

## IN THE FIELD

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## Tracking turtles from turbid waters

BY JENNIFER SMITH

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In a Hofstra University basement, nearly 500 turtle hatchlings paddle and splash under the watchful eye of graduate biology student Erin Horn.

Each tiny diamondback terrapin wears a colored tag denoting its origin: yellow for those scooped up from Cape May, N.J., orange for those from Rhode Island, white for hatchlings from the Peconic Bay.

Terrapins marked with green come from Jamaica Bay in Queens, where researchers recently found certain chemicals apparently had “feminized” male winter flounder, hampering their development and reproductive success. Known as endocrine disruptors, these chemicals include estrogenic compounds in industrial detergents that can either mimic or block hormonal activity. The chemicals get into the bay through discharge from sewage treatment plants and runoff from landfills.

In the first such study to focus on turtles, Horn is examining how those chemicals affect the development of diamondback terrapins. Her hypothesis: As a result of their heightened exposure to the chemicals, diamondback terrapins from Jamaica Bay “would have more shell abnormalities, and reduced fitness and locomotive performance” than those from uncontaminated areas. She also hopes to measure how contaminants accumulate over time in the tissue of these brackish-water turtles, which can live as long as 40 years in captivity.

Prized for turtle soup, diamondback terrapins were hunt-



PHOTO BY ELIZABETH SAGARIN



PHOTO BY JAMES A. ESCHER

Erin Horn, a graduate student at Hofstra University, is studying the effect of pollution on diamondback terrapins.

ed nearly to local extinction around 1900. Changing tastes and lower demand for luxuries during the Depression allowed the turtles to stage a quiet comeback in the coastal fringes of Long Island and Queens.

Still, threats remain. Raccoons regularly raid terrapin nests, eating up to 95 percent of the eggs females deposit on sandy high ground, said Hofstra herpetology professor Russell Burke. And the number of nests found each year at Jamaica Bay has declined by 25 percent since 1998.

“We expect most of that is due to a decrease in the number of adult females in the population,” Burke said. “There is good reason to think that the chemicals in the water could affect the sex ratio of the offspring . . . [or hurt] the ability of the turtles to reproduce.”

Scientists don’t know if the chemicals have affected the turtles’ sex ratio in the wild. The data is elusive: Unlike female diamondbacks, males tend not to come ashore, so they are difficult to count.

Last summer, Horn collected clutches of eggs from Jamaica Bay and the three control areas. She froze some eggs from each clutch, so the contaminant levels could be sampled later. The rest she incubated under identical laboratory conditions, and she set about tracking the developmental progress of each group.

Six days a week, Horn plucks each tiny turtle from its watery berth and places it in a plastic tub to enjoy a solitary ration of protein-loaded food pellets called “turtle brittle.” Once a month, the hatchlings get a more

thorough workover: They are weighed, their shells measured, and they get timed on how quickly they can get back on their feet after being flipped on their backs.

“We’re looking at how well can they right themselves,” as a measure of overall fitness, Horn said. “In the wild, a lot of times turtles find themselves upside down. . . . If it takes them a long time, they’re probably more likely to be eaten by a raccoon or a rat.”

Six months into her research, there are already some surprises.

In nature, diamondback terrapin clutches farther north tend to have more eggs but yield smaller hatchlings than those in the south, Horn said.

But the green-tagged terrapins from Jamaica Bay appear

to be growing faster than the others, even those hatched at about the same time. Horn said that could indicate some interaction between endocrine disruptors and the turtles’ thyroids.

“The Jamaica Bay hatchlings are actually larger than New Jersey ones, which is interesting,” Horn said.

After one year of monitoring, the hatchlings will be tagged and returned to the wild, where researchers who encounter them later can track their progress.

“After I’m all done collecting data in September, these guys are going to go back where they came from,” Horn said, gently cupping a 2-inch-long turtle from Queens. “We’ll put him back in Jamaica Bay, and hopefully we’ll find him again.”

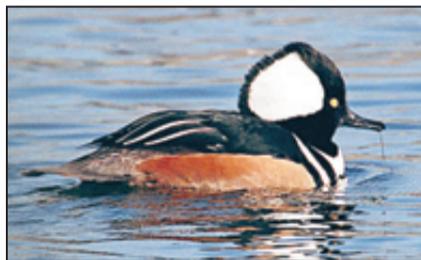
## THE MONTH OF FEBRUARY

## You can see

Ducks give voice to this, our muffled season. Our Island’s savvy birders know you can take almost any road to the water here — to Long Island Sound, the Peconics, the South Shore bays — and there will be ducks.

According to the authoritative Web site libirding.com, on the North Fork, good ducking sites include Cedar Beach in Southold (for scoters, buffleheads and red-breasted mergansers) and Husling Pond in Mattituck (hooded mergansers and ring-necked ducks). On the South Shore, Dune Road (from Shinnecock Inlet west to Cupsogue Beach County Park), is also prized for ducking. Farther west, the Wertheim National Wildlife Refuge provides shelter for wood ducks, black ducks and canvas backs along the Carmans River.

Long Island is a wintering grounds for some ducks and a way station for other birds winging their way north on the Atlantic flyway, their path from the southern hemisphere to the northern. Biolo-



NEWSDAY PHOTO / BILL DAVIS

A male hooded merganser duck, which birders can see on L.I.

gists call it a “migration stopover.”

Of course, with ducks, the delight is not just what you see but what you hear. We speak of their “quacks.” Ducks start vocalizing a few days before they hatch, say studies cited by Ducks Unlimited, a national hunting/conservation group. Hens have “assembly” calls to get their ducklings back in line, and some males of the species have courting whistles (which the females cannot produce).

Biologists cite “hail calls” used by fe-

male mallards to invite passing flocks of her species to land near her. Ducks call before leaving the ground, apparently to coordinate flights and to assemble their family members as they search together for food and shelter in the cold.

— JOE HABERSTROH

## Out and about

**MAPLE MAGIC.** 1 to 2:30 p.m. Feb. 3, Caumsett State Park, West Neck Road, Lloyd Neck. Learn cultural, economic and scientific background of maple sugaring through this hands-on program. Ages 18 and up. \$3 for adults. Information, 631-423-1770.

**COLD PRINTS.** 11 to 12:30 p.m. Feb. 3, Gardiner County Park, West Bay Shore. A woody hike in search of animals and their winter homes. Free. For reservations, 631-356-3681.

**COME HITHER.** 10 a.m. Feb. 6, Hither Hills West Overlook. Hike through Hither Woods, following the Serpent’s Back Trail to the shoreline overlooking

Napeague Bay. Meet at the Hither Hills West Overlook, off Route 27, about a mile east of the Montauk Highway / Old Montauk Highway split. Free. Led by Ed Porco, 631-668-2093.

**ROCK ON.** 10 to 11:30 a.m. Feb. 9 at Sunken Meadow State Park, Kings Park. A presentation on the formation of Long Island, then a hike to look at geological features. Free. For reservations, 631-356-3681.

**NO-NAME HIKE.** 1 to 3 p.m. Feb. 17 at Caumsett State Park, West Neck Road, Lloyd Neck. They’re calling this “just a hike,” and we like that. Ages 18 and up. \$3. Reservations, 631-423-1770.

**SNOW BIRDS.** Noon to 1:30 p.m. Feb. 24 at Point Lookout. Saunter along the shore and scan offshore waters for harlequin duck, common and red-throated loon, horned grebe, brant and Bonaparte’s gull. Binoculars provided, if needed. Free. Guided by Peter Walsh of Seatuck Environmental Association. Reservations, 631-356-3681. — LAURA MANN