

Diet analysis of translocated river otters (*Lontra canadensis*) in Honeoye Lake

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Introduction

River otters were extirpated from New York State by the mid - 1890s as a result of unregulated trapping, water pollution, and disturbance of their wetland habitat. In 2000, the Department of Environmental Conservation released seven river otters in Honeoye Lake as part of the New York River Otter Project. The success of this population relies on the availability of prey which may vary depending on geographic location, season, and preference. Typical prey items include fish, crustaceans, and other aquatic organisms (Fig 1 and 5). The goal of this preliminary study was to explore the feasibility of detecting diet preferences based on river otter scat analysis.

Research Questions

What do river otters in the southern Honeoye Valley eat? What is the best method for collecting, processing, and analyzing otter scat?

Methods

Protocols exist for studies of this kind; however there is not a consensus on a single method. Methods utilized in this preliminary study were inspired by the graduate thesis of Melissa Skyer (2006).

- Scat (Fig 4) was collected on October 15th and October 28th at the Muller Field Station in the town of Canadice
- Searches for latrine sites were conducted by canoe
- Otter scat was collected, deposited in plastic bags, and frozen
- Samples were thawed and washed with water through a series of sieves with various mesh sizes
- Components caught by the sieve were air dried and examined



Figure 1. River otters feeding on fish

Sample Analysis

Samples were sorted into three groups: fish scales, fish bones and spines, and other aquatic species. Crayfish exoskeletons were easy to identify in scats. Fish scales presented a challenge due to the partial digestion and wear of the scales. Scales were viewed under dissecting microscopes and identified with a key reference by FLCC students (Fig 2 and 3).



Figure 2. Cycloid scales found in scat represent minnow, sucker, or pike species

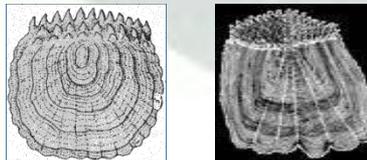


Figure 3. Ctenoid scales found in scat represent killifish, sunfish, and perch species

Results to Date

Major fish taxa found in scat samples include:

- Centrarchidae (sunfish): largemouth bass
- Percidae (perches): yellow perch
- Cyprinidae (minnows): minnow species
- Umbridae (mudminnows): mudminnow species

Other prey items identified include snake (species unknown) and crayfish.

Potential prey species found in Honeoye Lake include: largemouth bass, bluegill, pumpkinseed, black crappie, northern pike, chain pickerel, brown bullhead, central mudminnow, rainbow trout, bluntnose minnow, white sucker, rock bass, yellow perch, walleye, brook silversides, and golden shiner (Gilman 2004).



Figure 4. Fresh river otter scat (left) and aged otter scat (right)

What We Have Learned

- Conducting this preliminary study has allowed us to focus future research activities
- Our methods yielded some results, however, we are open to consider different field approaches
- Scat seems to be readily available from resident otters
- Dissecting and analyzing scat samples is extremely labor intensive
- Students have great interest in the project

Future Directions

To take the knowledge and experience gained from this pilot study to design and conduct a more extensive scientific study.

To incorporate educational goals in this study to include training students in field and laboratory techniques involving sampling, preparation and analyzing samples, and recording and analyzing data.



Figure 5. River otters feeding on fish and crustaceans

Literature Cited

Gilman B. (editor). 2004. Biodiversity of the Southern Honeoye Valley. New York: Finger Lakes Community College.

Skyer M. 2006. Food habits of a re-introduced river otter (*Lontra canadensis*) population in Western New York. M.S. thesis, Rochester Institute of Technology. 44p.