

SITE 13 - A STAND OF BUSHES AND WHAT LIVES IN BETWEEN

Population, when unchecked, increases in a geometrical ratio. Subsistence increases only in an arithmetical ratio. A light acquaintance with numbers will show the immensity of the first power in comparison of the second.

Thomas Robert Malthus: An essay on the
Principle of Population [1798]



SITE 13

A STAND OF BUSHES AND WHAT LIVES IN BETWEEN



Before you is a large expanse of bushes all of the same species, *Iva frutescens*. The species has three common names: marsh elder, high tide bush or gall bush. *Iva* seldom grows more than 10 feet tall and thrives, as you can see in this brackish area of the marsh. Here the salty tide encroaches only at its very highest or when a powerful nor'easter pushes the water up the river. A chief characteristic of the plant is its diminutive flowers neatly arranged in heads or "composites" and encircled by a series of very small, leaf-like growths called an involucre. Some of these flower heads are so elegantly arranged they resemble globular fruits.

There is a well marked area of transition between the large alfalfa field and the stand of marsh elder. Close to the ground is a plant with thick green stems and succulent branches the color of delicate jade. This is the saltwort or glasswort, *Salicornia europaea*.

The term "wort" is a word used many years ago to denote plant and in botanical literatures there are many "worts". *Salicornia* is well named for it only lives in salty soils and in doing so they have evolved some important mechanisms for keeping a critical balance between their internal fresh water needs and the salt outside their cells. The succulent stems retain a relatively large volume of water compared to most plants and it is this stored water that keeps a critical balance of liquids inside and outside the plant. *Salicornia* lacks leaves but does produce a number of small, inconspicuous flowers. If you want to see those flowers be prepared to get wet knees -- you have to look closely. In the fall, *Salicornia europaea* turns a deep pink or ruby red and those short fleshy stems can be pickled or preserved as a delicacy.

Between the stems of the marsh elder are endless spaces and plenty of room to hide. There are rabbits, but before you see them, they will see you. The common Eastern Cottontail, *Sylvilagus floridanus*, belongs to the order *Lagomotpha* and the genus, *Lepus*. There is no dearth of literature and folklore on "bunnies". Witness, Brer Rabbit, Bugs Bunny, Peter Cottontail and, of course, we still celebrate the coming of the Easter Bunny. These furry charmers descended from the primitive hoofed animals, the *condylarths*, whose fossilized remains date back to the Paleocene times, about 65 millions years ago. We have reason to believe that they achieved their present form during the Oligocene times, 38 million years ago. From that time to the present, *Lepus* has served as food for hunters both human and animal and within the last 1000 years has spread quickly throughout New England.

There is the old saying "to breed like a rabbit". and indeed they do. In one case, a cottontail was tracked and produced 30 young in one year. Their reproduction patterns are complex and beyond the scope of this volume but the cavorting antics of an overzealous male awaiting the sexual primacy of a female probably gave rise to the expression, " mad as a March hare."

Rabbits have ways to avoid being caught and running is one. In a succession of low, gliding leaps, it can propel itself 5 to 10 feet at a single bound and the execution of a series of these bounds can

move the rabbit at speeds ranging from 18 to 20 miles per hour. They had better run, for indeed their speed is what keeps the lucky ones from being consumed by ever vigilant predators. While in full flight, the hind feet hit the ground in front of the forefeet, producing a seemingly reversed running pattern.

Another way a rabbit can avoid being a meal is "freeze." This might seem a death wish but by freezing it does not move and thus can hide its most obvious, (and most endearing) target -- that fluffy, white tail. Running exposes the white tail -- staying put makes it invisible.

There are other denizens of this habitat. You don't often see them because they don't want to be seen by you or any potential predator. These are mice, voles and moles. Perhaps the most numerous is the meadow vole, *Microtus pennsylvanicus*. Its family name, *Cricetidae*, means hamster-like, and indeed they are both in looks and their ability to reproduce. They are perpetual breeders. The female's gestation period lasts three weeks and in one instance, it was documented that a vole had 17 litters in one year. In the wild they produce an average of three young per litter and that translates into 51 per year. It would seem that they might take over the marsh but the reality is that the adult life span is less than a month. During peak population booms, their numbers soar into the hundreds. On record is a population count of 12,000 individuals per hectare, (1 hectare = 2.5 acres). To sustain such populations voles must feed and their favorite food is alfalfa. At this site they have an abundance on which to graze like cattle, using teeth adapted for grinding.

There are moles; star-nosed moles, *Condylura cristata*. They too stay hidden and travel about beneath the surface or at night to avoid detection. A mole is almost blind, but underground they don't need the gift of sight. *Condylura's* slender nose ends in a crude star-shaped growth -- a hairless disc surrounded by 22 symmetrically arranged pink tentacles. This sensory apparatus contains a highly developed sense of smell coupled with remarkable tactile accuteness. This allows *Condylura* to navigate their dark, earthen world.

Unlike other species of moles, the starnose lives in small colonies in which couples pair off during breed season, and remained

together until the young are born.

What allows them to survive in this damp environment is the fact that they don't burrow as do other moles and they are excellent swimmers.