



## 2019 RIVER OTTER BRIDGE SURVEY RESULTS

April 2019

The Division of Wildlife uses annual river otter (*Lontra canadensis*) bridge surveys as a standardized method of assessing the current distribution of river otters, as well as long-term trends. River otter bridge surveys have been conducted at 180 bridge sites in watersheds throughout northeastern and southeastern Ohio (Districts Three and Four) since 2000. In response to increased sightings outside of eastern Ohio, in 2016, 242 additional river otter bridge survey locations were established across the remainder of the state (Districts One, Two, and Five), for a total of 422 survey locations statewide (Figure 1).

Survey locations are stratified by watershed group, with 12 to 18 locations in each. Watershed groups typically contain two to six watersheds, and were

assembled to establish areas of similar size to act as experimental units.

Bridge surveys are conducted annually in January or early February, four or more days after a rainfall or snow event to allow otters time to track up banks. Each bridge is surveyed once. The surveyed area includes 300 meters upstream and downstream from the bridge. Any otter sign (i.e., tracks, scat, fish kill remains, latrines) and distance from the bridge to the first detected sign is noted. A detectability index, as defined by the percentage of stream bank having suitable tracking conditions (sandbar, mud) available for detecting otters, is also determined for each site.

This report presents summary information on river otter bridge surveys conducted in Ohio with a focus on the last 3 years of surveys (2017-2019).

### Statewide Results

In 2017, staff conducted 420 bridge surveys across the state and sign was detected at 94 sites (22%; Figure 2). Tracks were detected at most sites (75 sites; 80%), though latrines were detected at six sites, scat at three sites, and fish kill remains at one site. The additional nine sites where sign was detected each had combinations of two or more types of sign present.

Detection rates were slightly lower statewide in 2018. Out of 412 bridge surveys conducted in 2018, sign was detected at 76 sites (18%). Again, tracks were the most common sign observed at 68 locations (89%), while scat was observed at one location, and fish kill remains were observed at two locations. An additional five sites had multiple types of sign present.

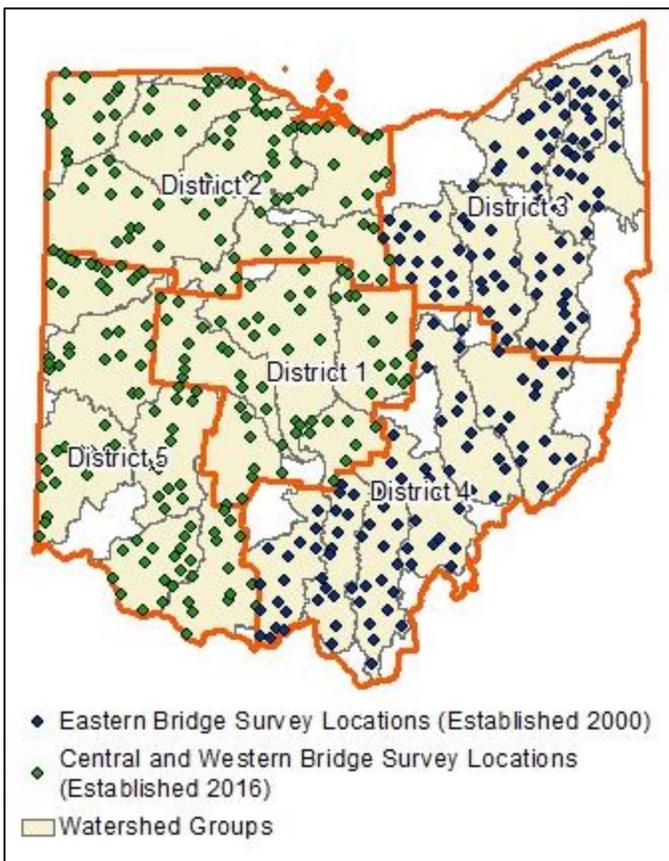


Figure 1. Ohio river otter bridge survey locations, watershed groups, and Division of Wildlife districts.

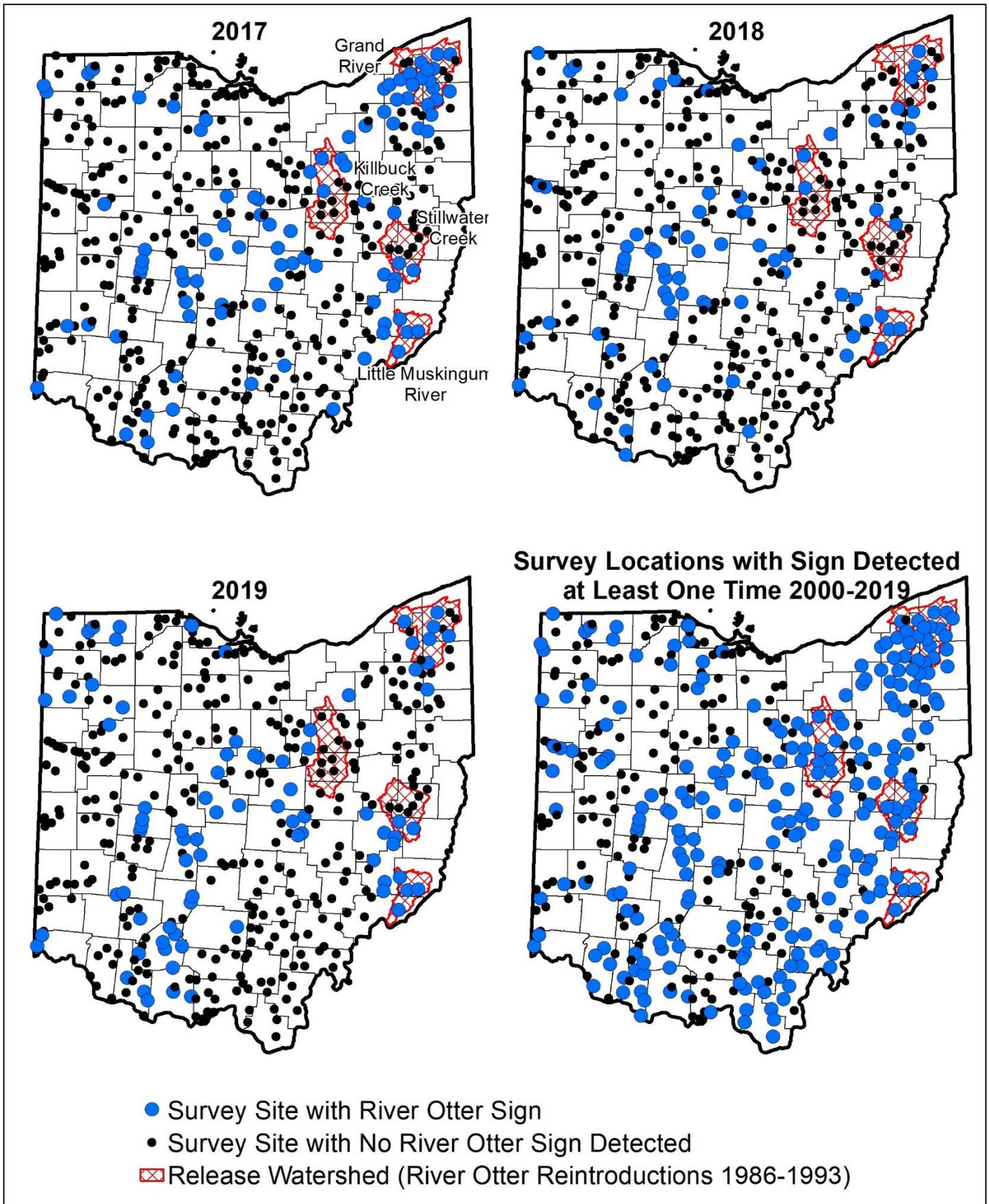


Figure 2. River otter reintroduction release watersheds, bridge survey locations with and without river otter sign detected in Ohio in 2017, 2018, and 2019, and bridge survey locations with and without river otter sign detected at least once from 2000 to 2019.

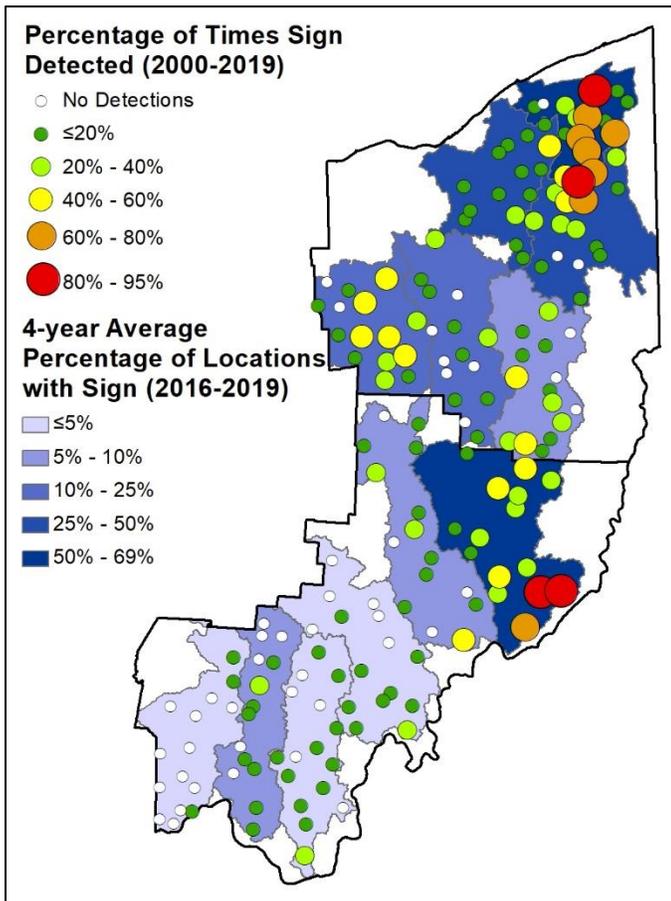


Figure 3. Percentage of times river otter sign was detected at each bridge survey location in eastern Ohio 2000-2019, and average percentage of survey sites with river otter sign by watershed group 2016-2018.

The results of surveys in 2019 were similar to the previous two years. Due to poor weather and flooding conditions, several surveys could not be completed, but a total of 400 surveys were conducted, with sign detected at 83 locations (21%). Tracks were observed at 69 locations (83%), scat was observed at two locations, latrine sites were observed at two locations, and multiple types of sign were observed at 10 locations.

**Eastern Ohio**

Since the implementation of river otter bridge surveys in Ohio, river otter sign in eastern Ohio has predominantly been located near the four watersheds where river otter reintroductions took place in the 1980s and 1990s (Figure 2). In recent years the eastern Ohio watershed groups with the highest proportion of river otter detections are the Wills, Duck Creek, and Little Muskingum Watershed Group which contains portions of Guernsey, Noble, Monroe, Washington, Belmont,

Coshocton, and Muskingum counties, and the Grand River Watershed Group which contains portions of Ashtabula, Trumbull, Geauga, and Lake counties (Figure 3).

The proportion of survey locations with sign detected in District Three in 2018 and 2019 was the lowest it has been since 2001 (Figure 4). However, due to poor weather conditions, 10 surveys in 2018 and 16 surveys in 2019 were not able to be conducted in District Three, so this may have contributed to the observed decline. Despite the lower rates of detection in 2018 and 2019, the detection rate in District Three remains higher than in District Four. Over the past five to 10 years, the trend in detections has been stable (Figure 5).

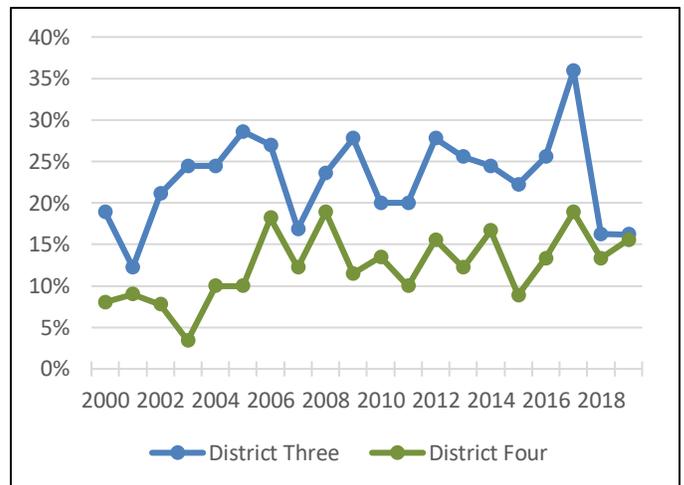


Figure 4. Percentage of bridge survey locations with river otter sign in District Three and District Four, 2000-2019.

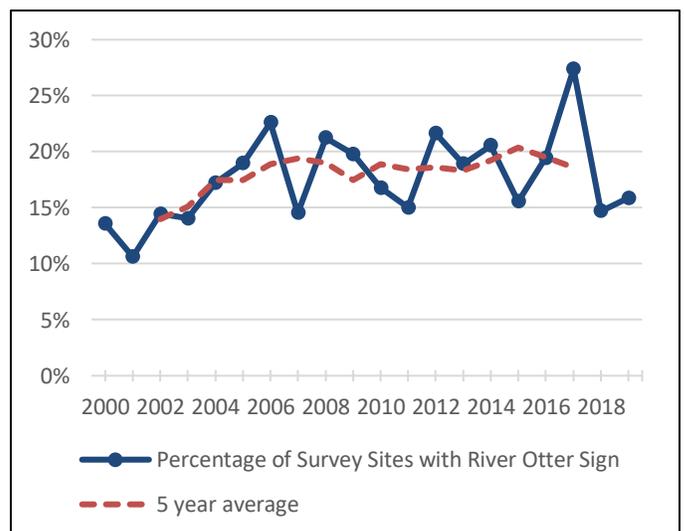


Figure 5. Percentage of bridge survey locations with river otter sign in eastern Ohio, 2000-2019.

### ***Central and Western Ohio***

Road-killed carcasses and verified observations collected through the division's online reporting database confirm the presence of river otters in central and western Ohio. The addition of bridge surveys in Districts One, Two, and Five in 2016 provided trends in river otter populations statewide, as well as evaluating distribution and relative abundance across the state.

Since the implementation of statewide otter surveys, detection rates and distribution of detections have been higher than expected in central and southwest Ohio. District One (central Ohio) has had the highest rate of detection of all districts statewide for the past four years (Table 1). Conversely, though harvest was legal in seven of the 13 counties in District One in 2016-2018 and in all 13 counties in 2019, only seven otters have been harvested in District One in the past four years (see Division of Wildlife 2019 Ohio River Otter Harvest Report). While it's possible the low harvest rates in this area are due to a lack of trapper effort, typically we would expect harvest rates to be higher if river otters are as relatively abundant in this area as indicated on bridge surveys.

Otter detection rates in District Five were higher than all other districts apart from District One in 2016, however detection rates decreased in 2017 and 2018.

In contrast to the relatively high rates of river otter detection in central and southwest Ohio, surveys in

District Two (northwest Ohio) began with low rates of detection, although detection rates have steadily increased over the past four years. River otter detections in District Two were restricted to the northern and eastern portions of the district in the first three years of surveys, but in 2019 otter sign was detected at several locations in the southwestern portion of the district as well.

The results from the newly implemented surveys may be indicative of higher otter populations in central and southwestern Ohio than previously thought. In the coming years, additional monitoring techniques such as conducting trail camera surveys at a subgroup of survey sites could be used to confirm trends observed on bridge surveys and may also provide additional information on the river otter population such as habitat preferences, activity patterns, and reproductive rates.

Ohio's river otter bridge surveys continue to be an important tool for tracking the distribution and relative abundance of river otters in Ohio. The information collected from bridge surveys can be used, in conjunction with data from harvest reports, trapper surveys, and river otter sightings and roadkill information, to track otter population trends across the state and inform the sustainable management of otter populations.

We are grateful to the division staff who put time and effort into conducting these surveys, as well as the many private landowners who allow staff access to their properties to conduct these surveys.

**Table 1. Number of river otter bridge surveys conducted, and number and percent of survey locations with sign present within each Division of Wildlife District from 2016-2019.**

		Year			
		2016	2017	2018	2019
District 1	Number of surveys conducted	61	60	61	56
	Number of surveys with sign present	20	27	30	24
	Percent of surveys with sign present	33%	45%	49%	43%
District 2	Number of surveys conducted	91	91	91	90
	Number of surveys with sign present	2	8	9	16
	Percent of surveys with sign present	2%	9%	10%	18%
District 3	Number of surveys conducted	90	89	80	74
	Number of surveys with sign present	23	32	13	12
	Percent of surveys with sign present	26%	36%	16%	16%
District 4	Number of surveys conducted	90	90	90	90
	Number of surveys with sign present	12	17	12	14
	Percent of surveys with sign present	13%	19%	13%	16%
District 5	Number of surveys conducted	90	90	90	90
	Number of surveys with sign present	26	10	12	17
	Percent of surveys with sign present	29%	11%	13%	19%