

AN EDGE IS A WORLD OF ITS OWN

Review of:

Joanna Burger 1996. *A Naturalist Along the Jersey Shore*. New Brunswick, N.J.: Rutgers Univ. Press 304 pp.
[Thirty-third in a series on "naturalist-in" books.]

Rocky shores, barrier beaches, salt marshes and long, thin barrier islands are found along the Atlantic coast of the USA. The state of New Jersey, with about 230 km of shoreline, has all of these. This is a very dynamic environment, often with abrupt zone changes as one moves inland from the water's edge or out into near-shore waters. The zones between the edge and the barrier islands are especially biodiverse. These islands absorb most of the wave force -- a boat can travel most of the way from Florida to Massachusetts in their shelter -- yet wind and waves are a constant factor, giving rise to shifting dunes. Salt marshes, too, are in constant flux. This is not wilderness. A highway runs close to the eastern shore along most of the length of New Jersey.

Delaware Bay is a major migration route for shore birds and more than 200 species of songbirds. Many of the former feed heavily on masses of horseshoe-crab eggs. The Jersey Shore is also a migration corridor for monarch butterflies, which pass and roost in the millions. Many migrants are funneled toward Cape May at the southern tip of the New Jersey peninsula.

The very productive estuaries serve as nurseries for many fish species, of which a majority are warm-water migrants that spend half of the year further south. Many are present along the Jersey Shore only as immatures. A majority of the birds also go south for the winter, although there are far-northern species for which the Jersey Shore is a wintering ground.

The author, who teaches biology at Rutgers University, is fascinated by all seashore life, and the nearby Jersey Shore is her favourite place of all. She has a strong, clear style of expression.

Although it is not an adventure story, *A Naturalist Along the Jersey Shore* is based on real field work with its attendant discomforts and perils. Burger is unmistakably hard-core. She is quite prepared to spend long periods of solitude in blinds in order to work out an animal's breeding cycle and relations with competitors. And she looks forward eagerly to each new breeding season.

Despite its title, this is not exactly a naturalist-in book as defined in this series. Rather, it is a treatise on the ecology of the Jersey Shore with a large personal component. This is not a complaint, just an observation. More specifically, this is wildlife ecology. The main attention is to the birds and other land vertebrates that breed along the Jersey Shore and what conditions are favourable to them, with an eye to conservation. There is much emphasis on niche differences among bird species nesting in the same areas.

After an introduction to the coastal zone, the chapters are arranged into sections by season. Each chapter has its own theme, such as breeding aggregations of Fowler's toad, horseshoe crabs, fiddler crabs, the cattle egret,

birds of prey, mosquitoes, and various shore birds. The book is illustrated by the author's drawings, including 94 field drawings, mostly of birds.

From a strictly scientific point of view, the most interesting chapter is on the common terns and skimmers. Burger and co-workers were puzzled that terns nested on only 34 of the 259 islands in Barnegat Bay, and not on all in a given year. At first it appeared that terns had many more islands available than they utilized, but an analysis of various parameters -- maximum height, distance from the mainland, vegetation cover, etc -- showed that only these 34 and three others fell within a certain range. In a striking corroboration, terns have since then nested on these three islands and no other new ones.

The chapter on the breeding of laughing gulls is especially attractive, showing a good sense of the challenges facing this bird, its tactics to overcome them, and how they sometimes fail to do so.

I find the chapter on Fowler's toad especially gripping, with its attention to breeding, metamorphosis and ways of avoiding predation.

The chapter on fiddler crabs focuses on where and how they live, and the challenges posed by the physical environment. Like other littoral organisms, they find their habitat renewed twice a day.

In the first half of the 20th century, there was much effort to drain swamps for mosquito control all along the Atlantic coast, leading to a great deal of alteration of landscape and biota. Especially during the Great Depression, large work gangs were put to cutting drainage ditches. Since about 1970, there has been a reversal in this trend, an attempt to preserve wetlands while controlling mosquitoes by other means.

There have also been changes during Burger's own lifetime. For example, when she was growing up the mallard was mostly a prairie bird, but now it is common along the Atlantic shore.

The success of mosquito control has increased the popularity of the beaches, and there are now houses all along the shore except in state parks, as well as on many barrier islands. And with the increased human population come wildlife-prejudicial cats and dogs.

Let me also mention Burger's (2006) estimable book about the Pine Barrens, an extensive region in central and southern New Jersey. This infertile forest has escaped destruction because of its unsuitability as farmland or timber. Her special focus is a population of the pine snake, *Pituophis melanoleucus*, separated by 1000 km from other populations.

References

Burger, J. 2006. *Whispers in the Pines: A Naturalist in the Northeast*. New Brunswick: Rutgers Univ. Press 345 pp.

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