

**Mount Rogers National Recreation Area
Stream Habitat Survey**

United States Department of Agriculture
Forest Service
Southern Research Station
Center for Aquatic Technology Transfer

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July 1995

Stream: Middle Fork Helton Creek

District: Mt. Rogers

Quadrangle: White Top Mountain

Sample Date: 7/12/95

Downstream Starting Point: Second fence inside F.S. boundary

Total Distance Surveyed: 0.77 miles

Percent of Total Area - Pools: 30.3

Number of Pools: 72

Number of Pools per mile: 94

Total Pool Area: $10257 \pm 619.6 \text{ ft}^2$

Mean Pool Area: 142.5 ft^2

Correction Factor: 1.08

Mean Maximum Depth: 1.5'

Mean Average Depth: 1.0'

Percent of Total Area - Riffles: 69.7

Number of Riffles: 68

Number of Riffles per mile: 88

Total Riffle Area: $23,573.80 \pm 1,541.8 \text{ ft}^2$

Mean Riffle Area: 346.7 ft^2

Correction Factor: 0.99

Mean Maximum Depth: 0.9'

Mean Average Depth: 0.4'

Number of Large Woody Debris Pieces per Mile: 243

Wood < 15' and < 14": 106.5

Wood < 15' and > 14": 2.6

Wood > 15' and < 14": 123.4

Wood > 15' and > 14": 10.4

Mean Channel Width: 18.7'

Mean Riparian Width: 58.4'

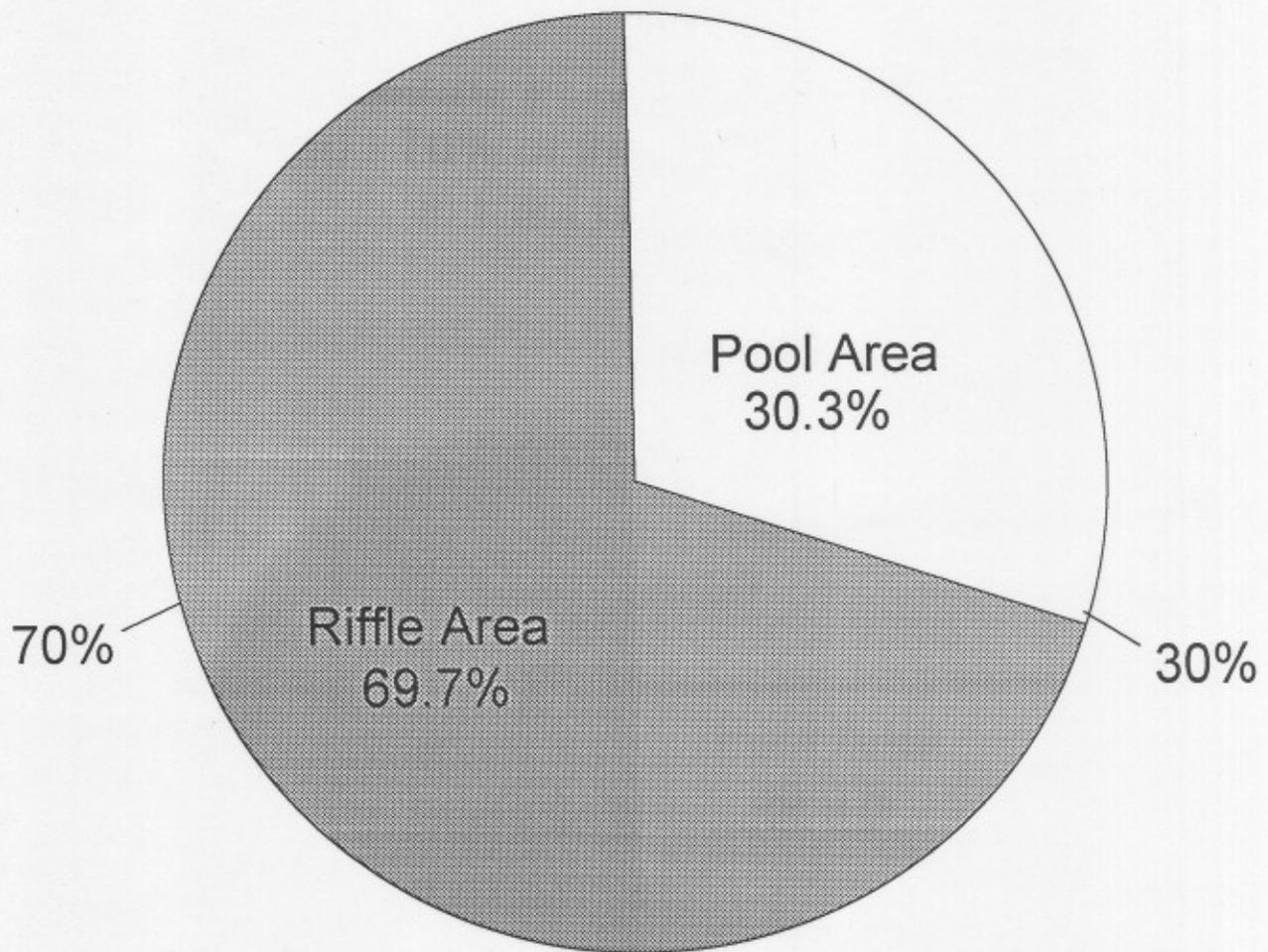
Mean Maximum Riparian Distance (either side): 47.6'

Mean Minimum Riparian Distance (either side): 10.8'

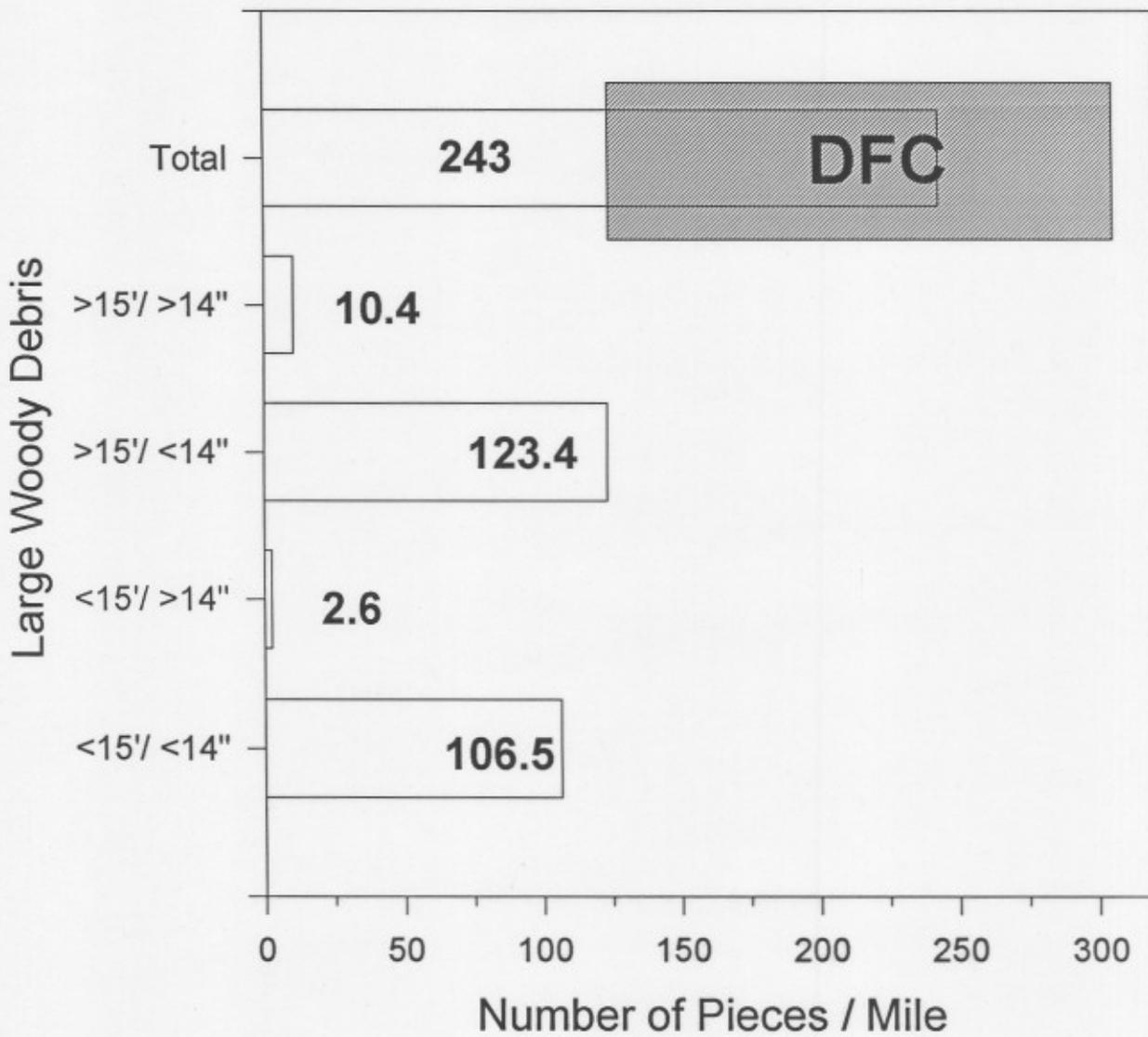
Maximum Riparian Width (Total): 135.3'

Minimum Riparian Width (Total): 39.1'

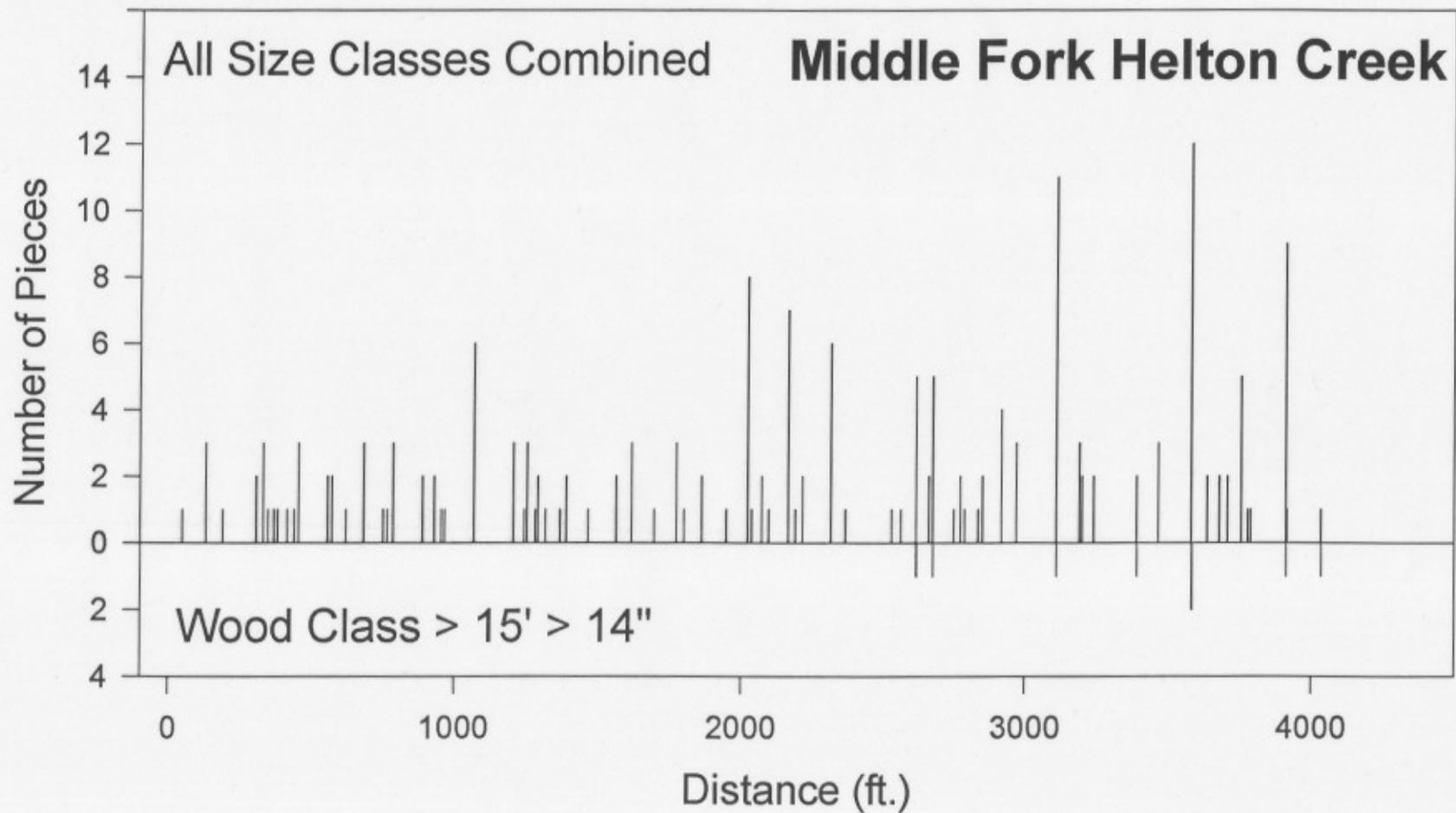
Middle Fork Helton Creek
DFC: 30 - 70% of the Total Stream Area
in Pool Habitat

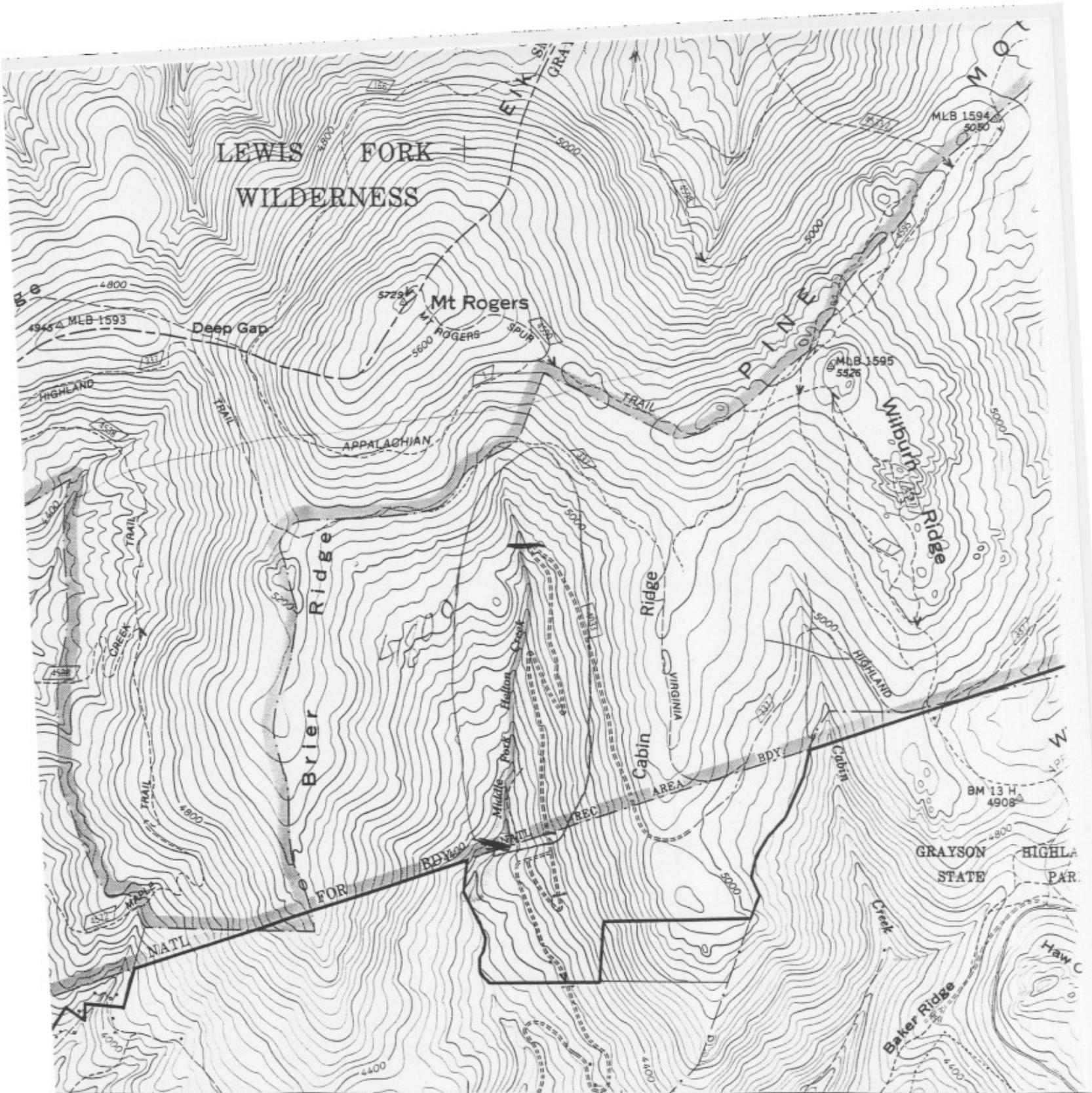


Middle Fork Helton Creek



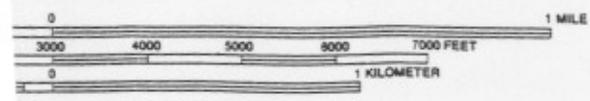
Large Woody Debris Distribution





ARK 219-SE) 450 451 32'30" 452 453 INTERIOR—GEOLOGICAL SURVEY, RESTON, VA

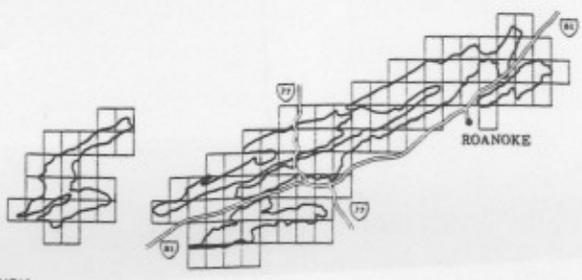
SCALE 1:24 000



INTERVAL 40 FEET
VERTICAL DATUM OF 1929

LEGEND

- | | | | |
|--|-----------------------|--|-------------------------|
| | Primary Highway | | Interstate |
| | Secondary Highway | | U.S. Highway |
| | Improved Road, Paved | | State Highway |
| | Improved Road, Gravel | | Secondary State Highway |
| | Improved Road, Dirt | | Forest Road |
| | Unimproved Road, Dirt | | |



WHITETOP MOUNTAIN
N3637.5-W8

1959

JEFFERSON NATIONAL MONUMENT

Stream: Big Laurel Creek

District: Mt. Rogers

Quadrangle: Whitetop Mountain

Sample Date: 7/11/95

Downstream Starting Point: Forest Service Boundary

Total Distance Surveyed: 0.88 miles

Percent of Total Area - Pools: 24.4

Number of Pools: 66

Number of Pools per mile: 75

Total Pool Area: 7741.5 ± 814.7 ft²

Mean Pool Area: 117.3 ft²

Correction Factor: 1.00

Mean Maximum Depth: 1.2'

Mean Average Depth: 0.8'

Percent of Total Area - Riffles: 75.6

Number of Riffles: 61

Number of Riffles per mile: 69

Total Riffle Area: 23,968.80 ± 2,840.7 ft²

Mean Riffle Area: 392.9 ft²

Correction Factor: 1.03

Mean Maximum Depth: 0.6'

Mean Average Depth: 0.3'

Number of Large Woody Debris Pieces per Mile: 248.9

Wood < 15' and < 14": 112.5

Wood < 15' and > 14": 10.2

Wood > 15' and < 14": 119.3

Wood > 15' and > 14": 6.8

Mean Channel Width: 15.0'

Mean Riparian Width: 67.9'

Mean Maximum Riparian Distance (either side): 37.2'

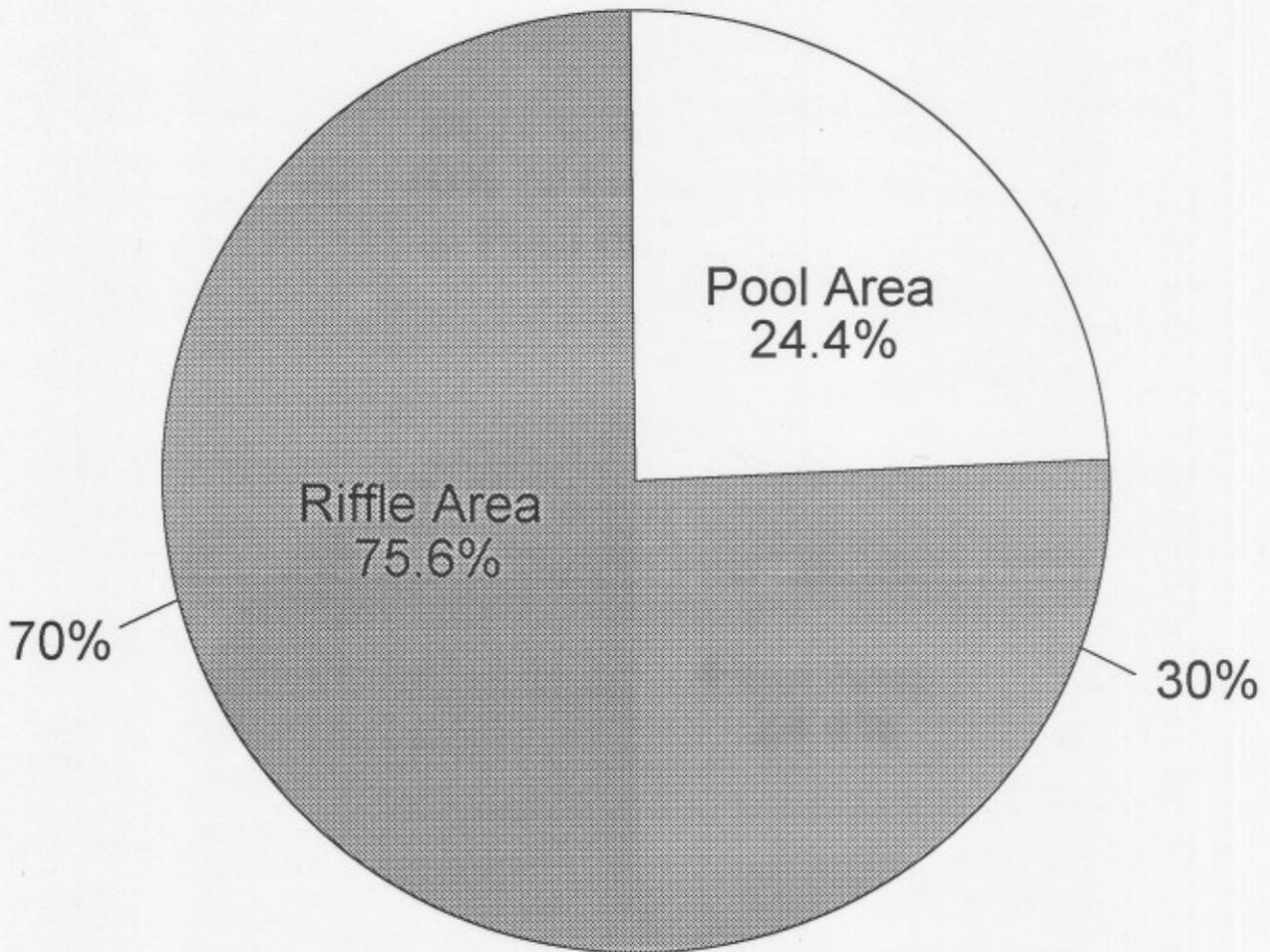
Mean Minimum Riparian Distance (either side): 12.9'

Maximum Riparian Width (Total): 103.2'

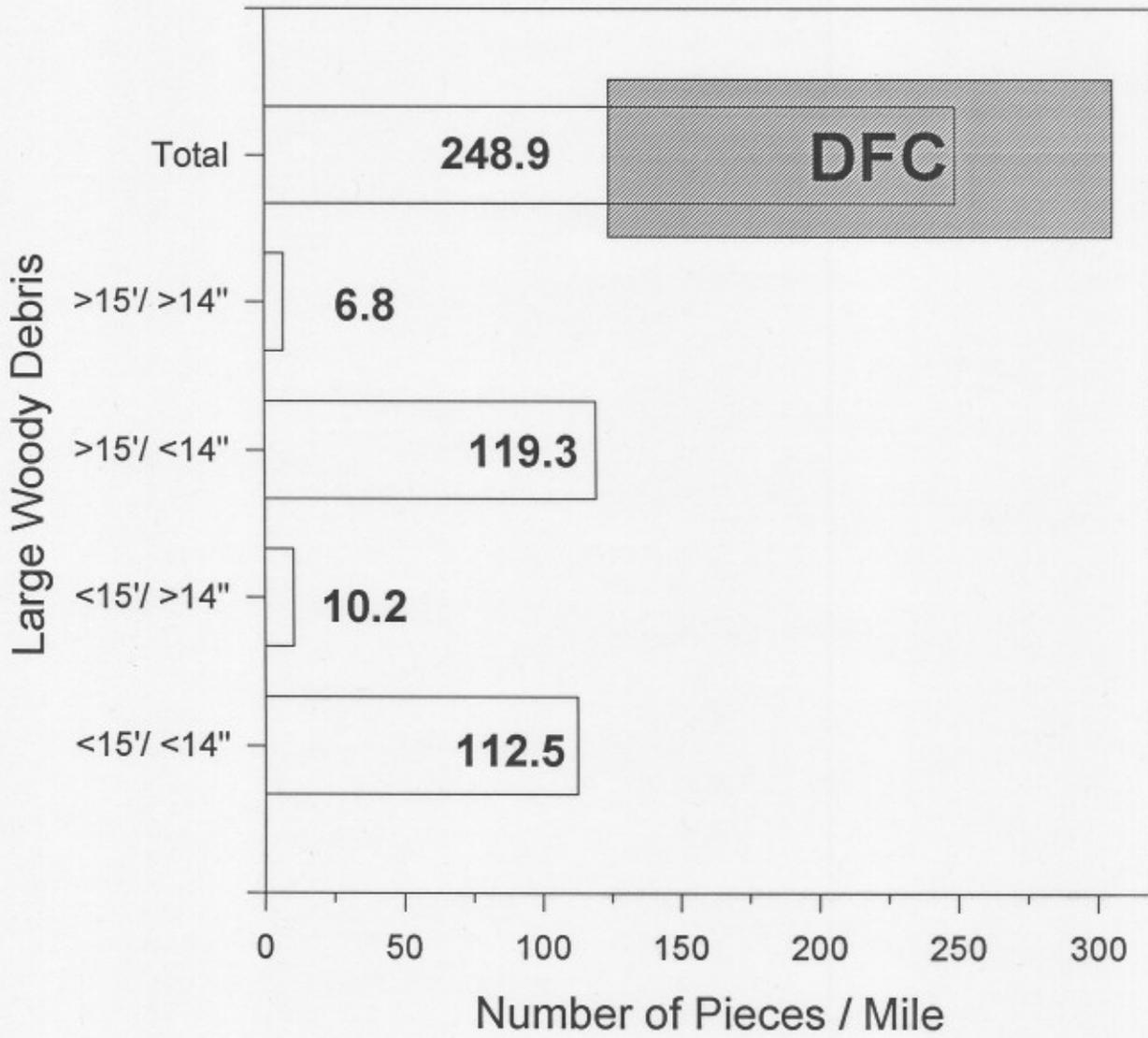
Minimum Riparian Width (Total): 42.5'

Big Laurel Creek

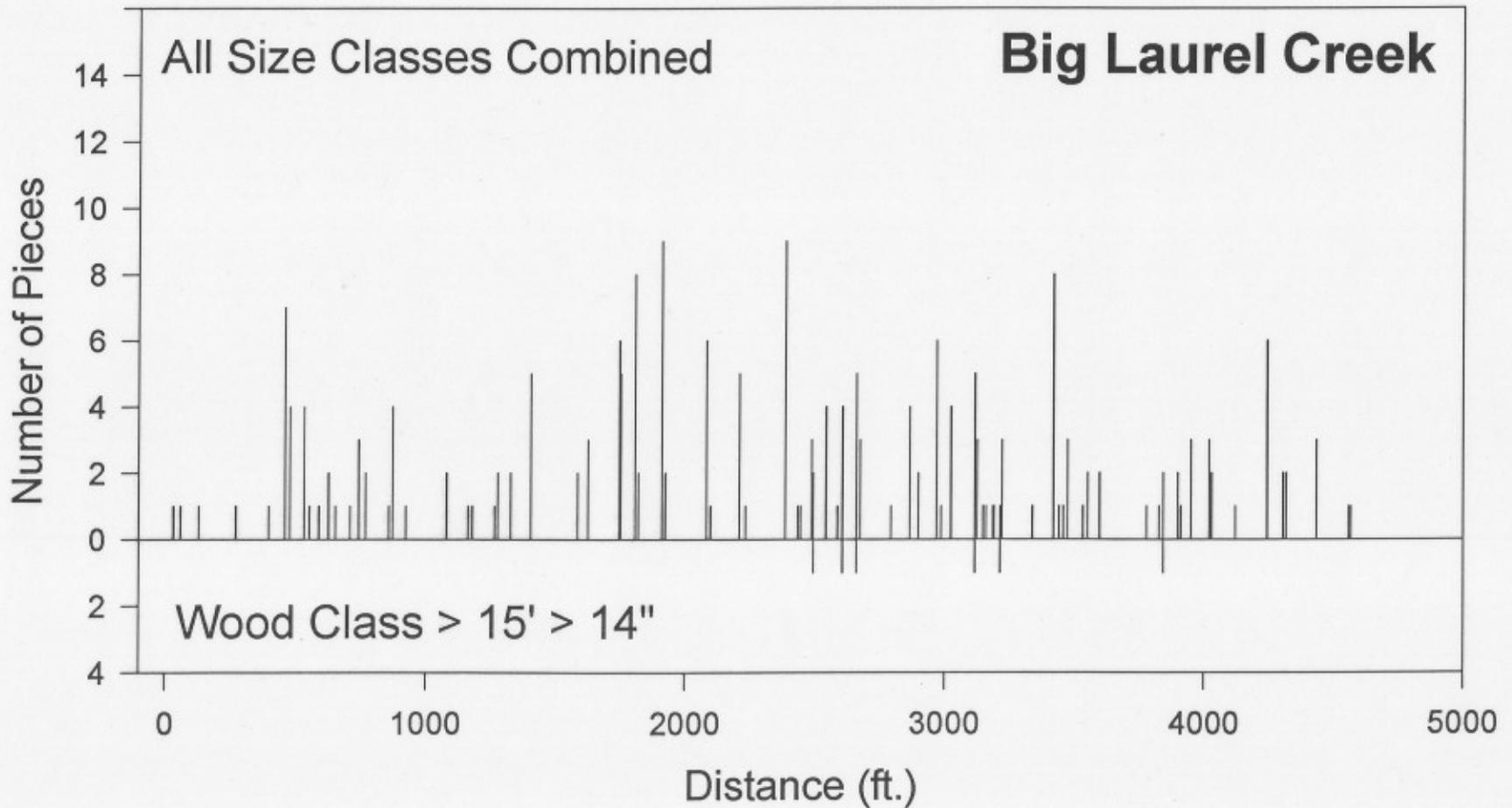
DFC: 30 - 70% of the Total Stream Area
in Pool Habitat

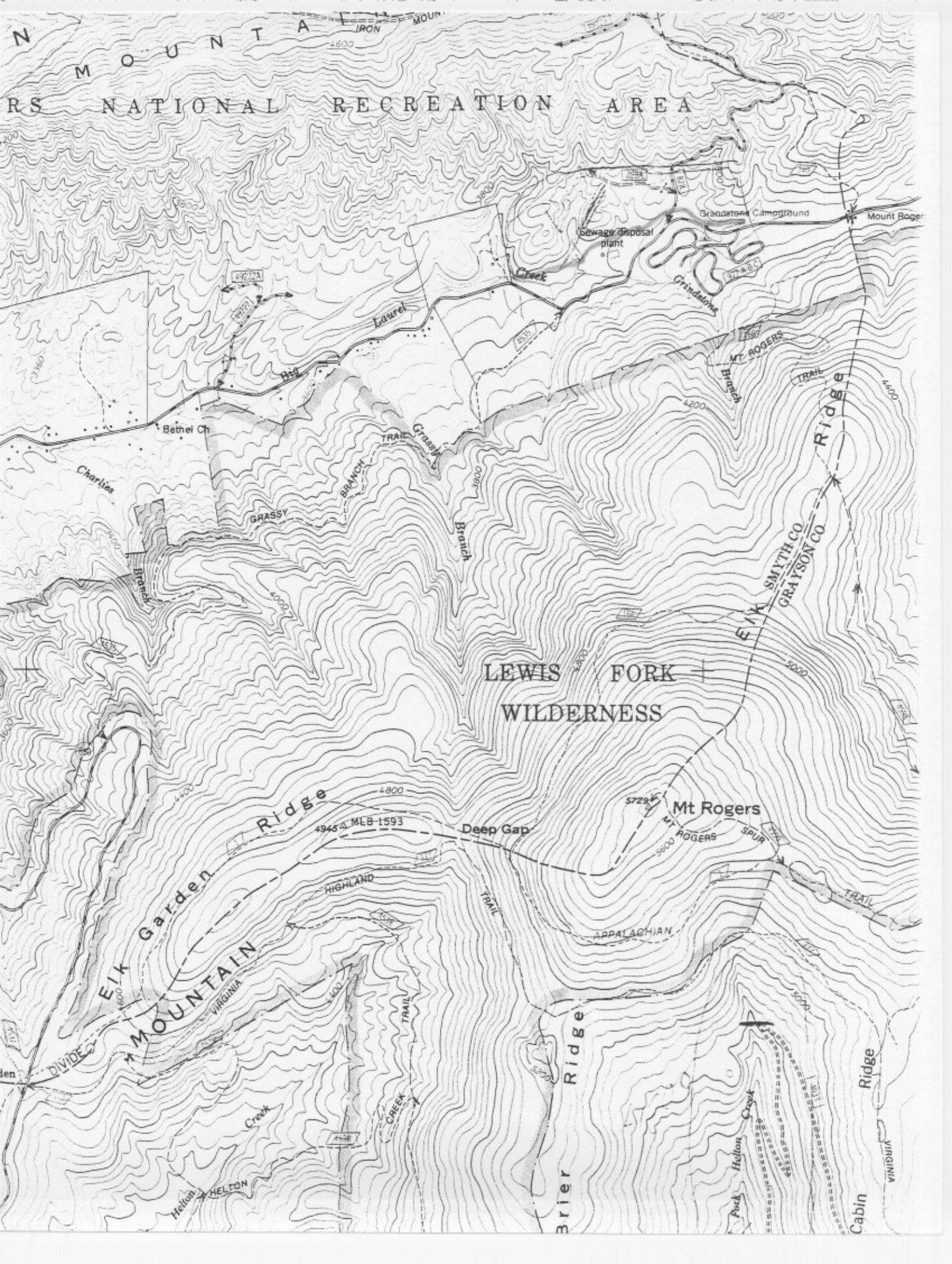


Big Laurel Creek



Large Woody Debris Distribution





Stream: Fox Creek (downstream of Appalachian Trail)

District: Mt. Rogers

Quadrangle: Trout Dale

Sample Date: 7/12/95

Downstream Starting Point: USFS Boundary

Total Distance Surveyed: 3.3 miles

Percent of Total Area - Pools: 47.6

Number of Pools: 186

Number of Pools per mile: 56.4

Total Pool Area: $163,066.0 \text{ ft}^2 \pm 11,059.1 \text{ ft}^2$

Mean Pool Area: 876.7 ft^2

Correction Factor: 1.03

Mean Maximum Depth: 2.0'

Mean Average Depth: 1.4'

Percent of Total Area - Riffles: 52.4

Number of Riffles: 152

Number of Riffles per mile: 46.1

Total Riffle Area: $179,218.6 \text{ ft}^2 \pm 21,413.3 \text{ ft}^2$

Mean Riffle Area: 9156.9 ft^2

Correction Factor: 1.05

Mean Maximum Depth: 1.1'

Mean Average Depth: 0.7'

Number of Large Woody Debris Pieces per Mile: 144.2

Wood < 15' and < 14": 64.2

Wood < 15' and > 14": 5.5

Wood > 15' and < 14": 66.4

Wood > 15' and > 14": 8.2

Mean Channel Width: 32.7'

Mean Riparian Width: 213.4'

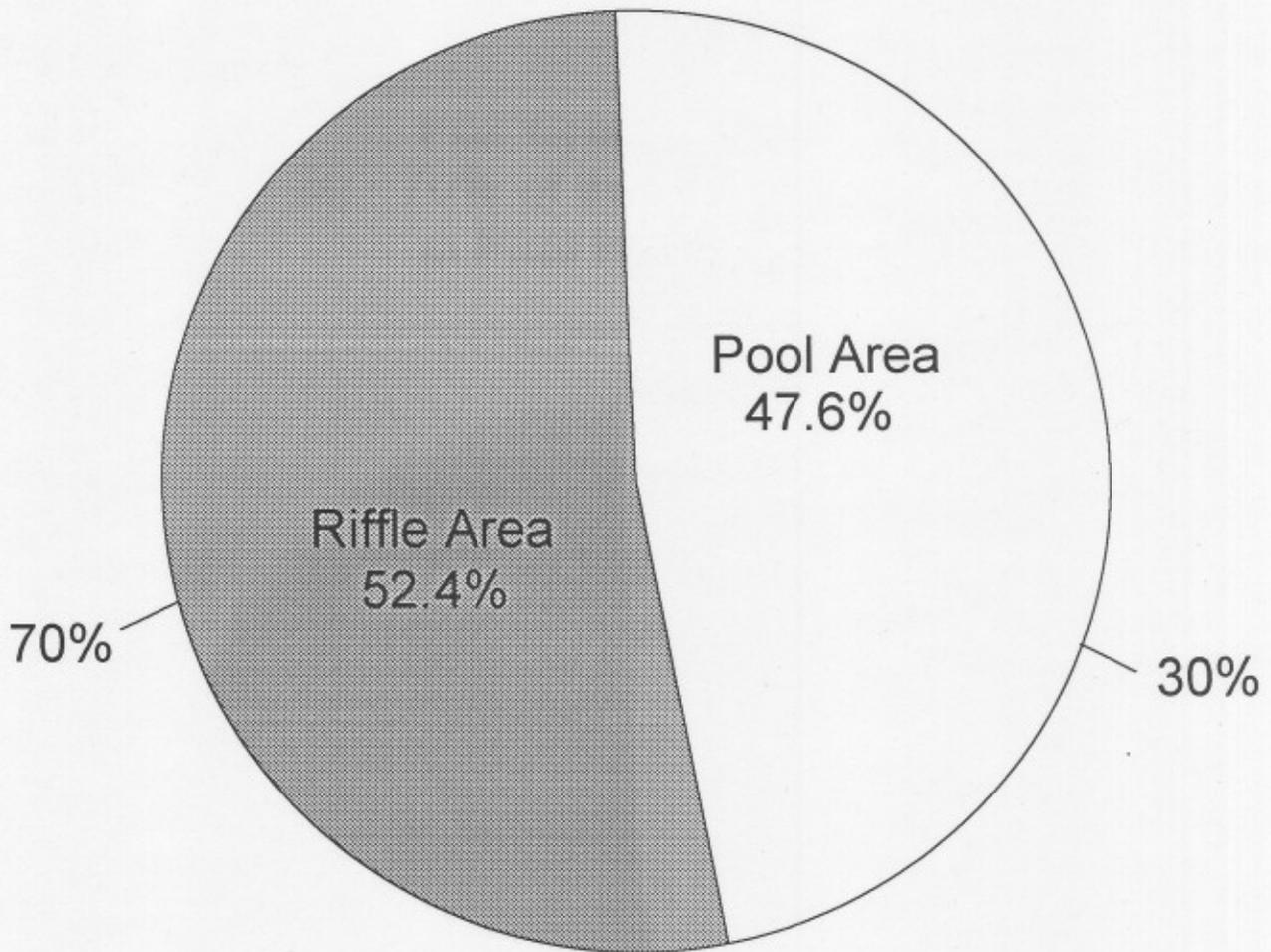
Mean Maximum Riparian Distance (either side): 149.9'

Mean Minimum Riparian Distance (either side): 33.9'

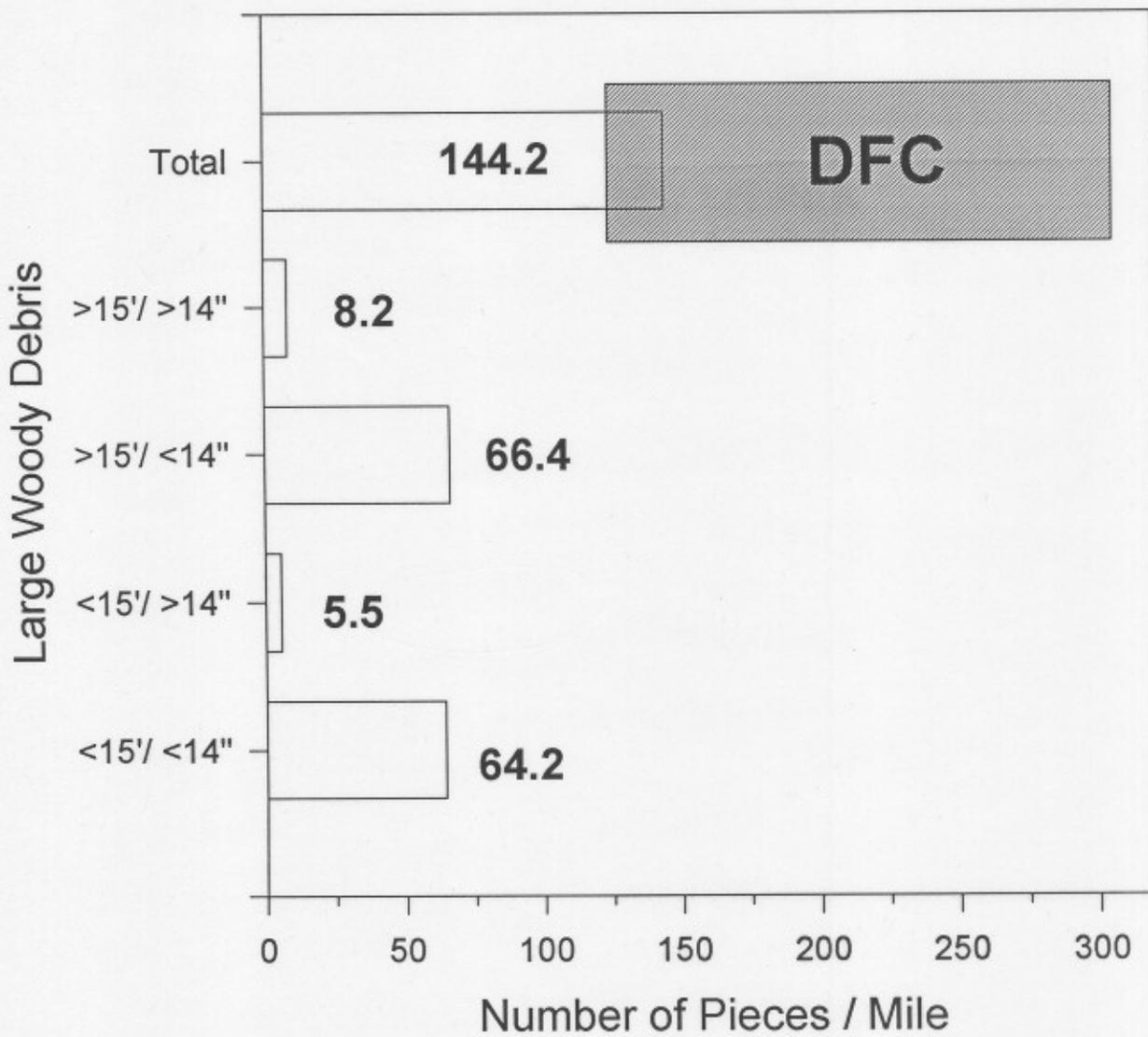
Maximum Riparian Width (Total): 443.5'

Minimum Riparian Width (Total): 63.5'

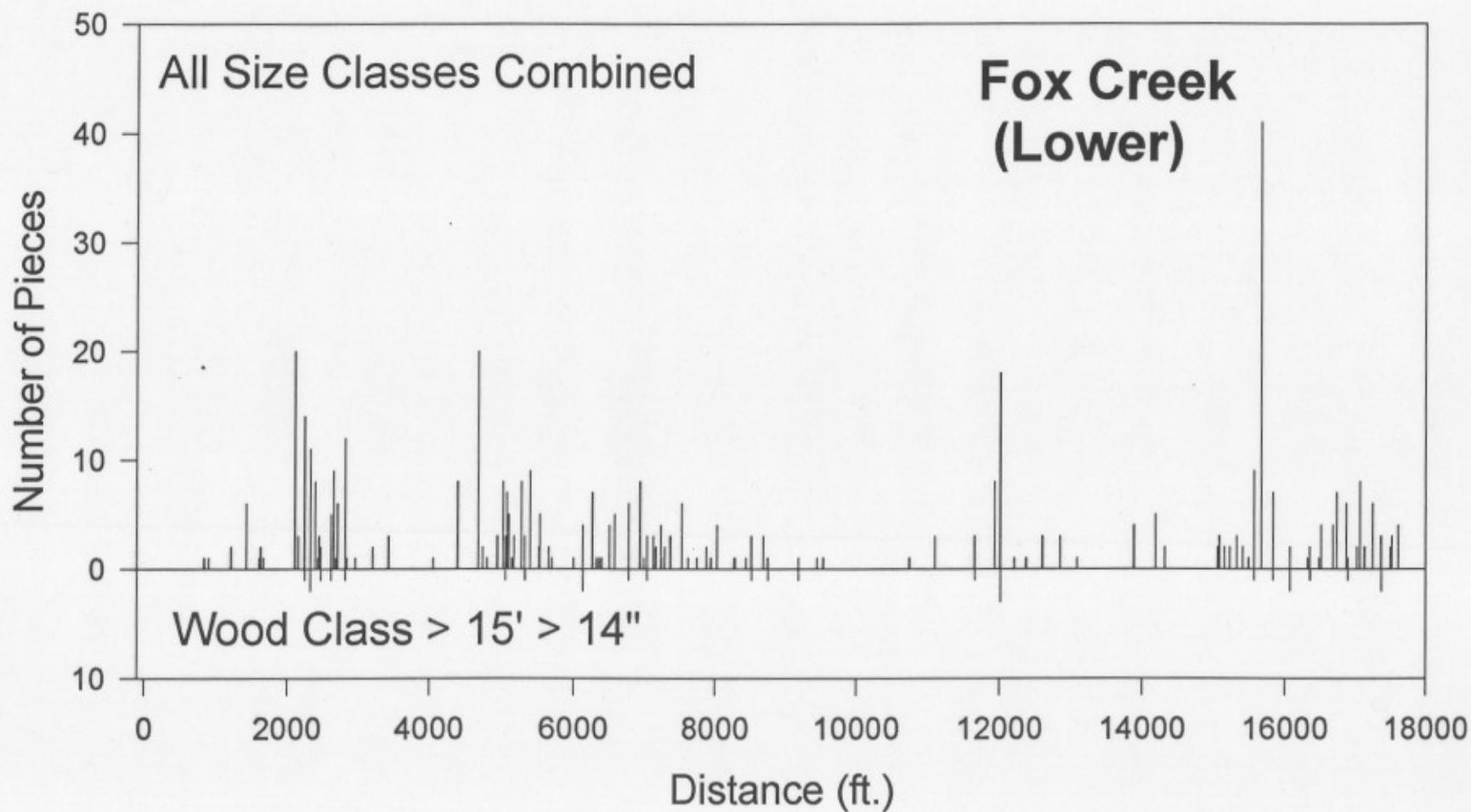
Fox Creek (Lower)
DFC: 30 - 70% of the Total Stream Area
in Pool Habitat



Fox Creek (Below Appalachian Trail)



Large Woody Debris Distribution



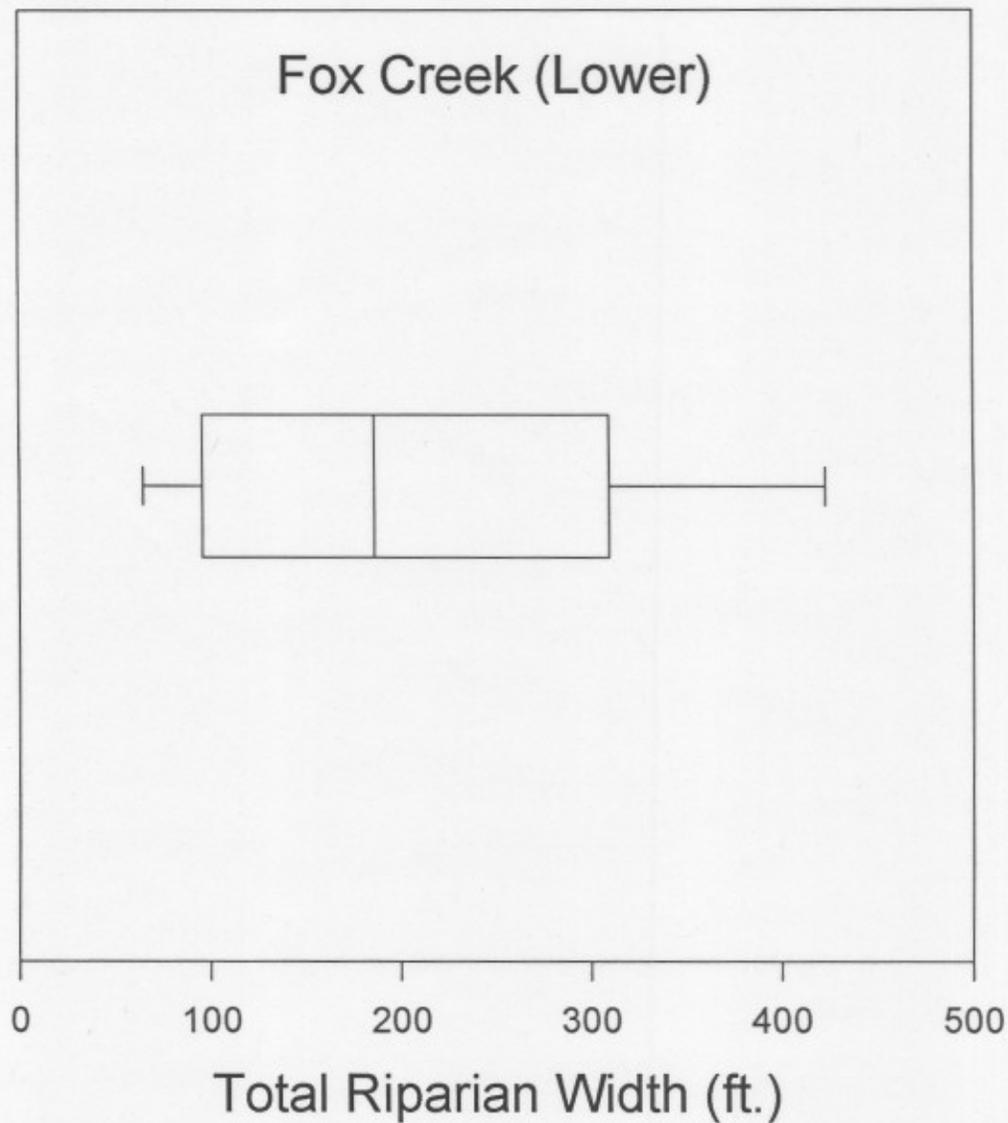
Riparian Width

Stream: Fox Creek (Lower)

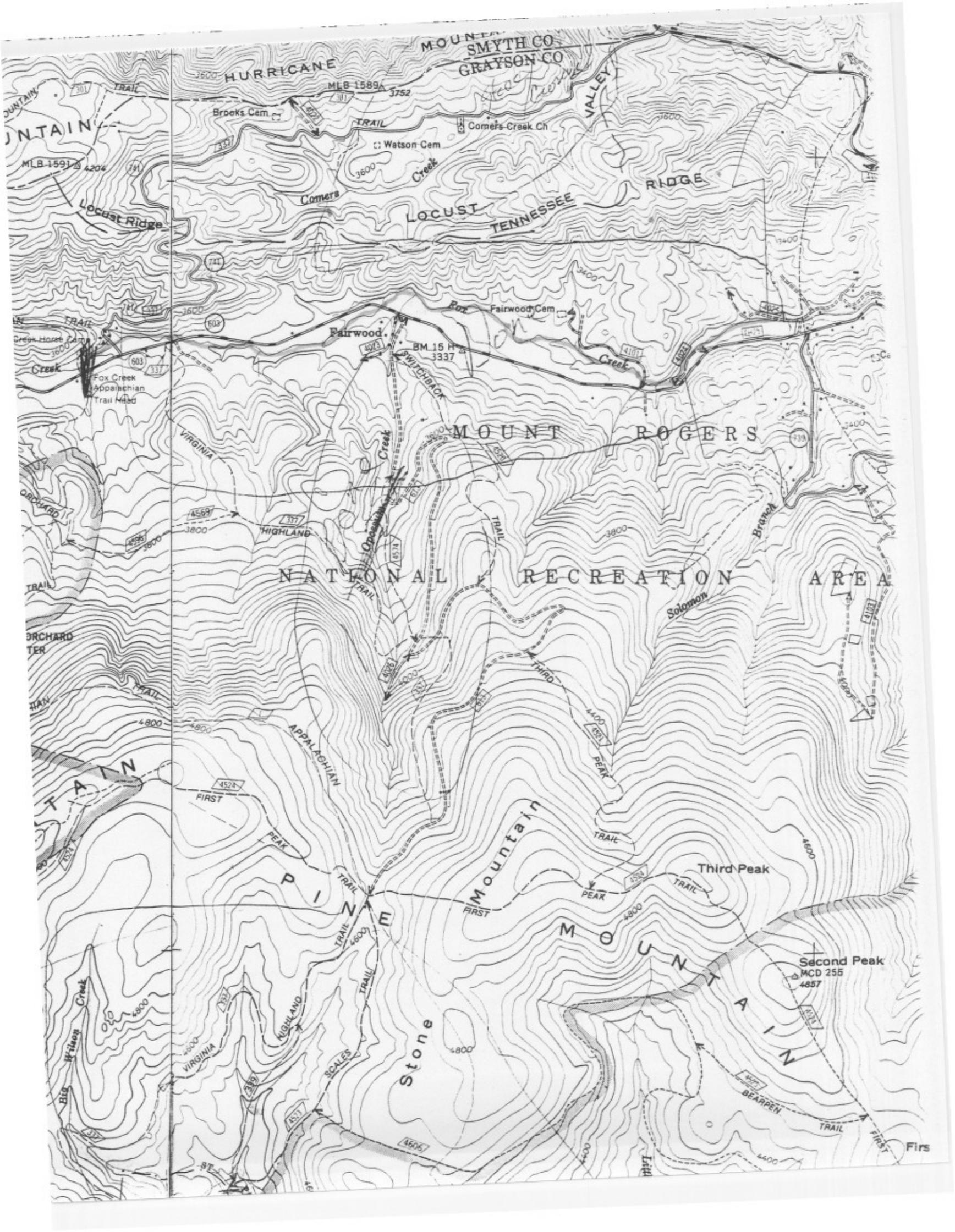
Number of measurements: 7

Mean width: 213.4 Std Dev: 128.0

Max: 443.5 Min: 63.5



Box plot of total riparian width. The box encloses the middle 50% of the observations, the bar in the center of the box represents the median, and the capped lines extending above and below the box represent the 90% and 10% quantiles.



Stream: FOX CREEK UPPER

District: MT. ROGERS

Quadrangle: Whitetop Mountain

Sample Date: 20-21 July 1992

Downstream Starting Point: Appalachian Trail

Total Distance Surveyed: 1.6 miles

Percent of Total Area - Pools: 48.6

Number of Pools: 259

Number of Pools per mile: 167.2

Total Pool Area: $36564.9 \text{ ft}^2 \pm 929.8 \text{ ft}^2$

Mean Pool Area: 141.2 ft^2

Correction Factor: 0.98

Mean Maximum Depth: 0.9'

Mean Average Depth: 0.7'

Percent of Total Area - Riffles: 51.4

Number of Riffles: 166

Number of Riffles per mile: 107.2

Total Riffle Area: $38662.9 \text{ ft}^2 \pm 1054.7 \text{ ft}^2$

Mean Riffle Area: 232.9 ft^2

Correction Factor: 1.04

Mean Maximum Depth: 0.4'

Mean Average Depth: 0.3'

Number of Large Woody Debris Pieces per Mile: 311.7

Wood < 15' and < 14": 245.3

Wood < 15' and > 14": 23.2

Wood > 15' and < 14": 41.3

Wood > 15' and > 14": 1.9

Mean Channel Width: Not Measured

Mean Riparian Width: Not Measured

Mean Maximum Riparian Distance: Not Measured

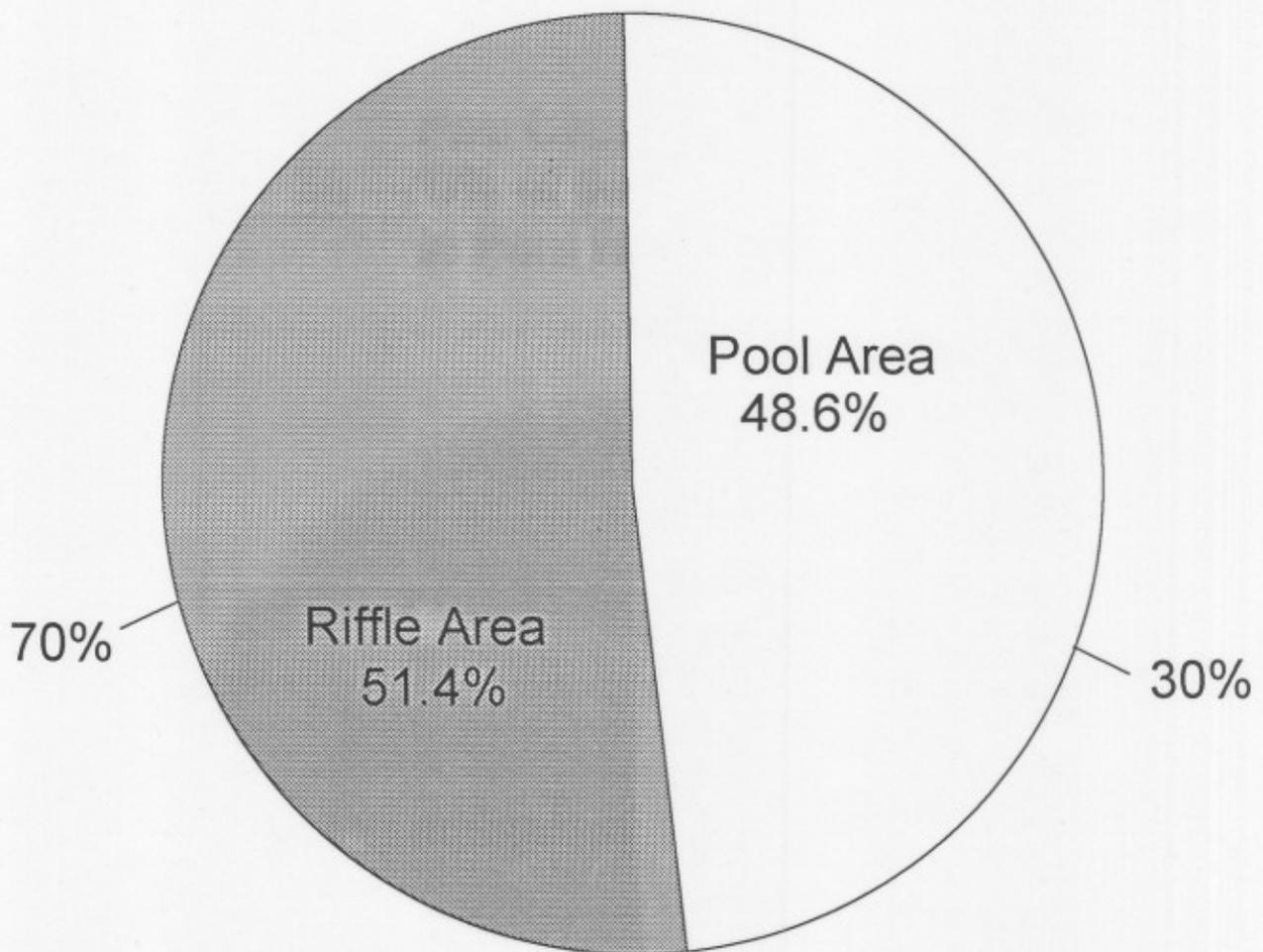
Mean Minimum Riparian Distance: Not Measured

Maximum Riparian Width (Total): Not Measured

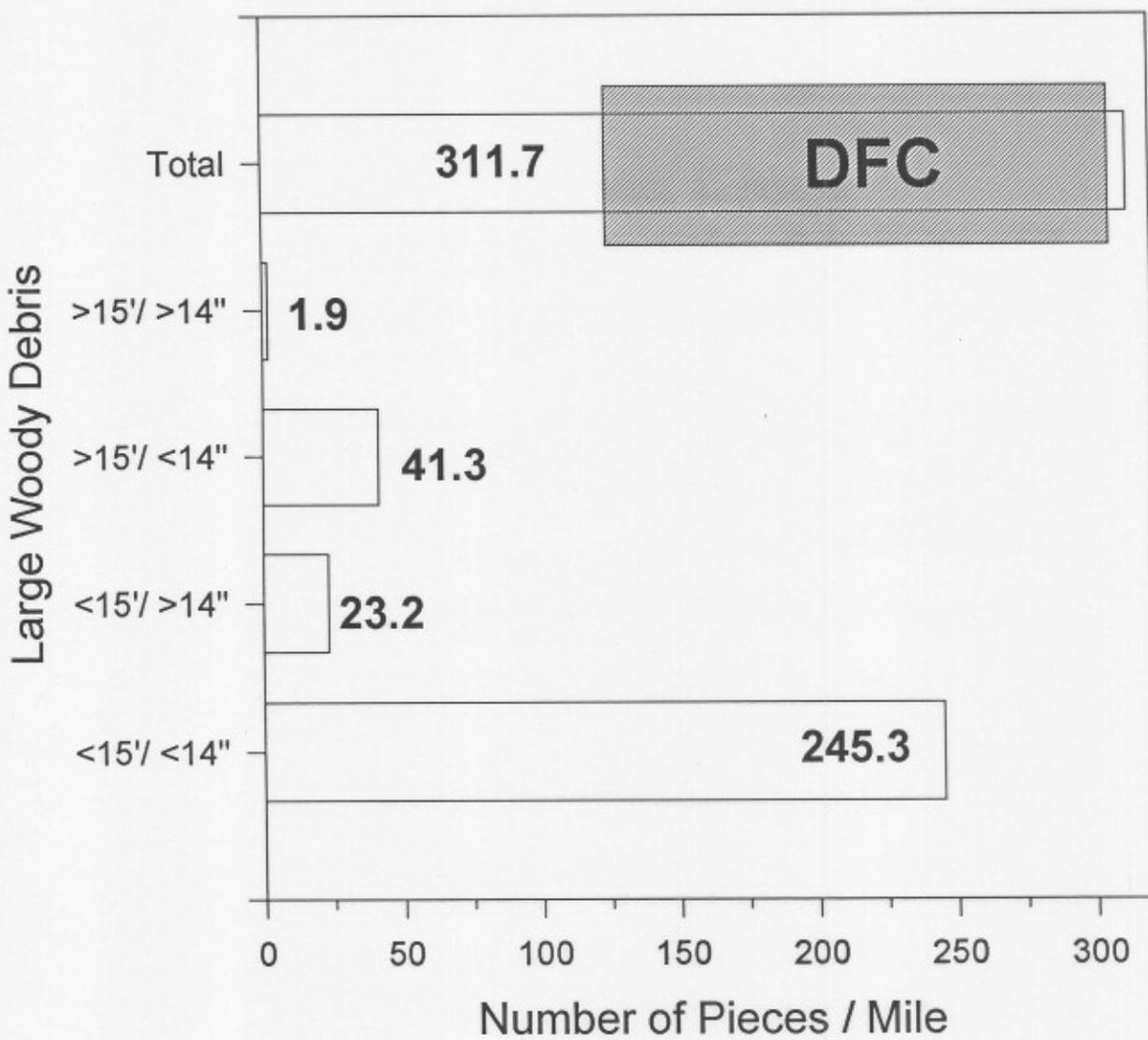
Minimum Riparian Width (Total): Not Measured

Fox Creek (Upper)

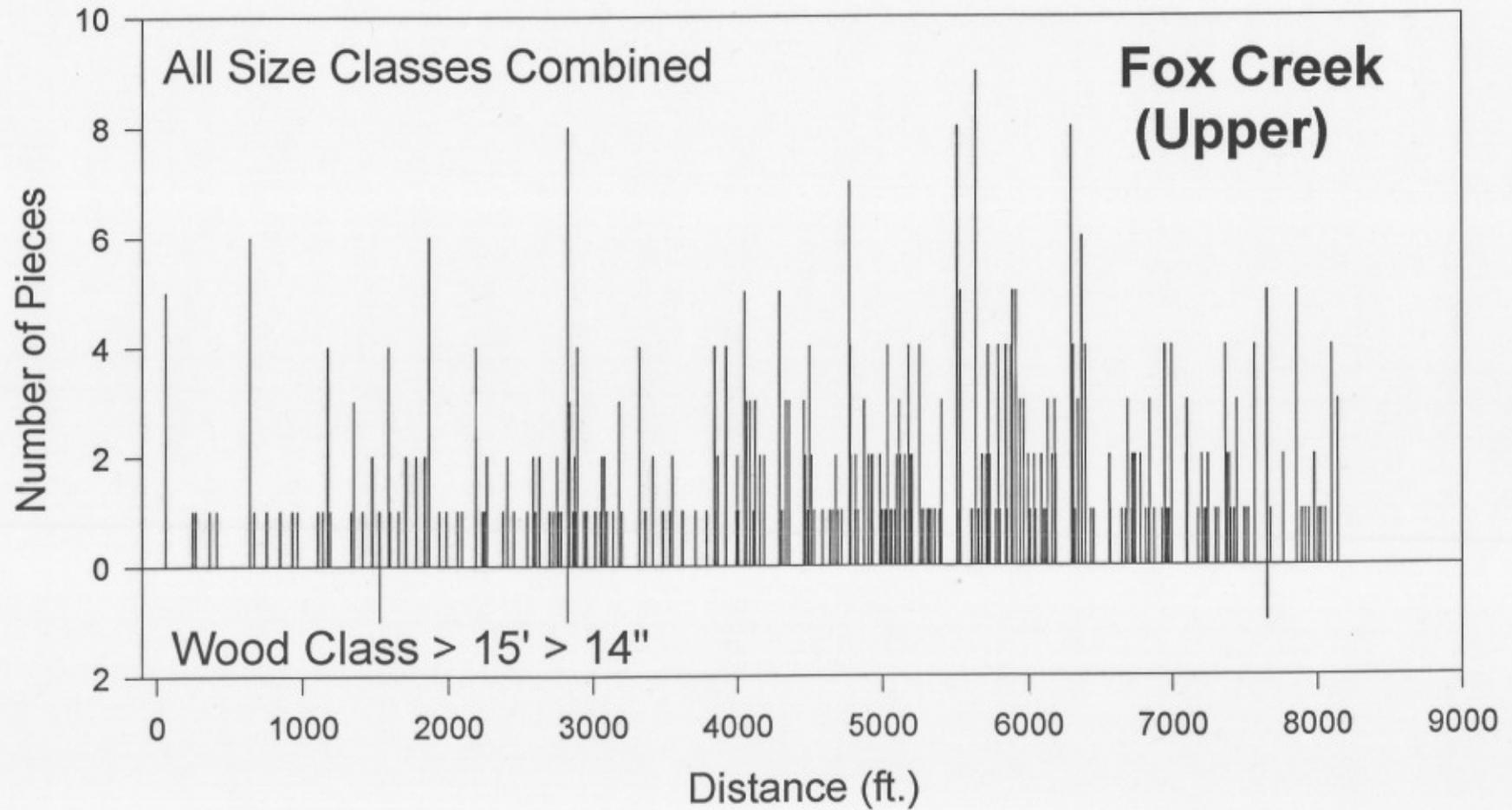
DFC: 30 - 70% of the Total Stream Area
in Pool Habitat

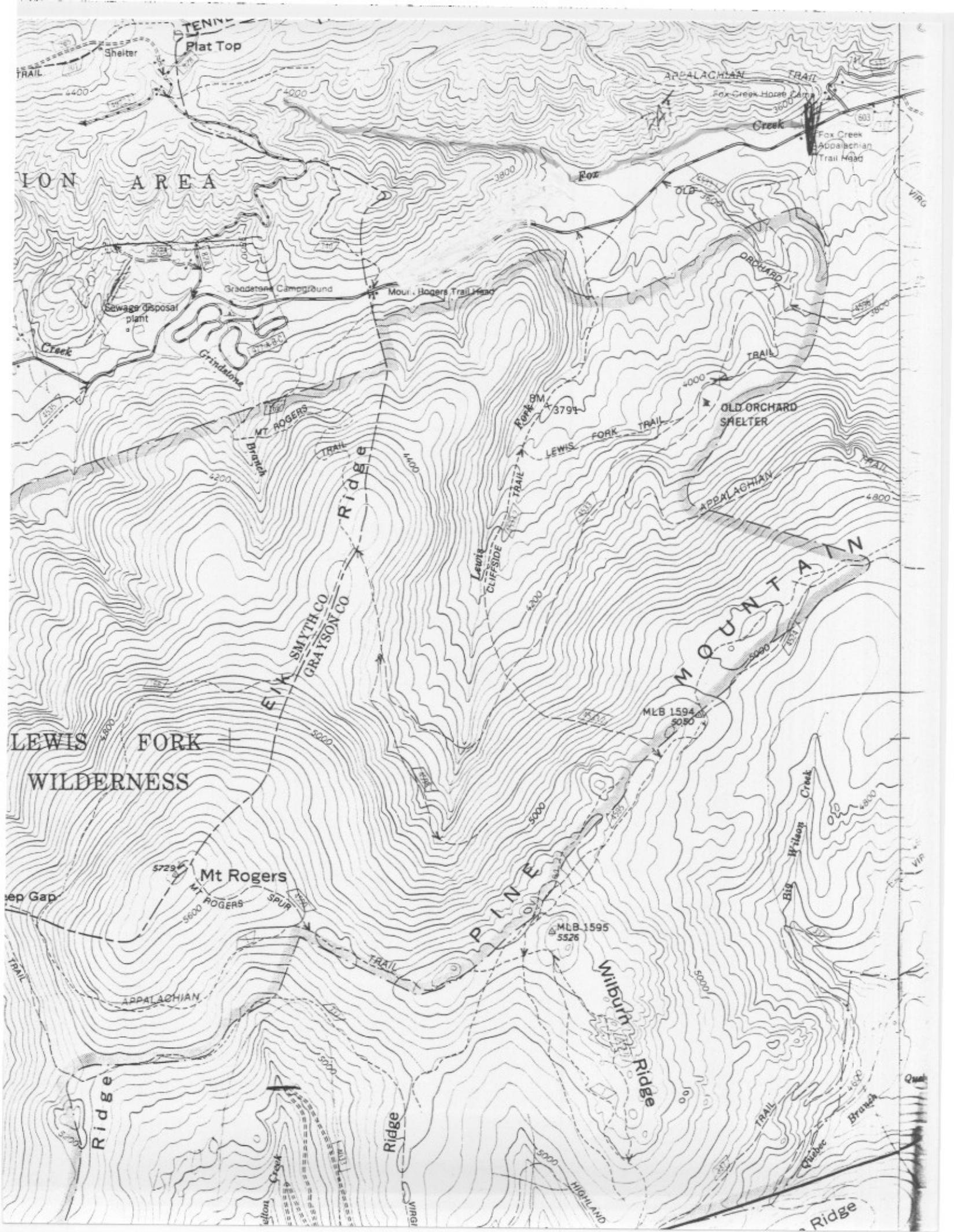


Fox Creek (Above Appalachian Trail)



Large Woody Debris Distribution





Stream: Fox Creek Tributary (upstream of S.R.4101)

District: Mt. Rogers

Quadrangle: Trout Dale

Sample Date: 7/12/95

Downstream Starting Point: Fox Creek Confluence

Total Distance Surveyed: 0.37 miles

Percent of Total Area - Pools: 10.9

Number of Pools: 37

Number of Pools per mile: 100.0

Total Pool Area: $2,174.7 \text{ ft}^2 \pm 809.5 \text{ ft}^2$

Mean Pool Area: 58.8 ft^2

Correction Factor: 1.28

Mean Maximum Depth: 0.8'

Mean Average Depth: 0.6'

Percent of Total Area - Riffles: 89.1

Number of Riffles: 131

Number of Riffles per mile: 87.8

Total Riffle Area: $17,851.2 \text{ ft}^2 \pm 2,989.2 \text{ ft}^2$

Mean Riffle Area: 575.8 ft^2

Correction Factor: 1.14

Mean Maximum Depth: 0.5'

Mean Average Depth: 0.2'

Number of Large Woody Debris Pieces per Mile: 289.2

Wood < 15' and < 14": 100.0

Wood < 15' and > 14": 56.8

Wood > 15' and < 14": 111.0

Wood > 15' and > 14": 21.6

Mean Channel Width: 13.3'

Mean Riparian Width: Not Measured

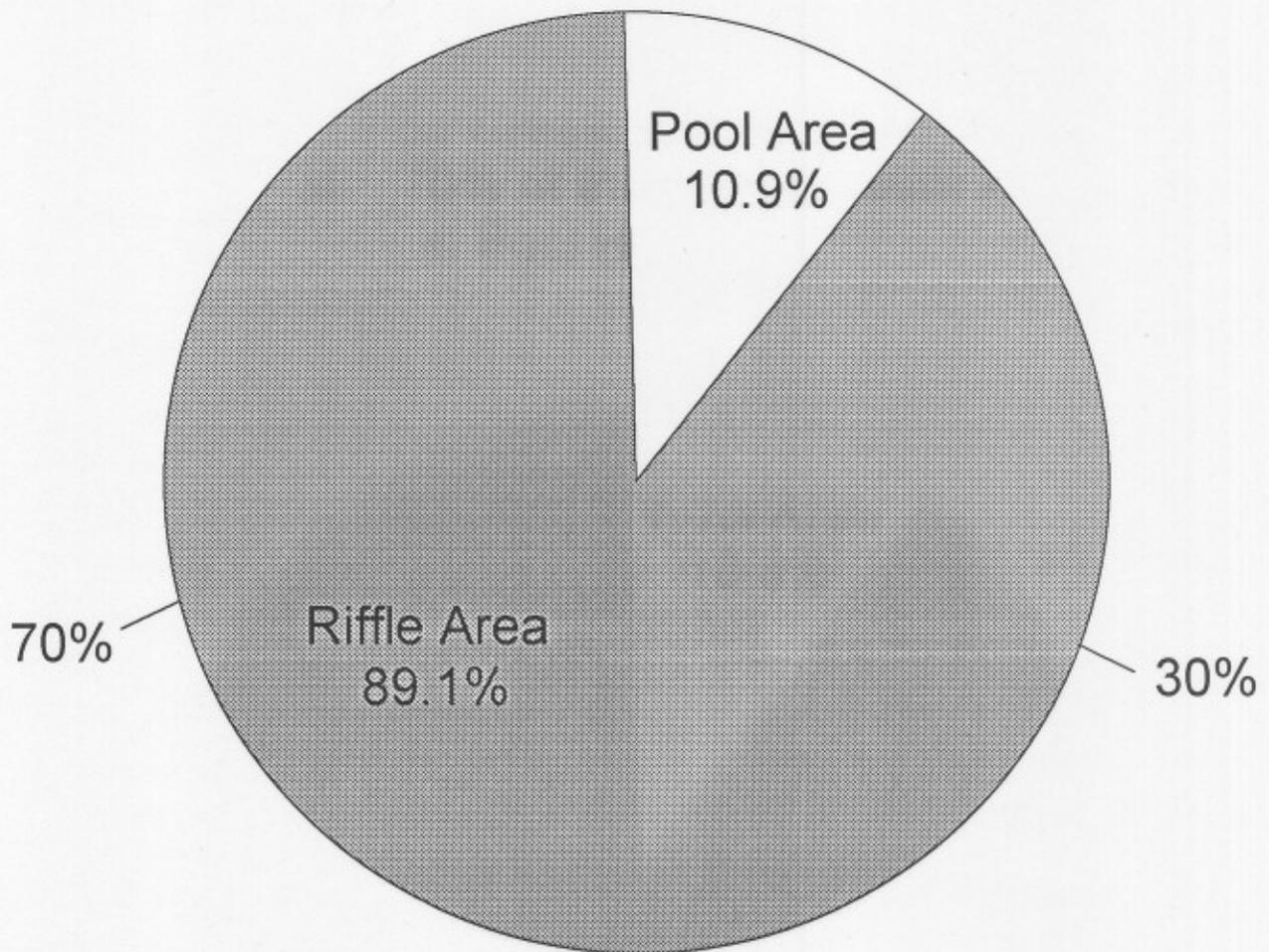
Mean Maximum Riparian Distance: Not Measured

Mean Minimum Riparian Distance: Not Measured

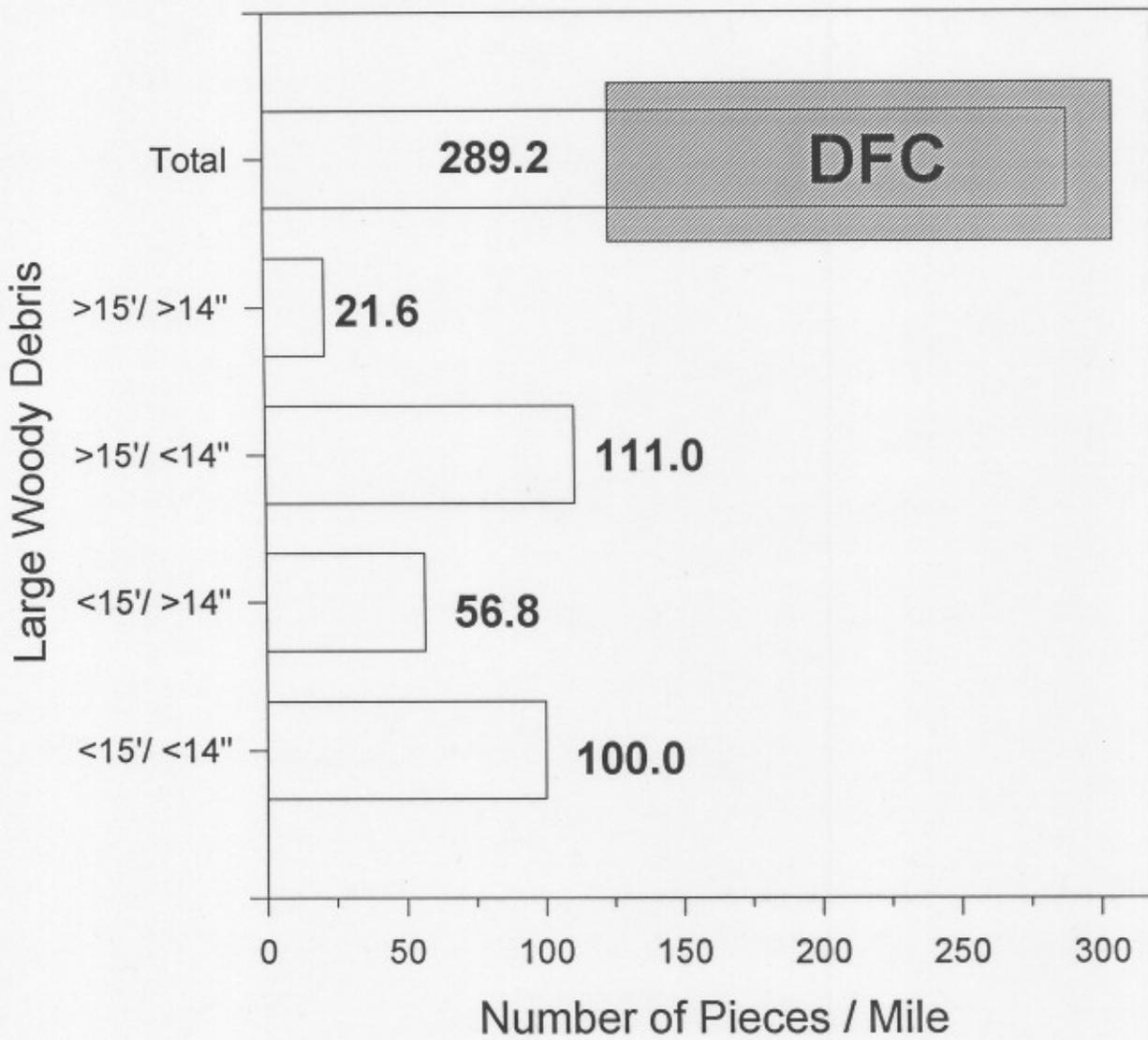
Maximum Riparian Width (Total): Not Measured

Minimum Riparian Width (Total): Not Measured

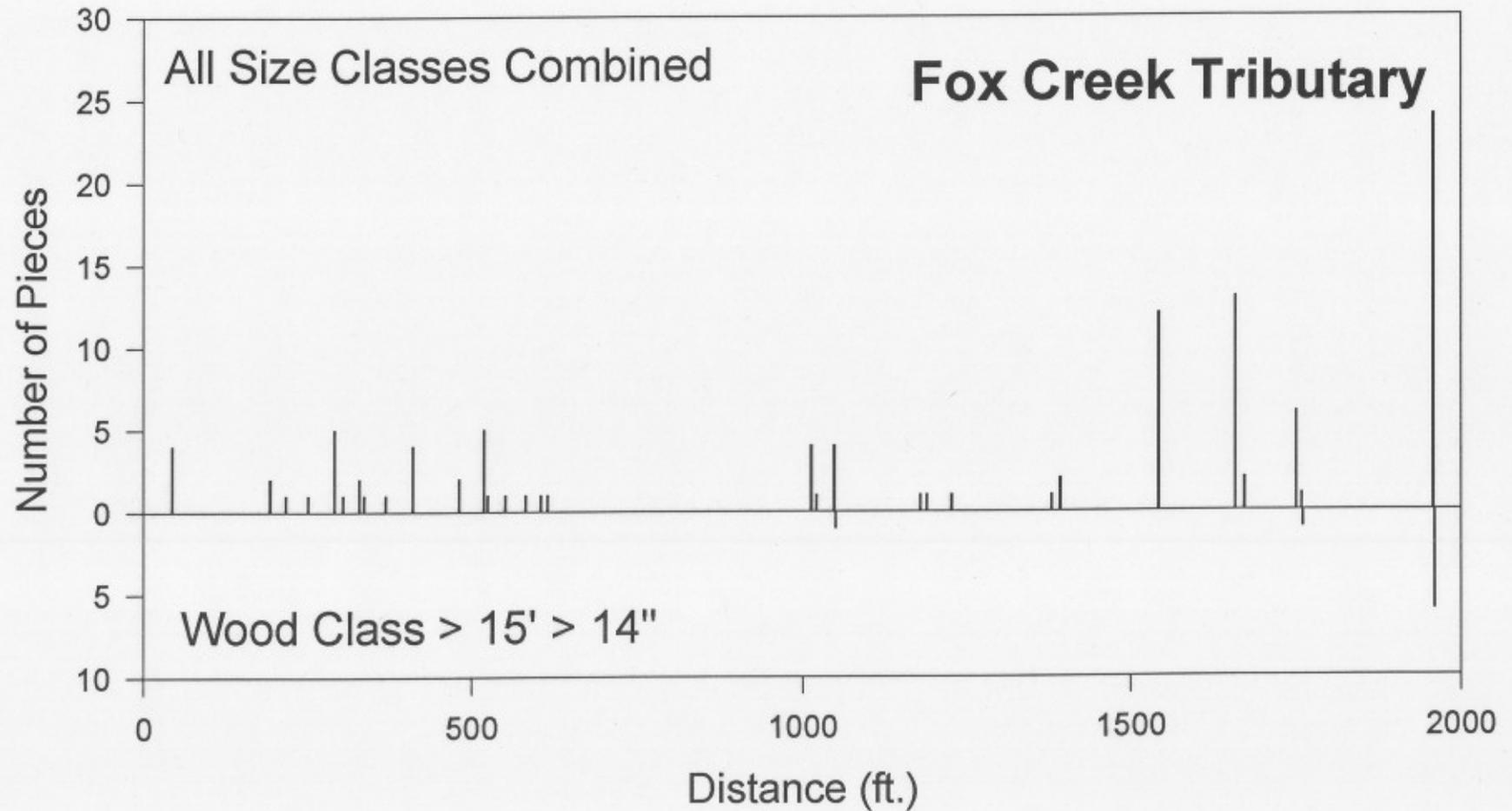
Fox Creek Tributary
DFC: 30 - 70% of the Total Stream Area
in Pool Habitat

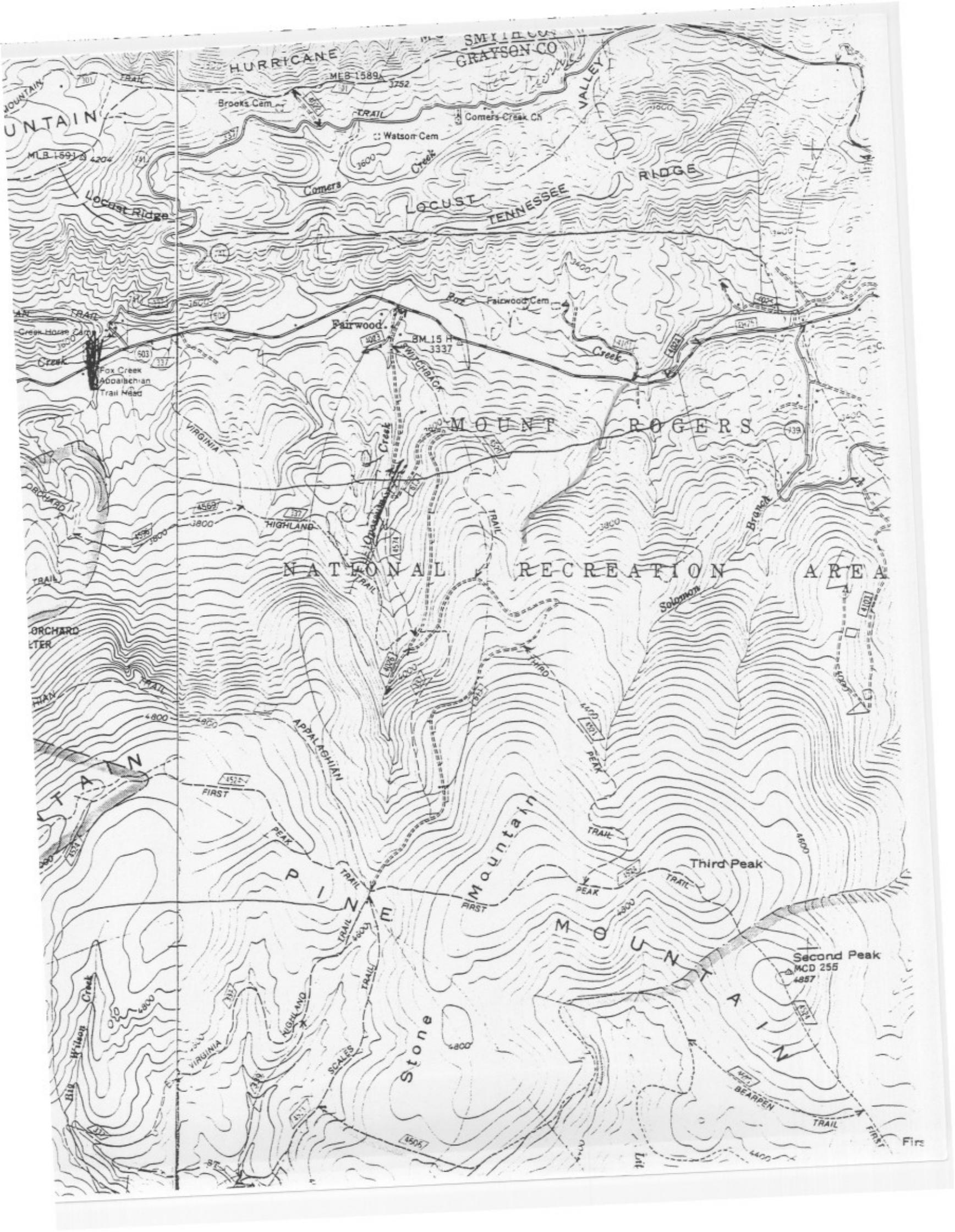


Fox Creek Tributary



Large Woody Debris Distribution





Stream: Opossum Creek

District: Mt. Rogers

Quadrangle: Trout Dale

Sample Date: 7/12/95

Downstream Starting Point: Fox Creek Confluence

Total Distance Surveyed: 1.6 miles

Percent of Total Area - Pools: 33.5

Number of Pools: 182

Number of Pools per mile: 113.8

Total Pool Area: 20,917.7 ft² ± 1,604 ft²

Mean Pool Area: 114.9 ft²

Correction Factor: 1.1

Mean Maximum Depth: 1.4'

Mean Average Depth: 0.9'

Percent of Total Area - Riffles: 66.5

Number of Riffles: 163

Number of Riffles per mile: 101.9

Total Riffle Area: 41,495.5 ft² ± 2,298.3 ft²

Mean Riffle Area: 256.1 ft²

Correction Factor: 0.98

Mean Maximum Depth: 0.7'

Mean Average Depth: 0.4'

Number of Large Woody Debris Pieces per Mile: 184.4

Wood < 15' and < 14": 95.0

Wood < 15' and > 14": 3.8

Wood > 15' and < 14": 80.6

Wood > 15' and > 14": 5.0

Mean Channel Width: 15.2'

Mean Riparian Width: 62.8'

Mean Maximum Riparian Distance (either side): 28.7'

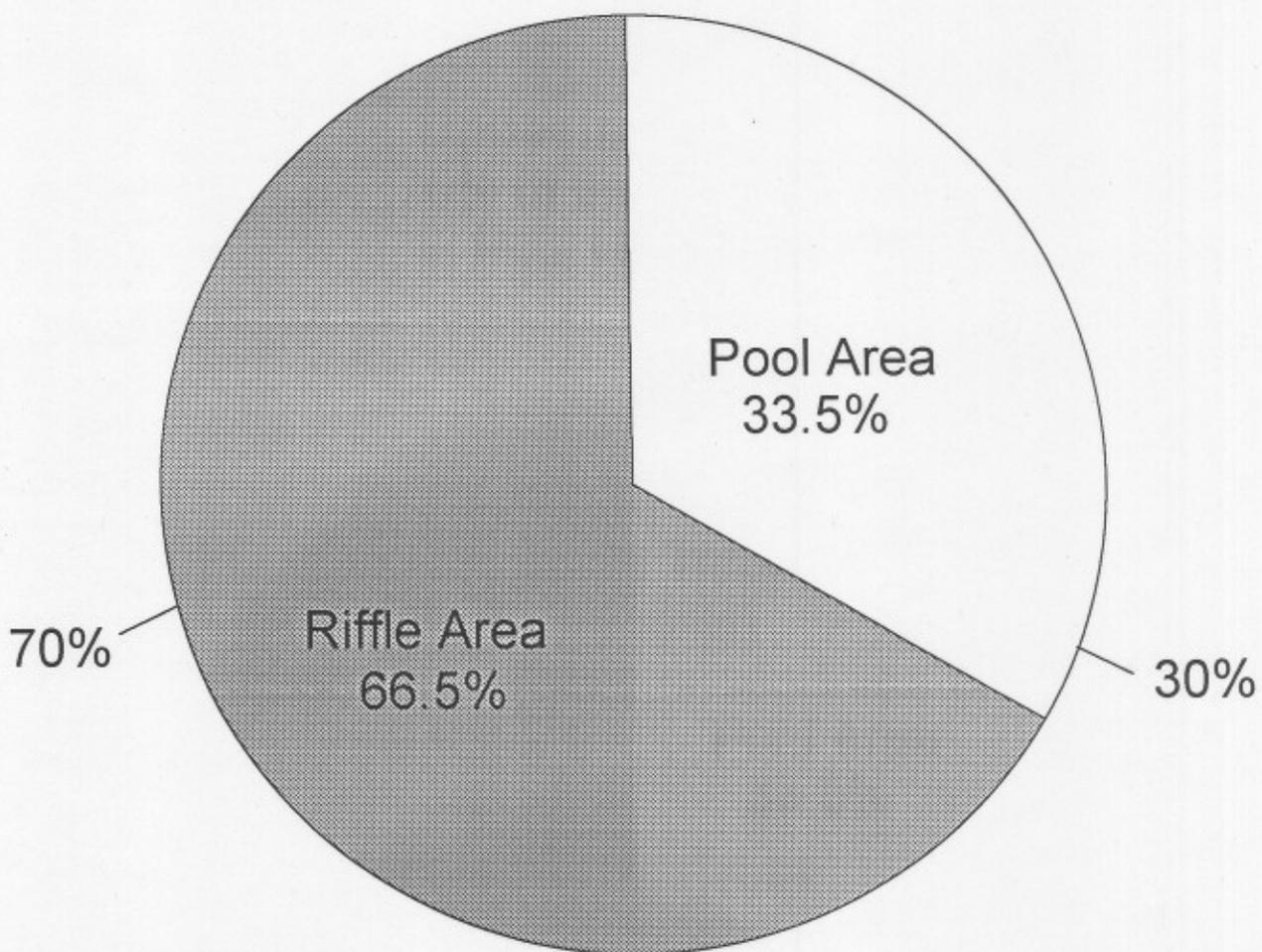
Mean Minimum Riparian Distance (either side): 16.1'

Maximum Riparian Width (Total): 85.3'

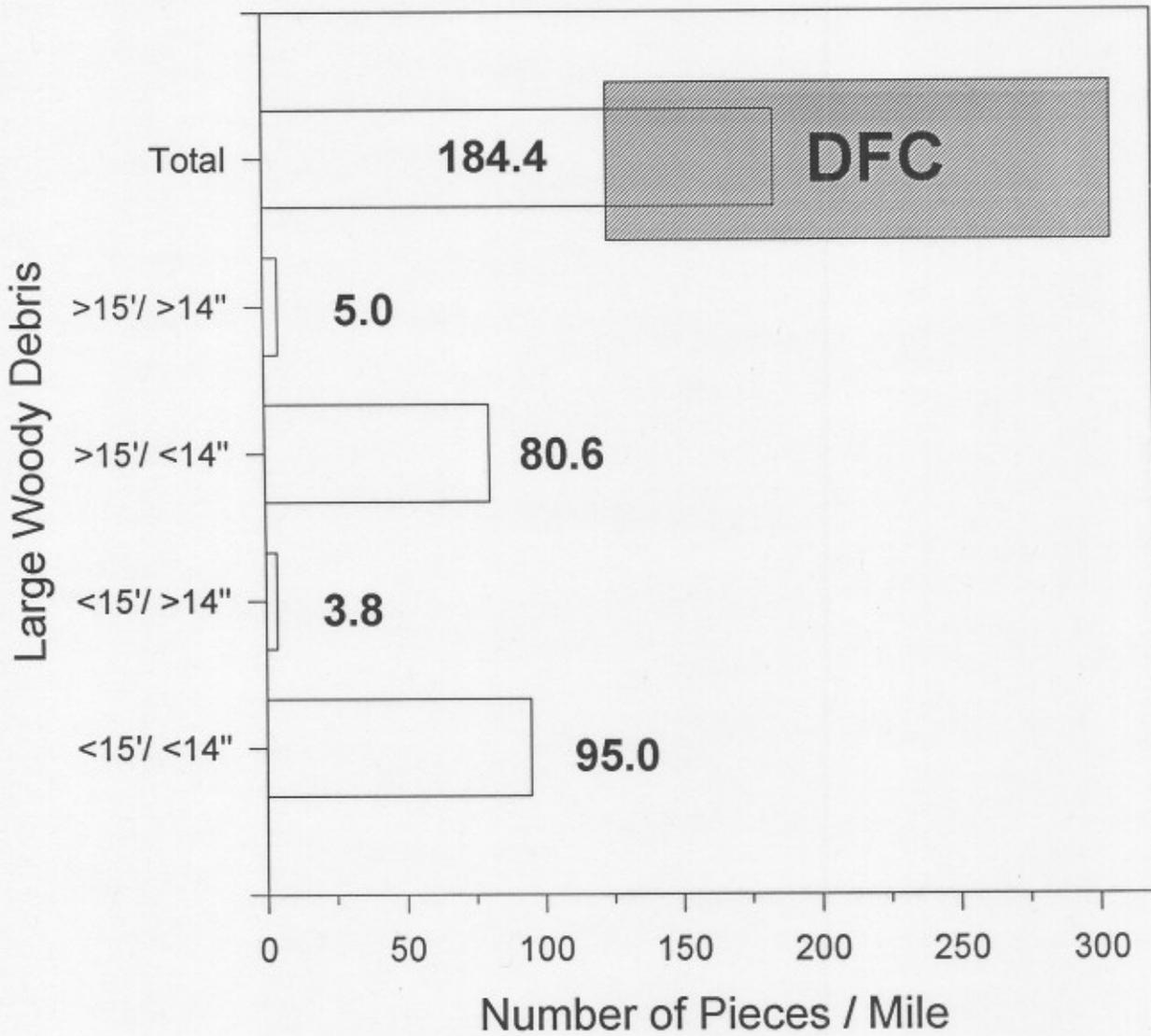
Minimum Riparian Width (Total): 50.6'

Opossum Creek

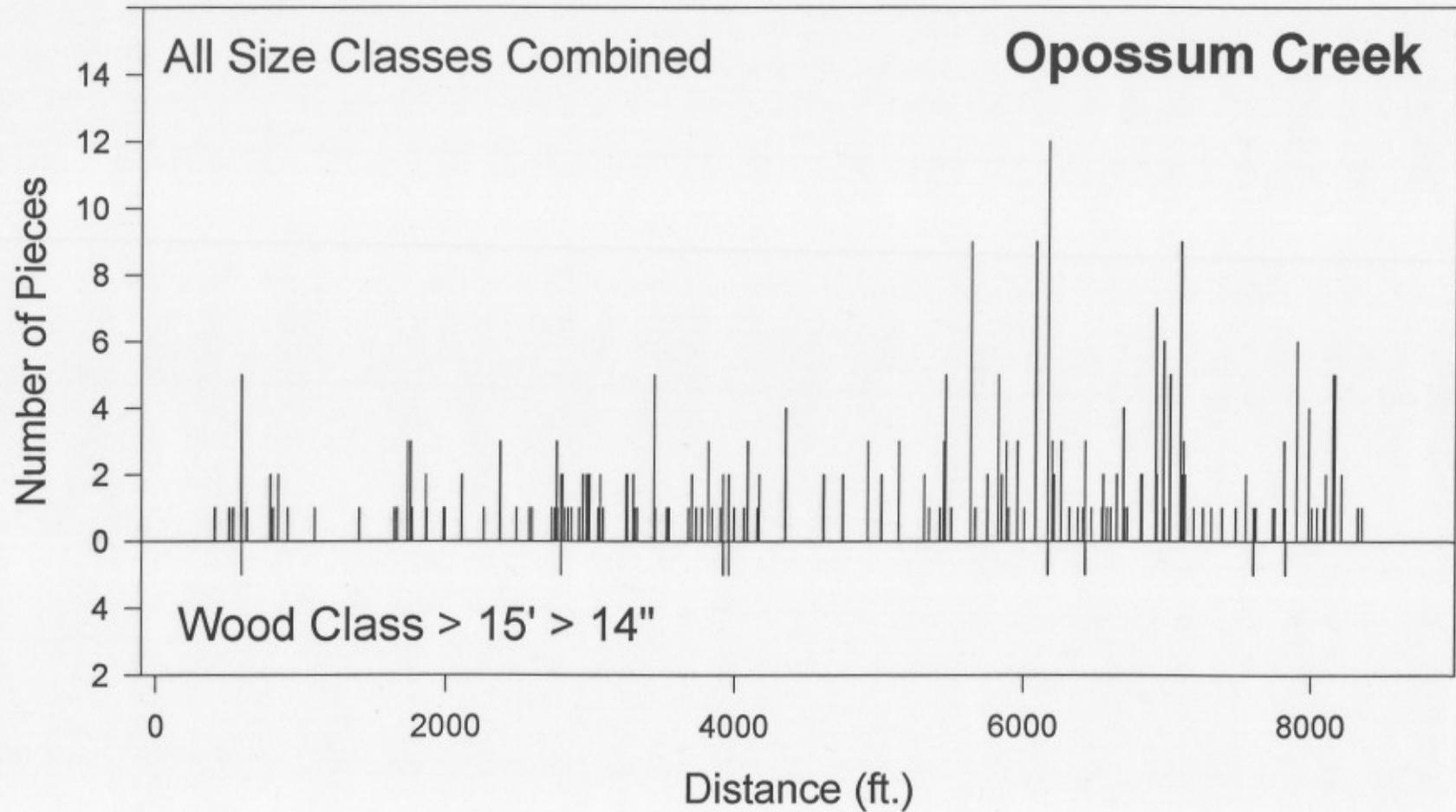
DFC: 30 - 70% of the Total Stream Area
in Pool Habitat



Opossum Creek



Large Woody Debris Distribution



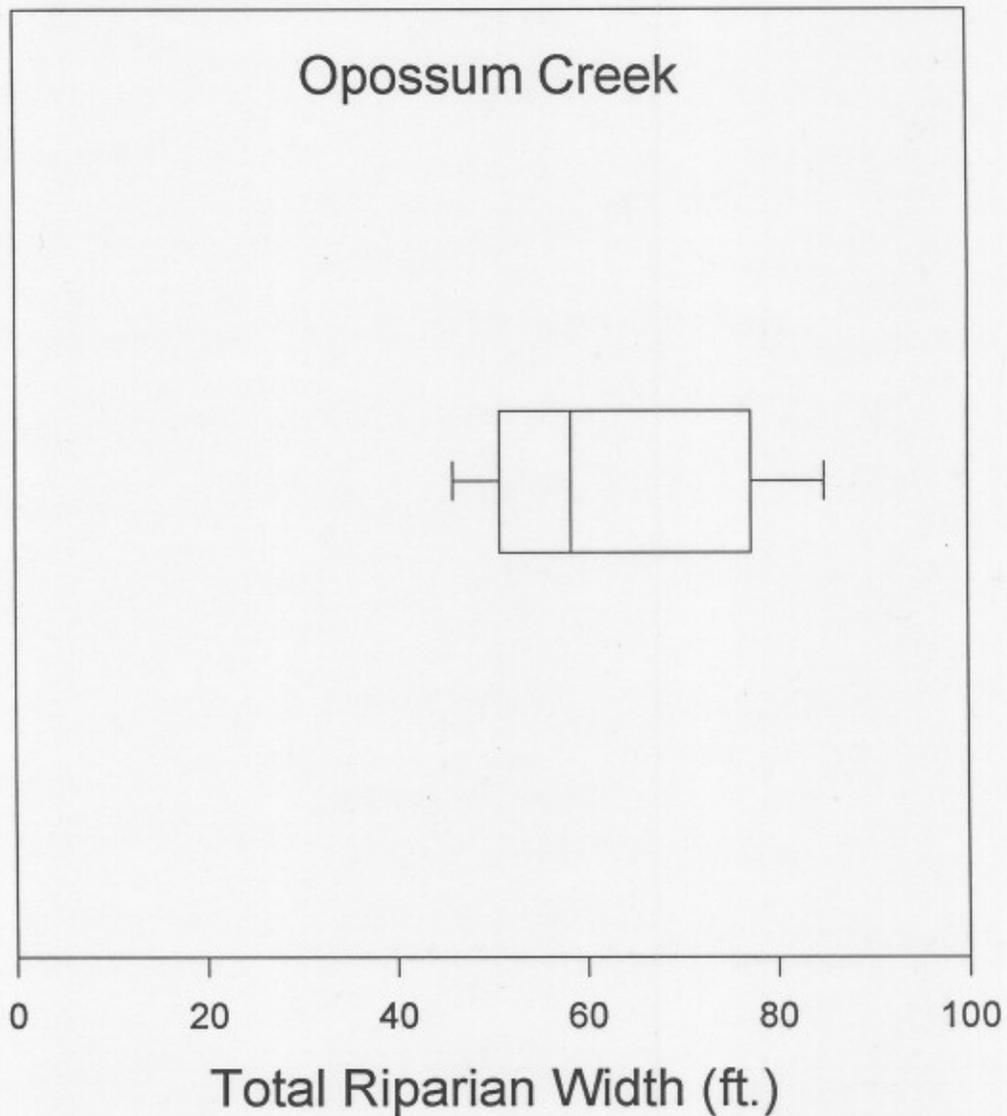
Riparian Width

Stream: Opossum Creek

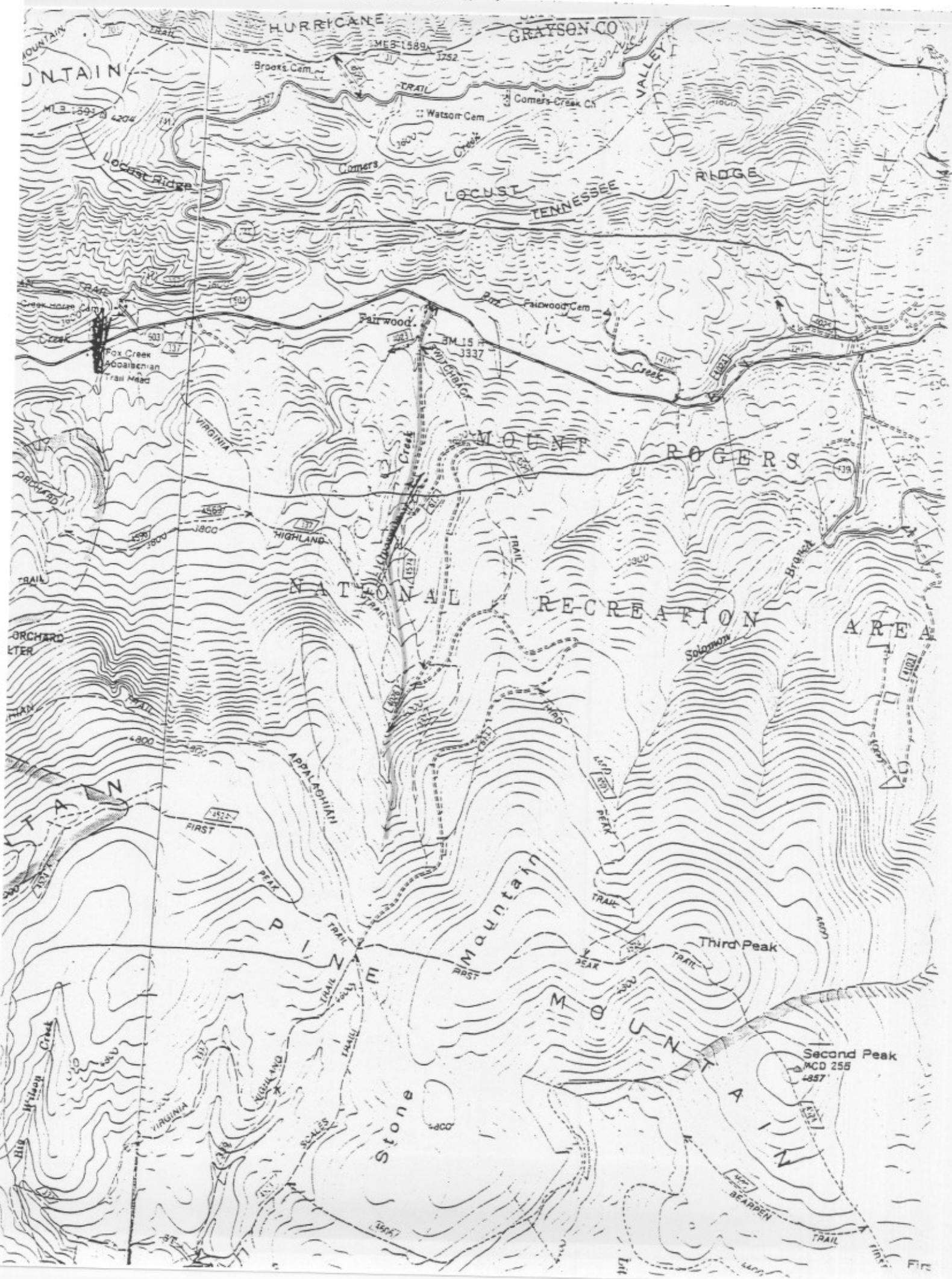
Number of measurements: 8

Mean width: 62.8 Std Dev: 14.8

Max: 85.3 Min: 44.0



Box plot of total riparian width. The box encloses the middle 50% of the observations, the bar in the center of the box represents the median, and the capped lines extending above and below the box represent the 90% and 10% quantiles.



HURRICANE GRAYSON CO

MOUNTAIN

LOCUST TENNESSEE RIDGE

MOUNT ROGERS

NATIONAL RECREATION AREA

MOUNTAIN

Stone

MOUNTAIN

Third Peak

Second Peak
ACD 255
4857

BEARPEN

Fir

Stream: LEWIS FORK

District: MT. ROGERS

Quadrangle: Whitetop Mountain

Sample Date: 20-29 July 1992

Downstream Starting Point: Confluence with Fox Creek

Total Distance Surveyed: 2.8 miles

Percent of Total Area - Pools: 51.6

Number of Pools: 419

Number of Pools per mile: 151.0

Total Pool Area: 103964.9 ft² ± 2609.0 ft²

Mean Pool Area: 248.1 ft²

Correction Factor: 1.00

Mean Maximum Depth: 1.2'

Mean Average Depth: 0.8'

Percent of Total Area - Riffles: 48.4

Number of Riffles: 239

Number of Riffles per mile: 86.1

Total Riffle Area: 97661.9 ft² ± 4757.2 ft²

Mean Riffle Area: 408.6 ft²

Correction Factor: 1.00

Mean Maximum Depth: 0.6'

Mean Average Depth: 0.3'

Number of Large Woody Debris Pieces per Mile: 178.8

Wood < 15' and < 14": 124.0

Wood < 15' and > 14": 5.4

Wood > 15' and < 14": 41.1

Wood > 15' and > 14": 8.3

Mean Channel Width: Not Measured

Mean Riparian Width: Not Measured

Mean Maximum Riparian Distance: Not Measured

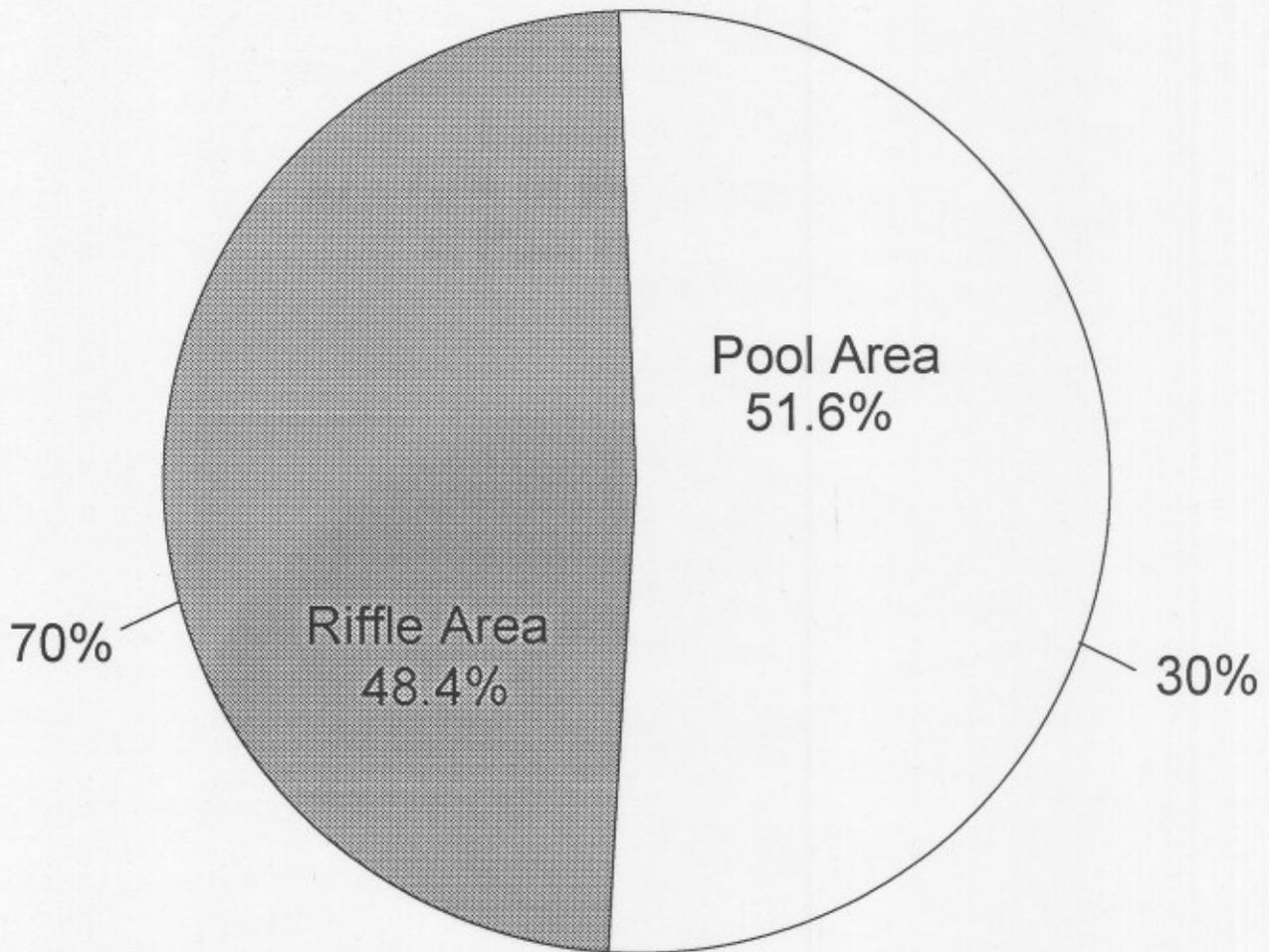
Mean Minimum Riparian Distance: Not Measured

Maximum Riparian Width (Total): Not Measured

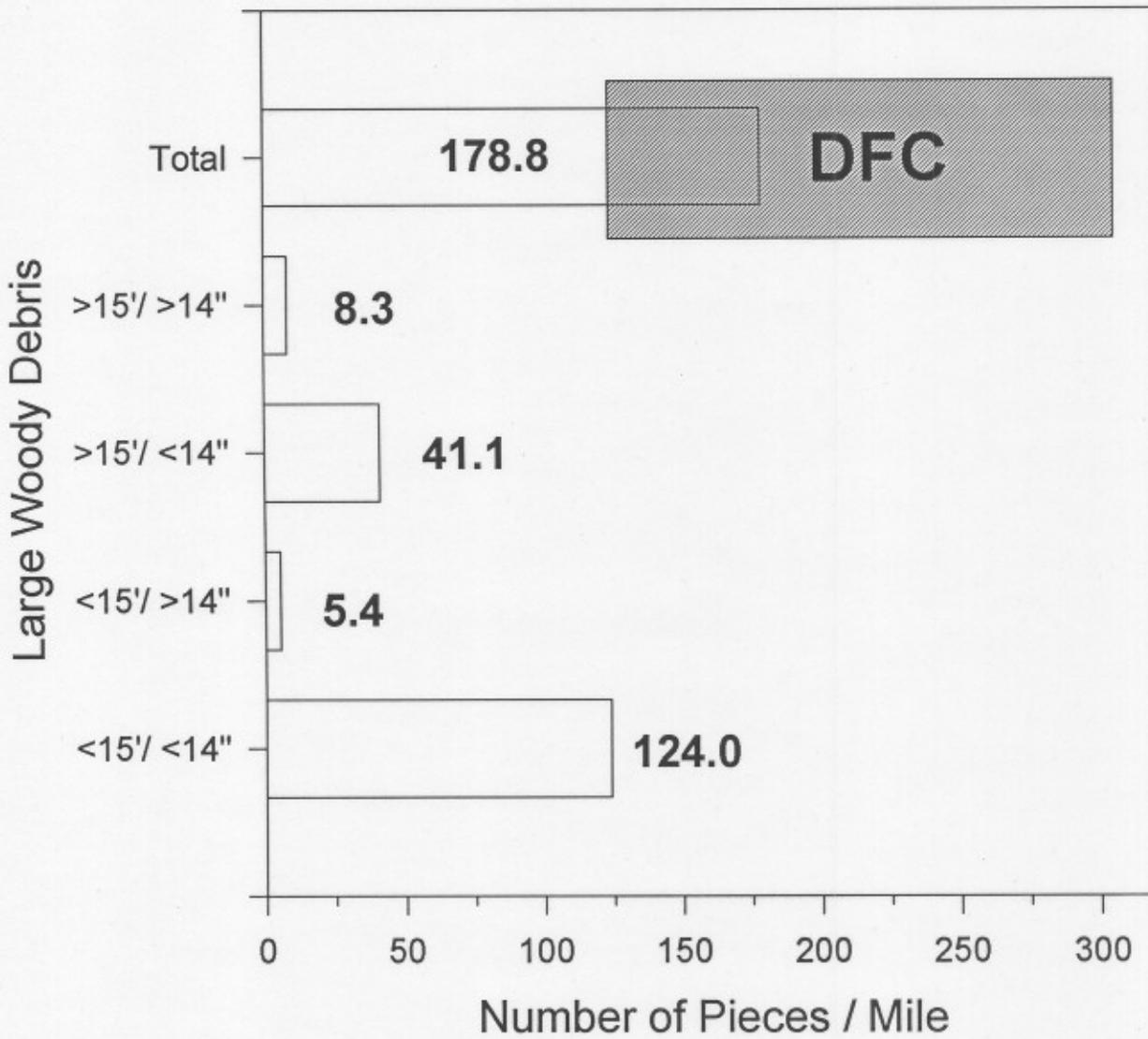
Minimum Riparian Width (Total): Not Measured

Lewis Fork

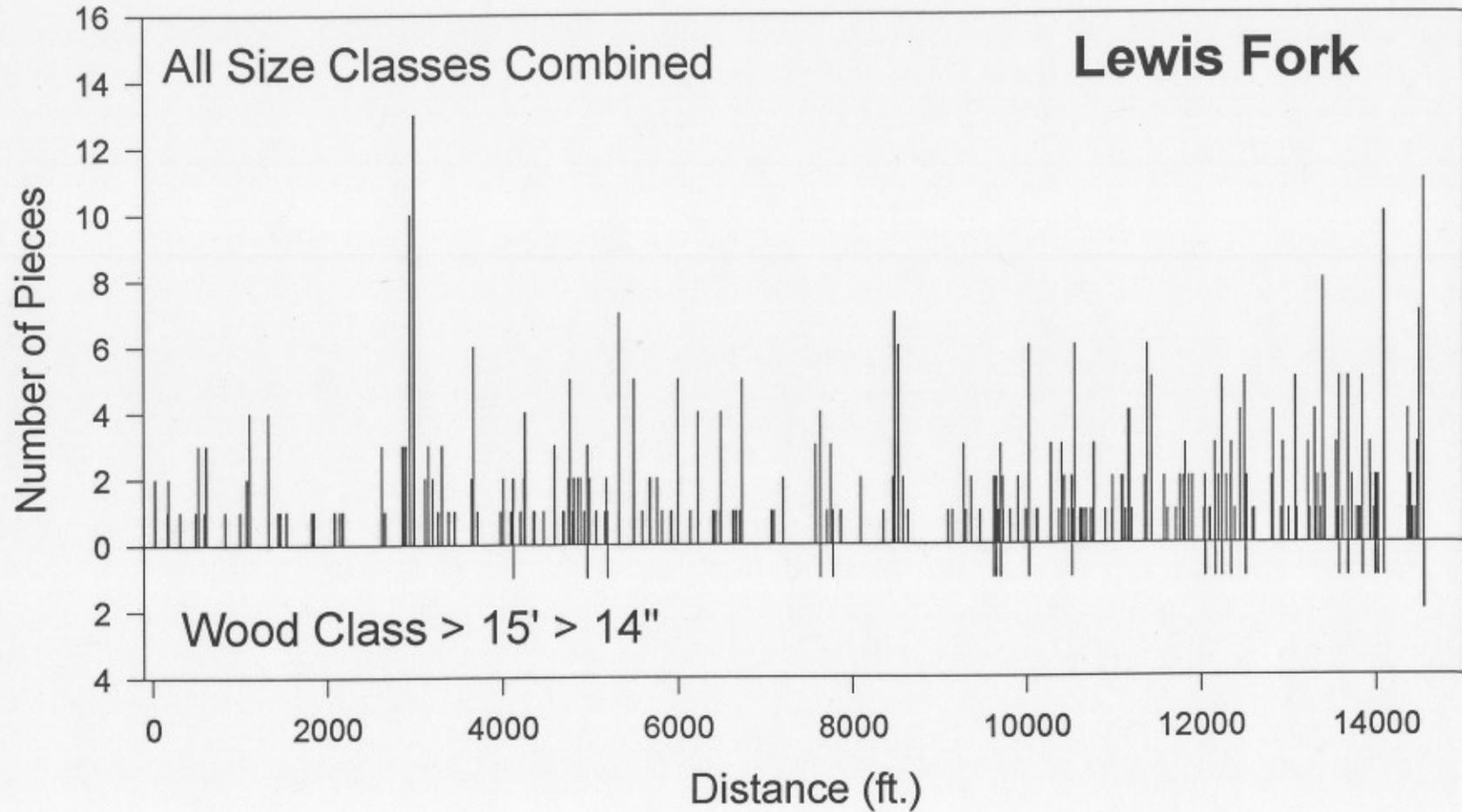
DFC: 30 - 70% of the Total Stream Area
in Pool Habitat

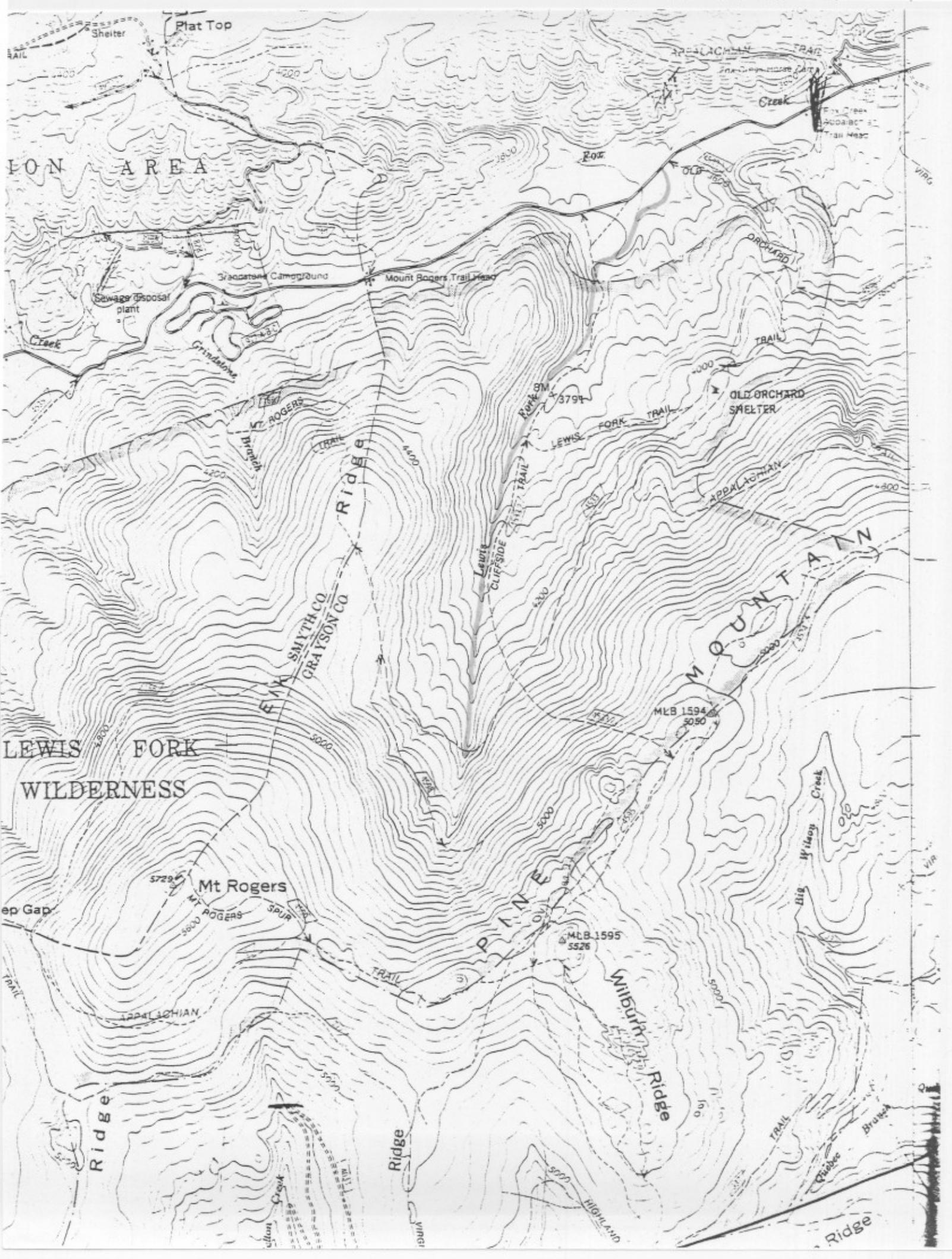


Lewis Fork



Large Woody Debris Distribution





ION AREA

LEWIS FORK WILDERNESS

Mt Rogers

Ridge

RIDGE

PINE

Wilbur Ridge

MOUNTAIN

Ridge

Shelter
Plat Top

Sewage disposal plant

Campground
Mount Rogers Trail

OLD ORCHARD SHELTER

Gap

APPALACHIAN

TRAIL

MCB 1595
5526

MCB 1594
5050

TRAIL

BRIDGE

HIGHLAND

APPALACHIAN TRAIL

Creek

ORCHARD

TRAIL

LEWIS FORK TRAIL

APPALACHIAN

Big Wilsey Creek

TRAIL

BRIDGE

VIRG

VIRG

VIRG

Stream: FOX CREEK TRIBUTARY 2 (upstream of Lewis Fork)

District: MT. ROGERS

Quadrangle: Whitetop Mountain

Sample Date: 20-21 July 1992

Downstream Starting Point: Confluence with Fox Creek

Total Distance Surveyed: 0.7 miles

Percent of Total Area - Pools: 31.1

Number of Pools: 96

Number of Pools per mile: 131.8

Total Pool Area: 5591.9 ft² ± 357.8 ft²

Mean Pool Area: 58.3 ft²

Correction Factor: 1.08

Mean Maximum Depth: 0.5'

Mean Average Depth: 0.3'

Percent of Total Area - Riffles: 68.9

Number of Riffles: 84

Number of Riffles per mile: 115.3

Total Riffle Area: 12388.1 ft² ± 630.9 ft²

Mean Riffle Area: 147.5 ft²

Correction Factor: 0.86

Mean Maximum Depth: 0.8'

Mean Average Depth: 0.1'

Number of Large Woody Debris Pieces per Mile:

Wood < 15' and < 14": 178.4

Wood < 15' and > 14": 5.5

Wood > 15' and < 14": 9.6

Wood > 15' and > 14": 6.9

Mean Channel Width: Not Measured

Mean Riparian Width: Not Measured

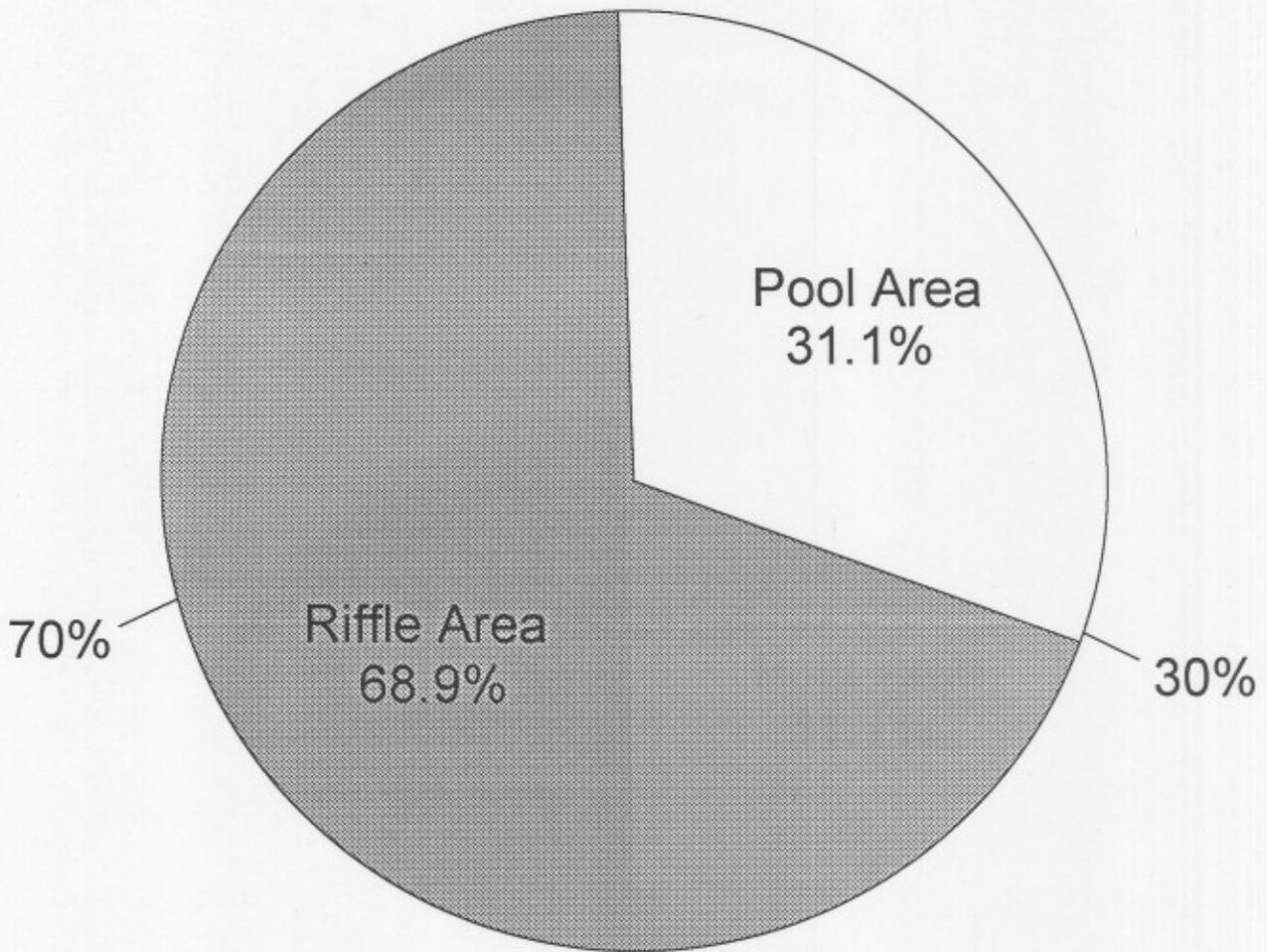
Mean Maximum Riparian Distance: Not Measured

Mean Minimum Riparian Distance: Not Measured

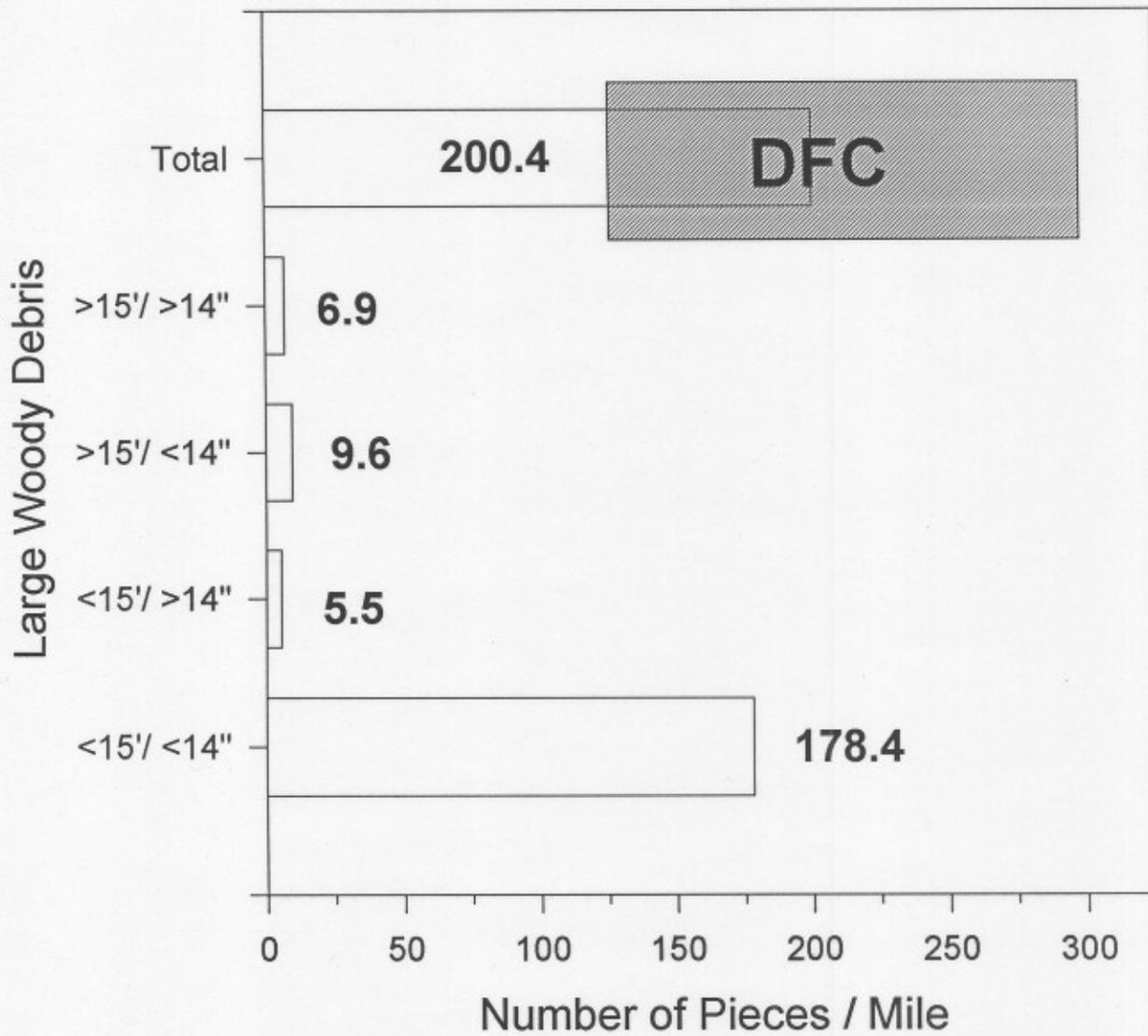
Maximum Riparian Width (Total): Not Measured

Minimum Riparian Width (Total): Not Measured

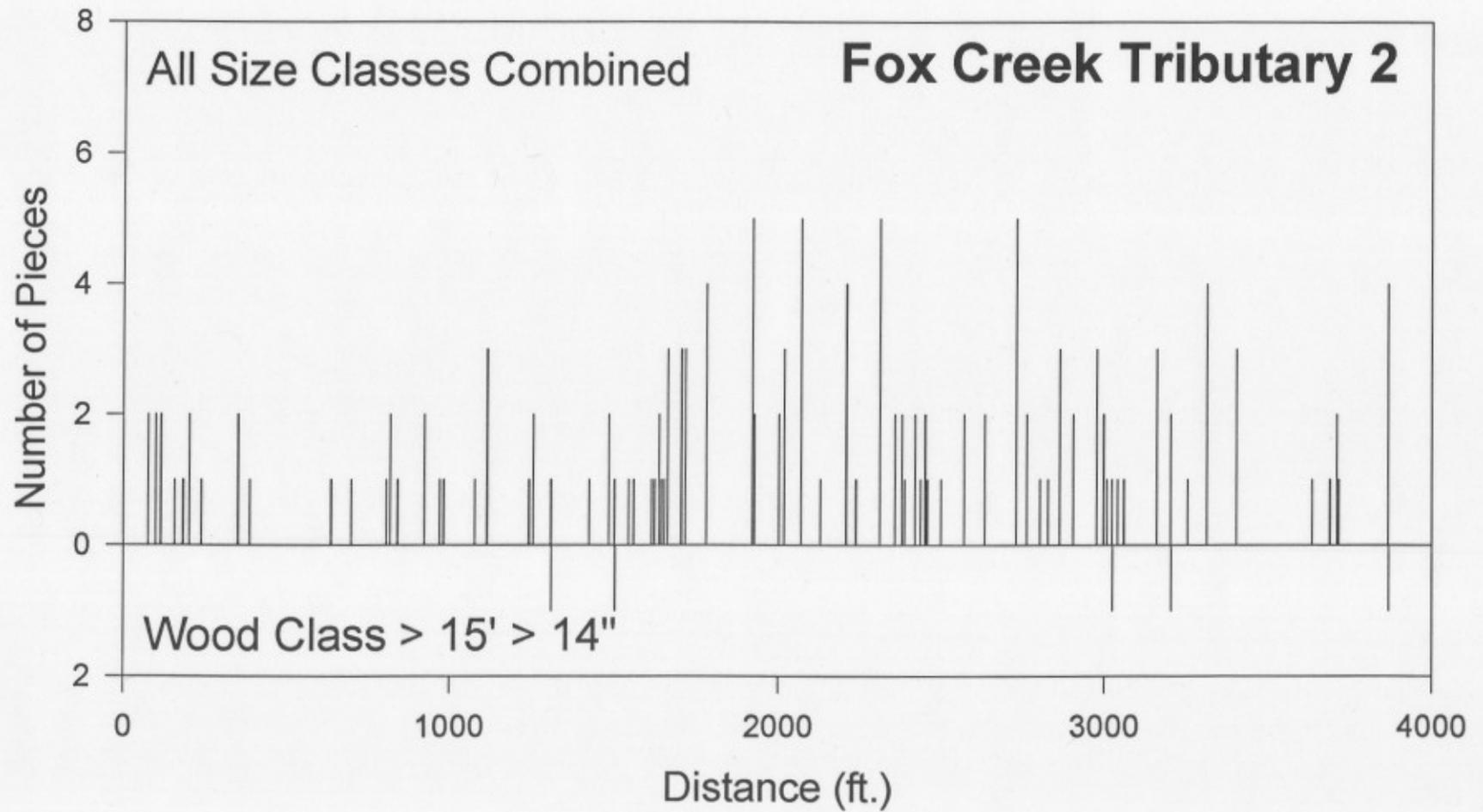
Fox Creek Tributary 2
DFC: 30 - 70% of the Total Stream Area
in Pool Habitat

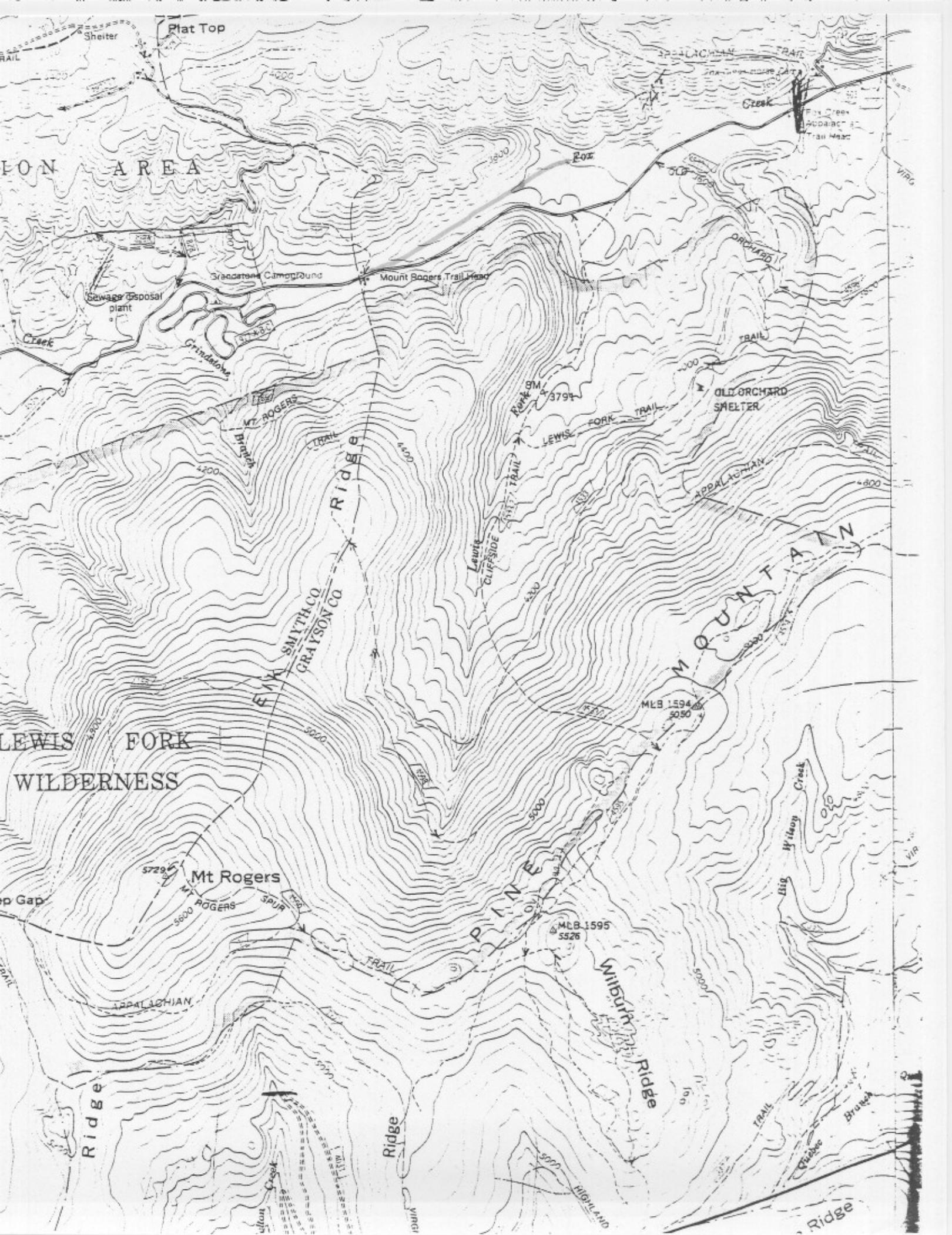


Fox Creek Tributary 2



Large Woody Debris Distribution





Stream: FOX TRIBUTARY 3 (upstream of Fox Tributary 2)

District: MT. ROGERS

Quadrangle: Whitetop Mountain

Sample Date: 20 July 1992

Downstream Starting Point: Confluence with Fox Creek

Total Distance Surveyed: 0.07 miles

Percent of Total Area - Pools: 12.5

Number of Pools: 9

Number of Pools per mile: 120.5

Total Pool Area: 136.1 ft² ± 48.0 ft²

Mean Pool Area: 15.1 ft²

Correction Factor: 0.84

Mean Maximum Depth: 0.3'

Mean Average Depth: 0.3'

Percent of Total Area - Riffles: 87.5

Number of Riffles: 15

Number of Riffles per mile: 200.8

Total Riffle Area: 948.0 ft²

Mean Riffle Area: 63.2 ft²

Correction Factor: 0.80

Mean Maximum Depth: 0.2'

Mean Average Depth: 0.1'

Number of Large Woody Debris Pieces per Mile: 334.7

Wood < 15' and < 14": 281.1

Wood < 15' and > 14": 0

Wood > 15' and < 14": 40.2

Wood > 15' and > 14": 13.4

Mean Channel Width: Not Measured

Mean Riparian Width: Not Measured

Mean Maximum Riparian Distance: Not Measured

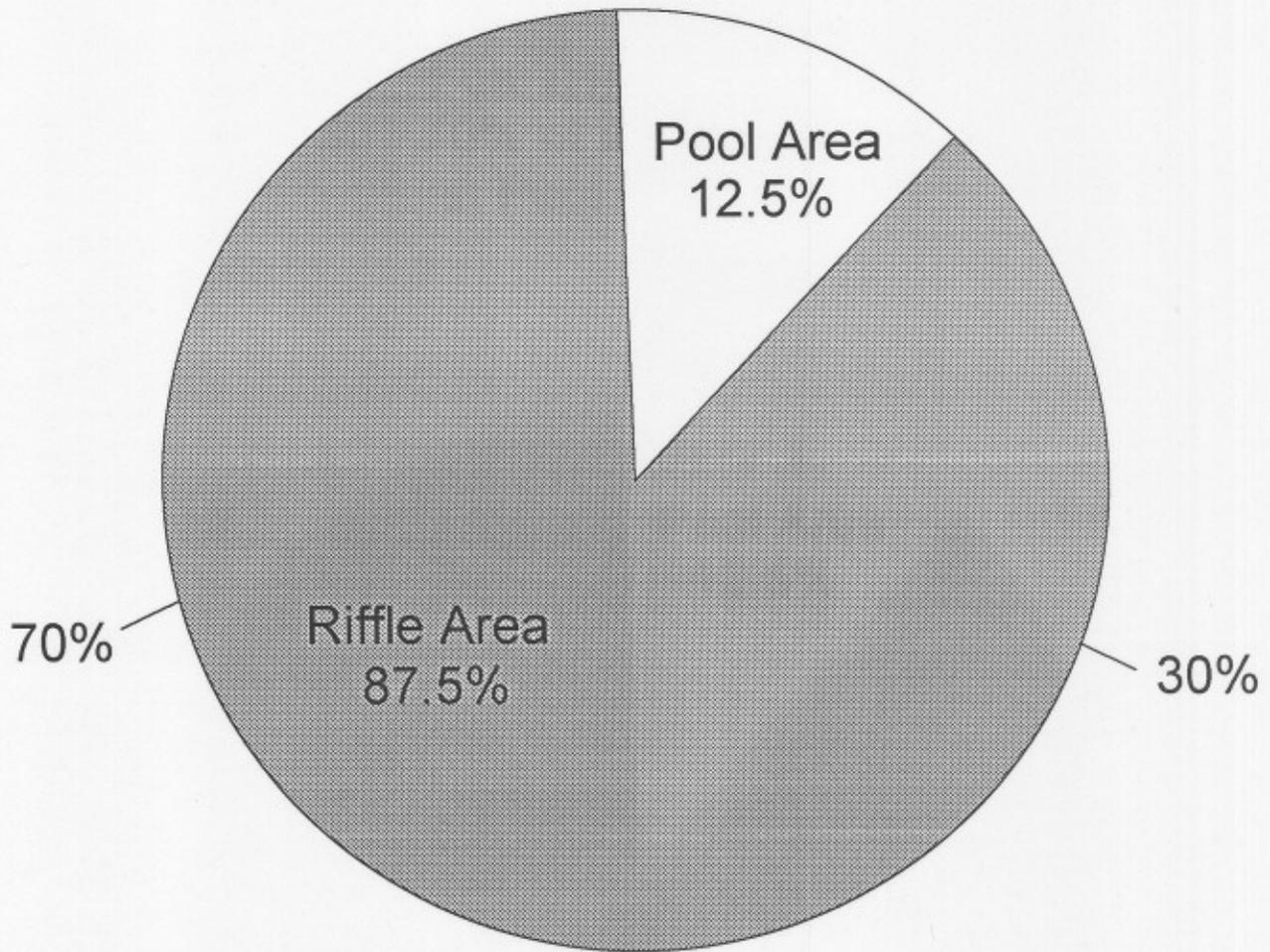
Mean Minimum Riparian Distance: Not Measured

Maximum Riparian Width (Total): Not Measured

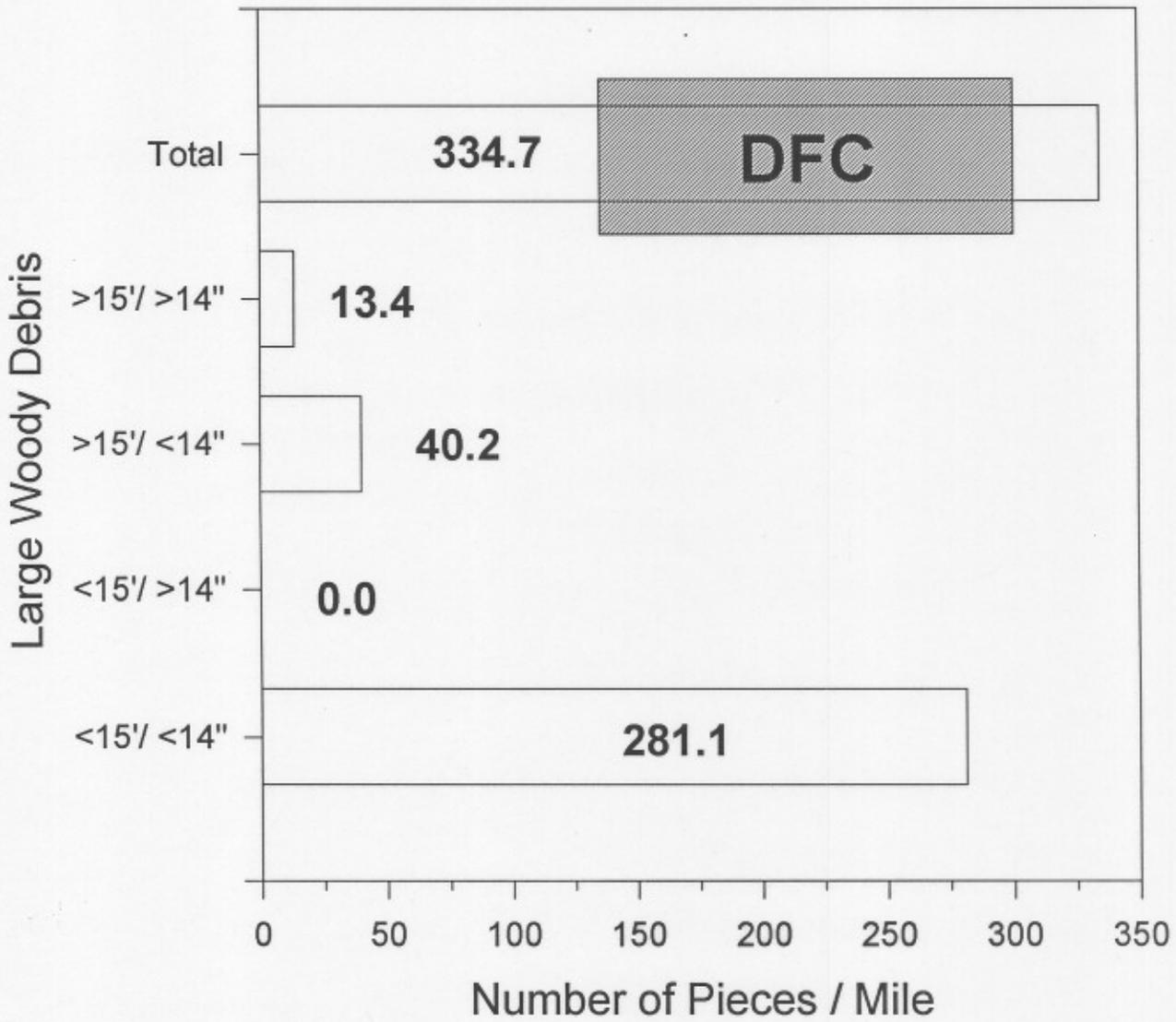
Minimum Riparian Width (Total): Not Measured

Fox Tributary 3

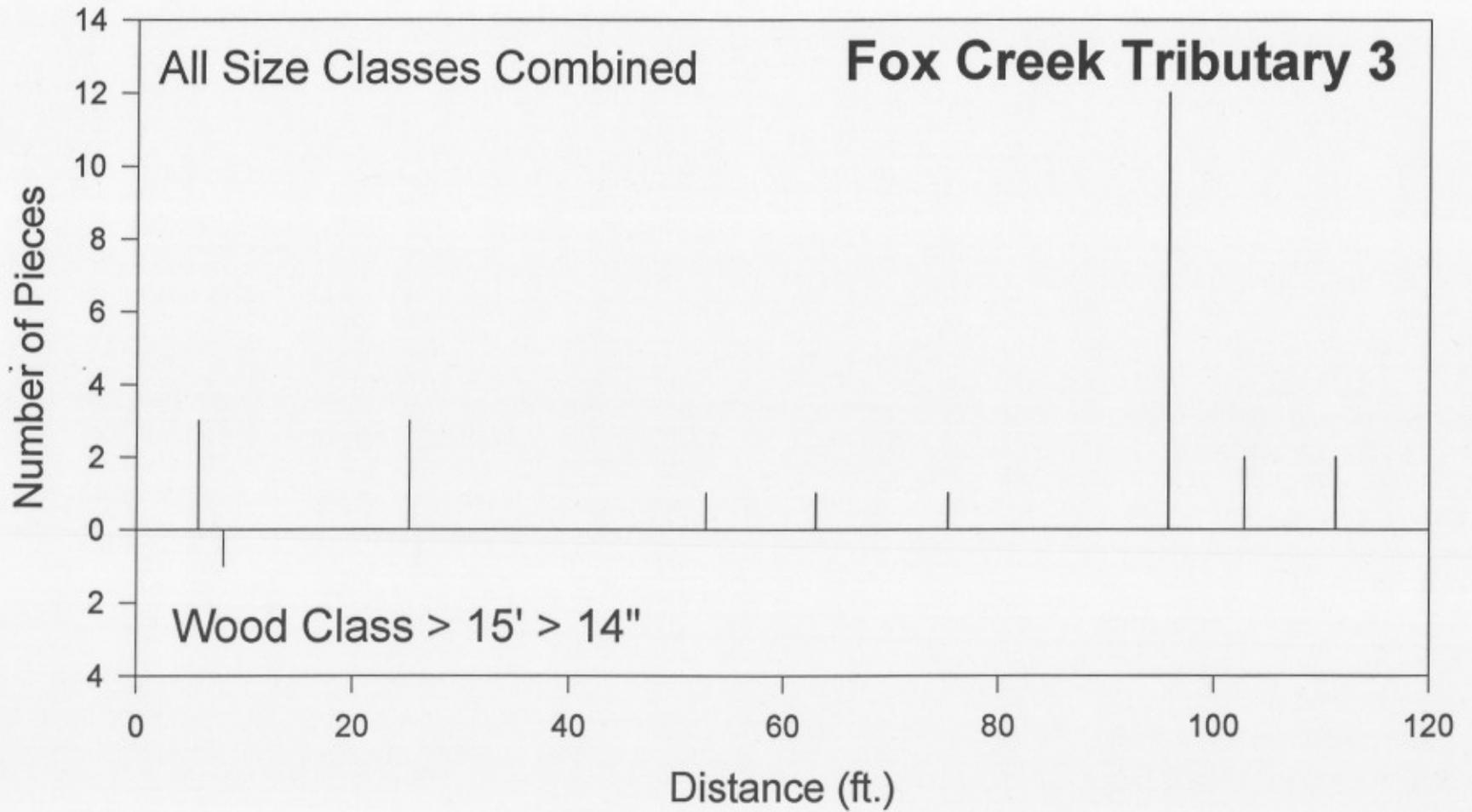
DFC: 30 - 70% of the Total Stream Area
in Pool Habitat

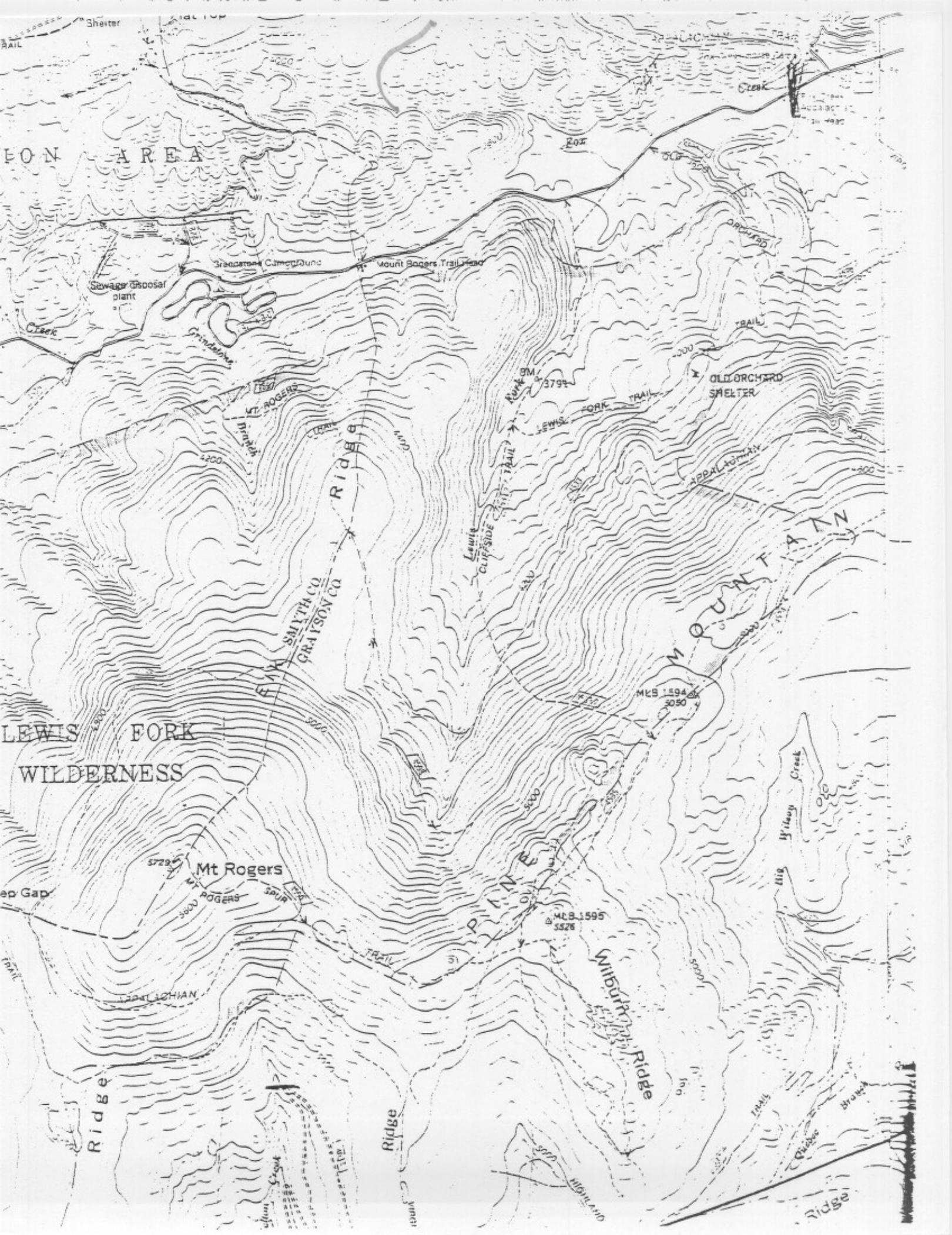


Fox Creek Tributary 3



Large Woody Debris Distribution





Stream: Comers Creek

District: Mt. Rogers

Quadrangle: Trout Dale

Sample Date: 7/12/95

Downstream Starting Point: USFS Boundary

Total Distance Surveyed: 5.8 miles

Percent of Total Area - Pools: 13.6

Number of Pools: 148

Number of Pools per mile: 25.5

Total Pool Area: 38,567.8 ft² ± 2,154.8 ft²

Mean Pool Area: 260.6 ft²

Correction Factor: 1.03

Mean Maximum Depth: 1.8'

Mean Average Depth: 1.1'

Percent of Total Area - Riffles: 86.4

Number of Riffles: 141

Number of Riffles per mile: 24.3

Total Riffle Area: 244,458.7 ft² ± 7,561.3 ft²

Mean Riffle Area: 1733.8 ft²

Correction Factor: 1.15

Mean Maximum Depth: 1.1'

Mean Average Depth: 0.6'

Number of Large Woody Debris Pieces per Mile: 121.5

Wood < 15' and < 14": 36.9

Wood < 15' and > 14": 10.5

Wood > 15' and < 14": 62.2

Wood > 15' and > 14": 12.8

Mean Channel Width: 23.5'

Mean Riparian Width: 88.7'

Mean Maximum Riparian Distance (either side): 52.9'

Mean Minimum Riparian Distance (either side): 12.3'

Maximum Riparian Width (Total): 187.8'

Minimum Riparian Width (Total): 45.2'

Stream: Comers Creek

District: Mt. Rogers

Quadrangle: Trout Dale

Sample Date: 7/12/95

Downstream Starting Point: USFS Boundary

Total Distance Surveyed: 5.8 miles

Percent of Total Area - Pools: 13.6

Number of Pools: 148

Number of Pools per mile: 25.5

Total Pool Area: 38,567.8 ft² ± 2,154.8 ft²

Mean Pool Area: 260.6 ft²

Correction Factor: 1.03

Mean Maximum Depth: 1.8'

Mean Average Depth: 1.1'

Percent of Total Area - Riffles: 86.4

Number of Riffles: 141

Number of Riffles per mile: 24.3

Total Riffle Area: 244,458.7 ft² ± 7,561.3 ft²

Mean Riffle Area: 1733.8 ft²

Correction Factor: 1.15

Mean Maximum Depth: 1.1'

Mean Average Depth: 0.6'

Number of Large Woody Debris Pieces per Mile: 121.5

Wood < 15' and < 14": 36.9

Wood < 15' and > 14": 10.5

Wood > 15' and < 14": 62.2

Wood > 15' and > 14": 12.8

Mean Channel Width: 23.5'

Mean Riparian Width: 88.7'

Mean Maximum Riparian Distance (either side): 52.9'

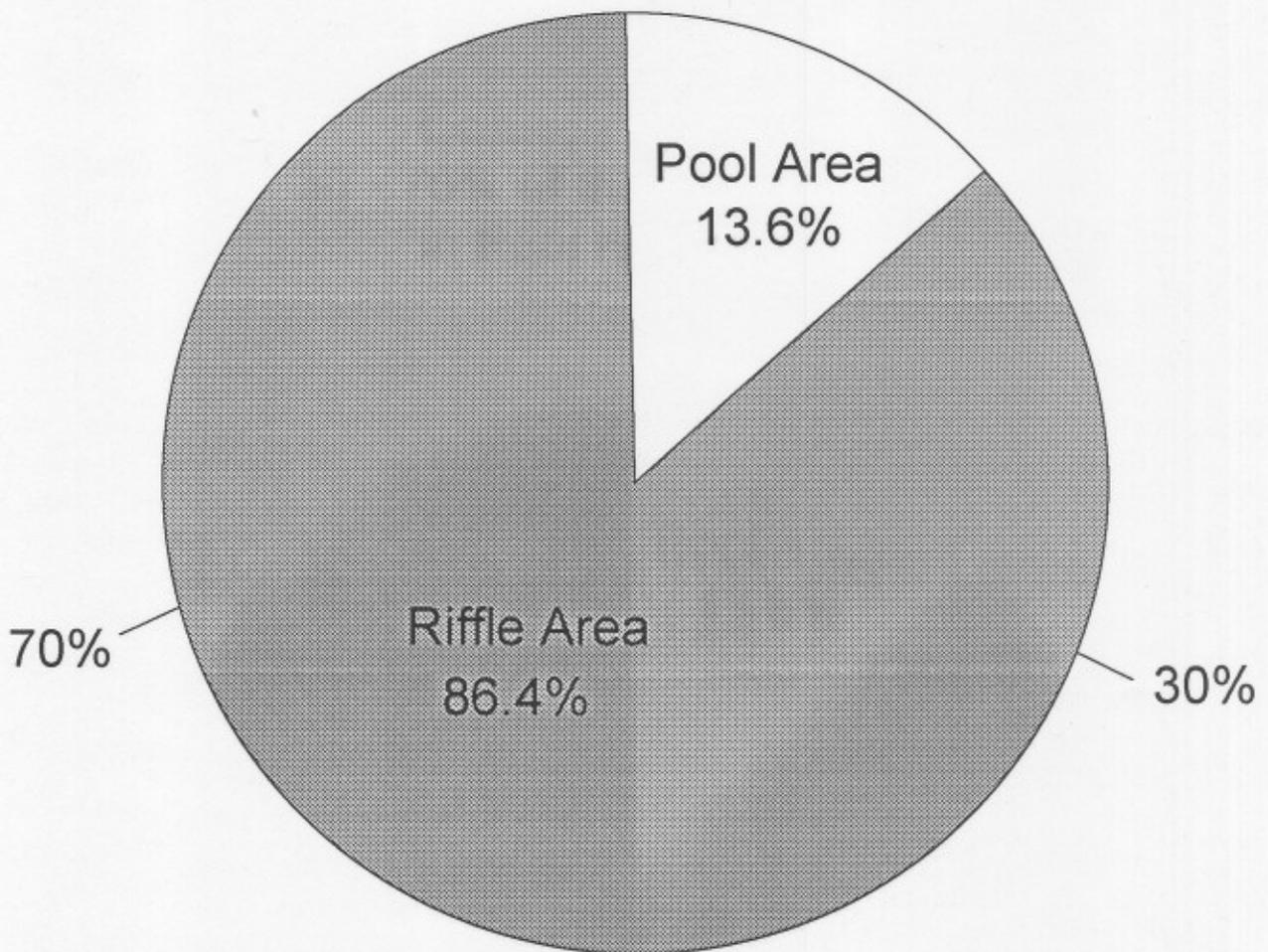
Mean Minimum Riparian Distance (either side): 12.3'

Maximum Riparian Width (Total): 187.8'

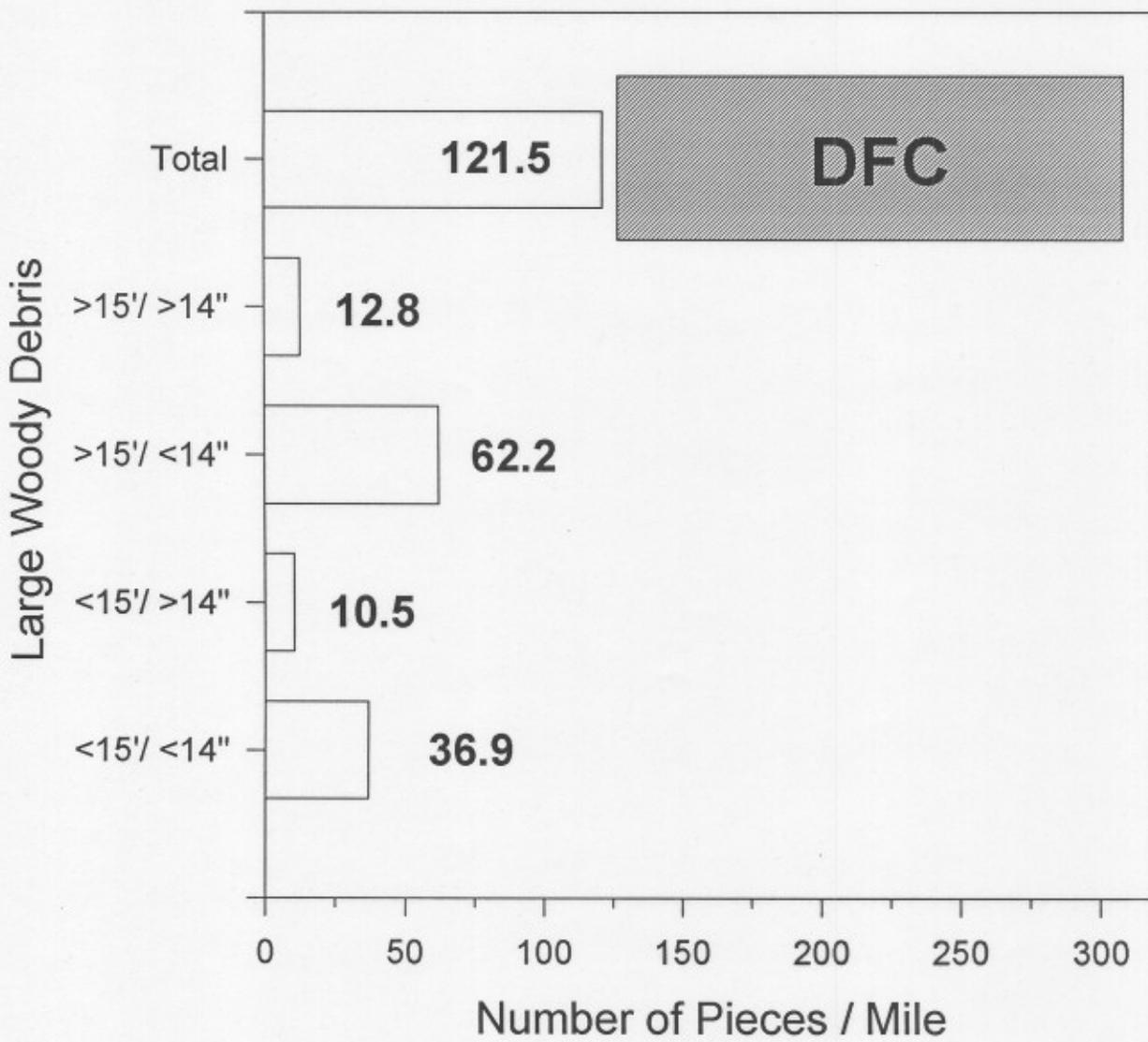
Minimum Riparian Width (Total): 45.2'

Comers Creek

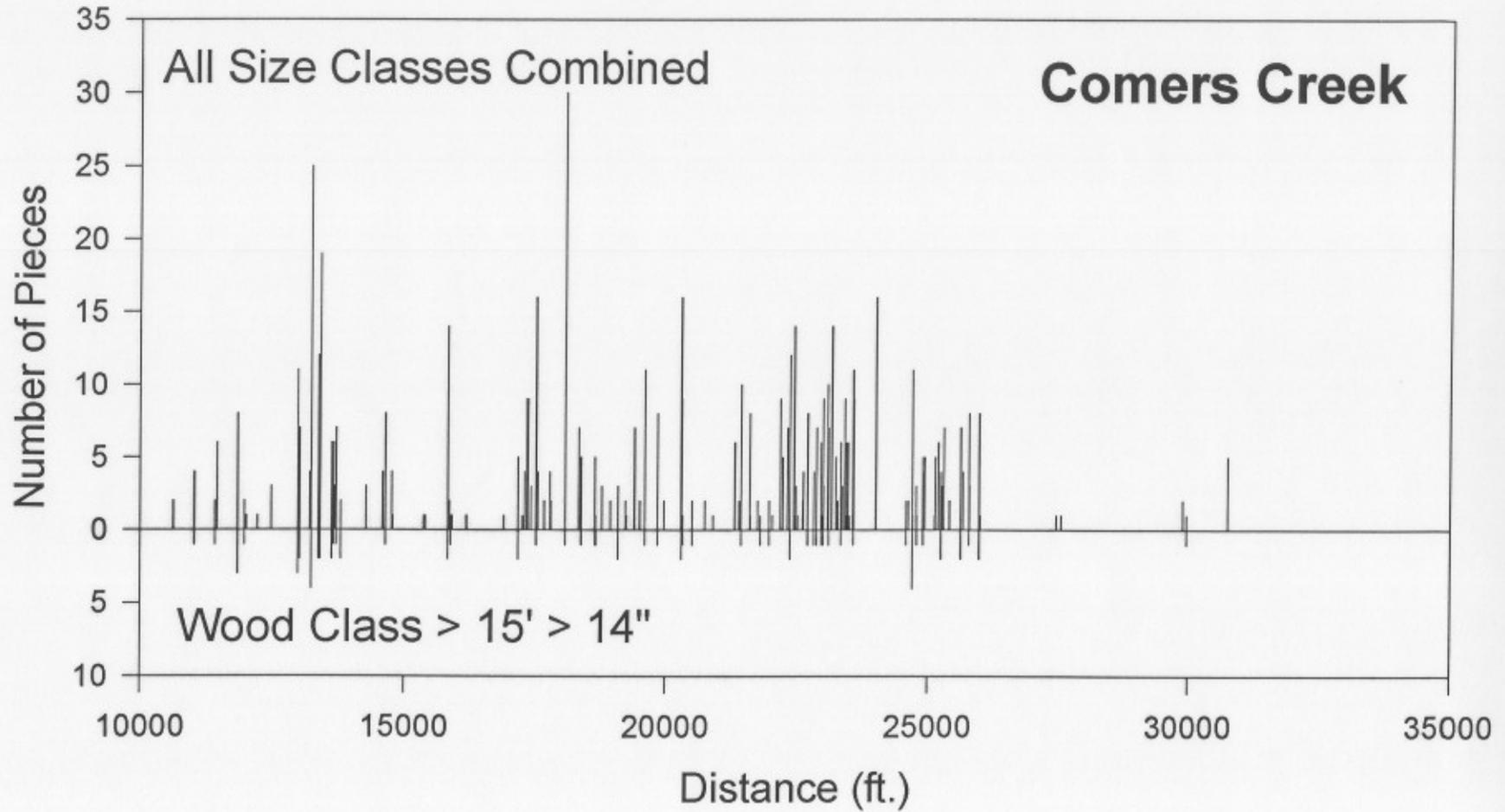
DFC: 30 - 70% of the Total Stream Area
in Pool Habitat



Comers Creek



Large Woody Debris Distribution



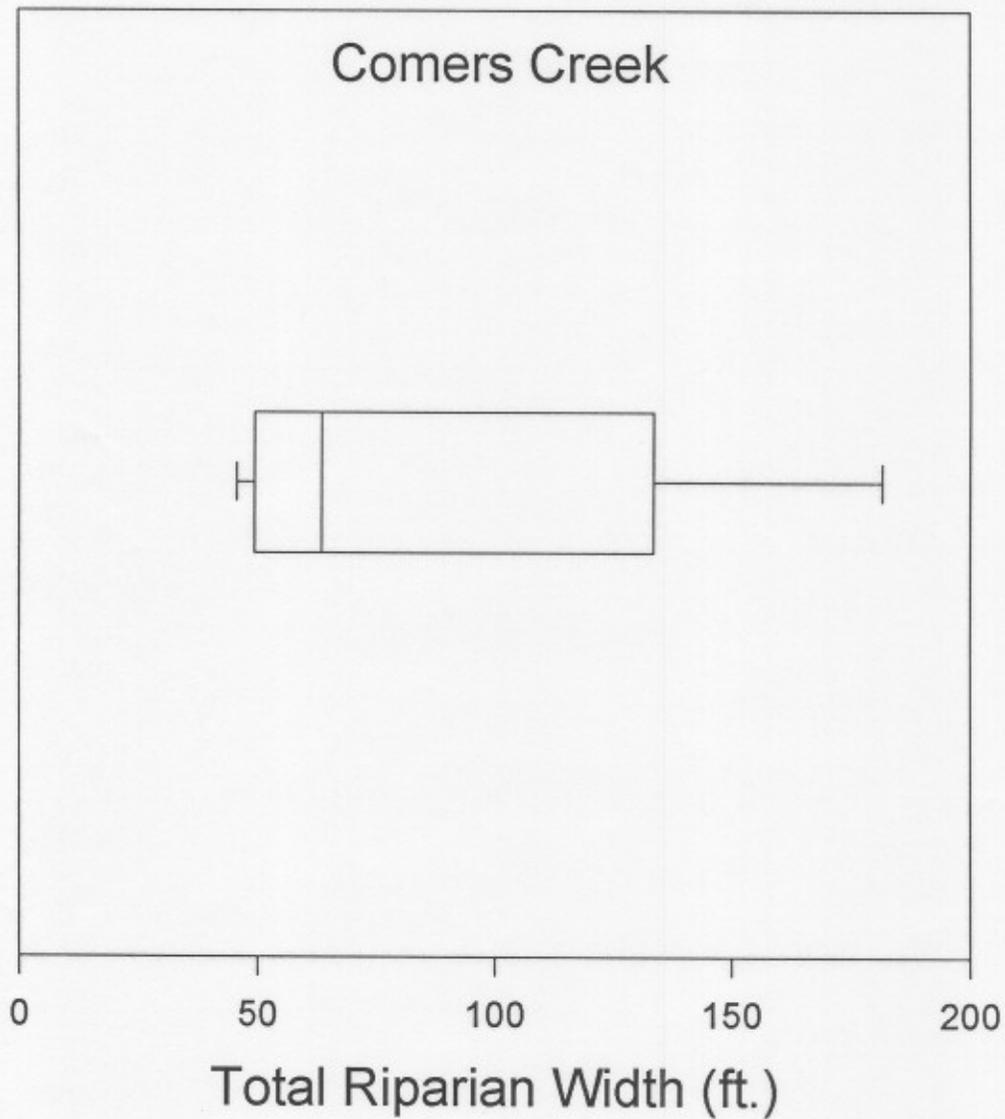
Riparian Width

Stream: Comers Creek

Number of measurements: 7

Mean width: 88.7 Std Dev: 53.99

Max: 142.5 Min: 3.5



Box plot of total riparian width. The box encloses the middle 50% of the observations, the bar in the center of the box represents the median, and the capped lines extending above and below the box represent the 90% and 10% quantiles.



Stream: HURRICANE CREEK

District: MT. ROGERS

Quadrangle: Trout Dale and Whitetop Mountain

Sample Date: 9 August - 20 September 1993

Downstream Starting Point: Confluence with Comers Creek

Total Distance Surveyed: 2.8 miles

Percent of Total Area - Pools: 51.3

Number of Pools: 407

Number of Pools per mile: 147.1

Total Pool Area: 51103.1 ft² ± 1079.8 ft²

Mean Pool Area: 125.6 ft²

Correction Factor: 0.93

Mean Maximum Depth: 0.9'

Mean Average Depth: 0.6'

Percent of Total Area - Riffles: 48.7

Number of Riffles: 251

Number of Riffles per mile: 90.7

Total Riffle Area: 48448.6 ft² ± 3644.7 ft²

Mean Riffle Area: 193.0 ft²

Correction Factor: 1.00

Mean Maximum Depth: 0.4'

Mean Average Depth: 0.2'

Number of Large Woody Debris Pieces per Mile: 149.2

Wood < 15' and < 14": 99.0

Wood < 15' and > 14": 13.4

Wood > 15' and < 14": 24.9

Wood > 15' and > 14": 11.9

Mean Channel Width: Not measured

Mean Riparian Width: Not measured

Mean Maximum Riparian Distance: Not measured

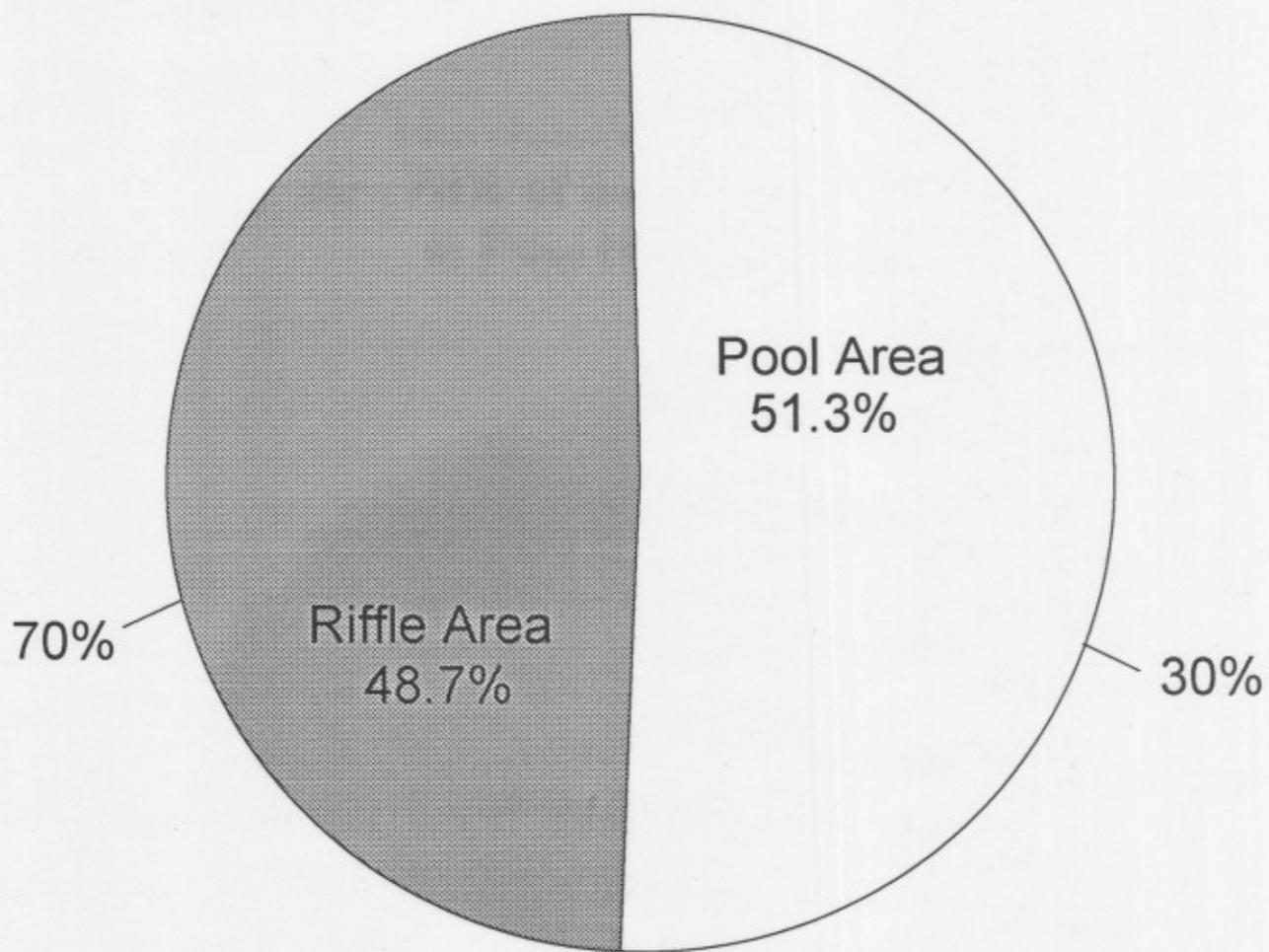
Mean Minimum Riparian Distance: Not measured

Maximum Riparian Width (Total): Not measured

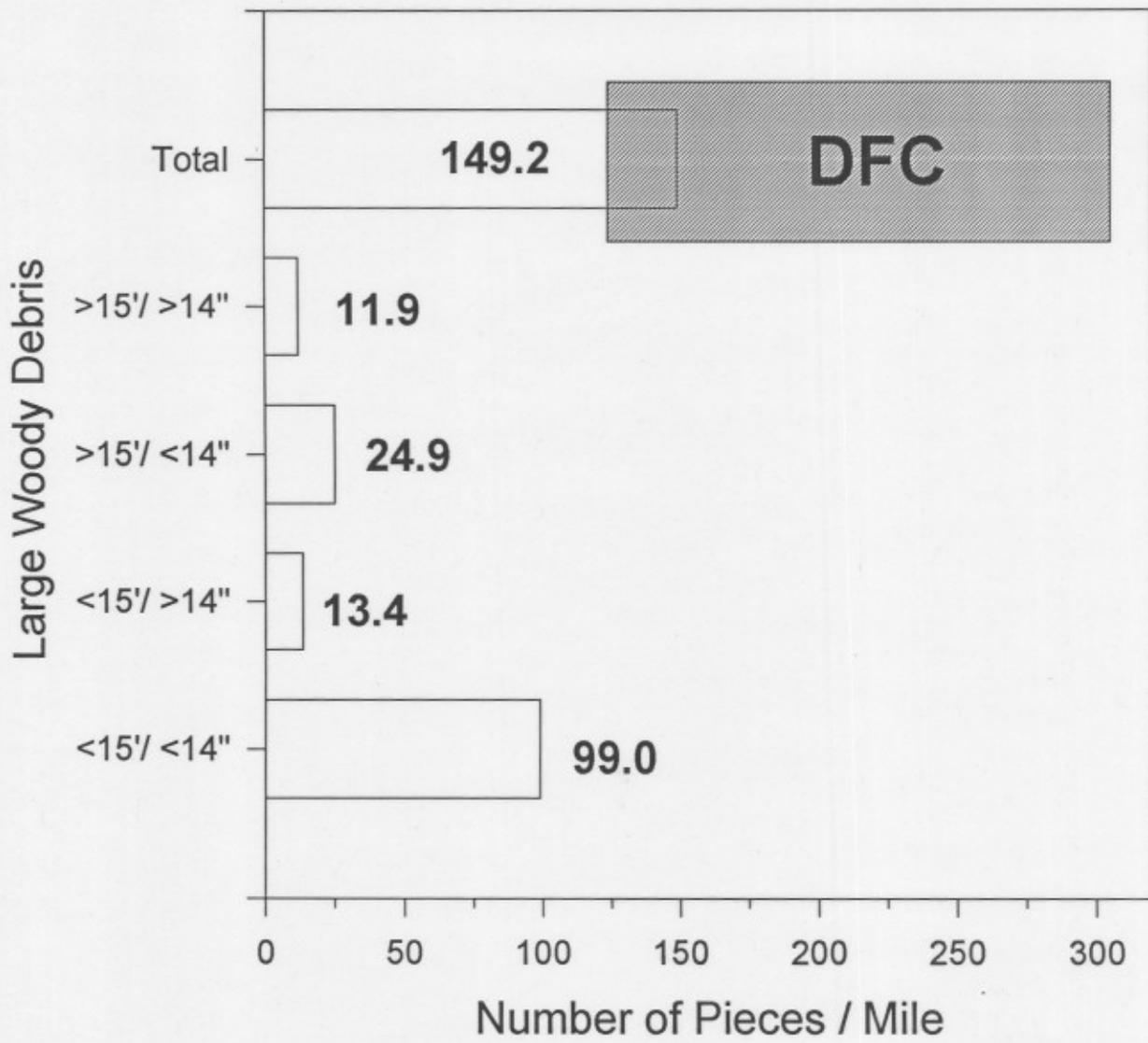
Minimum Riparian Width (Total): Not measured

Hurricane Creek

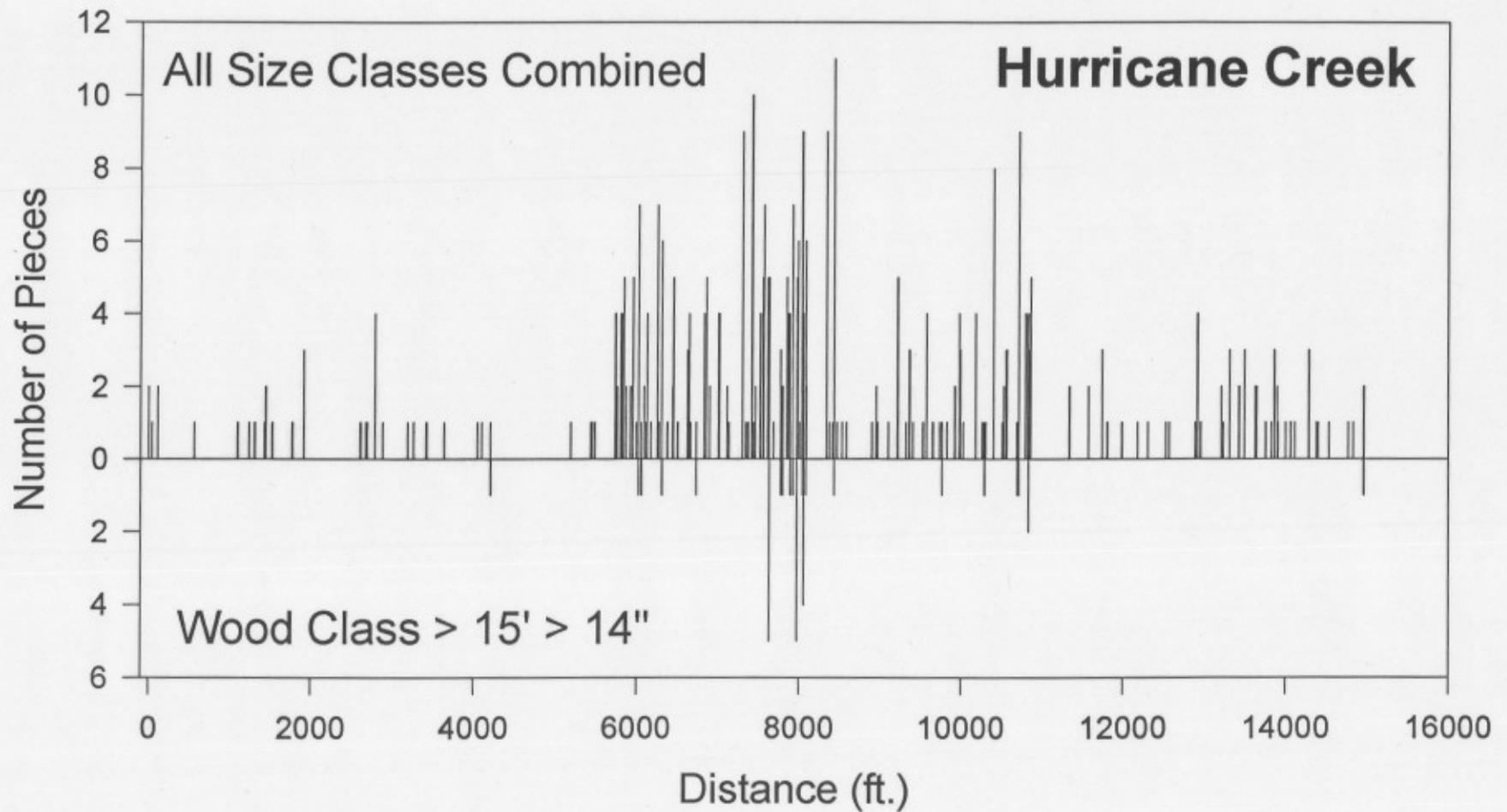
DFC: 30 - 70% of the Total Stream Area
in Pool Habitat

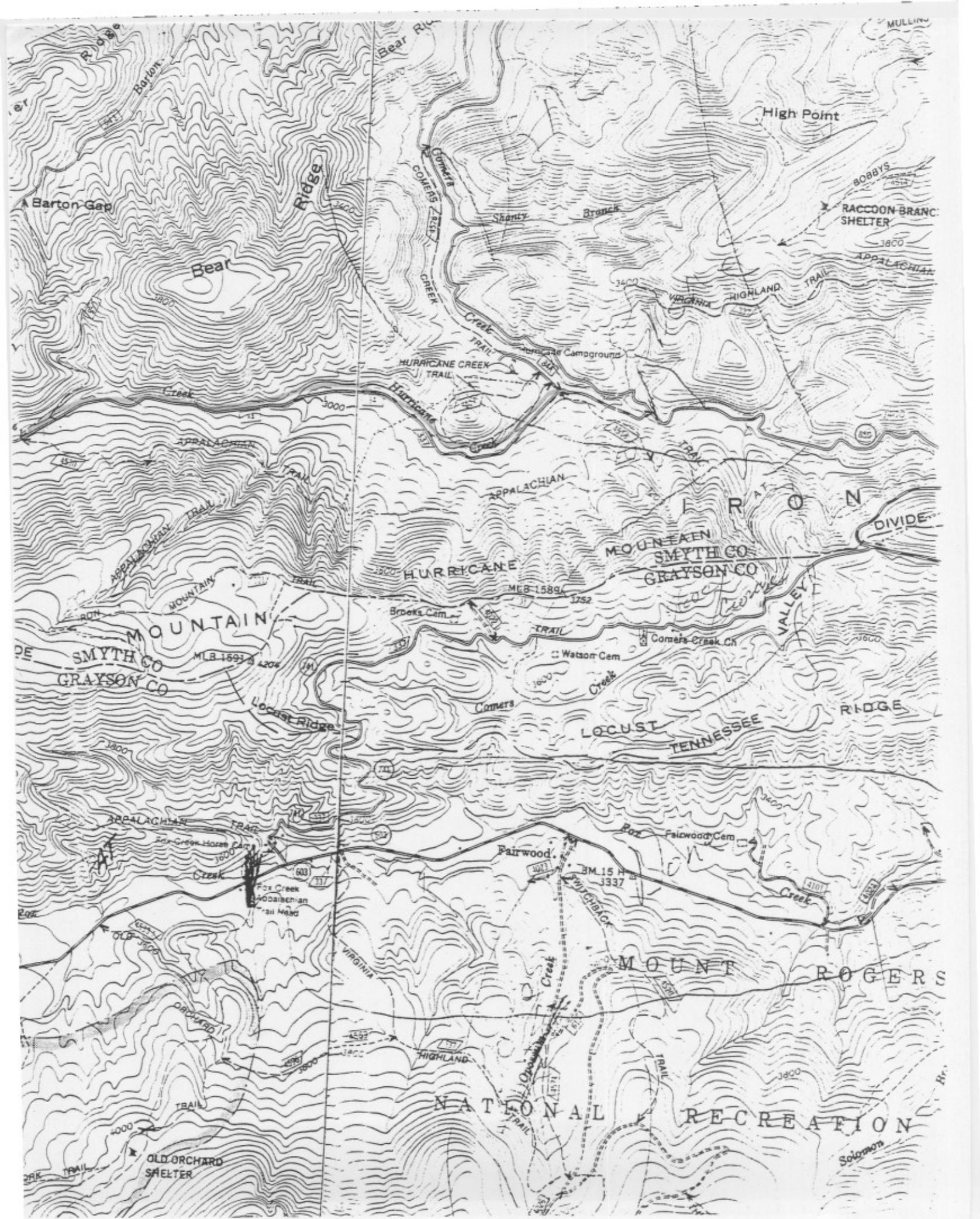


Hurricane Creek



Large Woody Debris Distribution





Stream: Big Wilson Creek (Lower)

District: Mt. Rogers

Quadrangle: Trout Dale

Sample Date: 7/12/95

Downstream Starting Point: USFS Boundary

Total Distance Surveyed: 1.9 miles

Percent of Total Area - Pools: 36.6

Number of Pools: 136

Number of Pools per mile: 71.6

Total Pool Area: $67,137.8 \text{ ft}^2 \pm 2,619.2 \text{ ft}^2$

Mean Pool Area: 493.7 ft^2

Correction Factor: 0.96

Mean Maximum Depth: 2.3'

Mean Average Depth: 1.6'

Percent of Total Area - Riffles: 63.4

Number of Riffles: 115

Number of Riffles per mile: 71.6

Total Riffle Area: $116,310.6 \text{ ft}^2 \pm 7,818.3 \text{ ft}^2$

Mean Riffle Area: 1011.4 ft^2

Correction Factor: 0.92

Mean Maximum Depth: 1.5'

Mean Average Depth: 0.8'

Number of Large Woody Debris Pieces per Mile: 107.0

Wood < 15' and < 14": 12.6

Wood < 15' and > 14": 5.3

Wood > 15' and < 14": 65.8

Wood > 15' and > 14": 23.7

Mean Channel Width: 45.6'

Mean Riparian Width: 75.0'

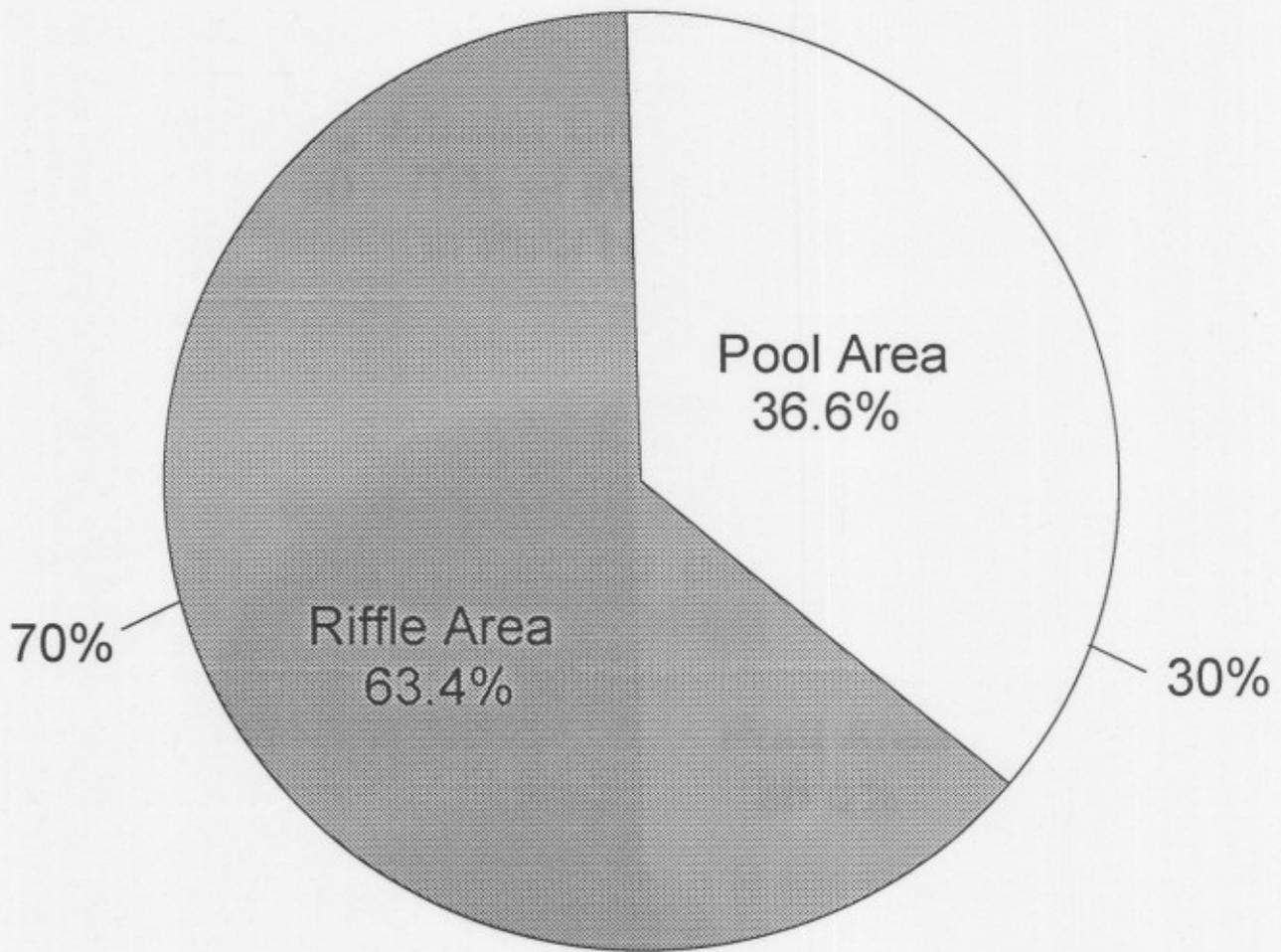
Mean Maximum Riparian Distance (either side): 20.1'

Mean Minimum Riparian Distance (either side): 9.3'

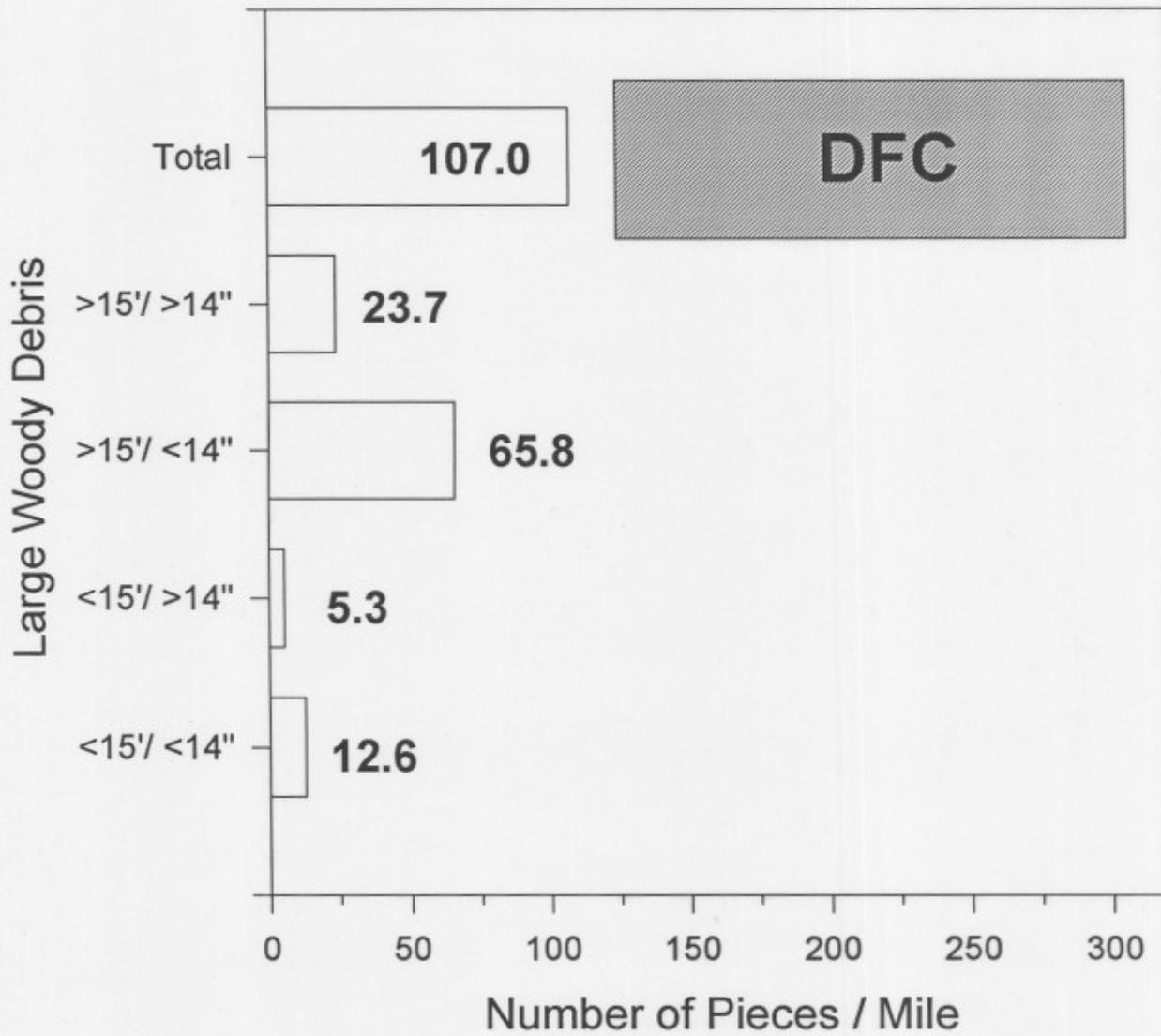
Maximum Riparian Width (Total): 144.2'

Minimum Riparian Width (Total): 49.0'

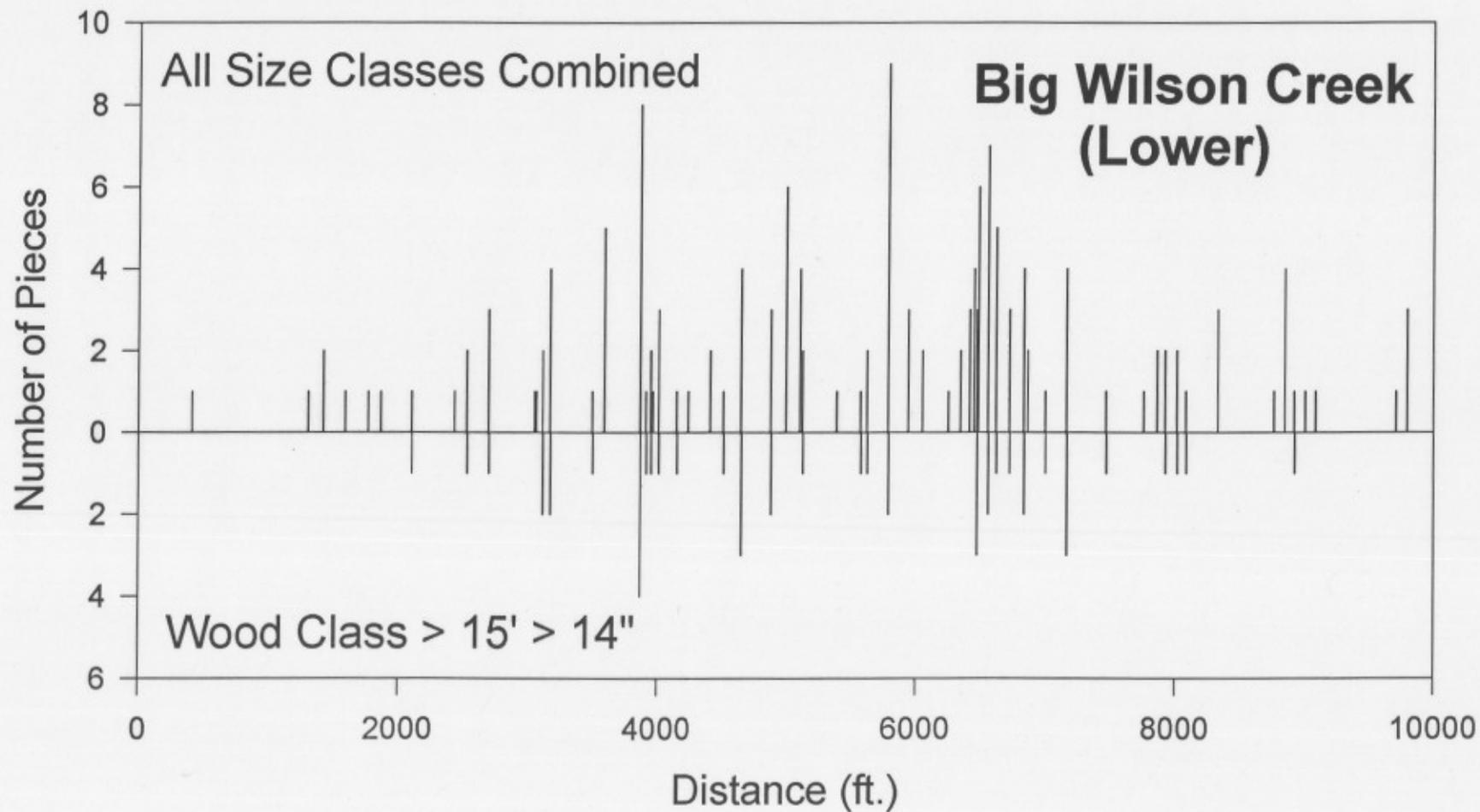
Big Wilson Creek (Lower)
DFC: 30 - 70% of the Total Stream Area
in Pool Habitat



Big Wilson Creek (Lower)



Large Woody Debris Distribution



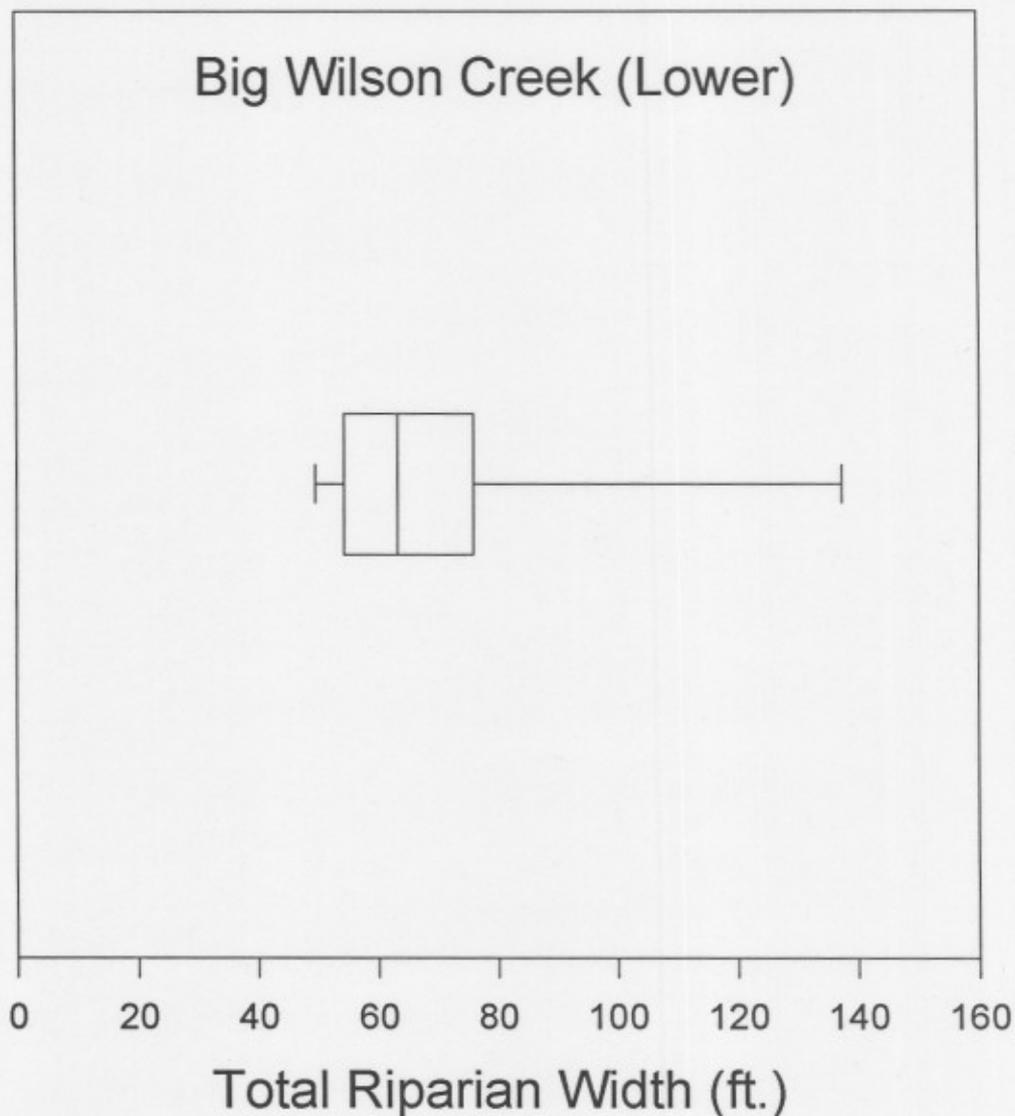
Riparian Width

Stream: Big Wilson Creek (Lower)

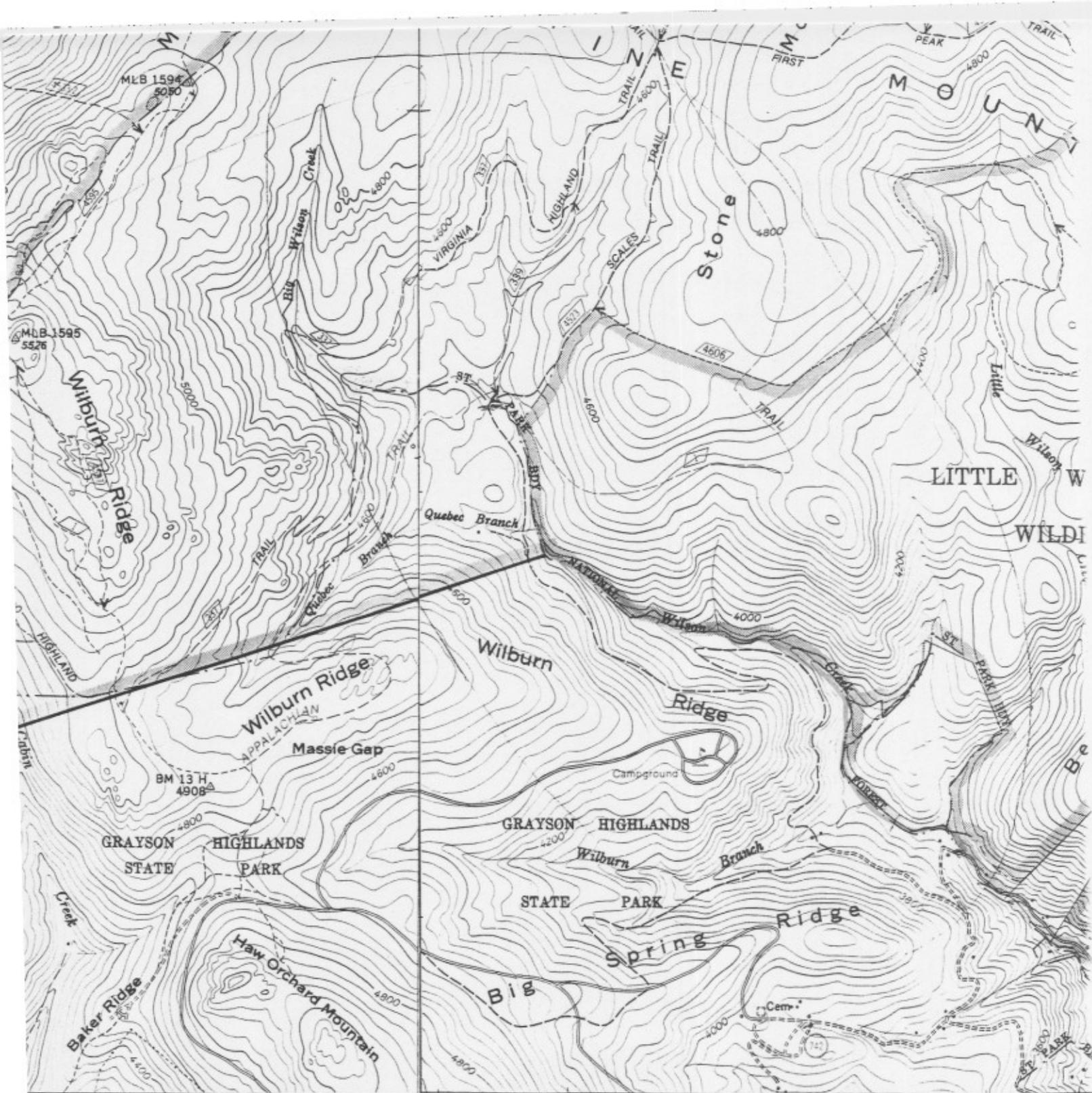
Number of measurements: 6

Mean width: 75.0 Std Dev: 32.2

Max: 144.2 Min: 49.0



Box plot of total riparian width. The box encloses the middle 50% of the observations, the bar in the center of the box represents the median, and the capped lines extending above and below the box represent the 90% and 10% quantiles.



● INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1978
 455000m E 81° 30' 1 120 000 FEET 456 1.4 MI. TO U.S. 58 457 458

(TVA 219-NE) Base map prepared by the Tennessee Valley Authority
 published by the U.S. Geological Survey

Control by NOS/NOAA, USGS, AND TVA
 Topography by photogrammetric methods using aerial
 photographs taken 1954. Map field checked by TVA, 1959.
 Polyconic projection. 1927 North American datum
 10,000-foot grid based on Virginia (South)
 rectangular coordinate system

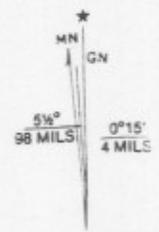


OKE

WHITETOP MOUNTAIN, VA
 N3637.5—W8130/7.5

1959
 PHOTOREVISED 1978

1000 meter Universal Transverse Mercator Grid ticks,
 zone 17, shown in blue
 Fine red dashed lines indicate selected fence and field lines
 visible on aerial photographs. This information is unchecked
 Modification to USGS base map by the Geometrics Service
 Center from 1980-83 aerial photography and 1988 correction
 guides furnished by the U.S. Geological Survey



UTM GRID AND 1988 MAGN
 DECLINATION AT CENTER

Stream: Big Wilson Creek (Upper)

District: Mt. Rogers/White Top Mountain

Quadrangle: Trout Dale

Sample Date: 7/12/95

Downstream Starting Point: Quebec Branch Confluence

Total Distance Surveyed: 1.3 miles

Percent of Total Area - Pools: 34.1

Number of Pools: 131

Number of Pools per mile: 101.0

Total Pool Area: 31,120.0 ft² ± 3,355.9 ft²

Mean Pool Area: 237.6 ft²

Correction Factor: 0.93

Mean Maximum Depth: 1.4'

Mean Average Depth: 0.9'

Percent of Total Area - Riffles: 65.9

Number of Riffles: 96

Number of Riffles per mile: 74.0

Total Riffle Area: 60,025.0 ft² ± 1,101.2 ft²

Mean Riffle Area: 625.3 ft²

Correction Factor: 0.97

Mean Maximum Depth: 0.8'

Mean Average Depth: 0.4'

Number of Large Woody Debris Pieces per Mile: 8.5

Wood < 15' and < 14": 3.1

Wood < 15' and > 14": 0.0

Wood > 15' and < 14": 3.8

Wood > 15' and > 14": 1.5

Mean Channel Width: 20.3'

Mean Riparian Width: 76.0'

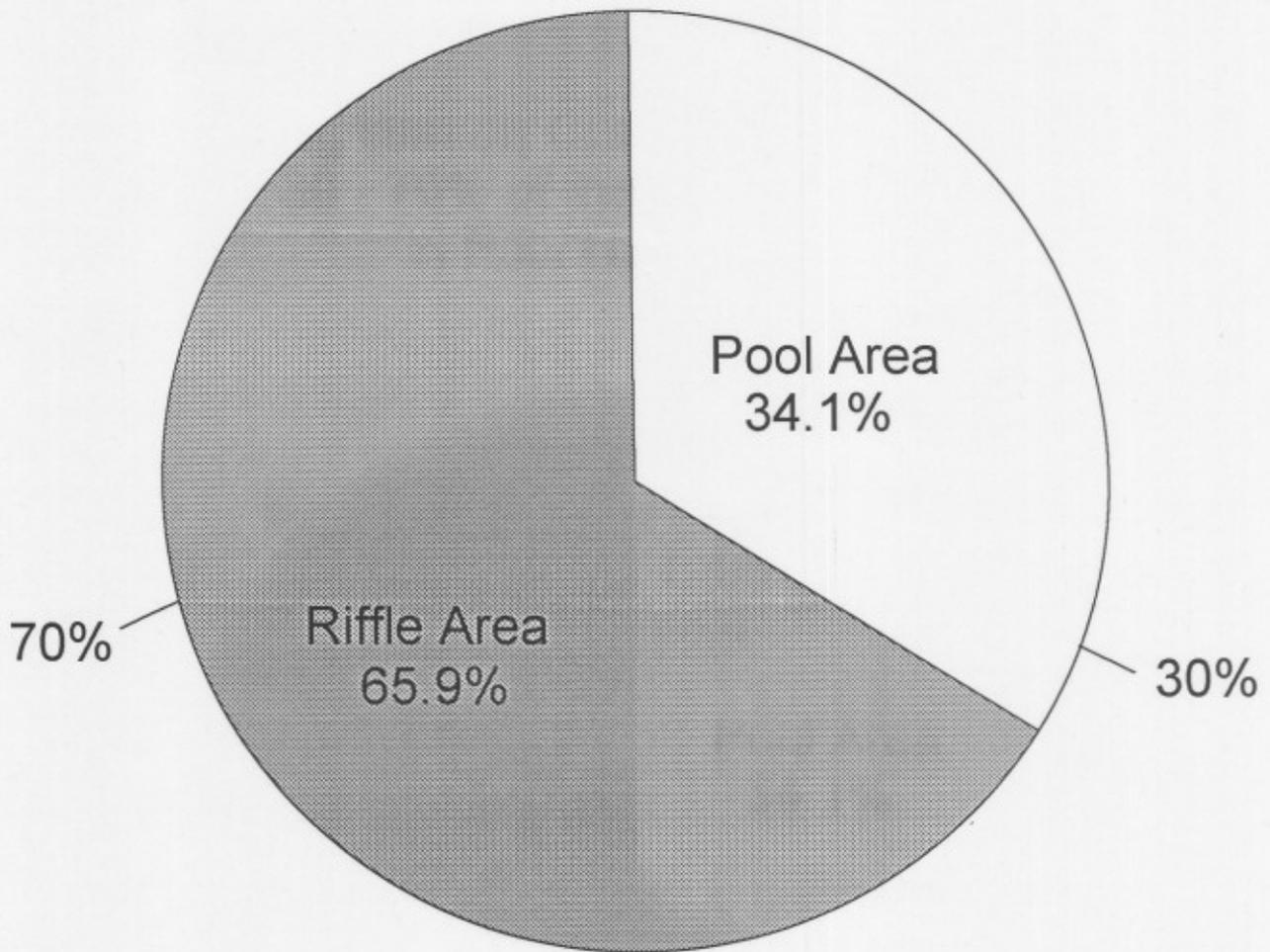
Mean Maximum Riparian Distance (either side): 28.8'

Mean Minimum Riparian Distance (either side): 6.6'

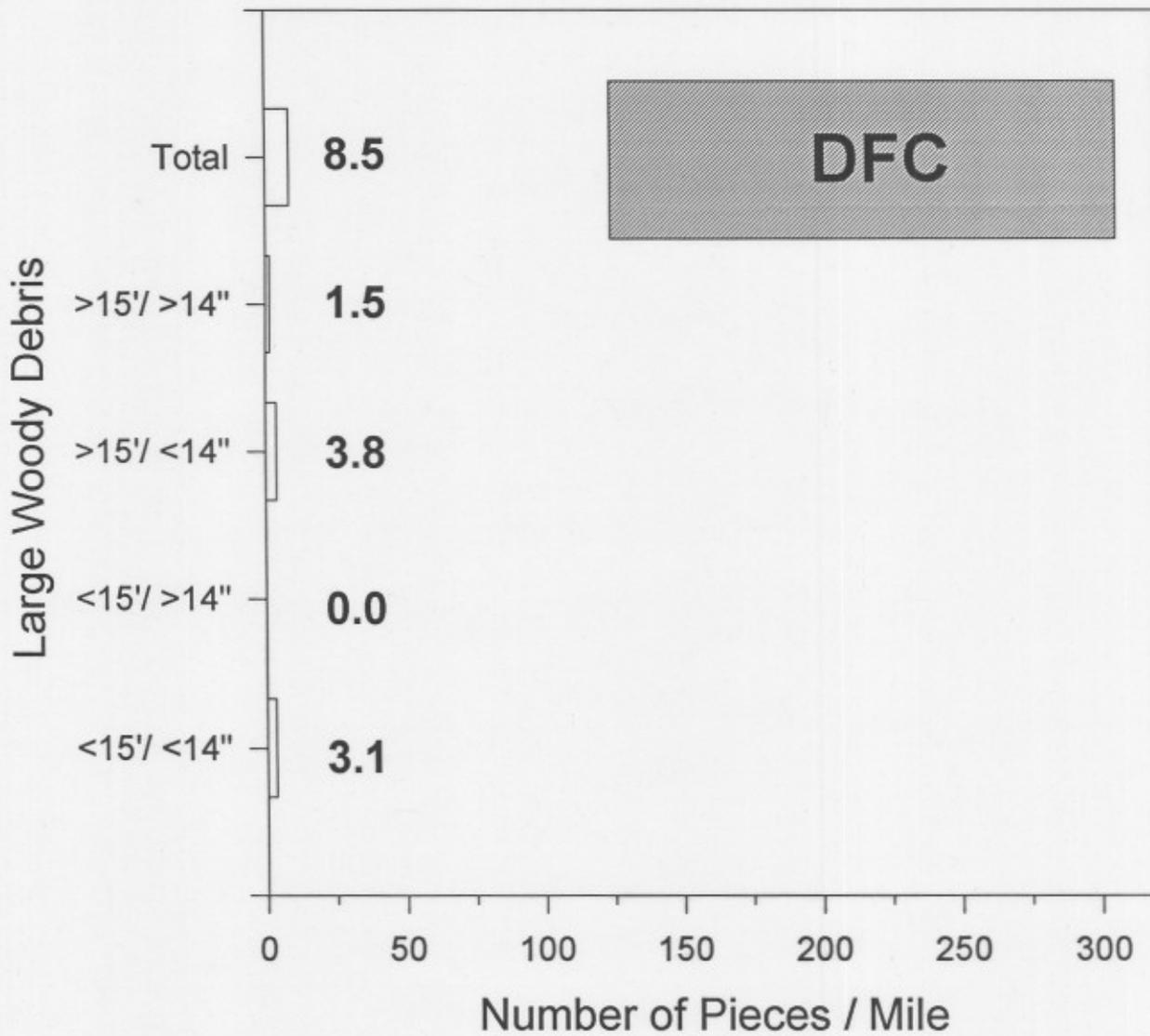
Maximum Riparian Width (Total): 94.3'

Minimum Riparian Width (Total): 30.0'

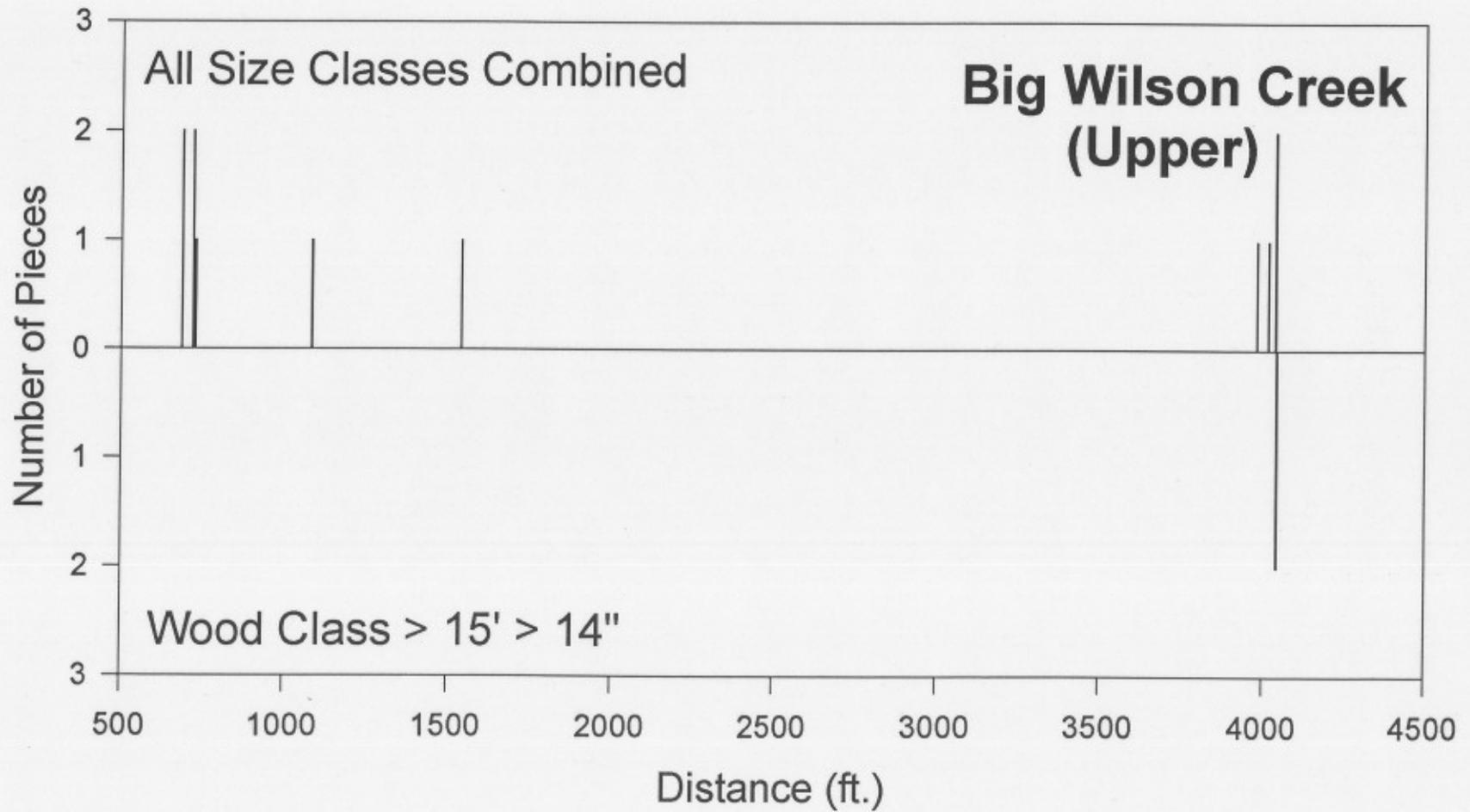
Big Wilson Creek (Upper)
DFC: 30 - 70% of the Total Stream Area
in Pool Habitat



Big Wilson Creek (Upper)



Large Woody Debris Distribution



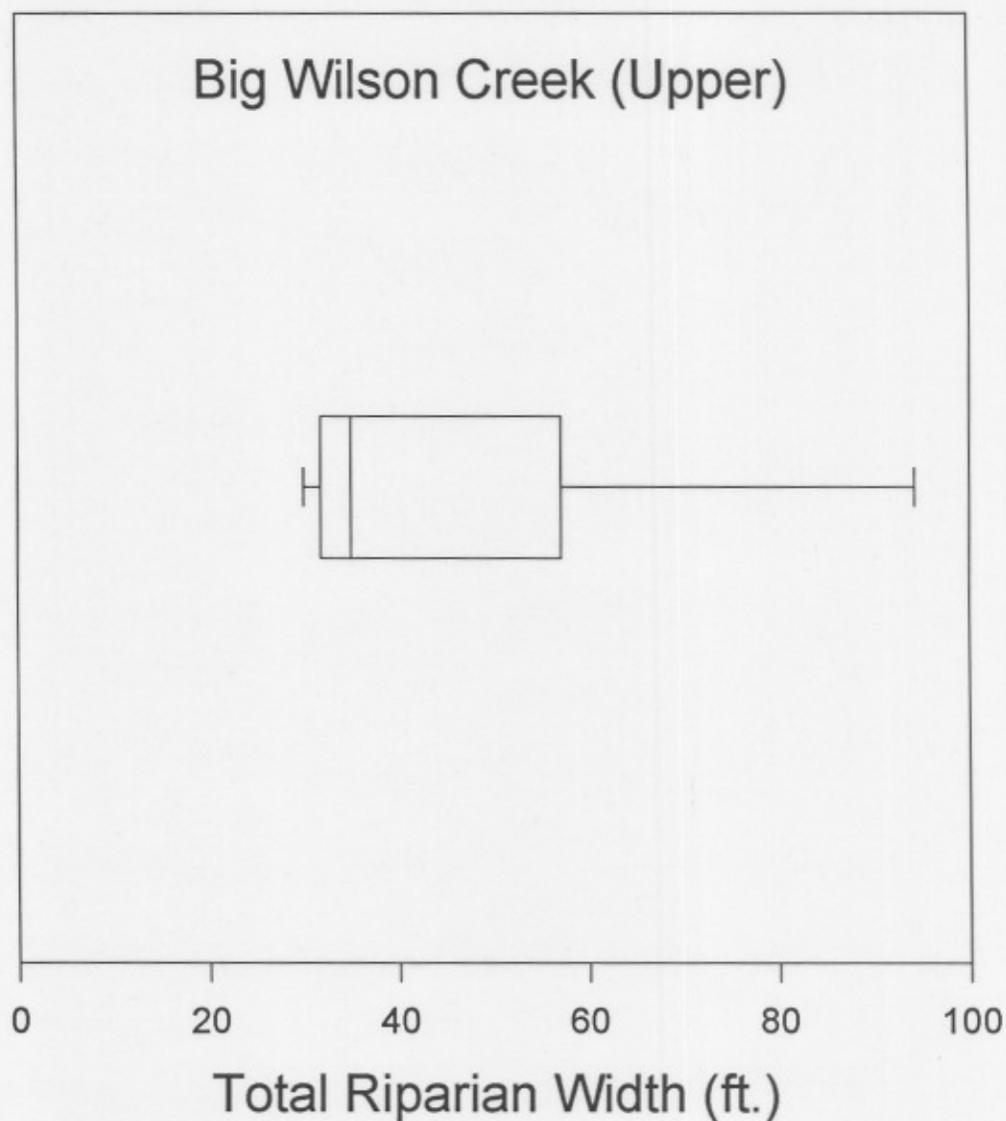
Riparian Width

Stream: Big Wilson Creek (Upper)

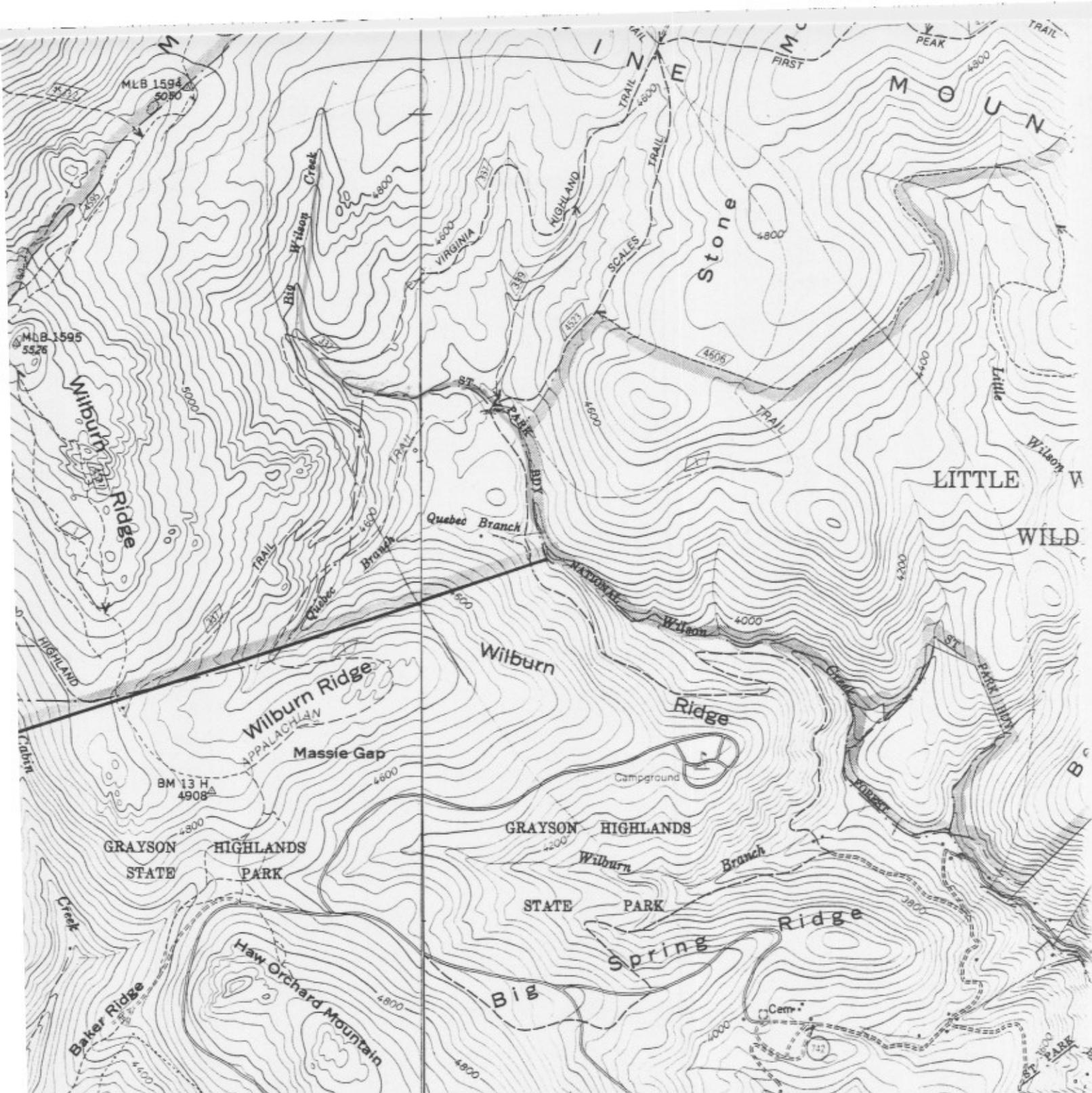
Number of measurements: 5

Mean width: 76.0 Std Dev: 24.0

Max: 94.3 Min: 30.0



Box plot of total riparian width. The box encloses the middle 50% of the observations, the bar in the center of the box represents the median, and the capped lines extending above and below the box represent the 90% and 10% quantiles.



INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1978
 455000m.E 81°30' 1 120 000 FEET 456 1.4 MI. TO U.S. 58 457 458

(TVA 219-NE) This map prepared by the Tennessee Valley Authority published by the U.S. Geological Survey

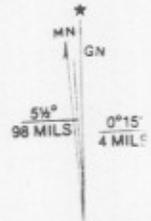
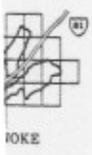
Control by NOS/NOAA, USGS, AND TVA
 Topography by photogrammetric methods using aerial photographs taken 1954. Map field checked by TVA. 1959.

Polyconic projection. 1927 North American datum
 10,000-foot grid based on Virginia (South) rectangular coordinate system

1000 meter Universal Transverse Mercator Grid ticks, zone 17, shown in blue

Fine red dashed lines indicate selected fence and field lines visible on aerial photographs. This information is unchecked

Modification to USGS base map by the Geometronics Service Center from 1980-83 aerial photography and 1988 correction



WHITETOP MOUNTAIN, VA
 N3637.5—W8130/7.5

1959
 PHOTOREVISED 1978

UTM GRID AND 1988 MAGN. DECLINATION AT CENTER

Stream: HELTON CREEK LOWER

District: MT. ROGERS

Quadrangle: Whitetop Mountain

Sample Date: 29 July 1992

Downstream Starting Point: Forest Service Boundary

Total Distance Surveyed: 1.2 miles

Percent of Total Area - Pools: 57.9

Number of Pools: 136

Number of Pools per mile: 117.6

Total Pool Area: 45282.8 ft² ± 1641.9 ft²

Mean Pool Area: 333.0 ft²

Correction Factor: 0.96

Mean Maximum Depth: 1.4'

Mean Average Depth: 1.1'

Percent of Total Area - Riffles: 42.1

Number of Riffles: 73

Number of Riffles per mile: 63.1

Total Riffle Area: 32885.1 ft² ± 1005.1 ft²

Mean Riffle Area: 39.5 ft²

Correction Factor: 1.09

Mean Maximum Depth: 0.7'

Mean Average Depth: 0.5'

Number of Large Woody Debris Pieces per Mile:

Wood < 15' and < 14": 102.9

Wood < 15' and > 14": 7.8

Wood > 15' and < 14": 14.7

Wood > 15' and > 14": 5.2

Mean Channel Width: Not Measured

Mean Riparian Width: Not Measured

Mean Maximum Riparian Distance: Not Measured

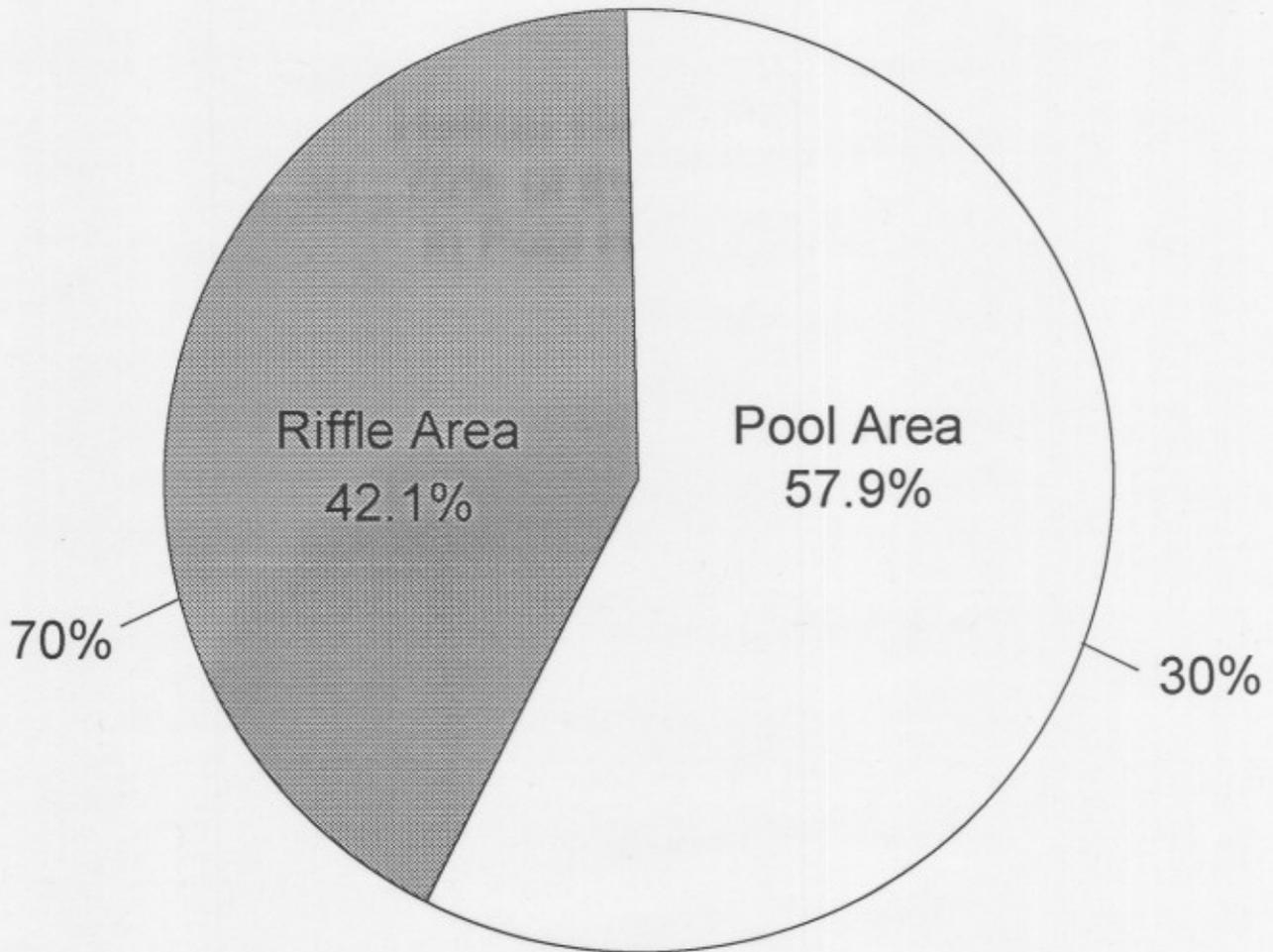
Mean Minimum Riparian Distance: Not Measured

Maximum Riparian Width (Total): Not Measured

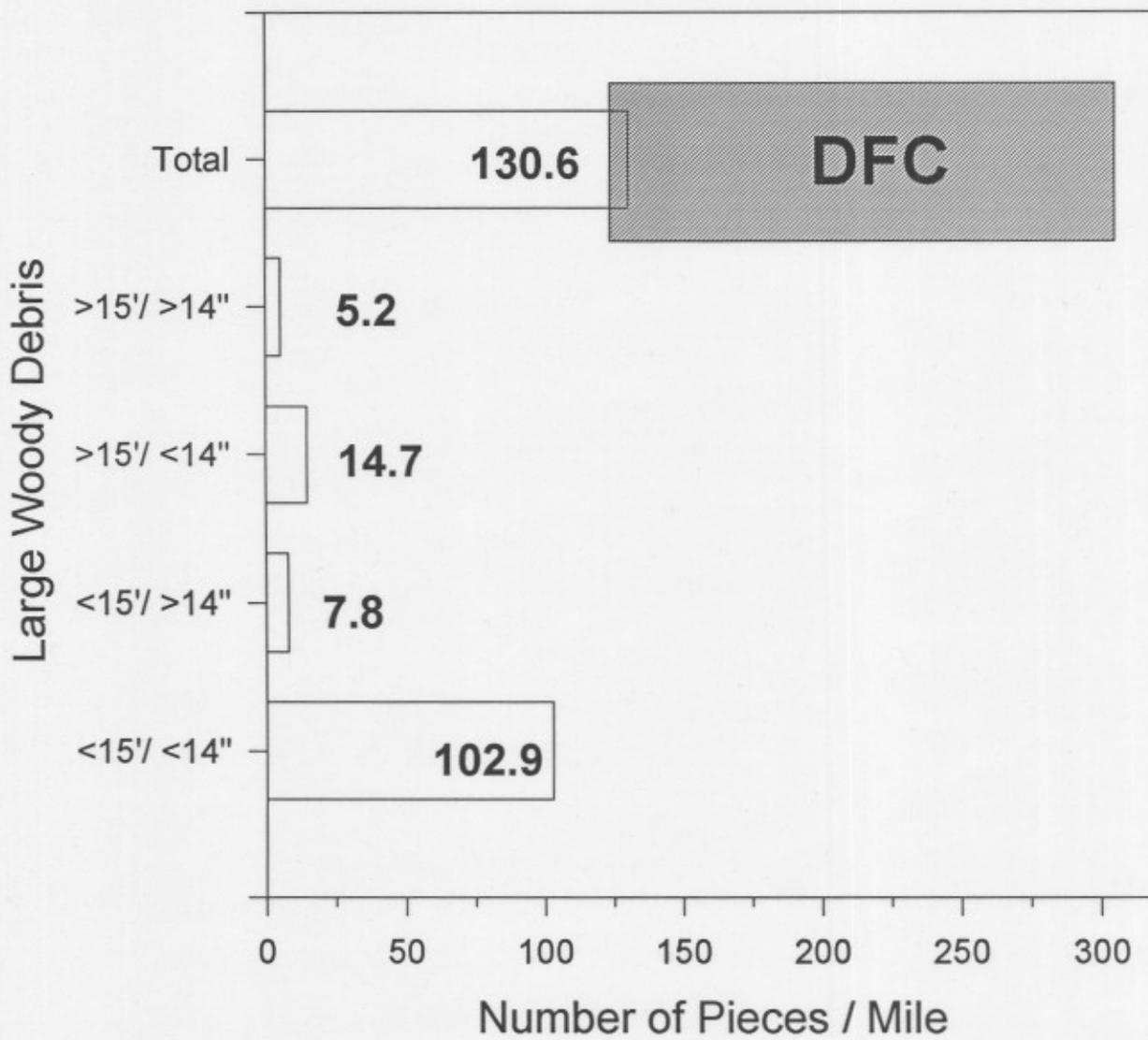
Minimum Riparian Width (Total): Not Measured

Helton Creek (Lower)

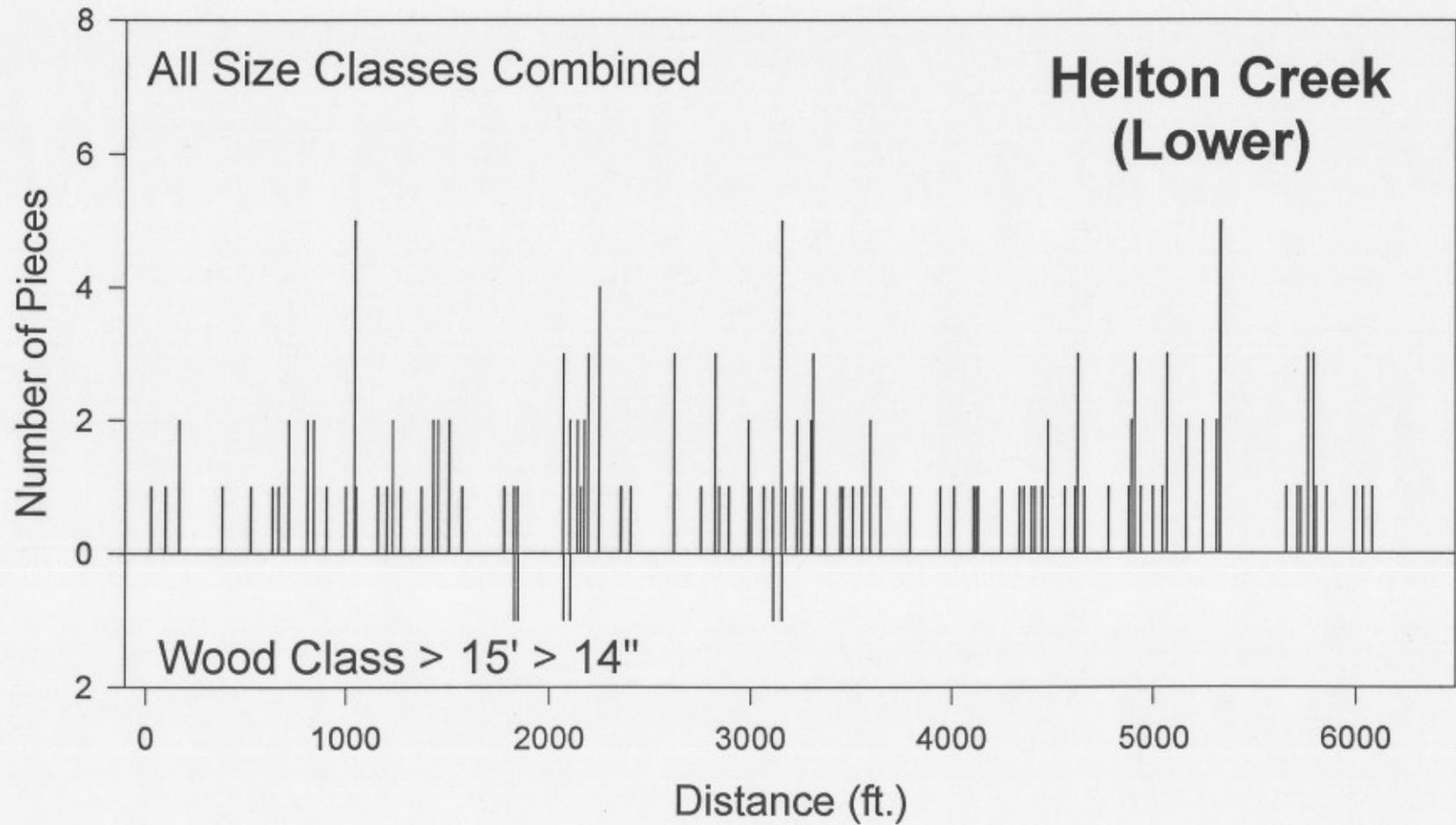
DFC: 30 - 70% of the Total Stream Area
in Pool Habitat

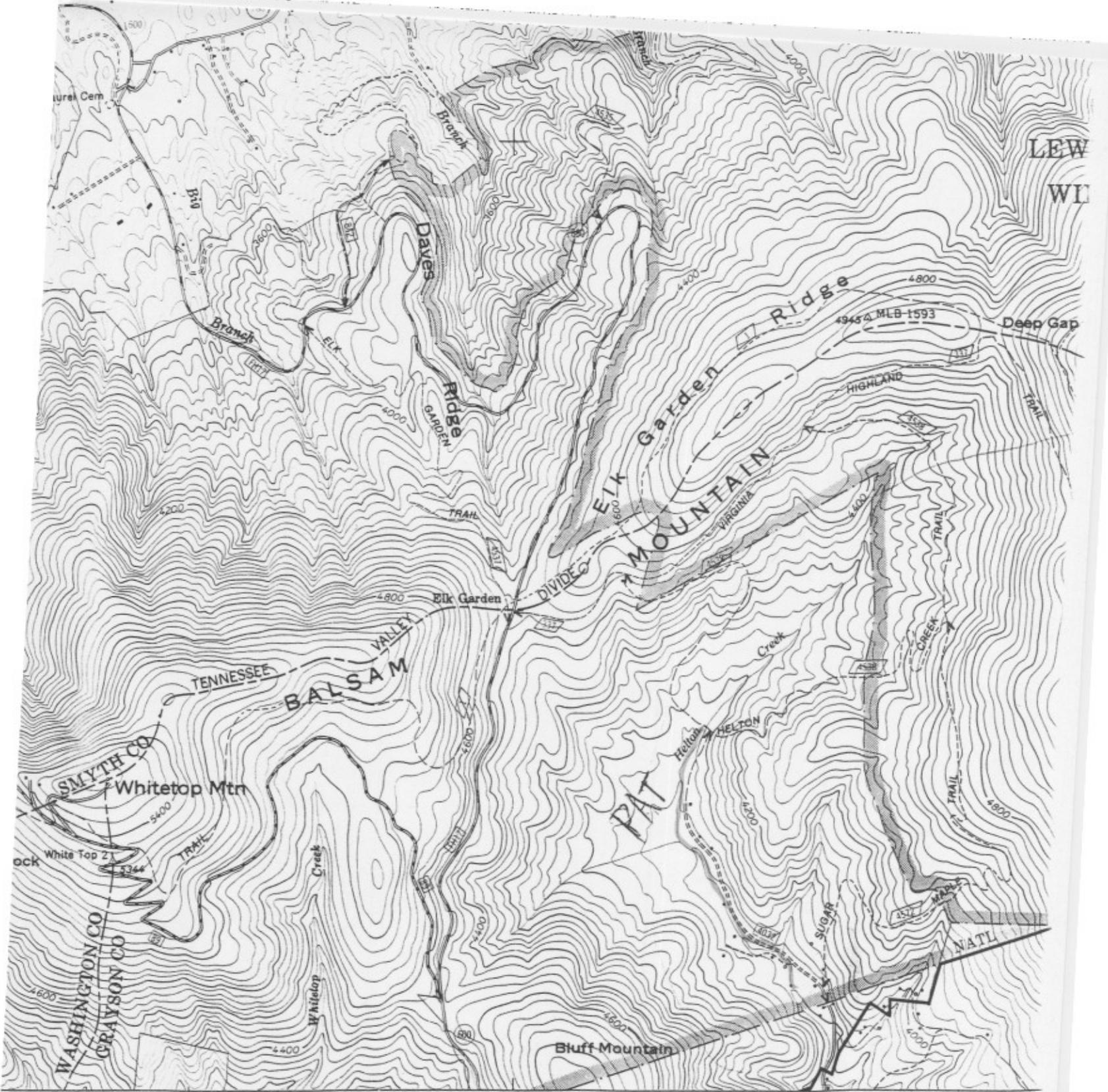


Lower Helton Creek



Large Woody Debris Distribution





Tennessee Valley Authority
Survey

using aerial
photography by TVA, 1959

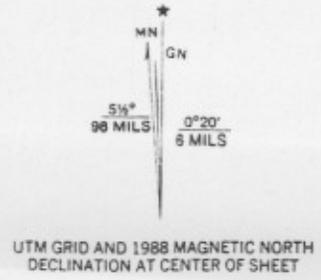
North American datum
(NAD 83)

UTM Grid ticks.

Boundary fence and field lines
not checked

46 1 090 000 FEET 47 1.7 MI. TO U.S. 58 35' 48 49 (PARK 219-SE) 450

SCALE 1:24 000

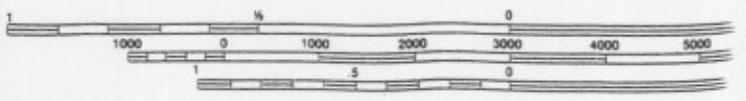


UTM GRID AND 1988 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

- | | | | |
|--|-----------------------------------|--|-------------------|
| | National Forest Boundary | | Primary Highway |
| | Forest Service land
as of 1988 | | Secondary Highway |
| | Class A Corner and Number | | Improved Road, B |
| | Barrier | | Improved Road, C |
| | | | Improved Road, D |
| | | | Unimproved Road |

CONTOUR INTERVAL 40 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 19

LEGEND



Stream: UPPER HELTON CREEK

District: MT. ROGERS

Quadrangle: Whitetop Mountain

Sample Date: 29-30 July 1992

Downstream Starting Point: Helton Creek Trail Crossing

Total Distance Surveyed: 1.3 miles

Percent of Total Area - Pools: 29.5

Number of Pools: 168

Number of Pools per mile: 129.2

Total Pool Area: 21464.0 ft² ± 798.3 ft²

Mean Pool Area: 127.8 ft²

Correction Factor: 1.02

Mean Maximum Depth: 1.1'

Mean Average Depth: 0.9'

Percent of Total Area - Riffles: 70.5

Number of Riffles: 123

Number of Riffles per mile: 94.6

Total Riffle Area: 51199.0 ft² ± 1031.5 ft²

Mean Riffle Area: 416.3 ft²

Correction Factor: 1.03

Mean Maximum Depth: 0.8'

Mean Average Depth: 0.5'

Number of Large Woody Debris Pieces per Mile: 240.6

Wood < 15' and < 14": 175.8

Wood < 15' and > 14": 3.8

Wood > 15' and < 14": 59.5

Wood > 15' and > 14": 1.5

Mean Channel Width: Not Measured

Mean Riparian Width: Not Measured

Mean Maximum Riparian Distance: Not Measured

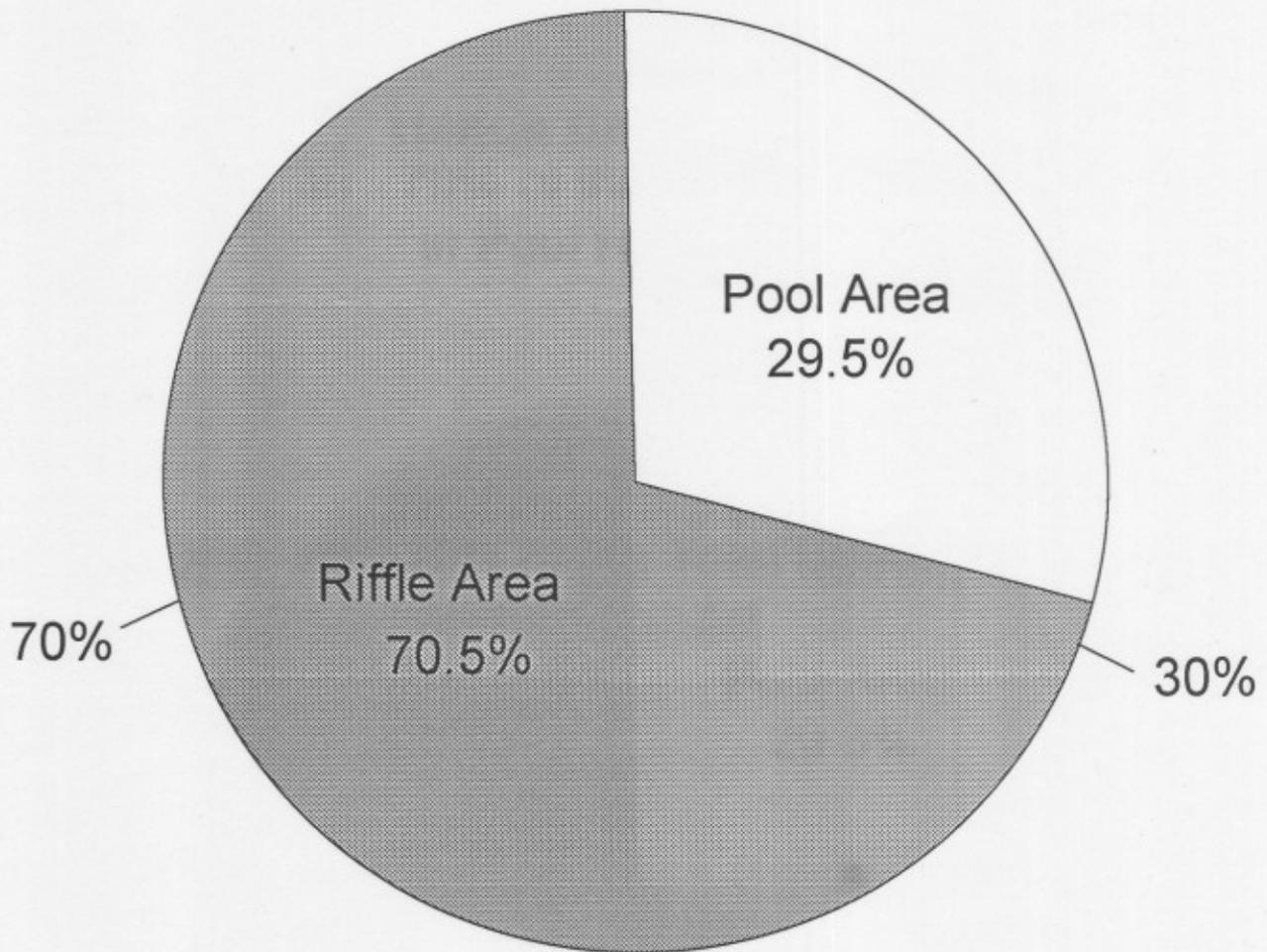
Mean Minimum Riparian Distance: Not Measured

Maximum Riparian Width (Total): Not Measured

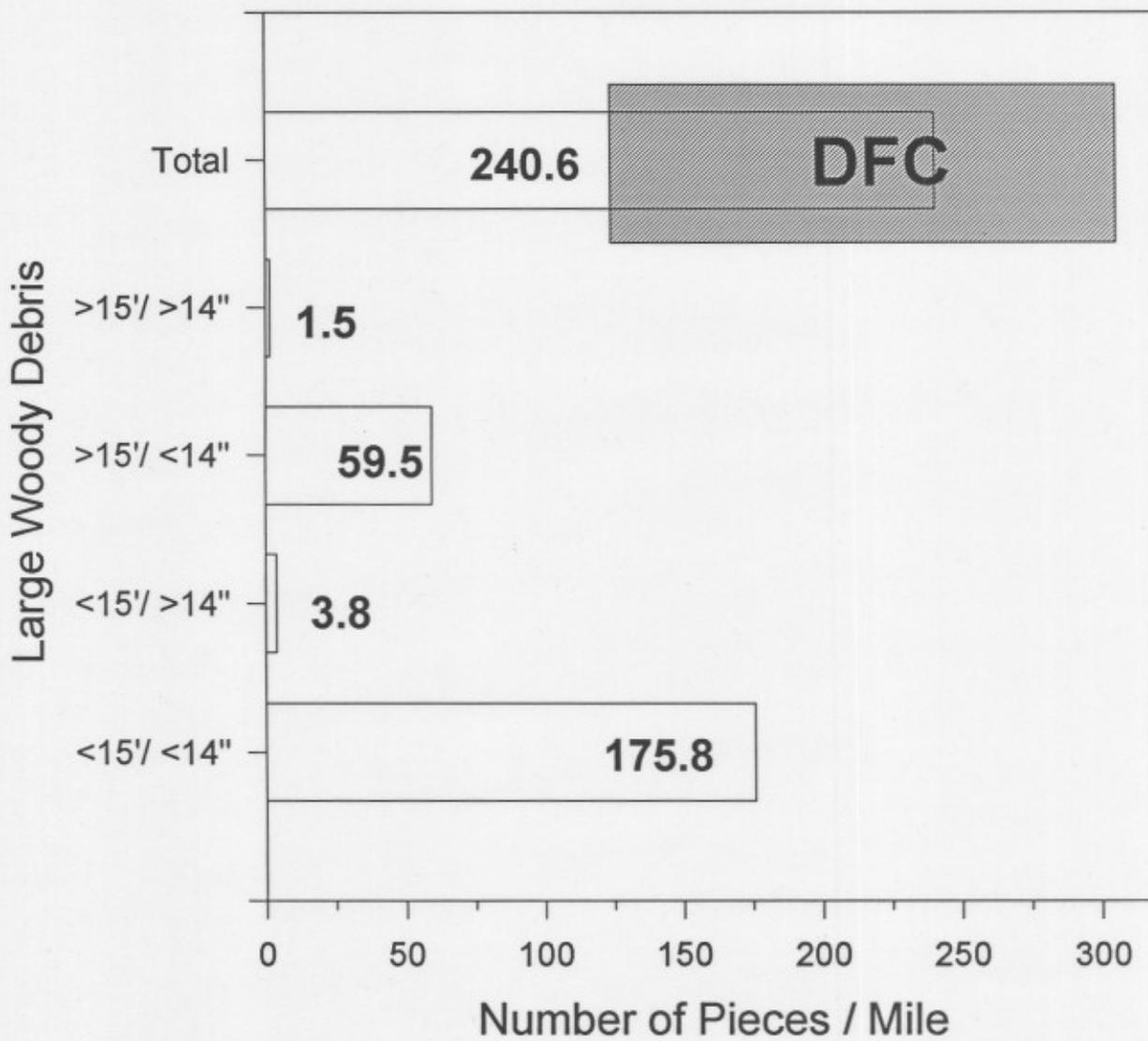
Minimum Riparian Width (Total): Not Measured

Helton Creek (Upper)

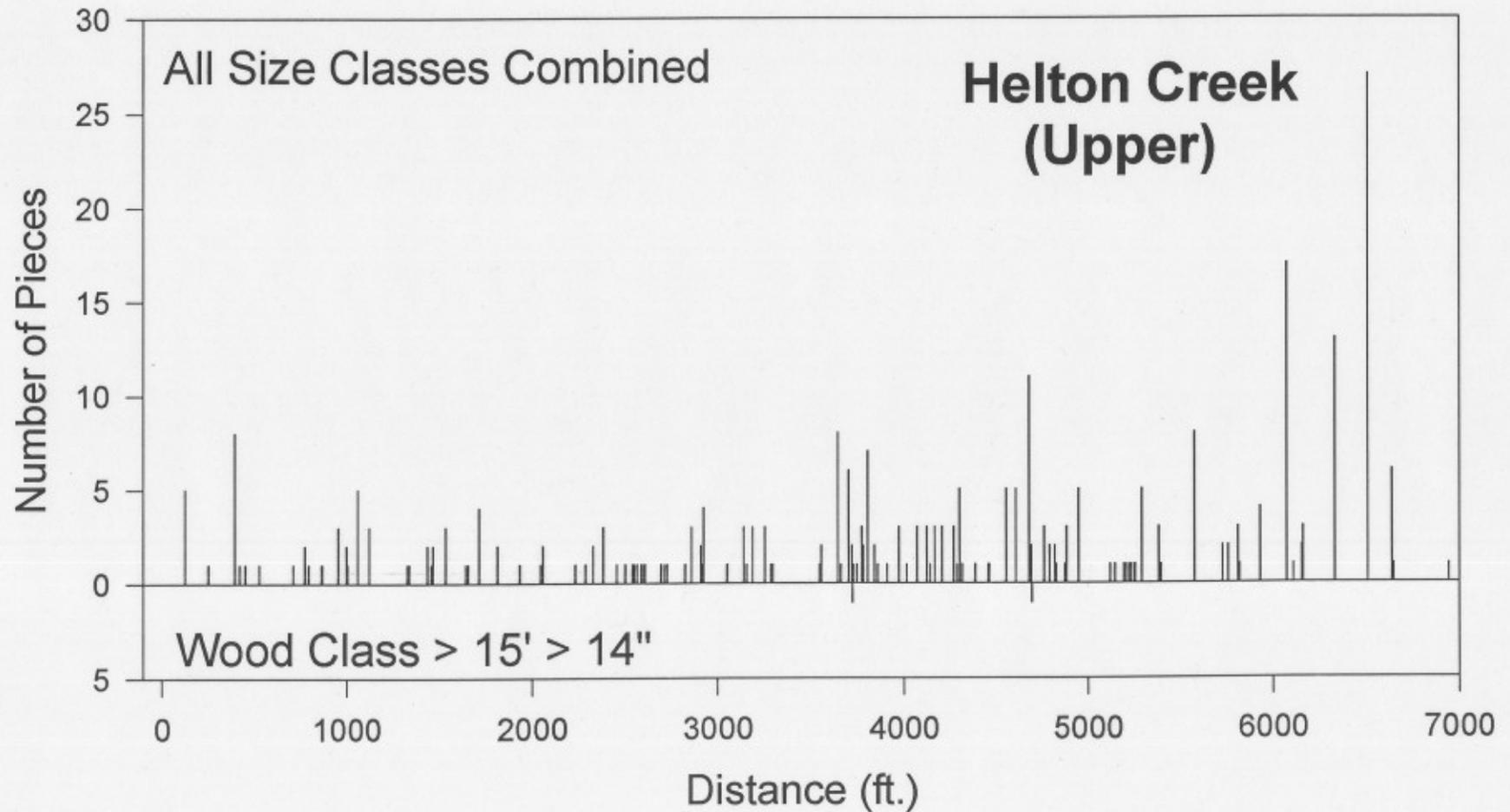
DFC: 30 - 70% of the Total Stream Area
in Pool Habitat

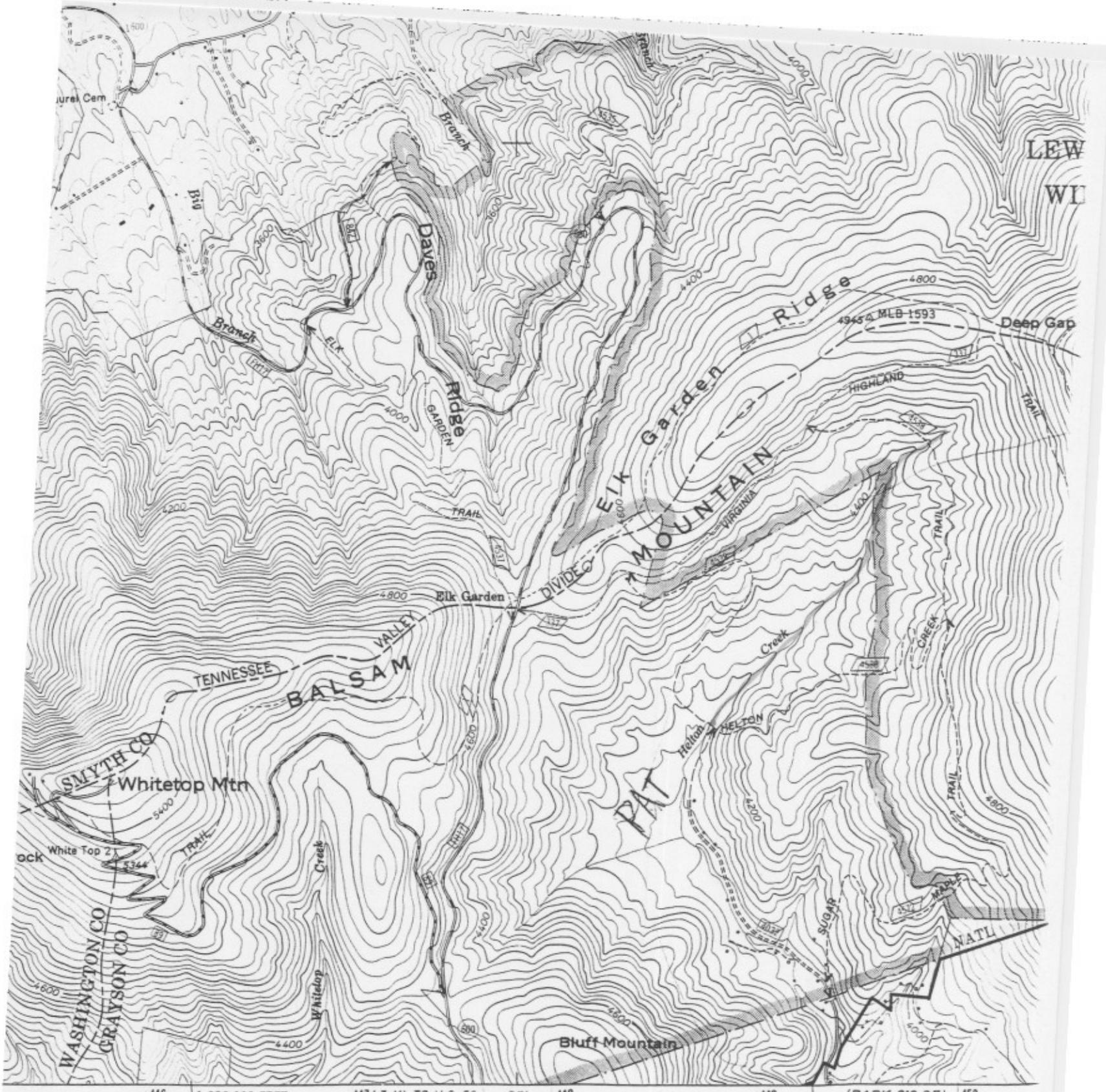


Upper Helton Creek



Large Woody Debris Distribution





see Valley Authority
Survey

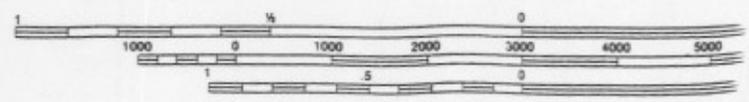
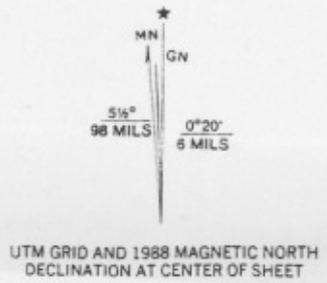
SCALE 1:24 000

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for Grid ticks,

d fence and field lines
unchecked



CONTOUR INTERVAL 40 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 19

LEGEND

	National Forest Boundary		Primary Highway
	Forest Service land as of 1988		Secondary Highway
	Class A Corner and Number		Improved Road
	Barrier		Improved Road
			Unimproved Road

Stream: HELTON CREEK TRIBUTARY 1 (Above Sugar Maple Trail)

District: MT. ROGERS

Quadrangle: Whitetop Mountain

Sample Date: 21 July 1992

Downstream Starting Point: Confluence with Helton Creek

Total Distance Surveyed: 0.2 miles

Percent of Total Area - Pools: 13.3

Number of Pools: 32

Number of Pools per mile: 128.6

Total Pool Area: 794.7 ft² ± 40.9 ft²

Mean Pool Area: 24.8 ft²

Correction Factor: 1.17

Mean Maximum Depth: 0.5'

Mean Average Depth: 0.4'

Percent of Total Area - Riffles: 86.7

Number of Riffles: 37

Number of Riffles per mile: 148.7

Total Riffle Area: 5194.1 ft² ± 399.2 ft²

Mean Riffle Area: 140.4 ft²

Correction Factor: 1.35

Mean Maximum Depth: 0.3'

Mean Average Depth: 0.1'

Number of Large Woody Debris Pieces per Mile: 225.0

Wood < 15' and < 14": 180.8

Wood < 15' and > 14": 4.0

Wood > 15' and < 14": 36.2

Wood > 15' and > 14": 4.0

Mean Channel Width: Not Measured

Mean Riparian Width: Not Measured

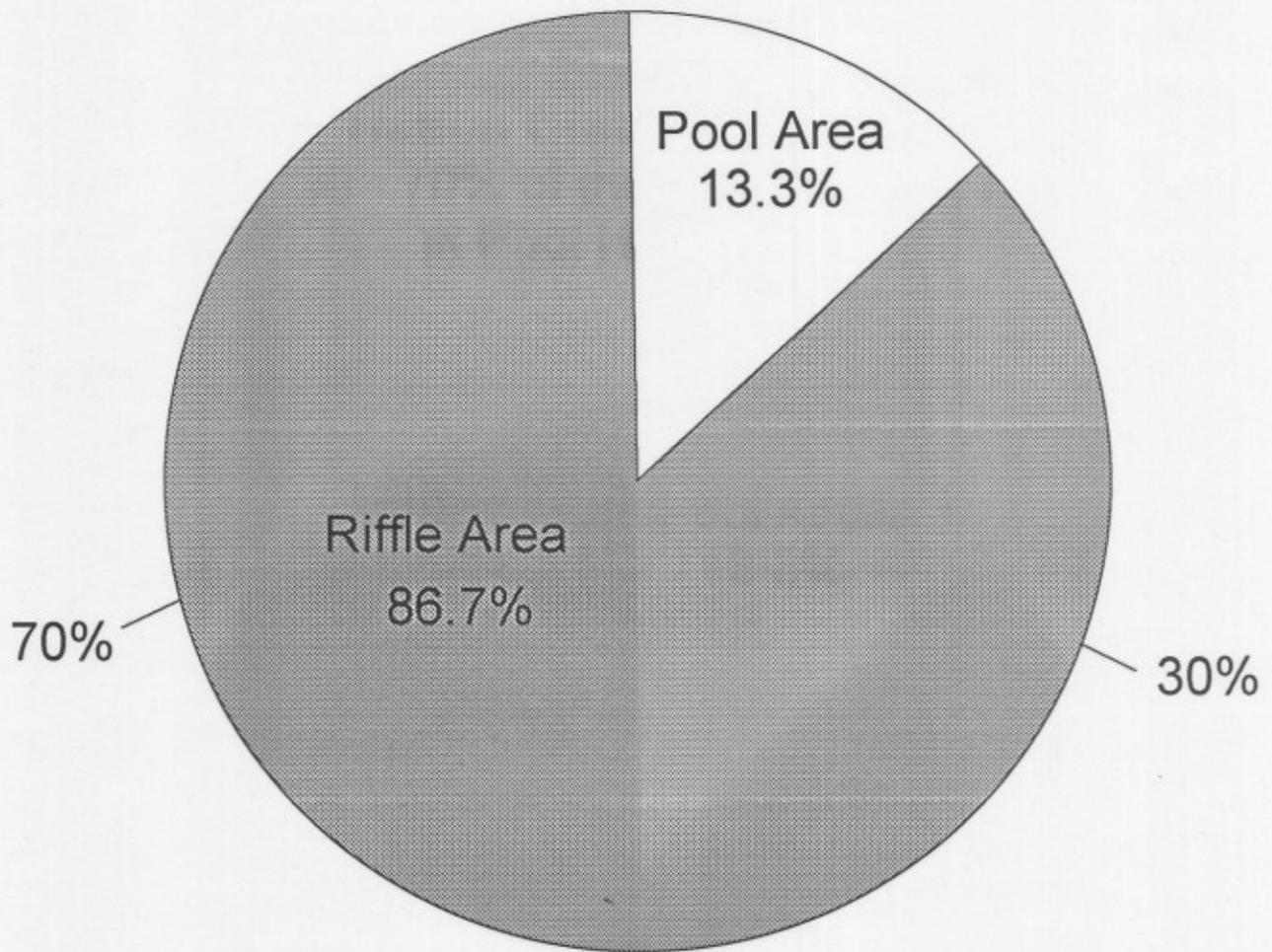
Mean Maximum Riparian Distance: Not Measured

Mean Minimum Riparian Distance: Not Measured

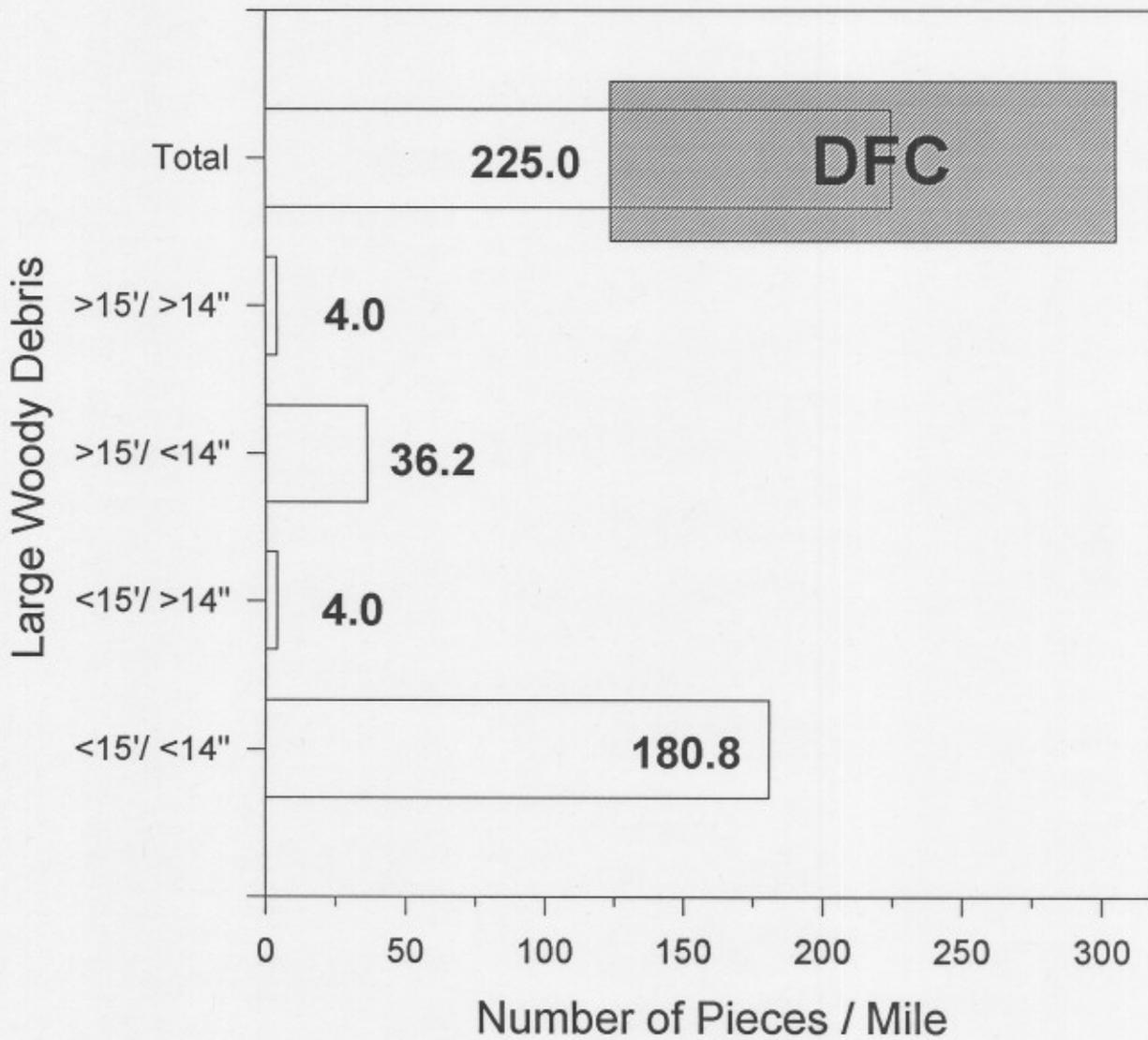
Maximum Riparian Width (Total): Not Measured

Minimum Riparian Width (Total): Not Measured

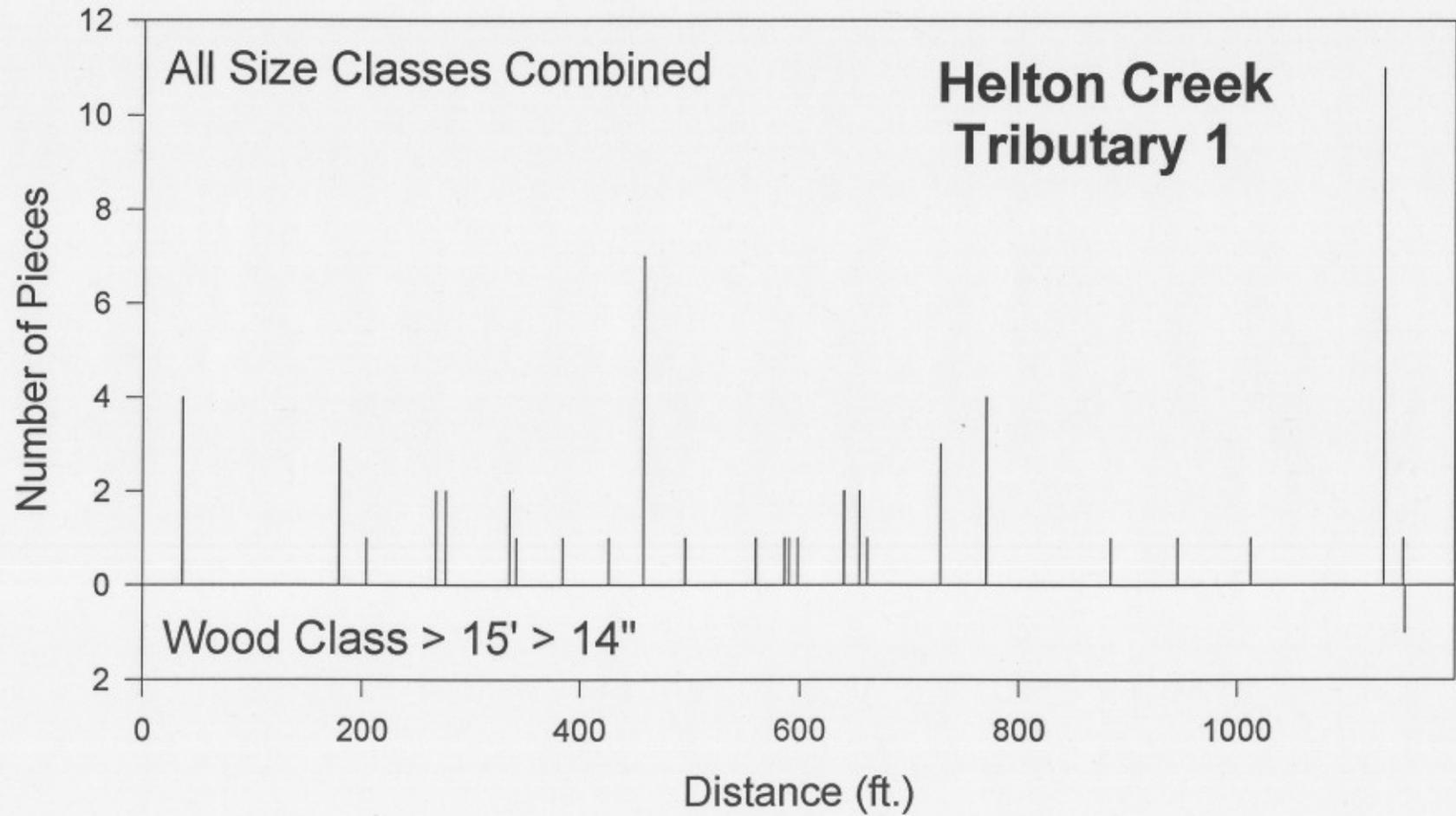
Helton Creek Tributary 1
DFC: 30 - 70% of the Total Stream Area
in Pool Habitat

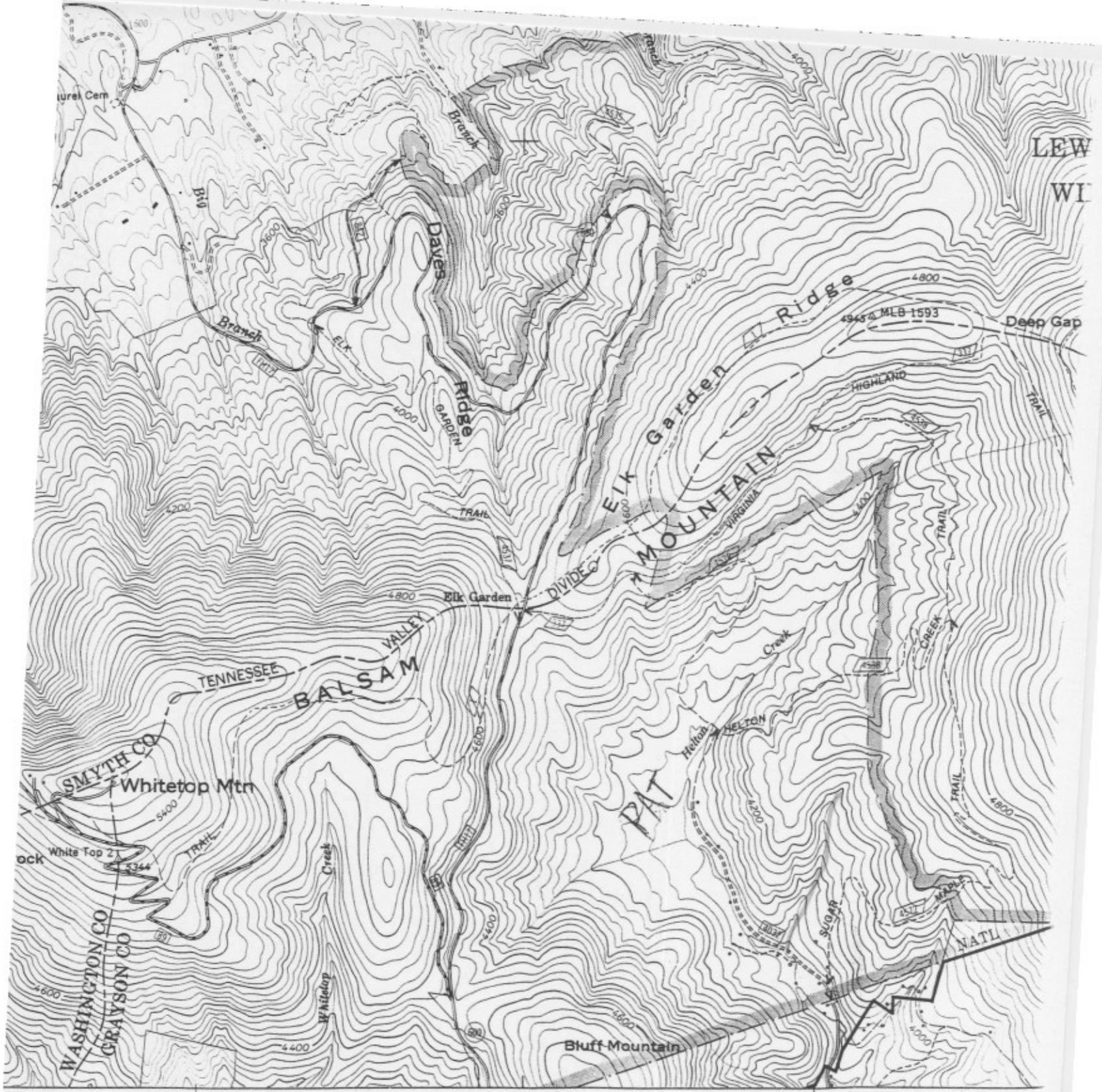


Helton Creek Tributary 1



Large Woody Debris Distribution





LEW
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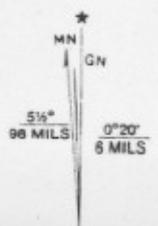
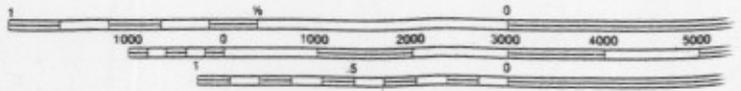
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SCALE 1:24 000



UTM GRID AND 1988 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

CONTOUR INTERVAL 40 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 19

- LEGEND
- National Forest Boundary
 - ▭ Forest Service land as of 1988
 - 423 Class A Corner and Number
 - Barrier
 - Primary Highway
 - Secondary Highway
 - Improved Road ^F
 - Improved Road ^C
 - Improved Road ^T
 - Unimproved Road

Stream: HELTON CREEK TRIBUTARY 3 (near Helton Creek Trail)

District: MT. ROGERS

Quadrangle: Whitetop Mountain

Sample Date: 1 August 1992

Downstream Starting Point: At Helton Creek Confluence

Total Distance Surveyed: 0.2 miles

Percent of Total Area - Pools: 10.5

Number of Pools: 33

Number of Pools per mile: 134.0

Total Pool Area: 1281.9 ft² ± 82.3 ft²

Mean Pool Area: 38.8 ft²

Correction Factor: 0.97

Mean Maximum Depth: 0.6'

Mean Average Depth: 0.5'

Percent of Total Area - Riffles: 89.5

Number of Riffles: 23

Number of Riffles per mile: 93.4

Total Riffle Area: 10954.2 ft²

Mean Riffle Area: 476.3 ft²

Correction Factor: 1.13

Mean Maximum Depth: 0.4'

Mean Average Depth: 0.3'

Number of Large Woody Debris Pieces per Mile: 341.2

Wood < 15' and < 14": 268.1

Wood < 15' and > 14": 0

Wood > 15' and < 14": 65.0

Wood > 15' and > 14": 8.1

Mean Channel Width: Not Measured

Mean Riparian Width: Not Measured

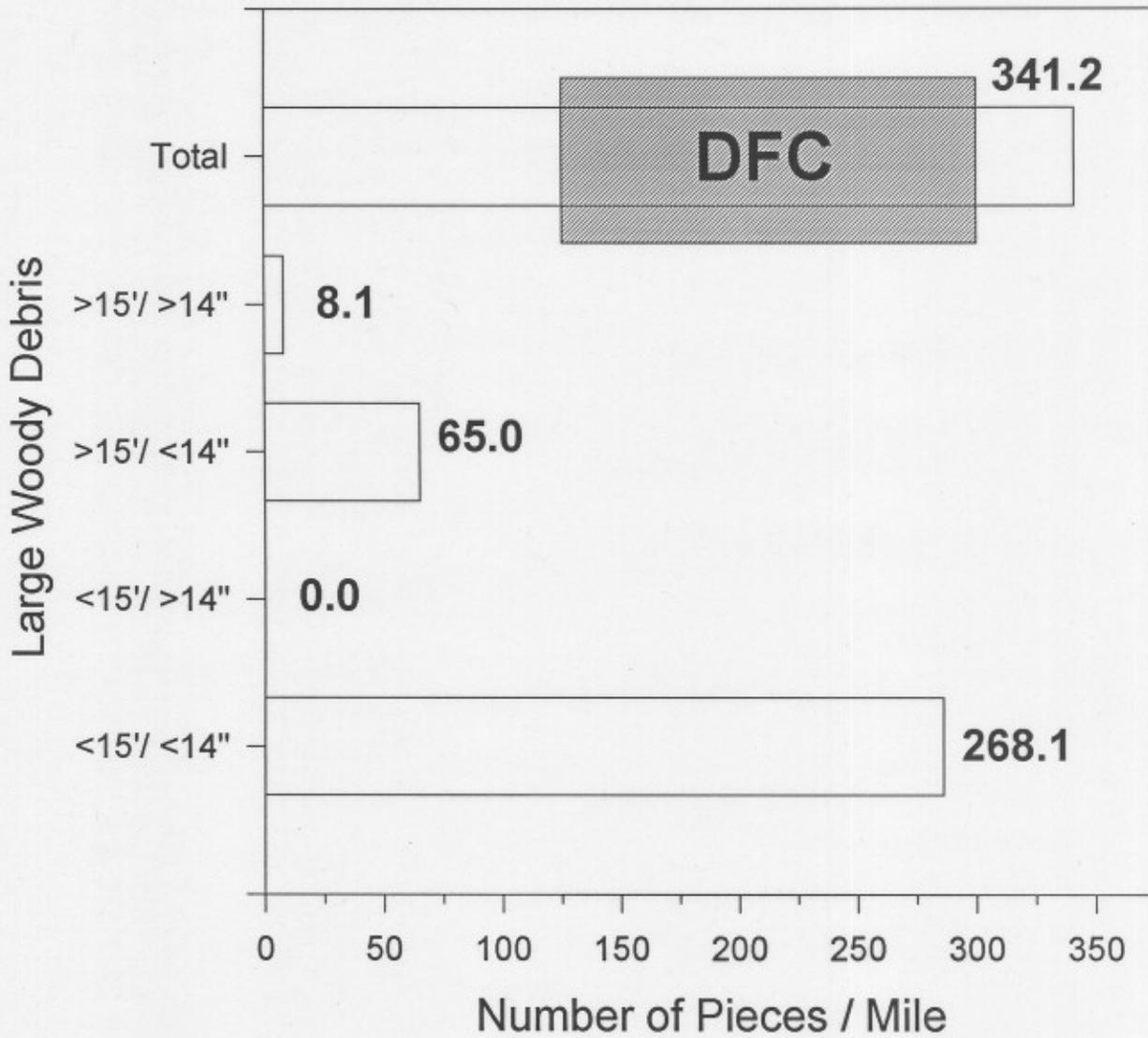
Mean Maximum Riparian Distance: Not Measured

Mean Minimum Riparian Distance: Not Measured

Maximum Riparian Width (Total): Not Measured

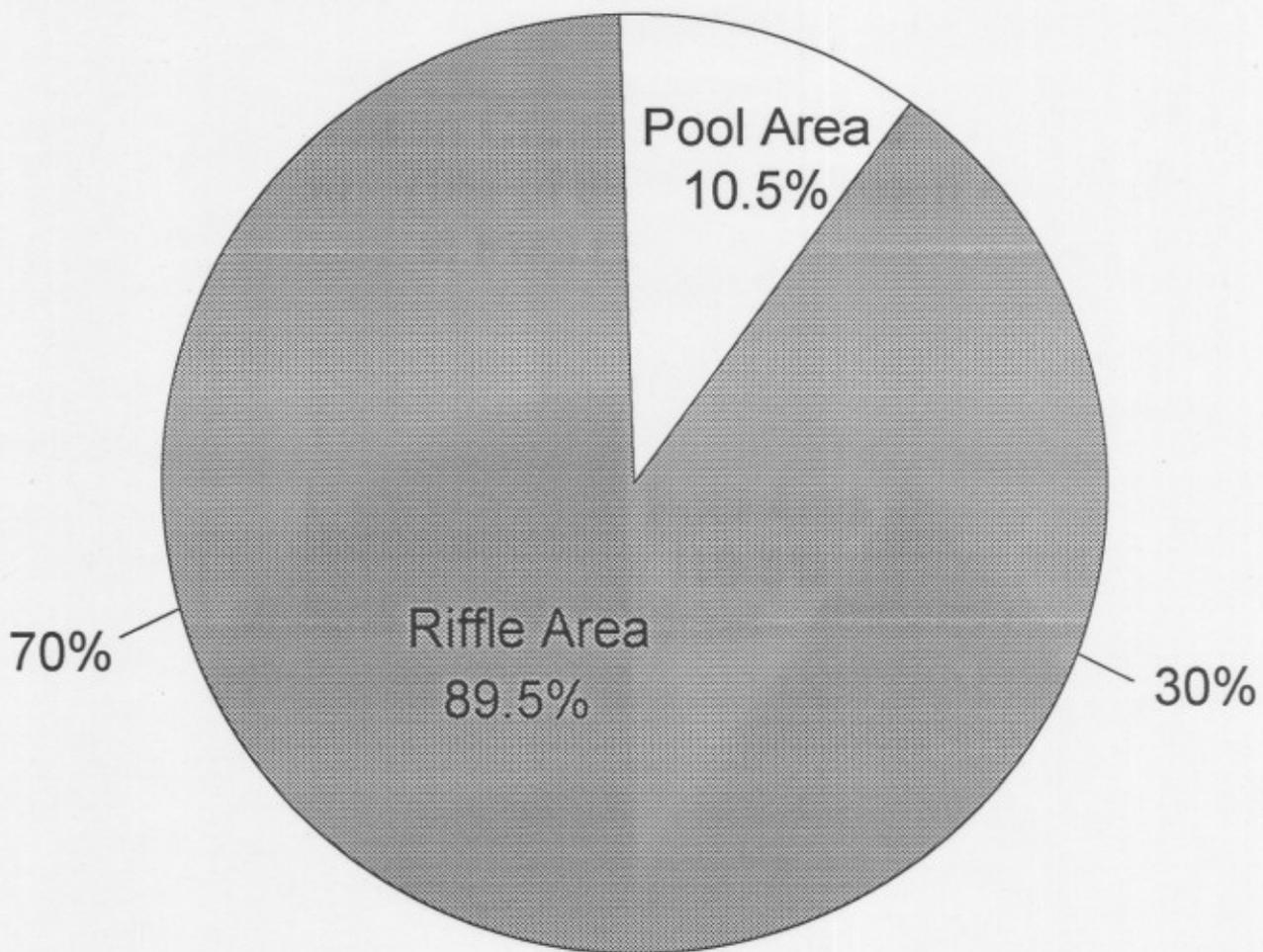
Minimum Riparian Width (Total): Not Measured

Helton Creek Tributary 3

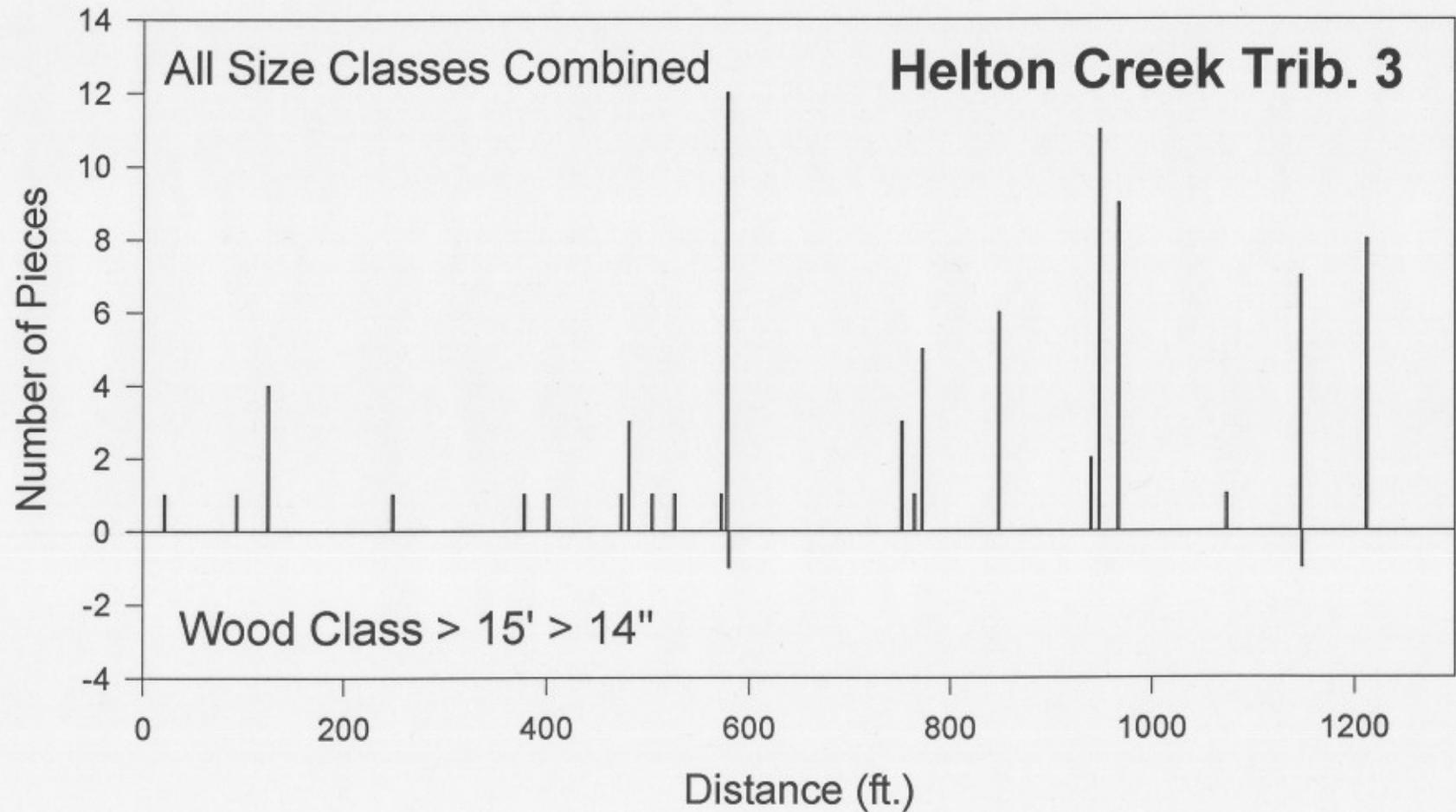


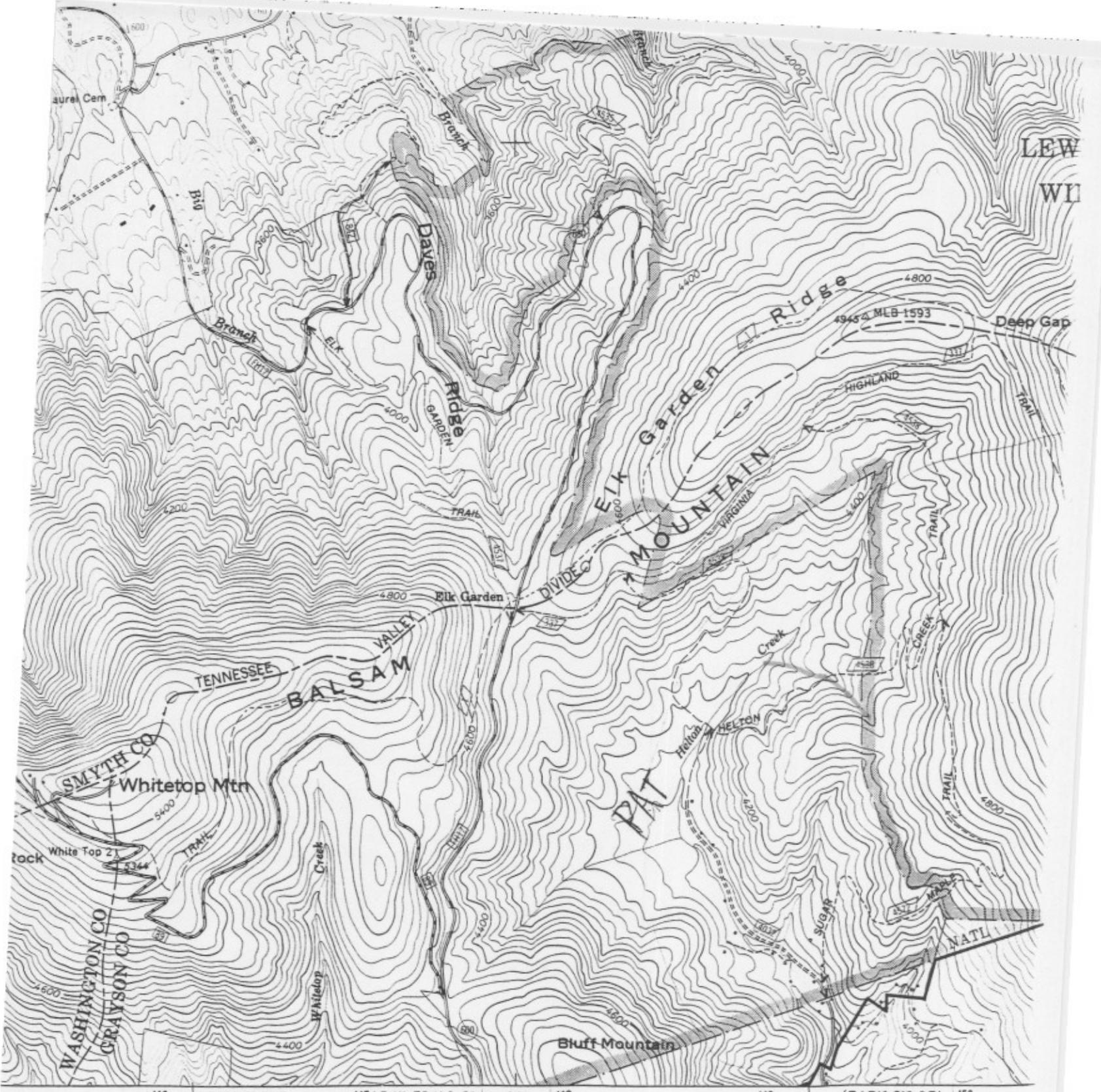
Helton Creek Tributary 3

DFC: 30 - 70% of the Total Stream Area
in Pool Habitat



Large Woody Debris Distribution





Tennessee Valley Authority
Survey

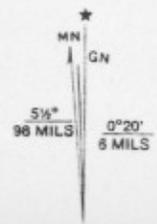
SCALE 1:24 000

Map is using aerial
photography taken by TVA, 1959

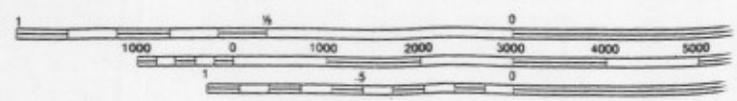
Map uses the
North American datum
(North)

Map uses
Universal Transverse
Mercator Grid ticks.

Map shows
fence and field lines
which have not been checked.



UTM GRID AND 1988 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET



CONTOUR INTERVAL 40 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 19

LEGEND

- National Forest Boundary
- Forest Service land as of 1988
- 423 Class A Corner and Number
- Barrier
- Primary Highway
- Secondary Highway
- Improved Road A
- Improved Road B
- Improved Road C
- Improved Road D
- Improved Road E

Stream: HELTON CREEK TRIBUTARY 4 (upstream of trib 3)

District: MT. ROGERS

Quadrangle: Whitetop Mountain

Sample Date: 31 July 1992

Downstream Starting Point: Confluence with Helton Creek

Total Distance Surveyed: 0.4 miles

Percent of Total Area - Pools: 8.3

Number of Pools: 30

Number of Pools per mile: 76.3

Total Pool Area: 1458.7 ft² ± 68.0 ft²

Mean Pool Area: 48.6 ft²

Correction Factor: 1.05

Mean Maximum Depth: 0.7'

Mean Average Depth: 0.6'

Percent of Total Area - Riffles: 91.7

Number of Riffles: 47

Number of Riffles per mile: 119.5

Total Riffle Area: 16206.6 ft² ± 474.0 ft²

Mean Riffle Area: 344.8 ft²

Correction Factor: 0.87

Mean Maximum Depth: 0.5'

Mean Average Depth: 0.3'

Number of Large Woody Debris Pieces per Mile: 338.1

Wood < 15' and < 14": 264.4

Wood < 15' and > 14": 5.1

Wood > 15' and < 14": 66.1

Wood > 15' and > 14": 2.5

Mean Channel Width: Not Measured

Mean Riparian Width: Not Measured

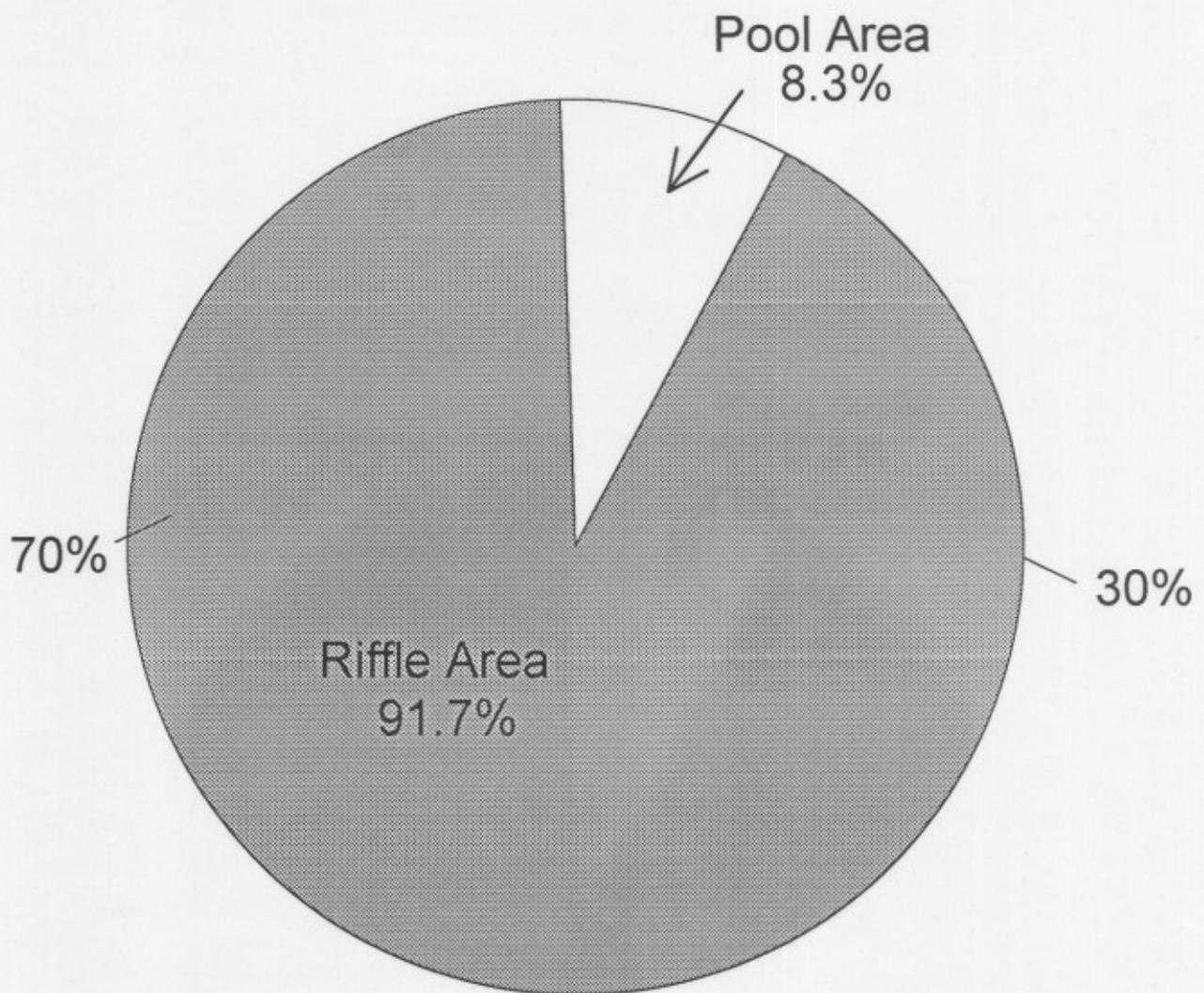
Mean Maximum Riparian Distance: Not Measured

Mean Minimum Riparian Distance: Not Measured

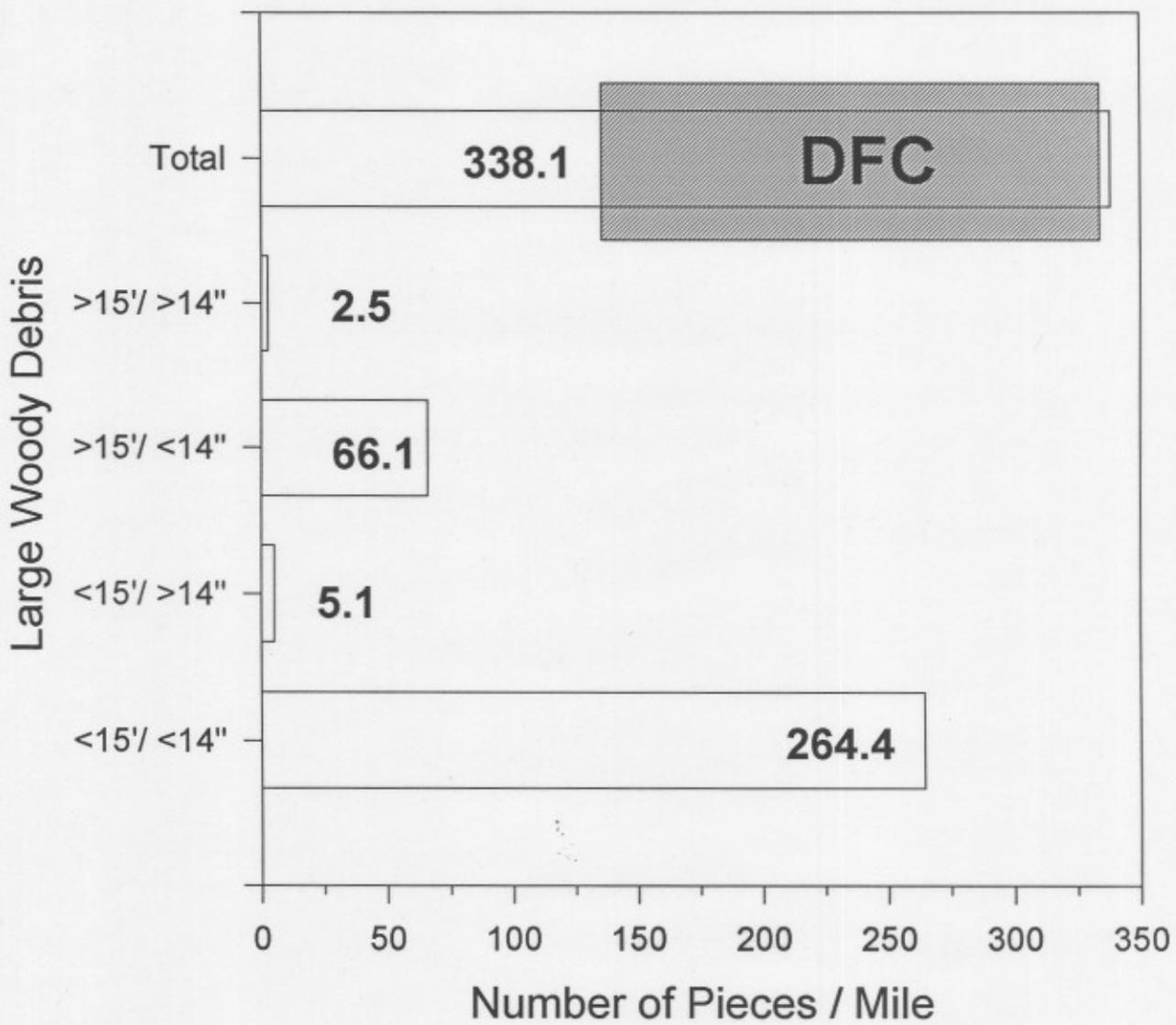
Maximum Riparian Width (Total): Not Measured

Minimum Riparian Width (Total): Not Measured

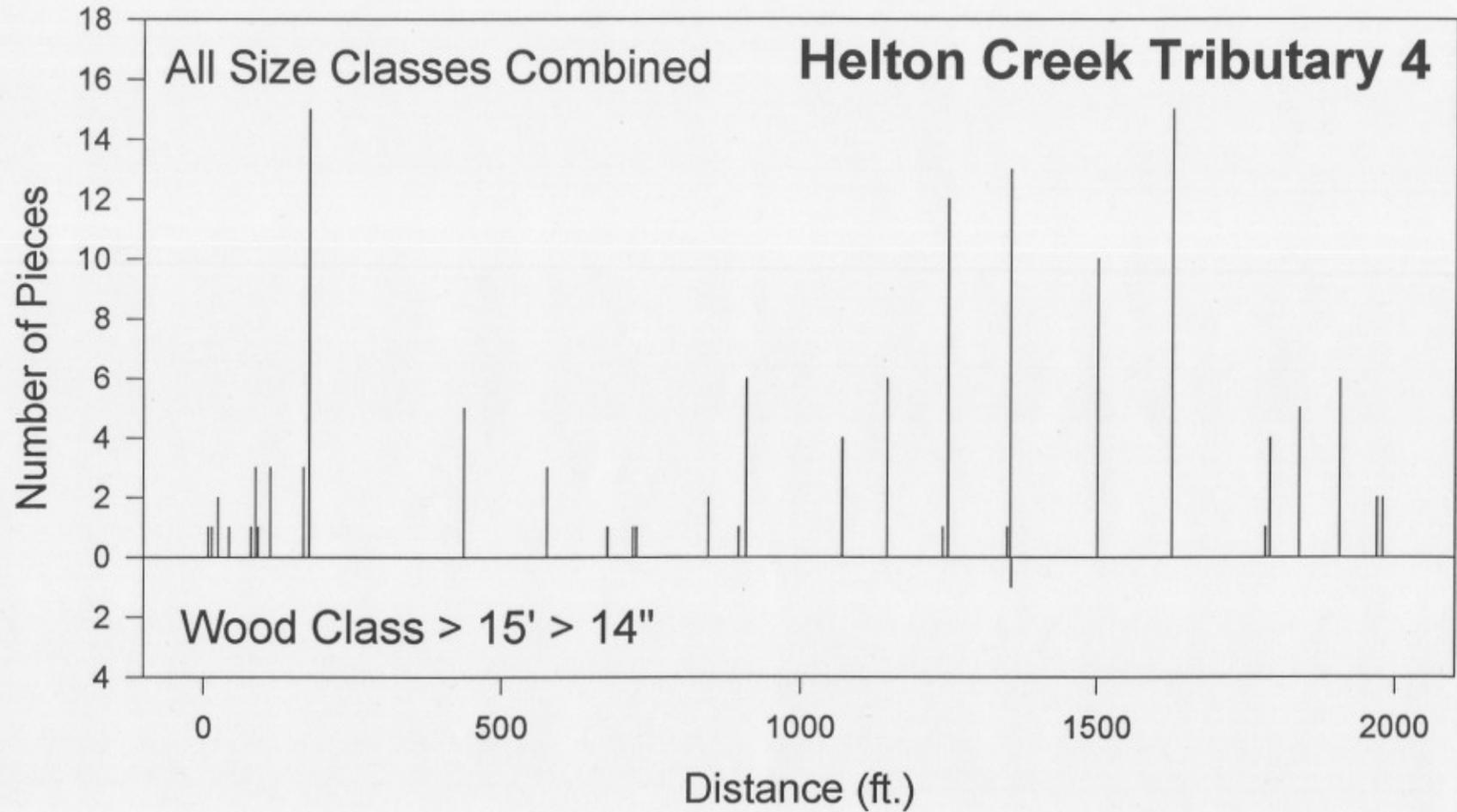
Helton Creek Tributary 4
DFC: 30 - 70% of the Total Stream Area
in Pool Habitat

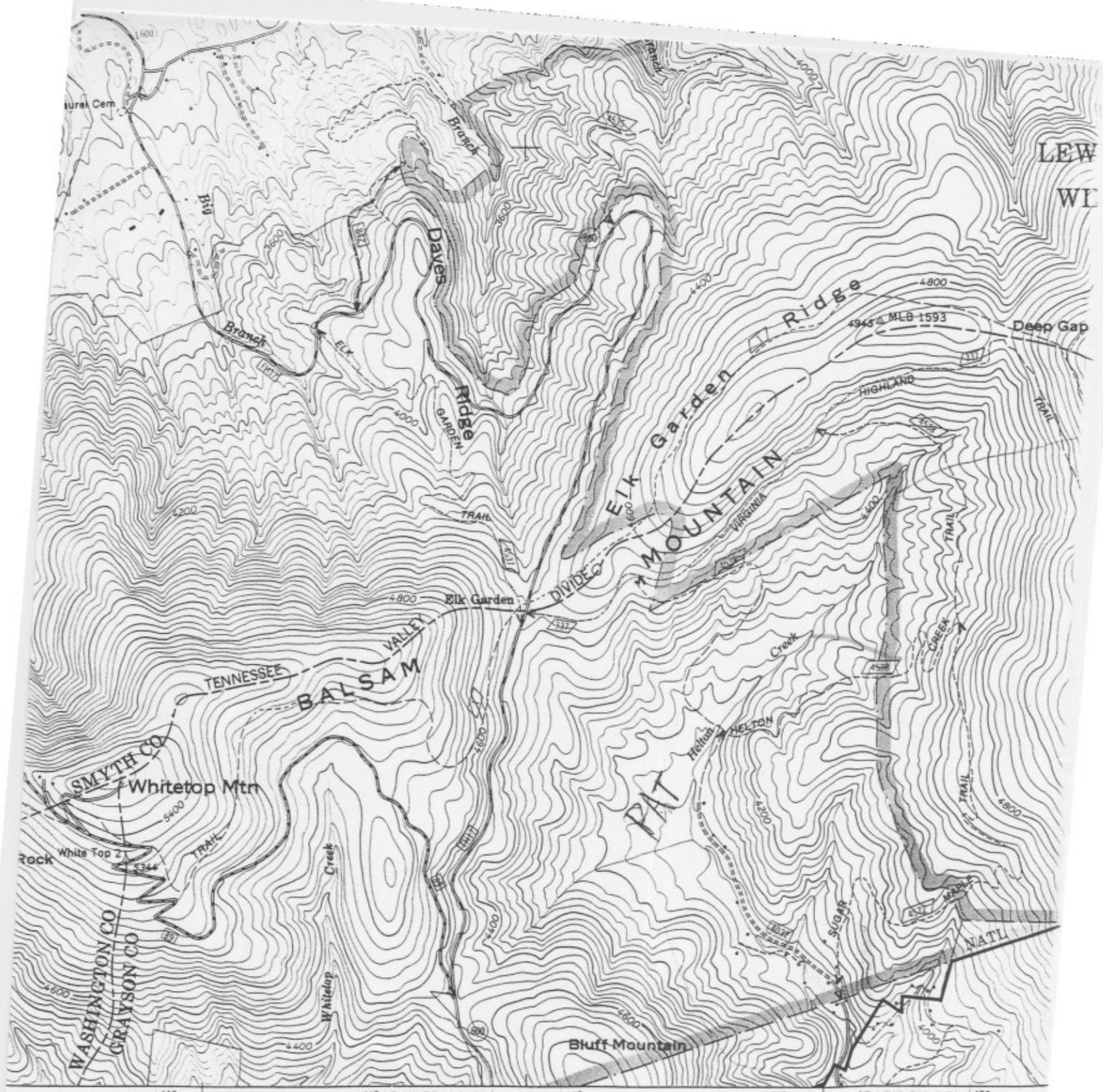


Helton Creek Tributary 4



Large Woody Debris Distribution





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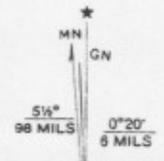
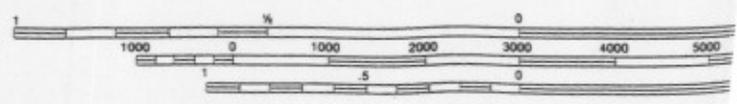
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UTM GRID AND 1988 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

- | | | | |
|-------|-----------------------------------|---|-------------------|
| — | National Forest Boundary | — | Primary Highway |
| □ | Forest Service land
as of 1988 | — | Secondary Highway |
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| — | Barrier | — | Improved Road |
| | | — | Unimproved Road |

CONTOUR INTERVAL 40 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1988
LEGEND