

Contributions of State and private forest lands to surface drinking water supply:

LOUISIANA

This file compiles State-specific excerpts from appendices A and B of the following report:

Liu, Ning; Dobbs, G. Rebecca; Caldwell, Peter V.; Miniati, Chelcy Ford; Bolstad, Paul V.; Nelson, Stacy; Sun, Ge. 2020. Quantifying the role of State and private forest lands in providing surface drinking water supply for the Southern United States. Gen. Tech. Rep. SRS-248. Asheville, NC: U.S. Department of Agriculture Forest Service, Southern Research Station. 405 p. <https://doi.org/10.2737/SRS-GTR-248>.

Appendix A—Detailed information regarding forest ownership, water yield, surface drinking water intakes, and percent of water originating on State and private forest (SPF) lands in Louisiana.

Table B.AL.1—Public water system intakes receiving water from State and private forest land in Louisiana.

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STATE OF LOUISIANA

Summary

State and private forest (SPF) lands cover 45.7 percent of Louisiana (figs. A.LA.1 and A.LA.2; table A.LA.1). About 41.2 percent of all Louisiana surface water originates on SPF lands (fig. A.LA.3). The majority of SPF land area is in, and surface water is from, corporate-owned forests, accounting for about 50.9 percent of the SPF land area and 50.5 percent of surface water from SPF. Family-owned forests contribute 39.3 percent of surface water from SPF and account for 39.4 percent of land area of SPF. Average annual water yield in Louisiana is about 587 mm (fig. A.LA.4). Louisiana has a total of 100 surface drinking water intakes where at least some available water comes from SPF (fig. A.LA.5). About 37.0 percent of the total population of Louisiana is served by surface drinking water overall, and Louisiana SPF surface drinking water also serves about 37.0 percent of the State population, or 1.7 million people, to some degree. About 70,000 people in Louisiana are getting more than half of

their surface drinking water from SPF within the State (fig. A.LA.6). State and private forest lands in Louisiana also supply water to 11 surface drinking water intakes in other States (Arkansas and Texas) (fig. A.LA.7), which collectively serve about 10,000 people in eight communities (fig. A.LA.8). Some public water systems in Louisiana utilize more than one surface drinking water intake; these systems are shown (intakes aggregated) in figure A.LA.9 by population served (symbol size) and percentage of water from SPF lands in Louisiana (symbol color). The detail map of southeastern Louisiana (fig. A.LA.10), encompassing New Orleans and Baton Rouge, adds clarity on the hydrology, surface drinking water intakes, water originating on SPF lands, and population centers in an area where there is complex intersection between public water supply systems and population served. A case study (fig. A.LA.11) of the Natchitoches Water System public water supply system presents an example of the important role SPF lands play in providing water supply to a single community in Louisiana, where a single surface drinking water intake receives 71.9 percent of its water from SPF and serves about 30,000 people.

Table A.LA.1—Land area by land cover and forest ownership type in Louisiana

Land cover	Land area (km ²)	Land area (acres)
Forest	63 710	15,742,997
Nonforest	63 293	15,640,076
Forest ownership type ^a	Land area (km ²)	Land area (acres)
Federal (public)	5605	1,385,051
Tribal (public)	34	8,423
State (public)	3987	985,113
Local (public)	818	202,233
Corporate (private)	29 575	7,308,056
Family (private)	22 861	5,649,030
Other private	830	205,091

^aState and private forest land comprises State, local, corporate, family, and other private (the last two also referred to together as nonindustrial private forest, or NIPF). Corporate ownership lands include forest land owned by forest industry as well as other corporate entities such as Timber Investment Management Organizations and Real Estate Investment Trusts (TIMOs and REITs, respectively).

Louisiana Forested Lands by Ownership

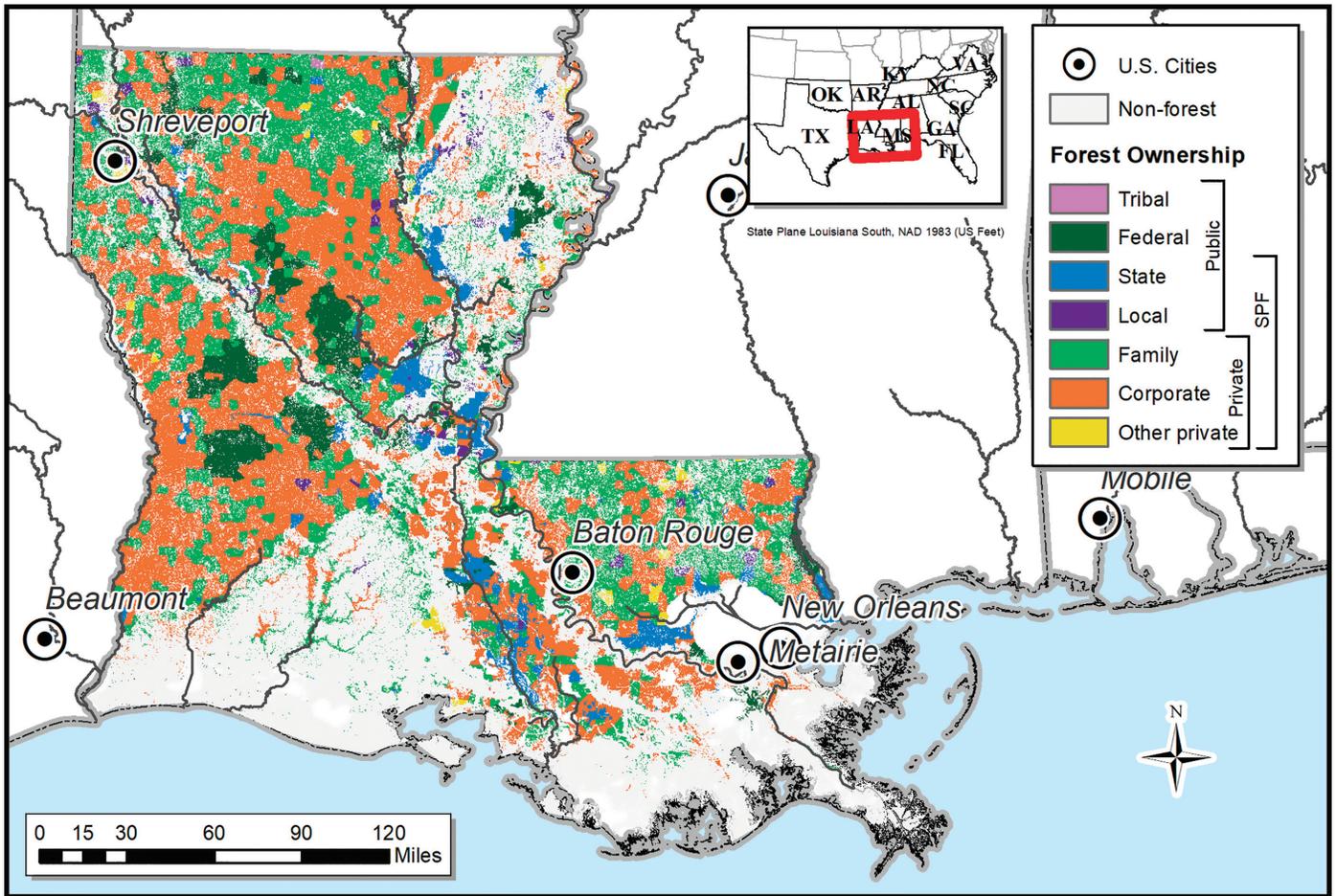


Figure A.LA.1—Louisiana nonforest land and forest lands by ownership, ca. 2014. Forest ownership data source: raster dataset by Hewes and others (2017); see report for more discussion of data derivation and accuracy.

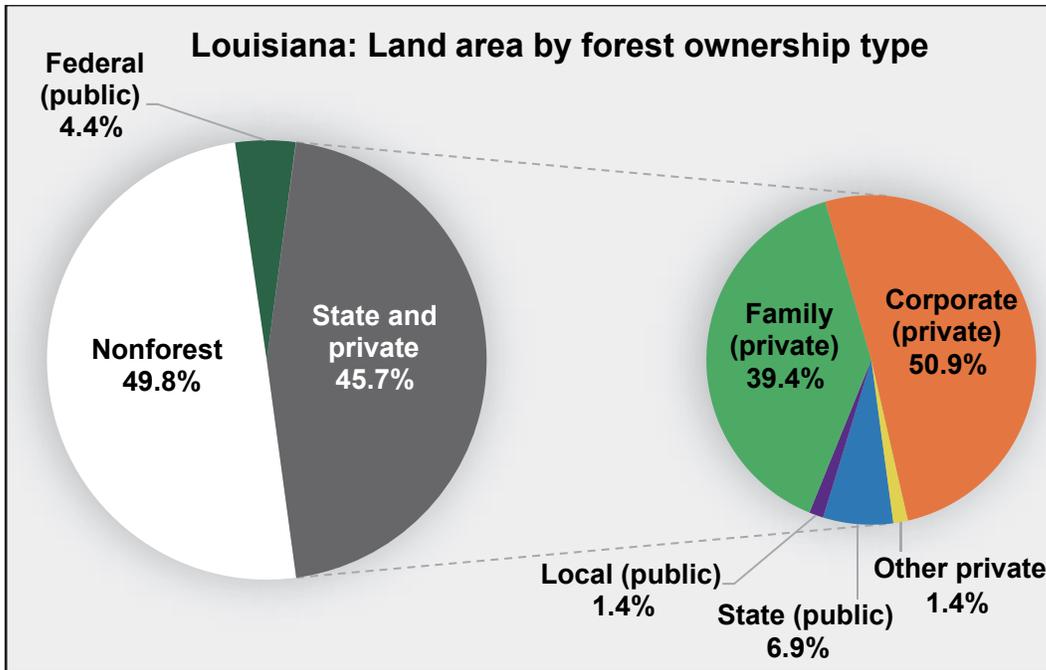


Figure A.LA.2—Land area percentages by forest ownership, ca. 2014. In the smaller circle, percentages represent portion of SPF total for each ownership category. Note: Due to rounding, percentages may not total exactly 100.

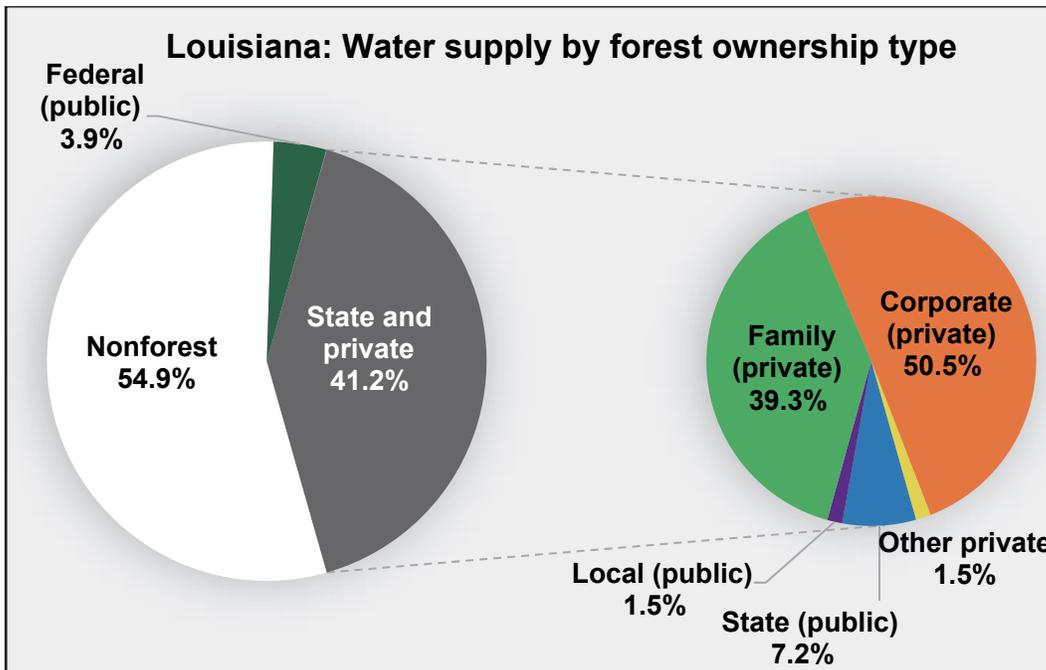


Figure A.LA.3—Percentage of Louisiana's water supply deriving from nonforest lands and forest lands of different ownership, ca. 2014. In the smaller circle, percentages represent portion of SPF total for each ownership category. Note: Due to rounding, percentages may not total exactly 100.

Louisiana
2001-2010 Mean Annual Water Yield by 12-Digit Hydrologic Unit

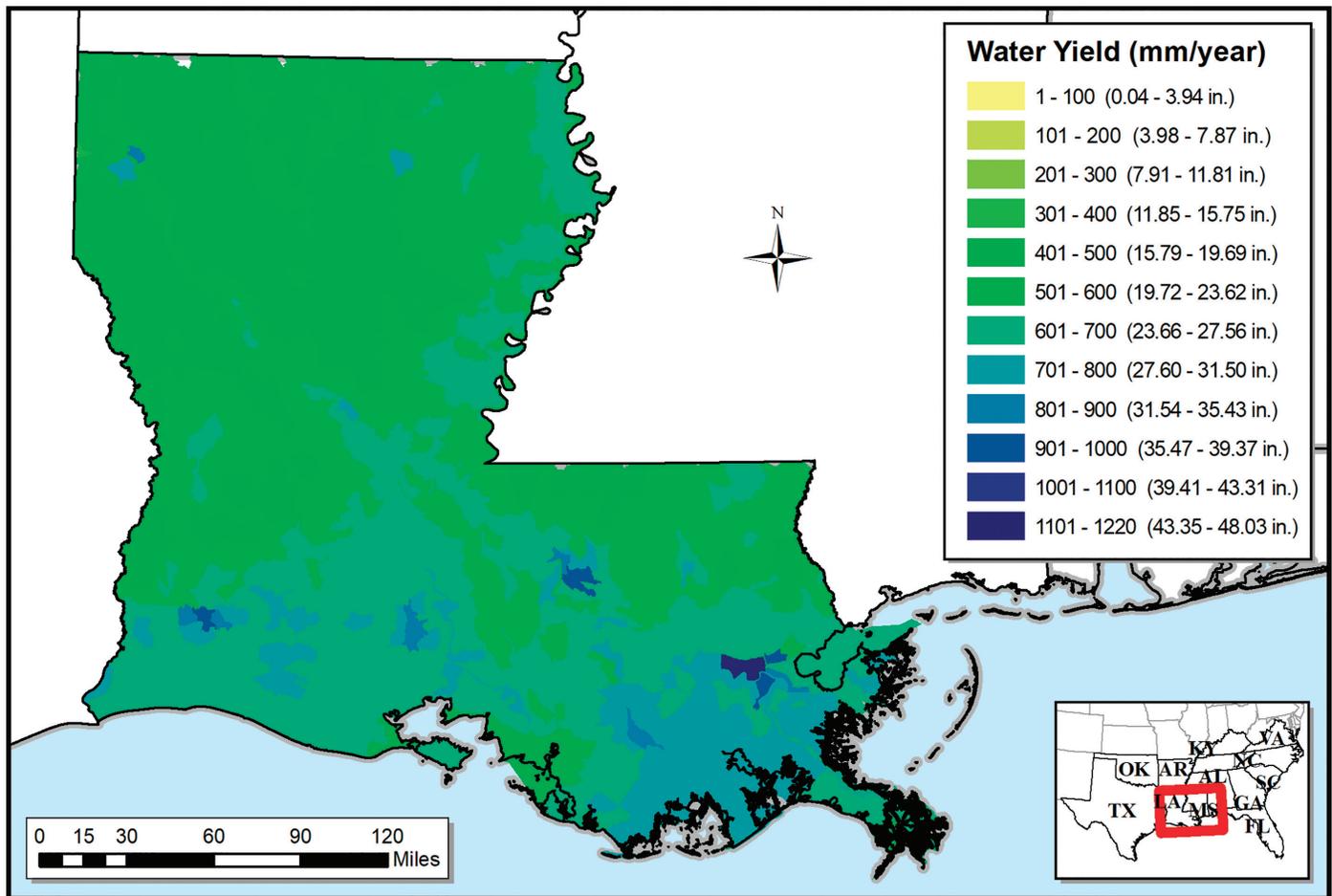


Figure A.LA.4—Estimated mean annual water yield by 12-digit hydrologic units in Louisiana, 2001–2010. Hydrologic Unit Codes (HUC) use number of digits to represent watersheds of different scales. A 12-digit HUC (HUC12) represents a small local watershed. For explanation of water yield and how it is derived, see report.

(A) Streams and Intrastate Public Water System Intakes Receiving Water from Louisiana State and Private Forests

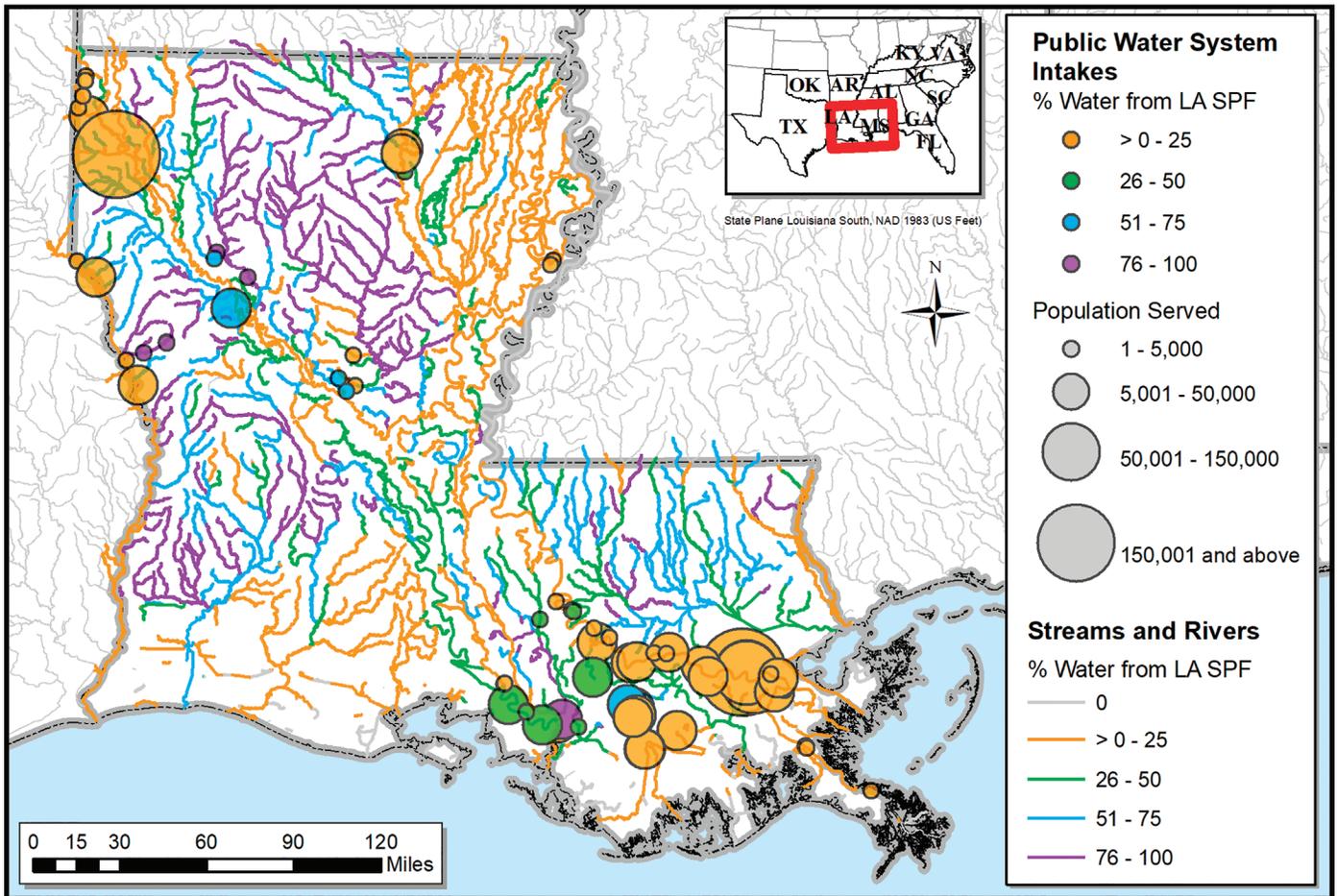


Figure A.LA.5—(A) Louisiana streams by percentage of Louisiana SPF water content, surface drinking water intakes within Louisiana by percentage of Louisiana SPF surface water available at intake (symbol color), and population served by each intake (symbol size). A total of 100 surface drinking water intakes within the State serve a population of 1,728,676 in 61 communities. Note: See figures A.LA.5 parts B and C on separate pages for streams and intakes only.

(B) Streams Receiving
Water from Louisiana State and Private Forests

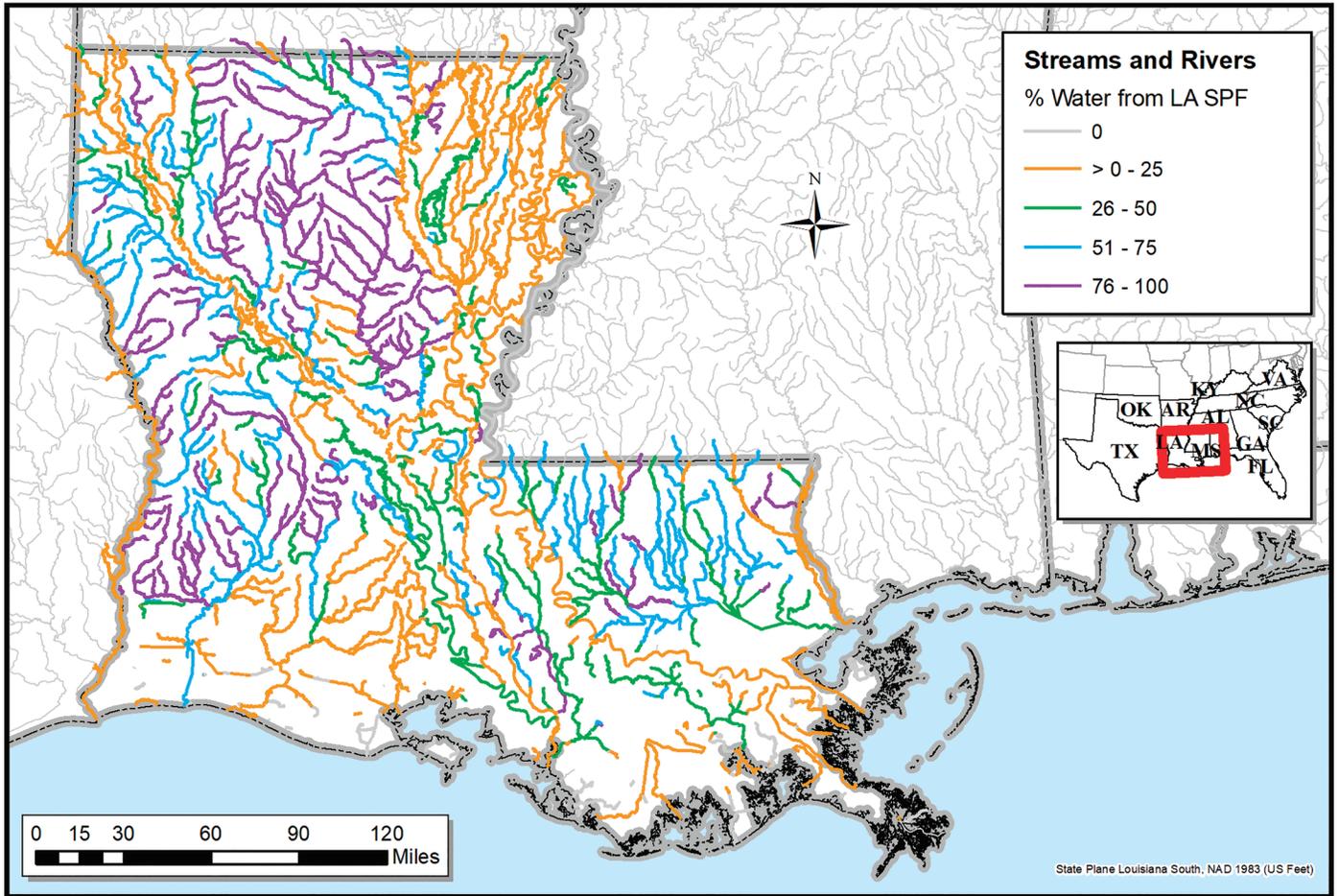


Figure A.LA.5—(B) Louisiana streams by percentage of Louisiana SPF water content.

(C) Intrastate Public Water System Intakes Receiving Water from Louisiana State and Private Forests

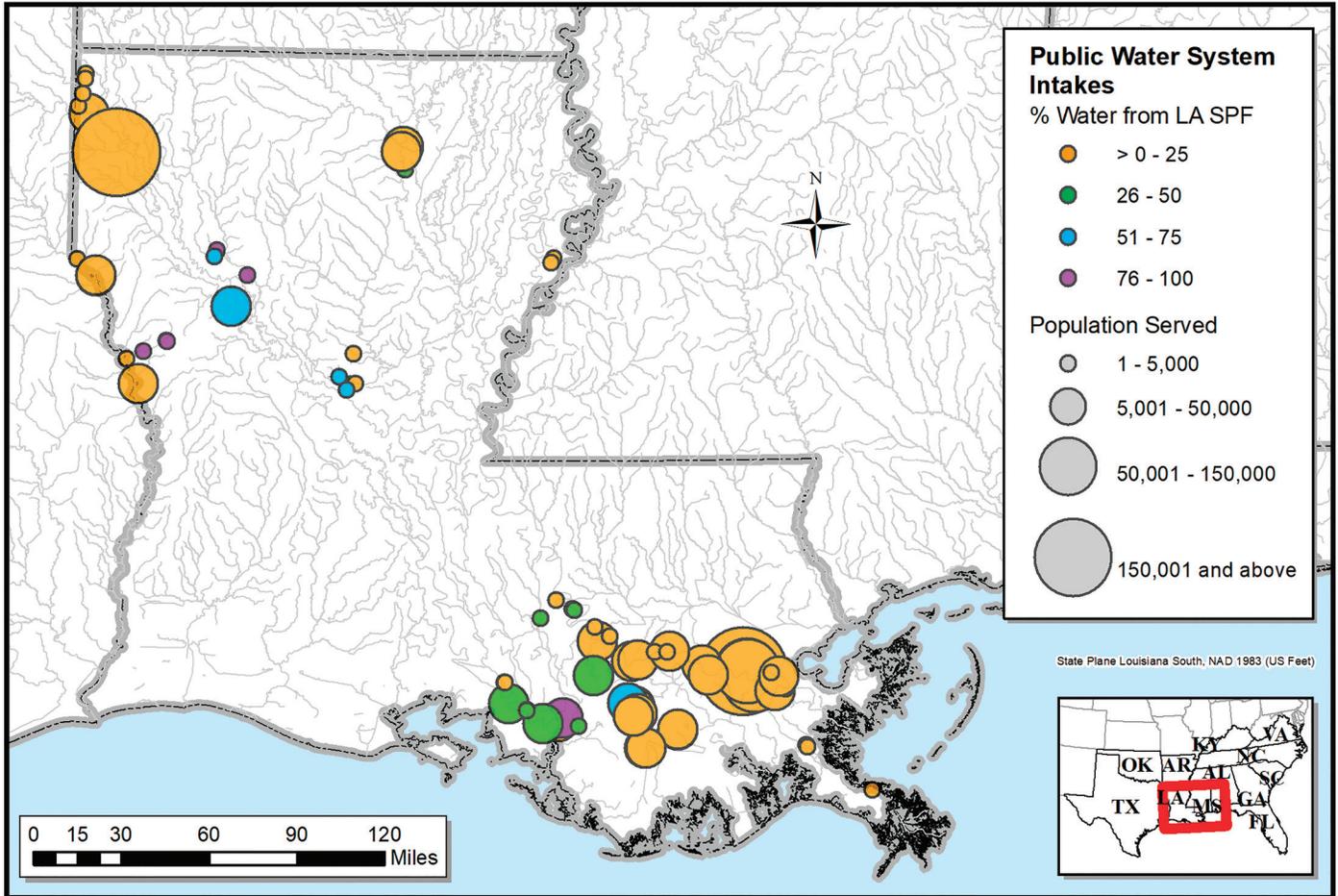


Figure A.LA.5—(C) Surface drinking water intakes within Louisiana by percentage of Louisiana SPF surface water available at intake (symbol color) and population served by each intake (symbol size). A total of 100 surface drinking water intakes within the State serve a population of 1,728,676 in 61 communities.

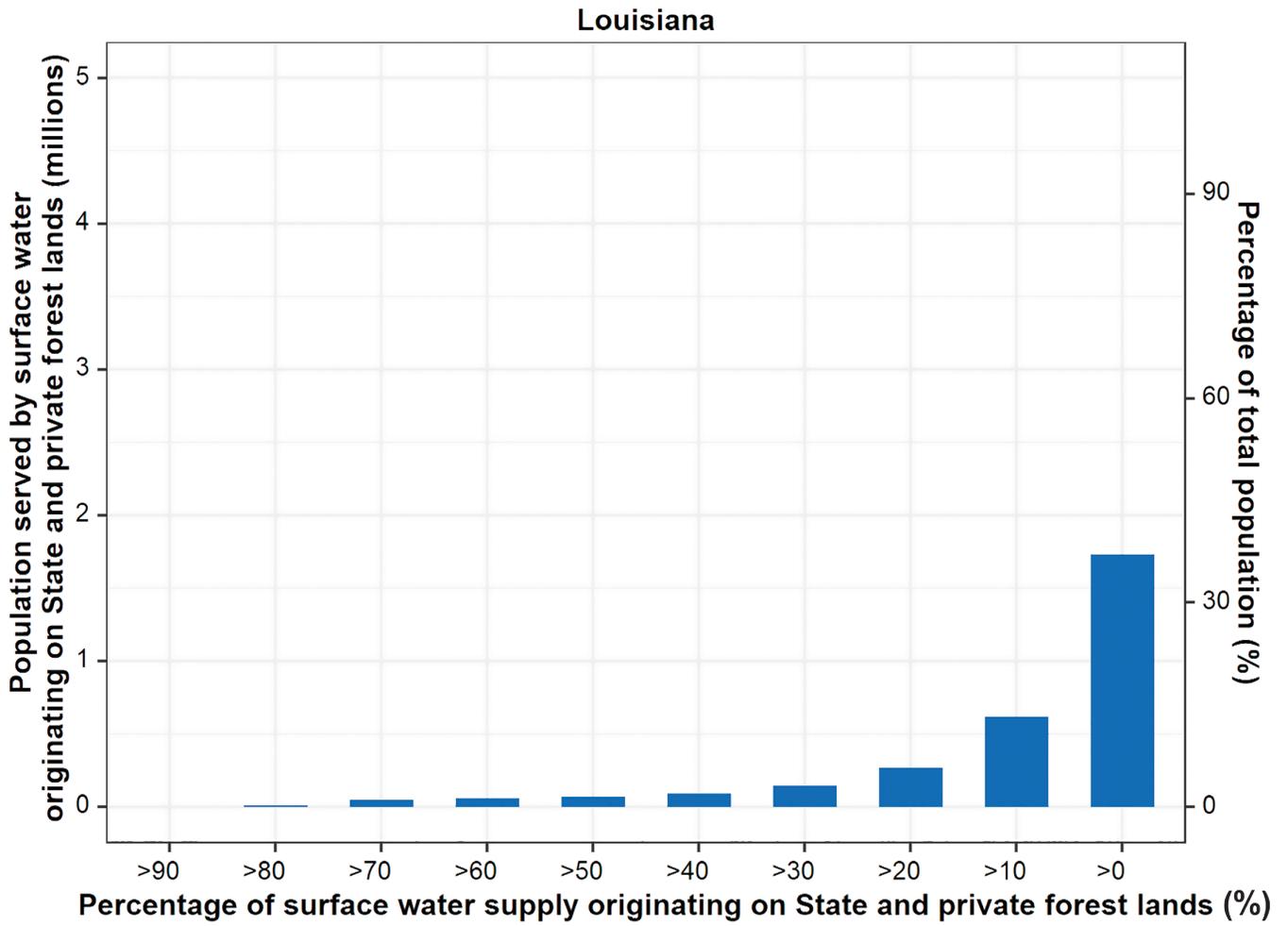


Figure A.LA.6—Cumulative frequency of population served according to percentage of water coming from Louisiana SPF lands.

Public Water System Intakes Outside of Louisiana Receiving Water from Louisiana State and Private Forests

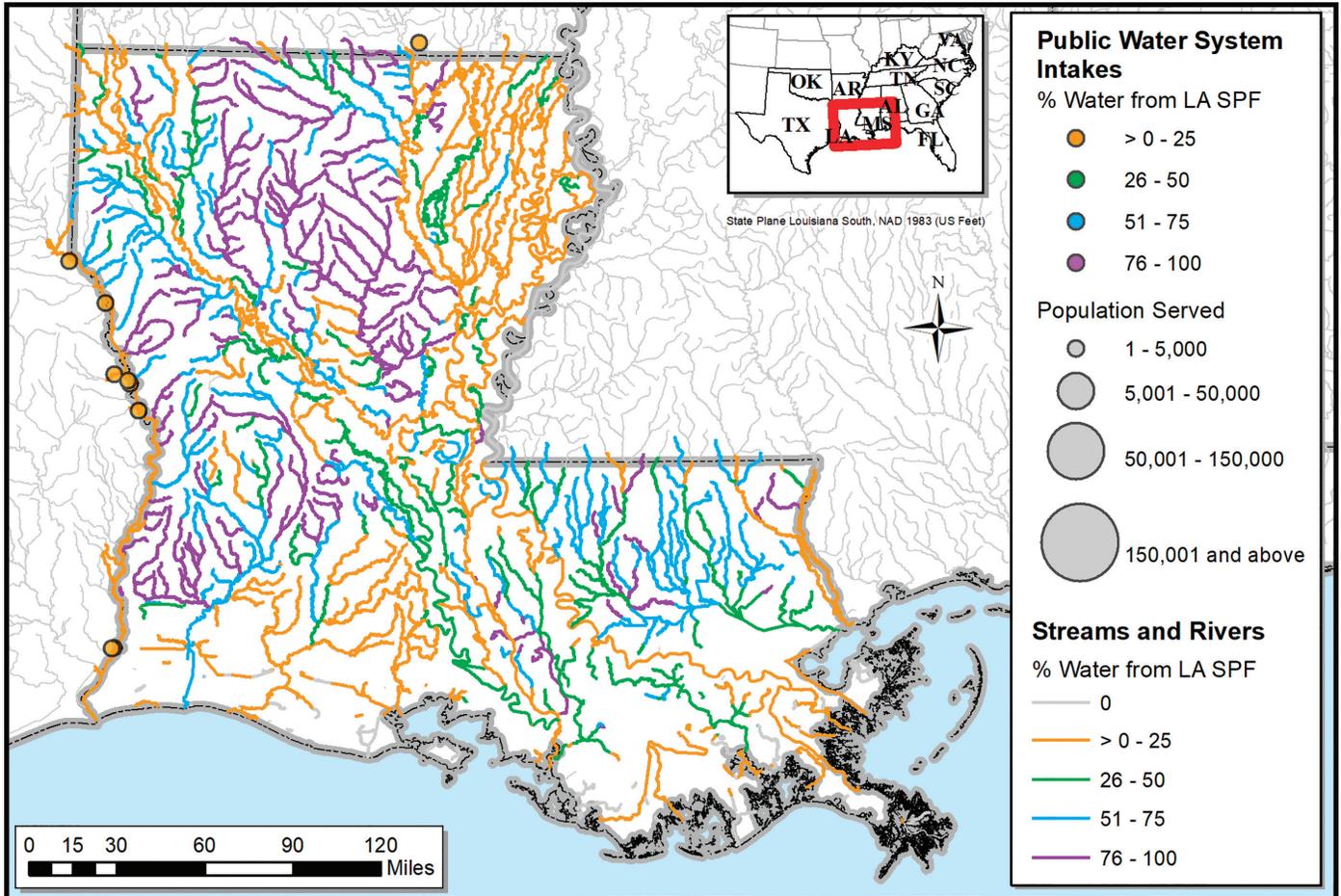


Figure A.LA.7—Louisiana streams by percentage of Louisiana SPF water content, surface drinking water intakes downstream of Louisiana by percentage of Louisiana SPF water content (symbol color), and population served by each of these external intakes (symbol size). A total of 11 surface drinking water intakes outside the State but carrying Louisiana SPF water serve a population of 9,587 in eight communities.

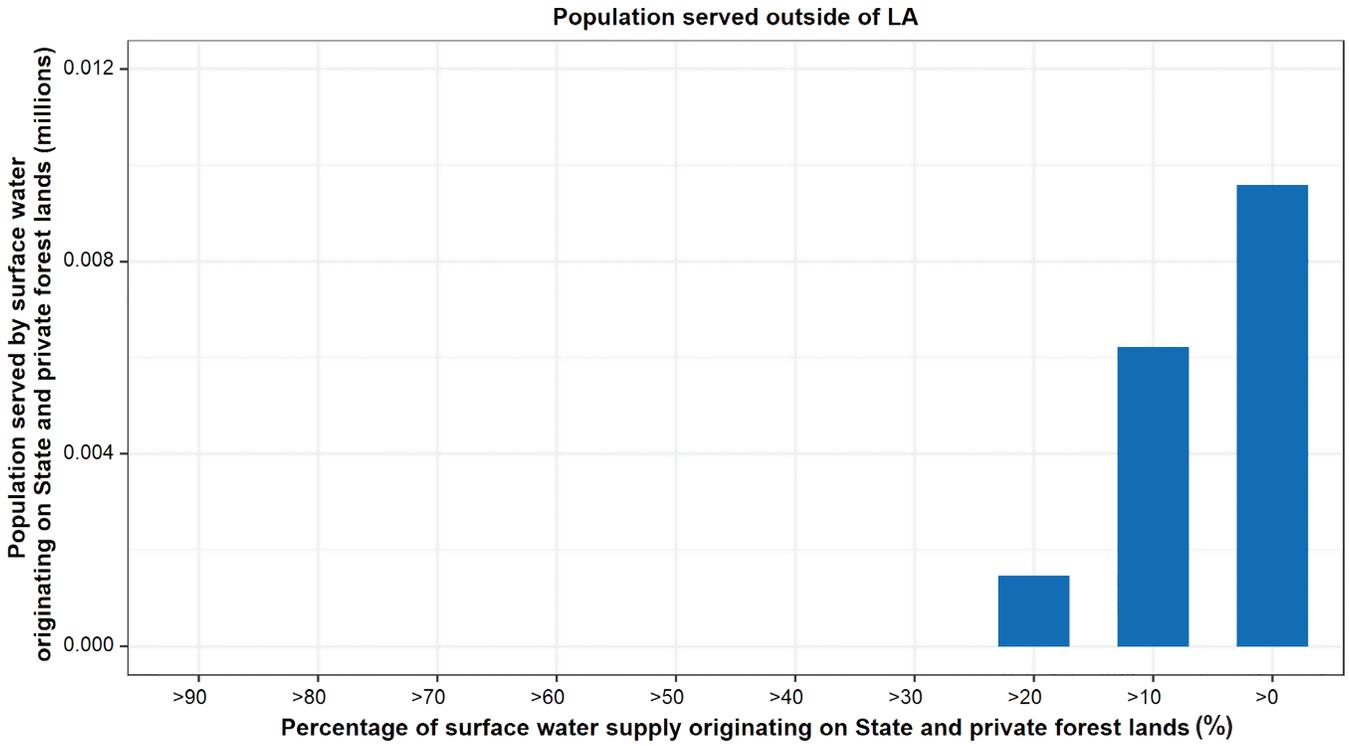


Figure A.LA.8—Cumulative frequency of non-Louisiana population served according to percentage of water coming from Louisiana SPF lands.

*Multi-Intake Public Water Systems (Aggregated to Single Symbol)
Receiving Water from Louisiana State and Private Forests*

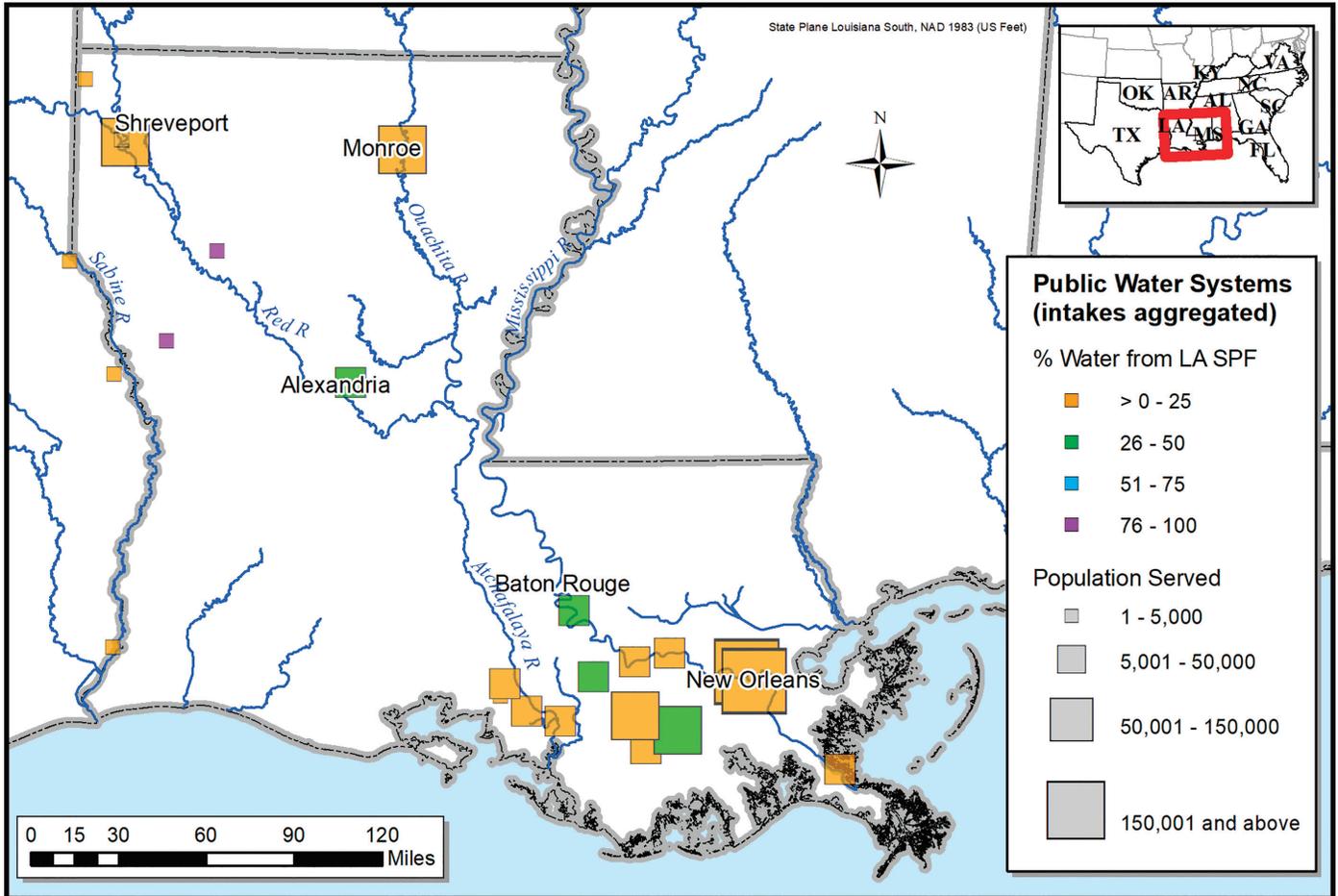


Figure A.LA.9—Multi-intake public water systems aggregated to single data point. Symbol color and size represent values for an entire municipal or corporate water supply system rather than values for individual surface drinking water intakes. Systems with no more than a single surface drinking water intake are not represented on this map.

Southeastern Louisiana Detail

Streams and Public Water System Intakes in Southeastern Louisiana Receiving Water from Louisiana State and Private Forests

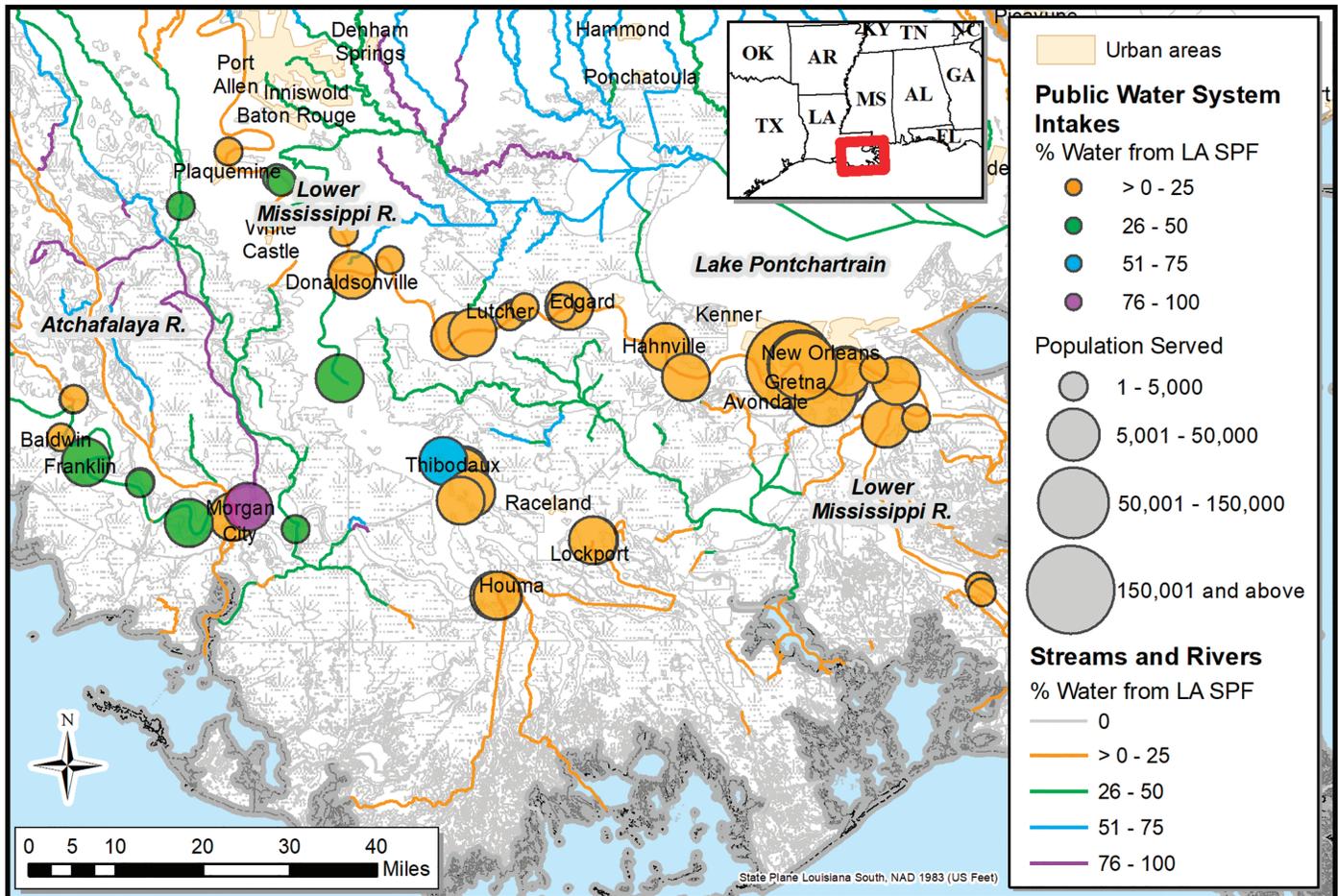


Figure A.LA.10—Local-scale detail showing percentage of water from Louisiana SPF for streams and surface drinking water intakes in southeastern Louisiana.

Natchitoches, LA, Case Study

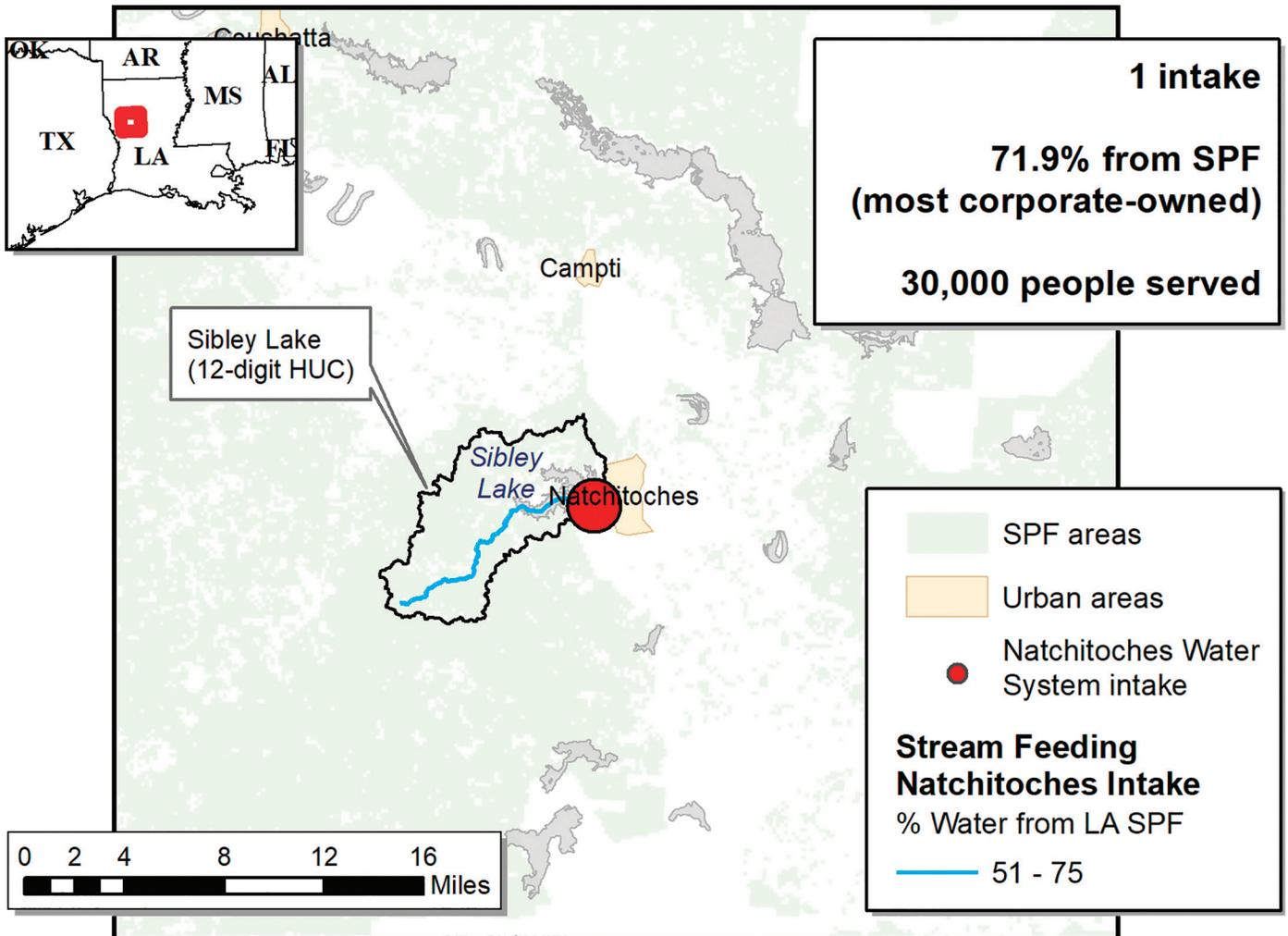


Figure A.LA.11—Case study of the Natchitoches Water System public water supply system, Natchitoches, LA, illustrating SPF water in the stream supplying the single surface drinking water intake. When this water reaches the intake, 71.9 percent of it comes from SPF lands. The largest ownership category in these specific SPF lands is corporate-owned.

Table B.LA.1—Public water system intakes receiving water from State and private forest land in Louisiana

Intake ID	Public water system name	Intake number for system	State	Population served by intake	Total volume of surface water available to intake	Total surface water from State and private forest lands
					(million m ³ yr ⁻¹)	(percent)
1	ALMATIS		LA	400	709,254	0.2
2	ASSUMPTION PARISH WW DISTRICT 1	1 of 2	LA	11,431	77	42.5
3	ASSUMPTION PARISH WW DISTRICT 1	2 of 2	LA	11,431	77	42.5
4	BELLE CHASSE WATER DISTRICT		LA	17,391	709,344	0.2
5	BLANCHARD WATER SYSTEM		LA	12,900	2844	3.6
6	CITY OF BOSSIER CITY WATER SYSTEM	1 of 3	LA	22,698	29 627	0.2
7	CITY OF BOSSIER CITY WATER SYSTEM	2 of 3	LA	22,698	29 627	0.2
8	CITY OF BOSSIER CITY WATER SYSTEM	3 of 3	LA	22,698	29 627	0.2
9	CITY OF MANY WATER SYSTEM	1 of 4	LA	1,144	139	81
10	CITY OF MANY WATER SYSTEM	2 of 4	LA	1,144	74	77.6
11	CITY OF MANY WATER SYSTEM	3 of 4	LA	1,144	74	77.6
12	CITY OF MANY WATER SYSTEM	4 of 4	LA	1,144	74	77.6
13	DALCOUR WATERWORKS DISTRICT		LA	925	709,344	0.2
14	DESOTO PARISH WATER WORKS DISTRICT 1		LA	6,591	5236	4.8
15	DOMINO SUGAR		LA	360	709,344	0.2
16	DOW USA, LA DIVISION		LA	3,960	709,151	0.2
17	E JEFFERSON WW DISTRICT 1		LA	243,782	709,344	0.2
18	FAIRVIEW UNION WATER SYSTEM		LA	2,205	159	72.6
19	FRANKLIN WATER SUPPLY		LA	8,500	3130	34.9
20	GRAMERCY WATERWORKS		LA	3,613	709,254	0.2
21	GREEN ACRES SUBDIVISION WS		LA	150	49	46.1
22	GRETNA WATERWORKS		LA	17,802	709,344	0.2
23	HICKORY GROVE WATER SYSTEM	1 of 4	LA	143	23	85.2
24	HICKORY GROVE WATER SYSTEM	2 of 4	LA	143	23	85.2
25	HICKORY GROVE WATER SYSTEM	3 of 4	LA	143	23	85.2
26	HICKORY GROVE WATER SYSTEM	4 of 4	LA	143	23	85.2
27	HOUMA WATER TREATMENT SERVICE AREA	1 of 3	LA	10,520	159	2.1
28	HOUMA WATER TREATMENT SERVICE AREA	2 of 3	LA	10,520	159	2.1
29	HOUMA WATER TREATMENT SERVICE AREA	3 of 3	LA	10,520	159	2.1
30	IBERVILLE WATER WORKS DISTRICT 3	1 of 4	LA	2,292	944	38.3
31	IBERVILLE WATER WORKS DISTRICT 3	2 of 4	LA	2,292	944	38.3
32	IBERVILLE WATER WORKS DISTRICT 3	3 of 4	LA	2,292	944	38.3
33	IBERVILLE WATER WORKS DISTRICT 3	4 of 4	LA	2,292	854	38.2
34	LAFOURCHE WATER DISTRICT 1	1 of 7	LA	11,252	83	38.5
35	LAFOURCHE WATER DISTRICT 1	2 of 7	LA	11,252	83	38.5
36	LAFOURCHE WATER DISTRICT 1	3 of 7	LA	11,252	100	23
37	LAFOURCHE WATER DISTRICT 1	4 of 7	LA	11,252	43	16.6
38	LAFOURCHE WATER DISTRICT 1	5 of 7	LA	11,252	43	16.6
39	LAFOURCHE WATER DISTRICT 1	6 of 7	LA	11,252	43	16.6
40	LAFOURCHE WATER DISTRICT 1	7 of 7	LA	11,252	43	16.6
41	LOGANSPOUT WATER SYSTEM		LA	1,555	4942	1.6
42	LUTCHER WATERWORKS		LA	4,781	709,254	0.2
43	MANSFIELD WATER SYSTEM		LA	6,354	5236	4.8
44	MARATHON PETROLEUM COMPANY LLC		LA	817	709,254	0.2
45	MONROE WATER SYSTEM	1 of 2	LA	26,286	21 882	12.4
46	MONROE WATER SYSTEM	2 of 2	LA	26,286	21 619	11.8

(continued)

Table B.LA.1 (continued)—Public water system intakes receiving water from State and private forest land in Louisiana

Intake ID	Public water system name	Intake number for system	State	Population served by intake	Total volume of surface water available to intake	Total surface water from State and private forest lands
					(million m ³ yr ⁻¹)	(percent)
47	MORGAN CITY WATER SYSTEM	1 of 2	LA	6,352	324	80.5
48	MORGAN CITY WATER SYSTEM	2 of 2	LA	6,352	86 239	18.9
49	NATCHITOCHEs WATER SYSTEM		LA	30,000	52	71.9
50	NEW ORLEANS CARROLLTON WW	1 of 2	LA	145,522	709,344	0.2
51	NEW ORLEANS CARROLLTON WW	2 of 2	LA	145,522	709,344	0.2
52	NEW ORLEANS ALGIERS WATER WORKS	1 of 2	LA	26,393	709,344	0.2
53	NEW ORLEANS ALGIERS WATER WORKS	2 of 2	LA	26,393	709,344	0.2
54	NEWELLTON WATER SYSTEM		LA	1,596	30	14.9
55	NORANDA ALUMINA, LLC		LA	500	709,254	0.2
56	OIL CITY WATER WORKS		LA	2,199	2844	3.6
57	PARISH UTILITIES OF ASCENSION		LA	9,810	40	13.1
58	PATTERSON WATER SYSTEM		LA	7,254	73	30.1
59	PENDLETON WATER ASSOCIATION		LA	2,211	7036	11.9
60	PINEHILL WATERWORKS DISTRICT	1 of 5	LA	902	115	20
61	PINEHILL WATERWORKS DISTRICT	2 of 5	LA	902	115	20
62	PINEHILL WATERWORKS DISTRICT	3 of 5	LA	902	115	20
63	PINEHILL WATERWORKS DISTRICT	4 of 5	LA	902	115	20
64	PINEHILL WATERWORKS DISTRICT	5 of 5	LA	902	115	20
65	POINTE A LA HACHE WATER SYSTEM		LA	653	709,344	0.2
66	PORT SULPHUR WATER DISTRICT	1 of 2	LA	4,611	709,344	0.2
67	PORT SULPHUR WATER DISTRICT	2 of 2	LA	4,611	709,398	0.2
68	RAPIDES PARISH WATERWORKS DISTRICT 3	1 of 4	LA	4,996	549	54.4
69	RAPIDES PARISH WATERWORKS DISTRICT 3	2 of 4	LA	4,996	93	23
70	RAPIDES PARISH WATERWORKS DISTRICT 3	3 of 4	LA	4,996	67	10.3
71	RAPIDES PARISH WATERWORKS DISTRICT 3	4 of 4	LA	4,996	67	10.3
72	SANDY POINT 480 WATER SYSTEM		LA	675	1093	78.8
73	SCHRIEVER WATER TREATMENT SERVICE AREA	1 of 2	LA	48,576	100	23
74	SCHRIEVER WATER TREATMENT SERVICE AREA	2 of 2	LA	48,576	100	23
75	SHELL CHEMICAL COMPANY		LA	1,002	709,254	0.2
76	SHREVEPORT WATER SYSTEM		LA	201,000	3785	10.9
77	SOUTH TOLEDO BEND WATER DISTRICT		LA	5,802	7437	12.4
78	ST BERNARD PARISH WATERWORKS		LA	44,000	709,344	0.2
79	ST CHARLES WATER DISTRICT 1 EAST BANK		LA	29,517	709,344	0.2
80	ST CHARLES WATER DISTRICT 2 WEST BANK		LA	31,485	709,344	0.2
81	ST JAMES WATER DISTRICT 1		LA	6,120	709,254	0.2
82	ST JAMES WATER DISTRICT 2		LA	9,392	709,254	0.2
83	ST JOHN WATER DISTRICT 1		LA	12,577	709,254	0.2
84	ST JOHN WATER DISTRICT 2		LA	3,702	709,254	0.2
85	ST MARY PARISH WATER SEWERAGE COMM 1		LA	2,823	1767	45.3
86	ST MARY PARISH WW DISTRICT 5	1 of 2	LA	3,750	3130	34.9
87	ST MARY PARISH WW DISTRICT 5	2 of 2	LA	3,750	83 004	18
88	TENSAS WATER DISTRICT ASSOCIATION		LA	3,843	30	14.9
89	THIBODAUX WATERWORKS		LA	15,810	88	66.8
90	TOWN OF BALDWIN WATER SUPPLY	1 of 2	LA	1,250	99	23.6
91	TOWN OF BALDWIN WATER SUPPLY	2 of 2	LA	1,250	99	23.6

(continued)

Table B.LA.1 (continued)—Public water system intakes receiving water from State and private forest land in Louisiana

Intake ID	Public water system name	Intake number for system	State	Population served by intake	Total volume of surface water available to intake	Total surface water from State and private forest lands
					(million m ³ yr ⁻¹)	(percent)
92	TOWN OF GREENWOOD WATER SYSTEM		LA	5,116	2844	3.6
93	VETERANS ADMINISTRATION		LA	1,330	549	54.4
94	VIVIAN WATER SYSTEM	1 of 3	LA	1,500	269	24.4
95	VIVIAN WATER SYSTEM	2 of 3	LA	1,500	389	6.6
96	VIVIAN WATER SYSTEM	3 of 3	LA	1,500	2844	3.6
97	W JEFFERSON WW DISTRICT 2	1 of 2	LA	94,385	709,344	0.2
98	W JEFFERSON WW DISTRICT 2	2 of 2	LA	94,385	709,344	0.2
99	WATER & SEWER COMMISSION 4 OF ST MARY	1 of 2	LA	4,674	553	22.6
100	WATER & SEWER COMMISSION 4 OF ST MARY	2 of 2	LA	4,674	83 055	18
101	ASHLEY MINERAL SPRING		AR	25	15 629	0.1
102	BEECHWOOD WSC		TX	1,143	7798	11.9
103	CITY OF HEMPHILL	1 of 2	TX	599	7272	11.5
104	CITY OF HEMPHILL	2 of 2	TX	599	7272	11.5
105	CITY OF HUXLEY		TX	1,964	5910	5.5
106	CITY OF JOAQUIN	1 of 2	TX	687	4942	1.6
107	CITY OF JOAQUIN	2 of 2	TX	687	4942	1.6
108	DUPONT SABINE RIVER WORKS	1 of 2	TX	734	11 639	23
109	DUPONT SABINE RIVER WORKS	2 of 2	TX	734	11 639	23
110	EL CAMINO BAY WATER SYSTEM		TX	331	7437	12.4
111	G-M WSC		TX	2,087	7036	11.9