



News from..

# Hudsonia

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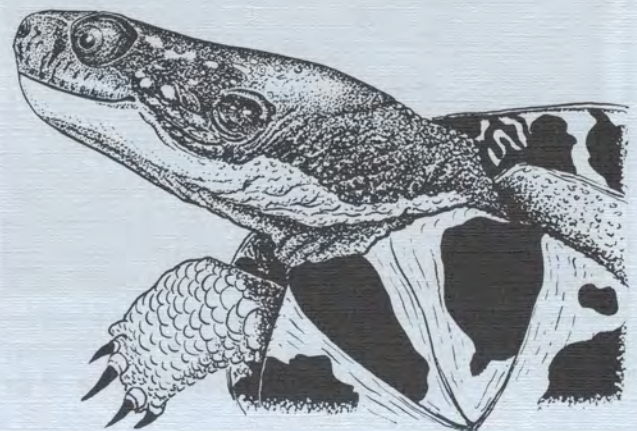
## TIME AND THE BLANDING'S TURTLE

On mild days in spring, adult Blanding's turtles bask and feed in the sun-warmed floating carpet of the marsh surface. They stick their heads out of the water and peer about, and their lemon-yellow throats are reptilian beacons that blaze across the brown, green and red ooze. I think Blanding's turtles are able to see each other's yellow throats, but I can only imagine what they see beyond the margins of the wetland.

As an educated guess, a Blanding's turtle can live to the age of 45 years or more. A turtle waving its yellow flag today could have been hatched at the end of World War II when our era of wetland preservation had just begun. The same turtle, if it lived in Dutchess County, N.Y., would have lived through the flood of 1955, the drought of 1965, and the flood of 1975. It would have seen beavers return to Dutchess, damming streams and creating habitat for marsh-dwelling insects and the turtles themselves. It might have seen a rural road built on fill across its marsh. Private motor vehicles would become more abundant, and crush more turtles on the roads. It would have seen homes, schools, golf courses, and shopping centers built next to its marshes. And during its life many more of its relatives would be picked up by children and dropped in the nearest pond - suitable habitat or not - when their young keepers became tired of them.

### Distribution and Habitat

Although Blanding's turtles occur from Nebraska to Nova Scotia, there is concern about the future of the species in most places where it occurs, including the heart of its distribution in Minnesota, Wisconsin and Michigan. They have been found in 10 of Dutchess County's 20 towns, at a total of some 50 sites since 1940. This makes Dutchess one of two New York foci for the species, with the other area around the upper St. Lawrence River. There are only 8 county sites where more than a single individual Blanding's turtle has been found in the last 10 years. Based on estimates of known available habitat and population density, there could be fewer than 200 adults in Dutchess County. Not very many. Not if you know that a population of 500 might be needed for long-term genetic viability.





Blanding's turtle habitat in Dutchess County is most often a glacial outwash plain with flat or gently-rolling, well-drained gravelly soil, numerous wetlands, and an abundant supply of groundwater. In the marshes themselves there is dense low wetland vegetation, but little or no tree canopy. There are scattered shrubs or shrub thickets, most often buttonbush. There are robust herbaceous emergent plants such as purple loosestrife or cattail, along with smaller herbs like smartweeds and bur-marigolds. Floating plants are also conspicuous, and include filamentous algae, duckweeds, liverworts, grasses, or water-lilies. Standing dead trees and shrubs, logs, branches, dead leaves, and other plant debris generally abound. The marsh bottom is silt or peat.

The most-studied set of habitats in Dutchess comprises three sites with 14 wetland units all told. Eleven of these have been haphazardly modified by human activities during the hypothetical 45-year lifespan of a Blanding's turtle elder. These alterations included filling, dumping, dredging, and damming. As a result, some of the wetlands became worse Blanding's turtle habitat and some became better.

These prime habitats are on top of one of New York's most important aquifers where residential wells often yield over 100 gallons per minute!



*Blanding's turtle habitat*



*Buttonbush, Cephalanthus occidentalis*

There is a fine trout stream with public fishing access, and the wetlands provide nesting habitat for wood duck, mallard and black duck. And some of the last livestock farmers in the area have actually made a good living while producing food for the rest of us. Thoughtful yet stringent protection of the wetlands, the water supply, the fish and game, and the farms could go hand-in-hand, with long-term benefits to all.

### A Place in the Sun

How do Blanding's turtles live? I can speak only of the adults, because very little is known about the behavior of the young. The adults become active in late March or early April, when all the ice is gone from the wetlands and the surface water temperatures rise to 26-36°C in the warm sunshine. In spring, the turtles bask in the sun a lot, either perched above the water on logs, or half-buried in the "soup" of algae and detritus at the surface of the marsh. They forage just under the surface for insects, snails, crustaceans, and tadpoles.

The marshes where the turtles spend the spring and in some places summer as well, range from 0.4-8.0 hectares in area, with water depths of 30-120 cm. Some of these habitats



## THE BLANDING'S TURTLE



dry up in late summer, others hold a foot of water all year. Generally there is little evidence of surface water flow through the wetlands, and they may be quite "stagnant" looking. Dense fringes of shrubs or trees block the wind but barely shade the water.

Blanding's turtle females leave the wetland once a year in June, sometimes migrating over a kilometer, to dig a hole and deposit up to 17 eggs. They lay them in coarse-textured, well drained, quickly-warming soil. The nest may be made at the edge of a field, in a yard or garden. One nest site was in a flowerbed next to a swimming pool. The incubation period is about 60 days, and when the young hatch they dig up out of the nest and somehow find their way to water.

Adult Blanding's turtles of both

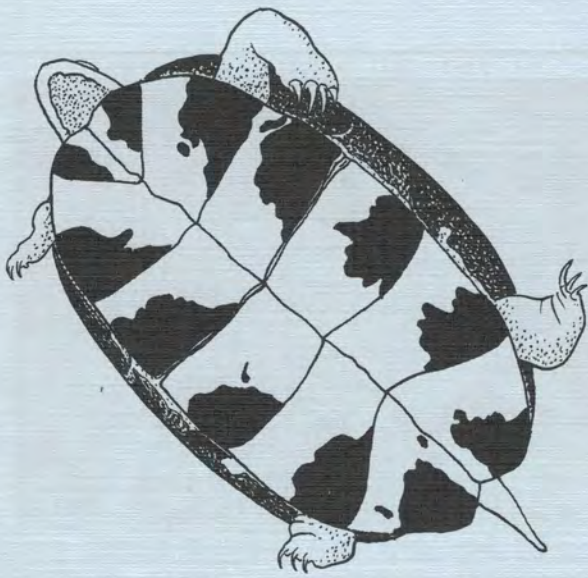
sexes are frequently found on land, especially in spring. Most of these turtles are apparently moving from one wetland to another, probably in response to changing water levels and other conditions in their marshes. I have handled nearly 100 Blanding's turtles in Dutchess County, tagged or photographed for individual identification. Turtles frequently showed up in two or three different but nearby wetlands, as well as moving around within a wetland. Radio-tracking, in which a miniature radio transmitter is affixed to a turtle's shell, has been conducted by the New York State Department of Environmental Conservation (DEC) with some of the same individuals I studied at two localities. The radio work and tagging provided complementary evidence of movement patterns and habitat use.



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*Individual black markings on plastron*

It is difficult to find Blanding's turtles after mid-June. They no longer stick their yellow necks way out of the water, instead just poking nose and eyes above the algae. However, they continue to move within and between wetlands. Sometime in fall they seek out a wetland or pond where they can spend the winter in the sediments beneath the water, safe from freezing temperatures, scarcely breathing in the cold, well-oxygenated water, and rarely moving.

#### **How Blanding's Turtles Are Studied**

For scientific study, I capture Blanding's turtles by hand, dipnet, and live trap. Each turtle is then measured and weighed precisely. I determine the turtle's sex by inspecting its under-shell (plastron) and the base of its tail. I photograph the turtle (individual adults can later be recognized by the shape of distinctive black markings on the plastron), examine it for parasites, scars, and abnormalities, and take notes on characteristics of its habitat. I may or may not attach a small white plastic tag, bearing a number and the legend REPORT EXACT LOCATION DATE AND NUMBER BARD COLL FIELD STA, to the rear edge of the carapace using quick drying, clear, waterproof epoxy. The whole handling process takes half an

hour, then I return the turtle to the spot where I found it.

In 1983, the DEC declared the Blanding's turtle a Threatened species in New York and gave it unambiguous legal protection. It is illegal to collect, injure or kill a Blanding's turtle. A special permit from the DEC is required even for scientific study. The conditions of my research permits dictate where, when and how I can catch Blanding's turtles, whether or not I can tag them, and how quickly I must release them. I am not allowed to solicit assistance from the public in finding or handling the turtles, and my field assistants must be approved by the DEC Endangered Species Unit. If I find a Blanding's turtle in a previously unknown locality, I must inform the DEC in writing within 48 hours.

Nonetheless, the habitats that are absolutely required by Blanding's turtles for their survival are not automatically protected. Most wetlands in which the turtles occur are less than 5 ha in size and therefore are not mapped and protected by the Freshwater Wetland law until it has been demonstrated that Blanding's turtles use them. Then the DEC can confer discretionary protection. But if someone fills, drains, or dredges an "undersize" Blanding's turtle wetland before the presence of the turtle is demonstrated, it is too late for that piece of habitat.

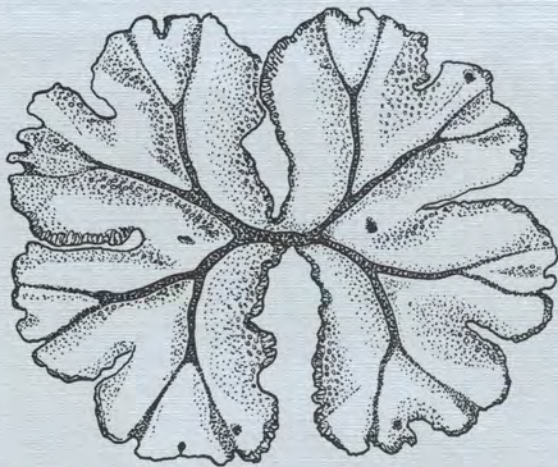


*Blanding's turtle habitat*



## What Needs to be Done?

I think it is time to "stick our necks out" to protect Blanding's turtle habitats in Dutchess County. Potential habitats could be mapped using existing topographic maps, soil maps, and aerial photographs. They could then be verified by quick field checking. Maps of suitable habitat could be consulted by municipal planning boards and by state agencies when local land use changes are proposed. If a suitable habitat could be affected, field work could be conducted (in spring, and under any required DEC permits) to determine whether or not there are Blanding's turtles present. The cost of such a study could be borne by the developer, much like the cost of soil tests used to determine suitability for septic systems. If Blanding's turtles were present, the developer could be asked to design the construction, mine, road, or other alteration in a way that would be compatible with the protection of the wetlands, overland travel-ways, and potential nesting areas. In most cases, it would be possible to harmonize development and habitat protection, and in fact this is being done at some Dutchess development sites already.



*The floating liverwort, Ricciocarpus natans*



*A partially filled-in Blanding's turtle habitat*

## Why Should We Bother?

Rare and declining species and vulnerable habitats are part of humankind's natural and cultural heritage. These components of nature are useful to society in many ways. All species of animals and plants, for example, contain unique genetic material that is potentially useful to us for the development of drugs, food, fiber, and other improvements to our quality of life. Furthermore, many people derive interest and enjoyment from the presence of a diversity of animal and plant life in their neighborhoods. Many people like turtles, and appreciate the thought that they might one day see the yellow beacon of a Blanding's turtle in the marsh. It would be environmentally spendthrift to allow a species such as the Blanding's turtle to disappear, albeit slowly, from a county, a state, or the continent. And if we wish to preserve this biological heritage, we must act to better understand, protect, and wisely use rare species and their habitats.

Article and photos by Erik Kiviat; drawings, design, editing, and formatting by Kathleen A. Schmidt; production by Kathy Anne Schmidt and Linda Nyman. Hudsonia Research Associates Peter Petokas and Michael Klemens are also conducting Blanding's turtle research.





*Short-awn foxtail grass, Alopecurus aequalis*

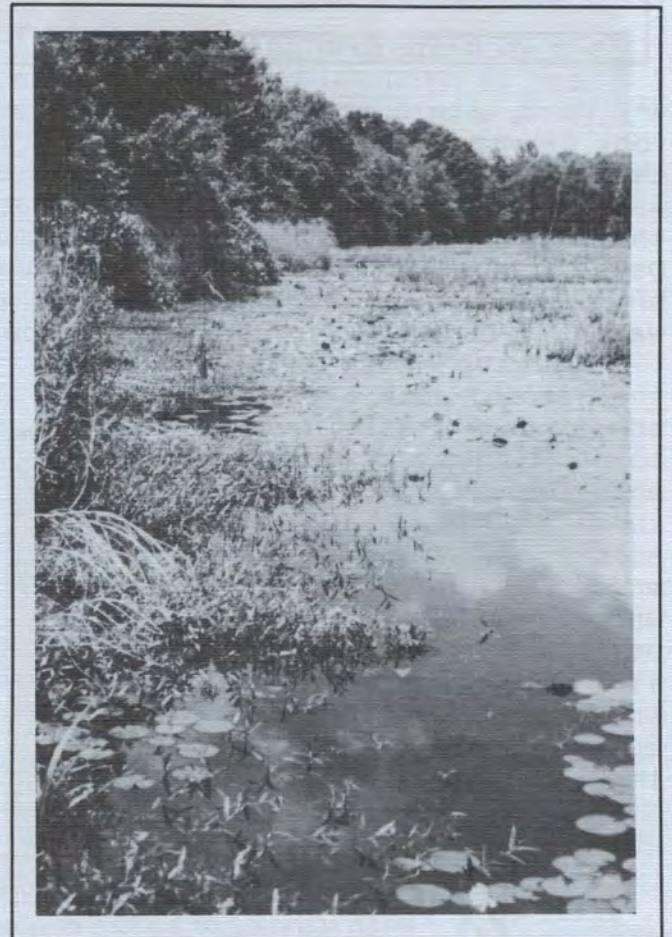
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*Blanding's turtle habitat*