

*A Beachfront Homeowners Guide to
Living In Harmony With Your
Coastal Environment*

MARINE SCIENCES RESEARCH CENTER

STATE UNIVERSITY OF NEW YORK

*A Beachfront Homeowners Guide to
Living In Harmony With Your
Coastal Environment*

Prepared for
Members and Friends
of the

East Hampton Beach Preservation Society

by

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INTRODUCTION

As every coastal resident knows, seashore environments are among the most dynamic places on earth. Their landscapes are constantly being reshaped by natural agents, both normal and episodic, and their natural flora and fauna must adapt to these changing conditions, including those changes humans have added.

The addition of humans as shaping agents into these environments can upset the balance between nature's forces and the beach. This disruption, however, does not have to be harmful and any adverse impacts do not have to be extensive.

This pamphlet is a question-answer guide for beachfront homeowners, beachgoers, or anyone who is concerned about the coastal environment. By addressing questions about erosion, wildlife, yard care, and pollution, we suggest methods not only to minimize adverse impact on, but also to enhance the environment. You can have an opportunity to contribute to the integrity of your beachfront environment, its wild inhabitants, and your personal investment by following these suggestions.

As you read this pamphlet, you will notice that many of the problems and their solutions are interrelated. Thus, a little consideration can go a long way!

This guide also lists further contacts that can provide more information about the subjects addressed as well as phone numbers of agencies that should be alerted if adverse conditions are observed near the beach environment.

EROSION

1. What are the effects of walking through beach vegetation?

While beach vegetation is hardy, it is vulnerable to frequent human foot traffic. Pedestrian traffic can not only uproot plants, but can also interfere with the plants' abilities to absorb and retain nutrients.

A decrease in plant populations provide the sand with less protection against erosional elements like wind and waves. Protection of beach vegetation is best achieved by simply not walking on the dune (See Figure 1), but rather using walkovers through the vegetation to beach areas.

- 2. When walking through sand dunes, where should I walk to minimize the impact?**

When walking through sand dunes, utilize regular paths along depressions between the dunes (See Figure 2). This will leave vegetation untrampled, minimizing damage to the integrity of the dunes.

- 3. Do 4x4's and All Terrain Vehicles (ATVs) damage beach vegetation?**

Dune vegetation roots, or rhizomes, may extend twenty feet beyond the toes of sandunes. The use of 4x4's and ATV's within this distance may damage these rhizomes and lead to the deaths of the plants. Driving these vehicles at distances greater than twenty feet will leave the rhizomes and the integrity of the dunes unharmed.

4. **Will planked walkways placed through the dunes and beach combat erosion?**

Planked walkways twisting around sand dunes and through beach vegetation can slow down beach erosion. Their presence provides a convenient limited access route to the beach with definite boundaries (See Figure 3). It is unlikely that most people will stray past these boundaries, and bordering vegetation therefore, will be undisturbed.

5. **Should overwalks be placed over the dune areas for access to the beach instead, of walkways on the ground?**

Overwalks probably are the best method of providing limited access to a beach. Because the walkway is raised above them, shifting sand dunes will be less likely to bury it. Overwalks also inhibit erosion by eliminating the existence of areas unprotected by beach vegetation which would be left by pathways on the ground (See Figure 4).

6. Do drift fences help or hurt?

Drift fences are structures that provide a catch for windblown sand as well as protection for sand on their leeward side. They promote the deposition of sand creating new sand dunes.

There are drawbacks to the use of drift fences for dune enhancement. They interfere with the natural flow of sand. Sand that is trapped by fences is not free to move to other areas of the beach so there is some cost to the total environment of enhancing dunes artificially.

Even properly maintained fences do not last forever. Broken fragment or sections of these fences can litter the environment and may present sharp hazards to beachgoers. New plastic fences, although more durable, can also present dangers to marine animals should fragments of them enter the environment as litter (See Figures 5 & 6).

7. How and where should drift fences be placed on the beach to achieve the desired effects, with minimal impact?

Drift fence posts should be driven between two and three feet deep with the slats of the fencing buried two to three inches below the sand. This avoids blow-outs beneath the fence which would otherwise prevent the accumulation of sand.

Depending on the desired effects, drift fences should be placed two-thirds of the way up the seaward side of the dune in order to make it higher. To widen the dune, it should be placed seaward of and parallel to the base of the dune.

8. Should I plant vegetation on my beach property?

Planting is an inexpensive, and effective means of erosion control. If beach vegetation on your property has become sparse (because of foot traffic or other causes), or if erosion is becoming a threat, you may want to plant some suitable grasses.

9. What types of vegetation should be planted and how should they be planted?

Native grasses are well adapted to conditions in your area and therefore provide the most effective erosion control. Some of the various grass and shrub species which can help to prevent erosion include: bitter panicgrass, saltmeadow cordgrass, American beachgrass, seaside goldenrod, and seaside spruce.

These species are best adapted to conditions on a particular part of the beach and should be planted accordingly. For example, bitter panicgrass inhabits the pioneer zones of dune areas, and should be planted 6-9 inches deep with 1-2 stems per hill; and American beachgrass grows best where it can collect deposits of windblown sand. (See Tables 1 & 2.) Pitch pine is one of several species of tree that can also serve as an anchor for sand and a windbreak in drier areas above tidal reaches.

AVAILABILITY AND USE OF THE BEACH GRASSES

Type	Availability & varieties	Best regional adaptation	Zone	Principal use
American Beachgrass	Adequate 'Cape' 'Hatteras'	North Atlantic	Pioneer	Initial Stabilization
Bitter Panicgrass	Limited	North Atlantic	Pioneer	Long-term Stabilization
Saltmeadow Cordgrass	Limited	North Atlantic	Intermediate	Long-term Stabilization
Coastal Panicgrass	Limited Atlantic	North Atlantic	Intermediate	Long-term Stabilization
Japanese Sedge	None	North Atlantic	Pioneer and Intermediate	Long-term Stabilization

Table 1.

CULTIVATION OF THE BEACH GRASSES

	Spacing for principal use (Inches)	Planting Date		Planting depth (Inches)	How to establish	Growth Rate
		Acceptable	Ideal			
American Beachgrass	12-14	Nov. 15- April 15	Feb. 1- April 1	6-8	3-5 columns per hill	Rapid
Bitter Panicgrass	12-24	Nov. 15- April 15	Jan. 15- March 15	6-9	1-2 stems per hill	Slow
Saltmeadow Cordgrass	18-24	Nov. 15- April 15	Feb. 1- April 1	6	3-5 columns per hill	Slow
Coastal Panicgrass	----	March 1- May 15	March 1- May 1	2	12-20 lbs. per acre	Moderate
Japanese Sedge	12-30	Feb. 1- April 15	Feb. 15- April 15	4	1-2 stems per hill	Slow

Table 2.

10. Will the vegetation have to be continuously replenished?

If properly placed and protected against human foot and vehicular traffic, native plants should not have to be replaced or tended. They have long since become adapted to the range of natural conditions of the beach environment.

WILDLIFE

11. How can I make sure that the wild animal life on my beach property is not disturbed by my activities?

You can protect the wild animals on your property from being disturbed by respecting and providing for their need for space. This is one characteristic that separates wild animals from pets. For this reason, it is important to restrain pets from wandering on parts of your property where wildlife, such as seabirds may be nesting. Children should also be instructed to avoid those areas and the importance of the needs of wildlife should be explained to them.

12. Should I feed the animals that frequent my yard?

Because viewing wildlife up close is always a delightful experience, people often are tempted to provide food to draw it closer to their homes. While this is an acceptable practice, it is important to remember never to allow these animals to become dependent on you for their nourishment. It is unwise to allow wild animals to fall into regular eating habits that are dependent upon people. Provide only enough food to attract them when you intend to watch them. This way they will fend for themselves in your absence.

Do not feed water birds. Feeding may cause them to congregate for extended periods of time (even through the winter), where their collective droppings can pollute surface waters.

YARD CARE

13. Am I polluting the environment by using fertilizers on my yard?

An overabundance of nutrients, such as nitrogen and phosphorous (often resulting from fertilizer runoff), pollutes natural water systems. While the collective input of such nutrients by a group of homeowners into the ocean will have negligible effects, seepage into more confined systems, such as ponds or bays can have substantial adverse impacts. The effects of this pollution follow a particular sequence as it becomes more severe.

1. INCREASES IN MARINE/AQUATIC PLANT LIFE (like algae blooms) take advantage of the large amount of nutrients.
2. RAPID DECREASE OF PLANT POPULATIONS as nutrients are used up and light becomes limiting.
3. RAPID INCREASES IN DECOMPOSER ORGANISMS to consume dead vegetation.
4. A DECREASE IN DISSOLVED OXYGEN in the water perhaps leading to anaerobic conditions.
5. FISH KILLS result from depleted levels of dissolved oxygen.

14. How can I best avoid contributing to water pollution when using fertilizers?

Water pollution from fertilizers can best be avoided by following these simple tips which will reduce runoff:

- ✓ Apply fertilizers when soil is moist so that it can be rapidly dissolved and incorporated into the plants.
- ✓ Apply fertilizers when the chances of heavy precipitation are slight and avoid driveways and other impermeable surfaces.
- ✓ Utilize slow-release fertilizers so that excess nutrients are not leached into soils and water systems.
- ✓ Avoid liquid fertilizers which can leach past root absorption zones. Solid fertilizers will remain in the grass until moisture dissolves them.

15. Am I impacting the environment by using pesticides around my house?

The use of pesticides can result in the deaths of useful species (often predators of the pests), contamination of food chains, and contamination of water supplies.

16. Are some pesticides worse than others?

Yes, general pesticides that are lethal to wide varieties of species can do the most damage to ecosystems. The use of more specialized varieties may however, affect only target species.

17. How can I incorporate the wise use of pesticides?

If chemical pesticides must be used, follow these rules:

- ✓ Do not apply near water and ensure that heavy rain is not expected. This will minimize runoff.
- ✓ Use only the amount of pesticides needed to do the job.
- ✓ Apply only to target plants and infested areas.
- ✓ Choose pesticides specific to your needs.

18. What alternatives do I have to fertilizers and pesticides that will not harm the environment or that will minimize the potential for harm?

Fertilizers:

- ✓ Fertilizers can be avoided by decorating your yard with attractive species of native plants to your area. Native species already are adapted to thrive in your beachfront environment and require little maintenance.
- ✓ Compost your yard and garden wastes. This provides an opportunity to recycle many of the nutrients already present.

Pesticides:

- ✓ Avoid chemical sprays and poisons whenever possible. Instead, try to dispose of nuisance plants manually and call the Suffolk County Department of Health for advice or service for problem animals.
- ✓ Wash houseplants with hand-soap solutions to kill insect infestations.
- ✓ Use Integrated Pest Management techniques like predatory insects and scent traps. The addition of native predatory insects into your backyard will enhance its ecology.

POLLUTION

- 19. Is litter merely unsightly or can its presence harm the ecosystem?**

While most people recognize litter as an aesthetic pollutant, many do not realize that many forms of litter are hazardous to marine and bird life. Plastic bags and polystyrene pellets often are mistaken by fish and other marine animals for food which, when ingested, can clog digestive systems and eventually result in the death of the animals. Six-pack rings can entangle marine birds and other animals impairing their ability to function, or even asphyxiating them.

- 20. Whose responsibility is it to keep the clean-- the individual's, the town's, or the county's?**

It is everyone's responsibility to keep our beaches clean. It is the individual's responsibility to properly dispose of everything that he or she brings to the beach or to take it with them. Depending on which government level is managing a particular beach, it is their responsibility to provide convenient and clearly marked waste receptacles.

21. Do I have other responsibilities to my beach environment?

Yes, a faulty septic system can release untreated sewage, nutrients, and disease-causing agents into receiving waters. To avoid contamination of these waters, it is important to make sure that your septic system is working properly. Have it checked periodically.

22. Who can I alert to possible pollution or threats of pollution in my area?

If you notice any oil or hazardous materials spills on or near the beach; any unusual conditions, such as fish kills, algae blooms, or excessive debris; or possible illegal ocean dumping; you should contact the proper authorities. They are listed below.

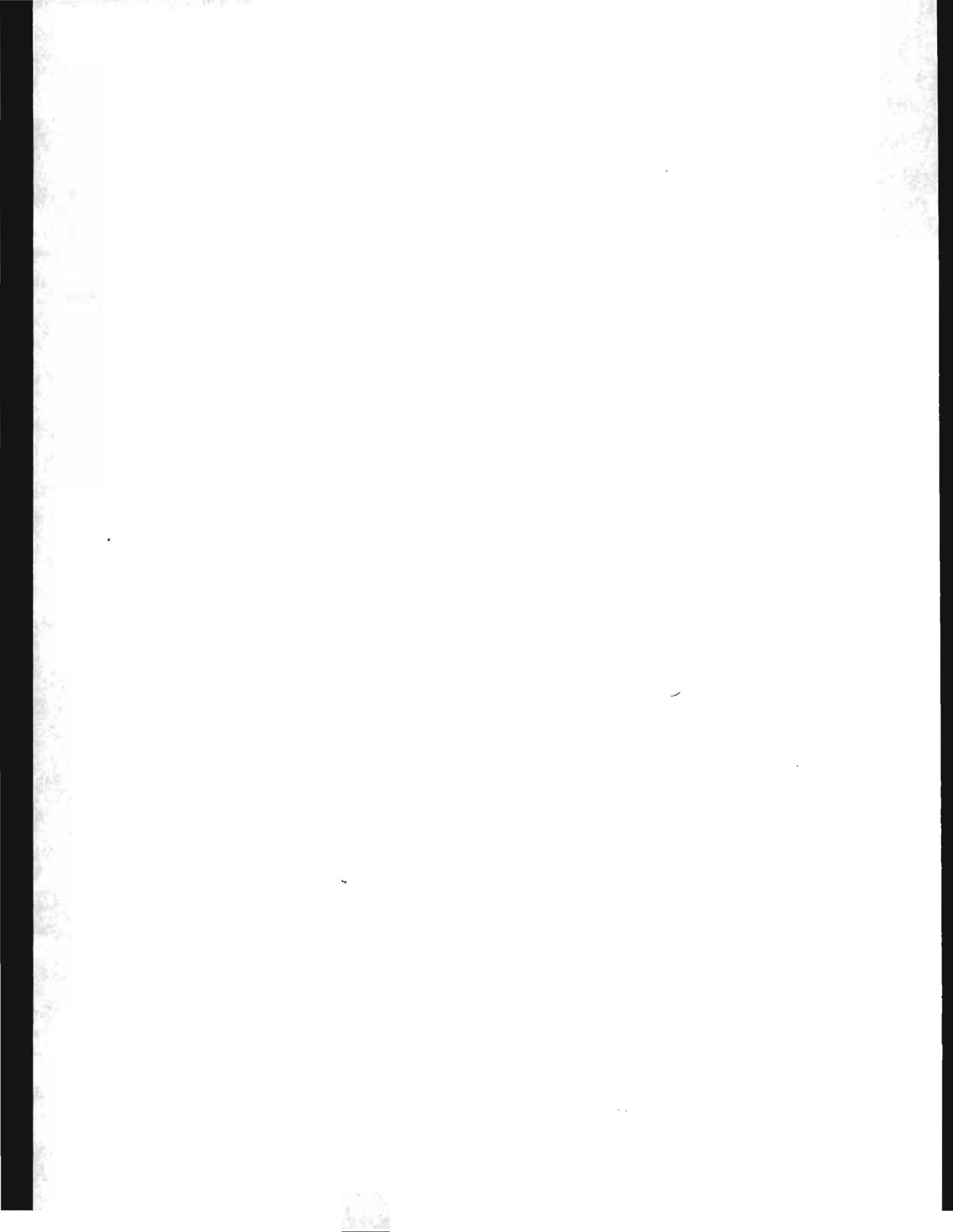




Figure 1 - Respect postings that regulate access to dune areas.



Figure 2 - The use of regular pathways will ensure minimal damage to beach vegetation when overwalks or planked walkways are not provided.

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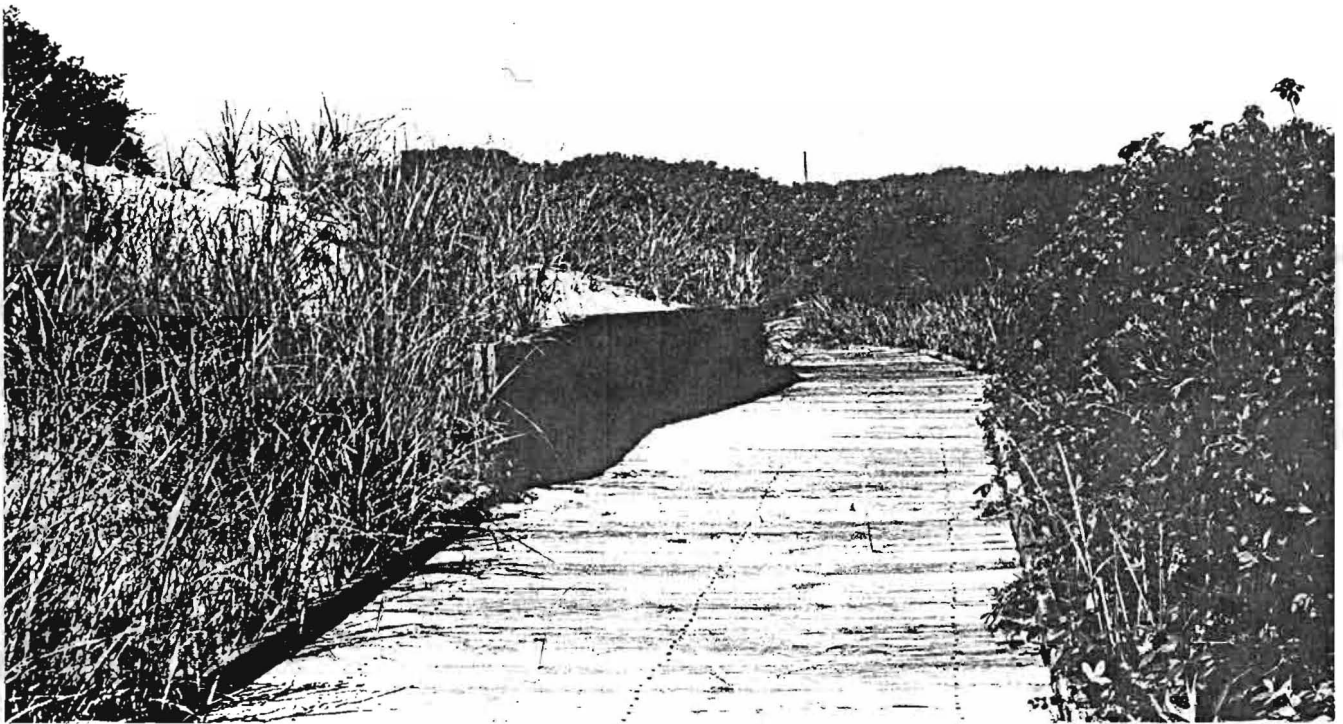


Figure 3 - Planked walkways help to ensure that neighboring vegetation will not be trampled by pedestrians.

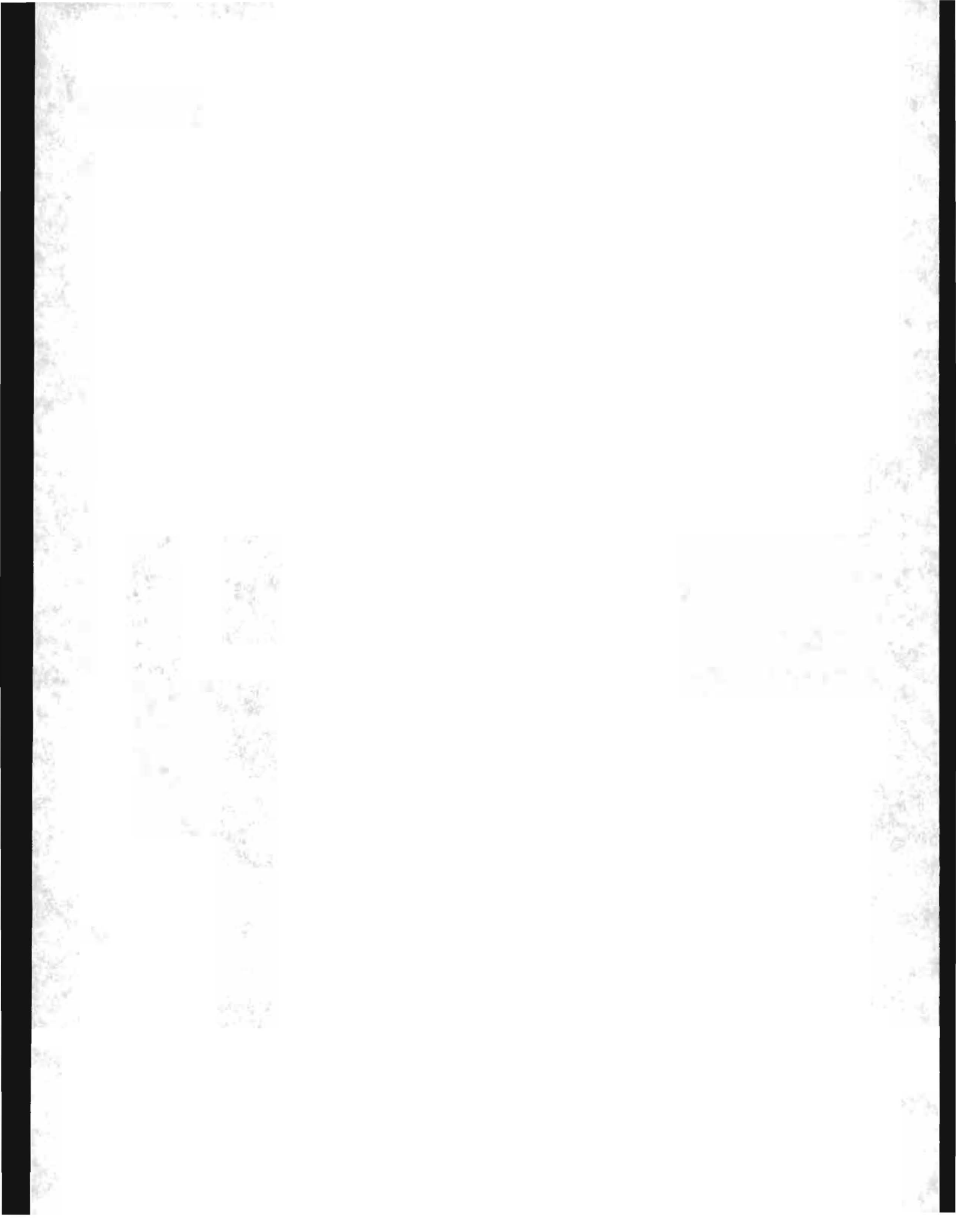




Figure 4 - Overwalks provide the best form of limited access to the beach.

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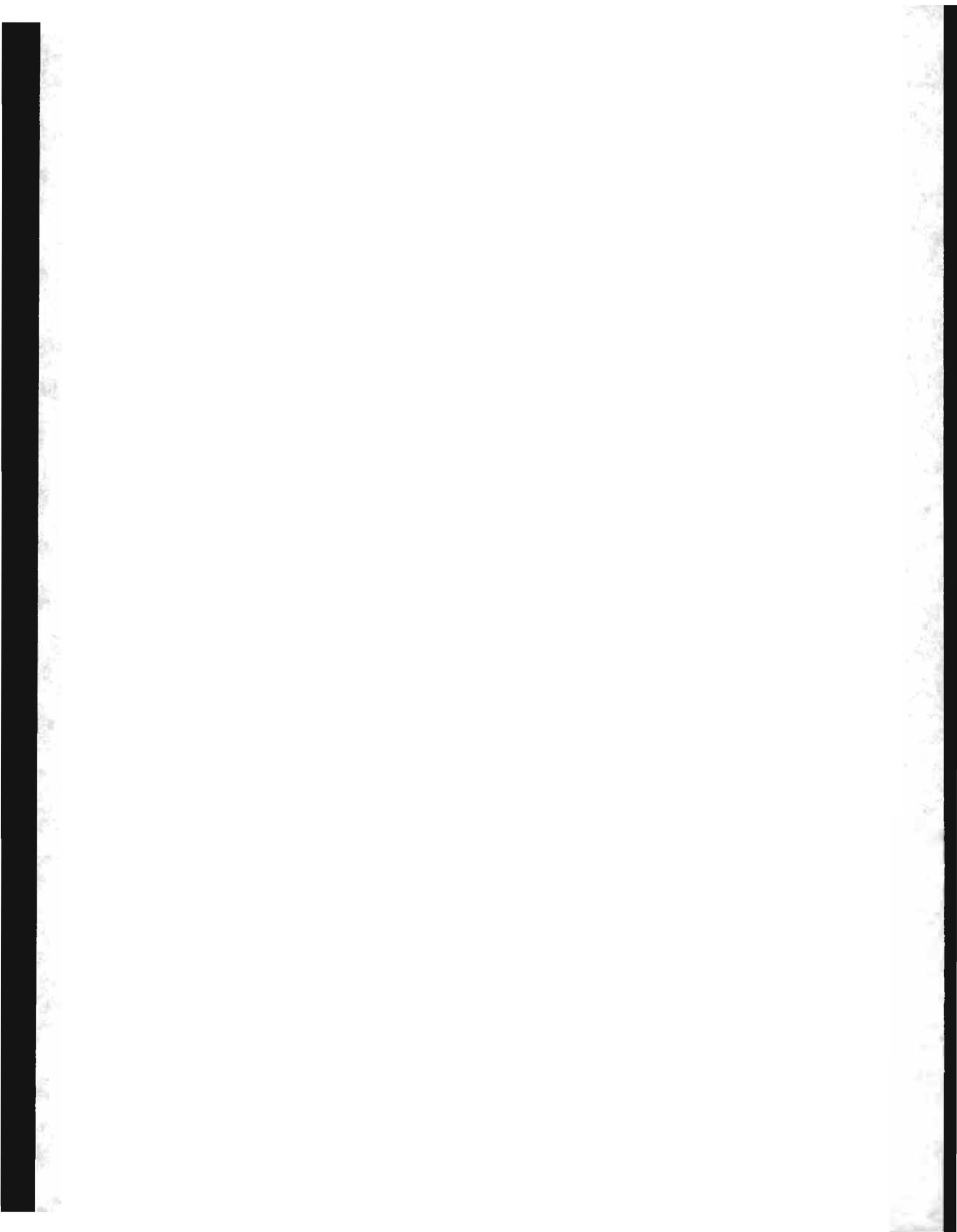
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Figures 5 & 6 - Well maintained drift fences can promote the building of sandunes (top), but have little functional value and can contribute dangerous debris to the environment when neglected.



IF YOU OBSERVE:

<p>ILLEGAL (OFF-SITE) OCEAN DUMPING</p>	<p>COAST GUARD (212) 668-7920</p>
<p>OIL OR HAZARDOUS MATERIALS SPILLS ON OR NEAR THE WATER</p>	<p>COAST GUARD (212) 668-7920</p> <p>NATIONAL RESPONSE CENTER 1-800-424-8802</p> <p>NYS DEC SPILL HOTLINE 1-800-457-7362 (518) 457-7362 (out of state)</p>
<p>FISH KILLS OR ALGAL BLOOMS</p>	<p>NYS DEC MARINE RESOURCES (516) 751-7900</p> <p>NYS DEC SPILL HOTLINE 1-800-457-7362 (518) 457-7362 (out of state)</p>
<p>DEBRIS</p>	<p>NYS DEC DEBRIS LINE (718) 482-4955</p>

For more
Information About:

Beach Vegetation

Building Overwalks

Fertilizers and Pesticides

Integrated Pest Control

Septic System Maintenance

Snow or Drift Fences

Contact

Soil Conservation Service or
Sea Grant Extension Program
Sea Grant Extension Program
Cornell Cooperative Extension
or Soil Conservation Service
Cornell Cooperative Extension
Suffolk County Department
of Health Services
Sea Grant Extension Program



Cornell Cooperative Extension

P.O. Box 1000
East Kirbride Road
Theills, N.Y. 10984
(914) 429-7089

Soil Conservation Service

164 Old Country Road
Westhampton Beach, N.Y.
11978
(516) 727-2315

New York Sea Grant

Extension Program

125 Nassau Hall
State University of New York
Stony Brook, N.Y. 11794-5000
(516) 632-8737

Suffolk County Department of

Health Services

Environmental Health
Information
300 Motor Parkway
Hauppauge, N.Y. 11788
1-800-458-1158

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