## Sandy Beaches: Ever-Changing

Photo: Sandy beach at Hammonassett State Park, Madison, CT: courtesy of Judy



Sandy beaches are high-energy habitats that constantly change throughout the year, reflecting the effects of tides, winds, storms, and currents

## Red sand comprised of garnet (left) and slipper shells (right) deposited on sandy beaches by wind and waves





Beach sands may appear devoid of life, but many tiny animals live beneath and between grains of sand, or in the wrack line, the line of decaying seaweed and eelgrass that washes up along the high tide mark





Dune grass and plants help keep the sand in place; while the plants can withstand the harsh environment of a sandy beach, their root systems are fragile and easily damaged if walked on by humans The upper side of each beach grass blade has 10-12 parallel ridges, alternating with grooves, that run from the base to the tip; this ribbed structure causes the leaves to roll up tightly when water is scarce and to unroll when water is available



Beach pea grows on the dunes, helping to stabilize the sand while providing a splash of color throughout the summer; its dark brown seed pods (peas) are eaten by birds and mice



Rough cocklebur and northern seaside goldenrod are hardy plants that can call sandy or rocky beaches "home" – they help anchor beach sand in place





Other plants commonly found on sandy dunes and upper beaches are the American sea rocket (left) and saltwort (right); the seeds of the sea rocket float and are easily dispersed along the beach by water





Salt-spray rose, with its pink or white flowers and prickly stems, is common to the upper reaches of the beach; high in Vitamin C, the colorful fruit or rose hips can be used in tea or jelly Bayberry bushes, with their waxy blue berries and sweet-smelling leaves, grow in the sandy soil of the upper beach among the dune grasses







The carnivorous channeled whelk (left) is one of the largest snails inhabiting the Sound; each disk of its parchment egg case (right) contains several fully formed baby whelks

Retracting its soft body into the shell, the snail uses the smaller dark oval-shaped shell or operculum (arrow) to protect itself from predators and to retain moisture



Horseshoe crabs are one of the most primitive arthropods; they have lived unchanged in form for more than 360 million years

Although they are arthropods, they are not true crabs, being more closely related to spiders and scorpions than they are to blue crabs and rock crabs



The front appendages of the burrowing mantis shrimp are similar to those of the praying mantis insect; barbs on these legs are used to quickly spear and crush prey



Sanderlings (above) and piping plovers (right) skitter up and down the beach at the water's edge, seeking small molluscs and crustaceans as the waves wash in and out





A black-bellied plover forages for worms, crustaceans or molluscs in wet sand; plovers have a distinctive behavior of running forward, pausing, looking or listening, then seizing their prey



American oystercatchers, recognized by their bright red bills, prefer sandy shelly beaches without predators for nesting

Common terns nest on rocky islands and barrier beaches, diving into open water for sand lances and other small fish, crustaceans and insects; they nest in colonies on sand, gravel or cobble near low-growing vegetation which provides cover for their chicks

