knob northern ridge. Unmapped
Ford	852.3	2.5	Hiking trail. Wading ford. Trail 151.
Culvert	941.0	0.6	Metal pipe culvert. Perch=.6 h=1.15. Under fs road 475 c..
Side Channel	984.0	1.0	Right in: 946
Trib	1203.5	1.0	Left unmapped off chesnut knob
Side Channel	1309.2	0.5	Right in: ?
Seep	1325.1		Low flow on right
Trib	1365.0	0.5	Right unmapped off john rock.
Trib	1427.1	0.5	Right unmapped off john rock
Trib	1448.2	0.5	Right off john rock unmapped
Bridge	1545.0		H=.5 wood log bridge no hand rails. Three logs laid beside eah other. Trail 151.

Photos taken of Horse Cove Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Horse Cove Creek, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Johnson Mountain Creek**
District:	Pisgah
USGS Quadrangle:	Pisgah Forest
Survey Date:	07/11/05
Downstream Starting Point:	confluence with Davidson River
Total Distance Surveyed (km):	0.5

	Pools	**Riffles**
Percent of Total Stream Area:	1	99
Total Area (m^2):	7	555
Correction Factor Applied:	1.50	1.10
Number of Paired Samples:	1	3
Total Count:	2	3
Number per km:	4	6
Mean Area (m^2):	4	185
Mean Maximum Depth (cm):	43	13
Mean Average Depth (cm):	30	5
Mean Residual Depth (cm):	25	--
Percent Surveyed as Glides:	0	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	0
Percent with >35% Fines:	100	100

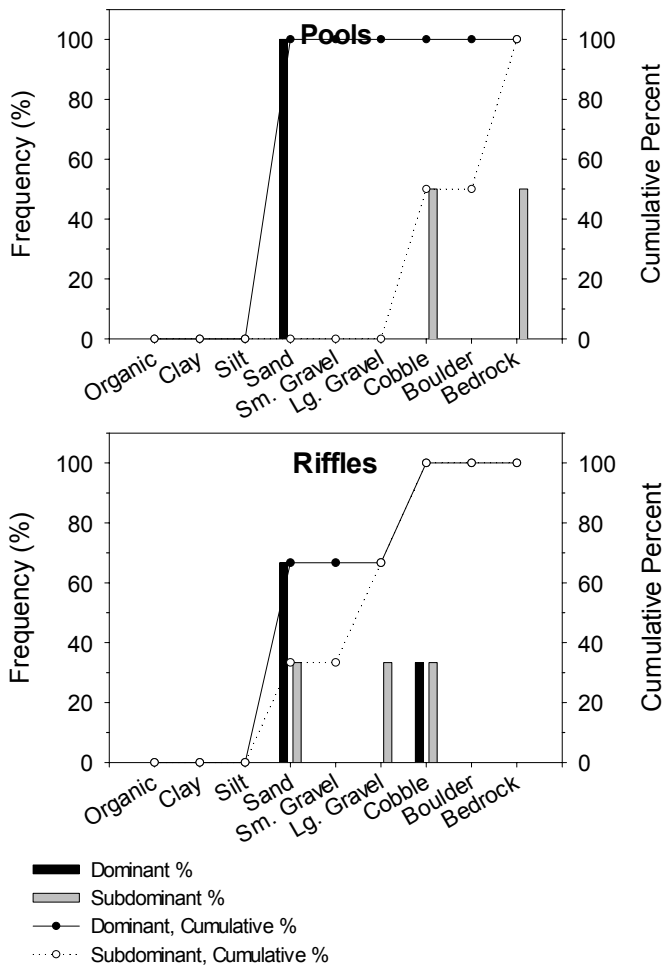
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	41
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	20
> 5 m long, > 55 cm diameter:	0
Total:	61

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	3	0
Maximum:	3	1
75th Percentile	3	0
25th Percentile	2	0
Minimum	2	0

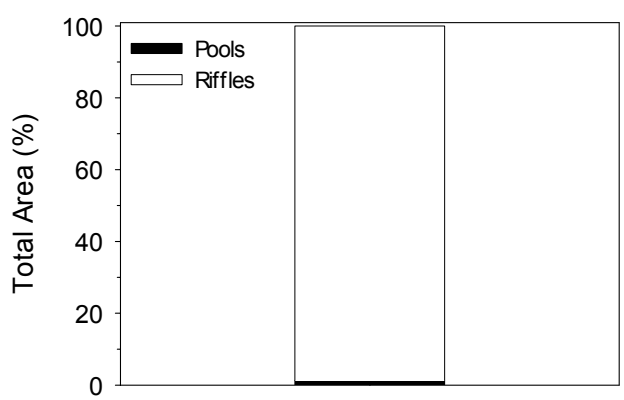
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	0
B:	80
C:	0
D:	0
E:	0
F:	20
G:	0

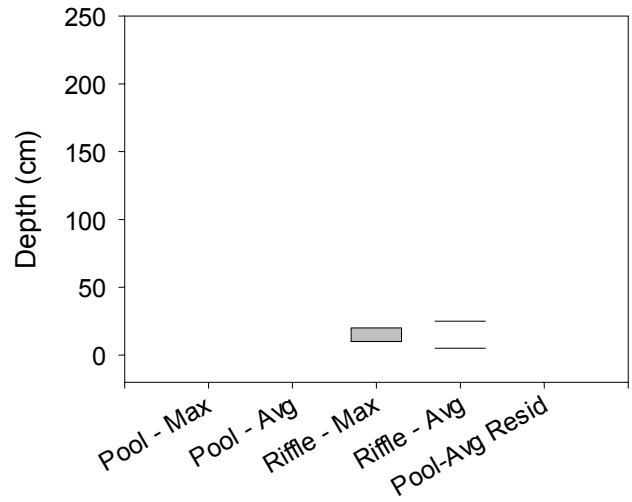
Other Stream Attributes	
Mean Bankfull Channel Width (m):	2
Mean Channel Gradient (%):	6
Median Water Temperature (C°):	15



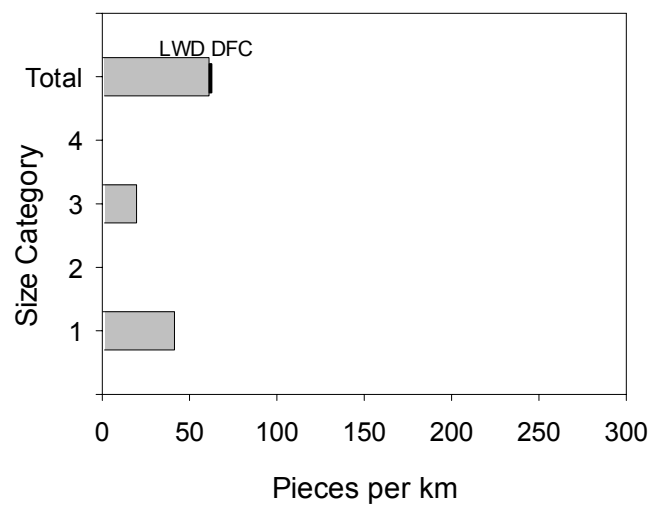
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Johnson Mountain Creek, summer 2005.



Estimated area of Johnson Mountain Creek in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Johnson Mountain Creek, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Johnson Mountain Creek, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

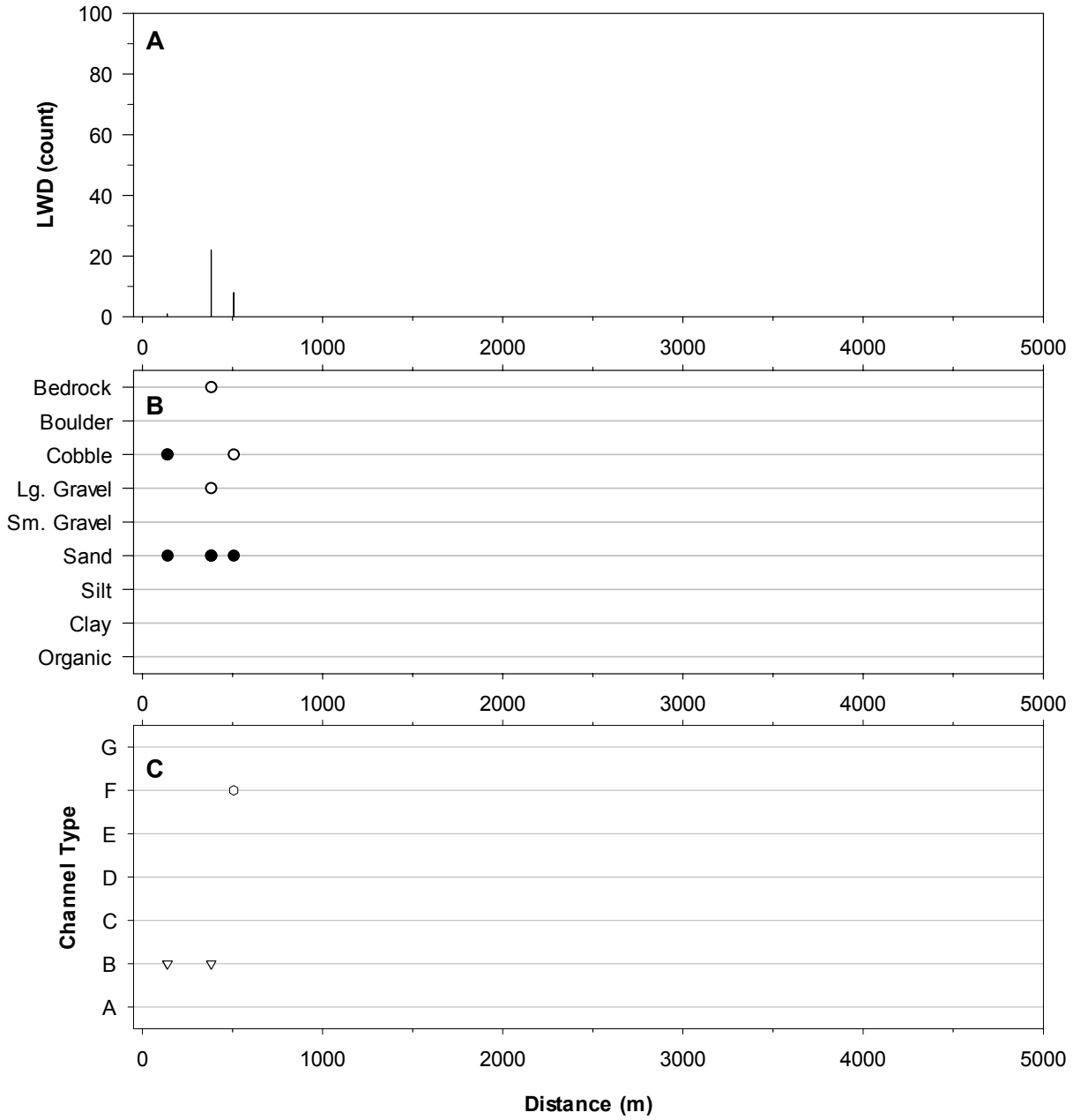
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Johnson Mountain Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Trib	28.0	1.0	In on right off johnson mt. Unmapped.
Ford	91.8	2.0	Trail ford. Trail: sycamore cove (not on quad map)
Ford	301.1	2.5	Sycamore cove trail. Foot trail.
Ford	324.0	2.0	Sycamore cove trail. Foot trail.
Ford	403.7	1.5	Sycamore cove trail. Foot trail.
Bridge	450.2	1.3	Sycamore cove trail. Foot trail. H=.95 wood bridge.

Photos taken of Johnson Mountain Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Johnson Mountain Creek, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Justus Creek**
District:	Pisgah
USGS Quadrangle:	Shining Rock
Survey Date:	06/16/05
Downstream Starting Point:	confluence with Looking Glass Creek
Total Distance Surveyed (km):	1.0

	Pools	**Riffles**
Percent of Total Stream Area:	4	96
Total Area (m^2):	110±11	2470±795
Correction Factor Applied:	1.10	1.38
Number of Paired Samples:	3	3
Total Count:	9	9
Number per km:	9	9
Mean Area (m^2):	12	274
Mean Maximum Depth (cm):	38	32
Mean Average Depth (cm):	20	11
Mean Residual Depth (cm):	3	--
Percent Surveyed as Glides:	33	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	11
Percent with >35% Fines:	89	11

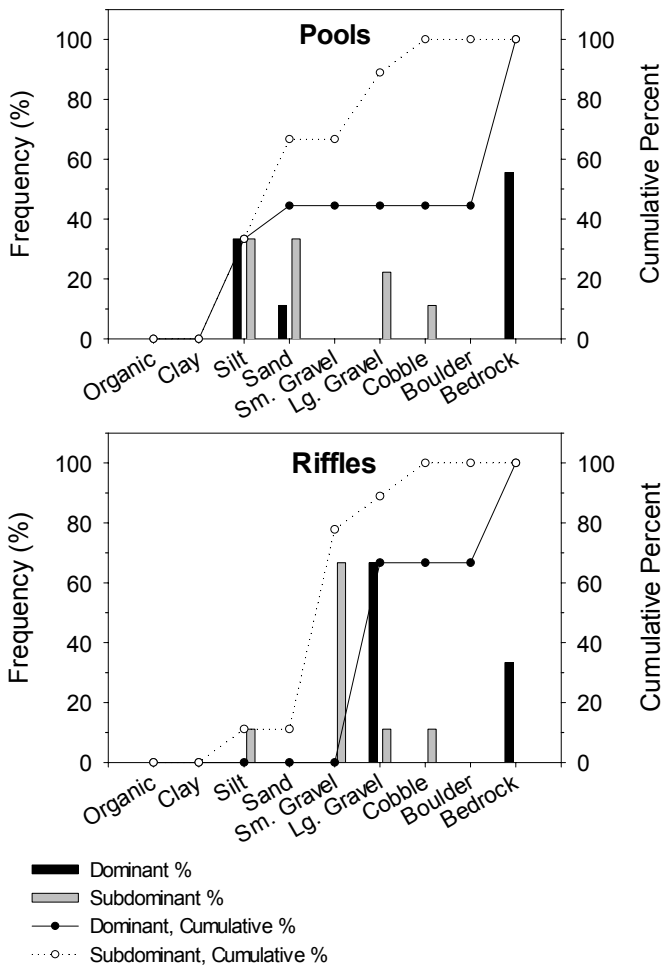
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	0
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	100
> 5 m long, > 55 cm diameter:	6
Total:	106

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	6	2
Maximum:	12	8
75th Percentile	8	1
25th Percentile	4	0
Minimum	3	0

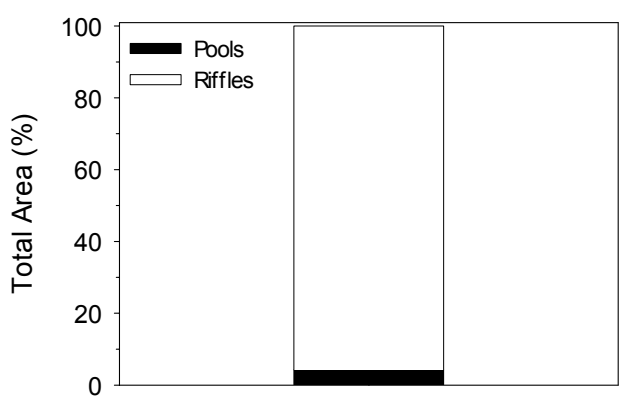
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

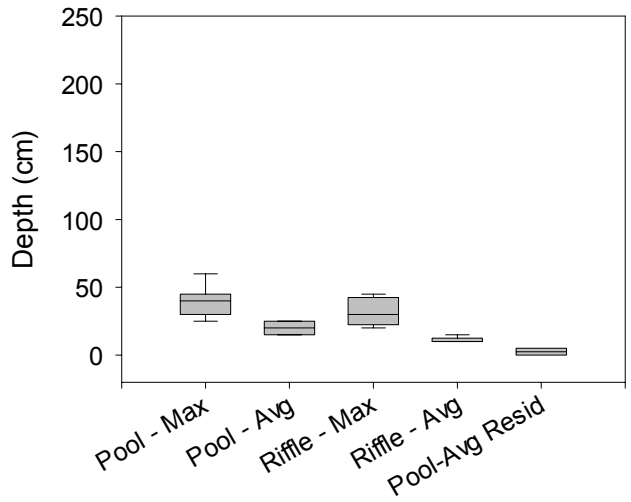
Other Stream Attributes	
Mean Bankfull Channel Width (m):	3
Mean Channel Gradient (%):	6
Median Water Temperature (C˚):	13



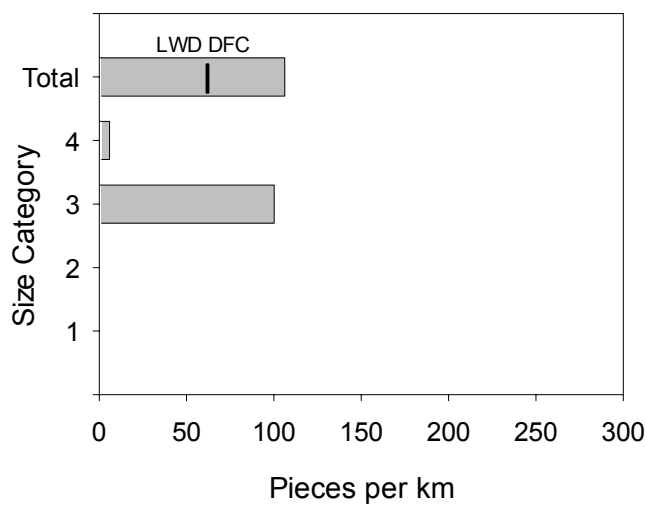
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Justus Cove, summer 2005.



Estimated area of Justus Cove in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Justus Cove, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Justus Cove, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

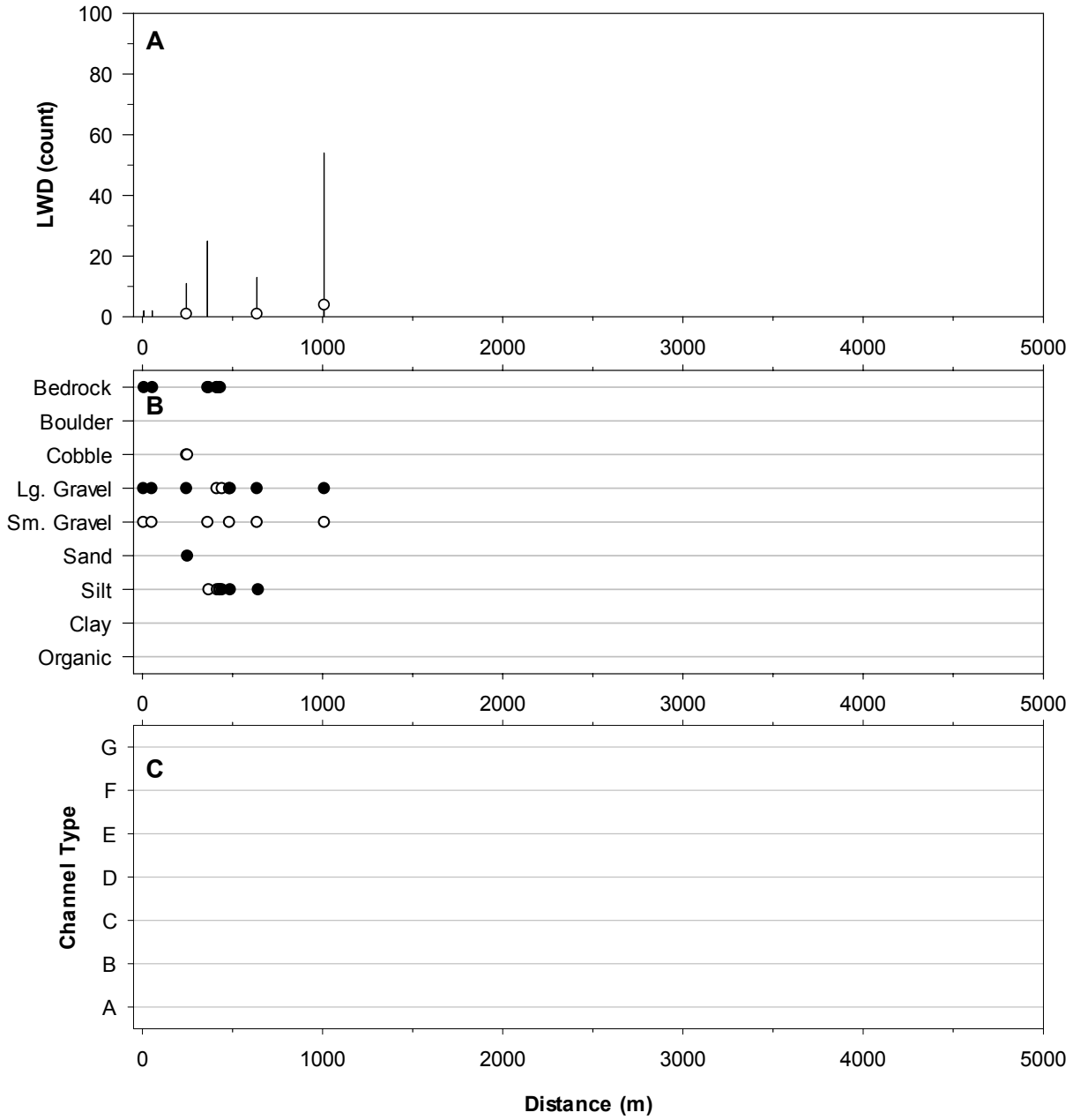
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Justus Cove during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Culvert	1.0	1.0	1.5 m tall, concrete, large gravel substrate
Trib	404.4	1.5	In on left
Trib	705.9	1.0	In on right, unnamed
Trib	740.1	1.0	In on left, unnamed
Trib	898.0	1.0	In on left, unnamed

Photos taken of Justus Cove during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
V		0.0	1.5 m tall, concrete, large gravel substrate
R	1	3.8	25 ave, max 30
R	5	410.6	Ave 40, max 55
R	9	1007.6	End survey 1215 6-16-05; stream width ~1 m for 200 m



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Justus Cove, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Laurel Fork Branch**
District:	Pisgah
USGS Quadrangle:	Shining Rock
Survey Date:	08/10/05
Downstream Starting Point:	confluence with Davidson River
Total Distance Surveyed (km):	2.4

	Pools	**Riffles**
Percent of Total Stream Area:	11	89
Total Area (m^2):	1182±205	9142±287
Correction Factor Applied:	0.99	1.01
Number of Paired Samples:	4	5
Total Count:	40	51
Number per km:	17	21
Mean Area (m^2):	30	179
Mean Maximum Depth (cm):	78	51
Mean Average Depth (cm):	48	22
Mean Residual Depth (cm):	19	--
Percent Surveyed as Glides:	0	--
Percent Surveyed as Runs:	--	14
Percent Surveyed as Cascades:	--	35
Percent with >35% Fines:	25	0

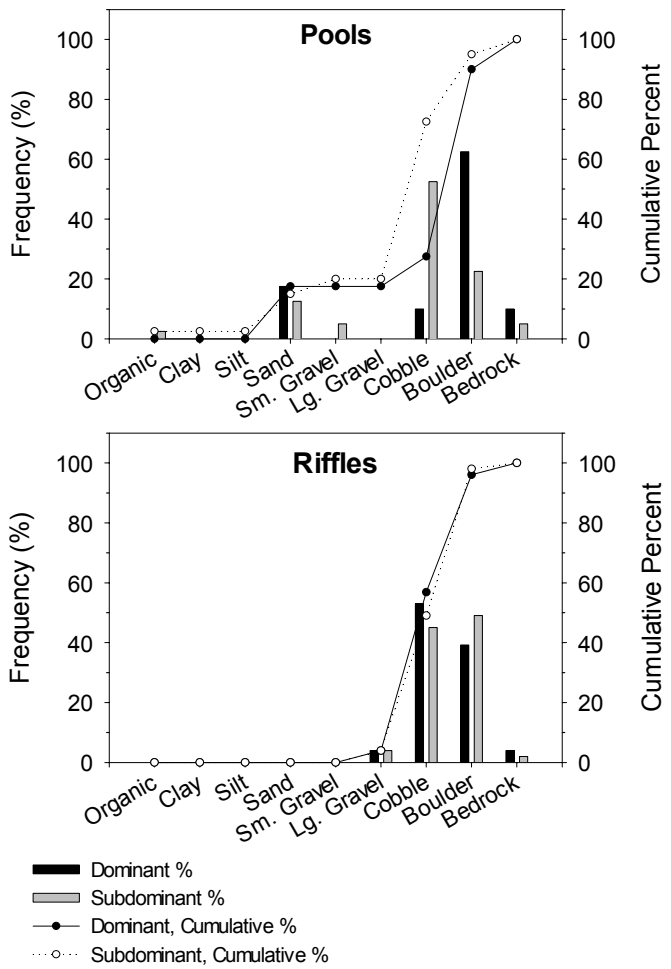
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	67
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	62
> 5 m long, > 55 cm diameter:	3
Total:	133

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	14	5
Maximum:	21	12
75th Percentile	21	8
25th Percentile	10	1
Minimum	7	1

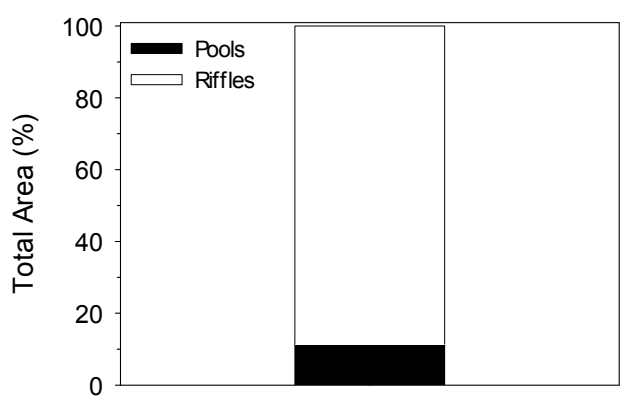
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	0
B:	38
C:	62
D:	0
E:	0
F:	0
G:	0

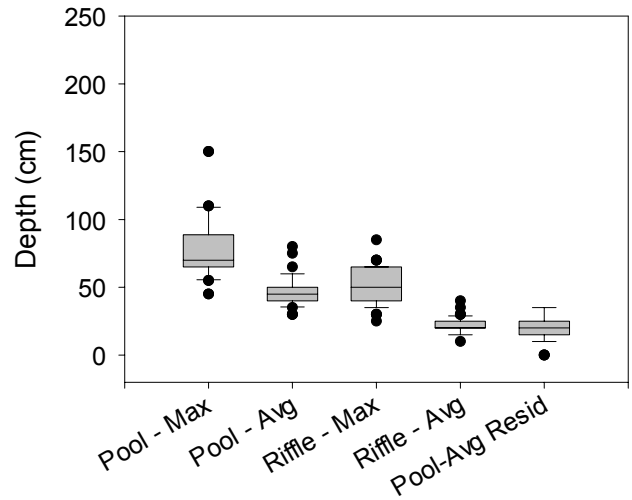
Other Stream Attributes	
Mean Bankfull Channel Width (m):	6
Mean Channel Gradient (%):	8
Median Water Temperature (C˚):	



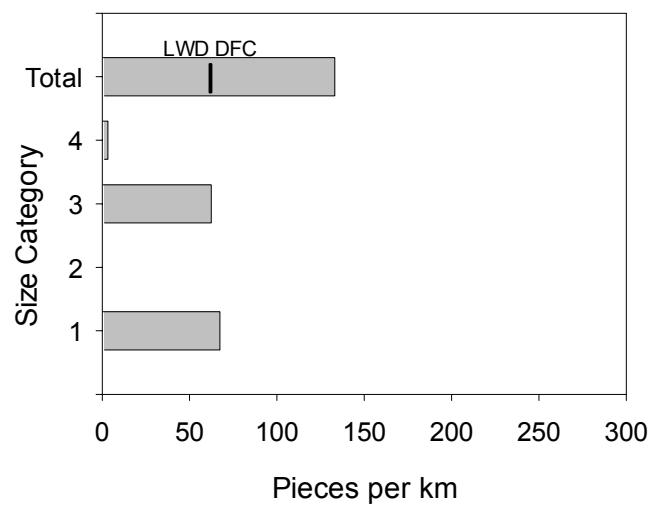
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Laurel Fork Branch, summer 2005.



Estimated area of Laurel Fork Branch in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Laurel Fork Branch, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Laurel Fork Branch, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

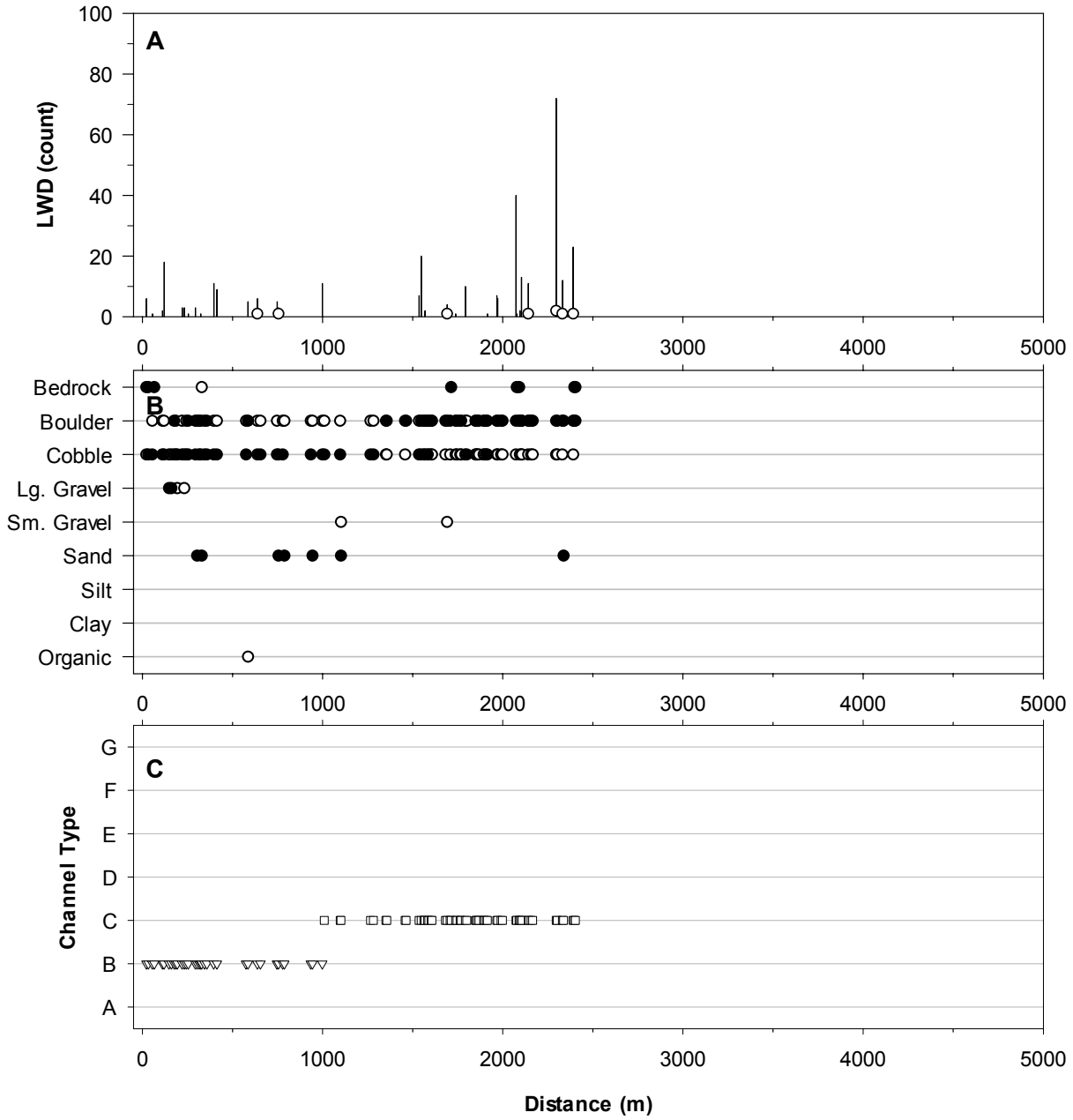
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Laurel Fork Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Trib	31.0	1.0	Unnamed trib in on right
Seep	329.0		In on left; substantial flow
Trib	346.0	1.0	Unnamed in on right
Trib	370.0	0.5	Unnamed in on left
Trib	428.0	1.0	Unnamed in on right
Trib	510.0	0.5	Unnamed in on right
Trib	744.0	0.3	Unnamed in on right; runs under fs 475
Culvert	788.0	2.0	2 m x 2 m; round metal .3 m above water, runs under FS 5095
Culvert	788.0	0.5	0.5 m x 0.5 m; round metal, size 4 substrate
Culvert	848.0	0.5	0.5 m x 0.5 m; round metal, size 4 substrate
Trib	890.0	1.5	Unnamed in on right
Trib	971.0	0.5	Unnamed in on left
Side Channel	1066.0		In on right
Side Channel	1079.0		In on left
Side Channel	1112.0		Out on right
Side Channel	1154.0		Out on left
Seep	1253.0		On left; little flow
Trib	1342.0	2.0	Unnamed i on left from pilot mt.
Trib	1400.0	1.0	Unnamed in on left
Trib	1467.0	0.5	Unnamed in on left
Side Channel	1507.0		In on right
Side Channel	1547.0		Out on right
Bridge	1714.0	5.0	
Side Channel	1772.0		In on left
Side Channel	1792.0		Out on left
Trib	1821.0	1.0	Unnamed in on left
Side Channel	1909.0		In on left
Side Channel	1914.0		In on right
Side Channel	1920.0		Out on left
Side Channel	1937.0		Out on right
Trib	1975.0	0.5	Unnamed in on right
Side Channel	2056.0		
Side Channel	2073.0		In on left
Seep	2321.0		On left; little flow

Photos taken of Laurel Fork Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
Trib		31.0	Unnamed trib in on right
R	3	55.0	Avg.=35; max=50
R	13	315.0	Avg.=60; max=85; rosgen calculates this as an "e" channel but is more similar to a "b" channel
Trib		346.0	Unnamed in on right
Trib		370.0	Unnamed in on left
Trib		428.0	Unnamed in on right
Trib		510.0	Unnamed in on right
Trib		744.0	Unnamed in on right; runs under fs 475
V		788.0	2 m x 2 m; round metal, .3 m above water, runs under FS 5095
V		788.0	0.5 m x 0.5 m; round metal, size 4 substrate
V		848.0	0.5 m x 0.5 m; round metal, size 4 substrate
Trib		890.0	Unnamed in on right
Rn	23	1009.0	Avg=30; max=40
Trib		1342.0	Unnamed i on left from pilot mt.
Trib		1400.0	Unnamed in on left
Trib		1467.0	Unnamed in on left
C	33	1682.0	Avg=60; max=110
Brg		1714.0	5 m x 5 m concrete bridge underFS 475
Trib		1821.0	Unnamed in on left
Trib		1975.0	Unnamed in on right
C	43	1991.0	Avg=50; max=65



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Laurel Fork Branch, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Little East Fork Pigeon River**
District:	Pisgah
USGS Quadrangle:	Sam Knob
Survey Date:	08/13/05
Downstream Starting Point:	FS boundary
Total Distance Surveyed (km):	4.4

	Pools	**Riffles**
Percent of Total Stream Area:	26	74
Total Area (m^2):	6389±252	18597±2176
Correction Factor Applied:	1.01	1.01
Number of Paired Samples:	10	8
Total Count:	108	85
Number per km:	25	19
Mean Area (m^2):	59	219
Mean Maximum Depth (cm):	115	73
Mean Average Depth (cm):	64	28
Mean Residual Depth (cm):	32	--
Percent Surveyed as Glides:	0	--
Percent Surveyed as Runs:	--	2
Percent Surveyed as Cascades:	--	36
Percent with >35% Fines:	0	0

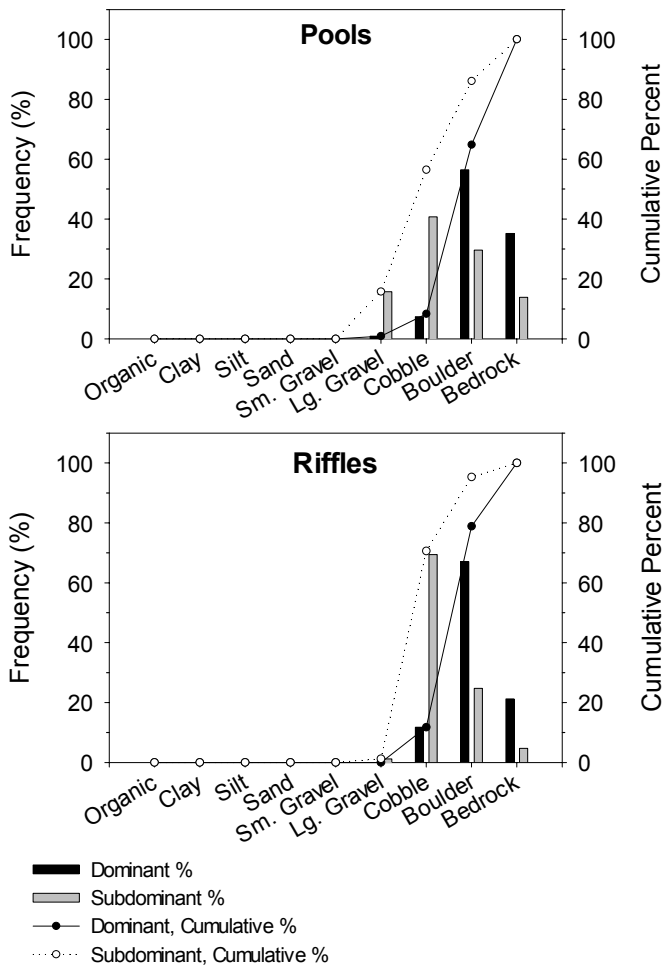
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	1
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	4
> 5 m long, > 55 cm diameter:	0
Total:	5

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	15	2
Maximum:	24	13
75th Percentile	15	2
25th Percentile	13	1
Minimum	12	1

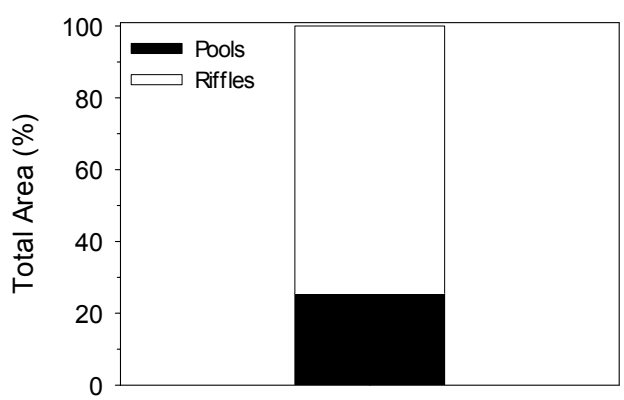
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

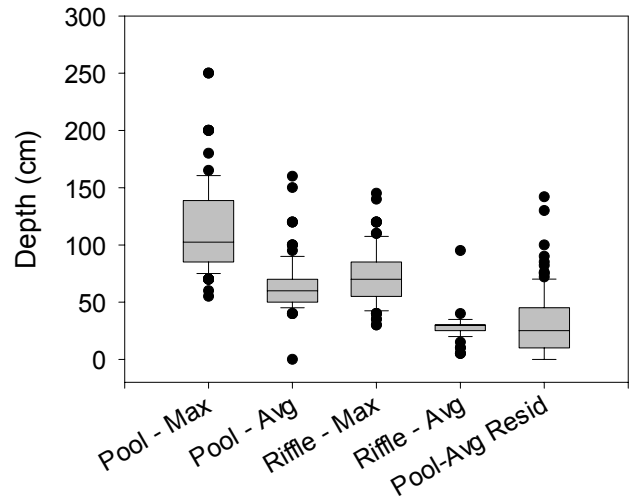
Other Stream Attributes	
Mean Bankfull Channel Width (m):	11
Mean Channel Gradient (%):	10
Median Water Temperature (C˚):	15



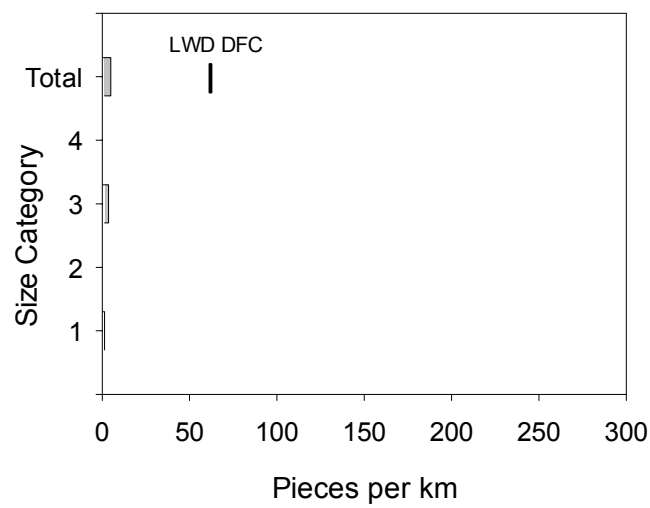
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Little East Fork Pigeon River, summer 2005.



Estimated area of Little East Fork Pigeon River in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Little East Fork Pigeon River, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Little East Fork Pigeon River, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

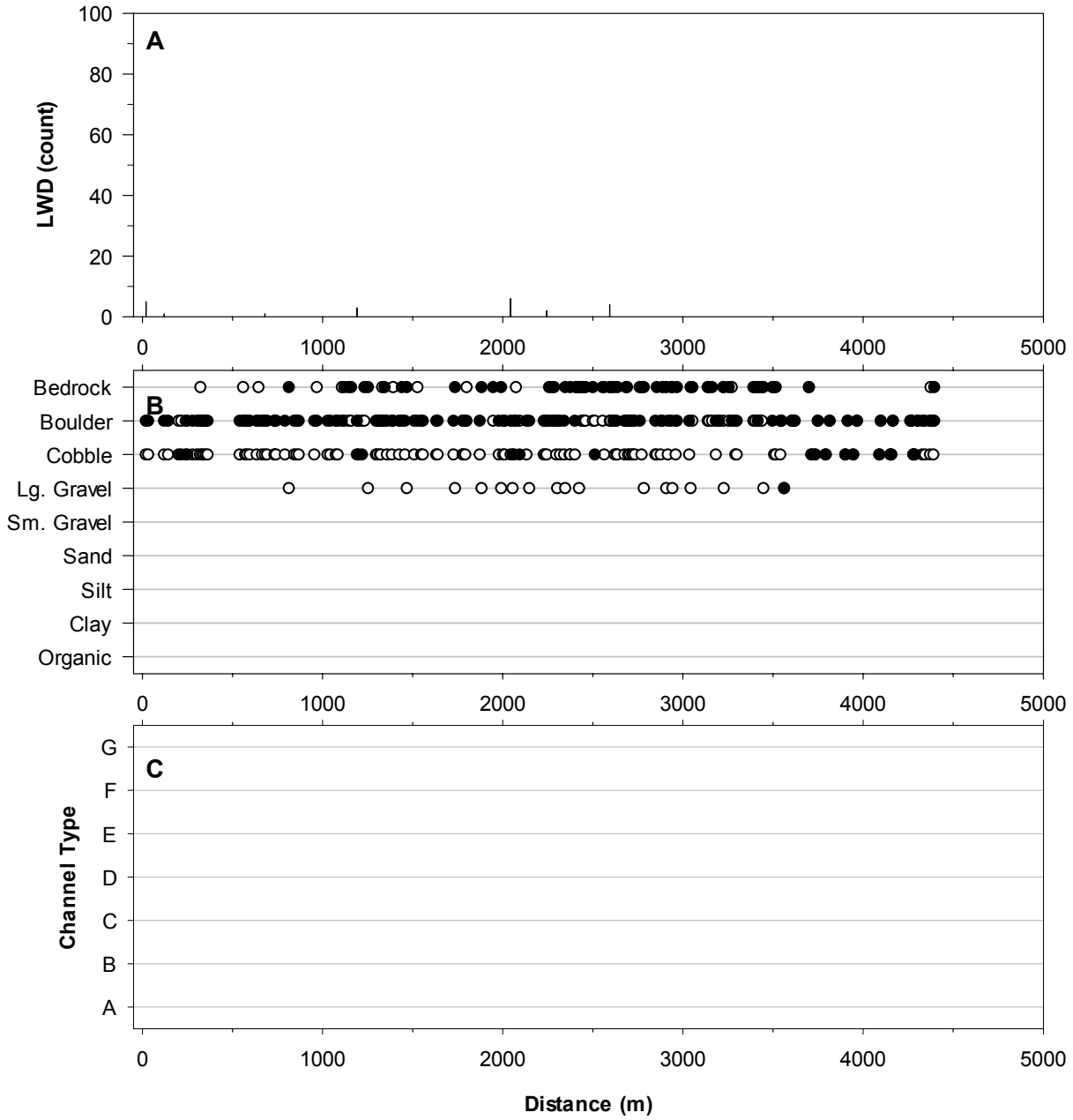
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Little East Fork Pigeon River during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Trib	61.0		In on right; cathey cove creek
Trib	228.0		Unnamed trib, in on right
Trib	649.0	1.5	Unnamed trib, in on left
Trib	893.0	1.0	Unnamed trib; in on left
Seep	933.0		In on left; minute flow
Seep	990.0		In on right; small flow
Seep	1035.0		In on left; smal flow
Seep	1140.0		In on right; little flow
Seep	1177.0		In on right; slight flow
Trib	1320.0	1.0	In on right; hemlock branch
Side Channel	1391.0		
Side Channel	1413.0		In on right
Side Channel	1474.0		In on left
Side Channel	1498.0		Out on left
Trib	1552.0	1.0	In on left; shining rock creek
Trib	1713.0	1.0	Unnamed trib; in on right
Seep	1804.0		In on left; small flow
Seep	1864.0		In on left; small flow
Seep	1882.0		In on left; small
Seep	2131.0		In on right; small flow
Side Channel	2188.0		In on right
Trib	2192.0	0.5	Unnamed trib; in on left
Side Channel	2212.0		Out on right
Side Channel	2250.0		In on left
Seep	2280.0		In on right; small flow
Side Channel	2296.0		Out on left
Trib	2298.0	2.0	Unnamed trib; in on right
Trib	2598.0		In on left
Trib	2627.0	2.0	Unnamed in on right
Side Channel	2635.0		In on right
Side Channel	2642.0		Out on left
Side Channel	2673.0		Out on right
Seep	2947.0		On left; light flow
Trib	3122.0	2.0	Unnamed in on left
Seep	3532.0		On left; light flow
Trib	3542.0	2.0	Unnamed in on right
Seep	3551.0		
Trib	3762.0	0.5	Unnamed in on right
Trib	3770.0	1.0	
Trib	3862.0	3.0	
Seep	4039.0		
Trib	4083.0	2.0	Unnamed in on right
Seep	4213.0		On left; slight flow
Trib	4238.0	3.5	Unnamed in on right
Trib	4379.0	1.0	Unnamed in on left

Photos taken of Little East Fork Pigeon River during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
Trib		61.0	In on right; cathey cove creek
Trib		228.0	Unnamed trib, in on right
R	4	240.0	
R	14	843.0	
Trib		1320.0	In on right; hemlock branch
R	24	1508.0	
C	34	2063.0	
C	45	2500.0	Avg=55; max=95
R	54	2776.0	Avg=65; max=80
R	64	3290.0	Avg=65; max=90
Trib		3542.0	Unnamed in on right
R	74	3901.0	Avg=45; max=55
Trib		4379.0	Unnamed in on left
P	112	4394.0	conditions too hazardous to continue; picture of cascade taken



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Little East Fork Pigeon River, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Log Hollow Branch**
District:	Pisgah
USGS Quadrangle:	Shining Rock
Survey Date:	08/09/05
Downstream Starting Point:	confluence with Big Bear Pen
Total Distance Surveyed (km):	0.8

	Pools	**Riffles**
Percent of Total Stream Area:	13	87
Total Area (m^2):	310±69	2052±1377
Correction Factor Applied:	1.36	1.12
Number of Paired Samples:	3	3
Total Count:	12	12
Number per km:	16	16
Mean Area (m^2):	26	171
Mean Maximum Depth (cm):	70	44
Mean Average Depth (cm):	47	19
Mean Residual Depth (cm):	31	--
Percent Surveyed as Glides:	8	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	8
Percent with >35% Fines:	33	0

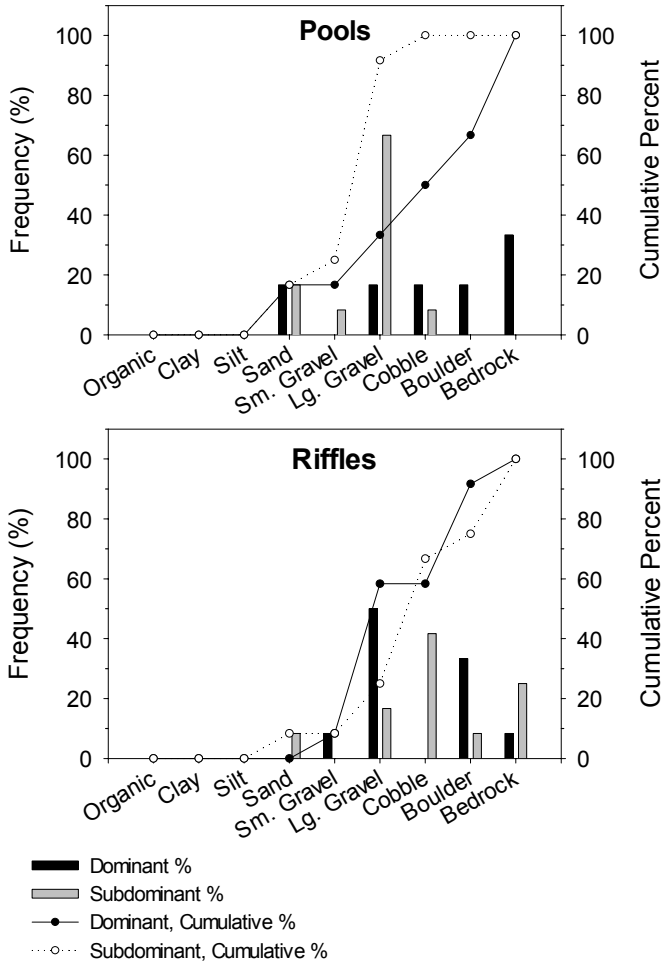
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	31
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	42
> 5 m long, > 55 cm diameter:	1
Total:	74

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	9	2
Maximum:	10	4
75th Percentile	9	2
25th Percentile	8	1
Minimum	7	0

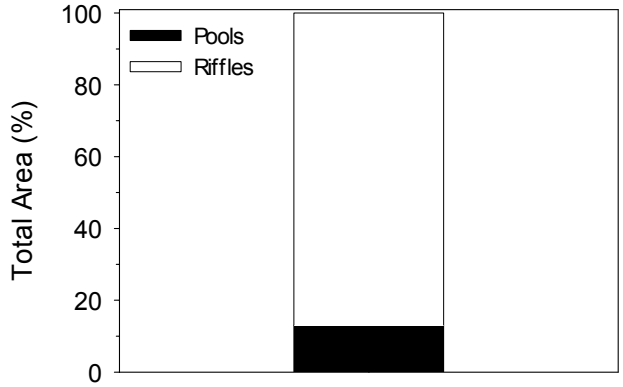
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	21
B:	79
C:	0
D:	0
E:	0
F:	0
G:	0

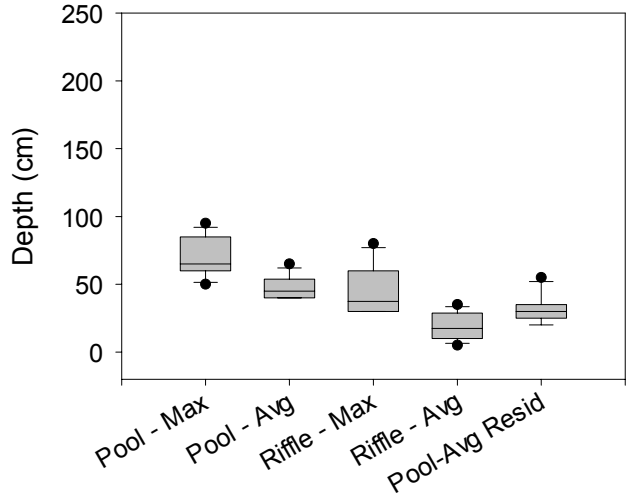
Other Stream Attributes	
Mean Bankfull Channel Width (m):	5
Mean Channel Gradient (%):	18
Median Water Temperature (C˚):	15



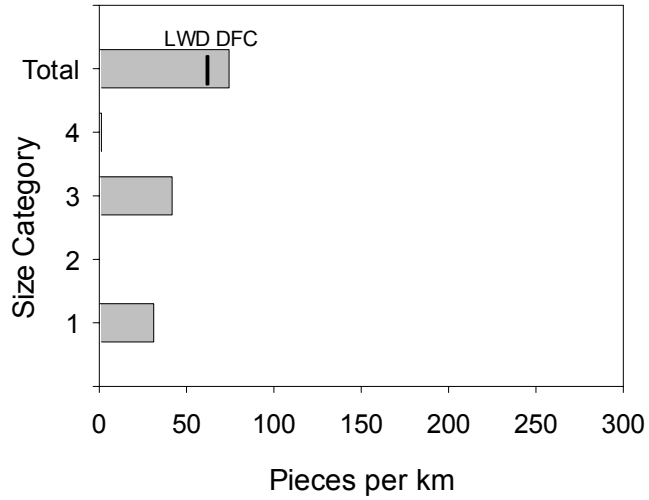
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Log Hollow Branch, summer 2005.



Estimated area of Log Hollow Branch in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Log Hollow Branch, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Log Hollow Branch, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

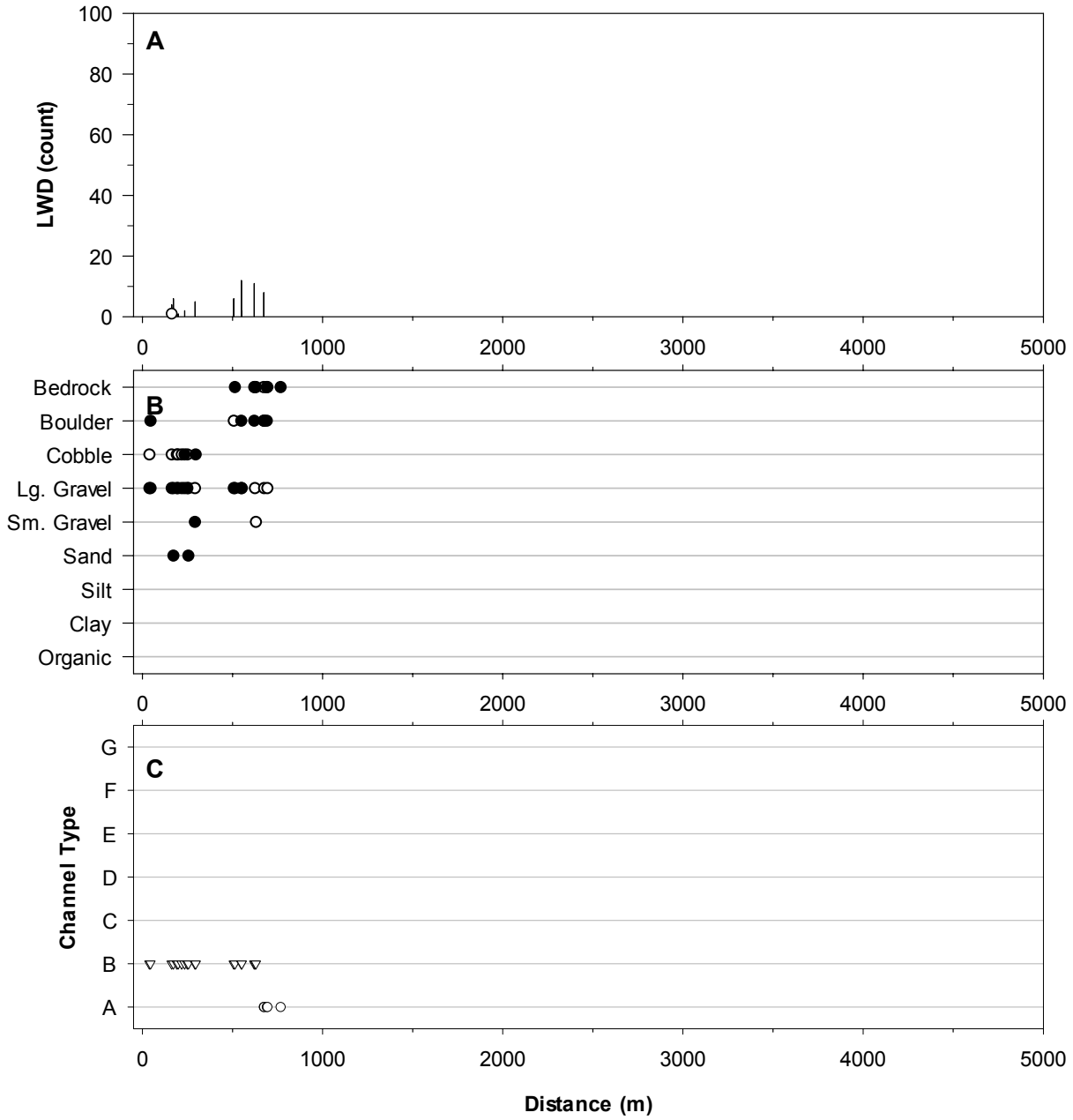
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Log Hollow Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Seep	76.8		Left high flow
Seep	247.0		Left moderate flow
Side Channel	268.0	1.0	Right side back in at 291.7
Seep	308.1		Left side high flow
Seep	552.7		Left side low flow
Side Channel	558.0	0.5	Left side comes back in at 562
Trib	629.0	0.5	Left side off of south spring top
Fall	668.0		Height 1.25
Fall	702.0		Height 2 meters

Photos taken of Log Hollow Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Log Hollow Branch, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Long Branch**
District:	Pisgah
USGS Quadrangle:	Shining Rock
Survey Date:	08/10/05
Downstream Starting Point:	confluence with Davidson River
Total Distance Surveyed (km):	2.8

	Pools	**Riffles**
Percent of Total Stream Area:	22	78
Total Area (m^2):	1758±629	6313±1766
Correction Factor Applied:	1.12	1.07
Number of Paired Samples:	4	4
Total Count:	49	41
Number per km:	17	15
Mean Area (m^2):	36	154
Mean Maximum Depth (cm):	59	30
Mean Average Depth (cm):	29	15
Mean Residual Depth (cm):	8	--
Percent Surveyed as Glides:	45	--
Percent Surveyed as Runs:	--	34
Percent Surveyed as Cascades:	--	12
Percent with >35% Fines:	63	5

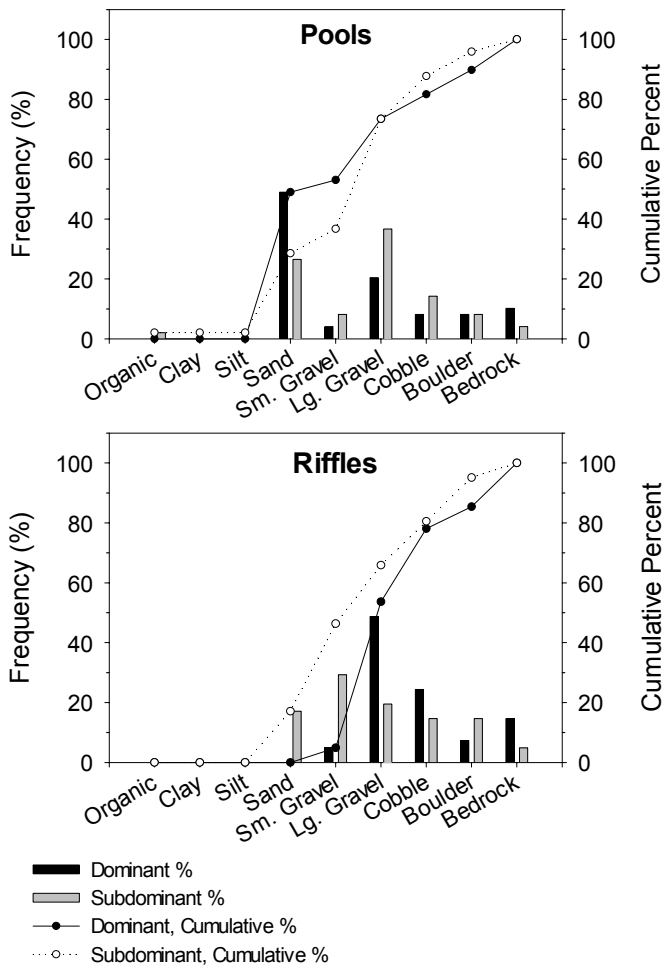
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	72
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	48
> 5 m long, > 55 cm diameter:	0
Total:	120

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	16	8
Maximum:	27	23
75th Percentile	23	11
25th Percentile	10	3
Minimum	7	1

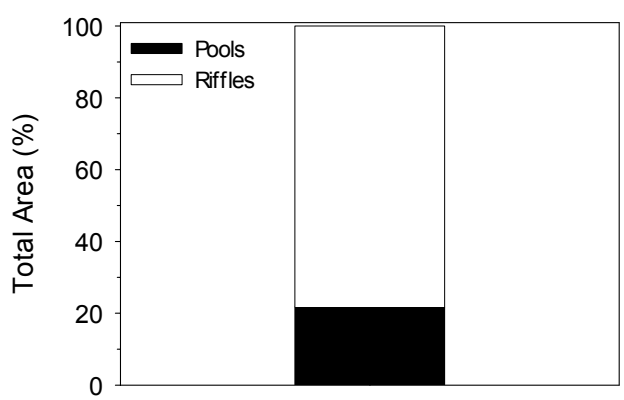
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	0
B:	100
C:	0
D:	0
E:	0
F:	0
G:	0

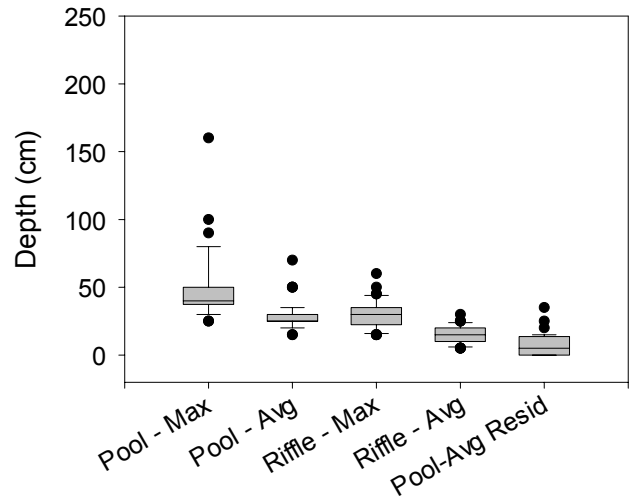
Other Stream Attributes	
Mean Bankfull Channel Width (m):	4
Mean Channel Gradient (%):	7
Median Water Temperature (C°):	15



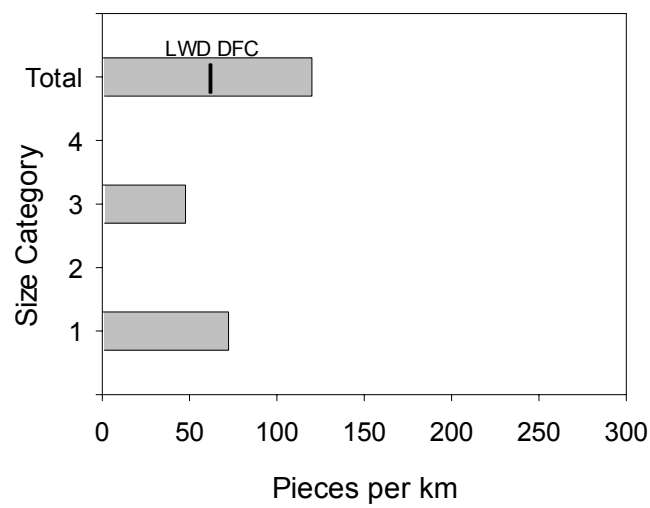
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Long Branch, summer 2005.



Estimated area of Long Branch in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Long Branch, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Long Branch, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

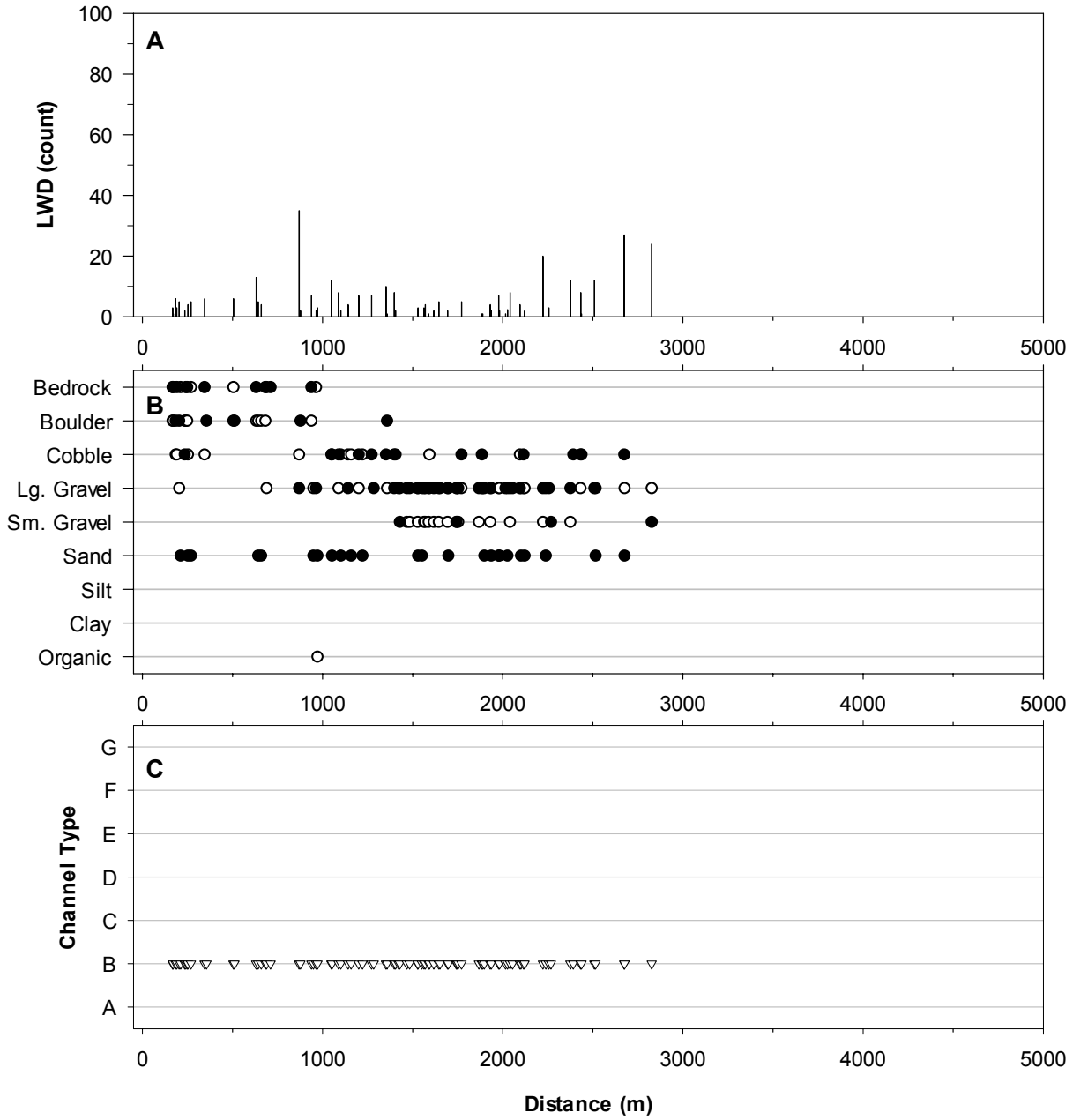
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Long Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Seep	171.0		In on left
Trib	337.0	0.7	
Trib	358.7	1.3	
Trib	426.0	1.5	
Culvert	498.0		Single pipe, metal, underneath fs road 5095
Fall	578.0	10.0	15 meters tall
Side Channel	621.0	1.5	In on right
Side Channel	631.0		Out on right, leaves underground
Trib	971.0	1.0	
Trib	1118.0	1.0	
Trib	1194.0	0.8	
Trib	1288.0	0.5	
Trib	1368.0	0.5	
Trib	1426.0	1.3	
Bridge	1565.0		1 meter above water long branch trail number 116, camera batteries dead
Trib	1580.0		
Trib	1630.3	0.2	
Trib	1667.0	1.0	
Seep	1700.0		In on right
Side Channel	1798.0	1.0	In on left
Side Channel	1853.0		Out on left, leaves underground
Trib	1870.0	1.0	
Side Channel	2061.5	1.5	In on left
Trib	2068.7	0.5	
Side Channel	2076.0	1.5	Out on left
Seep	2076.0		In on left
Seep	2109.0		In on left
Trib	2362.0	0.2	
Trib	2401.0	0.2	
Trib	2463.0	1.0	
Trib	2537.0	0.3	
Trib	2579.0	0.2	

Photos taken of Long Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
V		498.0	Single pipe, metal, underneath fs road 5095
FALL		578.0	15 meters tall
C	9	682.4	



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Long Branch, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Looking Glass Creek**
District:	Pisgah
USGS Quadrangle:	Shining Rock
Survey Date:	06/15/05
Downstream Starting Point:	confluence with Davidson River
Total Distance Surveyed (km):	8.4

	Pools	**Riffles**
Percent of Total Stream Area:	17	83
Total Area (m^2):	14707±1196	71651±19402
Correction Factor Applied:	1.12	1.34
Number of Paired Samples:	4	7
Total Count:	74	84
Number per km:	9	10
Mean Area (m^2):	199	853
Mean Maximum Depth (cm):	104	66
Mean Average Depth (cm):	62	35
Mean Residual Depth (cm):	21	--
Percent Surveyed as Glides:	1	--
Percent Surveyed as Runs:	--	17
Percent Surveyed as Cascades:	--	13
Percent with >35% Fines:	20	0

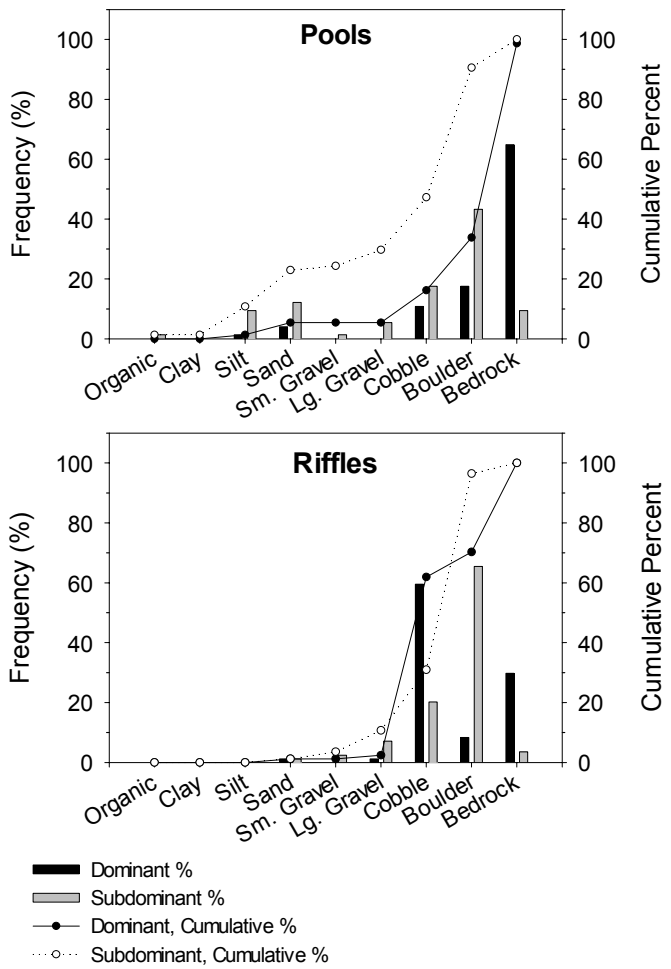
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	6
< 5 m long, > 55 cm diameter:	1
>5 m long, 10 cm – 55 cm diameter:	9
> 5 m long, > 55 cm diameter:	1
Total:	18

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	16	3
Maximum:	23	11
75th Percentile	20	3
25th Percentile	12	1
Minimum	8	0

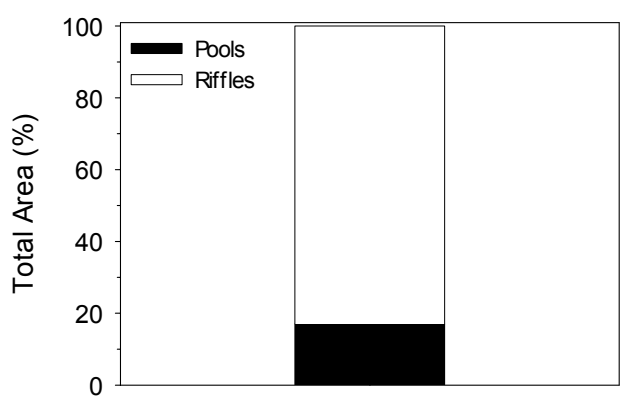
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	0
B:	0
C:	0
D:	0
E:	0
F:	100
G:	0

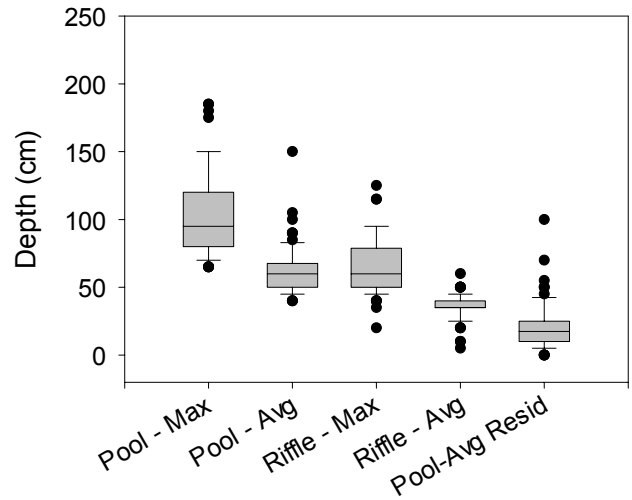
Other Stream Attributes	
Mean Bankfull Channel Width (m):	10
Mean Channel Gradient (%):	4
Median Water Temperature (C˚):	14



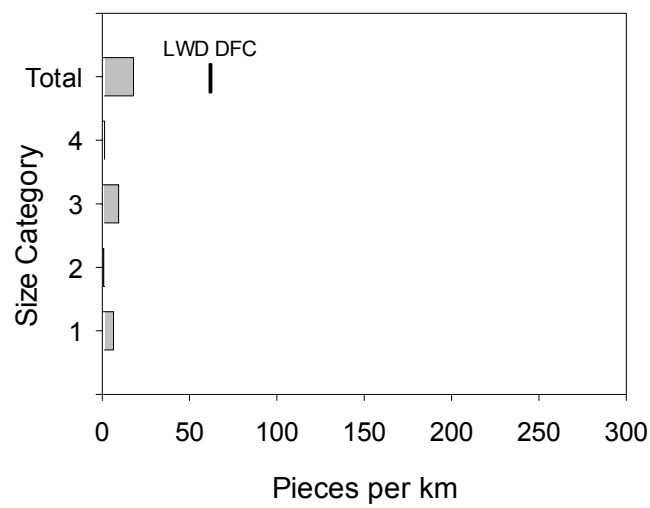
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Looking Glass Creek, summer 2005.



Estimated area of Looking Glass Creek in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Looking Glass Creek, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Looking Glass Creek, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

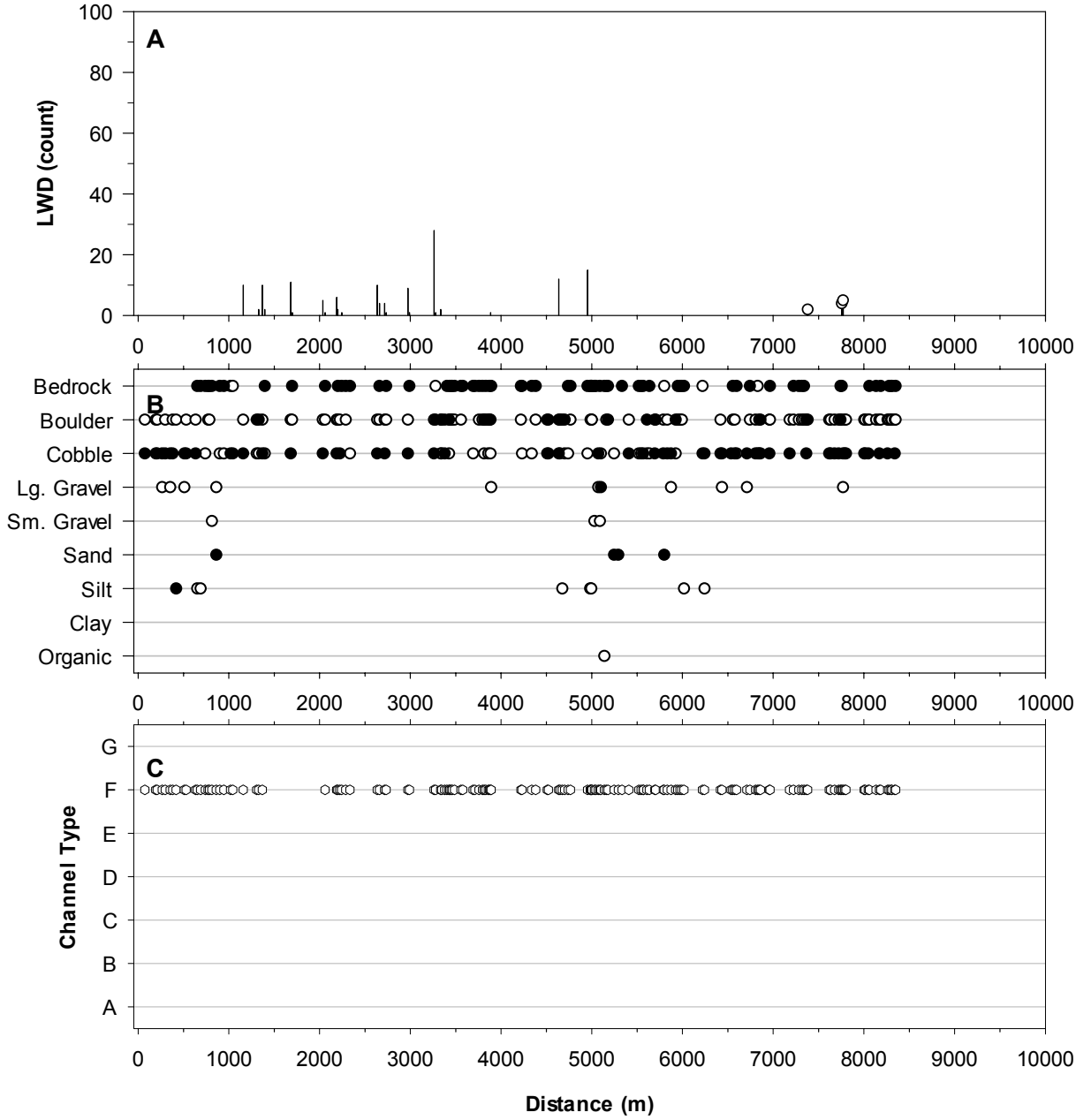
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Looking Glass Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Trib	73.5	1.0	
Trib	418.6	0.5	Unnamed in on left
Other	508.1	0.5	Drainage pipe in on left, pvc, green
Fall	650.8	3.0	Resumed survey ~20 m above falls
Other	811.6	11.0	Gauging station
Seep	1852.5	0.1	On left
Trib	1954.2	0.5	On right
Trib	2137.0	1.0	On right
Trib	2200.8	1.5	
Bridge	2423.0		Foot bridge, moore cove trail
Bridge	2432.5		State road 276
Seep	3160.6		Left
Trib	3211.5	1.5	Left
Seep	3384.1		In on left; moderate flow
Seep	3436.5		In on left; moderate flow
Seep	3527.9		In on left, moderate flow
Fall	3577.0		.5 HIGH x .25 M WIDE
Culvert	3980.0		
Trib	4060.0	0.5	Unknown in on left
Culvert	4117.0		1 HIGH x .5 M WIDE
Other	4166.0		Sliding rock recreation area
Culvert	4299.7		25 CM HIGH x .5 DIAMETER
Trib	4398.0		Gumstand creek; in on left; 1.5 m
Bridge	4432.5	15.0	Height: 4.5 m; wood and concrete
Culvert	4612.3		Angled down; .5 m diameter
Trib	4718.0	1.5	Unamed in on right
Seep	5292.0		In on lef and right
Trib	5447.0	2.0	Bearpen branch; in on left
Bridge	5616.9	7.0	Concrete; 4 m high
Seep	5673.0		On right
Trib	5699.3	1.0	Unnamed; in on right
Seep	5769.0		On right
Trib	5923.5	1.5	Justus cove; in on left
Trib	7153.0	1.5	Unnamed in on left
Trib	7209.0	1.0	Unnamed in on left
Trib	7413.0	1.5	
Seep	7527.0		
Culvert	7625.5	0.5	On left
Bridge	7650.6	8.0	4 m high; stone and concrete
Culvert	7778.5		STONE CUBE; 1 x 1 m
Side Channel	7928.7		In on left
Trib	7955.8		Unnamed in on right
Side Channel	7972.6		Out on left
Culvert	7972.6		
Seep	8076.0		In on left; minute flow
Seep	8194.5		In on right; miniscule flow

Photos taken of Looking Glass Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
RN	6	528.0	
FALL		650.8	Resumed survey ~20 m above falls
R	16	2034.9	Fly anglers present
C	29	3557.3	



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Looking Glass Creek, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Moore Cove**
District:	Pisgah
USGS Quadrangle:	Shining Rock
Survey Date:	07/27/05
Downstream Starting Point:	confluence with Looking Glass Creek
Total Distance Surveyed (km):	0.7

	Pools	**Riffles**
Percent of Total Stream Area:	8	92
Total Area (m^2):	176±10	2136±650
Correction Factor Applied:	1.17	2.13
Number of Paired Samples:	2	3
Total Count:	10	10
Number per km:	14	14
Mean Area (m^2):	18	214
Mean Maximum Depth (cm):	41	43
Mean Average Depth (cm):	39	17
Mean Residual Depth (cm):	22	--
Percent Surveyed as Glides:	0	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	50
Percent with >35% Fines:	20	0

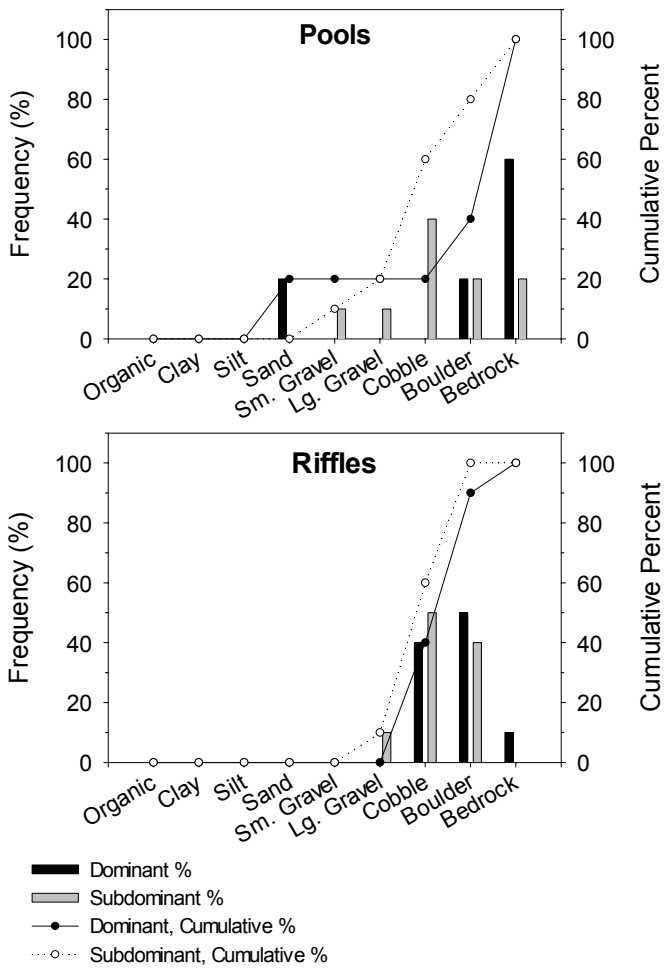
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	75
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	76
> 5 m long, > 55 cm diameter:	0
Total:	151

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	5	0
Maximum:	5	1
75th Percentile	5	1
25th Percentile	5	0
Minimum	5	0

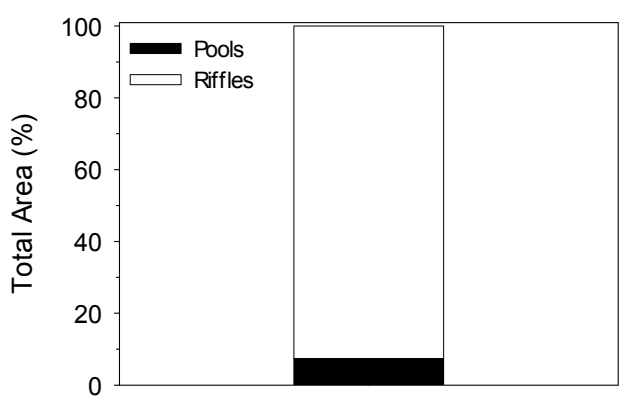
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	0
B:	0
C:	0
D:	0
E:	0
F:	100
G:	0

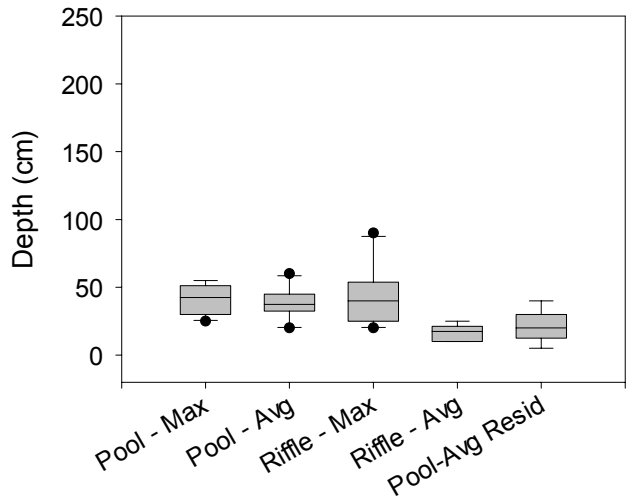
Other Stream Attributes	
Mean Bankfull Channel Width (m):	4
Mean Channel Gradient (%):	12
Median Water Temperature (C˚):	16



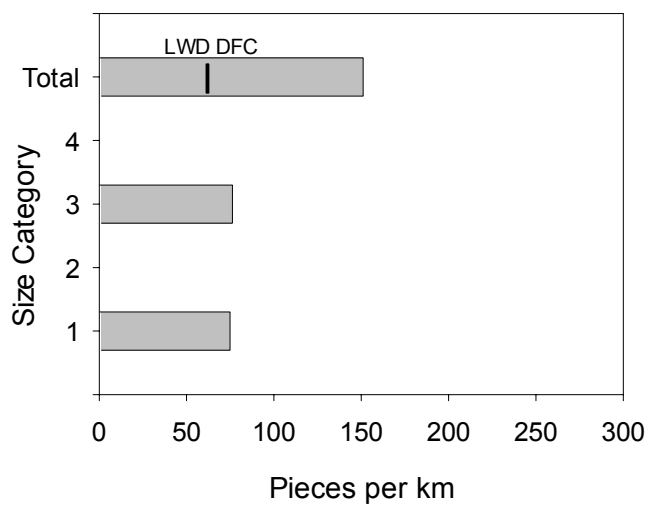
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Moore Cove, summer 2005.



Estimated area of Moore Cove in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Moore Cove, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Moore Cove, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

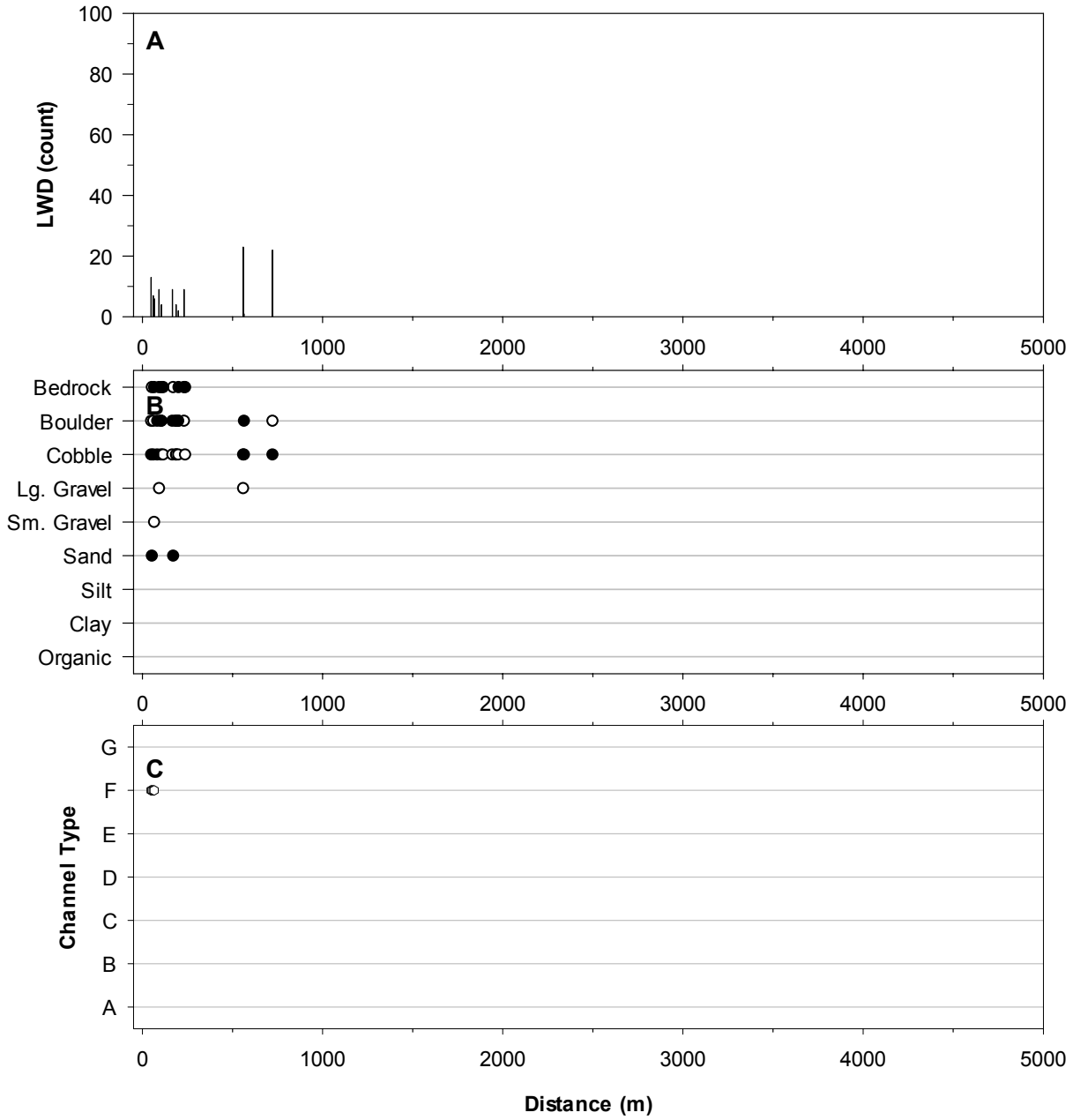
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Moore Cove during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Side Channel	26.1		Left in: 40.9
Trib	254.3	1.5	Right. Off of big drainage off of saddle fap
Bridge	299.7	0.9	H=1.1 treated wood. Trail number 318 crosses.
Side Channel	364.0	1.0	Right in: 426
Seep	402.1		Left low flow
Seep	438.0		Left medium flow
Ford	488.0	1.0	Foot path ford. Trail stem off trail number 318
Bridge	503.0	0.6	H=.85 treated wood bridge.
Seep	594.0		Right low flow
Bridge	617.7	0.9	H=1.25 treated wood. Trail number 318
Trib	623.3	1.0	Unmapped tributary on left off of ridge to the left
Ford	680.0	1.0	Foot path. Trail number 318
Fall	721.1	3.0	Too tall to measure. Estimated at 20 meters tall. (moore cove falls)

Photos taken of Moore Cove during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Moore Cove, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Pounding Mill Creek**
District:	Pisgah
USGS Quadrangle:	Shining Rock
Survey Date:	08/05/05
Downstream Starting Point:	confluence with Looking Glass Creek
Total Distance Surveyed (km):	1.2

	Pools	**Riffles**
Percent of Total Stream Area:	24	76
Total Area (m^2):	405±129	1315±864
Correction Factor Applied:	1.11	0.92
Number of Paired Samples:	2	3
Total Count:	21	20
Number per km:	17	16
Mean Area (m^2):	19	66
Mean Maximum Depth (cm):	68	32
Mean Average Depth (cm):	47	16
Mean Residual Depth (cm):	37	--
Percent Surveyed as Glides:	0	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	40
Percent with >35% Fines:	0	0

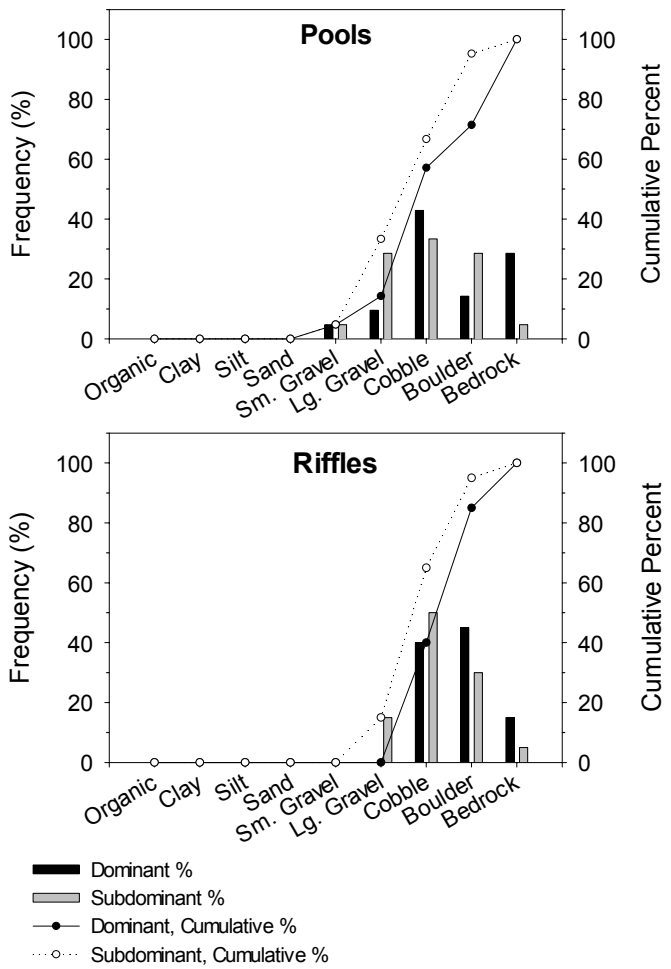
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	51
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	61
> 5 m long, > 55 cm diameter:	3
Total:	115

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	4	1
Maximum:	6	1
75th Percentile	5	1
25th Percentile	3	0
Minimum	3	0

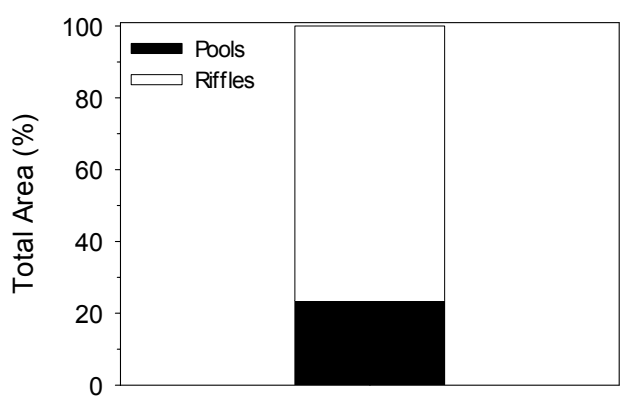
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	73
B:	27
C:	0
D:	0
E:	0
F:	0
G:	0

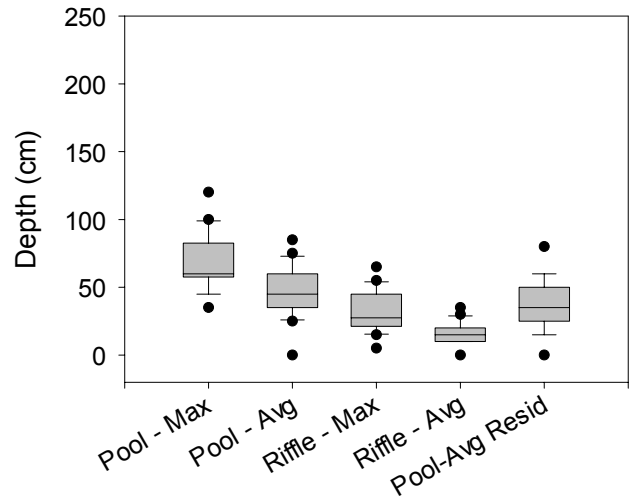
Other Stream Attributes	
Mean Bankfull Channel Width (m):	3
Mean Channel Gradient (%):	22
Median Water Temperature (C°):	16



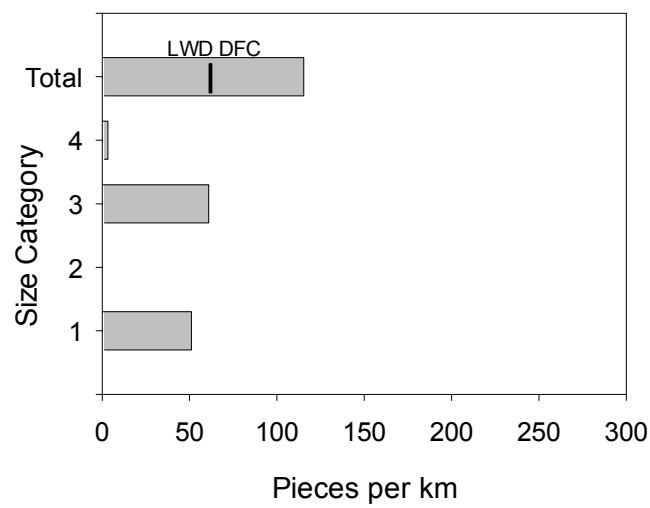
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Poundingmill Branch, summer 2005.



Estimated area of Poundingmill Branch in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Poundingmill Branch, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Poundingmill Branch, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

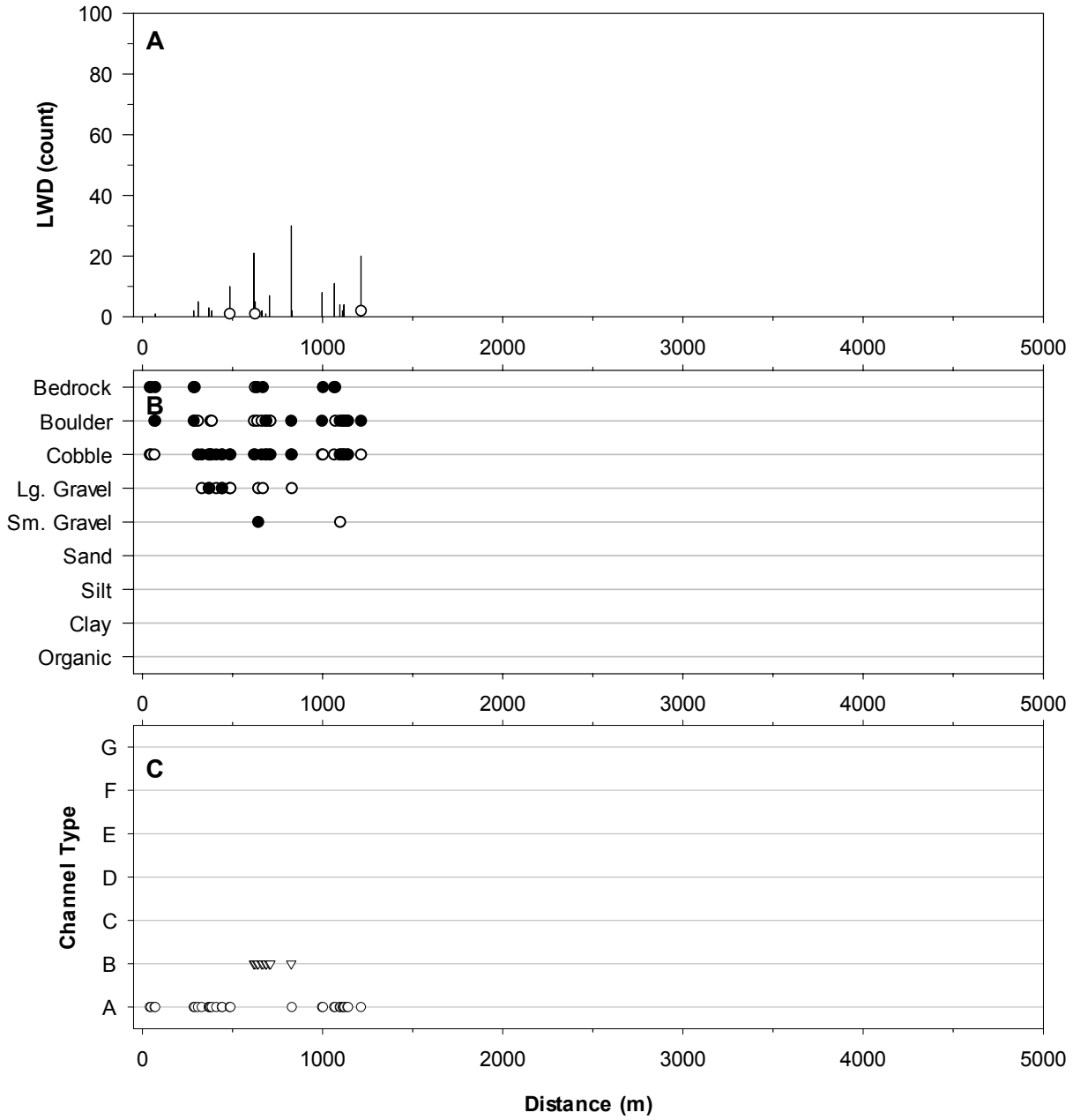
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Poundingmill Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Seep	1.0		High flow left side
Seep	147.4		Low flow right side
Trib	290.6	1.5	Unmapped trib on left off bennett gap
Trib	296.0	1.0	Unmapped trib on left off bennett gap
Culvert	384.6	1.5	No perch, height 1.5, concrete, hwy 276, and 25 meters long
Side Channel	411.6	1.0	Leftside and comes back in at 425.5
Side Channel	836.1		Right side and comes back in at 844
Seep	1125.0	0.5	Right side high flow
Fall	1213.0		Height 20 meters

Photos taken of Poundingmill Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Poundingmill Branch, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Pressley Cove**
District:	Pisgah
USGS Quadrangle:	Shining Rock
Survey Date:	07/14/05
Downstream Starting Point:	confluence with Avery Cove
Total Distance Surveyed (km):	1.1

	Pools	**Riffles**
Percent of Total Stream Area:	6	94
Total Area (m^2):	104±27	1544±101
Correction Factor Applied:	0.99	1.14
Number of Paired Samples:	3	2
Total Count:	6	7
Number per km:	6	7
Mean Area (m^2):	17	221
Mean Maximum Depth (cm):	38	29
Mean Average Depth (cm):	25	11
Mean Residual Depth (cm):	11	--
Percent Surveyed as Glides:	0	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	100
Percent with >35% Fines:	33	0

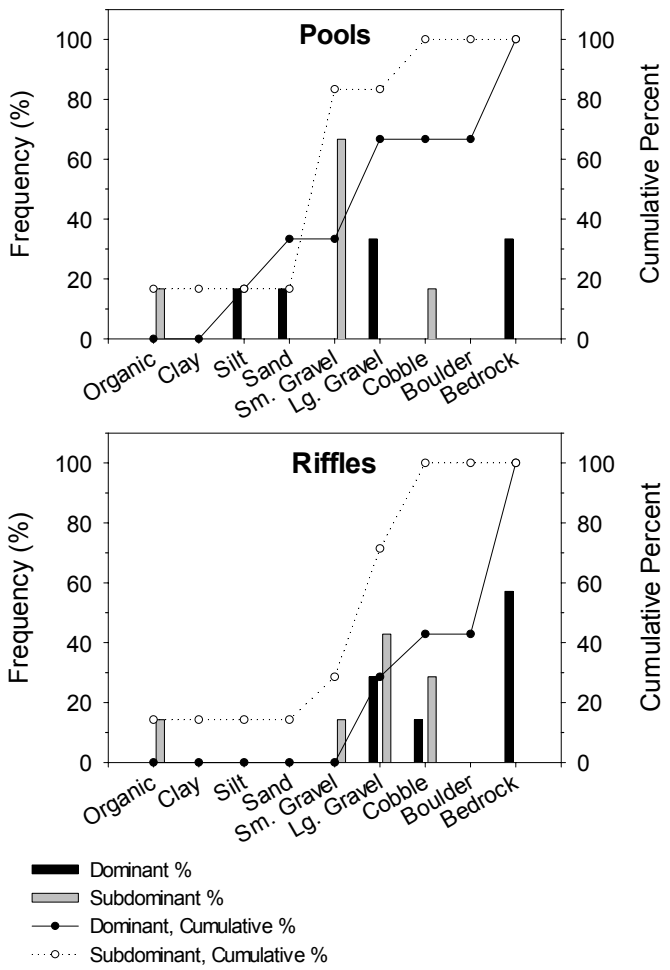
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	101
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	8
> 5 m long, > 55 cm diameter:	76
Total:	185

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:		3
Maximum:		5
75th Percentile		4
25th Percentile		2
Minimum		1

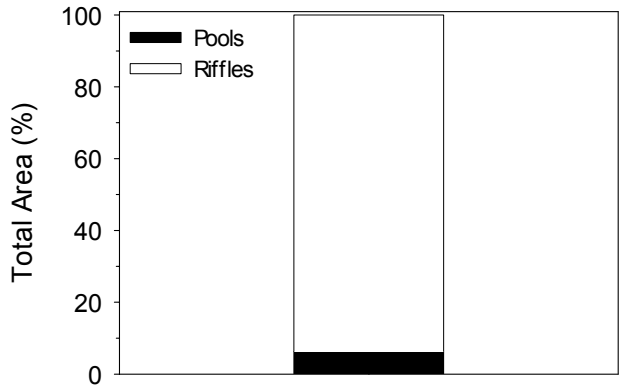
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	
B:	
C:	
D:	
E:	
F:	
G:	

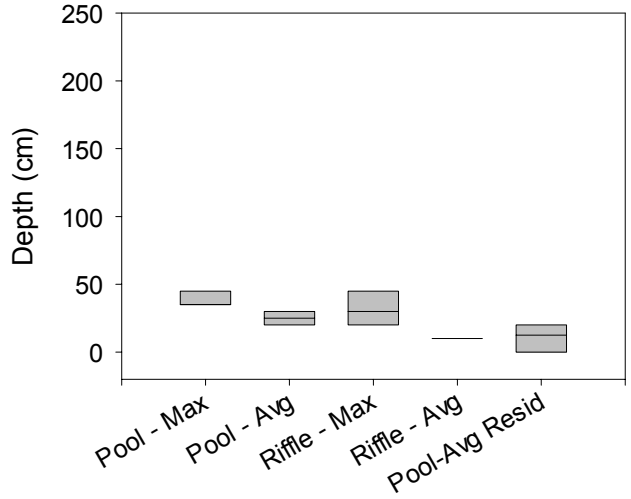
Other Stream Attributes	
Mean Bankfull Channel Width (m):	12
Mean Channel Gradient (%):	23
Median Water Temperature (C˚):	15



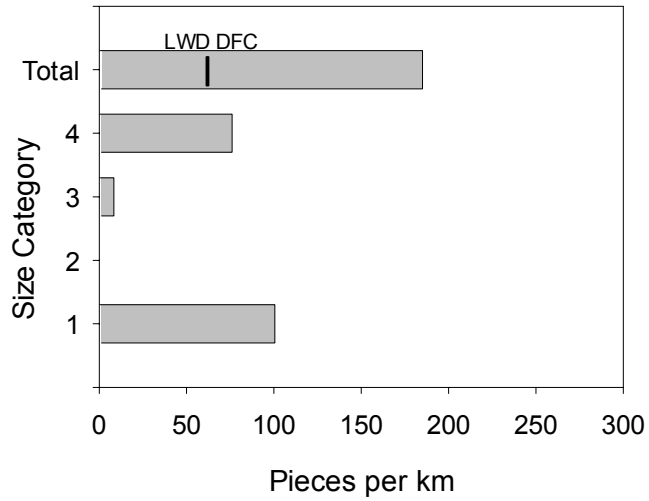
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Pressley Cove, summer 2005.



Estimated area of Pressley Cove in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Pressley Cove, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Pressley Cove, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

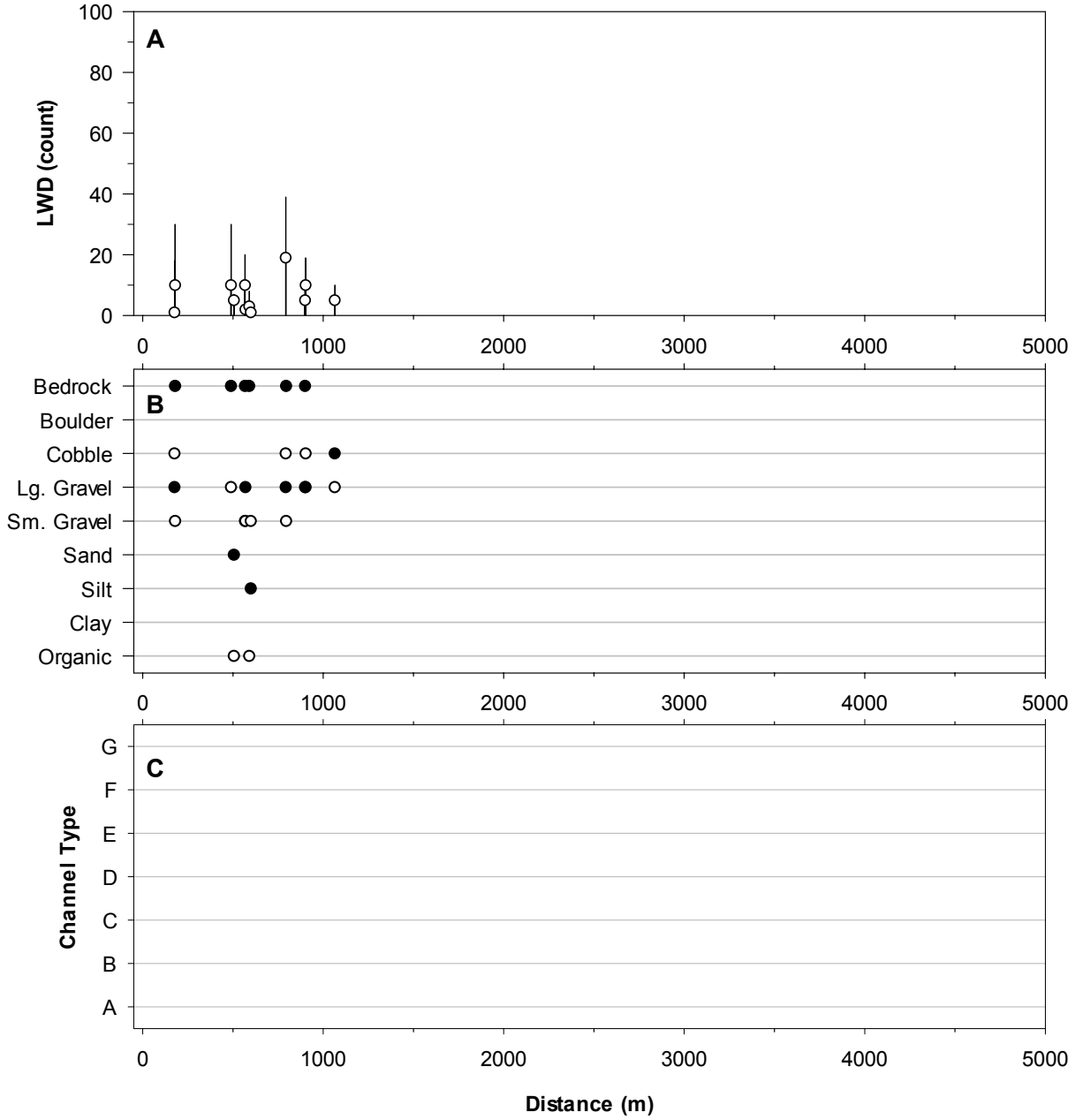
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Pressley Cove during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Side Channel	152.5		Backin at 170.3 on right
Side Channel	174.5		Onb right back in at 179
Trib	693.7	0.5	Unnamed and unmapped on left off black mountain
Side Channel	700.0		Right in
Seep	861.0		Low flow on right
Seep	914.0		Medium flow on right
Side Channel	944.2		
Side Channel	965.0		Right in
Trib	985.0		Left

Photos taken of Pressley Cove during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Pressley Cove, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Right Fork Davidson River**
District:	Pisgah
USGS Quadrangle:	Shining Rock
Survey Date:	08/03/05
Downstream Starting Point:	confluence with mainstem Davidson River
Total Distance Surveyed (km):	2.2

	Pools	**Riffles**
Percent of Total Stream Area:	22	78
Total Area (m^2):	1304±172	4540±1672
Correction Factor Applied:	1.40	1.19
Number of Paired Samples:	3	4
Total Count:	47	43
Number per km:	21	19
Mean Area (m^2):	28	106
Mean Maximum Depth (cm):	86	51
Mean Average Depth (cm):	61	30
Mean Residual Depth (cm):	42	--
Percent Surveyed as Glides:	0	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	93
Percent with >35% Fines:	0	0

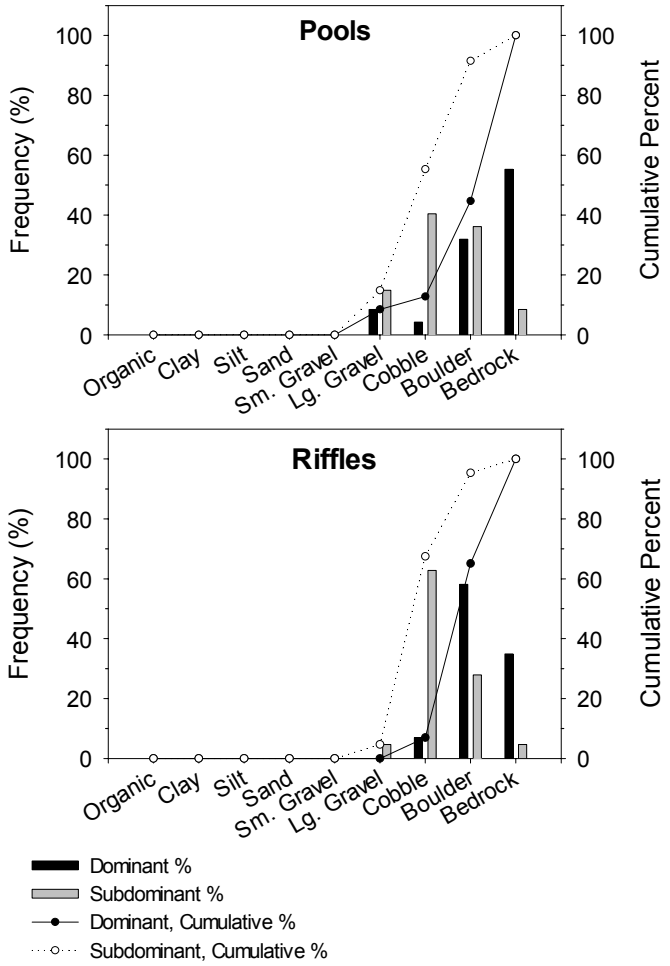
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	74
< 5 m long, > 55 cm diameter:	10
>5 m long, 10 cm – 55 cm diameter:	59
> 5 m long, > 55 cm diameter:	3
Total:	146

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	8	2
Maximum:	12	5
75th Percentile	10	2
25th Percentile	7	1
Minimum	5	0

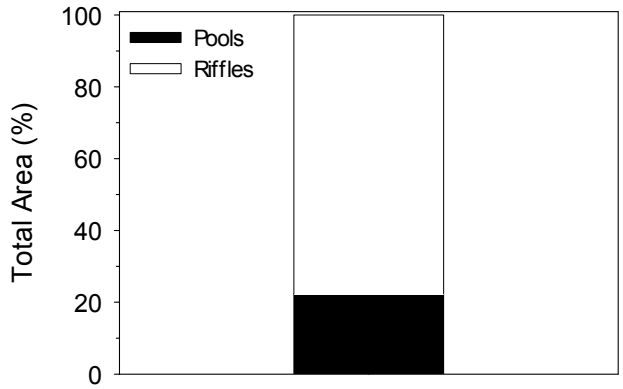
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	100
B:	0
C:	0
D:	0
E:	0
F:	0
G:	0

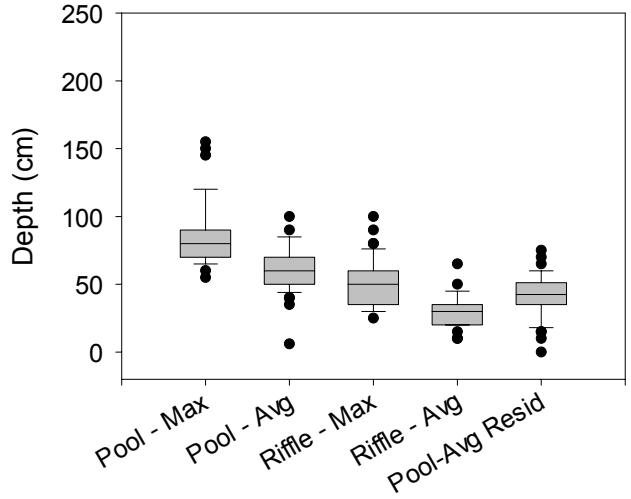
Other Stream Attributes	
Mean Bankfull Channel Width (m):	5
Mean Channel Gradient (%):	17
Median Water Temperature (C˚):	15



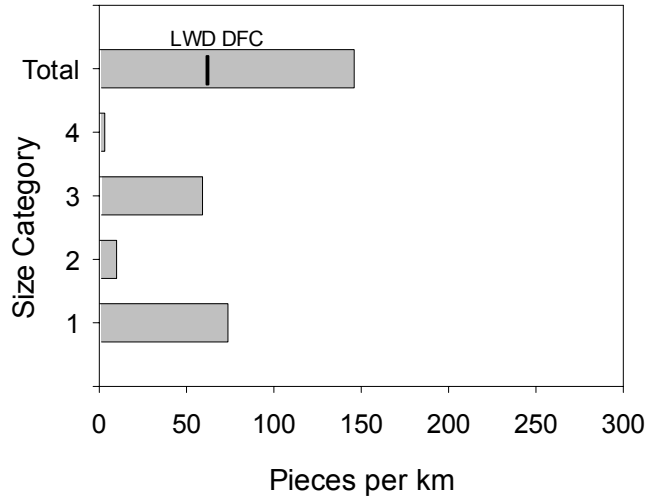
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Right Fork Davidson River, summer 2005.



Estimated area of Right Fork Davidson River in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Right Fork Davidson River, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Right Fork Davidson River, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

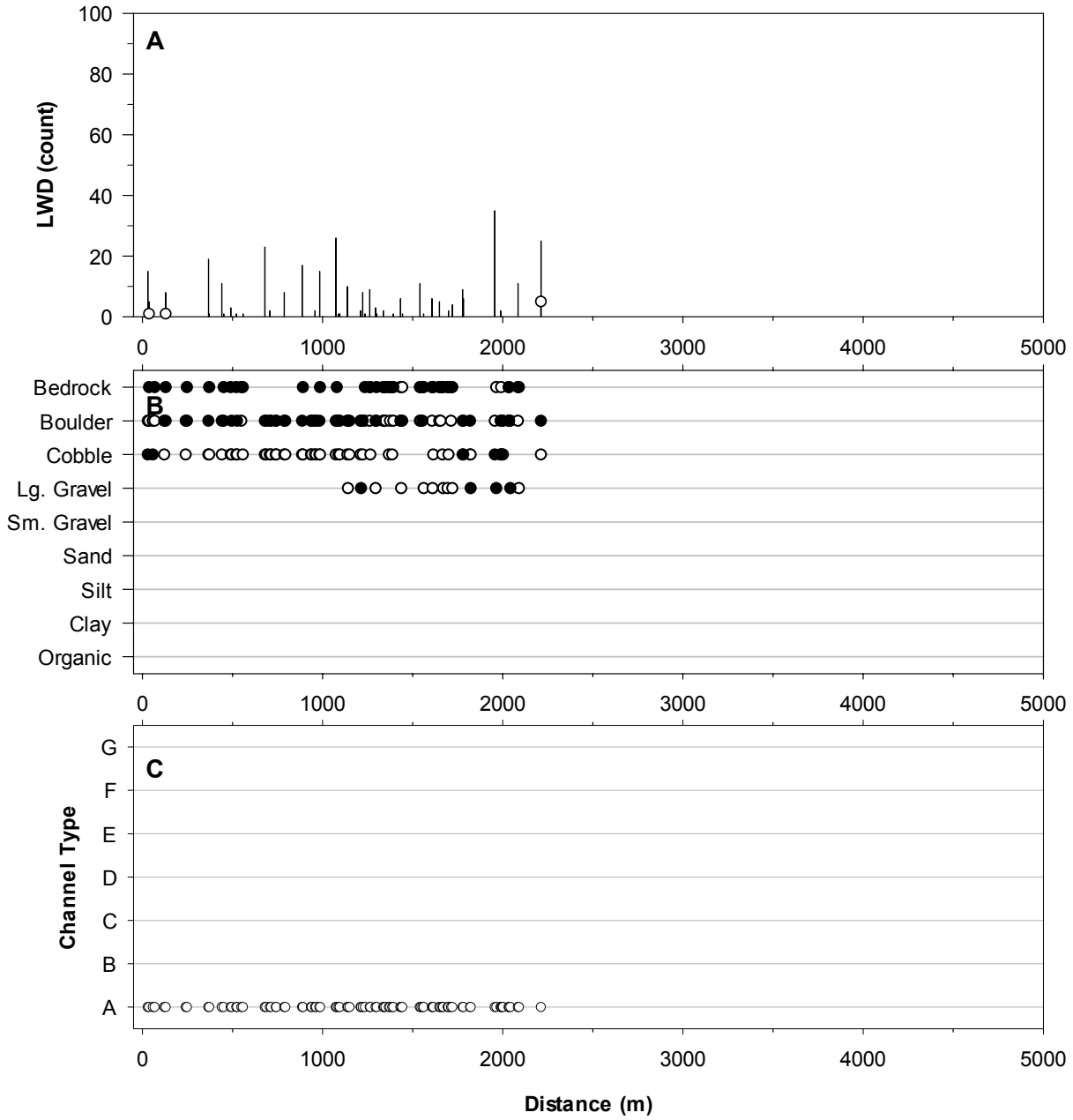
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Right Fork Davidson River during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Seep	65.8		Right side high flow
Seep	450.7		Right side high flow
Side Channel	600.6	1.5	
Side Channel	958.0		Right side comes back in at 992.8
Side Channel	986.0	1.5	
Fall	1373.9	2.5	Height 1.2
Fall	1452.0		Height 1.5
Trib	1514.8	1.0	Unknown trib to right off of lanning ridge
Fall	1520.8		Height 2.5
Side Channel	1625.0		Left side comes back in at 1641.6
Trib	1785.0		On right unnamed trib off lanning ridge
Side Channel	1799.1	1.5	On left comes back in at 1836
Trib	1854.0	0.5	Left side off rork ridge
Side Channel	1955.3	1.0	Left comes back in at 1978.1
Side Channel	2100.0	0.8	Left side comes back in at 2112.1
Seep	2113.0		Left side low flow
Trib	2144.7	0.5	Unnamed trib on left off of lanning ridge
Fall	2211.5		Height 30 meters

Photos taken of Right Fork Davidson River during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Right Fork Davidson River, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Searcy Creek**
District:	Pisgah
USGS Quadrangle:	Shining Rock
Survey Date:	08/06/05
Downstream Starting Point:	confluence with Davidson River
Total Distance Surveyed (km):	1.8

	Pools	**Riffles**
Percent of Total Stream Area:	12	88
Total Area (m^2):	626±73	4711±810
Correction Factor Applied:	1.12	1.00
Number of Paired Samples:	2	5
Total Count:	31	37
Number per km:	18	21
Mean Area (m^2):	20	127
Mean Maximum Depth (cm):	43	30
Mean Average Depth (cm):	26	14
Mean Residual Depth (cm):	8	--
Percent Surveyed as Glides:	16	--
Percent Surveyed as Runs:	--	11
Percent Surveyed as Cascades:	--	30
Percent with >35% Fines:	81	3

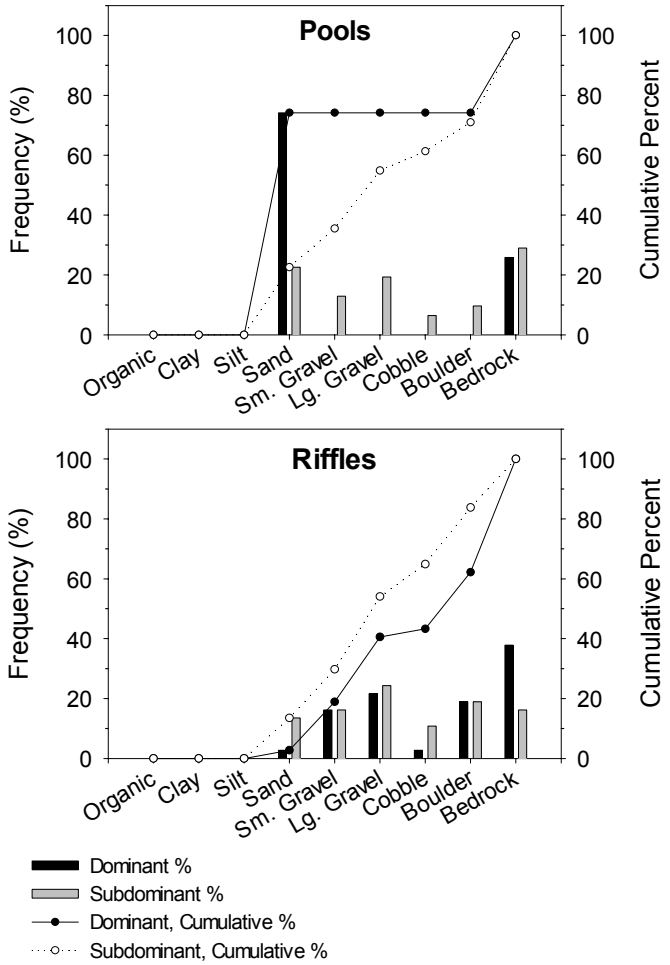
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	51
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	39
> 5 m long, > 55 cm diameter:	2
Total:	92

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	8	2
Maximum:	11	4
75th Percentile	9	2
25th Percentile	7	1
Minimum	5	0

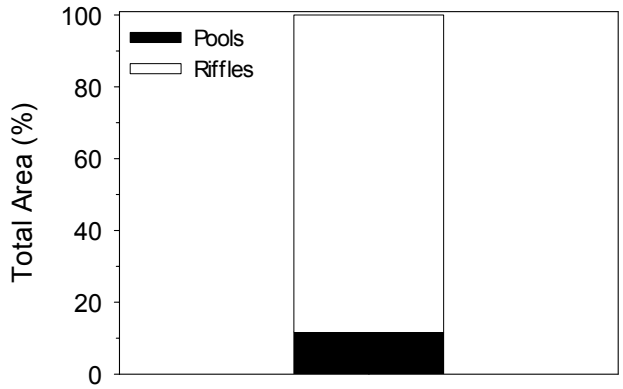
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	0
B:	100
C:	0
D:	0
E:	0
F:	0
G:	0

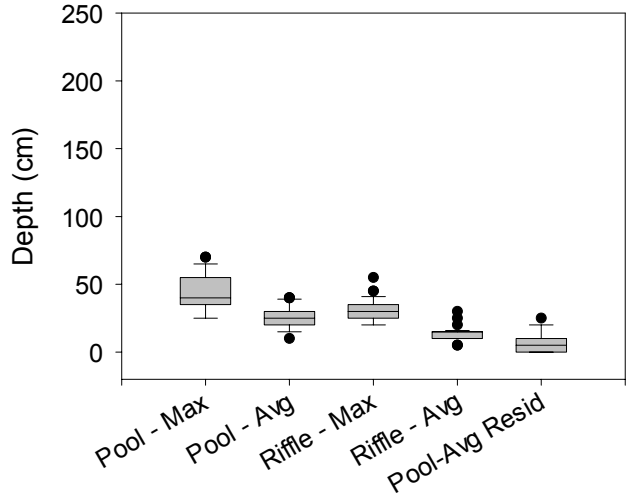
Other Stream Attributes	
Mean Bankfull Channel Width (m):	5
Mean Channel Gradient (%):	7
Median Water Temperature (C°):	15



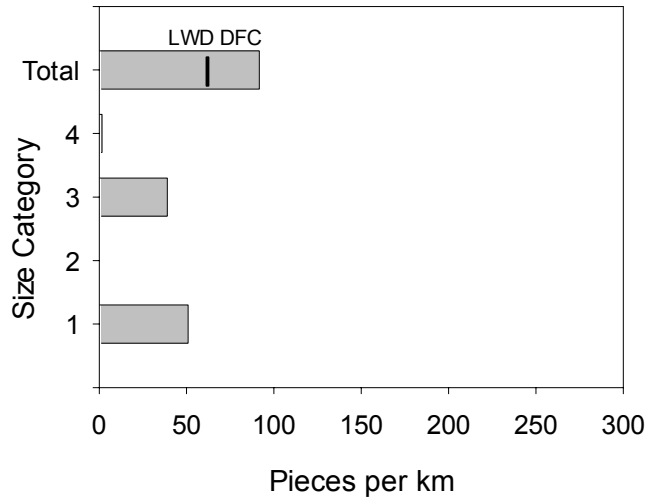
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Searcy Creek, summer 2005.



Estimated area of Searcy Creek in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Searcy Creek, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Searcy Creek, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

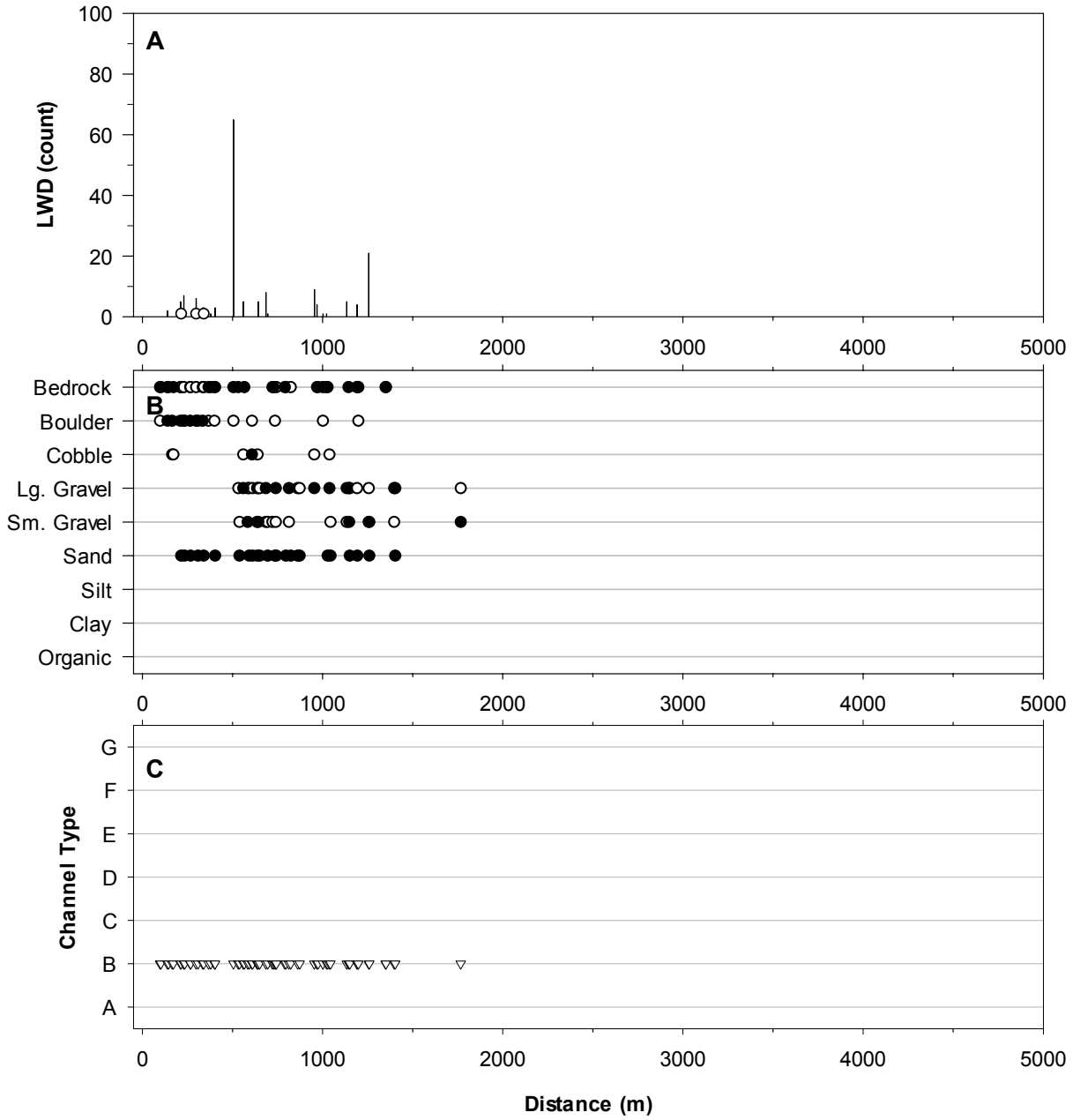
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Searcy Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Seep	27.0		In on left, substantial flow
Seep	37.0		In on left, substantial flow
Seep	73.0		In on right, substantial flow
Side Channel	123.0		In on left
Side Channel	131.0		In on right
Side Channel	136.0		Out on right
Side Channel	157.0		Out on left
Seep	176.0		In on left, moderate flow
Seep	193.0		In on left, substantial flow
Seep	331.0		In on left, minute flow
Seep	370.0		In on left, substantial flow
Side Channel	377.0		In on left
Side Channel	389.0		Out on left
Side Channel	392.0		In on left
Side Channel	400.0		Out on left
Side Channel	471.0		In on right
Side Channel	482.0		Out on right
Ford	505.0		Unnamed trail running between fs 5095 and trail 123
Bridge	525.0	2.0	0.5 m tall, log construction, small side trail off of main,
Trib	610.0	1.0	Unnamed trib, in on left
Trib	690.0	1.0	Unnamed trib, in on left
Trib	730.0	0.5	Unnamed trib, in on left
Trib	812.0	0.5	Unnamed trib, in on right
Side Channel	827.0		In on left
Side Channel	830.0		Out on right
Side Channel	862.0		Out on left
Trib	884.0	0.5	Unnamed trib, in on right
Trib	925.0	3.0	Unnamed trib, in on left
Trib	982.0	0.5	Unnamed trib, in on right
Trib	1231.0	1.5	Unnamed trib, in on left
Trib	1324.0	0.5	Unnamed trib, in on left
Trib	1474.0	2.5	Unnamed trib, in on right
Trib	1519.0	0.5	Unnamed trib, in on right
Trib	1562.0	0.5	Unnamed trib, in on left, underground after approx. 7m
Seep	1665.0		In on left, small flow
Trib	1672.0	1.0	Unnamed trib, in on left
Side Channel	1705.0		In on right
Side Channel	1715.0		Out on right
Trib	1767.0	1.0	Unnamed trib, in on left

Photos taken of Searcy Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
R	3	165.0	Max 50 ave 35
C	8	335.0	Max 75 ave 50
Ford		505.0	Unnamed trail running between fs 5095 and trail 123
Brg		525.0	0.5 m tall, log construction, small side trail off of main,
Rn	13	532.0	
Trib		610.0	Unnamed trib, in on left
Rn	18	643.0	Max 55 ave 40
Trib		690.0	Unnamed trib, in on left
Trib		730.0	Unnamed trib, in on left
Trib		812.0	Unnamed trib, in on right
Trib		925.0	Unnamed trib, in on left
Trib		982.0	Unnamed trib, in on right
R	28	1022.0	Max 45 ave 35
Trib		1231.0	Unnamed trib, in on left
Trib		1324.0	Unnamed trib, in on left
Trib		1474.0	Unnamed trib, in on right
Trib		1519.0	Unnamed trib, in on right
Trib		1562.0	Unnamed trib, in on left, underground after approx. 7m
Trib		1672.0	Unnamed trib, in on left
Trib		1767.0	Unnamed trib, in on left



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Searcy Creek, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Shut-in Branch**
District:	Pisgah
USGS Quadrangle:	Shining Rock
Survey Date:	07/28/05
Downstream Starting Point:	confluence with Davidson River
Total Distance Surveyed (km):	1.6

	Pools	**Riffles**
Percent of Total Stream Area:	10	90
Total Area (m^2):	466±33	4112±229
Correction Factor Applied:	1.30	1.05
Number of Paired Samples:	4	4
Total Count:	22	20
Number per km:	14	13
Mean Area (m^2):	21	206
Mean Maximum Depth (cm):	64	35
Mean Average Depth (cm):	48	19
Mean Residual Depth (cm):	34	--
Percent Surveyed as Glides:	0	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	45
Percent with >35% Fines:	0	0

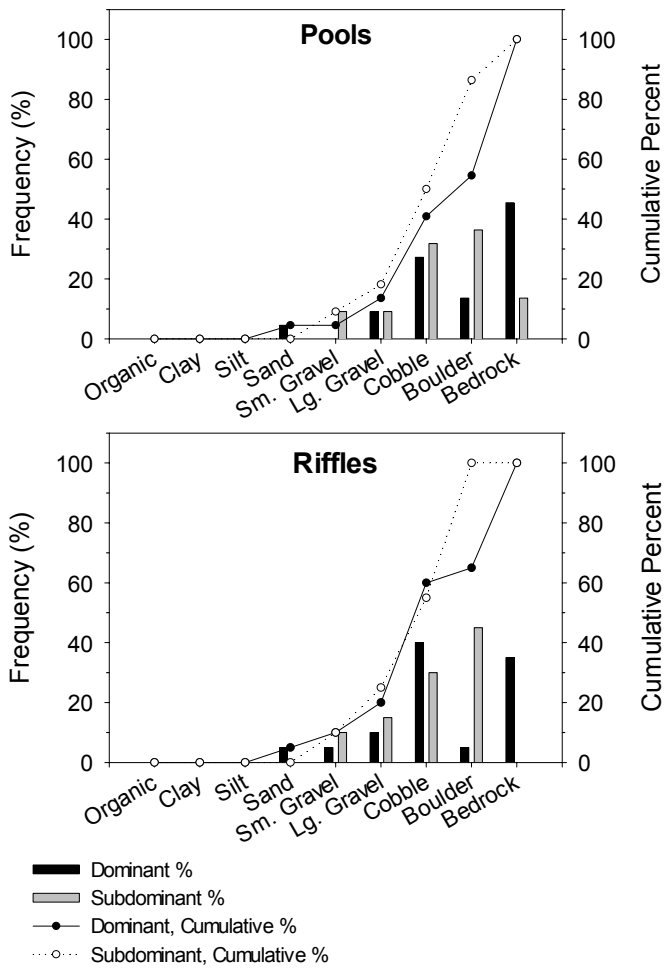
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	78
< 5 m long, > 55 cm diameter:	2
>5 m long, 10 cm – 55 cm diameter:	87
> 5 m long, > 55 cm diameter:	1
Total:	168

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	47	22
Maximum:	89	85
75th Percentile	68	22
25th Percentile	26	0
Minimum	5	0

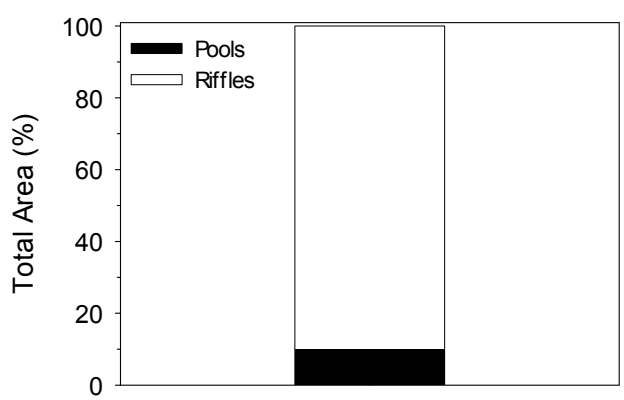
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	100
B:	0
C:	0
D:	0
E:	0
F:	0
G:	0

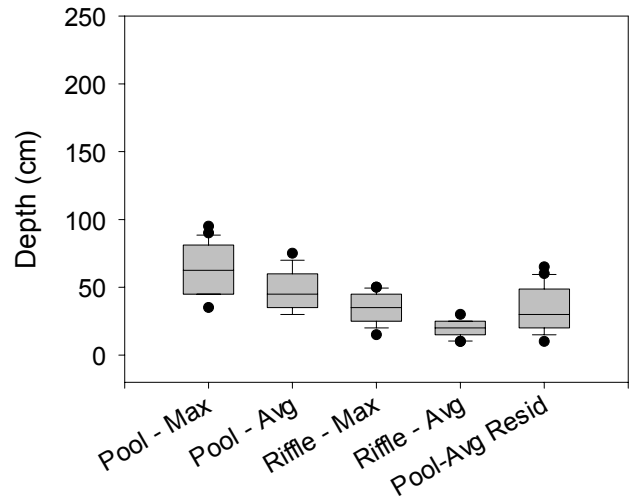
Other Stream Attributes	
Mean Bankfull Channel Width (m):	3
Mean Channel Gradient (%):	11
Median Water Temperature (C˚):	16



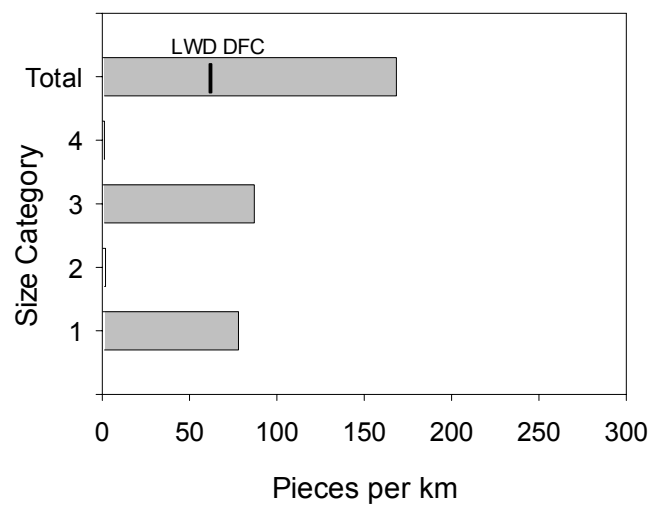
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Shut-in Branch, summer 2005.



Estimated area of Shut-in Branch in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Shut-in Branch, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Shut-in Branch, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

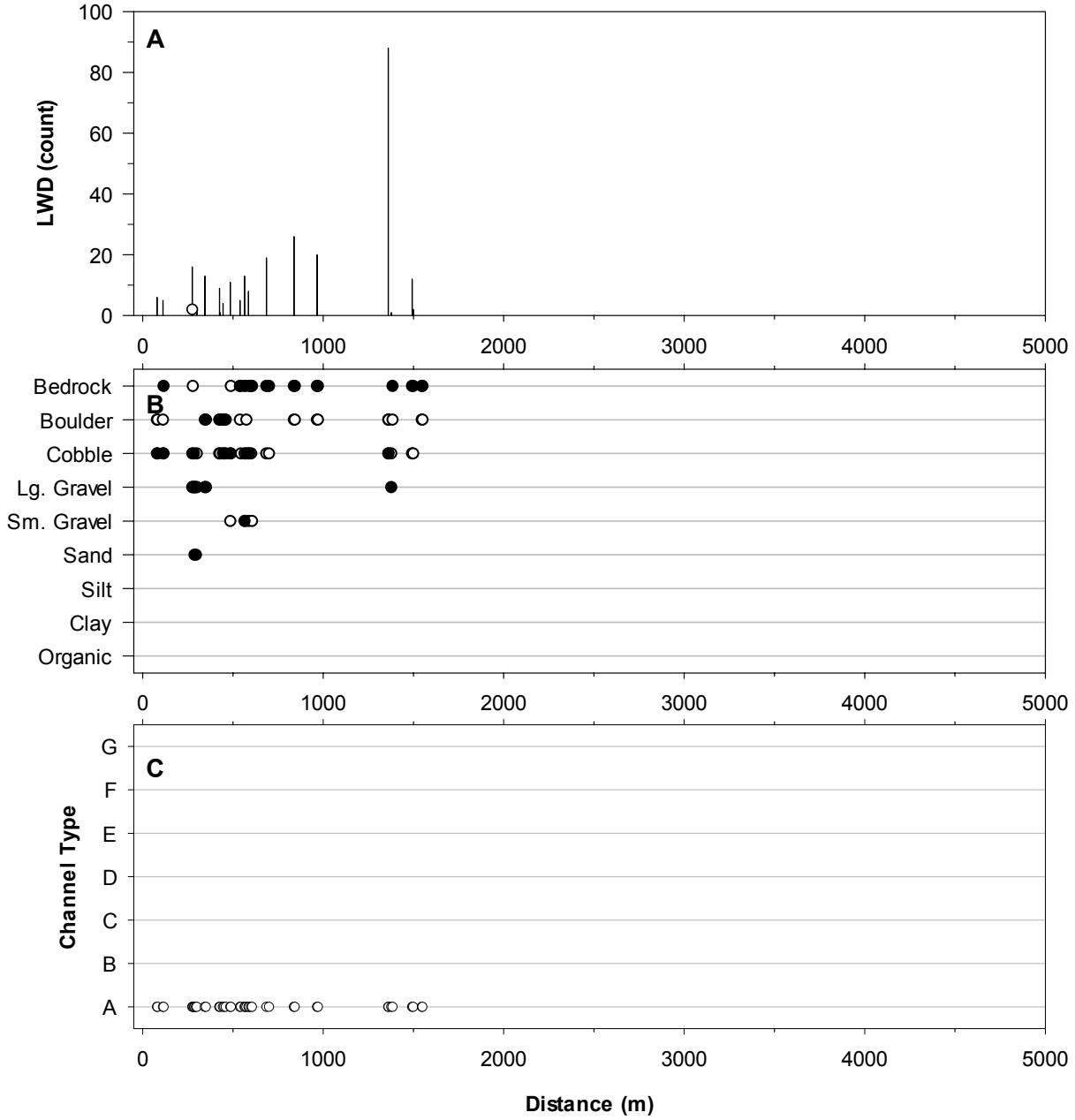
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Shut-in Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Side Channel	20.0		Left in
Side Channel	294.6		Right in
Seep	458.0		Right high flow
Seep	586.0		Moderate flow.
Seep	695.0		Right high flow
Trib	715.9	0.5	Left off of north ridge of chesnut knob
Trib	807.5	2.0	Left off of north ridge of chesnut knob
Side Channel	1049.1		Left in
Side Channel	1082.0		Right in
Seep	1083.7		Right medium flow
Side Channel	1145.0		Right in
Seep	1275.0		Right low flow
Side Channel	1307.0		Left in

Photos taken of Shut-in Branch during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Shut-in Branch, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**West Fork Pigeon River**
District:	Pisgah
USGS Quadrangle:	Sam Knob
Survey Date:	08/13/05
Downstream Starting Point:	FS boundary
Total Distance Surveyed (km):	10.4

	Pools	**Riffles**
Percent of Total Stream Area:	25	75
Total Area (m^2):	30481±5632	91443±22620
Correction Factor Applied:	1.33	1.32
Number of Paired Samples:	10	9
Total Count:	107	98
Number per km:	10	9
Mean Area (m^2):	285	933
Mean Maximum Depth (cm):	133	108
Mean Average Depth (cm):	71	33
Mean Residual Depth (cm):	31	--
Percent Surveyed as Glides:	21	--
Percent Surveyed as Runs:	--	1
Percent Surveyed as Cascades:	--	20
Percent with >35% Fines:	2	1

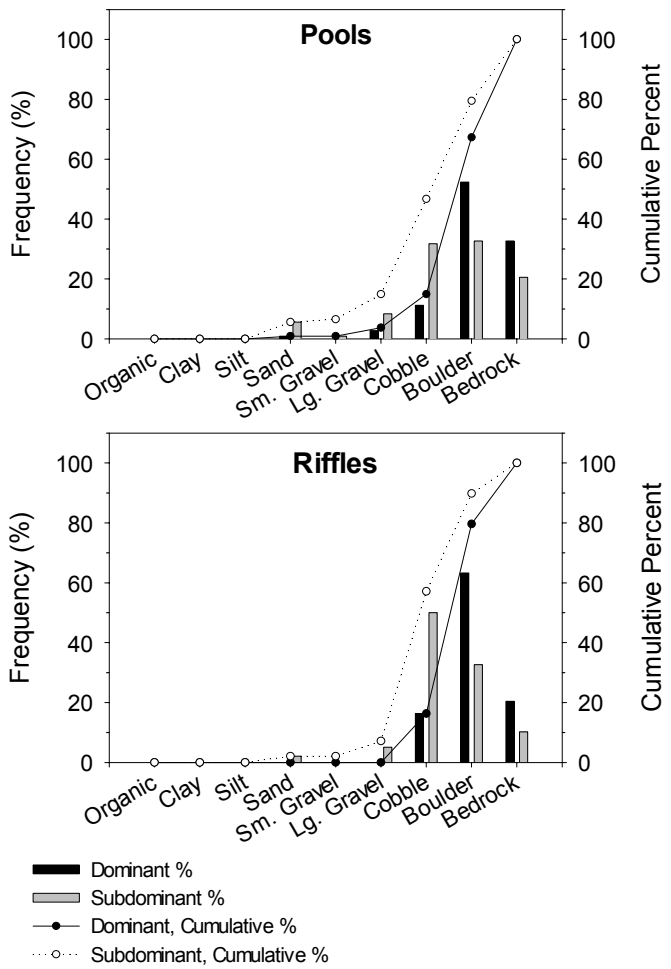
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	18
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	27
> 5 m long, > 55 cm diameter:	0
Total:	45

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	26	3
Maximum:	36	17
75th Percentile	26	4
25th Percentile	22	1
Minimum	17	0

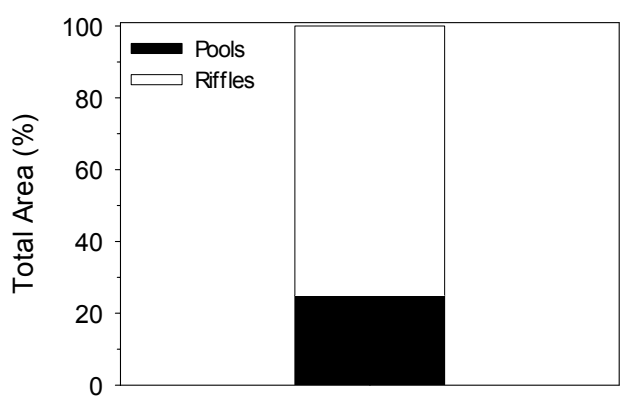
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	0
B:	0
C:	7
D:	0
E:	0
F:	93
G:	0

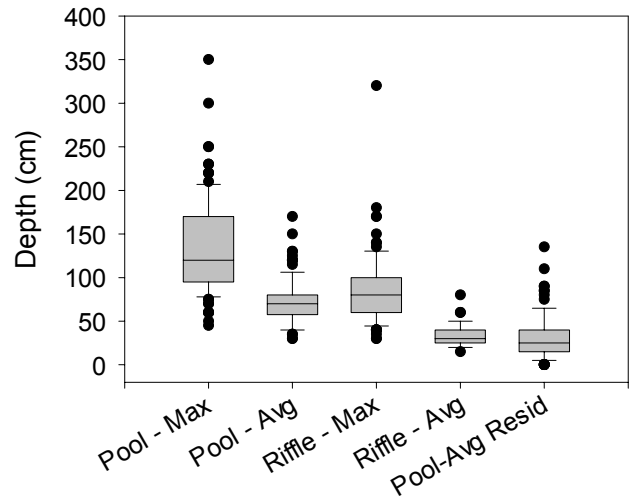
Other Stream Attributes	
Mean Bankfull Channel Width (m):	19
Mean Channel Gradient (%):	7
Median Water Temperature (C°):	16



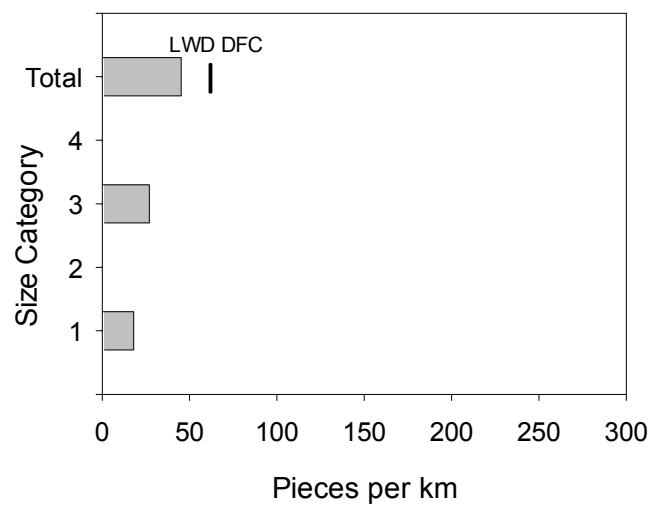
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in West Fork Pigeon River, summer 2005.



Estimated area of West Fork Pigeon River in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in West Fork Pigeon River, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in West Fork Pigeon River, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

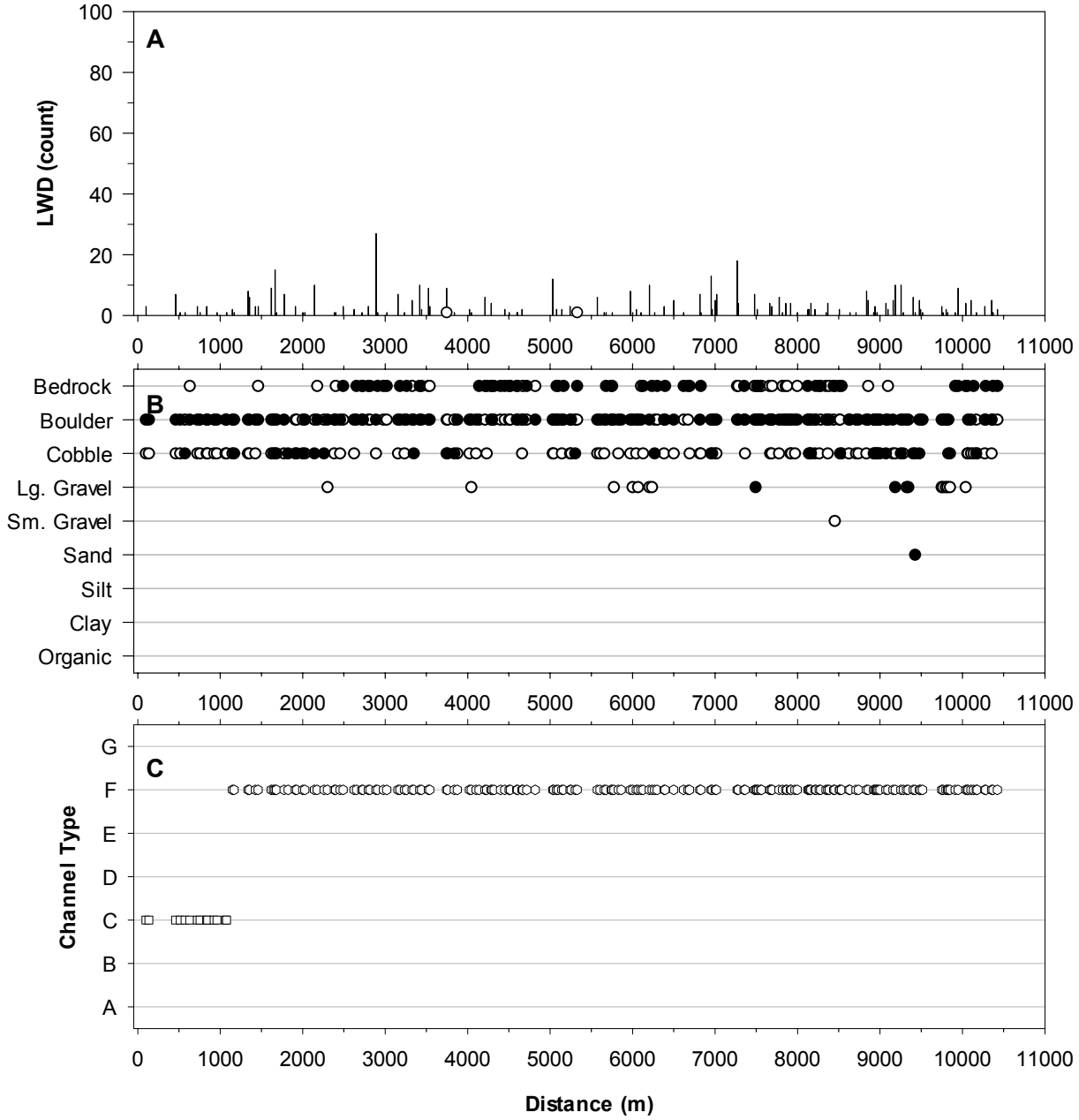
Stream features found on West Fork Pigeon River during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Trib	322.0	6.0	In on right
Side Channel	431.2	4.0	In on left
Side Channel	465.0	8.0	Out on left
Seep	741.0		In on left
Trib	1078.0	1.5	Turnpike creek in on left
Slide	1665.0		Slide on right
Seep	2065.0		In on left, very small
Trib	2371.0	3.0	Tom creek in on right
Seep	2653.3		In on right
Trib	2765.0	1.5	In on left
Slide	2866.0		On right side underneath road 215
Trib	3565.0	1.5	In on left
Seep	4180.0		In on right
Seep	4200.0		In on right
Trib	4231.0	0.5	In on right
Seep	4540.0		In on left
Trib	4734.0	4.0	In on right, green creek
Trib	4820.0	1.5	In on right
Seep	6048.0		In on right
Seep	6231.0		In on left
Seep	6395.0		In on right
Braid	6588.5	30.0	
Side Channel	6737.0	3.0	In on right
Side Channel	6800.0	4.0	Out on right
Side Channel	6861.0	6.0	In on right
Trib	6882.0	1.0	In on left
Trib	6944.0	1.0	In on right
Side Channel	6997.0	4.0	Out on right
Trib	6997.0	2.0	In on left
Bridge	7282.0		Road 215,approx 4 meters above flow
Seep	7317.0		In on left
Fall	7415.0		6 meters high
Trib	8367.0	1.5	In on right
Bridge	8385.0		7 meters high, road 215
Side Channel	8579.0	3.0	In on right
Side Channel	8624.0	3.0	Out on right
Trib	8710.4	7.0	In on left, flat laurel creek
Trib	8748.0	4.0	In on left, part of flat laurel creek
Trib	8925.0	2.0	Unnamed in on right
Seep	8978.0		In on right
Other	9007.0		Sr 215 close on right with crush rock for bank stabilization
Side Channel	9007.0	1.5	In on left
Side Channel	9048.0	1.5	Out on left
Spring	9209.0		In on left
Trib	9348.0	1.5	In on left
Trib	9706.0	1.0	In on right
Trib	9812.0	1.0	In on right
Seep	9862.0		In on right
Seep	9974.0		In on right
Side Channel	10069.0	1.5	In on left
Side Channel	10104.0	5.0	Out on left

Trib	10231.0	3.0	In on left

Photos taken of West Fork Pigeon River during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
Trib		322.0	In on right
R	9	1147.5	
Slid		1665.0	Slide on right
Trib		2371.0	Tom creek in on right
Trib		2765.0	In on left
Slid		2866.0	On right side underneath road 215
R	29	3418.0	
R	49	5973.0	
C	59	7002.0	
Brg		7282.0	Road 215,approx 4 meters above flow
Fall		7415.0	6 meters high
C	69	7915.0	
Brg		8385.0	7 meters high, road 215
R	79	8710.4	
Trib		8710.4	In on left, flat laurel creek
R	89	9749.0	



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in West Fork Pigeon River, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	Camp Creek
District:	Toecane
USGS Quadrangle:	Old Fort
Survey Date:	06/04/05
Downstream Starting Point:	confluence with South Toe River
Total Distance Surveyed (km):	1.5

	Pools	Riffles
Percent of Total Stream Area:	21	79
Total Area (m^2):	1179	4307
Correction Factor Applied:	1.06	1.17
Number of Paired Samples:	2	2
Total Count:	26	26
Number per km:	17	17
Mean Area (m^2):	45	166
Mean Maximum Depth (cm):	89	65
Mean Average Depth (cm):	57	29
Mean Residual Depth (cm):	35	--
Percent Surveyed as Glides:	0	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	96
Percent with >35% Fines:	0	0

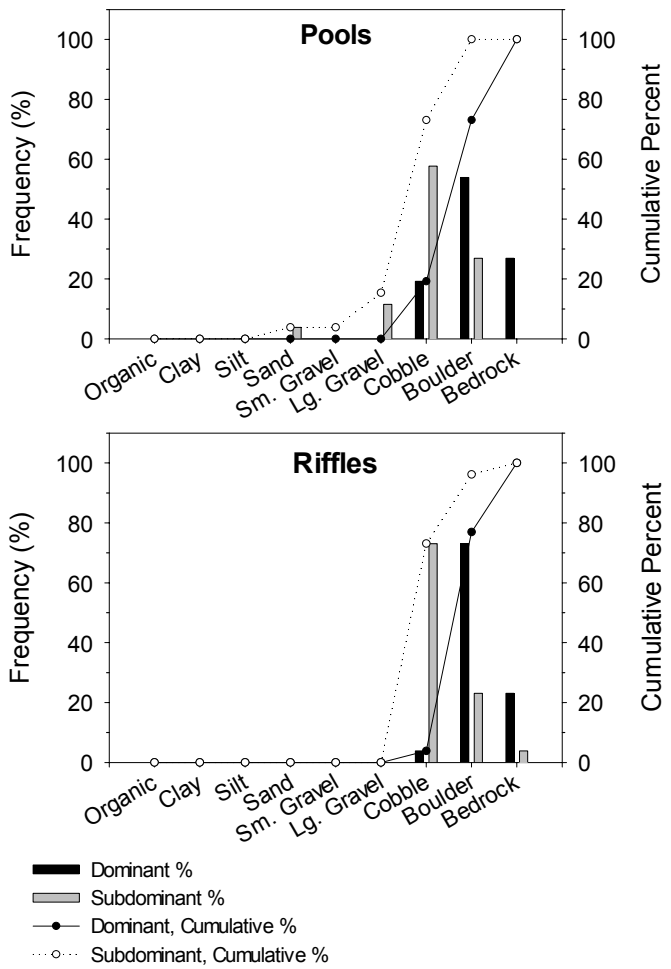
Large Woody Debris Size	Pieces per km
< 5 m long, 10 cm – 55 cm diameter:	30
< 5 m long, > 55 cm diameter:	4
>5 m long, 10 cm – 55 cm diameter:	29
> 5 m long, > 55 cm diameter:	1
Total:	65

Riparian Width	Total Width* (m)	Left & Right Width** (m)
Mean:	8	2
Maximum:	8	2
75th Percentile	8	2
25th Percentile	8	2
Minimum	8	1

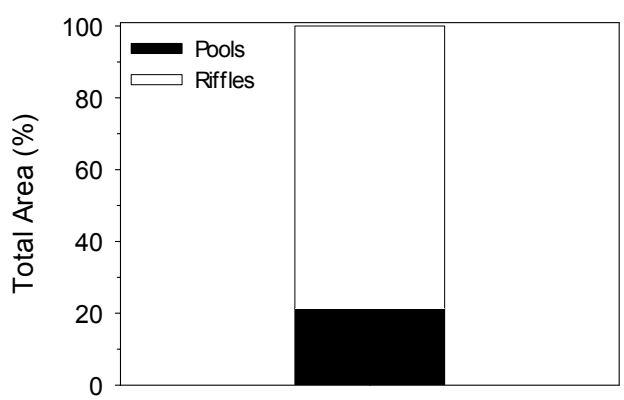
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	Frequency (%)
A:	0
B:	100
C:	0
D:	0
E:	0
F:	0
G:	0

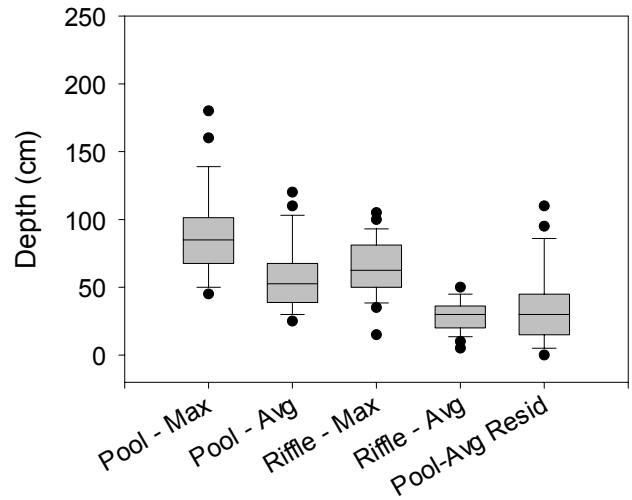
Other Stream Attributes	
Mean Bankfull Channel Width (m):	5
Mean Channel Gradient (%):	33
Median Water Temperature (C˚):	10.5



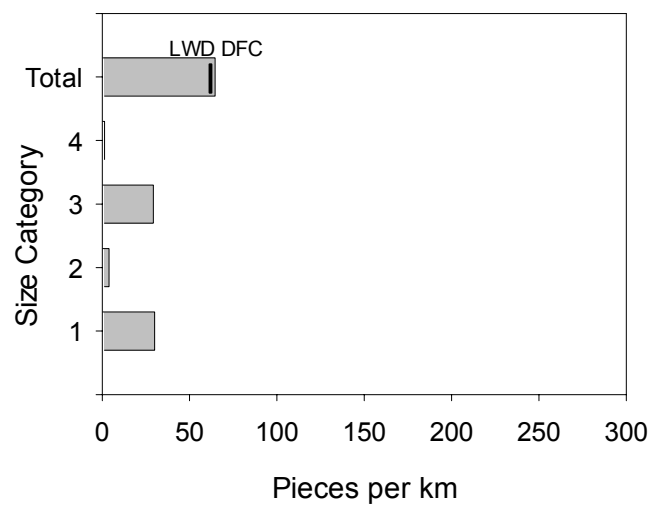
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Camp Creek, summer 2005.



Estimated area of Camp Creek in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Camp Creek, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Camp Creek, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

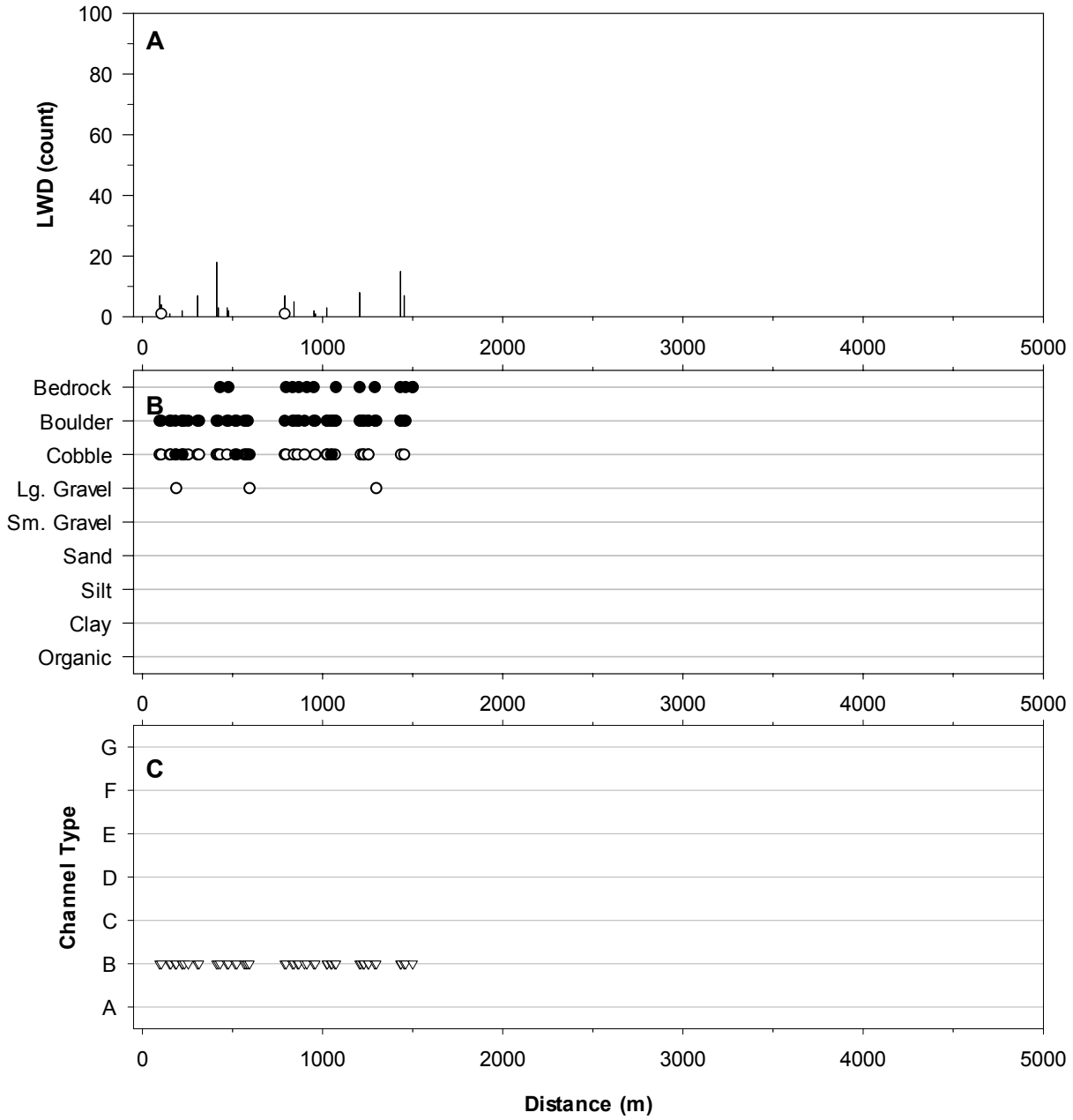
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Camp Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Brd	32.3	1.0	Height 2 meters, length 7 meters
Ford	116.0	1.5	Unnamed and unmapped foot trail, width 1.5
Sch	174.2	1.0	Ended at meter 229 bnd on left side
Sch	264.0		
Sch	796.9	1.0	Left side comes back in at meter 856
Seep	1028.5		Rigt side low flow
Sch	1085.0		Left side,

Photos taken of Camp Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
Brd		32.3	Height 2 meters, length 7 meters
C	10	565.8	
C	20	1068.5	



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Camp Creek, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Lower Creek**
District:	Toecane
USGS Quadrangle:	Old Fort
Survey Date:	06/06/05
Downstream Starting Point:	FS road 472 crossing
Total Distance Surveyed (km):	2.6

	Pools	**Riffles**
Percent of Total Stream Area:	31	69
Total Area (m^2):	4540	10097
Correction Factor Applied:	0.80	2.21
Number of Paired Samples:	4	4
Total Count:	47	45
Number per km:	18	17
Mean Area (m^2):	97	224
Mean Maximum Depth (cm):	117	74
Mean Average Depth (cm):	73	31
Mean Residual Depth (cm):	52	--
Percent Surveyed as Glides:	0	--
Percent Surveyed as Runs:	--	4
Percent Surveyed as Cascades:	--	71
Percent with >35% Fines:	0	0

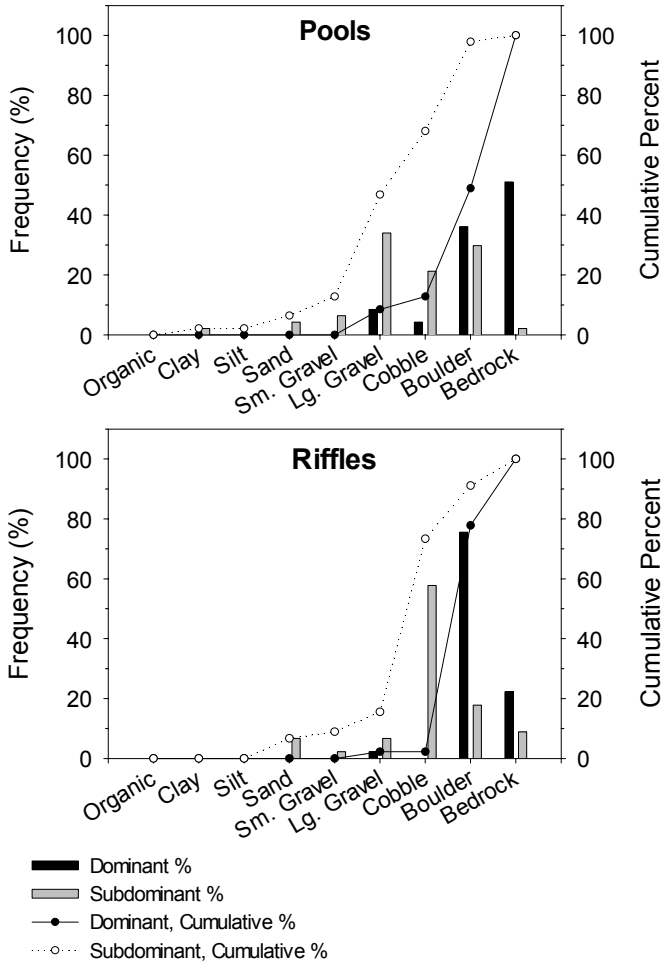
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	10
< 5 m long, > 55 cm diameter:	1
>5 m long, 10 cm – 55 cm diameter:	20
> 5 m long, > 55 cm diameter:	6
Total:	36

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	11	2
Maximum:	14	7
75th Percentile	13	2
25th Percentile	10	0
Minimum	9	0

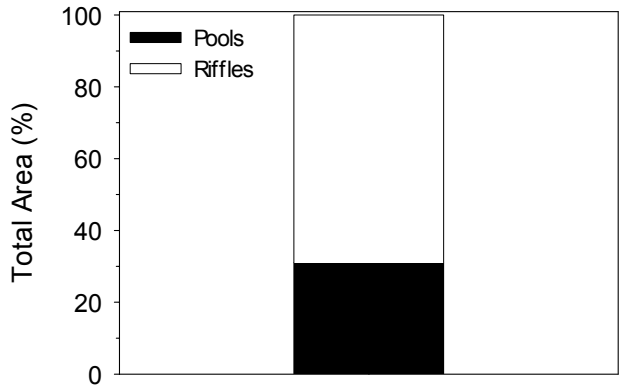
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	100
B:	0
C:	0
D:	0
E:	0
F:	0
G:	0

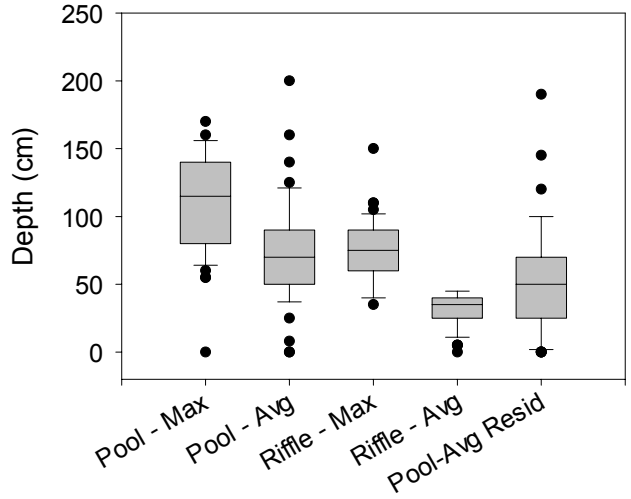
Other Stream Attributes	
Mean Bankfull Channel Width (m):	7
Mean Channel Gradient (%):	24
Median Water Temperature (C˚):	13



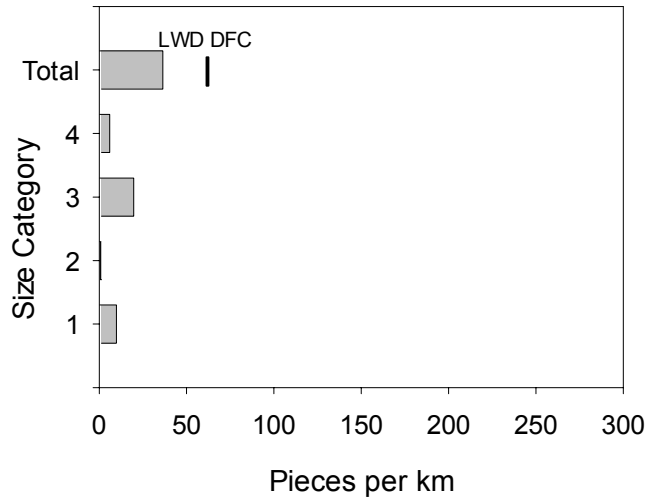
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Lower Creek, summer 2005.



Estimated area of Lower Creek in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Lower Creek, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Lower Creek, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

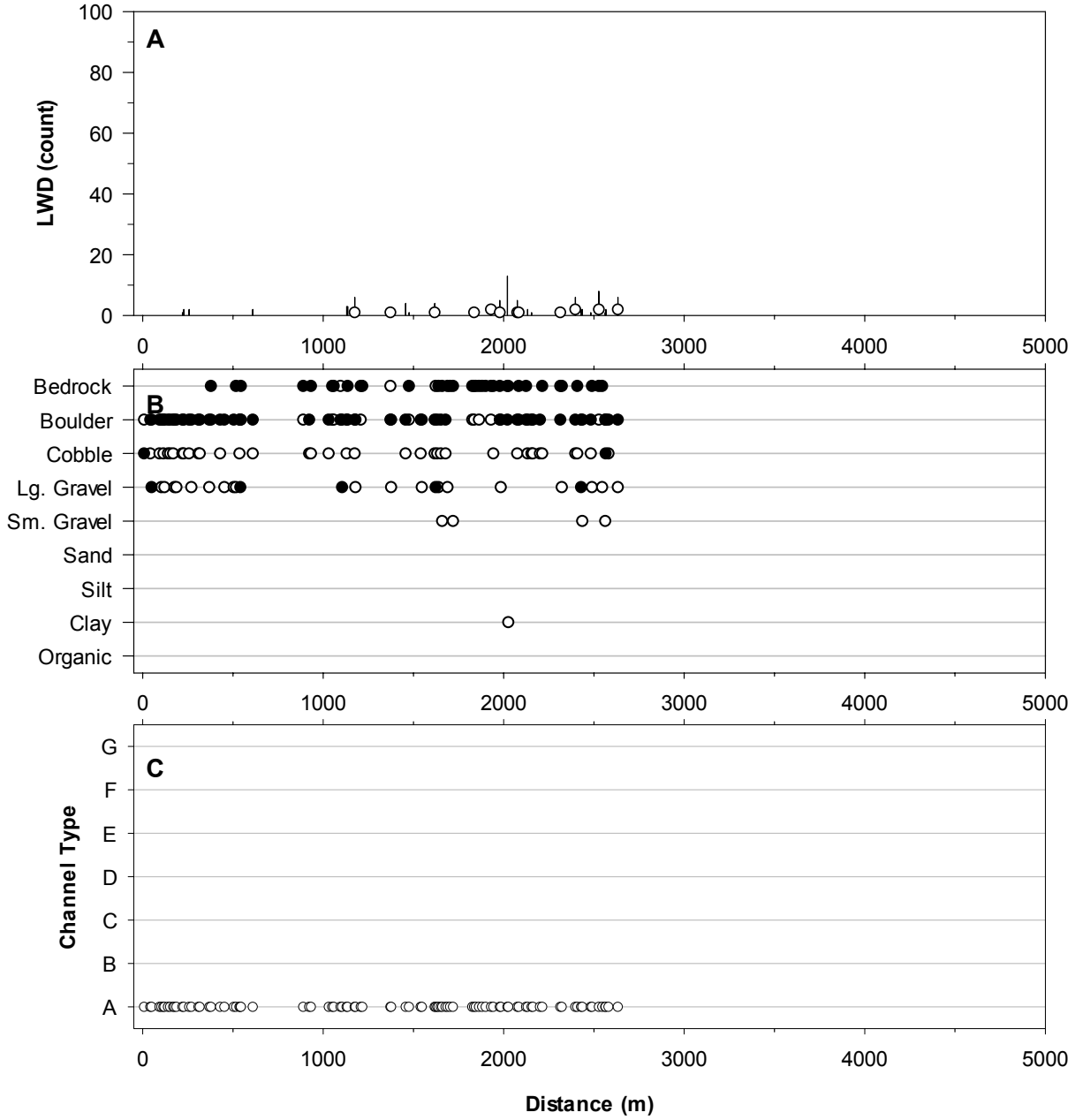
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Lower Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Side Channel	211.9	0.5	Left side of stream, in
Side Channel	256.4	0.5	Left side of stream, out
Fall	403.0		Height 105
Side Channel	498.0	1.0	Right, in
Side Channel	552.7	1.0	Right, out
Fall	889.0		height 2 meters
Fall	1475.0		Height 4 meters
Fall	1569.0		Height 3 meters
Seep	1703.0		Left side of stream, low to moderate flow
Fall	1793.0		Height 1.25 meters
Fall	1836.0		Height 5 meters

Photos taken of Lower Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
C	10	428.8	The channel kind of splits intotwo sections so rosgen and bankful was done at the narrowest part of riffle
Fall		403.0	Height 105
Fall		889.0	Personnal camera, height 2 meters
C	20	1208.0	
Fall		1475.0	Height 4 meters
Fall		1569.0	Height 3 meters
Fall		1793.0	Height 1.25 meters
Fall		1836.0	Height 5 meters
C	30	1845.0	No bank full indicators, picture same as waterfall above, this cascade is nothing more than bedrock
C	40	2396.0	No bankfull indicators were present



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Lower Creek, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Middle Fork Upper Creek**
District:	Toecane
USGS Quadrangle:	Montreat
Survey Date:	06/10/05
Downstream Starting Point:	confluence with South Fork Upper Creek
Total Distance Surveyed (km):	0.3

	Pools	**Riffles**
Percent of Total Stream Area:	15	85
Total Area (m^2):	107	600
Correction Factor Applied:	0.49	1.07
Number of Paired Samples:	3	3
Total Count:	9	10
Number per km:	30	33
Mean Area (m^2):	12	60
Mean Maximum Depth (cm):	89	43
Mean Average Depth (cm):	62	25
Mean Residual Depth (cm):	42	--
Percent Surveyed as Glides:	0	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	70
Percent with >35% Fines:	0	0

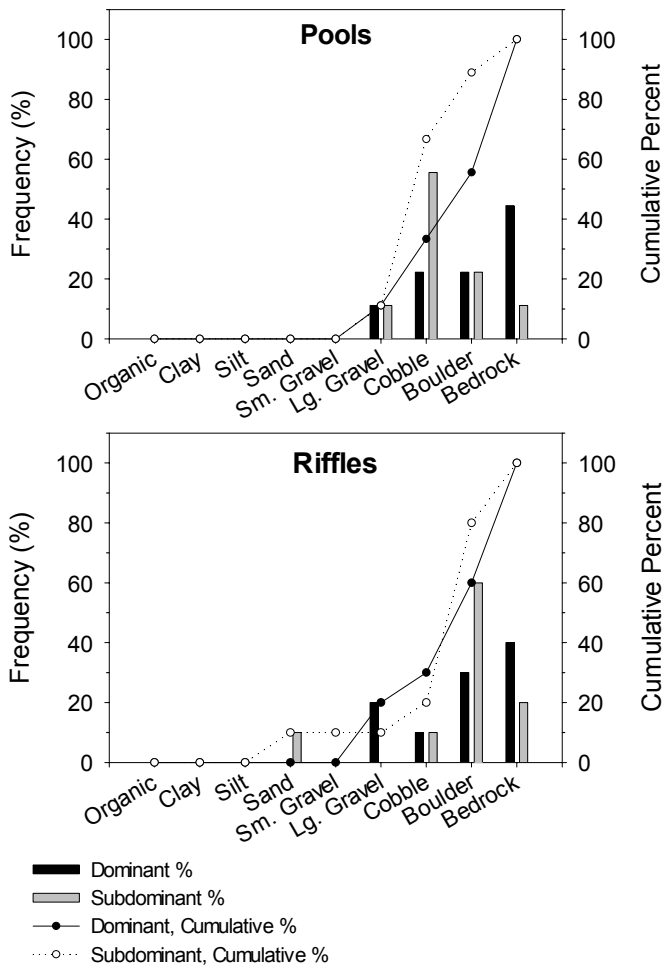
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	13
< 5 m long, > 55 cm diameter:	0
>5 m long, 10 cm – 55 cm diameter:	0
> 5 m long, > 55 cm diameter:	0
Total:	13

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	7	1
Maximum:	7	1
75th Percentile	7	1
25th Percentile	7	1
Minimum	7	1

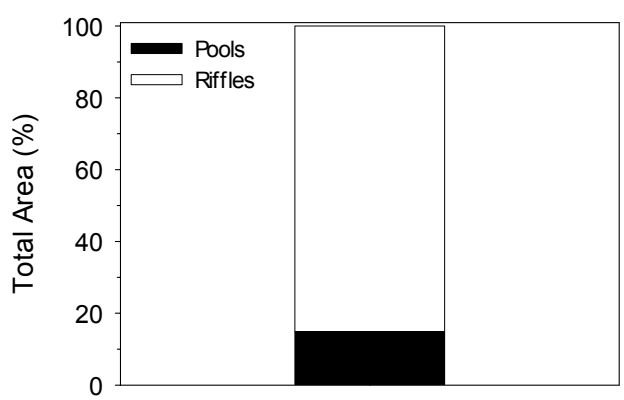
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	100
B:	0
C:	0
D:	0
E:	0
F:	0
G:	0

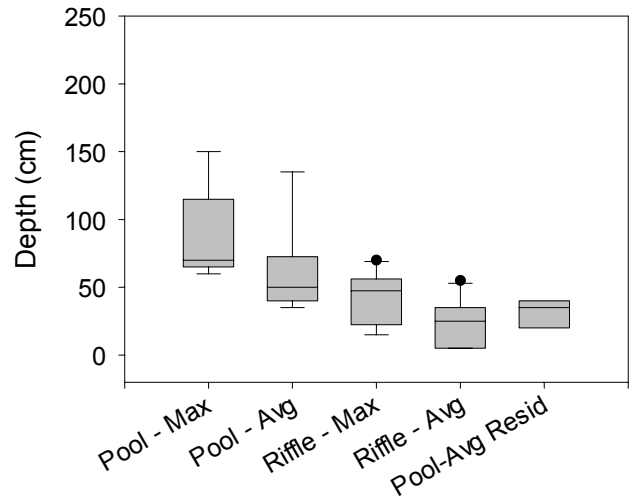
Other Stream Attributes	
Mean Bankfull Channel Width (m):	6
Mean Channel Gradient (%):	25
Median Water Temperature (C˚):	12



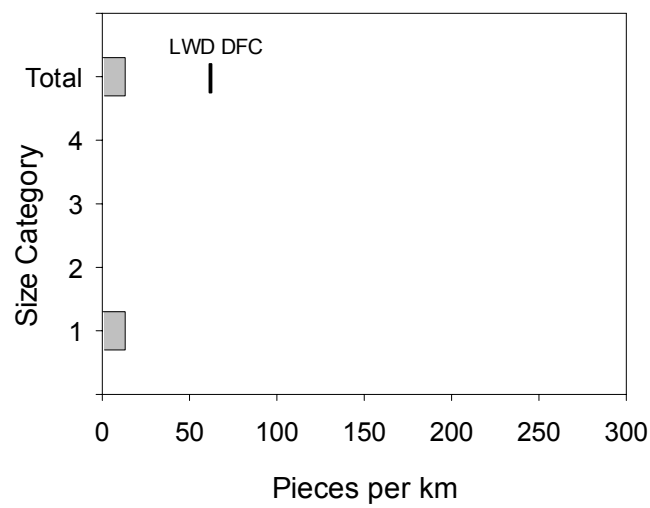
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Middle Fork Upper Creek, summer 2005.



Estimated area of Middle Fork Upper Creek in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Middle Fork Upper Creek, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Middle Fork Upper Creek, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

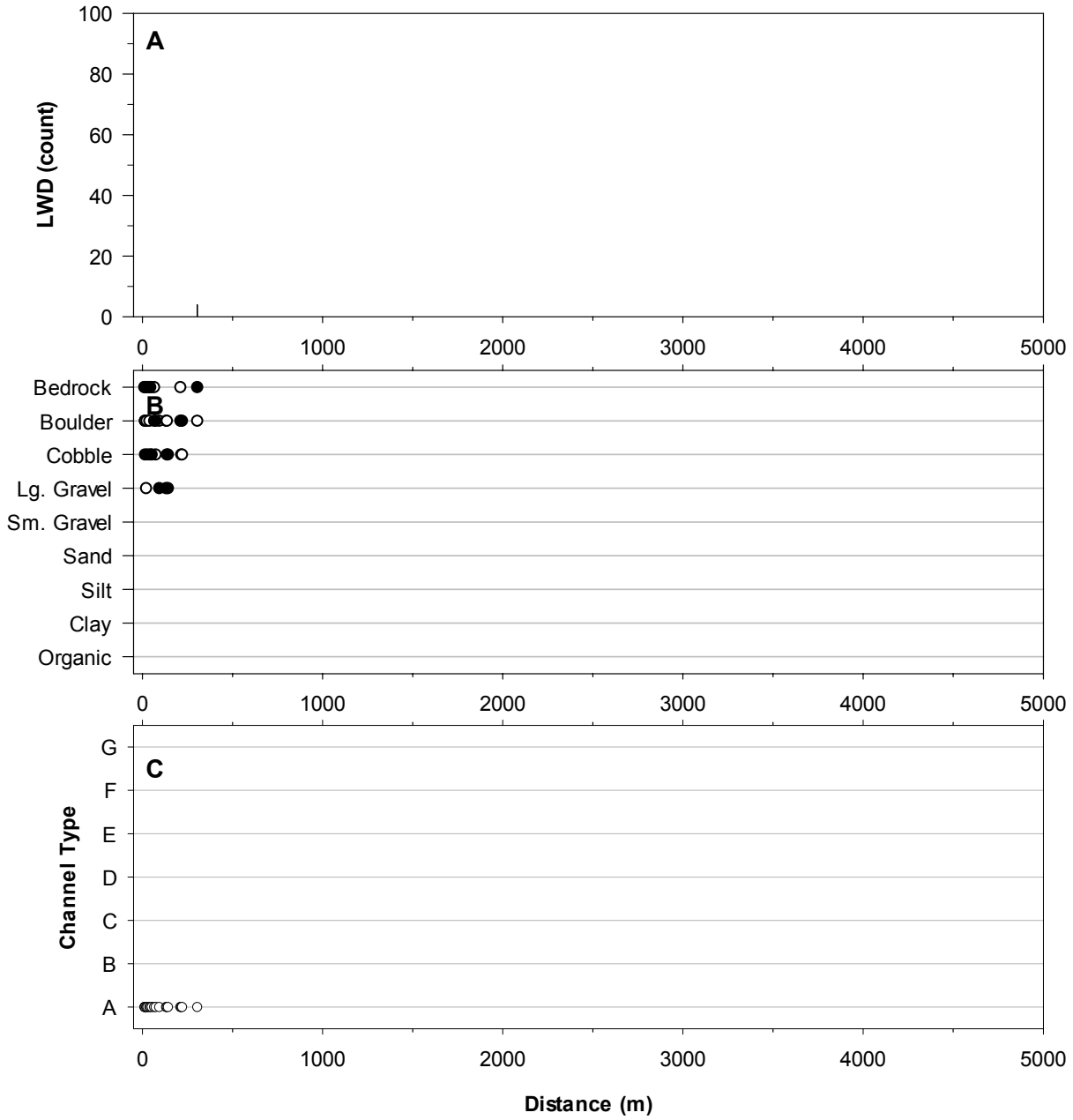
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Middle Fork Upper Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments

Photos taken of Middle Fork Upper Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
R	2	13.7	
C	5	64.5	No bankfull indicators
R	9	214.3	No bankfull indicators
C	10	304.0	End survey dangerous casade.



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Middle Fork Upper Creek, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).

Stream:	**Upper Creek**
District:	Toecane
USGS Quadrangle:	Old Fort/Montreat
Survey Date:	06/09/05
Downstream Starting Point:	confluence with South Toe River
Total Distance Surveyed (km):	2.2

	Pools	**Riffles**
Percent of Total Stream Area:	3	97
Total Area (m^2):	2221±960	63046±570
Correction Factor Applied:	1.09	1.06
Number of Paired Samples:	3	3
Total Count:	26	23
Number per km:	12	11
Mean Area (m^2):	85	2741
Mean Maximum Depth (cm):	133	84
Mean Average Depth (cm):	86	40
Mean Residual Depth (cm):	50	--
Percent Surveyed as Glides:	0	--
Percent Surveyed as Runs:	--	0
Percent Surveyed as Cascades:	--	48
Percent with >35% Fines:	0	0

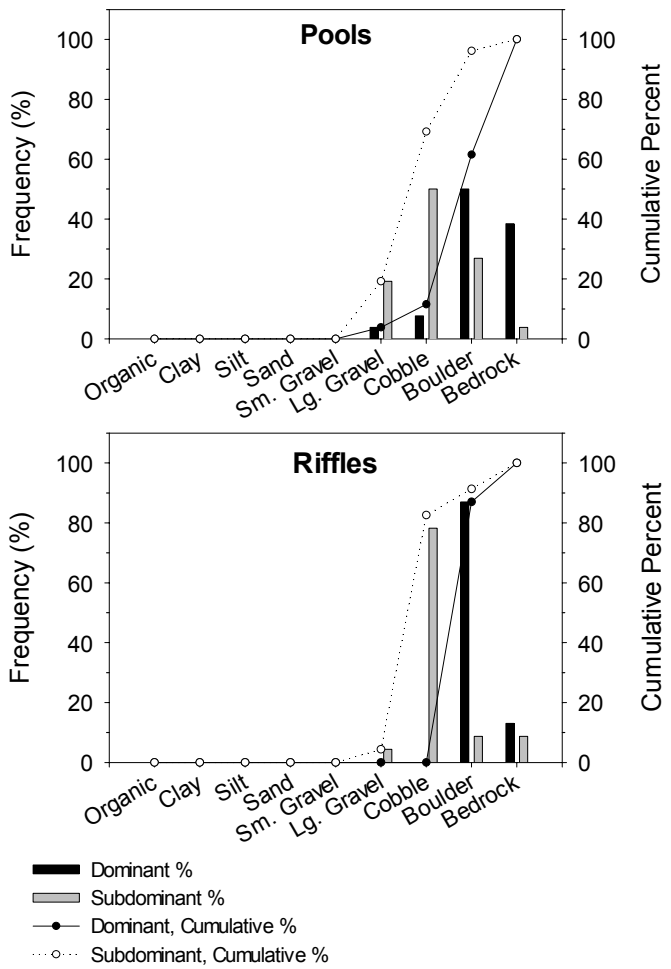
Large Woody Debris Size	**Pieces per km**
< 5 m long, 10 cm – 55 cm diameter:	7
< 5 m long, > 55 cm diameter:	1
>5 m long, 10 cm – 55 cm diameter:	17
> 5 m long, > 55 cm diameter:	1
Total:	27

Riparian Width	**Total Width* (m)**	**Left & Right Width** (m)**
Mean:	12	2
Maximum:	13	3
75th Percentile	13	2
25th Percentile	12	1
Minimum	11	1

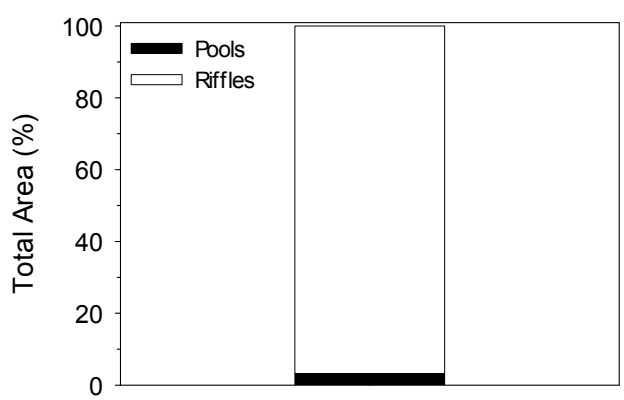
*Left riparian, right riparian, and bankfull channel widths were added together for calculations
**Left and right riparian widths were grouped (not added) together for calculations

Rosgen Channel Type	**Frequency (%)**
A:	33
B:	67
C:	0
D:	0
E:	0
F:	0
G:	0

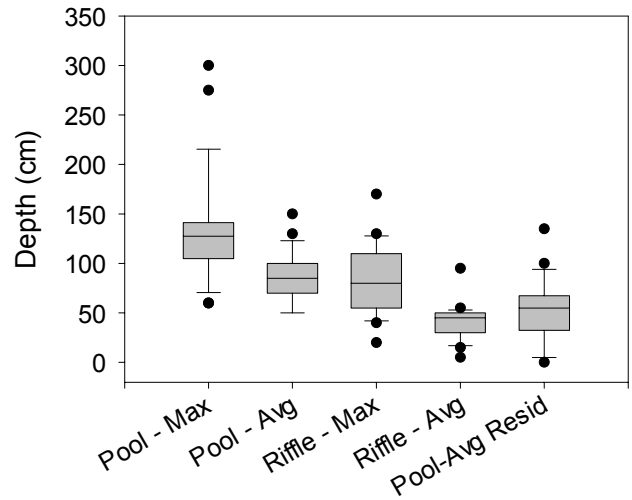
Other Stream Attributes	
Mean Bankfull Channel Width (m):	9
Mean Channel Gradient (%):	8
Median Water Temperature (C˚):	12



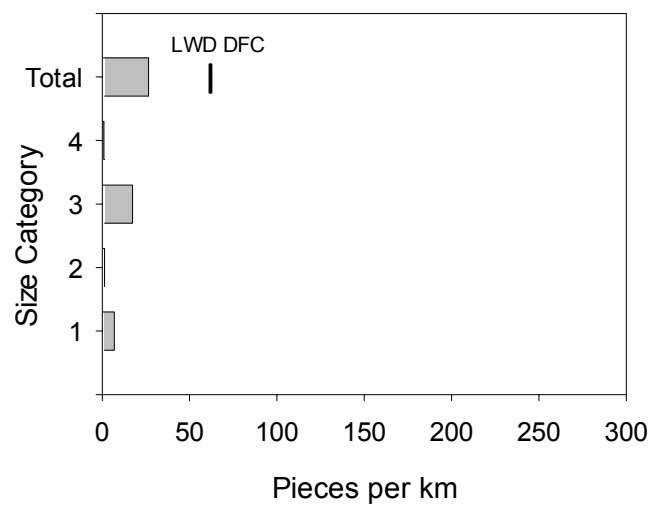
Frequency (percent) and cumulative percent of dominant and subdominant substrate occurrence for pools and riffles in Upper Creek, summer 2005.



Estimated area of Upper Creek in pools and riffles as calculated using BVET techniques, summer 2005.



Maximum and average depths and residual pool depths for pools and riffles in Upper Creek, summer 2005. The top and bottom of the boxes represent the 25th and 75th percentiles, the bar in the center of the box represents the median, whiskers represent the 10th and 90th percentiles, and closed circles represent the entire range of the data.



LWD per kilometer in Upper Creek, summer 2005. Y-axis labels are LWD size classes described below. The Nantahala and Pisgah NFs DFC for total LWD is about 62 pieces per km.

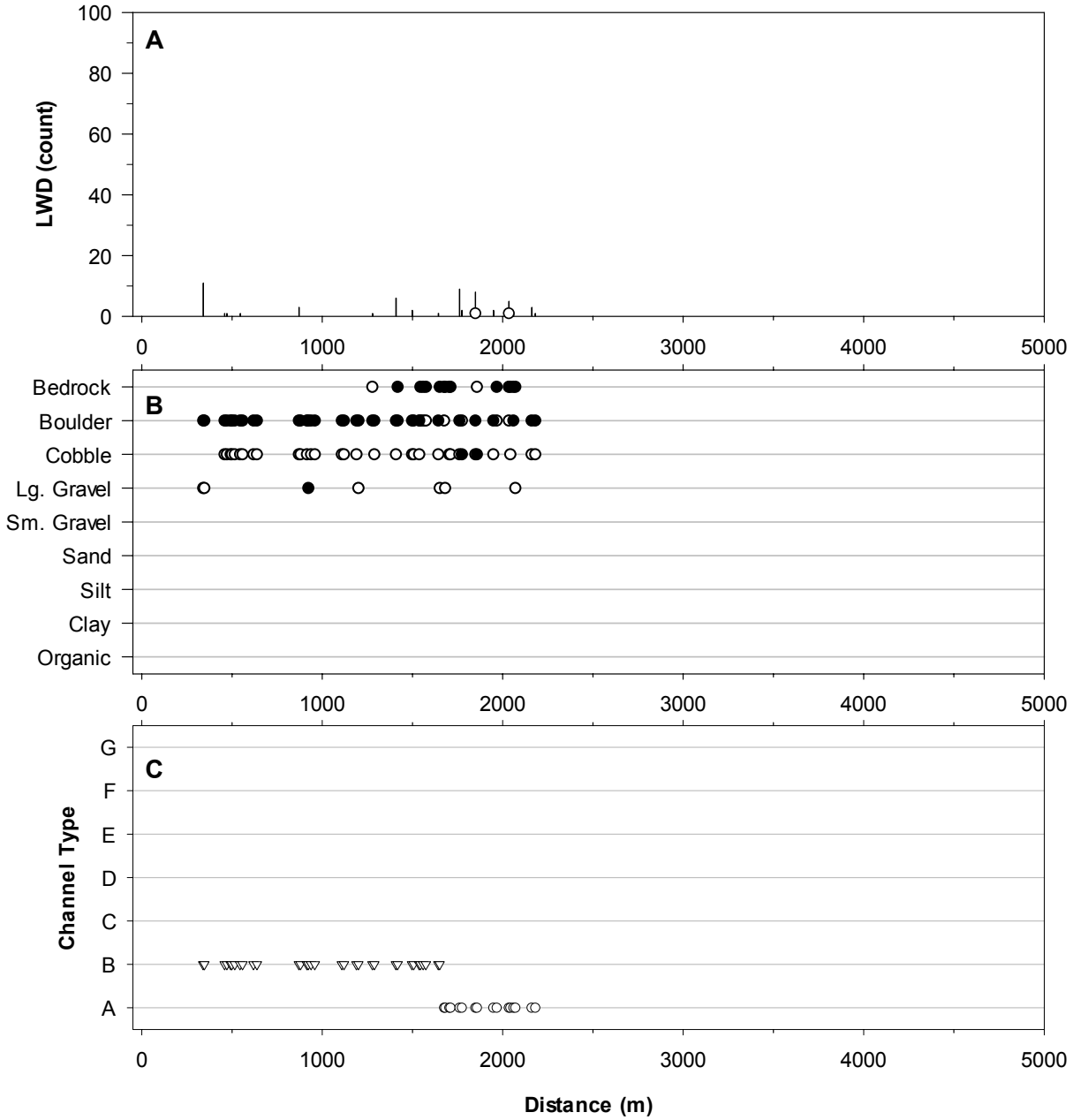
Size 1: < 5 m long, 10-55 cm diameter
Size 2: <5 m long, > 55 cm diameter
Size 3: > 5 m long, 10-55 cm diameter
Size 4: > 5 m long, > 55 cm diameter

Stream features found on Upper Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Stream Feature	Distance (m)	Width (m)	Comments
Side Channel	226.0	1.5	Out 267.8
Trib	620.0	0.5	In on right
Side Channel	778.0	2.0	Out 816m.
Side Channel	980.6	2.5	Out 1000
Trib	1165.0	1.5	On right.grassy knob branch
Fall	1468.0		H=1.5
Fall	1578.0		H=1.8
Fall	1662.0		
Seep	1670.0		Low flow on right.
Fall	1726.8		H=2m
Trib	2035.0	0.5	In on left.unnamed unmapped coming off salt rock gap
Trib	2143.0	7.5	In on right. Middle fork of uper creek.

Photos taken of Upper Creek during BVET habitat survey, summer 2005. Distance is meters from start of survey.

Unit Type	Unit #	Distance (m)	Comments
Trib		620.0	In on right
R	8	938.1	B channel now. Is transitioning into a channel.
Fall		1578.0	H=1.8m
C	16	1675.0	H=2m
Fall		1726.8	H=2m



Distribution and abundance of LWD, distribution of substrates, and distribution of Rosgen's channel types (Rosgen 1996) in Upper Creek, summer 2005. LWD, substrate, and channel type were recorded for each habitat unit in the stream. X-axis indicates distance upstream from Forest Service Boundary. Vertical bars on (A) indicate total count of LWD; open circles represent the amount of the total LWD that was >5 m in length, >55 cm in diameter (size 4). Closed circles on (B) are dominant substrates, open circles are subdominant substrates. See Appendix A for substrate sizes. See Appendix A for channel type descriptions from (C).