

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

# MISSISSIPPI

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**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 Mississippi.

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

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## STATE OF MISSISSIPPI

### Summary

State and private forest (SPF) lands cover 57.4 percent of Mississippi (figs. A.MS.1 and A.MS.2; table A.MS.1). About 54.9 percent of all Mississippi surface water originates on SPF lands (fig. A.MS.3). The majority of SPF land area is in, and surface water is from, family-owned forests, accounting for about 62.8 percent of the SPF land area and 63.4 percent of surface water from SPF. Corporate-owned forests contribute 26.1 percent of surface water from SPF and account for 26.7 percent of land area of SPF. Average annual water yield in Mississippi is about 575 mm (fig. A.MS.4). Mississippi has a total of 23 surface drinking water intakes where at least some available water comes from SPF (fig. A.MS.5). About 7.2 percent of the total population of Mississippi is served by surface drinking water overall, and Mississippi SPF surface drinking water also serves about 7.2 percent of the State population, or 0.2 million people, to some degree. About 0.1 million people in Mississippi are getting more than half of their surface drinking

water from SPF within the State (fig. A.MS.6). State and private forest lands in Mississippi also supply water to 51 surface drinking water intakes in other States (Alabama, Illinois, Kentucky, Louisiana, and Tennessee) (fig. A.MS.7), which collectively serve about 1.1 million people in 37 communities (fig. A.MS.8). Some public water systems in Mississippi utilize more than one surface drinking water intake; these systems are shown (intakes aggregated) in figure A.MS.9 by population served (symbol size) and percentage of water from SPF lands in Mississippi (symbol color). The Jackson detail map (fig. A.MS.10) 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.MS.11) of the City of Jackson public water supply system presents an example of the important role SPF lands play in providing water supply to a single community in Mississippi, where eight surface drinking water intakes receive about 67.2 percent of their water from SPF and serve about 0.2 million people.

**Table A.MS.1—Land area by land cover and forest ownership type in Mississippi**

Land cover	Land area (km <sup>2</sup> )	Land area (acres)
Forest	81 414	20,117,466
Nonforest	46 704	11,540,799
Forest ownership type <sup>a</sup>	Land area (km <sup>2</sup> )	Land area (acres)
Federal (public)	7776	1,921,417
Tribal (public)	131	32,277
State (public)	3812	941,943
Local (public)	922	227,887
Corporate (private)	19 611	4,845,919
Family (private)	46 185	11,412,500
Other private	2977	735,523

<sup>a</sup>State 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).

### Mississippi Forested Lands by Ownership

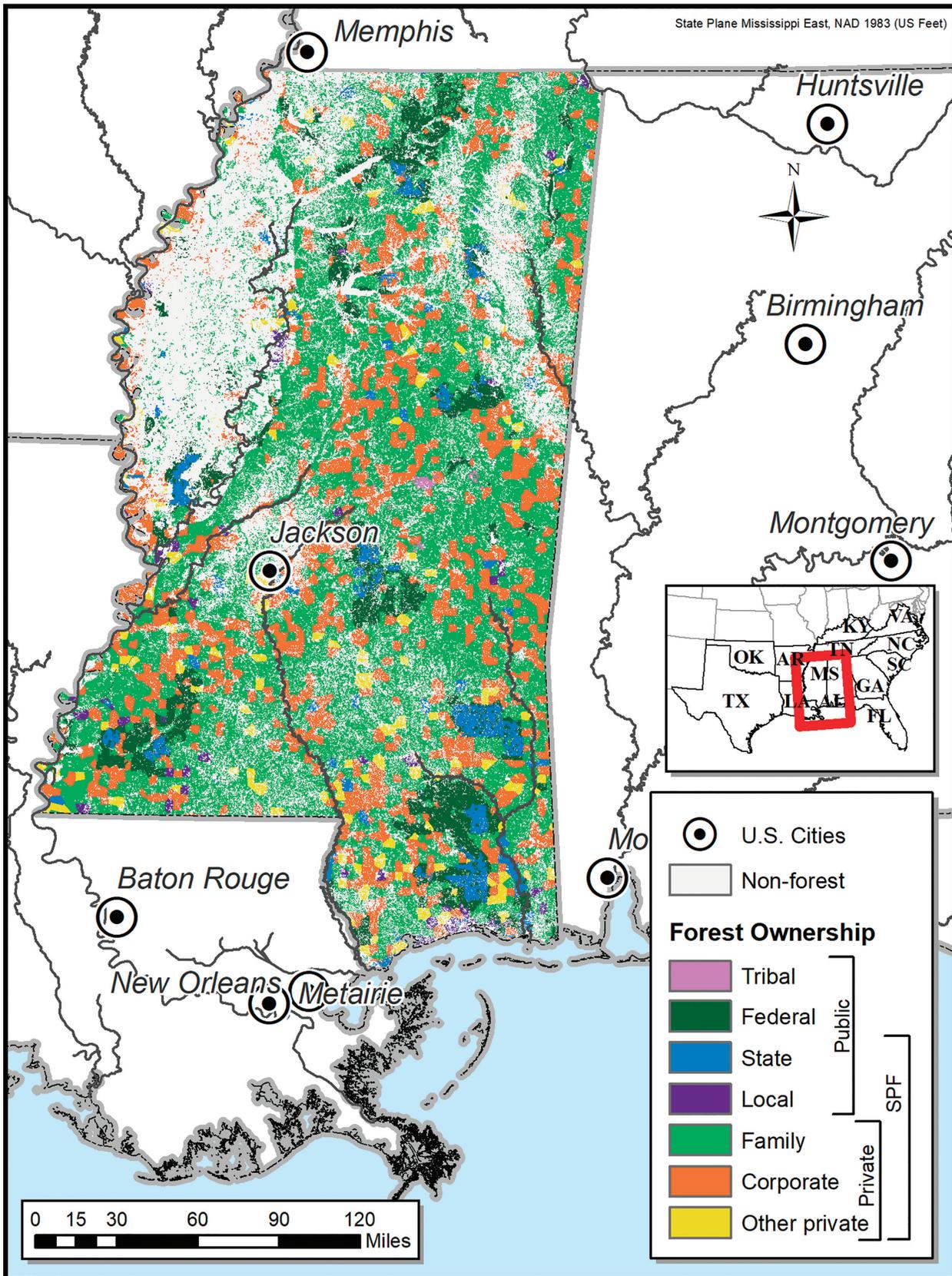


Figure A.MS.1—Mississippi nonforest land and forest lands by ownership, ca. 2014. Forest ownership data source: raster dataset by Hewes and others (2017); see report for more discussion of data derivation and accuracy.

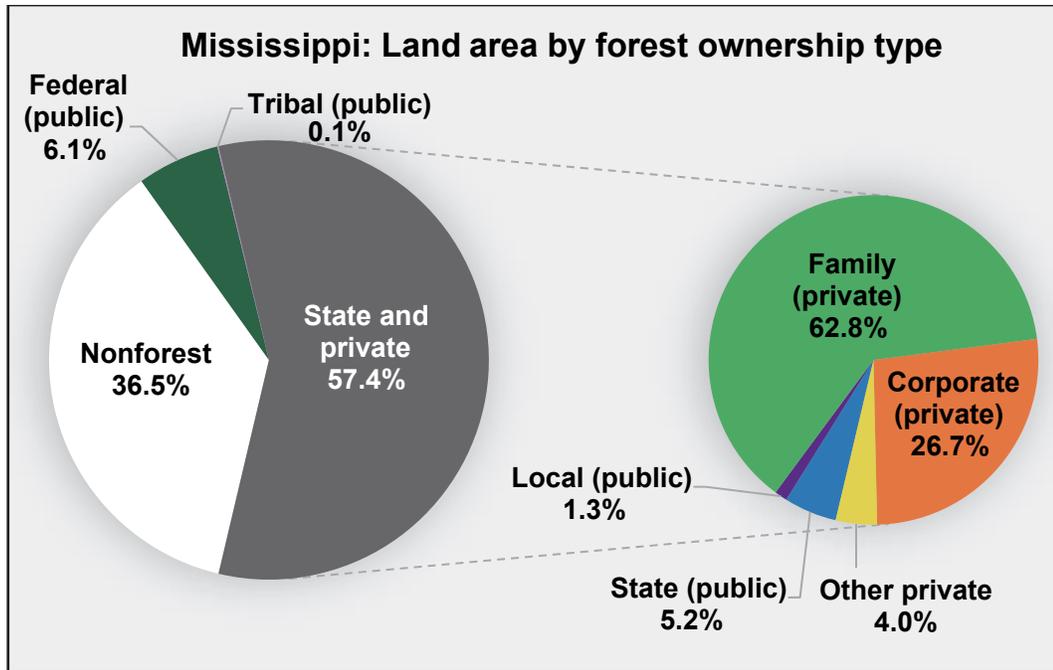


Figure A.MS.2—Land area percentages by forest ownership, ca. 2014. In the smaller circle, percentages represent portion of SPF total for each ownership category. Note: Due to rounding, percentages may not total exactly 100.

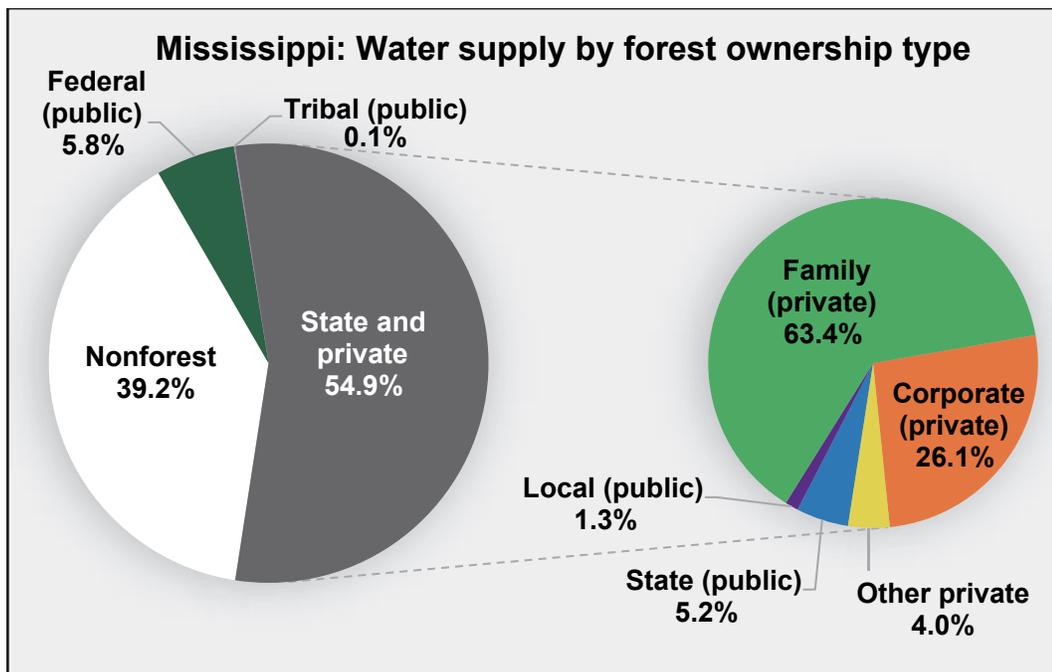


Figure A.MS.3—Percentage of Mississippi's water supply deriving from nonforest lands and forest lands of different ownership, ca. 2014. In the smaller circle, percentages represent portion of SPF total for each ownership category. Note: Due to rounding, percentages may not total exactly 100.

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

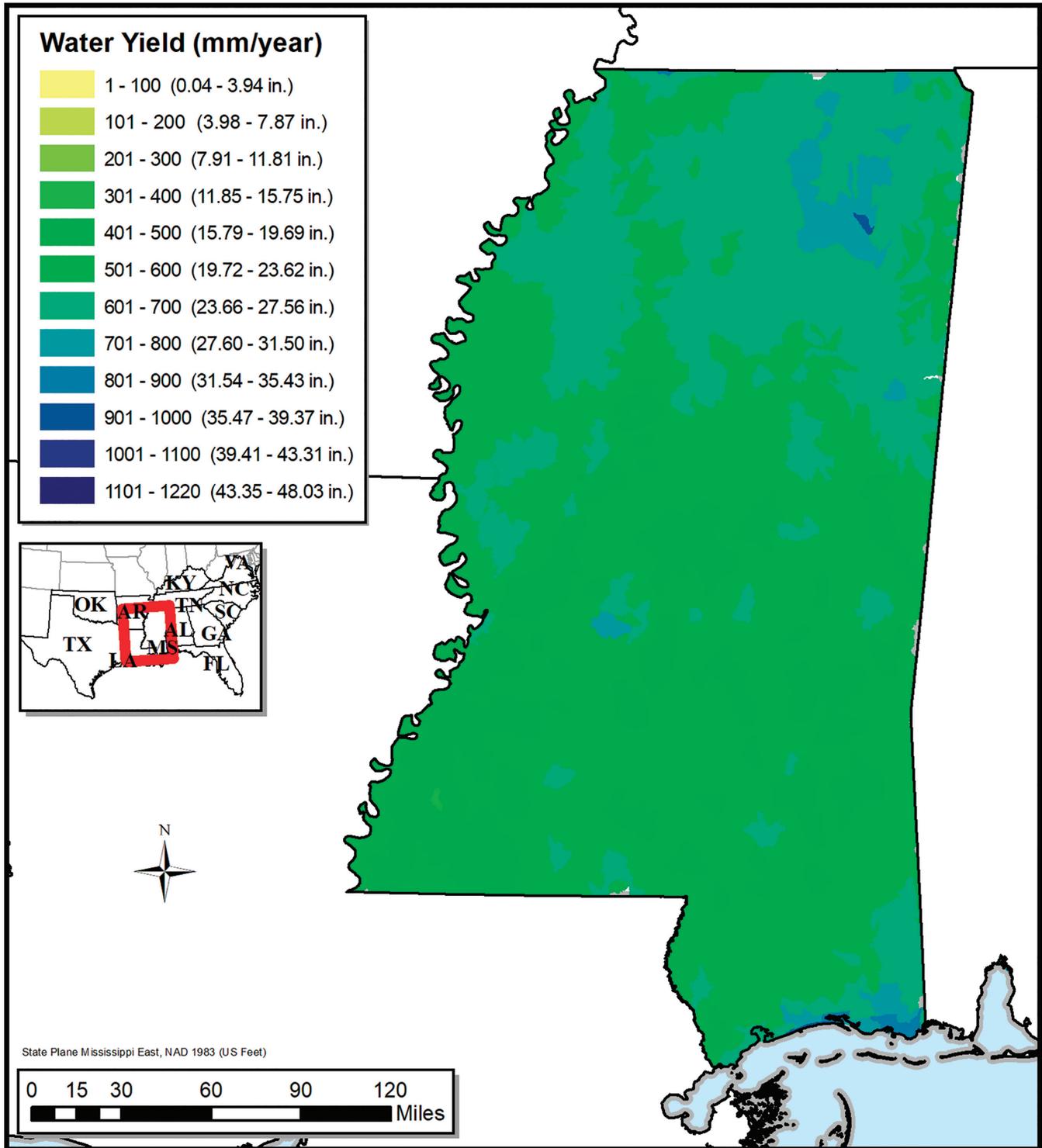


Figure A.MS.4—Estimated mean annual water yield by 12-digit hydrologic units in Mississippi, 2001–2010. Hydrologic Unit Codes (HUC) use number of digits to represent watersheds of different scales. A 12-digit HUC (HUC12) represents a small local watershed. For explanation of water yield and how it is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

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

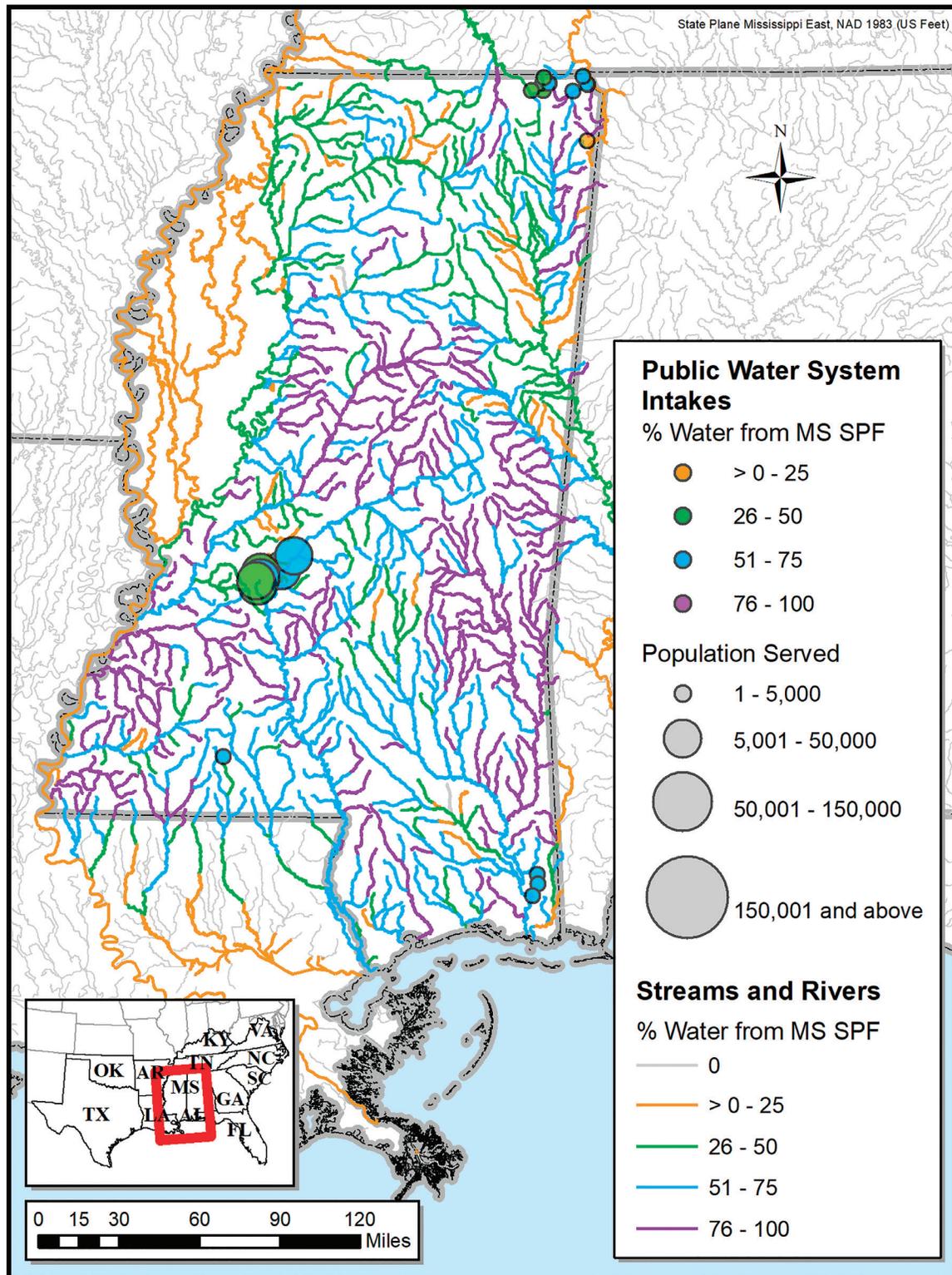


Figure A.MS.5—(A) Mississippi streams by percentage of Mississippi SPF water content, surface drinking water intakes within Mississippi by percentage of Mississippi SPF surface water available at intake (symbol color), and population served by each intake (symbol size). A total of 23 surface drinking water intakes within the State serve a population of 214,946 in six communities. Note: See figures A.MS.5 parts B and C on separate pages for streams and intakes only.

### (B) Streams Receiving Water from Mississippi State and Private Forests

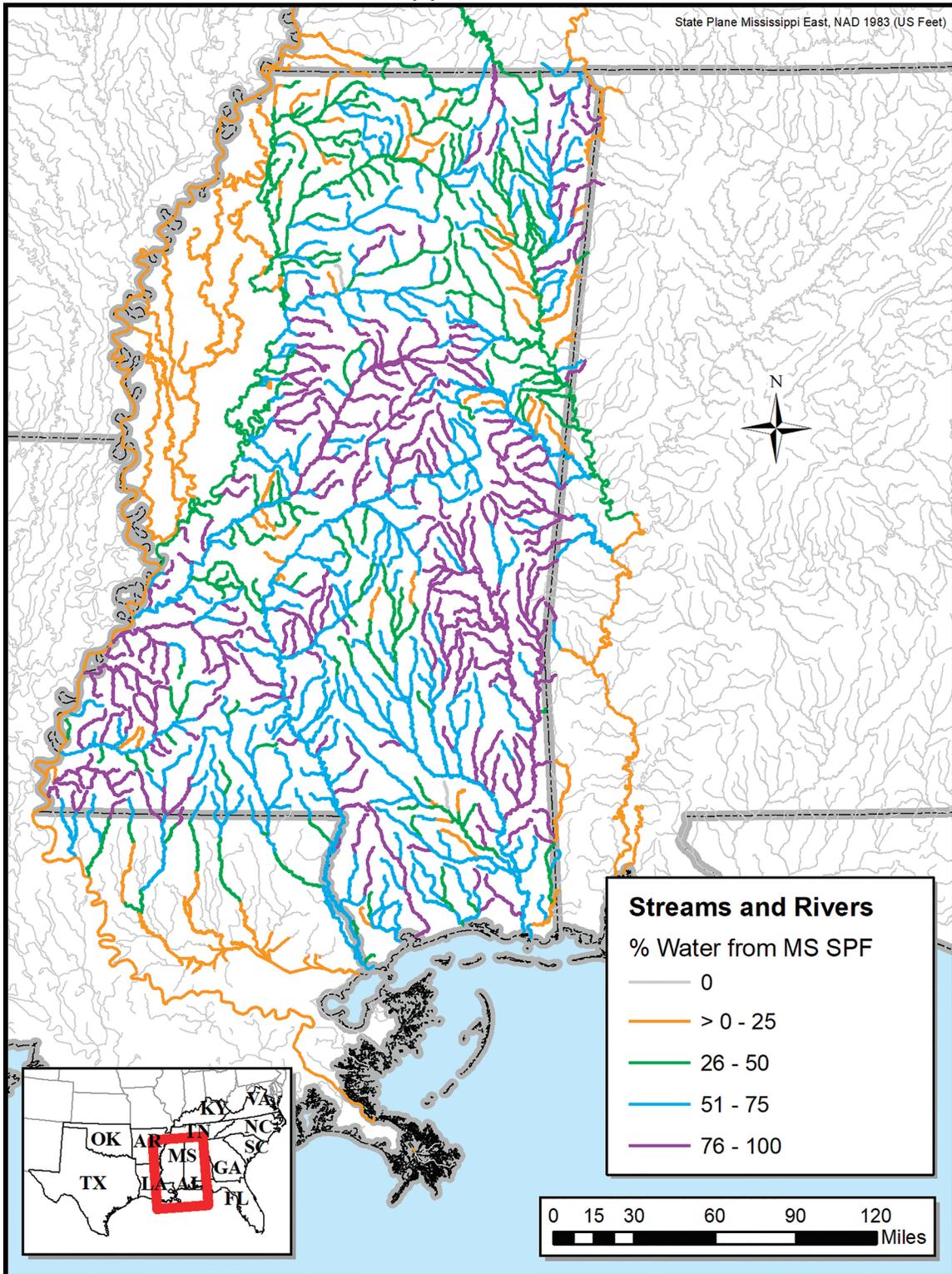


Figure A.MS.5—(B) Mississippi streams by percentage of Mississippi SPF water content.

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

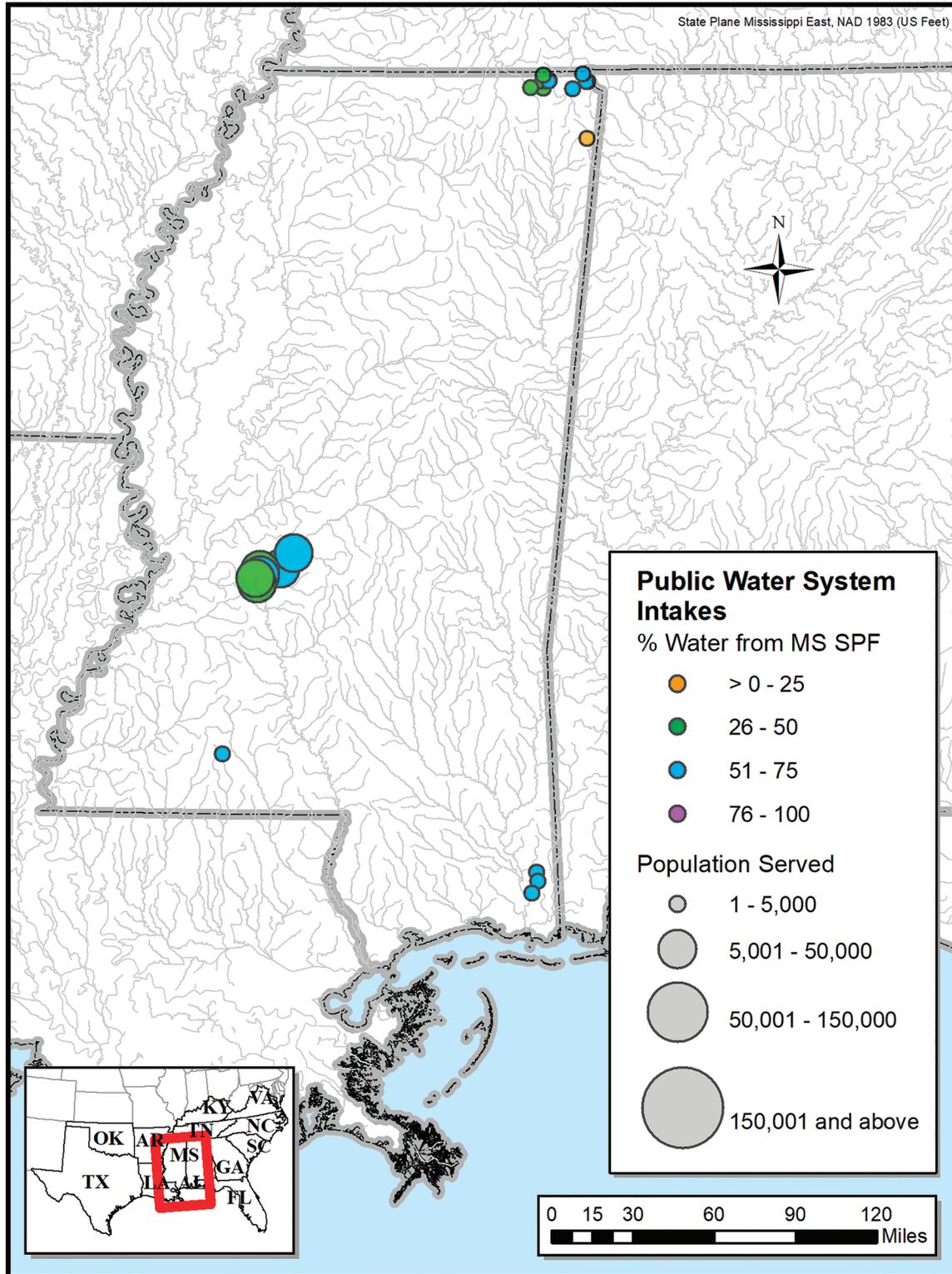


Figure A.MS.5—(C) Surface drinking water intakes within Mississippi by percentage of Mississippi SPF surface water available at intake (symbol color) and population served by each intake (symbol size). A total of 23 surface drinking water intakes within the State serve a population of 214,946 in six communities.

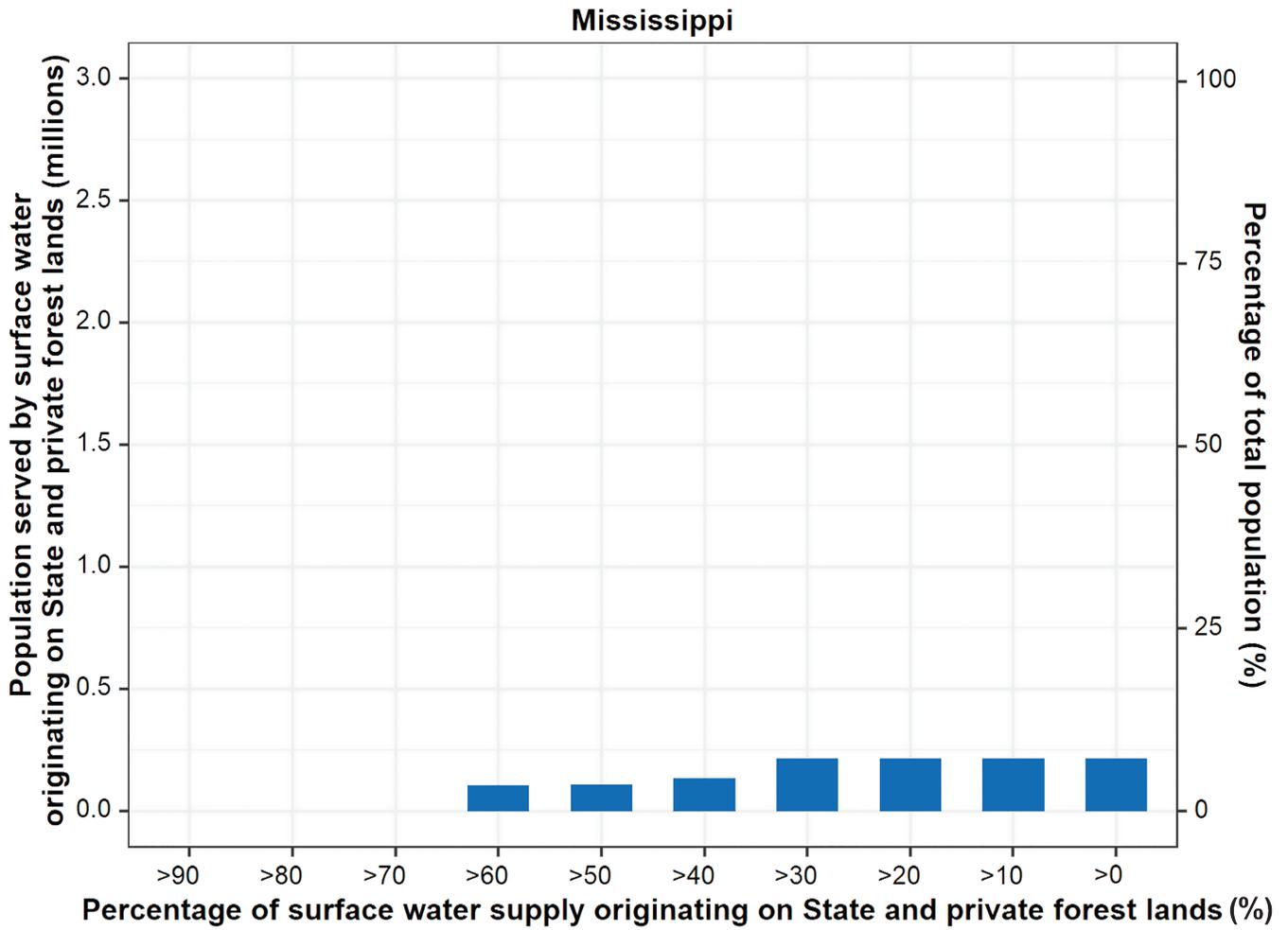


Figure A.MS.6—Cumulative frequency of population served according to percentage of water coming from Mississippi SPF lands.

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

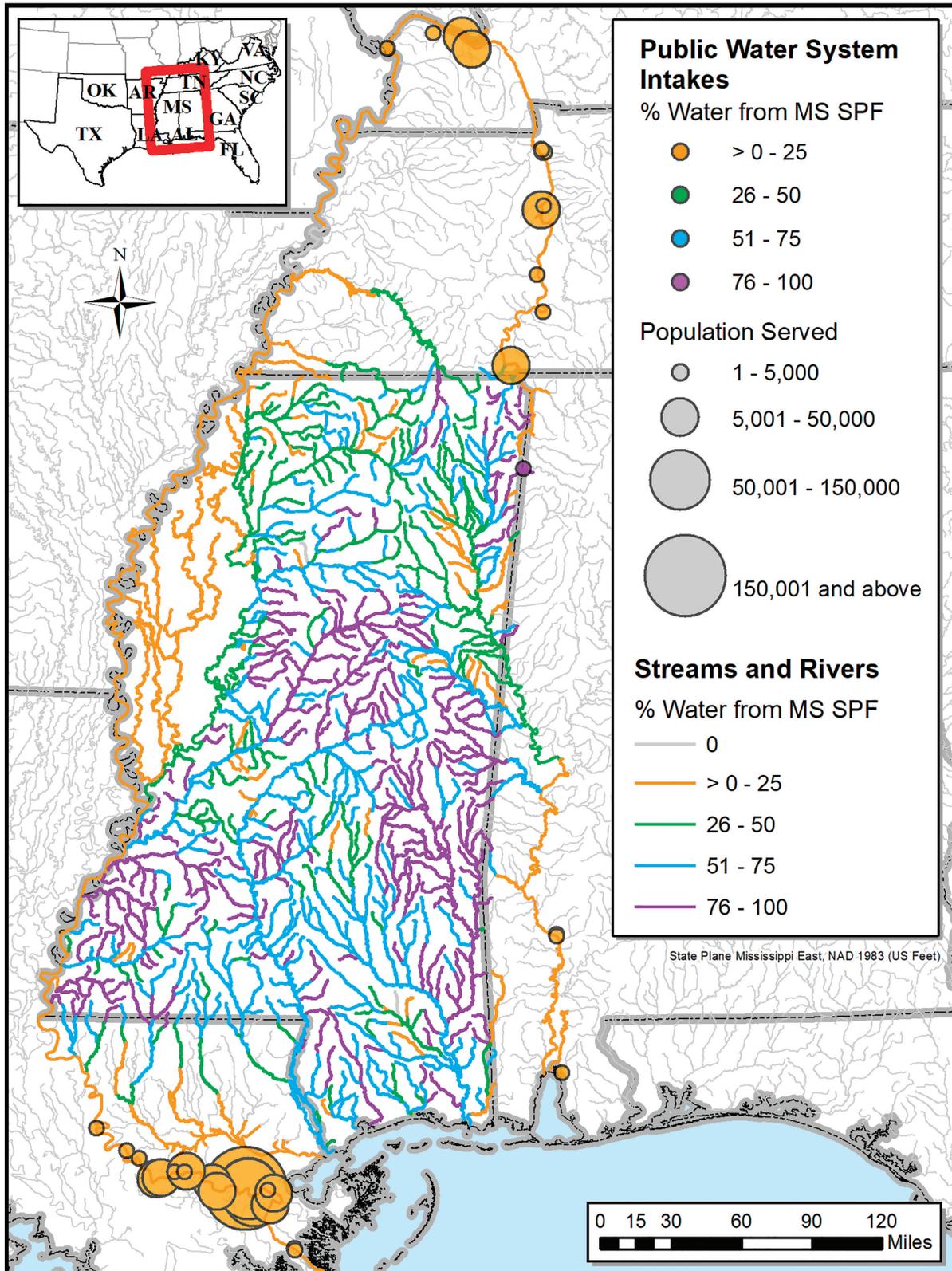


Figure A.MS.7—Mississippi streams by percentage of Mississippi SPF water content, surface drinking water intakes downstream of Mississippi by percentage of Mississippi SPF water content (symbol color), and population served by each of these external intakes (symbol color). A total of 51 surface drinking water intakes outside the State but carrying Mississippi SPF water serve a population of 1,057,304 in 37 communities.

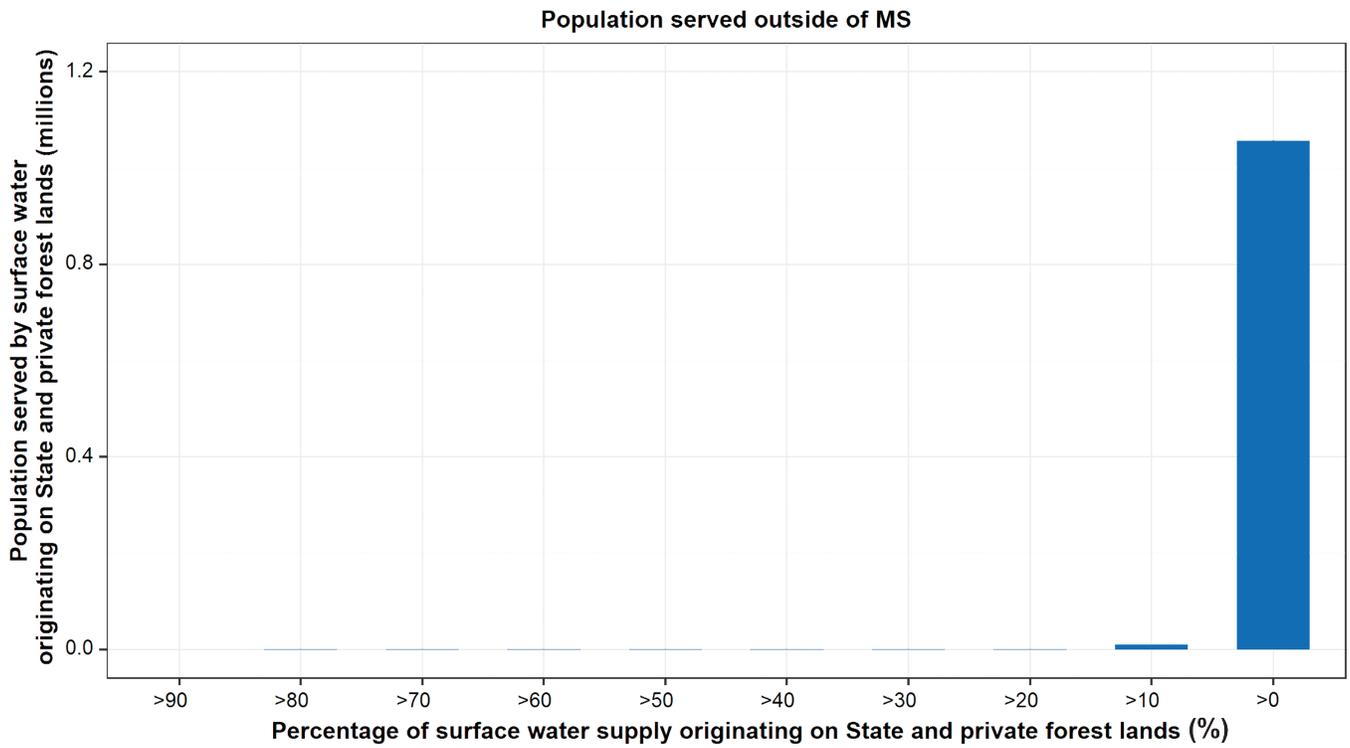


Figure A.MS.8—Cumulative frequency of non-Mississippi population served according to percentage of water coming from Mississippi SPF lands.

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

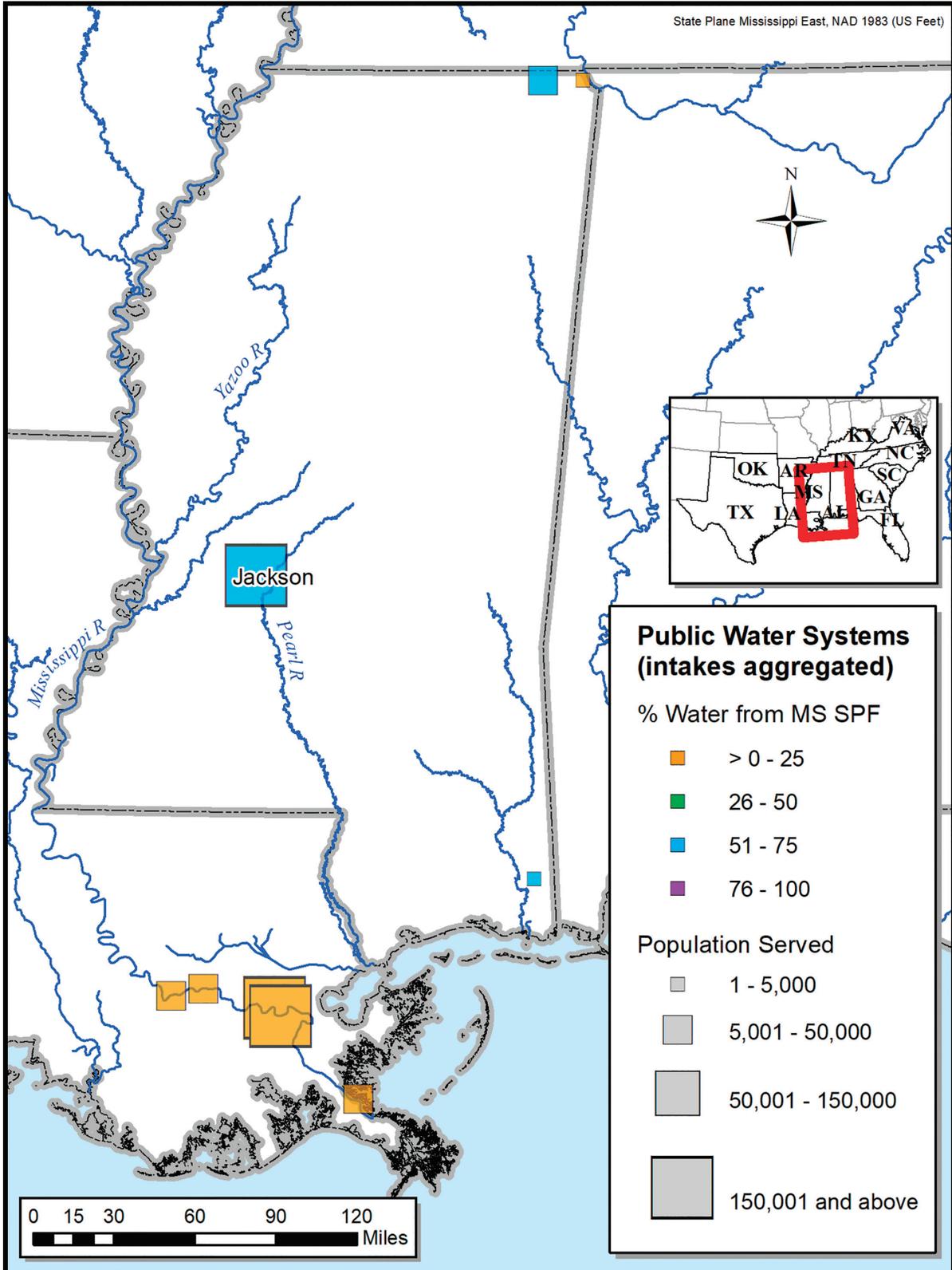


Figure A.MS.9—Multi-intake public water systems aggregated to single data point. Symbol color and size represent values for an entire municipal or corporate water supply system rather than values for individual surface drinking water intakes. Systems with no more than a single surface drinking water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

# Jackson Detail

*Streams and Public Water System Intakes in the Jackson, MS, Area  
Receiving Water from Mississippi State and Private Forests*

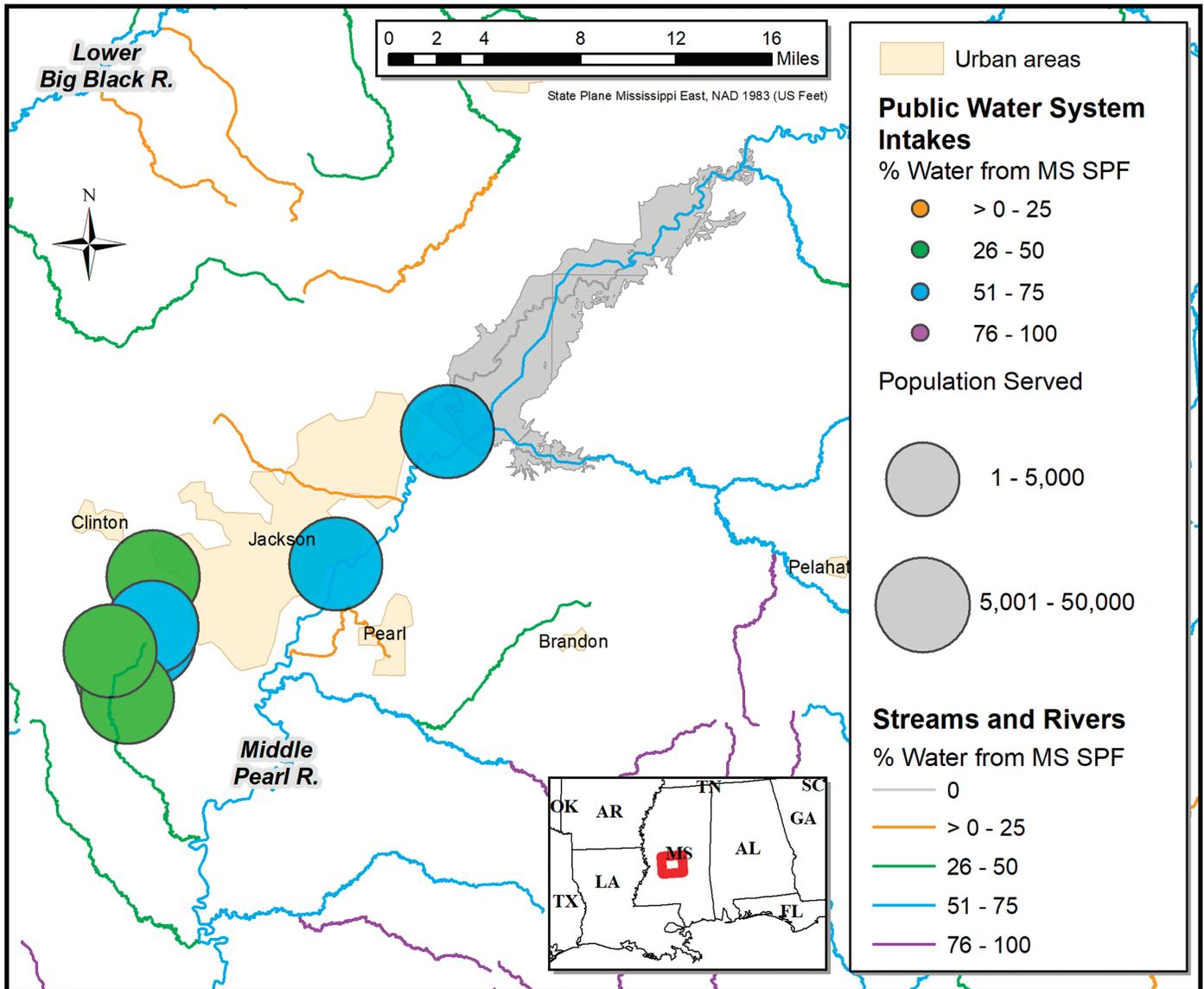


Figure A.MS.10—Local-scale detail showing percentage of water from Mississippi SPF for streams and surface drinking water intakes around Jackson, MS.

## Jackson, MS, Case Study

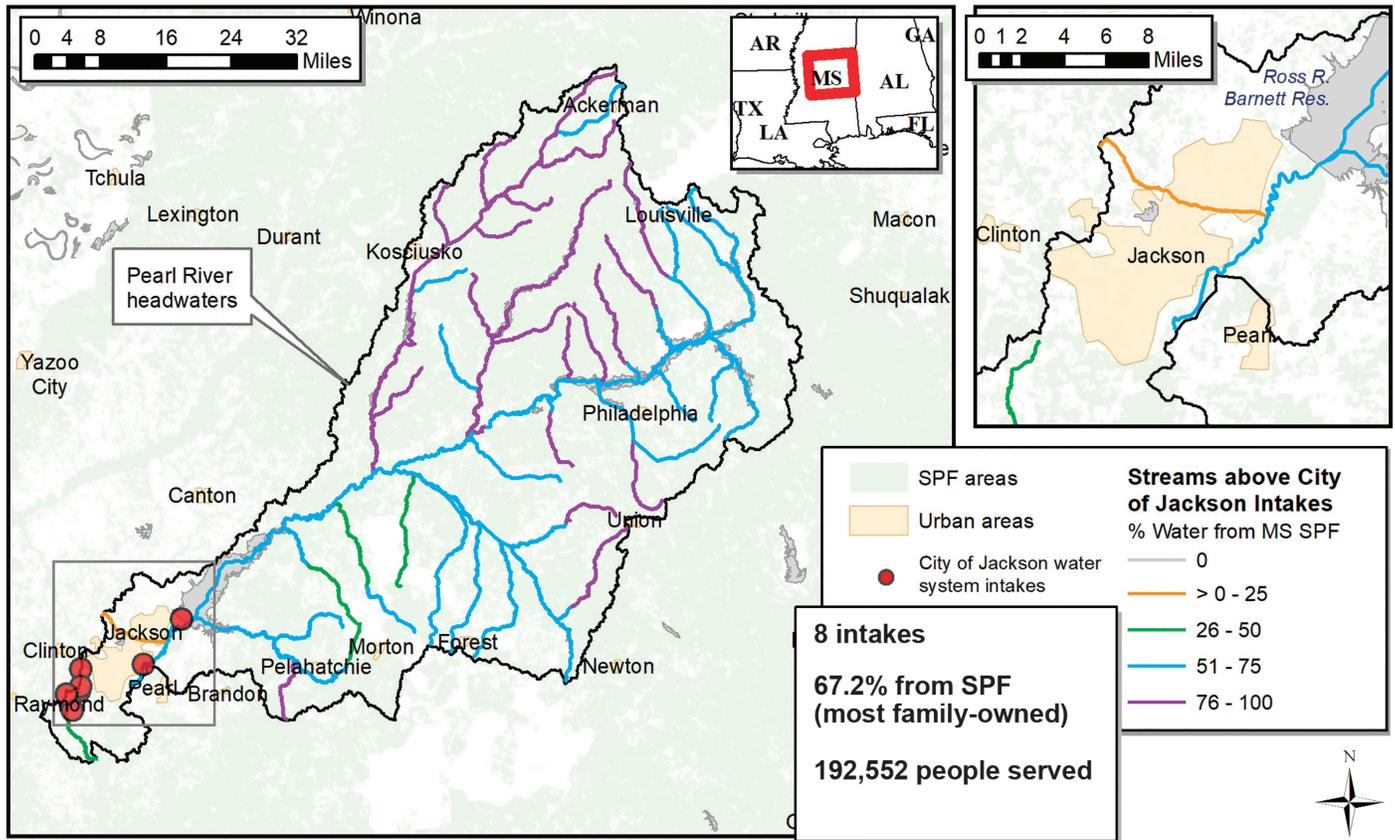


Figure A.MS.11—Case study of the City of Jackson public water supply system, Jackson, MS, illustrating SPF water in streams supplying the eight surface drinking water intakes. When this water reaches the intakes, 67.2 percent of it comes from SPF lands. The largest ownership category in these specific SPF lands is family-owned.

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

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 <sup>3</sup> yr <sup>-1</sup> )	(percent)
1	CITY OF CORINTH	1 of 7	MS	2,286	259	64.5
2	CITY OF CORINTH	2 of 7	MS	2,286	72	61.8
3	CITY OF CORINTH	3 of 7	MS	2,286	72	61.8
4	CITY OF CORINTH	4 of 7	MS	2,286	484	48
5	CITY OF CORINTH	5 of 7	MS	2,286	69	37.8
6	CITY OF CORINTH	6 of 7	MS	2,286	69	37.8
7	CITY OF CORINTH	7 of 7	MS	2,286	69	37.8
8	CITY OF JACKSON	1 of 8	MS	24,069	4262	69.9
9	CITY OF JACKSON	2 of 8	MS	24,069	4472	67.6
10	CITY OF JACKSON	3 of 8	MS	24,069	4788	66.4
11	CITY OF JACKSON	4 of 8	MS	24,069	4788	66.4
12	CITY OF JACKSON	5 of 8	MS	24,069	90	45.5
13	CITY OF JACKSON	6 of 8	MS	24,069	47	36.8
14	CITY OF JACKSON	7 of 8	MS	24,069	47	36.8
15	CITY OF JACKSON	8 of 8	MS	24,069	47	36.8
16	GULF LNG CLEAN ENERGY POTABLE WATER PLAN		MS	25	378	62.9
17	JACKSON CO UTILITY AUTHORITY-EAST	1 of 3	MS	1,429	11 400	69.1
18	JACKSON CO UTILITY AUTHORITY-EAST	2 of 3	MS	1,429	11 731	69
19	JACKSON CO UTILITY AUTHORITY-EAST	3 of 3	MS	1,429	82	56.6
20	SHORT COLEMAN PARK-NASA PLANT	1 of 3	MS	461	310	64.3
21	SHORT COLEMAN PARK-NASA PLANT	2 of 3	MS	461	310	64.3
22	SHORT COLEMAN PARK-NASA PLANT	3 of 3	MS	461	45 990	0.6
23	TOWN OF TISHOMINGO		MS	706	547	8.3
24	JACKSON WATER WORKS & SEWER BOARD	1 of 2	AL	4,142	28 589	19.2
25	JACKSON WATER WORKS & SEWER BOARD	2 of 2	AL	4,142	28 589	19.2
26	RED BAY WATER & GAS BOARD		AL	1,200	78	87.7
27	SPANISH FORT WATER SYSTEM		AL	4,632	61 754	8.9
28	IL AMERICAN-CAIRO	1 of 3	IL	974	260,792	0.2
29	IL AMERICAN-CAIRO	2 of 3	IL	974	260,792	0.2
30	IL AMERICAN-CAIRO	3 of 3	IL	974	260,792	0.2
31	FLUOR FEDERAL SERVICES INC.		KY	2,000	259,996	0.2
32	LEDBETTER WATER DISTRICT		KY	3,742	259,689	0.2
33	PADUCAH WATER WORKS	1 of 4	KY	9,145	57 884	1
34	PADUCAH WATER WORKS	2 of 4	KY	9,145	57 884	1
35	PADUCAH WATER WORKS	3 of 4	KY	9,145	57 884	1
36	PADUCAH WATER WORKS	4 of 4	KY	9,145	259,689	0.2
37	ALMATIS		LA	400	709,254	2.3
38	BELLE CHASSE WATER DISTRICT		LA	17,391	709,344	2.3
39	DALCOUR WATERWORKS DISTRICT		LA	925	709,344	2.3
40	DOMINO SUGAR		LA	360	709,344	2.3
41	DOW USA, LA DIVISION		LA	3,960	709,151	2.3
42	E JEFFERSON WW DISTRICT 1		LA	243,782	709,344	2.3
43	GRAMERCY WATERWORKS		LA	3,613	709,254	2.3
44	GRETNA WATERWORKS		LA	17,802	709,344	2.3
45	LUTCHER WATERWORKS		LA	4,781	709,254	2.3
46	MARATHON PETROLEUM COMPANY LLC		LA	817	709,254	2.3

(continued)

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

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 <sup>3</sup> yr <sup>-1</sup> )	(percent)
47	NEW ORLEANS CARROLLTON WW	1 of 2	LA	145,522	709,344	2.3
48	NEW ORLEANS CARROLLTON WW	2 of 2	LA	145,522	709,344	2.3
49	NEW ORLEANS ALGIERS WATER WORKS	1 of 2	LA	26,393	709,344	2.3
50	NEW ORLEANS ALGIERS WATER WORKS	2 of 2	LA	26,393	709,344	2.3
51	NORANDA ALUMINA, LLC		LA	500	709,254	2.3
52	POINTE A LA HACHE WATER SYSTEM		LA	653	709,344	2.3
53	PORT SULPHUR WATER DISTRICT	1 of 2	LA	4,611	709,344	2.3
54	PORT SULPHUR WATER DISTRICT	2 of 2	LA	4,611	709,398	2.3
55	SHELL CHEMICAL COMPANY		LA	1,002	709,254	2.3
56	ST BERNARD PARISH WATERWORKS		LA	44,000	709,344	2.3
57	ST CHARLES WATER DISTRICT 1 EAST BANK		LA	29,517	709,344	2.3
58	ST CHARLES WATER DISTRICT 2 WEST BANK		LA	31,485	709,344	2.3
59	ST JAMES WATER DISTRICT 1		LA	6,120	709,254	2.3
60	ST JAMES WATER DISTRICT 2		LA	9,392	709,254	2.3
61	ST JOHN WATER DISTRICT 1		LA	12,577	709,254	2.3
62	ST JOHN WATER DISTRICT 2		LA	3,702	709,254	2.3
63	W JEFFERSON WW DISTRICT 2	1 of 2	LA	94,385	709,344	2.3
64	W JEFFERSON WW DISTRICT 2	2 of 2	LA	94,385	709,344	2.3
65	CAMDEN WATER DEPT		TN	9,629	54 712	1
66	CHEMOURS-NEW JOHNSONVILLE PLANT		TN	750	54 799	1
67	CLIFTON WATER DEPT		TN	3,843	48 212	1.2
68	FIRST U.D. OF HARDIN COUNTY		TN	6,698	46 372	1
69	PARSONS WATER DEPARTMENT		TN	1,989	49 041	1.1
70	WEST STEWART UTILITY DISTRICT	1 of 5	TN	88	56 262	1
71	WEST STEWART UTILITY DISTRICT	2 of 5	TN	88	56 262	1
72	WEST STEWART UTILITY DISTRICT	3 of 5	TN	88	56 262	1
73	WEST STEWART UTILITY DISTRICT	4 of 5	TN	88	56 262	1
74	WEST STEWART UTILITY DISTRICT	5 of 5	TN	88	56 262	1