

Modified From
BEST MANAGEMENT PRACTICES FOR PINE BARRENS ROADSIDE PLANT COMMUNITIES
Prepared by Michael Van Clef, Ph.D. Ecological Solutions, LLC
May 2009

Mowing and Maintenance Regimes

The following mowing and maintenance practices are specifically intended to protect and promote native Pinelands vegetation while addressing traffic safety concerns relative to roadside shoulders. *Please refer to the typical section illustration on the following page.*

Regular-Mow Zone

The regular-mow zone is defined as an 8-foot distance from the edge of the traveled roadway. This zone includes the paved, gravel or vegetated road shoulder beyond the typical road area used by vehicles. The purpose of this zone is to provide safe emergency vehicle pull-off areas and allow road maintenance activities including maintenance of drainage swales and access to utilities. In limited cases, this zone may have to be wider than 8 feet to allow required maintenance activities.

Regular-Mow Zone Mowing and Maintenance Regime

The regular-mow zone should be mowed as necessary to maintain its practical functions. Because typical roadside mowers have a 5 to 6-foot cutting width and paved/gravel portions of road shoulders may be 2-3 feet wide, it is expected that one pass will be required during each mowing event. Vegetation heights must be maintained below 10 inches at all times to prevent contact with the bottom of vehicles, which may cause ignition of the vegetation under certain conditions. Vegetation in these areas is typically non-native cool season grasses that can withstand repeated growing season mowing. However, maintaining a mowing height greater than 6 inches can allow the establishment and maintenance of a suite of native Pine Barrens species. Future development of native, cool season grasses may provide suitable substitutes for non-native grasses. In general, the presence of nutrient-rich fill material necessitates more frequent mowing requirements (up to 3-4 times per year) than would be required of native plants growing on unaltered native soils. Fertilizer or other soil amendments should not be used to avoid impacts on native plants growing in any zone. There should be no mowing in areas of any zone that are currently sparsely vegetated. This will reduce mower-generated soil erosion.

There are two recommended special exceptions to mowing within the regular-mow zone. The first involves the presence of rare plant species and the second involves narrow road shoulders. Regular mowing has eliminated numerous roadside rare plant populations. Sites with rare plants require the mowing regime described under the dormant-season mow zone below (i.e., annual dormant season mowing only).

Areas requiring this special exception are relatively small compared to the entire roadway length (e.g., less than 5,000 square feet). These areas should be marked with signage to facilitate communications with roadside managers and avoid untimely mowing that would degrade or eliminate rare plant populations. Signs should be placed on either side of the sensitive areas and include language that specifies acceptable mowing dates (i.e., after November 30th and before March 30th).

Many smaller roadways (e.g., county and municipal) have narrow vegetated road shoulders less than 8 feet wide. Undisturbed zones are close to the traveled roadway and do not allow typical zonation. In these cases, there is no provision for safe vehicle pull-off areas.

These narrow road shoulders should be mowed as described under the dormant-season mow zone recommendations below, unless regular mowing is required for maintenance functions. Where emergency vehicular access is desired in the future, the removal of trees and shrubs will be required and maintenance regimes should follow recommendations in this section.

Dormant-Season Mow Zone

The widths of dormant-season mow zone vary based on safety considerations and the zone is kept free of all woody plants or other large obstructions that present a hazard to errant vehicles. The installation of guide-rail is required when sufficient dormant-season mow zone distances cannot be obtained due to unmovable obstructions. Intersection sight lines may be considered an extension of the dormant-season mow zone concept whereby vegetation height must be maintained below 30 inches at all times to allow visibility.

Dormant-Season Mow Zone Mowing and Maintenance Regime

The dormant-season mow zone should be mowed on an annual basis during the dormant season - after November 30th and before March 30th. Whenever possible, all mowing should occur in March (ca. late winter/early spring) to allow the full, uninterrupted life cycle of plants including growth, flowering, seed production, seed dispersal and seedling establishment. Annual mowing will remove the tops of any woody plants that may have sprouted during the previous year and will weaken root systems to stunt future growth. Mowing height should be 6 inches above the ground to avoid damage to a suite of short-statured woody native species (e.g., Bearberry, Wintergreen, and Pine Barrens Heather which are excellent ground cover for roadsides). Fertilizer or other soil amendments should not be used to avoid impacts on native plants growing in any zone. Areas of any zone that are currently sparsely vegetated should not be mowed. This will reduce mower-generated soil erosion.

Practical considerations of a condensed mowing schedule may necessitate a wider mowing window because personnel may not be able to perform all necessary mowing during a one month period. Even though personnel time constraints may not allow all mowing to occur in March, effort should be taken to delay mowing into late autumn to allow late-flowering species (e.g., Pine Barrens Gentian, Asters, Bonesets, and Goldenrods) to produce and begin dispersing their seeds. The flowering and fruiting of Pine Barrens plants indicates a number of potential roadside species that begin flowering as early as April and flower/produce fruit through October (Boyd 1991 and South Jersey Vascular Plant Database). It is critical that mowing regimes preserve both early blooming and late fruiting plants.

Exclusive use of dormant season mowing may not be adequate to completely eliminate recalcitrant woody species, especially where establishment is already underway (e.g., pitch pine sprouts). In these cases, it may become necessary to mechanically or chemically remove woody species. Prescribed burning during the dormant season should also be considered a useful option to reduce woody plant establishment. However, low in-

tensity prescribed burning should not be used on an annual basis and care should be given to understand the impacts of repeated burns on reducing desirable native species and/or increasing invasive species (e.g., Chinese bushclover). Annual, low intensity prescribed burning has documented negative impacts on soil microfauna and related natural food chains (Boyd and Marucci 1979).

Transitional Zone *(not shown in illustration)*

The “alcove” and wide median areas along major interstate and state roadways may be considered an extension of the transitional zone concept and are common on the Garden State Parkway and Atlantic City Expressway. Alcoves were designed to provide visual interest for drivers and typically exceed clear zone distance requirements. They are kept clear of woody vegetation and can be used to foster healthy, attractive native Pine Barrens plant communities.

Transitional Zone Mowing and Maintenance Regime

The transitional zone should be managed in the same manner as the dormant-season mow zone recommendations detailed above. These areas have potential to greatly expand early succes-

sional habitat that is becoming increasingly uncommon throughout the Pine Barrens, while simultaneously filling their original intended purpose of creating visual interest for drivers.

Undisturbed Zone

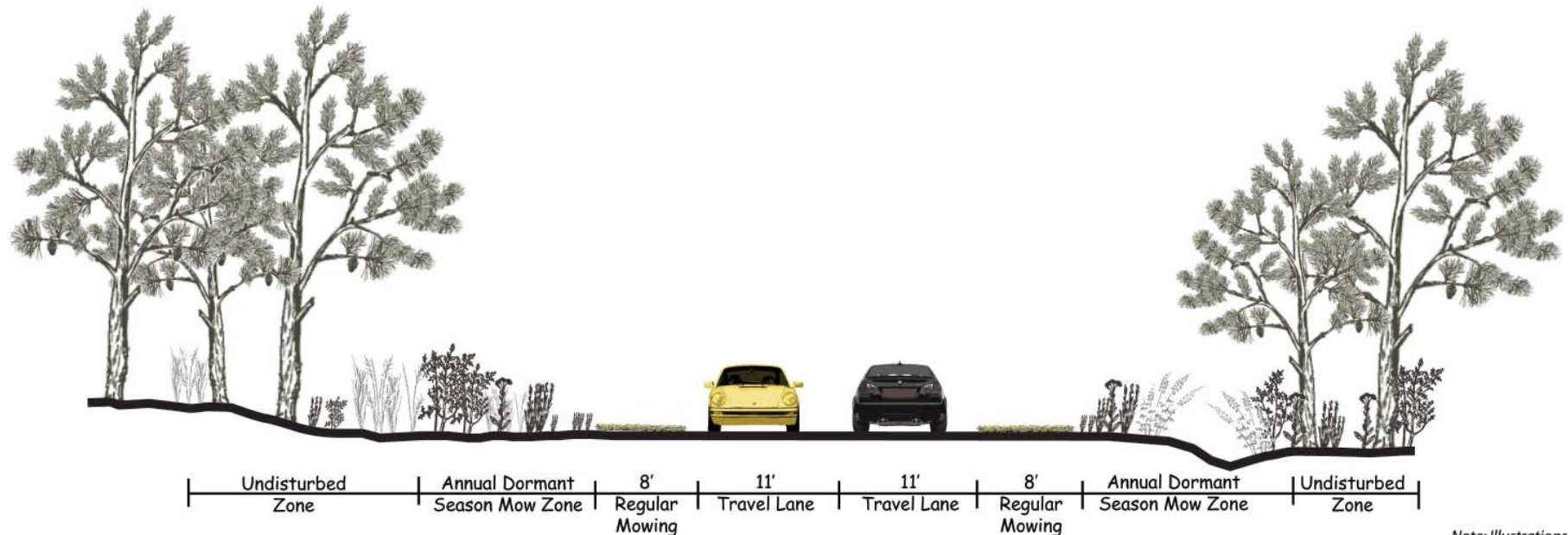
This zone begins at the tree line of adjacent forest cover and its distance from the roadside is defined by dormant-season mow zone requirements (or modified by the inclusion of alcoves - see above). This zone typically extends to the edge of the roadside right-of-way.

Undisturbed Zone Mowing and Maintenance Regime

Mowing is not recommended in this zone. However, some major roadways may not currently provide required dormant-season mow-zone distances (original zones may have become obsolete due to increased speed limits and traffic volumes), which will necessitate future removal of woody plants within the right-of-way. Recommended mowing regimes detailed above should be used for any newly-enlarged dormant-season mow-zones.

Pinelands Roadside Management Practices

Mowing Regimes - Mow Zones
Jan 2010



Note: Illustrations Not To Scale