



# Protecting Avalon's Dunes

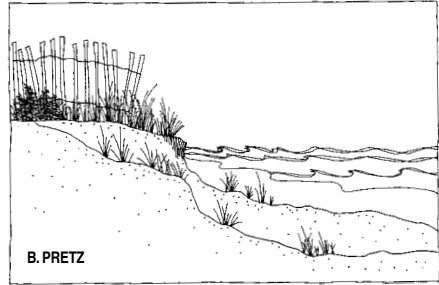
By **Brian Reynolds, PhD.**, Chairman,  
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**T**he Borough of Avalon has long realized that the dunes are important for public safety and the protection of property. The Borough is also proud to claim one of the few examples of a mature maritime forest to be found between Virginia and Massachusetts.

## Sea water in the streets

Storms in the 1960s and the 1970s severely damaged the dunes at various locations in the Borough, so much so that in the southern areas between 60th and 80th Streets they were essentially washed away and there was nothing to prevent ocean waters from spilling onto Borough streets.

At that time an aggressive approach was taken to rebuild these dunes to be able to withstand the storm surge of a Category 2 hurricane. The program involved pumping sand onto the beach and anchoring it initially with dune grass and placing snow fencing at the seaward side to encourage sand deposition as the result of wind action. With the passing years and placement of additional snow fencing and dune grass, the dunes have expanded towards the ocean and the beach is growing. As the dunes developed, the shrub vegetation normally found in the secondary dunes self-seeded naturally, but this was not true on the tertiary dunes. Because of salt spray, storms, sandy soil and other harsh conditions, few vegetative species can survive in the conditions found by the shore. In the 1970s and 1980s scientists found a non-indigenous plant, Japanese black pine (*pinus thunbergii*), to



tolerate shore conditions well and to be free from disease and insect problems at the time. The town planted numerous specimens throughout the dune system on what, in some areas, was the tertiary dune. For the most part these trees flourished.

## Problems with pines

In recent years the Japanese black pine has become moderately invasive and, in a few instances, has seeded immediately behind the primary dunes. Recent studies have shown that the species does not provide good habitat, nor is it a good food source for animals. In the last decade many pine trees in New Jersey, Connecticut, Rhode Island and elsewhere have become susceptible to pests such as black turpentine beetle (*dendroctonus terebrans*), pinewood nematode (*bursaphelenus xylophilus*), blue stain fungus (*Leptographium spp.*), and bark beetles, to name a few. Once stricken, the trees die rapidly.

The Borough became concerned about fire hazard because the trees in some locations grow so close together they crowd out any vegetation other than poison ivy, leaving a thick mat of needles and pine cones as potential tinder. Dead pine trees can now be found throughout the dune system.

The Borough also feared that, as trees die off in large numbers where there is little

other vegetation, sand could easily blow off the dunes onto property, streets or the beach itself, compromising the protection afforded by the dunes. Replacing these trees would quickly place a strain on Borough resources.

## **A plan for the dunes**

To address these concerns, the Borough has developed a *Dune Vegetation Management Plan* to replace the Japanese black pine, working with a local environmental consultant, Lomax Consulting Group. One of the consultant's first steps was to conduct an inventory of the location and number of Japanese black pine on the dunes. One of the densest plantings was in the vicinity of the 74th Street beach path. The *Plan* incorporated a pilot study of the viability of tactics employed in this area.

In order to come up with a selection of indigenous plants that provide good habitat and food sources for wild species, the consultant visited Island Beach State Park and gathered input from the US Department of Agriculture's Natural Resources Conservation Service facility in Swainton as well as from several internet postings from universities in coastal states that have studied the problems encountered by the Japanese black pine.

Several local nurseries helped provide information on the availability of selected species and their hardiness to withstand the rigorous conditions on the dunes. While the project could eventually encompass the full range of the Borough's dunes, the *Plan* currently focuses on the areas where the dunes are relatively stable, rather than at the north end of the community where constant beach replenishment is necessary to overcome storm damage.

## **Getting the word out**

One of the first steps in developing the *Plan* was to talk with property owners near the dunes in target areas who could be affected by the program. Throughout the development of the *Plan*, the Environmental Commission, Planning/Zoning Board and Borough Council provided at least a dozen briefings on the *Plan* at public

meetings. After one Borough Council meeting, a local reporter wrote an article about the program that appeared in the *Cape May County Herald*. After an interview and site visit, the *Press of Atlantic City* subsequently published an article. The Borough posted a draft of the *Plan* and solicited comments on the town website ([www.avalonboro.org](http://www.avalonboro.org)).

Throughout the process the Borough responded to emails, phone calls and letters from residents who questioned the removal of vegetation on the dunes. After approval of the *Plan* by Council, the final version was also posted on the Borough website.

## **Putting the Plan into action**

Government officials were involved from the beginning and attended some of the early meetings. A jurisdictional letter from the New Jersey Department of Environmental Protection (NJDEP) classified the project as dune maintenance and stipulated that all work was to be done by hand without bringing heavy equipment onto the dunes. As a result, workers will not remove roots during the selective removal of Japanese black pine at ground level from the pilot study area, instead leaving the roots to degrade over time. The remaining roots will help to hold the dunes together while the indigenous vegetation takes root.

Workers will trim trees either by removing lower branches or by pruning candles. What little native vegetation grows in the area will remain. The Borough will complete all work by hand and will strive to prevent the sand from blowing off the dunes during the restoration process. Planting of selected vegetation will happen in spring or fall depending on the best time for the selected species.

While the pilot study is underway, the Borough will remove dead pines adjacent to beach access paths for the sake of public safety, but will leave the roots in place to hold the dunes together.

Throughout the *Plan* development process it has been very beneficial to get support from the mayor and Council and for them to take the time to study and understand this issue, and to be proactive, rather than reactive in the situation. 