

The background of the slide is a blurred, close-up photograph of green grass or reeds, creating a soft, naturalistic texture. The colors range from light green to a slightly darker, muted green.

Vegetation Associated With Sediment Control Standards

Danella Funk

What is Soil

- ★ Soil is a non-renewable resource that can take hundreds or thousands of years to form
 - CLORPT is the term used to describe this process
- ★ Different plants tend to prefer different soils
- ★ Loss of soil could mean loss of biodiversity
- ★ Treat soil with respect

Soil
Texture
Types -
NOAA





Modern-day
Mesopotamia
– Wikipedia

History Hinges on Soil

- ★ Mesopotamia is regarded as the world's first civilization
 - This land is located along the Euphrates river in present day Iraq and surrounding countries
- ★ People here practiced forms of crop rotation
- ★ Irrigation techniques ultimately led to downfall
 - Overwatering and saltwater intrusion
- ★ Crops withered away and the first civilization came to an end

Facing Issues of Modern Saltwater Intrusion



Cattus
Island
Ghost
Forest -
Ghosts of
the Coast

- ★ Saltwater intrusion is an issue that is happening locally in Cattus Island County Park
- ★ Superstorm Sandy and sea level rise is attributed to saltwater entering the soil
- ★ Saltwater intrusion is killing the trees, leaving a pale ghost forest in its wake

Soil is Linked to Economics

- ★ The Dust Bowl of the 1930s left many farmers without a livelihood
 - It was recorded that in just a single day, an entire layer of topsoil would be blown away
- ★ This directly impacted the amount of food available to the average family
- ★ Combining this with an already damaged economy it was a recipe that would continue to exacerbate existing issues



Black Sunday
April 14, 1935
- USDA

New Jersey Sediment Control Standards



USDA logo -
Wikipedia

- ★ Due to the disaster of the Dust Bowl, the soil conservation act was passed on April 27th 1935
- ★ This launched the Soil Conservation Service which would later become the Natural Resources Conservation Service
 - This is a branch of the United States Department of Agriculture
- ★ In 1976, New Jersey passed the NJ Soil Erosion and Sediment Control Act
- ★ As of 2017, there are thirty-two standards in total

Standard for Permanent Vegetative Cover for Soil Stabilization

- ★ Permanent stabilization preserves soil for future use
- ★ When not stabilized, soil can end up in waterways where it is lost and harming the ecosystem
- ★ When planting seeds for stabilization, look for factors such as temperature and soil pH



Permanent erosion control matting - Eastgate Supply

Warm Season Plants

★ Grow well at temperatures above eighty-five degrees fahrenheit



Little bluestem
(*Schizachyrium scoparium*)-
Norman G. Flaigg, Lady Bird
Johnson Wildflower Center

Deertongue
(*Dichanthelium clandestinum*)-
Stephanie
Brundage, Lady
Bird Johnson
Wildflower
Center



Cold Season Plants

★ Grow well at temperatures below eighty-five degrees fahrenheit



Switchgrass (*Panicum virgatum*) -
Peggy Romfh, Lady Bird Johnson
Wildflower Center



Canadian wild rye (*Elymus canadensis*) - Melody Lytle,
Lady Bird Johnson Wildflower
Center

Standard for Temporary Vegetative Cover for Soil Stabilization

- ★ While in the process of being seeded, soil must have a covering to keep it stable while waiting for a permanent stabilization method
- ★ Waiting periods of 2-6 months are included in this standard
- ★ Several kinds of stabilization materials



Typical straw netting
- Miller Seed



Jute
Mulch
Netting
-
Wellco



Straw
Netting at
Modwash,
Toms River
- Danella
Funk



Non-Native Non-Invasive

Annual
ryegrass
(*Lolium
multiflorum*)
- Pennington

Standard for Stabilization With Much Only



Crushed stone mulch -
Connecticut Stone

- ★ Essentially embedded into the standard for temporary vegetative cover for soil stabilization
- ★ Follows same protocols - mulch jute netting and straw netting
- ★ Crushed stone is included as a mulch stabilizer

Standard for Permanent Stabilization With Sod

- ★ Permanent stabilization without the wait
- ★ Quality and irrigation are extremely important
 - Sod should not be bent, broken, or dry
 - Irrigation can be costly
- ★ In Summer, the sod must be ordered, delivered, and installed within 24-hours.



Sod farm - DeBucks
Sod Farm

Grasses Used for Sod

- ★ Kentucky bluegrass is good when water is readily available
- ★ Sod made of fescue or a mix with Kentucky bluegrass is better for dry areas



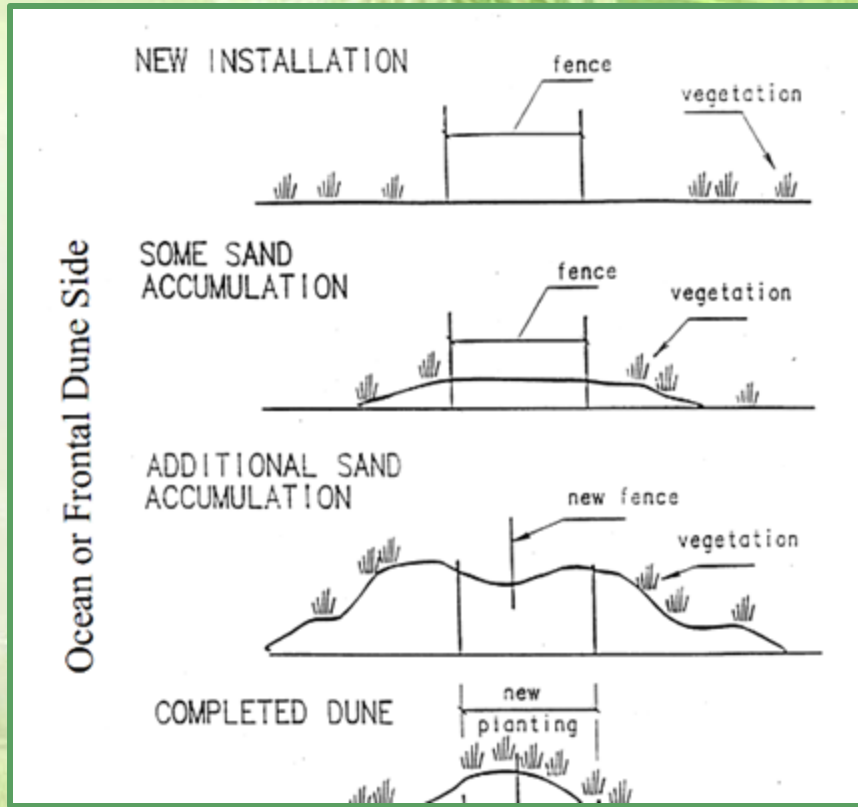
Non-Native Non-Invasive

Kentucky bluegrass (*Poa pratensis*) -
Willowlee Sod Farms



Non-Native Non-Invasive

Tall fescue (*Festuca
arundinacea*)- Great Basin Seed



Standard for Dune Stabilization

- ★ Controlling surface movement of sand dunes requires the use of vegetative and mechanical means
- ★ Sand fences help grow and keep dunes intact
- ★ Vegetation must be able to withstand sea salt spray from ocean

Sand dune cross section - NJ
Soil Erosion and Sediment
Control Standards, USDA

Reccomended Cultivar Beachgrasses

★ Cultivar plants are grown through selective breeding



American beachgrass
(*Ammophila breviligulata*) - Donald
Cameron, Go Botany



Coastal panicgrass
(*Panicum amarum* var.
amarulum) - Stock Seed
Farms



Saltmeadow cordgrass
(*spartina patens*)-
Gardenia

Suitable Non-Cultivar Beach Plants



Seaside goldenrod
(*solidago sempervirens*) -
Gardenia



Switchgrass (*Panicum
virgatum*) - Andy and
Sandy Wasowski, Lady
Bird Johnson
Wildflower Center



Eastern red cedar
(*juniperus virginiana*) -
NJ Hiking

Animals That Benefit



Monarch butterfly
(*Danaus plexippus*) on
Seaside goldenrod - Pam
Denmon/USFWS



Atlantic ghost crab
(*Ocypode quadrata*) -
Terry Ross

Standard for Topsoiling

- ★ Most recent standard added in 2017
- ★ Important to use temporary stabilization in stockpiles while not being used
- ★ Usually applied at uniform thickness
 - Golf courses, sports fields, and landfills are exceptions
- ★ Compaction should be assessed prior to putting down topsoil
- ★ Plants with shallow root systems may be recommended when working with compacted soil

Non-Native Non-Invasive



English lavender
(*Lavandula angustifolia*) - Seed
Corner

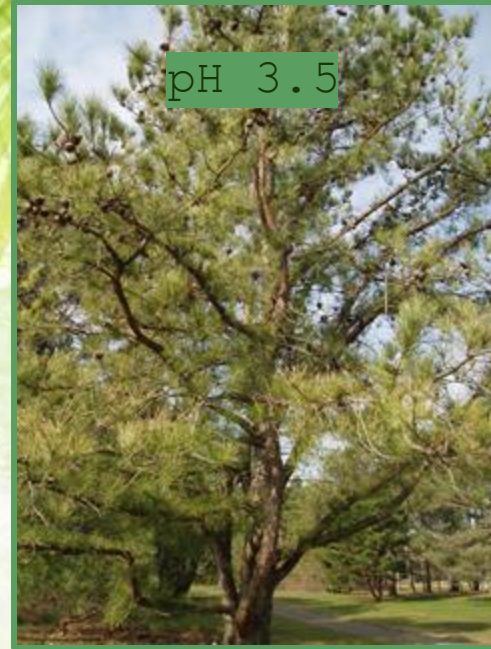
Standard for Management of High Acid-Producing Soils

- ★ The coastal plains section of New Jersey contains areas of soil with high pH
 - This includes the Pine Barrens
- ★ While beneficial to specific species, this could be harmful to humans
- ★ Properly store the acid soil in a stockpile separate from soil with a higher pH
- ★ Cover the acid soil with limestone to decrease the pH
- ★ Cover the soil with at least twelve inches of topsoil and monitor the location for at least six months

Species That Prefer Highly Acidic Soil

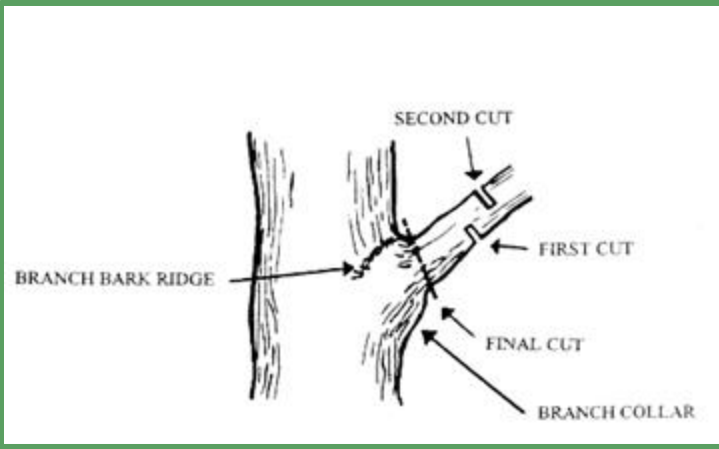


Lowbush blueberry
(*Vaccinium angustifolium*)
- Wikimedia Commons



Pitch pine (*Pinus rigida*)
- Julie Makin, Lady Bird
Johnson Wildflower Center

Standard for Tree Protection During Construction



Proper way to cut tree limbs - NJ Soil Erosion and Sediment Control Standards

- ★ Weigh pros and cons prior to cutting down tree
- ★ Vigor, age, species, disease, aesthetics, urban stress tolerance, longevity, and local wildlife benefits
- ★ Ensure that after excavation, roots are covered
- ★ Consideration of the protected root zone

SPECIES	ROOT SEVERENCE	SOIL COMPACTION & FLOODING	SOIL pH PREFERENCE	MATURE TREE HEIGHT (feet)	MATURE CROWN SPRED (feet)	HAZARD TREE RATING*	DAMAGE CAUSING ROOTS
Eastern redcedar	Tolerant	Sensitive	4.7-7.8	40-50	10-20	Low	No
Red maple	Tolerant	Tolerant	4.5-7.5	50-70	40-60	Medium	Yes

★ Table 9-1 within the NJ Soil Erosion and Control Standards lists different trees found in New Jersey with all of this information



Eastern red cedar
(Juniperus virginiana) -
Bumbees

Red maple
(Acer rubrum) -
NetPS Plant
Finder



Standard for Selection of Trees, Shrubs, and Vines for Planting

- ★ When looking to add new trees or plants, looking for ones that are native, support wildlife, and are aesthetically pleasing are the most ideal
- ★ Adding in these plants can help support soil stabilization
- ★ Assistance of a landscape architect is often helpful



Jersey-Friendly Yards
sign - Ocean County Soil
Conservation District

Common Native Trees

Evergreen



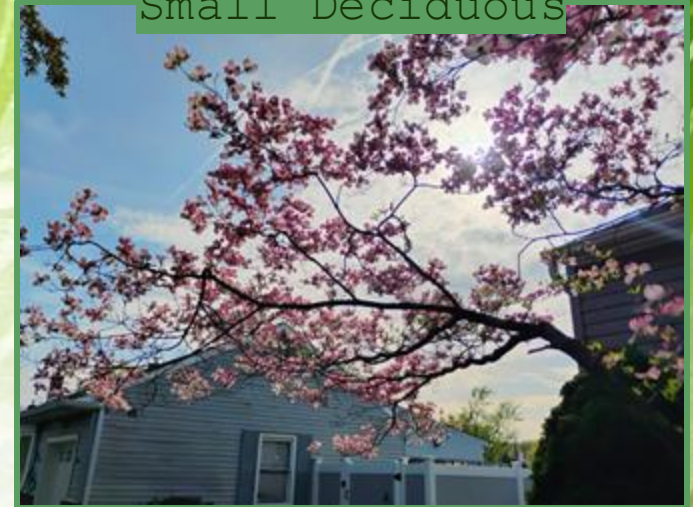
American holly
(*Ilex opaca*) -
Bumbee's

Deciduous



American beech (*Fagus
grandifolia*) - Pinelands
Nursery & Supply

Small Deciduous



Flowering dogwood (*Cornus
florida*) - Danella Funk

Suitable Bushes and Vines



Sweet pepperbush
(*Clethra alnifolia*) -
Gardenia

Non-Native Non-
Invasive



Common lilac (*Syringa
vulgaris*) - CLC
Landscape Design



Trumpet creeper
(*Campsis radicans*) -
Wikimedia Commons



Flowering
dogwood
(Cornus
florida) -
Danella Funk



Korean
dogwood
(Cornus
kousa) -
Outdoor
Design
Living

Standard for Maintaining Vegetation

- ★ Maintaining vegetation is key to preserving our soil
- ★ Applying correct fertilizer, pruning, and reseeding are included
- ★ Replanting trees that are invasive to native ones
 - Kousa dogwood versus flowering dogwood

Prescribed Pine Barren Burns

- ★ Done during winter months to remove accumulated brush
- ★ Pitch pine tend to thrive after prescribed burns are completed
- ★ Without these burns, real wildfires would become much more intense



Prescribed burn in pine barrens -
Central Pine Barrens Joint Planning &
Policy Commission

The Collaboration of Engineering and Vegetation



Grassed waterway -
Blanchard River
Demonstration Farms
Network

- ★ Grassed waterways are an engineering standard in the NJ Soil Erosion and Sediment Control Standards
- ★ This combines engineering and vegetation
 - Standard for dune stabilization also does this
- ★ Sod containing tall fescue (*Festuca arundinacea*) may be used as the vegetative lining

Concluding Statements

- ★ Although soil is complex, having standards in place makes the subject easier to understand
- ★ Using tools provided by these standards allow for better understanding of local species
- ★ Humans and nature work together to protect our soil



Soil profile -
lumen learning



Questions?

References

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