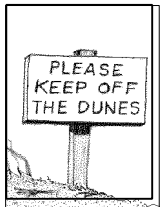
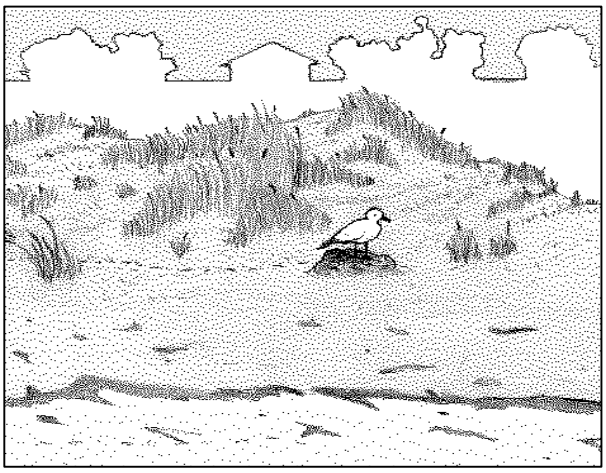
MONMOUTH COUNTY PLANNING BOARD'S



ECO-TIPS:
Coastal Dunes

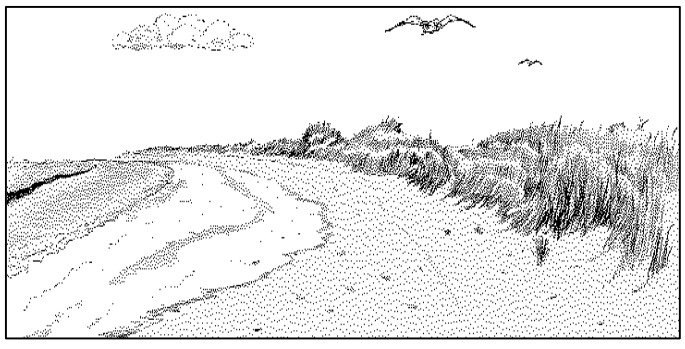
INTRODUCTION

Dunes are an important natural resource for Monmouth County. They help protect our coast from storms and flooding. For many years, natural dunes were removed or altered to accommodate development. This made oceanfront properties more susceptible to damage from waves and wind during major storms. The smaller beaches affected tourism and removed wildlife habitat. Today, dune restoration projects are being initiated in municipalities along Monmouth County's shoreline. These new "man-made" dunes are once again providing storm protection and habitat and increasing tourism opportunities. This brochure will discuss the importance of dunes, and describe several things that have been done to initiate or enhance local dune restoration projects.



THE NATURAL DUNE SYSTEM

A natural dune system is a series of vegetated ridges, which are created by wind and waves. These forces move sand landward, where vegetation grows, trapping the sand. As sand accumulates, the vegetation continues to grow, and a network of roots is created to anchor the sand. As more sand is deposited on the land, the dune field begins to migrate and new dunes are formed.



Dunes are dynamic. They provide protection from storms, habitat for wildlife, and a recreational attraction for tourists. Dunes protect coastal towns from strong winds and waves during storms. They are a part of the coastal ecosystem and support a diversity of wildlife. They also attract visitors to our shorelines for recreation and tourism.

FOR DEFENSE

Sand dunes provide a first line of defense. Dunes protect structures, such as roads and buildings, by absorbing direct wave energy and blocking high winds. Dunes also minimize the impact of erosion by supplying sand to the beach and nearshore areas. Natural re-deposition of a beach that was eroded during a storm, is more likely when a dune is present. Studies indicate that beaches that do not have a protective dune system have more damage and erosion after a storm and may be more likely to require a replenishment program to replace lost sand.

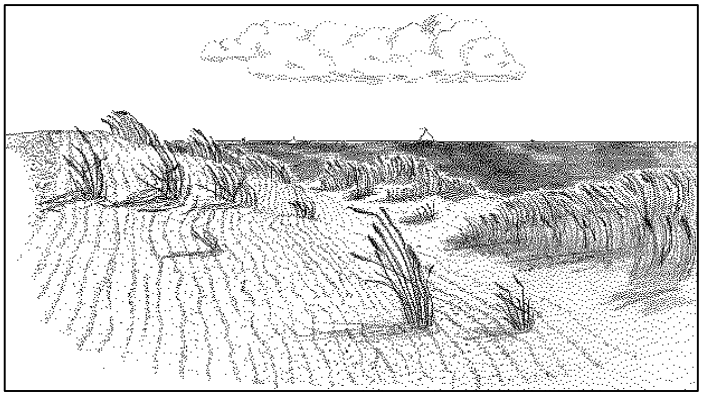
FOR HABITAT

The diversity of wildlife habitat found on dunes depends on the size, location and maturity of the dune. Large undisturbed dunes can provide habitat for birds, small mammals, reptiles, amphibians, and an abundance of insects including beetles. Mature dunes provide food and cover for many bird species native to Monmouth County. Migratory shorebirds can also be seen during the early spring and fall months stopping on the dunes to rest and feed. During the early spring, the shorebirds look to establish nesting territories on beaches and dunes. Dune vegetation provides secluded, quiet areas for birds to lay their eggs and raise their young.

Because of the current lack of dunes, habitat for shorebirds is limited. Many of these once plentiful species are now threatened or endangered. Several Monmouth County communities have recently restored dune areas along their coastline to restore these habitats.

FOR TOURISM

New Jersey has 125 miles of beaches. Monmouth County has 27 miles along the oceanfront and 26 miles along Raritan Bay. These beaches are active with tourists. Boardwalks, restaurants, amusements and bathing beaches attract visitors from around the country. Sand dunes can enhance the tourist's appreciation of these beaches. Some of the most popular beaches in Monmouth County have dune systems. Gateway National Recreation Area's Sandy Hook provides one example. Miles of pathways and nature walks provide visitors with controlled access to sand



dunes that can aid tourism while promoting environmental consciousness. As shorebirds return to our beaches, bird watching opportunities increase and a new kind of tourist will come to Monmouth County beaches: The birdwatcher.

BEGINNING A DUNE RESTORATION PROJECT

Local volunteers have recognized that dunes are important for defense, habitat and tourism. Volunteer involvement has led to the restoration of dunes throughout Monmouth County. Environmental Commissions, neighborhood organizations and private citizens have conducted dune planting and maintenance projects in their communities. These volunteers have followed simple dune restoration recommendations provided by the State of New Jersey and have coordinated their efforts with local nurseries and public works departments for supplies and labor.

BUILDING A DUNE

Before a dune can be built, sufficient area is needed. Structures such as sand (snow) fences can help to trap sand. Use four-foot high wood slatted fences, placed parallel to the coastline with no less than twenty feet between the fences. Since irregular dunes are more attractive to wildlife, place the fences in an irregular pattern. Used Christmas trees have also been used as a framework on which a dune can grow.

The key to creating a functional dune is planting the proper vegetation to trap and hold the sand. Vegetation helps to keep the sand anchored to the dune. Sea Isle 'Japanese Sedge, 'American' Beachgrass, and 'Atlantic' Coastal Panicgrass are tolerant to the salty and sandy conditions, and are appropriate for stabilizing or building dunes. Plant these grasses in strips parallel to the coastline. The grasses should be planted in rows. The closest should be at least 100 feet from the mean high water line, as room permits. Plant strips of vegetation no less than twenty feet wide. Where possible, plant grass strips up to fifty feet wide. Late winter and early spring are the best times to plant. Fertilize the grasses in the first few growing seasons for optimal growth.

Using fences in conjunction with the grass plantings provides the best dune building scenario. After your dune has been stabilized, secondary plants can be planted to further stabilize the dune. Bayberry, Beach Plum, Rugosa Rose, Shore Juniper, Seaoats, and Japanese Black Pine are suitable for beach habitats. Other not-so desirable vegetation such as poison ivy may migrate to a mature dune. Although a nuisance to humans, these plants can be beneficial for stabilization.

DUNE PROTECTION

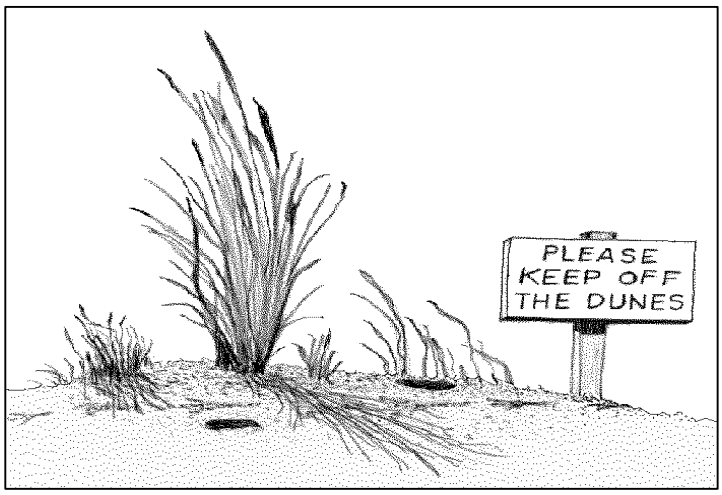
While providing storm protection and habitat, dunes tend to reduce access to beaches. Walking on dunes jeopardizes their stabilization by damaging the fragile anchoring root system. Providing pathways between or over dunes will provide convenient access while limiting damage. These access points can range from simple cleared paths to paved walkways or boardwalks. Placing fences along the walkways will confine pedestrians to the paths. This will also protect nesting birds. A more elaborate access way is a dune walkover. Walkways constructed over the dunes protect vegetation while providing a *hands off* approach to appreciating the beauty of the dune system.

Restoration, maintenance and protection of dunes are vital to ensuring storm protection, wildlife habitat stability and tourism. Information about the importance of dunes through signage and literature is a very effective tool for educating citizens. Volunteer involvement has led to successful local dune projects and these volunteers will continue to protect the dunes they helped to construct.

DUNES ARE REGULATED

Dunes are protected and regulated by New Jersey State laws. These regulations intend to protect dunes from development and environmental harm. The USDA and NJDEP also offer recommendations for proper building and maintenance of dune systems. Municipalities may have

ordinances and dune building guidelines to follow. Call your local governing body or environmental commission to obtain information before beginning a dune project.



FOR MORE INFORMATION…

Contact the Monmouth County Planning Board, Environmental Planning Section at 732.431.7460.

Several publications are available on the topics of dune planting and construction, including:

The Restoration of Sand Dunes
Along the Mid-Atlantic Coast
USDA Soil Conservation Service, 1992
and
Landscaping at the Seashore
Rutgers Co-operative Extension, 1980

For these documents call the
USDA Natural Resource Conservation Service
at 732.462.1079

Guidelines and Recommendations for Coastal Dune Restoration and Creation Projects
New Jersey Department of Environmental Protection, Division of Coastal Resources, 1985.

For this document call the
New Jersey Department of Environmental Protection
at 609.984.0058

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