The Utility & Beauty of Coastal Dunes

prepared by the

Ocean City Dune Stabilization Committee

in cooperation with the

Worcester Soil Conservation District

and the

Natural Resources Conservation Service

U.S. Department of Agriculture

The Utility and Beauty of Coastal Dunes

Millions enjoy the ocean beach for the water, sun, air and a multitude of sounds, sights and smells of nature. Dunes, formed by wind, water and vegetation are an integral part of the ocean environment and help protect the lives and property of coastal residents. Mankind is a main contributor to dune formation by pumping, constructing, fencing sand areas and establishing and maintaining vegetation.

This publication was written to help people in the Ocean City, Maryland area select and use plants to control erosion, build dunes, provide wildlife habitat and beautify the beach. It pictorially describes the types of plants, methods of establishing them and programs for maintaining a healthy, vigorous and functional vegetative community. It is in loose-leaf form to simplify the inclusion of alterations created by new technology or of new subject materials.

It was made possible through the cooperative effort of local citizens and government. Participants include: The Ocean City Dune Stabilization Committee, a volunteer citizens group; the Worcester County Soil Conservation District and the U. S. Department of Agriculture, Natural Resources Conservation Service.

Technical advice and assistance was provided by: Bruce E. Nichols, District Conservationist; Norman Melvin, Botanist, and Christopher Miller, Plant Materials Specialist. Bruce Nichols and Lou Granados from the Dune Stabilization Committee provided the writing, editing and copy preparation. Graphic design and printing was provided by Hastings Brothers Printers, Inc. of Salisbury, Maryland.

Financing was obtained from governmental bodies, condominium associations, businesses and individuals in the Ocean City area including: the Town of Ocean City, Worcester County and the Natural Resources Conservation Service, U.S.D.A.

The Delmarva Condominium Managers Association, and the Atlantis, Calypso, Century I, Golden Sands, Irene, Mann Properties, Our Place at the Beach, Pyramid and Sea Watch condominiums also contributed.

Businesses included the Ed Smith Real Estate School, Millar Elevator Company, Ocean Landscaping, Peninsula Bank and WZBH Radio station. The Caine Woods Community Association, Womans Club of Ocean City and private individuals contributed funds.

Dune Management

The beach at times appears as barren sand. Only specialized plants adapted to the inhospitable environment can survive and they must withstand salt, high heat, lack of nutrients, drought, flooding, erosion, abrasion from wind-driven sand and freezing temperatures.

A plant may be poisoned by salt, cooked by high temperatures, starved from lack of nutrients, withered from lack of water, cut by wind-driven sand, flooded by storm or tide, uprooted by wave or wind erosion, eaten by wild life or crushed by tourists.

Most beach vegetation occurs naturally. However, man has introduced species such as yucca from the southwestern U.S. desert and lambs-quarters from Eurasia. Many species found on the beach are transitory and not suited to the long-term environment; others, such as downy broom and cheatgrass (a winter annual) can dominate the vegetative community temporarily, but may not reappear for years.

Any vegetation growing on the beach helps stabilize the sand, and is therefore considered

Although attacked as allergenic, goldenrod is innocent. It blooms the same time as ragweed.

beneficial. Although removing plants to lessen competition for preferred or planted species is not recommended, property owners may decide to remove competing plants.

At times, entire plant species populations are removed for frivolous reasons. Although attacked by owners and managers as allergenic, the beautiful goldenrod is not. Its showy blooms just happen to appear when allergic reactions such as hay fever and rhinitis, induced by ragweed, occur.

Ragweed is wind-pollinated, and has inconspicuous small green flowers that are generally unnoticed. A comparison of the two pollens shows that goldenrod is relatively smooth, while ragweed has sharp, irritating spines projecting from a sphere similar to a mace. The spines help attach the pollen for fertilization, but irritate tissue as it is pulled through the respiratory system. Goldenrod pollen relies on insects for pollination. It is heavy, and it attaches itself to insects with a sticky substance and is then transferred by contact. It is generally not windblown.

In general, bright fragrant blossoms are pollinated by insects and do not cause allergic reactions. It is usually the windblown pollinators that cause such problems.

We recommend that any plant that becomes established on the dune be allowed to develop. Let nature decide which one stays and which goes. After all, nature has the long-term experience.

General Planting Information

Photos in this publication are of plant species in various stages of development. The back of each page has a description of the plant which includes planting and management suggestions, and a note section for keeping a dune plant record.

In most years, planting should be done in winter or early spring. Planting in late February or March is suggested because the plants can be well rooted and established before hot weather. Good results can also be achieved by planting during summer when soil moisture is sufficient for warm season species. Take special care to keep the soil moist for germination and seedling development. Avoid planting during the dry season; instead, plant when the risk of loss by sandblasting, moisture stress and erosion are lowest.

Maintain planted areas by reestablishing plants where plants die and by correcting problems with such things as surface mulch, sand-trapping devices and access walkways.

For most herbaceous plants, seed is difficult to harvest without special equipment. Seed or other plant materials may be produced commercially.

Vegetative material, rather than seed, is generally used for planting when the seed supply is limited, and small amounts of plant material can be obtained by thinning natural areas of dense growth. A supply of plants for your site can be raised in a nursery, field grown by experienced persons or purchased from a commercial grower specializing in coastal plants.

In general, plant vigorous, mature plants one

American Beach Grass culms in first year with rows of Panic Grass.

to two feet apart in rows two feet apart. Space the plants more closely to speed the accumulation of sand. Plant the area uniformly since unequal plant density promotes erosion. Random species spacing will minimize bare spots if a plant dies.

Large areas can be planted with various types of transplanters. Plant small areas by hand with a nursery spade, bar or other device to make a hole the size needed.

Plant tall beach grasses upright in the soil about eight inches deep. Part of the leaf surface may be buried. Most other species should be planted at the depth at which they were removed from the source site.

Herbaceous plants will become established and diversify faster if they are fertilized. Nutrients should be supplied to stimulate growth during the growing season from April through November. Target dates to apply fast-release fertilizer are April 1, June 20 and September 7. Slow release fertilizers should be applied according to directions

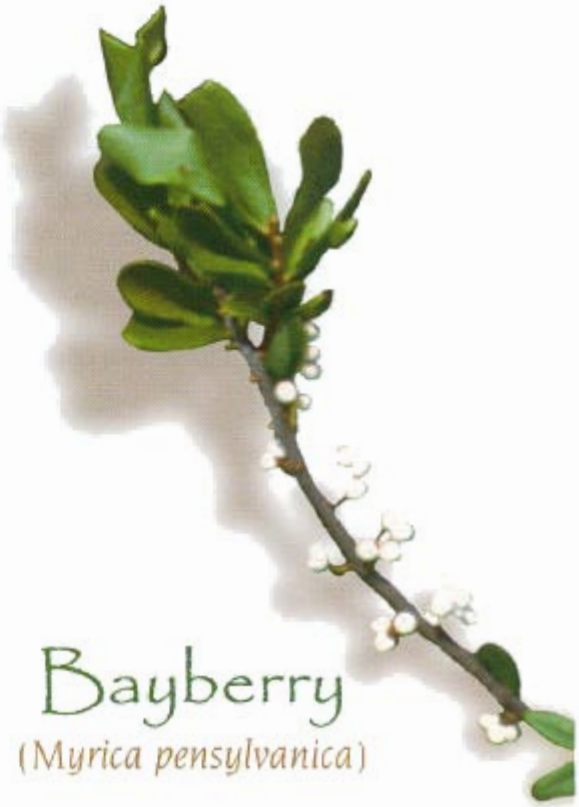
Various plants and fertilization rates should be tried to determine overall Best Management Practices.

The common names used in the plant descriptions are those generally accepted in Maryland Authority for nearly all scientific names is the "NRCS National List of Scientific Plant Names." Conflicts in spelling were resolved using the most recent papers and publications available.

As technology advances, this document will be updated. The date each page was produced is shown in its lower right corner.

The following photographs and text provide a basic understanding of the beach and its vegetation. We tried to capture the beauty of the vegetation during various seasons so the user can recognize the plants any time. Although all plants are beneficial and some add beauty, others provide food and wildlife habitat, or serve as deterrents to trespassers. It is important to remember that no completely undesirable species of plants grow on a dune.

All programs and services of the U. S. Department of Agriculture are offered on a non-discriminatory basis, without regard to race, color, national origin, religion, sex, age, marital status, disability or political beliefs.



Bayberry

(*Myrica pensylvanica*)

Plant History

- Where planted _____
- When planted _____
- Date shoots (new growth) appeared _____
- Date(s) fertilized _____

_____

_____

- Remarks _____

_____

_____

Bayberry, *Myrica pensylvanica* (Perennial shrub) has inconspicuous early spring flowers which give rise to a beautiful, fragrant fruit historically referenced as candle berry, since the wax on the fruits is used to scent bayberry candles. The leaves are dark green, deciduous and aromatic when crushed. The winds usually strip the branches of all leaves soon after frost, usually in November. This species is relatively easy to acquire and establish on the landward side of the primary dune. Bayberry can be established by seeding 1/2" deep or by transplanting as a balled or container-grown shrub. Direct seeding should be incorporated in late winter or early spring. The seed should be mechanically agitated to break the wax coating for quicker and increased germination. The shrub is shaped by the elements and seldom exceeds 3' in height on the frontal dune. Seed and plants are commercially available.

Beach Heather

(*Hudsonia tomentosa*)

Plant History

- Where planted _____
- When planted _____
- Date shoots (new growth) appeared _____
- Date(s) fertilized _____

_____

_____

- Remarks _____

_____

_____

Beach-heather, *Hudsonia tomentosa* (Perennial) has bright yellow flowers in May which produce one or two seeds. Plants occur naturally on the landward side of the beach in gently undulating low relief dunes usually with an accessible water table. They produce a meadow-like appearance with clear sand spaces. This natural spacing may be caused by lack of water or nutrient conservation or be the result of toxins that eliminate competing species. Vegetation varies from a drab olive green during winter dormancy to a brilliant silver green during growth. More needs to be understood for management of this species. Not commercially available as seed or plants.

Sandbur

(Cenchrus longispinus)

Plant History

- Where planted _____
- When planted _____
- Date shoots (new growth) appeared _____
- Date(s) fertilized _____

_____

_____

- Remarks _____

_____

_____

Sandbur, *Cenchrus longispinus* (Annual) is an annual grass, with a compact inflorescence, with great potential for foot traffic control. The first bur on the beach is a native grass. Seed may be collected and sown into the sand with germination as high as 90 percent. Few barefoot travelers will walk where it is grown. Since this is an annual, replanting or reseeding needs to be done yearly to regulate foot traffic. Its spines break off and can be quite irritating. Yearly inspection may be required to determine acceptable stand maintenance. This plant may be commercially available but is limited. Seeding depth is estimated at 1".

Coastal Panicgrass

(*Panicum amarum*)

Plant History

- Where planted _____
- When planted _____
- Date shoots (new growth) appeared _____
- Date(s) fertilized _____

_____

_____

- Remarks _____

_____

_____

Coastal panicgrass, *Panicum amarum* var. *amarulum* (Perennial) is a tall beach grass three to four feet in height and unequaled as a functional vegetative cover. A warm season grass, it requires average temperatures on the dune of near 70 degrees Fahrenheit before germination or growth. Panicgrass will do little more than germinate the first year after planting, attaining one to two inches in height. The following year the fully developed grass will average three feet in height if adequate fertilizer is applied. As the seed fills out, it gently bends the stalk and dominates the landscape. This grass produces a tremendous amount of seed available for both wildlife consumption and plant propagation, which must be covered by 1 1/2" to 2" of sand to germinate. Germination success depends on wind movement and the accumulation of sand. Fertilization is needed to enhance second year growth and dominance. No other maintenance is anticipated other than yearly fertilization. Panicgrass has outperformed American beachgrass in dune trials from the second season through the fourth and may be a preferred associated plant. The vegetation is dormant in the winter but still protects the dune. Seed and plants are commercially available.

Red Cedar

(*Juniperus virginiana*)

Plant History

- Where planted _____
- When planted _____
- Date shoots (new growth) appeared _____
- Date(s) fertilized _____

_____

_____

- Remarks _____

_____

_____

Red cedar, *Iuniperus virginiana* (Perennial tree) has a small yellow-green spring flower which turns into a light green berry and by fall darkens into a bluish berry. The aromatic foliage is pungent, not considered pleasing by many. The fruit is eaten by a greater variety of birds than most vegetation on the beach. As many as 68 species have been identified using it as a food source. The evergreen foliage is a welcomed site along the beach in the winter. The foliage provides birds with winter cover on an otherwise wide-open and unprotected environment. It is difficult to get established, unless it is planted in the protected back dunes. It offers a successional planting that could add beauty and function. The red name alludes to its rust color and can dominate the winter to early spring appearance. Seed and plants are commercially available. Seed must be processed by macerating and soaking to improve germination. Seed should be planted 1/4" to 1/2" deep but may have to be planted deeper to access moisture.

Virginia Creeper

(*Parthenocissus quinquefolia*)

Plant History

- Where planted _____
- When planted _____
- Date shoots (new growth) appeared _____
- Date(s) fertilized _____

_____

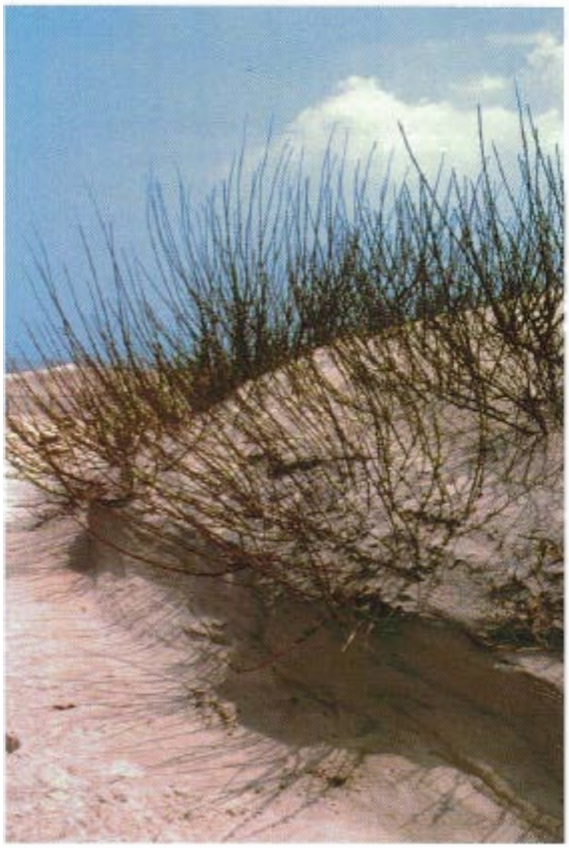
_____

- Remarks _____

_____

_____

Virginia creeper, *Parthenocissus quinquefolia* (Perennial) most easily recognized by its five pointed leaf, produces clusters of small greenish, slightly detectable flowers which transform into grape-like clusters of green berries that turn almost black when ripe Runners from the wandering vines transverse the dune, climbing over shrubs, trees or anything they can fasten their tendrils around. Vines and leaves turn an outstanding red color in late summer, early fall or when under stress. Most vines remain alive in the winter, producing new spring growth. They have a huge potential for obscuring the sand fence, much as greenbriar and sweet autumn clematis. A preferred food for over 25 species of birds, it can be planted by seed or developed by cutting Once established, little to no maintenance is required. A suggested method for planting is to place a well-rooted plant in a peat pellet into the sand. Plants and seeds are commercially available and to insure germination, should be planted 1" deep for sufficient moisture.



Beach Plum

(*Prunus maritima*)

Plant History

- Where planted _____
- When planted _____
- Date shoots (new growth) appeared _____
- Date(s) fertilized _____

_____

_____

- Remarks _____

_____

_____

Beach plum, *Prunus maritima* (Perennial shrub) has a white, clustered flower which sometimes emerges just prior to the leaves and can dominate the beach scene. The flower is a favorite nectar source for bees, and opens the spring beach with quite a buzz of activity. The leaves offer a beautiful background of soft green, brushed with the appearance of new growth red stems. the plum develops as a green, fleshy fruit resembling miniature Granny Smith apples, then turns red. Raccoons literally gorge themselves when plums are at their sweetest ripe condition. Winter strips the leaves revealing a maze of red stems. Easy to establish on the landward side of the dune, the plum is not subject to any disease or insect limiting factors. Plants and seed are commercially available. Direct seeding is possible, but container, dry root or balled plants are preferred.

Rugosa Rose

(*Rosa Rugosa*)

Plant History

- Where planted _____
- When planted _____
- Date shoots (new growth) appeared _____
- Date(s) fertilized _____

_____

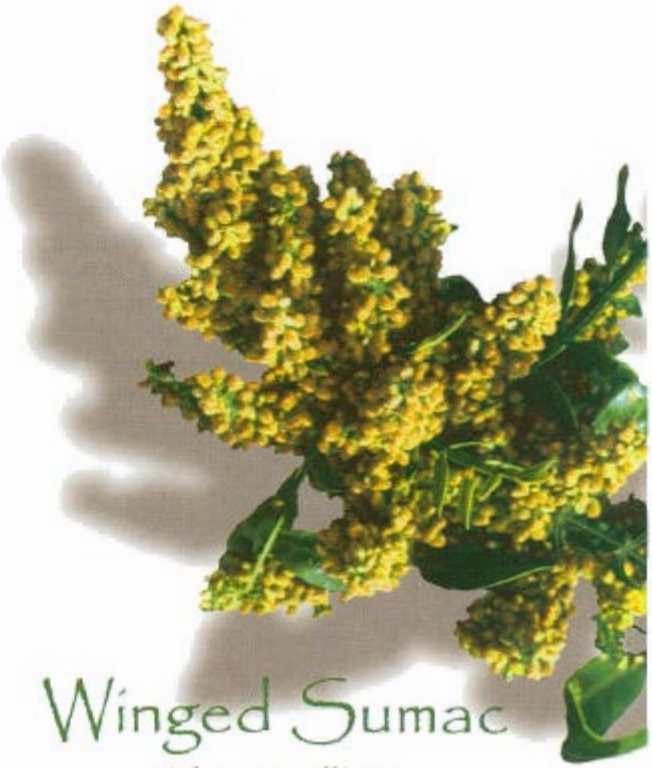
_____

- Remarks _____

_____

_____

Rugosa rose, *Rosa rugosa* (Perennial shrub) an exotic import from Japan, has one of the most beautiful flowers on the beach. With its own arsenal of thorns it may be a natural deterrent to unwanted foot traffic. The rose hips are bright and beautiful, and have been called sea tomatoes. Winter strips the leaves, leaving an array of rose hips. This plant is widely available for planting. Wildlife use of the bloom and nectar is known, but use of the rose hips and seed is not locally documented. It has a high resistance to salt spray and is at home in the dune. Establishment period is critical but little maintenance is necessary. Plants are available commercially in container, ball and dry root forms.



Winged Sumac

(*Rhus copallina*)

Plant History

- Where planted _____
- When planted _____
- Date shoots (new growth) appeared _____
- Date(s) fertilized _____

_____

_____

- Remarks _____

_____

_____

Winged sumac, *Rhus copallina* (Perennial shrub) flowers create an outstanding display on the dune. Their buds are slightly pink and become yellow white flowers. The seeds are red and sticky at maturity and form dark hanging heads that persist into late winter or early spring. The seed is oil-coated, which contributes to its longevity, but is acidic and not a preferred food of wildlife. The plant is important because of its availability, but not preferred as a frontal dune species due to its susceptibility to salt damage. It can do well on the landward side of the primary dune, and once established, spreads by rhizomes. The seeds are thought to be difficult to germinate, but coating them with sulfuric acid for one hour and planting them in the fall dramatically increases germination. A good candidate for inclusion into a seed mixture, they are easy to collect, but must be treated. Seed and plants are available commercially, but limited!

Seaside Spurge

(*Euphorbia polygonifolia*)

Plant History

- Where planted _____
- When planted _____
- Date shoots (new growth) appeared _____
- Date(s) fertilized _____

_____

_____

- Remarks _____

_____

_____

Seaside spurge, *Euphorbia polygonifolia* (Annual) has small flowers needing magnification to fully see. The plant is small but stands out due to its assortment of pale light green leaves attached to light green and yellow stems that transform to light red in older growth. Its seed capsule is slightly more obvious than the flower, but needs magnification for clarity. Plants characteristically have milky acrid juice just like their relative poinsettia. An annual, it provides little wind protection in the winter, although at times it is abundant and sufficiently covers the sand to stabilize it. It may be introduced in a seed mixture, but seed is not presently available. Management is to let nature take its course. Future seed mixtures may benefit from its inclusion.

American Beachgrass

(*Ammophila breviligulata*)

Plant History

- Where planted _____
- When planted _____
- Date shoots (new growth) appeared _____
- Date(s) fertilized _____

_____

_____

- Remarks _____

_____

_____

American beachgrass, *Ammophila breviligulata* (Perennial) is a native grass that reaches 3' in height and is the foundation of 99% of all beach vegetative revitalization. It ranges from the St. Lawrence Seaway to Cape Hatteras, NC, and there is hardly a stretch of the beach where it cannot be found. The grass has the most extensive root and rhizome system on the dunes with roots sometimes exceeding 26' in length. The grass spreads extensively from lateral rhizomes since the seed is not generally viable and of no planting value. Some green leaf area may remain in the winter but most plants usually turn a yellow-brown. New shoots may appear in the fall, but in most cases start growth in early spring (March). The first leaf emergence is a sharp pointed shaft that unfolds as it matures. The grass grows best where sand is accumulating, although a buildup of sand exceeding 8" in one storm event may negatively affect plants. Accumulations of 2 or more feet have a high probability of killing the plants. No wildlife use is documented except cover. Maintenance should include a fertilization program. There are problems with maintaining a pure American beachgrass community. It usually starts to deteriorate at 3 to 5 years of age, and has completely died off under the assault of insect and disease. We have witnessed good growth during the first season of establishment and a complete biological die off the following year. Managers should promote plant succession and introduce other long term vegetative types. Widely available commercially in dry root form, it should be planted during the last two weeks of February and the first two weeks of March.

Seaside Goldenrod

(Salidago sempervirens)

Plant History

- Where planted _____
- When planted _____
- Date shoots (new growth) appeared _____
- Date(s) fertilized _____

_____

_____

- Remarks _____

_____

_____

Seaside goldenrod, *Salidago sempervirens* (Perennial) has lush vegetation with rich, green leaves accented by bright yellow fall flowers. A perennial, its beauty lies in its contrast with the harsh environment. Managers have wrongly attacked this plant for inducing allergies, i.e., hay fever, asthma, etc., but it is ragweed that is usually the culprit. Goldenrod should be welcomed to any dune. Winter identification is usually made by the bleached skeleton of woody stalk and flower residue. Wildlife use is very low, and mainly limited to Goldfinch, Junco and Pine Siskin. In February and March, red leaves that emerge from the sand soon become green. Presently the only method of propagation is by root stalk or breaking apart the multiple stalk into separate plants. Seeding has potential, but has not been widely used. Best maintenance is to let nature take its course. A good fertilization schedule also helps. Goldenrod is presently not available by seed or plant. Transplants should be made in late winter or early spring.

Seabeach Evening Primrose

(*Oenothera humifusa*)

Plant History

- Where planted _____
- When planted _____
- Date shoots (new growth) appeared _____
- Date(s) fertilized _____

_____

_____

- Remarks _____

_____

_____

Seabeach evening primrose, *Oenothera humifusa* (Annual) is a delicate yellow beauty which sometimes becomes reddish. Its flowers are considered nocturnal, but often bloom during daylight hours, especially in the evening. The plant usually occupies less than a square foot, but sometimes covers as much as 3 to 4 square feet. In the spring it germinates "early" and reaches maturity by May. It persists until frost when the foliage disappears except for the woody base stem, which by late winter is usually absent. The seed is small and the only documented wildlife use is by the common Goldfinch. Management should be to include it in a seed mixture and fertilize it for diversity of stand. An overall fertilization program should increase its growth. It is not preferred for dune stabilization because of its size, limited root growth and annual growth habit. It is of advantage in early succession dune communities. Plants or seed are not know to be available commercially, and preferred planting depth is not documented.

Yucca

(*Yucca filamentosa*)

Plant History

- Where planted _____
- When planted _____
- Date shoots (new growth) appeared _____
- Date(s) fertilized _____

_____

_____

- Remarks _____

_____

_____

Yucca, *Yucca filamentosa* (Perennial) is a beautiful, white, tall flower at times overtopping the 4' sand fence. Yucca can easily draw attention from other plants on the beach. It usually blooms in June, but may delay bloom to a later date due to plant stress. Its dark green vegetation is visible all year long. The ends of the leaves may burn with salt spray, but its hardiness and ability to spread by seeds and roots have earned it a place on the beach. The plant does best in stabilized areas with reduced sand movement. Its vegetation structure offers diversity and contrast. Yucca is a plant that can divert foot traffic. Its seed is viable and easy to collect, and should be considered for use in a seed mixture to diversify beach plantings. Wildlife use is diverse including hummingbirds and woodpeckers. Many other species use the persistent seed, especially when snow covers up most other food sources. It can be propagated by breaking apart the tubers into pieces as small as 1/4". Generally, the bigger the root, the better and more vigorous the plant. Yucca responds well to fertilization. The plants and seeds are readily available commercially, and are planted as container, balled or root stock. Seeding for greatest success is estimated to be 1/2 to 1" depth.

Lathco Flatpea

(Lathyrus latifolius)

Plant History

- Where planted _____
- When planted _____
- Date shoots (new growth) appeared _____
- Date(s) fertilized _____

_____

_____

- Remarks _____

_____

_____

Lathco flatpea, *Lathyrus latifolius* (Perennial) is a pink beauty occasionally occurring as a light yellow flower. It graces the beach only where introduced and is a persistent dark green legume that originated in Central Europe. It spreads by underground rhizomes and produces viny growth up to 7' high. A nitrogen producer, it has an advantage in the nitrogen limiting growth environment of the dune. It has been established by direct seeding with bacterium inoculation, but transplants may be preferred. Transplants introduced in April or June should become established the first year and spread during the second year. A single plant has been known to establish a community as large as 8' across in a 4-year period. In winter the vegetative cover declines into a dormancy, and the tops are lost to wind damage. It is drought tolerant and seldom shows stress from low water availability. Wildlife use includes birds and rodents. Rabbits sometimes graze clumps close to the ground limiting their use for beach protection. Monitored sites have not shown salt burn. The plant can grow in pure stands and out-compete other species. Our experience is limited but it has potential for management. Although plants and seed are available commercially, plant availability is limited.

Partridge Pea

(*Cassia fasciculata*)

Plant History

- Where planted _____
- When planted _____
- Date shoots (new growth) appeared _____
- Date(s) fertilized _____

_____

_____

- Remarks _____

_____

_____

Partridge pea. *Cassia fasciculata* (Annual) is a pleasing introduction to the dunes with a bright yellow flower with contrasting dark green foliage. It is vigorous in growth, occurs naturally and seems to take advantage of dunes with high organic residue leaf litter. The most common location is where American beachgrass is on the decline or has completely collapsed as a community. The pea usually occurs later in succession where it takes advantage or moisture conservation by plant residue left by the death of other species. Once established, it grows well. A legume, it fixes nitrogen and is of great advantage in an environment with few available nutrients. The winter foliage is limited to persistent woody stems without any real easy identification points after the pods are dislodged. The woody stems decline, break down, and usually disappear by spring when a new plant may appear. The seeds are very important to wildlife, providing a constant food source. Quail have been observed working the pods to shatter out the seeds. The plant has the potential for direct seeding, especially in a vegetatively declining dune. It also may be of great advantage in a diverse seed mixture. Plants could easily be made available.

Scarlet Pimpernel

(*Anagallis arvensis*)

Plant History

- Where planted _____
- When planted _____
- Date shoots (new growth) appeared _____
- Date(s) fertilized _____

_____

_____

- Remarks _____

_____

_____

Scarlet pimpernel, *Anagallis arvensis* (Annual) is a small, red flowered plant which is not abundant on the beach. It is not considered of great conservation value due to its small size and infrequent occurrence, but adds plant diversity and seasonal color to the dunes. Little else is known about the use or management options. No known source of seed or plants is identified.

Camphorweed

(*Heterotheca subaxillaris*)

Plant History

- Where planted _____
- When planted _____
- Date shoots (new growth) appeared _____
- Date(s) fertilized _____

_____

_____

- Remarks _____

_____

_____

Camphorweed, *Heterotheca subaxillaris* (Annual or Biennial) has a bright yellow flower which matures into a white fluffy seed head. The flower and seed head are similar to the dandelion in color and shape. The plant is an annual or biennial depending on the time of year it germinates and the availability of nutrients and water. Its leaves are strongly aromatic with the smell of camphor when crushed, and it appears to be more abundant under a fertilization program. Its winter appearance varies greatly, from a dead disappearing residue to a live immature plant. The seed is viable and readily disseminated by the wind. It may be added to a seed mix or planted alone. The stabilization properties on the dune are not extremely important but again, anything that grows offers benefits. Wildlife use is not documented. Plants or seed are not known to be commercially available.

Saltwort

(*Salsola kali*)

Plant History

- Where planted _____
- When planted _____
- Date shoots (new growth) appeared _____
- Date(s) fertilized _____

_____

_____

- Remarks _____

_____

_____

Saltwort, *Salsola kali* (Annual) has small flowers needing magnification for detail. It is armed with thorn tipped leaves and fruits that are formidable deterrents to trespassers on the dunes. The plant is typically 2' tall, and may take on an open or dense vegetative form. Plants grow 4' to 5' across and 4' tall where water and nutrients are available. Plants of this size are not usually found on the elevated dune. The leaves and stems range in color from a light pale green to a dark red, depending on site, time of year and growth response to the environment. The fruit has yellowish to lead-colored wings. The fruit and seeds have potential value, with direct seeding, to form a living fence. Broken by wind and decomposition, its winter existence is very limited, and it disappears from the beach after November. Wildlife use is not well documented other than an occasional grazing by rabbits when the plant is young. It can be used in seed mixes and responds well to fertilization and water. Its overall capability to capture and stabilize sand on the beach is considered low due to its limited physical presence during the winter.

Coastal Bluestem

(*Andropogon littoralisisa*)

Plant History

- Where planted _____
- When planted _____
- Date shoots (new growth) appeared _____
- Date(s) fertilized _____

_____

_____

- Remarks _____

_____

_____

Coastal bluestem, *Andropogon littoralis*(Perennial) is a clump grass that emerges in the spring through a brown residue, and is usually reduced in height by wind breakage on exposed areas. The small green leaves contrast with the brown in the spring but soon dominate the clump. As it grows the stems take on a chalky-blue color, hence its descriptive name, bluestem. The grass, which naturally occurs in clumps isolated from continuous stands or total vegetation coverage is spread by long rhizomes. Although the seed can be planted in denser stands and fertilized, creating a total area coverage, it should not be mowed. It can be planted by transplanting the plants, or by collecting seed-bearing parts of plants and cutting them into the sand with a spade or similar device. Its seed is viable but easily wind-blown, a plus in establishing new plantings in the wild but a management headache unless they are immediately secured in place in the sand. The seed moves much like feathers on the beach, and wildlife use is limited to cover. Some success has been achieved by cutting the top of the plant into the sand to retain the seeds. Plants may become available, but there is no documented source of seed.

Trailing Wild Bean

(*Strophostyles helvola*)

Plant History

- Where planted _____
- When planted _____
- Date shoots (new growth) appeared _____
- Date(s) fertilized _____

_____

_____

- Remarks _____

_____

_____

Trailing wild bean, *Strophostyles helvola* (Annual) has variably colored flowers ranging from pink to beige to white with one to four beans per flower cluster. An annual, it decomposes after the November frost leaving only the bean seed. The bean is used by wildlife and especially hoarded by mice for winter use. In the spring the seeds germinate and grow, forming a three leaf dominated vine that runs across the dune and at times exceeds 20' in length. Its growth readily adopts the protective fencing for support, but it can also completely cover a dune. This legume has lush growth and takes full advantage of its nitrogen fixating capability in soils with little available nutrients. Establishment of the beans can be by seed planted 1 to 2 inches deep. Use bacterial inoculation on the seed source since it may not be available in the soil. Seeds and inoculation are presently available commercially.