

River Otter (*Lontra canadensis*) Survey
of
Fishers Island
Southold, N.Y.
March 21-23, 2013



Otter photographed at Arshamomaque Preserve, Southold.

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STUDY GOAL: To determine the presence and distribution of river otters (*Lontra canadensis*) on Fishers Island, a potential source of otters for recolonizing eastern Long Island. Fishers Island is the largest island among the archipelago linking eastern Long Island, where river otters are very scarce and successful breeding has not been documented, with mainland Connecticut and Rhode Island, where robust otter populations are found.

INTRODUCTION: The river otter is a top-of-the-food-chain, semi-aquatic carnivore that was once found in all major watersheds throughout North America. Despite its common name, the river otter will utilize the shallow portions of all types of fresh and saltwater habitats, not just rivers, containing its main prey items: fish and crabs.

Unregulated trapping during the fur trade era (early 1600s through the mid-1800s), combined with water pollution and habitat degradation, resulted in the extirpation of the river otter from much of its historic range in North America, including Long Island, N.Y. (DeKay, 1842). By 1900, the New York State otter population was restricted to a small area centered on the Adirondack Mountains (<http://www.amnh.org/education/resources/rfl/web/bulletins/bio/biobulletin/story834.html>).

A field survey of Long Island's mammals by staff from the New York State Museum and Science Service initiated in the fall of 1960 and continued through the summer of 1963 found no evidence of river otters on Long Island, although the final report includes the notation,

"...during the past 100 years or so, a few otters have been observed at various localities on Long Island and some have been killed...many otter reports, especially certain recent ones and those from western Long Island, can best be explained as individuals which have come across the Sound from Connecticut, where the species has been increasing in numbers" (Connor, 1971). It should be noted that this survey focused its field efforts, trapping, and specimen collections on the small mammals from shrew to squirrel size.

Further evidence that Long Island's river otter population had not recovered by the 1960s is found in a 1972 publication by the Long Island chapter of The Nature Conservancy titled, "The Natural History of Long Island." The publication makes no mention of river otters.

Conservation laws and otter reintroduction programs have helped this species recover in much of its historic range. In 1990, New York's otter population had expanded to encompass most of the watersheds in the eastern half of the state. Much suitable habitat in the western half of New York, and on Long Island, remained unoccupied. Recognizing the limits of natural recolonization and to assist the otter's recovery, the New York State River Otter Project was established and between 1995 and 2000, 270 river otters were captured from sites in eastern New York and released at ten sites in the western part of the state (<http://www.dec.ny.gov/animals/9355.html>).

Robust otter populations are now found in many areas on the mainland adjacent to Long Island. New Jersey's Division of Fish and Wildlife proposes to open a very limited otter trapping season in northeastern New Jersey, adjacent to the metropolitan NYC area, based on evidence that the otter population in that area has increased (Garris, 2013). Westchester County, N.Y. (Wildlife Management Area 3S) currently has a 110-day otter trapping season with no bag limits. Connecticut's otter population has been slowly expanding; their otter trapping season extends for 4.5 months and is permitted throughout the state (Paul Rego, 2008). All of Rhode Island's major watersheds are inhabited by river otters, but hunting and trapping of otters is currently not allowed in that state (Brown, 2009).

A 2008 survey to determine the presence and distribution of river otters on Long Island documented otter scent stations in two distinct, widely separated locations. One encompasses approximately twenty miles of the north shore of Nassau County and western Suffolk (and their adjacent tidal creeks, embayments and freshwater ponds). Another much smaller area was documented 45 miles further east on

Shelter Island and in Southold on the north fork (Bottini, 2009). It is assumed that Long Island is slowly being re-colonized by juvenile otters dispersing from populations in Westchester County, N.Y. and coastal Connecticut.

Although river otters are excellent swimmers, they are predisposed to travel in relatively shallow water where they are most successful in finding and capturing prey. Large expanses of open water may be a barrier to river otter movements, dispersal, and recolonization of unoccupied habitat. Maximum open water crossings by river otters in coastal Alaska as recorded by radio telemetry studies were 6.5 km, or 4 miles (Blundell et. al., 2002).

River otters have been documented on Nomans Land Island, MA and Martha's Vineyard, MA. The former is too small to support a permanent population of otters, and it is assumed that otters swim the 2.7 miles (4.3 km) between the two (Johnson, 2013). At least one otter made the crossing to Nantucket (Johnson, 2013), either from Martha's Vineyard (7 miles or 11.3 km) or Monomoy N.W.R. (8.5 miles or 13.7 km). Therefore, the maximum open water crossing recorded for river otters in coastal Alaska does not appear to hold true for otters inhabiting the eastern seaboard.

It is possible that the Fishers Island – Great Gull Island – Plum Island archipelago acts as a travel corridor for juvenile otters dispersing from coastal Connecticut and Rhode Island to Long Island (20 miles or 32 km) in search of unoccupied habitat. The open water crossings along that route are as follows:

- Connecticut or Rhode Island to Fishers Island: 1.9 mi. or 3.1 km.
- Fishers Island to Little Gull Island (4.6 mi. or 7.4 km) or Great Gull Island (5.0 mi. or 8 km).
- Great Gull Island to Plum Island: 2.1 mi. or 3.4 km).
- Plum Island to Orient Point, Long Island: 1.3 mi. or 2.1 km).

The maximum open water crossing along this route is 5 miles or 8 km.



Map 1. Open Water Distances between Orient, N.Y. and the islands comprising the Long Island - Fishers Island - Connecticut and Rhode Island archipelago.

STUDY AREA: Fishers Island is located approximately two miles south of eastern Connecticut, two miles west of Rhode Island, and ten miles ENE of Orient Point, N.Y., the closest point on Long Island. Comprised of glacial deposits that also formed Plum Island and Great Gull Island, and the north shore of Long Island to the west, and the Elizabeth Islands and part of Cape Cod to the east, the seven-mile-long by one-mile-wide Fishers Island is dotted with many freshwater kettlehole ponds, freshwater marshes and swamps. Many tidal ponds, salt marshes, and coves are found along its irregular coastline. All of these provide excellent habitat for river otters.

METHODS: River otters are elusive, difficult to observe in the wild, and have large home ranges, making them difficult to census. The most commonly used census techniques for river otters are trapper surveys and harvest records, track surveys, and scent station surveys. Since trapping otters is prohibited on Fishers Island, trapper surveys and harvest records are not a feasible option for this area. Reliable track surveys depend on consistent snow cover, which Fishers Island

lacks. Therefore, scent station surveys are the most reliable census technique for the island.

Otter scent stations are sites where otters leave their scat and scent. These sites are often found where otters must exit the water to get around a dam or other obstacle, where they exit the water to travel overland to reach another pond or creek, on points of land that jut into a waterway, at the confluence of tributary streams, and on small islands (Kulish, 1969). They are generally located within a few meters of the shoreline (Swimley et. al., 1998).



Figure 1. Typical otter scat with very fresh scat (left), older scat (middle) and the oldest, bleached remains of fish scales and bones (right).

In northern latitudes, otter scent station surveys are best conducted over the winter months. Otter marking activities at scent station sites peak during the winter mating season. Their scat contains a higher proportion of fish at this time of year, minimizing confusion with raccoon (*Procyon lotor*) scat, which resembles otter scat when both are feeding on crayfish (Serfass et al. 1990, Serfass 1994). The lack of leaves and herbaceous cover during winter also makes surveying more efficient.

Field surveys for evidence of otter sign (scat, tracks, and scent mounds) were conducted over three days in March, 2013. Areas selected for field surveys were determined based on the following:

- 1) a review of aerial photos of Fishers Island to identify the most likely otter scent station sites; and
- 2) sighting information obtained from island residents.

Jane Harvey, Pierce Rafferty, Bob Evans and Lou Horn were helpful in securing permissions from landowners and identifying access points and trailheads.

Each potential scent station site was inspected for evidence of river otters (scat, scent mounds, scrapes, tracks). Evidence of otters was documented with photographs and scat samples, and each scent station was identified and referenced with UTM coordinates using a Garmin GPS map76Cx unit. Scent stations that would be suitable locations to set up remote surveillance cameras were also identified.

RESULTS: Fifty-seven (57) sites were surveyed on Fishers Island by foot and kayak from March 21-23, 2013. Otter sign was noted at 24 sites, with scent stations (scat) found at 23 sites and otter tracks at one site. Two scent stations also had a den nearby.

A majority (20) of the scent stations were located adjacent to freshwater wetlands (ponds, swamps and marshes), and two were located adjacent to a tidal pond (Island or Oyster Pond). The tracks were found on an otter run (trail) connecting the tidal waters of Fishers Island Sound and Mud Pond (freshwater).

After the field survey was completed, I learned that otters frequent Pirate's and Darby Coves, and use the docks at the Pirate's Cove Marina as a scent station. Chip DuPont, the owner of Pirate's Cove Marina, has noted otter use of his dock for at least 20 years (Williamson, 2013).

River otter sign was well distributed throughout the island, with the exception of the West End area, which was underrepresented in the survey. Several potential scent station sites on the West End (the freshwater ponds near North Hill, the Stony Beach peninsula, and the large freshwater pond located between Munnatawket Avenue, Central Avenue, and Crescent Avenue near Hawks Nest Point) were not surveyed because of time constraints.

DISCUSSION: Based on the number and distribution of river otter scent stations documented on the relatively small island (4 square miles), Fishers Island is widely used by otters. Scent station surveys are useful for documenting the presence and distribution of river otters, but they do not provide reliable estimates of population size, and the number of otters with established territories on Fishers Island is unknown.

River otters have large territories, and it is possible that many of the otters utilizing Fishers Island have territories that include adjacent islands as well as the mainland. With the exception of females caring for their newborn to several month-old young, otters are constantly moving around in their territory, seldom staying in one place for more than a few days. It is not known if any of the otters reside solely on Fishers Island, or how much time is spent there on an annual basis.

CONCLUSION: Fishers Island has a population of river otters that are widely distributed throughout the island, utilizing a variety of the island's fresh, brackish and saltwater habitats, and adjacent upland areas. Based on the report of river otters reaching Nantuckett Island, it seems possible that juvenile otters dispersing from Fishers Island, coastal Rhode Island and eastern Connecticut natal sites could reach eastern Long Island by way of the Fishers Island – Plum Island archipelago.

ACKNOWLEDGEMENTS: Many thanks to colleagues Luanne Johnson and Elizabeth Baldwin of Biodiversity Works for taking time out of their busy work and study schedules to assist on the survey. Their field expertise and advice was invaluable. In addition to her contribution to the field survey, Juliana Duryea organized the data and reviewed the final report. Jane Harvey generously offered her lovely home for the survey team to warm up, rest and refuel. Fishers Island residents Bob Evans, Pierce Rafferty, Ken Edwards, Steve Malinowski and Lou Horn all provided very helpful local knowledge. Bob DeLuca of the Group for the East End and Rick Kedenburg of North Fork Audubon provided key Fishers Island contacts. This survey would not have been possible without the support of the Fishers Island Conservancy and its current president Tom Sargent, as well as the Long Island River Otter Project's longtime supporters John DeCuevas of the Baker Foundation and Kevin McAllister, our Peconic Baykeeper.

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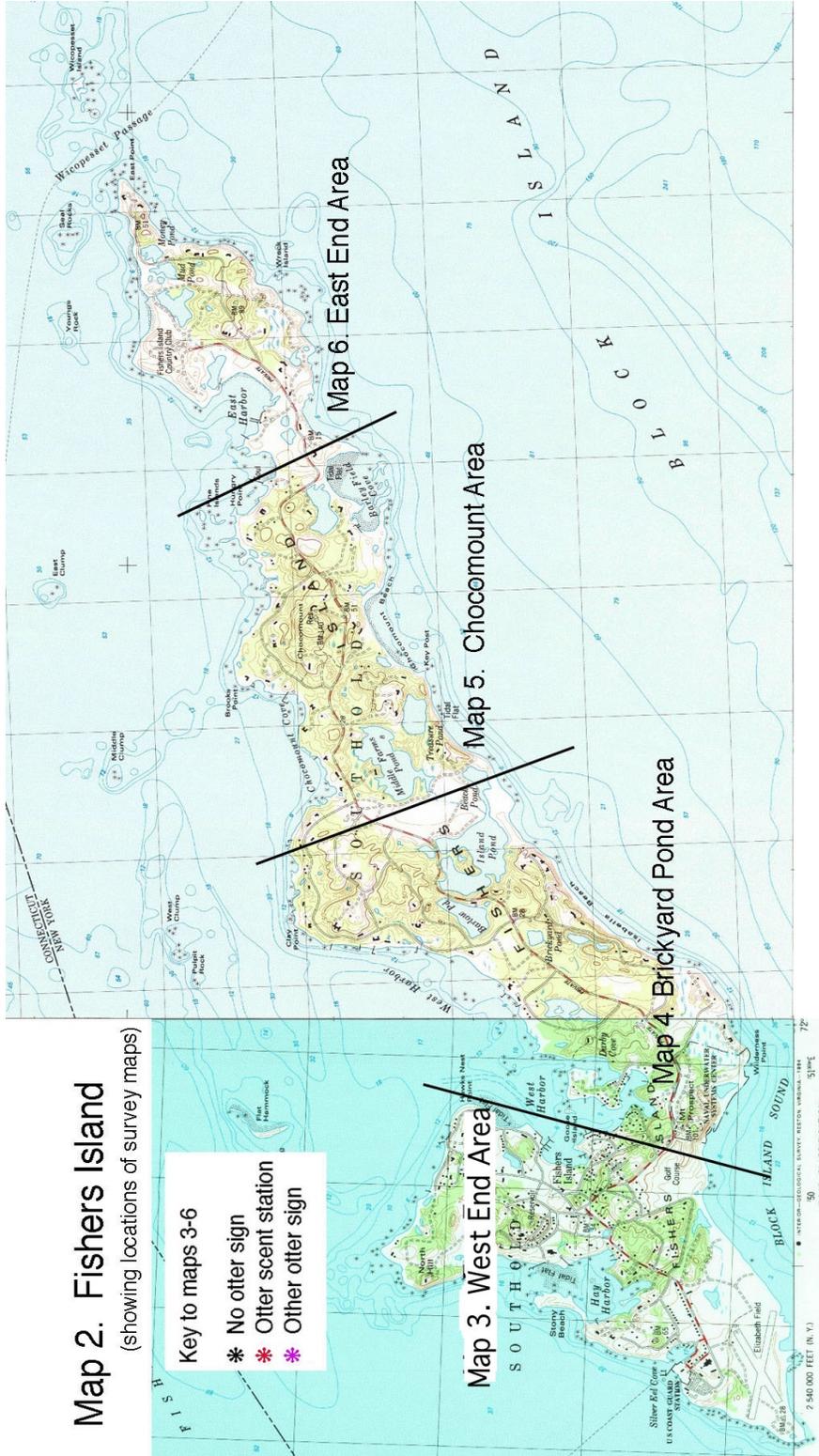
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APPENDIX I. MAPS

Map 2. Fishers Island (map key and locations of field survey maps).

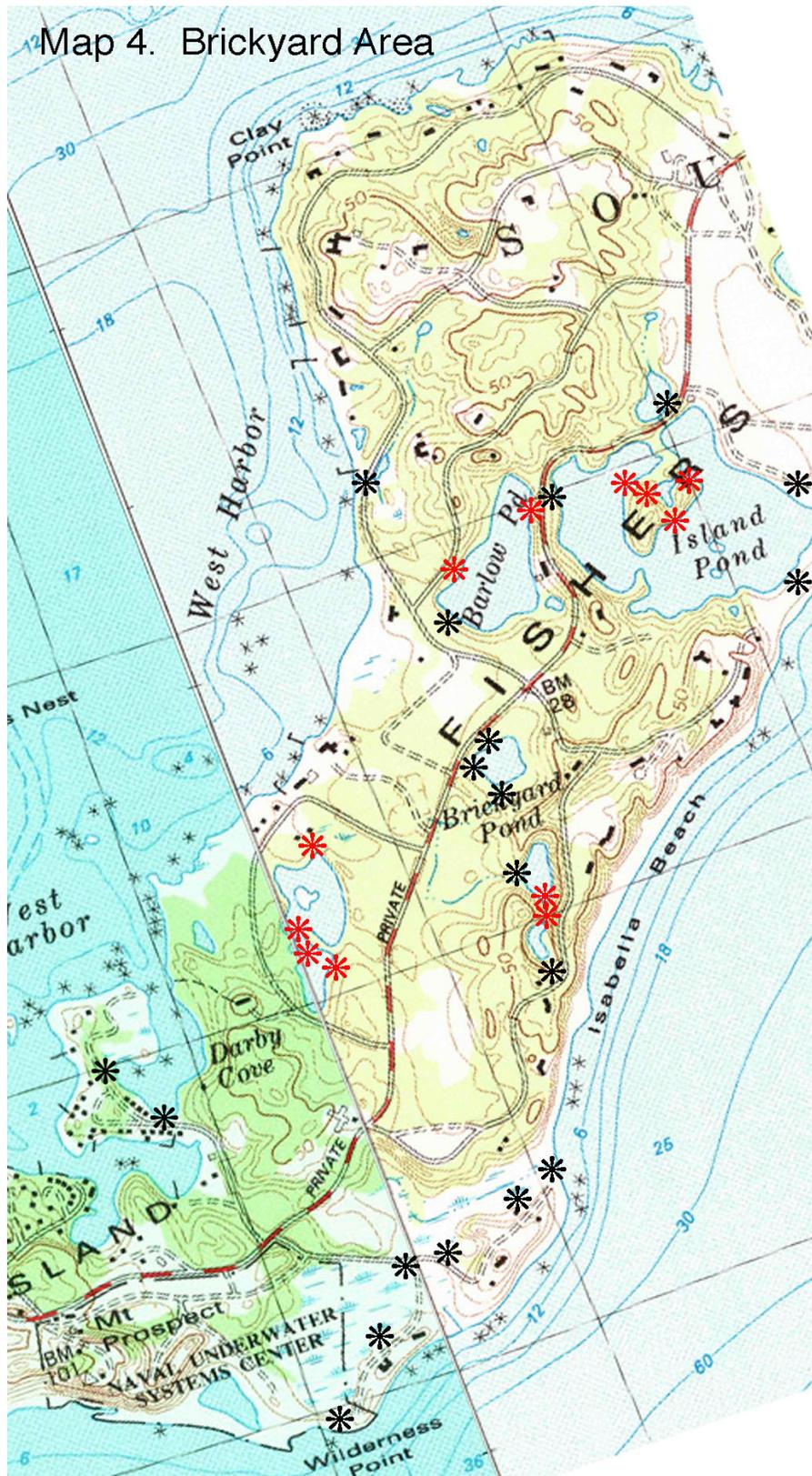


Map 3. West End Area



Map 3. West End Area

Map 4. Brickyard Pond Area



Map 5. Chocomount Area



APPENDIX II. SURVEY DATA

Site Name	UTM Coordinates	River Otter Sign Noted	Dist. to Water (m)	Survey Date	Observers
Brickyard Swamp – Boker Doyle Trail West #1 *	19T 0248746 4572374	1 scat pile **	1	03/21/13	MB, JD
Brickyard Swamp – Boker Doyle Trail West #2 *	19T 0248726 4572349	4 scat piles **	2	03/21/13	MB, JD
Brickyard Swamp – Boker Doyle Trail North *	19T 0248741 4572604	Scrapes, 12 scat piles **	1	03/21/13	MB, JD
Brickyard Swamp – Boker Doyle Trail East *	19T 0248809 4572348	Scrapes, 5 scat piles **	1	03/21/13	MB, JD
Clay Pit Pond – South	19T 0249298 4572221	20 scat piles (1 fresh) **	2	03/23/13	MB, JD
Clay Pit Pond – North	19T 0249324 4572263	Game trail, scrapes, 12 scat piles (1 fresh) **	2	03/23/13	MB, JD
Barlow Pond – West (Barlow Pond Lane) *	19T 0249398 4573121	Game trail, 6 scat piles, 1 scat mound **	1	03/23/13	MB
Barlow Pond – East (East End Lane) *	19T 0249712 4573255	Game trail, 4 scat piles **	1	03/21/13	MB, JD
Island Pond – Nature Preserve Path	19T 0250035 4573157	Game trail, 7 scat piles **	6	03/21/13	MB, JD
Island Pond – Island Pond South	19T 0249980 4573060	Scrapes, 4 piles **	3	03/21/13	MB, JD
Island Pond – Nature Preserve Pond *	19T 0249955 4573127	Game trail, 12 scat piles **	8	03/21/13	MB, JD
Island Pond – Island Pond North *	19T 0249965 4573136	Game trail, 30 scat piles, 3 scat mounds **	3	03/21/13	MB, JD
Middle Farms Pond North Peninsula *	19T 0250794 4573823	Game trail, scrapes, 100 scat piles (3 fresh) **	1	03/22/13	LJ, JD
Middle Farms Pond East Cove	19T 0250972 4573755	Game trail, 50 scat piles **	1	03/22/13	LJ, JD
Middle Farms Pond Southeast Peninsula *	19T 0250907 4573586	Game trail, 21 scat piles **	1	03/22/13	MB
Middle Farms Pond Southwest Peninsula	19T 0250619 4573400	Game trail, 15 scat piles (1 fresh) **	1	03/22/13	LJ, JD
Treasure Pond Trail *	19T 0250955 4573495	Game trail, 1 scat pile (1 fresh) **	1	03/22/13	MB
Swan Pond North Peninsula *	19T 0252721 4574033	30 scat piles	1	03/22/13	JD, EB
Swan Pond South Den Site *	19T 0252769 4573947	Den, 24 scat piles, 5 scat mounds (3 fresh) **	2	03/22/13	MB, LJ
Golf Course Fairway – East Main Road	19T 0253437 4574251	4 scat piles **	3	03/22/13	JD, EB
Golf Course Fairway – North of Dirt Road	19T 0253948 4574124	6 scat piles (1 fresh) **	2	03/22/13	MB, LJ
Ice Pond Area #1	19T 0254049 4574804	2 scat piles **	1	03/22/13	MB
Ice Pond Area #2	19T 0254105 4574811	1 scat pile	1	03/22/13	MB
Mud Pond	19T 0254592 4575171	Game trail, tracks	N/A	03/22/13	JD, LJ, EB

* Recommended Camera Site

** Scat sample collected

MB = Mike Bottini

JD = Juliana Duryea

LJ = Luanne Johnson

EB = Elizabeth Baldwin

APPENDIX III. SURVEY TEAM.

Mike Bottini

Mike has a M.Sc. from the University of British Columbia, Vancouver where he studied elk in Banff National Park. His wildlife research subjects have included salamanders, turtles, and piping plovers. He is currently studying river otters on Long Island, N.Y.

Juliana Duryea

Juliana has a B.S. in Natural Resource Planning from the University of Vermont, works as a piping plover steward for the Town of East Hampton, and as a biologist with the Long Island River Otter Project.

Luanne Johnson

Luanne is working on her Ph.D. dissertation at Antioch New England Graduate School in Keene, N.H. based on skunk research on Martha's Vineyard, and is currently studying river otters, belted kingfishers, bank swallows, piping plovers and other beach nesting bird species on Martha's Vineyard where she is the director of Biodiversity Works.

Liz Baldwin

Liz is finishing up her M.Sc. at Antioch New England Graduate School in Keene, N.H. Her thesis is based on her river otter research with Biodiversity Works on Martha's Vineyard.