

# 2004 Furbearer Sign Survey

## *Wildlife Diversity Program Note 04-1*

### Methods

Furbearer Sign Surveys are conducted at a stratified random sample of Basin Survey Sites so the presence/absence of target species can be linked to existing databases on biotic and abiotic features. Basin Survey Sites are fixed stations established by the Illinois Environmental Protection Agency (IEPA) and Illinois Department of Natural Resources (IDNR) to monitor surface water quality, shoreline characteristics, diversity and abundance of fishes, and other metrics which provide an assessment of biotic integrity for riverine systems (IEPA 1996).

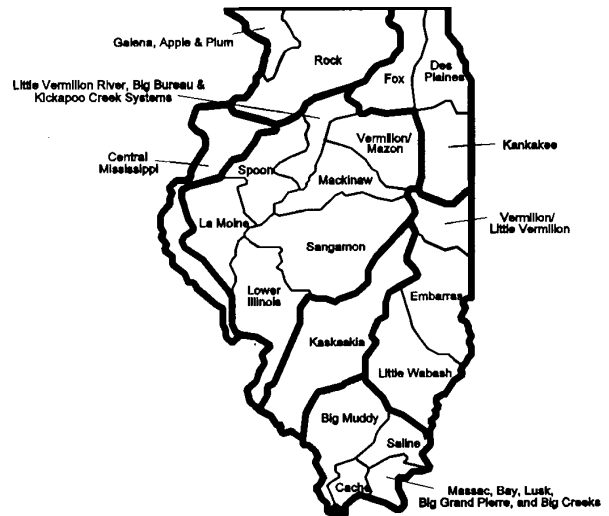
Trained IDNR staff conduct Furbearer Sign Surveys from 1 Feb through 31 Mar in the southern furbearer zone and 15 Feb through 15 Apr in the northern zone. Staff use hip chains to measure 300m upstream and downstream from survey starting points, usually road bridges, and search both shorelines for tracks, scats and other signs of the presence of river otter, mink and beaver (i.e., a total of 1200m unless evidence of all three species is encountered in a shorter distance). Data collected by staff include the presence/absence of target species, types of sign encountered and the percentage of shoreline with conditions deemed suitable for detecting sign.

### Results

Staff conducted Sign Surveys in 70 counties during 2004. Observers recorded signs of river otters at 25 sites (36%), beavers at 62 (89%) and mink at 50 (71%). The presence of river otters was documented in all 7

Landscape Management Units (LMUs; Fig. 1) and 15 of 21 (71%) Population Management Units (PMUs). PMUs without any observations of river otter sign during 2004 were: 1) Fox, 2) Kankakee, 3) Lower Illinois, 4) Spoon, 5) Cache, and Saline (Table 1).

**Figure 1.** River otter Landscape Management Units (denoted by bold lines) and Population Management



Units are based on watershed delineations by Page et al. (1992), with some modifications.

### Discussion

Furbearer Sign Surveys were initiated in southern Illinois during 1999 ( $n = 41$ ) and expanded in 2000 to attain statewide coverage ( $n = 74$ ). Detection rates during 2004 were similar to those in 2003 for river otter (36% vs. 34%), beaver (89% vs. 88%), and mink (71% vs. 70%).

Combined data for 1999 through 2004

suggest that river otters now occur statewide (i.e., their presence was documented in 100% of LMUs, 95% of PMUs, and at 60% of survey sites). This is a significant improvement from the early 1980s, when <100 individuals were thought to occur in 2 PMUs (Anderson 1982), and the period 1983-1993, when most (80%) element occurrence records (EORs) originated from 4 PMUs (Anderson 1995). Their success is linked to recent (1994-1997) releases of wild river otters in the Wabash ( $n = 137$ ), Kaskaskia ( $n = 72$ ) and Illinois ( $n = 137$ ) LMUs as well as natural recoveries in the Central Mississippi, Rock/Mississippi North and Shawnee LMUs.

Experts recommend use of  $\geq 2$  independent methods to monitor the distribution and abundance of river otters (Melquist and Dronkert 1987). Methods used in Illinois include the Furbearer Sign Survey, annual surveys of licensed trappers (e.g., Miller et al. 2001), EORs, and a population model.

Widespread and numerous observations of river otters or their sign were reported by trappers during 2002-03 (118 reports from 56 counties), 2001-02 (150 reports from 61 counties), 2000-01 (118 reports from 56 counties), and 1999-00 (96 reports from 51 counties) (Miller et al. 2002a, 2002b, 2003, 2004). Combined reports for 1999-00 through 2002-03 originated from 81 counties located in all LMUs and PMUs.

A total of 449 EORS were processed by IDNR from 1998-2003. Records originated from 84 counties located in all LMUs and PMUs.

From 1996-2001, IDNR staff submitted 115 dead otters for necropsy at the Cooperative Wildlife Research Lab at Southern Illinois University. Woolf and Nielsen (2001) reported 5 females with embryos ( $\bar{x} = 2.4$  embryos/female), 9 with placental scars ( $\bar{x} =$

2.2 scars/female), and 22 that had been lactating. Using a deterministic population model developed by Hamilton (1998), Woolf and Nielsen (2001) estimated that the number of otters in the Wabash, Illinois and Kaskaskia LMUs had increased to 1,830 by 2001 and would reach a population of 4,610 in 2005.

Bluett et al. (1995) proposed 3 criteria for removing the river otter from its state threatened status: a widespread distribution, natural reproduction and stable or increasing numbers. Independent sources of information suggest these criteria have been satisfied.

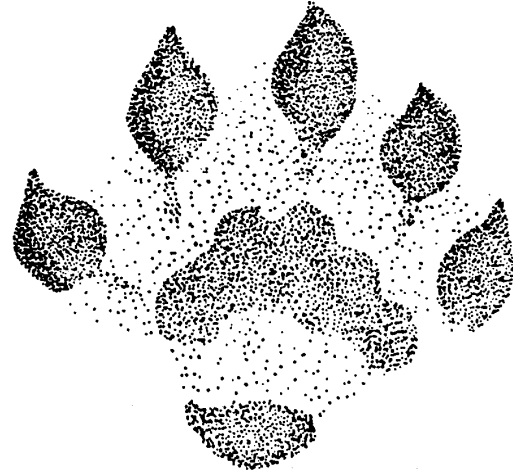
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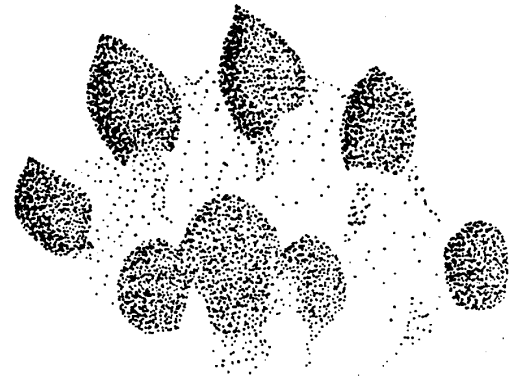
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Table 1. Presence/absence of river otter, mink and beaver on 70 Furbearer Sign Survey routes sampled in Illinois, 2004.

Landscape Unit	Population Unit	County	Station	Presence (P)/Absence (A)		
				River otter	Beaver	Mink
Central Mississippi	Central Mississippi	Adams	KI04	P <sup>a</sup>	P	P
Central Mississippi	Central Mississippi	Pike	KCA03	P	P	P
Central Mississippi	Central Mississippi	Warren	LDD20	A <sup>a</sup>	P	P
Fox-DesPlaines-Kankakee	DesPlaines	Cook	HBDA01	P <sup>a</sup>	P	A
Fox-DesPlaines-Kankakee	DesPlaines	DuPage	GBK12	A	P	P
Fox-DesPlaines-Kankakee	DesPlaines	Will	GBL02	A	P	P
Fox-DesPlaines-Kankakee	Fox	Kane	DTC03	A <sup>a</sup>	A	P
Fox-DesPlaines-Kankakee	Fox	Kendall	DTCA01	A	P	P
Fox-DesPlaines-Kankakee	Fox	McHenry	DTK06	A	A	A
Fox-DesPlaines-Kankakee	Kankakee	Iroquois	FLH02	A <sup>a</sup>	P	P
Fox-DesPlaines-Kankakee	Kankakee	Kankakee	F02	A <sup>a</sup>	P	A
Illinois	LaMoine	Brown	DE03	A <sup>a</sup>	P	P
Illinois	LaMoine	McDonough	DG04	P <sup>a</sup>	P	A
Illinois	LaMoine	Schuyler	DGD01	P <sup>a</sup>	P	P
Illinois	Lower Illinois	Jersey	DZA02	A	P	P
Illinois	Lower Illinois	Macoupin	DA05	A	P	A
Illinois	Lower Illinois	Morgan	DF05	A	P	P
Illinois	Little Vermilion . . .	Bureau	DQ01	P <sup>a</sup>	P	A
Illinois	Little Vermilion . . .	Marshall	DP02	A	P	P
Illinois	Mackinaw	McLean	DKP02	P <sup>a</sup>	P	P
Illinois	Mackinaw	Tazewell	DKG01	P <sup>a</sup>	P	P
Illinois	Mackinaw	Woodford	DKKB01	A	P	A
Illinois	Sangamon	Cass	EEA01	P <sup>a</sup>	P	P
Illinois	Sangamon	Christian	EOH01	P <sup>a</sup>	P	P
Illinois	Sangamon	DeWitt	EIH01	A	P	P
Illinois	Sangamon	Logan	EID07	P <sup>a</sup>	P	P
Illinois	Sangamon	Macon	E05	P <sup>a</sup>	P	P
Illinois	Sangamon	Sangamon	E26	P <sup>a</sup>	P	P
Illinois	Spoon	Fulton	DJ08			
Illinois	Spoon	Knox	DJ02			
Illinois	Spoon	Stark	DJN02	A	P	P
Illinois	Vermilion-Mazon	Grundy	DV04	A	P	A
Illinois	Vermilion-Mazon	LaSalle	DR01			

<sup>a</sup>Evidence of the presence of river otters was detected in 1999, 2000, 2001, 2002, and/or 2003.

Table 1 (continued). Presence/absence of river otter, mink and beaver on 70 Furbearer Sign Survey routes sampled in Illinois, 2004.

Landscape Unit	Population Unit	County	Station	Presence (P)/Absence (A)		
				River otter	Beaver	Mink
Illinois	Vermilion-Mazon	Livingston	DS06	P <sup>a</sup>	P	P
Kaskaskia	Kaskaskia	Bond	OIC02	A <sup>a</sup>	P	P
Kaskaskia	Kaskaskia	Clinton	OH01	A <sup>a</sup>	P	A
Kaskaskia	Kaskaskia	Fayette	OO01	A	P	P
Kaskaskia	Kaskaskia	Monroe	OB04	A	A	P
Kaskaskia	Kaskaskia	Montgomery	OIL01	A	P	P
Kaskaskia	Kaskaskia	Moultrie	OT01	P <sup>a</sup>	P	P
Kaskaskia	Kaskaskia	Randolph	OA01	A <sup>a</sup>	P	P
Kaskaskia	Kaskaskia	Shelby	OR02	A	A	P
Kaskaskia	Kaskaskia	Washington	OJA01	A <sup>a</sup>	P	P
Rock-Mississippi North	Galena-Apple-Plum	Carroll	None	A <sup>a</sup>	P	P
Rock-Mississippi North	Galena-Apple-Plum	JoDaviess	MNI12	P <sup>a</sup>	P	P
Rock-Mississippi North	Rock	DeKalb	PQC05			
Rock-Mississippi North	Rock	Henry	PBG12			
Rock-Mississippi North	Rock	Lee	PBU10	A <sup>a</sup>	A	P
Rock-Mississippi North	Rock	Ogle	PQB04	A <sup>a</sup>	P	P
Rock-Mississippi North	Rock	Stephenson	PWH01	P <sup>a</sup>	A	P
Rock-Mississippi North	Rock	Whiteside	PH01	A <sup>a</sup>	P	P
Shawnee	Big Muddy	Franklin	NH26	A <sup>a</sup>	P	A
Shawnee	Big Muddy	Jackson	ND01	P <sup>a</sup>	P	A
Shawnee	Big Muddy	Jefferson	NJ07	P <sup>a</sup>	P	P
Shawnee	Big Muddy	Perry	NCK01	A <sup>a</sup>	P	A
Shawnee	Big Muddy	Union	ICD02	A	P	P
Shawnee	Cache	Alexander	IXD01	A <sup>a</sup>	P	P
Shawnee	Cache	Pulaski	IX11	A <sup>a</sup>	P	P
Shawnee	Massac-Bay-Lusk . .	Johnson	AJF16	A	P	A
Shawnee	Massac-Bay-Lusk . .	Pope	AJG18	P <sup>a</sup>	P	A
Shawnee	Saline	Hamilton	ATF07	A	A	A
Shawnee	Saline	Saline	ATG03	A <sup>a</sup>	P	A
Wabash	Embarras	Coles	BENC01	A	P	P
Wabash	Embarras	Crawford	BF01	A <sup>a</sup>	P	P
Wabash	Embarras	Cumberland	BEJH01	A	A	P
Wabash	Embarras	Douglas	BE14	A	P	A

<sup>a</sup>Evidence of the presence of river otters was detected in 1999, 2000, 2001, 2002, and/or 2003.

Table 1 (continued). Presence/absence of river otter, mink and beaver on 70 Furbearer Sign Survey routes sampled in Illinois, 2004.

Landscape Unit	Population Unit	County	Station	Presence (P)/Absence (A)		
				River otter	Beaver	Mink
Wabash	Embarras	Jasper	BEG01	P	P	P
Wabash	Embarras	Lawrence	BEAB01	A	P	P
Wabash	Little Wabash	Clay	C19	A	P	P
Wabash	Little Wabash	Effingham	C28	A	P	A
Wabash	Little Wabash	Richland	CH01	A	P	P
Wabash	Little Wabash	Wayne	CA07	P <sup>a</sup>	P	A
Wabash	Little Wabash	White	C32	P <sup>a</sup>	P	A
Wabash	Vermilion	Champaign	BPK13	P <sup>a</sup>	P	P
Wabash	Vermilion	Vermilion	BPG11	P <sup>a</sup>	P	P

<sup>a</sup>Evidence of the presence of river otters was detected in 1999, 2000, 2001, 2002, and/or 2003.

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Prepared by Bob Bluett  
 Illinois Department of Natural Resources  
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