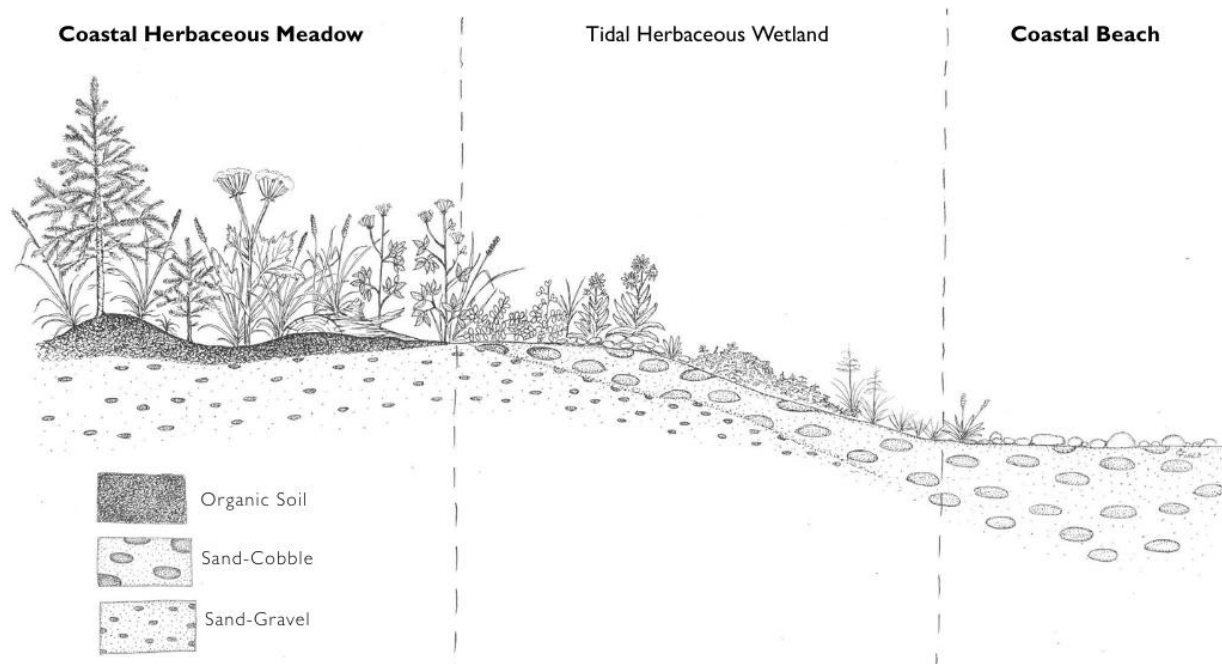


Coastal Herbaceous Meadow and Beach



Coastal Herbaceous Meadow

Coastal herbaceous meadows are subject to storm surge and salt spray but are located inland of the range of tidal influence. Rhizomatous, stoloniferous, and salt-tolerant graminoids and forbs are characteristic of the communities. Species diversity is low and nonvascular and woody plant species are uncommon. In general, species diversity increases with substrate stability. Grasslands typically occupy mobile substrates on the supratidal beach with rich herb meadows developing on more stable stretches in back beach settings. The dominant plant species occupying the supratidal beach include: the succulent, halophytic forb seaside sandplant (*Honckenya peploides*), dunegrass (*Leymus mollis*), seaside ragwort (*Senecio pseudoarnica*), oysterleaf (*Mertensia maritima*), and beach pea (*Lathyrus japonicus*). Additional grasses, such as red fescue (*Festuca rubra*), meadow barley (*Hordeum brachyantherum*), largeflower spargrass (*Arctopoa eminens*), Pacific reedgrass (*Calamagrostis nutkaensis*), and Bering's tufted hairgrass (*Deschampsia beringensis*) may intergrade with distance from the shore.

In the back beach, meadow communities are complimented by a diversity of accessory herbs including the large umbels: common cow parsnip (*Heracleum lanatum*), Scottish licorice-root (*Ligusticum scoticum*), Pacific hemlockparsely (*Conioselinum pacificum*), seacoast angelica (*Angelica gmelinii*); sedges such as largehead sedge (*Carex macrocephala*), Gmelin's sedge (*Carex gmelini*), Mackenzie's sedge (*Carex mackenziei*), and longawned segde (*Carex macrochaeta*); and

the forbs: silverweed cinquefoil (*Potentilla anserina*), fragrant bedstraw (*Galium aparine*), Nootka lupine (*Lupinus nootkatensis*), wooly geranium (*Geranium erianthum*), false lily of the valley (*Maianthemum dilatatum*), and Kamchatka aconite (*Aconitum maximum*). Boreal yarrow (*Achillea millefolium* ssp. *borealis*), Tilesius' wormwood (*Artemisia tilesii*), and arctic rush (*Juncus arcticus*) tend to increase in abundance on more recently disturbed, mineral soils. Sitka spruce (*Picea sitchensis*) saplings may be recruited in meadows that are lifting out of the range of storm surge and salt spray due to isostatic rebound or regional tectonics.

Coastal Beach

Coastal beaches occupy the zone of daily tidal influence and in the Chenega region, are commonly comprised of coarse sand, gravel, and cobble. Gradients tend to be steep and storm berms are often present. The barren to sparsely vegetated condition of these beaches relates to both the uplift experienced during the 1964 Good Friday Earthquake, which raised formerly subtidal substrates out of the ocean, as well as the generally high exposure and energy of the coastline, which precludes the retention of finer sediment that facilitates the establishment of vascular plants and some marine alga.

Environment:

Coastal herbaceous meadows develop along gently sloping coastal forelands. Substrates range from coarse sand and gravel in the supratidal beach to sandy loams in the back beach. Vegetation occupies the elevational range from the upper intertidal zone to the inland extent of salt spray.

Disturbance:

Coastal herbaceous meadows and beaches are exposed to wind, salt spray, storm surges, and tidal inundation. Owing to their landscape position, these habitats are highly susceptible to damage from oil spills and human use. Degree of damage from an oil spill to nearshore waters is expected to vary with factors such as degree of tidal influx, tide level, location, season, and extent and duration of the spill. Off-road vehicle use along beaches is frequent near villages and towns.

Animal Species Supported:

Mammals:

Moose (*Alces alces*) – **Tunturpak, Teqliq** [Chenega], **Teggliq** [NW, PG]

Showshoe hare (*Lepus americanus*) – **Uskaanaq** [NW, PG]

Northern vole (*Microtus oeconomus*) – **Kriisaq** [N Alutiiq], **Ugna'aq** [S Alutiiq]

Sitka black-tailed deer (*Odocoileus hemionus* ssp. *sitkensis*) – **Tuntuq, Puhgutaq** [Chenega]

Black bear (*Ursus americanus*) – **Tan'erliq**

Fox (*Vulpes vulpes*) – **Kaugya'aq; Kangilngaq, Uuquciik** [NW, PG]

Birds:

Mallard duck (*Anas platyrhynchos*) – **Nillqitaq** [NW, PG, Kodiak], **Seqtaq** [PWS]

Cackling goose (*Branta hutchinsii*) – **Lagiq** [Kodiak], **Neqlleq** [NW, PG]

Tundra swan (*Cygnus columbianus*) – **Qugyuk** [Kodiak], **Uquirpak** [PWS], **Saqulegpak** [NW, PG]

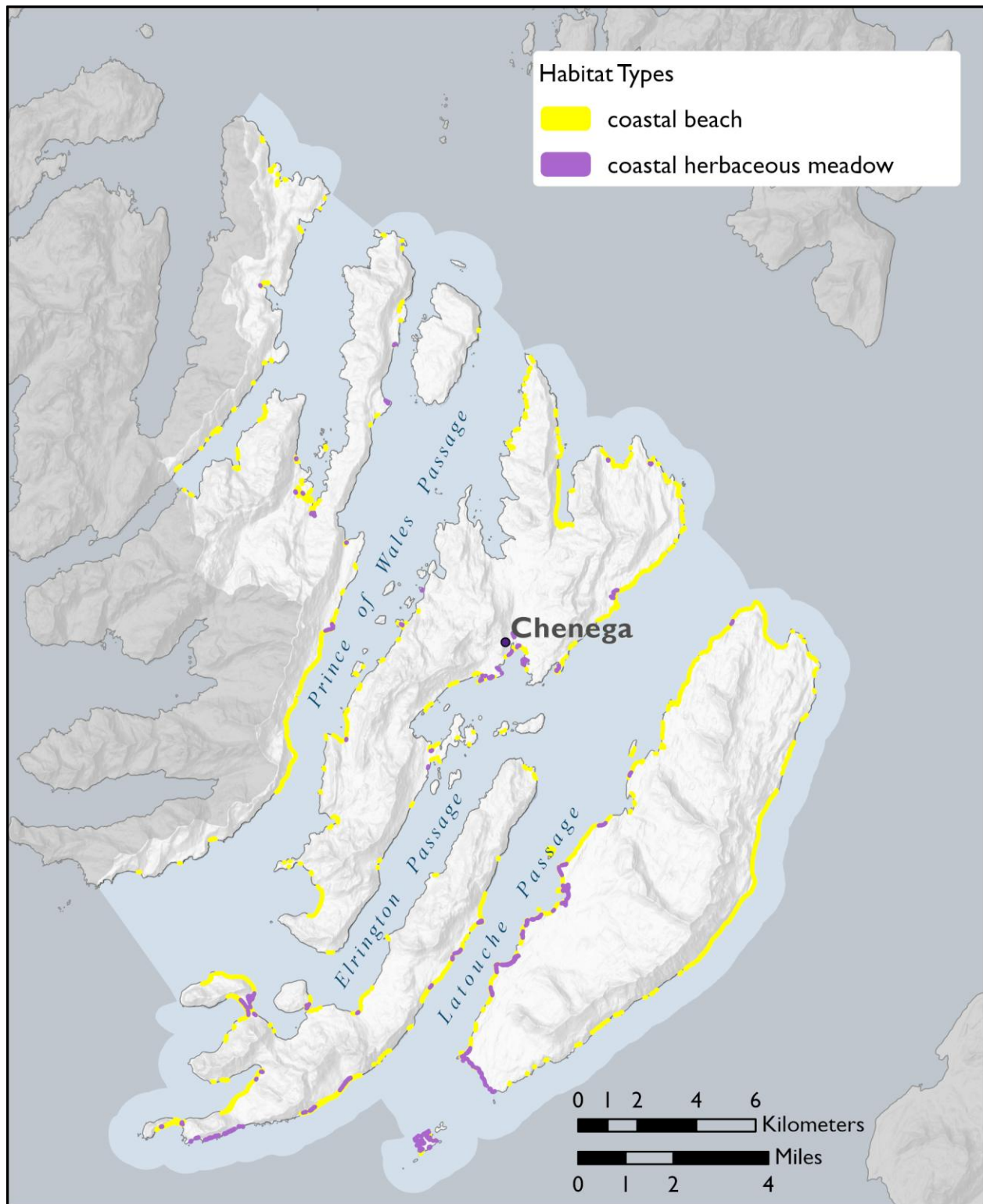
Common snipe (*Gallinago gallinago*) – **Kulic'kiiq**

Sandhill crane (*Grus canadensis*) – **Tatellgaq** [NW, PG]

Bald eagle (*Haliaeetus leucocephalus*) – **Kuckalaq** [Chenega], **Kum'agyak** [NW, PG]

Gull (*Larus* spp.) – **Naruyaq, Qatayaq** [Kodiak], **Naahqwaq** [Chenega], **Qukiswa'aq** [NW, PG]

Arctic tern (*Sterna paradisaea*) – **Ayusaq**



Subsistence Plants:

Species: Common name (*Scientific name*) – **Alutiiq name** [if known]

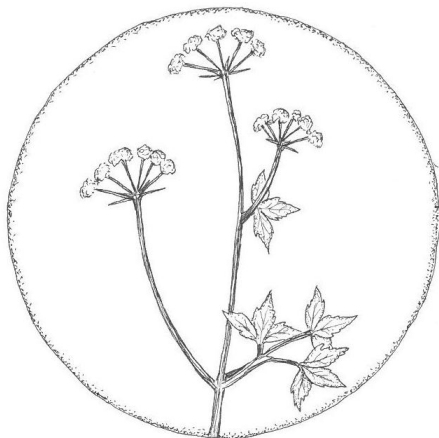
[NW = Nanwalek; PG = Port Graham; PWS = Prince William Sound]

Beach pea (*Lathyrus maritimus*, *L. japonicus*): Shoots and whole young pea pods may be eaten, while older pods must be shelled before peas are consumed. **CAUTION:** should not be eaten in quantity; paralysis and nervous disorders can occur from overconsumption.

Oyster leaf (*Mertensia maritima*): Leaves have an oyster-like flavor and can be nibbled on raw as a snack or added to soups or salads.

Stickywilly (*Galium aparine*): Young, tender shoots can be eaten raw or cooked. Can be used to treat urinary tract infection and as an anti-inflammatory.

Beach grass (*Leymus mollis*) – **Imanit, Tapernat**: This plant is used for a wide array of purposes. Leaves are harvested and used as roofing material, fire starter, insulation (clothing, home, food storage pits), mattress stuffing, floor coverings, food preparation surfaces, and steam bath switches. Leaves are also woven into baskets, mats, mittens, socks, cups, and bags. The roots and rhizomes are used as scrubbing material for steam baths.



Beach lovage (*Ligusticum scoticum*) – **PitRuus'kaa**, **PetRuskaq**: Leaves are often picked from non-flowering stems in late spring and summer. Leaves are eaten raw in salads, cooked as a vegetable green, added to a variety of savory dishes (boiled fish, soups, fish patties) or wrapped around food (whole fish) before baking. Leaves can be boiled into a tea to ease kidney ailments. Seeds can be harvested in the fall and added to stews and soups.

Sea plantain (*Plantago maritima*) – **Weguat, Weguaq** [NW]: Greens are edible and collected in late spring and summer.

Leaves are eaten raw or added to salads, or cooked as a vegetable green. Mashed leaves can be applied as a poultice to bites or stings to relieve irritation. Leaves can also be wrapped around feet overnight to cure bunions and heal sore cracked skin.

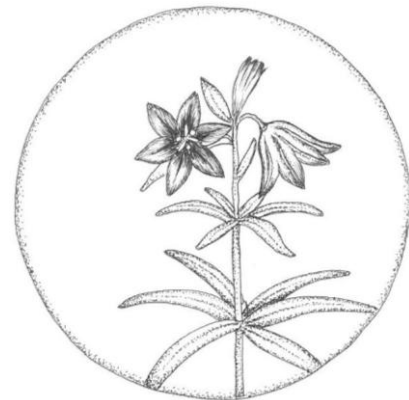


Beach fleabane (*Senecio pseudoarnica*) – **Kegtuyaqutaq**, **Uuqutiit Suitkaa'it**: Roots can be pounded and crushed into a poultice that draws infection and inflammation from boils. Leaves with veins removed can be warmed and placed on skin so that sap runs directly into the infected area. Stems can also be crushed and heated for use as a switch to relieve arthritis and heal broken bones.

Beach sandwort (*Honckenya peploides*): Greens are edible, high in vitamin A and C, and used to prevent scurvy. Leaves are harvested and eaten raw, cooked, or fermented. Leaves can be used in steam bath or boiled

into a tea to treat bladder infections. Fish can be cleaned on a mat of leaves to keep clean and prevent from sliding. Shoots can be added raw to salads, steamed and sautéed, or added to stir fry, meats, or soups.

Chocolate lily (*Fritillaria camschatcensis*) – **Laagaq** [NW, PG]: Bulbs are dug by hand in the summer. Bulbs can be eaten raw, but are often boiled or roasted and eaten with oil. Some people mix bulbs with sour dock and berries, add to *akutaq*, or use as a stuffing for baked fish.



Sitka spruce (*Picea sitchensis*) – **Napaq** [PG], **Anggarnarliq** [PWS], **Naparqiaq**: Spruce trees are an extremely versatile subsistence species. Spruce tips are harvested in late spring and can be eaten raw. Spruce bud tea can treat coughs, pneumonia, and other respiratory problems. Young spruce cone tea can be used for tuberculosis, stomach troubles, and colds. Spruce pitch can be used to heal boils, warts, sores, and burns; chewed as a gum to alleviate headaches or sore throats; or spread on wounds as a sticky bandage. Roots can be ground into a powder and cooked into a paste spread on wounds for sickness, frostbite, and cuts. The thin cambium may be eaten raw or boiled into a tea. Wood is used in house construction and carved for traditional tools, such as buckets, shovels, arrows, spear shafts, drying racks, pegs, wedges, snow shoes, drums, and boat parts. Branches can be collected for bedding. Roots can be harvested for weaving material or binding splints for broken bones. Pitch can be used to waterproof kayak seams or as fire starter. Spruce cone ashes are mixed with chewing tobacco, while old cones



can be used as toilet paper. Wood is also a major source of fire wood, while bark and twigs are used as fire kindling.

Yarrow (*Achillea millefolium*) – **Qangananguaq** [Kodiak], **Caisit** [PWS]: Yarrow has an array of known medicinal uses, and can be collected in the spring, summer and fall. Leafy stems can be used as a steam bath switch or a poultice to treat aches and pains, sores, cuts, boils, abscesses, toothaches, arthritis, and broken bones. Leaves can be crushed and rubbed directly on clothing or exposed skin as a mosquito repellent. Yarrow has known blood-clotting abilities and can be placed on a wound to stop bleeding or packed inside the nose to stop a nosebleed, or drunk as a tea to stop internal hemorrhaging. Leaves can also be boiled into a tea to relieve colds, congestion, cramps, asthma, hangovers; treat heart and kidney problems and side effects of cancer treatments, and as a gargle for sore throats. Drops of the tea can also be placed in the eyes and ears to treat ailments. Yarrow tea is also reported to heal uterine complaints, provide uterine cleansing and enhance flow of milk after childbirth. Breathing the steam from heated plants can help clear the sinuses. Roots can also be crushed, heated, and used as a poultice to use on sore body parts.

Hemlock parsley (*Conioselinum chinense*, *C. pacificum*) – **Cingkaruaq**, **Cingkaq**: Stems are collected from late May into June and peeled and eaten raw. Stalks can be soaked in hot water before being used as a steam bath switch to treat arthritis, rashes, and skin troubles. Leafy stems can be boiled into a tea to treat pneumonia and colds. Crushed leaves and roots can be used as a hot poultice to relieve swelling.

Common wormwood (*Artemisia tilesii*) – **Caik**, **Apalngaaqutaq** [NW, PG]: Also known as ‘stinkweed’. Wormwood can be used either fresh or dried. Chewing leaves can help relieve cold and flu symptoms. Flowers and leaves can be soaked in hot water and sat upon to relieve hemorrhoids or wrapped around feet to draw out fever. Leaves can be boiled into a tea to treat heart and stomach problems, sore throats, and headaches, to flush kidneys, shrink hernias, and remove lumps and pains from varicose veins. Dry leaves can be rubbed and shredded until soft like cotton and applied to slow-healing cuts to promote healing. Dry, crushed leaves can be placed inside socks and shoes to cure athlete’s foot and stinky feet. Stems can be used as steam bath switches to help with aches and pains.

Wild iris (*Iris setosa*) – **Naus’nitsaruak**: Roots can be boiled into an infusion to be used as a laxative or boiled and used as a poultice to help treat infected wounds. Petals can be used as a purple dye for basket making. **CAUTION:** plant is poisonous and should not be ingested; can cause irritation or allergic reaction from handling.

Nootka rose (*Rosa nutkana*) – **Shnapiishniik**, **Cipau’iniik** (flower); **Qelempaq** (rose hip): Petals can be eaten fresh or boiled into a tea to help with coughs and colds. Rose hips are picked in the fall

once sweetened and softened by frost. Hips can be dried and boiled into a cleansing tea and used to treat colds and bronchitis. Sitting on rose hips soaked in hot water can help a woman pass her placenta after giving birth. Hips can also be eaten raw, used in desserts, or preserved in jams, jellies, and syrups.

Sour dock (*Rumex occidentalis*, *R. arcticus*) – **Aatunaq**, **Qu'unarleq** [PG], **Gunnarliiq**: Leaves are collected in early summer before the plant flowers and becomes tough. Leaves and stems can be consumed raw or boiled until tender and eaten plain or mixed with sugar, lily bulbs, berries and oil, or made into jam and pies. Seeds can be collected and ground into a flour. Roots can be turned into a golden-yellow dye for crafts. Fresh leaves can be placed on the forehead to treat headaches, applied to the body to treat rheumatism or draw out a fever, or rubbed directly on skin to relieve nettle stings. Leaves can be eaten to purge the system, clean the blood of ill health, and to treat scurvy. Leaves can be dried and ground into a powder and sniffed to stop sneezing or alleviate headaches. Roots can be boiled into a tea to be used as a laxative. **CAUTION:** consume plant in moderation; leaves contain oxalic acid which can deplete the body of calcium.

Pacific red elder (*Sambucus racemosa*) – **Tuuciik**, **Qaruckaq**, **Angutgwakutaq** [NW, PG], **Sanuuliiq**, **Cirt'aungkaa**: Berries can be preserved as jelly. Hollow stems can be used to make children's pop guns. Flowers and unripe berries can be boiled into a tea that flushes kidneys and induces a cleansing sweat in those with fever, pneumonia, chills, flu and tuberculosis, and other chronic diseases. The inner and outer bark can be used to relieve back problems in the steam bath. Branches can be used as steam bath switches used to relieve aches, pains, rheumatism, and menstrual cramps. **CAUTION:** seeds are poisonous and are known to cause diarrhea and vomiting.

Cow parsnip (*Heracleum lanatum*) – **Ugsuuteq** [N Alutiiq], **Ugyuuteq** [S Alutiiq], **Ugyutak**, **Ugsutak**, **Vgyuun** [PWS, PG, Kodiak], **Amuulraaq**, **Ammuul'aaq**: Stems are harvested in the spring and peeled and eaten raw, dipped in oil, or pickled. Tender stems are also added to soups, stews, salads or cooked with fish. Hollow stems can be used as straws or made into children's toys (pop guns, pipes). Roots can be heated and smashed into a poultice for relief of toothache pain. Leaves can be chewed for sore throats, colds, and mouth sores, while a tea can alleviate symptoms of tuberculosis. The large, oversized leaves can be used to wipe surfaces, wrap fish or fish eggs while steaming, or line bowls to add flavor during cooking. **CAUTION:** surficial hairs and exudates can cause rashes, blisters and itching.



Wild parsnip (*Angelica lucida*) – **Uriisaq, Asaaqgwak** [NW, PG]: Wild parsnip is harvested throughout the growing season. It is edible as a pot herb in cooked dishes. Stems can be used as a steam bath switch used to relieve aches, pains, sores, rashes, sore muscles, and intestinal gas during pregnancy, or as insect switches while hiking. Leaves can be placed on hot rocks during a steam bath and splashed with water to help clear sinuses. The inner part of stem and leaves can be used as a poultice to treat rashes, sores, pimples, cuts, dry skin, skin problems, swollen wounds, and broken bones. Plant is said to contain oil that revitalizes skin and removes human scent from hands while hunting.



An example of coastal herbaceous meadow and coastal beach habitat (PC: ACCS – Kachemak Bay)