Native and Invasives of Cape Cod

Terminology Used

- ***Rhizome***
  - *Roots or stems that grow horizontally under ground and allow new shoots to sprout from them*
- ***Stolon***
  - *Similar to rhizomes, but stolon run horizontally above the ground*
- ***Allelopathic***
  - *Capable of modifying the soil chemistry in its vicinity to prevent seed germination and potentially making the immediate area inhospitable to neighboring plants*
- ***Perennial***
  - *Lives longer than a single year and will return following a winter season of dormancy*
- ***Invasive***
  - *Non-native to a region and does not have predators or competition to prevent a species from outcompeting native species*
- ***Disturbance***
  - *Damage or removal of plant material or ground cover, often a result of human actions but may be the result of fire or weather conditions*
- ***Succession***
  - *The change in species composition over time as reproduction spreads species into new areas*

Terminology Used

- ***Lenticel***
  - *Porous tissues found in the bark, stems, and/or roots of some woody plants that function as pores to aid in gas exchange*
- ***Ovate***
  - *Describes something to be similarly shaped to an oval or egg-shape*
- ***Serrate***
  - *Having a serrated edge, typically used to describe leaf shape, seen as "teeth" similar to a saw that may end in a sharp point or be rounded.*
- ***Fragmentation***
  - *Describes a form of asexual reproduction in which a plant may reproduce from fragments of a mature individual to produce a clone.*

Native

American Beachgrass

- Native upland species in Cape Cod, grows in sand dunes and is outcompeted in wetland habitats
- Provides subsurface structure to sand dunes to help prevent erosion due to wind and water
- Spread rapidly through rhizome roots traveling beneath the surface of the sand and sprouting new stems
- Beachgrass is capable of tolerating periods of drought through multiple mechanisms, aided by characteristics of its leaves and root structure

What to look for:

- Leaves with rough-textured upper surface and smooth undersides
- Grows up to 3ft tall and will be found on dune edges or coastal edges where sand deposition is common
- Seed head appears at top of stalks in late July-August

Invasive

Mugwort

- Invasive perennial plant, that has been naturalized in some locations in North America
- Performs well in low-Nitrogen soils, taking root in uncultivated or weedy areas
- There are numerous medicinal and culinary uses by peoples in areas that Mugwort grows natively

What to look for:

- irregular leaf shape that varies based on size and has lightened underside.
- Leaves closer to growing tip do not branch and are narrow spear-shapes
- Stem has purple color closer to main stalk
- Breaking leaf produces a sage-like smell
- Small yellow or brown flowers grow in clusters from midsummer to autumn

What makes it "Invasive"?

- Mugwort does not require high concentrations of Nitrogen, allowing it to thrive in low nutrient environments
- Reproduction through rhizome system, meaning plant spreads without seed production from roots or root fragments after being cut

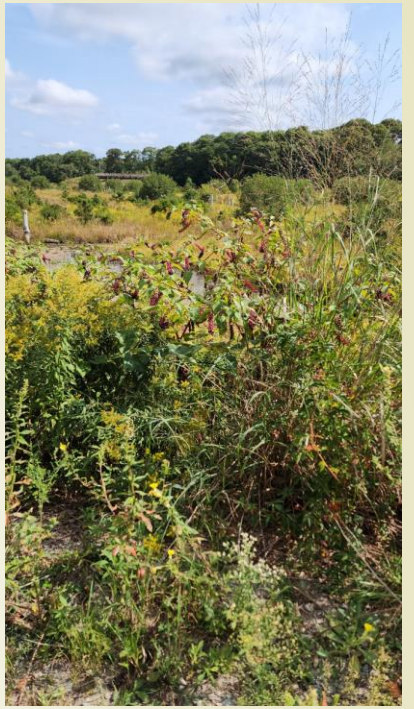
Native

American Pokeweed

- Native Perennial species found on cape cod
- Poisonous berries to mammals, not to birds
  - Traditionally used for dye or ink by native tribes on Cape Cod
  - Reproduction is typically facilitated by birds transporting seeds after consuming the berries

What to look for:

- Characteristic bunches of berries, ranging in color from green to pink to dark purple
- Broad, spear-shaped leaves with smooth edges
- A pink/red stem that can grow up to 2” in diameter



Invasive

Spotted Knapweed

- Invasive perennial, native to eastern Europe that was introduced in 1800s
- Excels in disturbed areas and will quickly appear following the removal of native ground cover
  - Industrial site, river banks, roadsides, etc. have high potential to create a space knapweed will fill

What makes it "Invasive"?

- A deep-reaching taproot gives better access to water
- High seed production
- No/low predation by native animals
- Allelopathic disruption of growth of neighboring plants

What to look for:

- Compound leaves with deep lobes
- Leaves and stem are covered in fine hairs
- Flower head is vibrant pink/lavender with bulb structure at base

Invasive

Porcelain berry

- Woody perennial vine that was introduced to North America as an ornamental garden plant
- Originally native to Eastern Asia

What to look for:

- A main characteristic is the vibrant berries, ranging from blues and purples to pink and even yellow
- Black will be present on the berries regardless of color
- Leaves have 3-5 lobes of varying depth
- The bark will have raised pores, known as lenticels, creating a rough surface

What makes it "Invasive"?

- Thrives in disturbed areas with ample sunlight and will outcompete native species
- Ground cover, pest resistance, and tolerance to adverse conditions
- Climbing growth pattern allows porcelain berry to climb over smaller shrubs and trees, dominate sunlight availability, and kill ground cover plants

Native

Wintergreen

- Native evergreen shrub that will grow in groups or as individuals
  - Reproduces by stolon (horizontal rhizomes from mother plant) and grows clones
- Creeping variety grows close to the ground, can spread ~40cm across, and up to ~15cm high

What to look for:

- Small, round leaves with a shiny or waxy appearance
  - Leaves may appear smooth around edges or have wide serrations
  - 3-4 leaves per stem
  - Leaves smell like sweet mint or licorice when broken
- Small red (edible?) berries during fruiting season
- Stems have red/pink color

Native

Striped Wintergreen

- Variant of wintergreen native to Cape Cod
  - Differentiable from creeping wintergreen by white stripe running down centerline of leaf and more narrow, pointed leaf shape with more pronounced serrations
  - Instead of red berries on short stem, white flowers form on long, vertical stems that are red in color
  - Does not have the same aromatic compounds as creeping wintergreen, therefore the leaves do not have a minty smell when broken

- Reproduces in similar cloning method as creeping wintergreen, producing clones from horizontal rhizome roots
  - does not typically form as dense groundcover and grows in smaller groups

Invasive

Multiflora Rose

- Originally introduced from Asia to aid in soil conservation and to be used as a border for grazing areas.
- Classified as an invasive, noxious weed and often requires complete removal of plant and root to manage.

What to look for:

- Compound leaves grow leaflets in rows, ending in a single leaflet
- Leaflets are ovate with serrate edges and end in a pointed tip
- Stems and branches have short, curved thorns

- White flowers appear in late spring and give way to red berries by late summer

What makes it invasive?

- High seed production and resilient seeds
- Lack of predation
- Vegetative reproduction, growing new plants from cut stems
- Leaves emerging earlier in the spring, and persisting later into the fall than native plants

Invasive

Bush Honeysuckle

- Deciduous honeysuckle variant, native to Asian countries, that is invasive in the United States.
- Thrives at the edges of forests and areas where human activity have resulted in a disturbance to natural succession.

What to look for:

- Can grow to height of 2.5m
- Oblong leaves 4-6 cm long
- White-Pale yellow flowers
- Dark red berries that are around 1cm in diameter and are poisonous to humans

What makes it invasive?

- Thrives in areas of disturbance where native species have been potentially damaged or removed
- Leafs out early in the spring, often by march, which reduces available sunlight for native species
- Is suspected to be allelopathic, meaning the plant alters the local soil chemistry in a way that hinders or prevents other plants from growing

Invasive

Oriental Bittersweet

- Herbaceous perennial vine that produces small, green-yellow, star-shaped flowers and a red, poisonous berry.

What to look for:

- Bright red berries growing in clusters spread along stem
- Thin stems have smooth bark with lenticels creating bumpy texture, larger stems have rough texture with deep grooves.
- Broad, rounded leaves with rounded serrations, sometimes coming to a short point.
- Bright orange roots that spread horizontally and will host multiple sprouts

What makes it "invasive"?

- Being a semi-woody vine makes bittersweet capable of climbing other plant species and removing sunlight availability.
- Thick growth causes a dense underbrush which prevents other plants from germinating or growing when covered by bittersweet.
- Fragmentation behavior makes removal difficult as a plant can sprout from a single root fragment.

Invasive

English Ivy

- A climbing evergreen plant, capable of growing up to 30ft high, that was originally imported as an ornamental species
- Produces aerial rootlets, or small roots used to cling to surfaces, to climb trees, walls, or other structures

What makes it "Invasive"?

- Due to its nature to climb structures or other plants, English Ivy poses a risk of "choking" other plants by reducing available sunlight

- This choking behavior can create "ivy deserts", or areas of monoculture dominated by English ivy, crowding out other plants and displacing native species
- Found to be a reservoir for bacterial leaf scorch, which is harmful to native trees

What to look for:

- Often found climbing up trees or man-made structures
- Leaves grow alternate from the stem, are 2-4 in long, and either have 5 lobes at juvenile growth stages, or are unlobed and oval shaped when mature
- Berries range from purple-black to orange-yellow and ripen in late winter
- Flowers last from late summer to late autumn, are 3-5cm in diameter, and are green-yellow in color

Invasive

Japanese Knotweed

What to look for?

- Broad, spade-shaped leaves with a flat base at stem
- Small white flowers growing upright in tight clusters
- Hollow bamboo-esque stems with raised nodes where leaves separate from main stalk
- Purple/red speckling pattern on main stems

What makes it "invasive"?

- Thrives in areas of disturbance and produces dense monocultures, preventing the growth of native species
- Very resilient and exhibit aggressive growth
- Thickets can grow to large size and up to 10-13ft tall, creating areas of shade and preventing other species' growth
- Reproduces from rhizome buds in roots, and cut root or plant fragments will produce shoots and roots to form new plant colonies. **CUTTING NOT RECOMMENDED**

Invasive

Autumn Olive

- Deciduous shrub that can grow up to 11ft tall, with clusters of flowers that range from white to yellow, and thorny branches.

What makes it "invasive"?

- Grows rapidly and develops a large canopy, covers native species
- Substantial seed production and high germination potential
- Fixes Nitrogen, allowing it to grow competitively in low N soils
- Found to be allelopathic and change soil chemistry to a state that detriments other plant species

What to look for:

- Alternating, wavy leaves that are up to 10cm long and 4cm wide with silvery undersides
- Yellow-white berries that ripen into fragrant red berries with silver or brown spots