

Appendix D

Invasive Plant Information

Invasive plant species that have been confirmed in Kodiak as of 12/2005:

<u>Common name</u>	<u>Scientific Name</u>
<u>Species of special concern to Fort Abercrombie State Historic Park due to known locations and methods of spread.</u>	
Orange hawkweed	Hieracium aurantiacum
Ox-eye daisy	Leucanthemum vulgare or Chrysanthemum leucanthemum
Canada thistle	Cirsium arvensis
Bull thistle	Cirsium vulgare
Common tansy	Tanacetum vulgare
Cat's ears	Hypochaeris radicata
Creeping buttercup	Ranunculus repens
Tall buttercup	Ranunculus acris
Japanese knotweed (or bohemian?)	Polygonum cuspidatum or Polygonum bohemicum
Butter and eggs / yellow toadflax	Linaria vulgaris
Foxglove	Digitalis purpurea

Species of concern but probably not a current threat to Fort Abercrombie due to limited locations or method of spread (according to current knowledge).

Hempnettle	Galeopsis bifida
Cornspurry	Spergula arvensis
White sweetclover	Melilotus alba
Blackberry (himalayan?)	Rubus discolor
Reed canarygrass	Phalaris arundinacea
Sweetrocket or Dame's rocket	Hesperis matronalis
Fall dandelion	Leontodon autumnalis

Common roadside or disturbed site species.

Common dandelion	Taraxacum officinale
Common plantain	Plantago major
Common chickweed	Stellaria spp
Pineapple weed	Matricaria discoidea
European mountain ash	Sorbus aucuparia
Common groundsel	Senecio vulgaris

Species not confirmed but "need to watch for".

Garlic mustard	Alliaria petiolata
Yellow hawkweeds	Hieracium spp
English ivy	Hedera helix
Purple loosestrife	Lythrum salicaria

Vegetative Restoration Recommendations

Revegetation procedures will vary with the intent of the restorative effort. In keeping with the policy of non-exotic species introduction, use of natural seeding will be encouraged and used when possible. However, in cases where rapid revegetation is needed some exotic annual grasses may be employed. The following guidelines are suggested, but consultation with the USDA Natural Resources Conservation District or the University of Alaska Plant Materials Center in Palmer** may be warranted on larger restoration projects.

Forest Areas (such as restoring re-routed trails)

Scarify and aerate heavily compacted soils to promote natural seeding where erosion is not a problem. Grasses are typically not appropriate in forest areas. Import forest litter (leaves, mosses, branches, twigs, etc.) from nearby in a non-destructive manner, place larger branches on top to hold litter in place. Where continued undesired public use is anticipated (such as a short-cut trail), larger barriers such as logs may be employed to encourage natural restoration.

Meadow Areas (such as restoring re-routed trails)

Scarify and aerate heavily compacted soils to promote natural seeding where erosion is not a problem. Import meadow litter (leaves, mosses, branches, twigs, etc.) from nearby in a non-destructive manner, place larger branches on top to hold litter in place. Natural fiber textile mats may be used in areas highly erosive. Where continued undesired public use is anticipated (such as a short-cut), larger barriers such as logs may be employed to encourage natural restoration.

High Public Use Areas (such as lawns, campsites, picnic sites, etc.)

Establishment of a highly durable, impact resistant foliage cover is needed in high use areas. The following are a few prescriptions for areas where something simple, broad in range of site conditions, inexpensive, quick to provide cover, not too intrusive, and native to Alaska is required.

Example Seeding Plans for Kodiak:

1. Spread weed-free topsoil
Cover all bare ground with loamy to silt loam topsoil. Spread soil to a minimum depth of 5 inches (less if a soil base already exists). Top dress soil surfaces with starter fertilizer and lightly rake, using rate of 80-80-40 lbs/ac as N-P₂O₅-K₂O-S.
2. Establish weed-free vegetation cover on bare surfaces
Because rapid establishment of cover is critical to protect the soil from frequent rain events, and there may be the desire to inter-seed/plant other native species as plugs or containerized material as time and opportunity permits, a single species planting is recommended. Perennial species can be used, such as red fescue varieties of "Arctared" or "Boreal", or "Norcoast" Bering hairgrass, but will probably establish a little slower, cost more, and persist longer (which might not be wanted). For rapid cover, use of annual grasses may be employed quickly to

stabilize soils while perennial grasses become established. Native root material and native seed already in the topsoil will more than likely take over the site in a year or two, depending on the topsoil source.

- a. Seeding Rates (note seed tag info)
Example: To seed 40 pounds per acre of pure live seed, the procedure would be:
 $0.98 \text{ purity} \times 0.80 \text{ germination} = 0.784$
 $40 \text{ lb/ac} / 0.784 = 51 \text{ lb of seed needed}$
 - b. Red Fescues
12 lbs/ac Pure Live Seed (broadcast), certified noxious weed free
 - c. Bering Hairgrass
6 lbs/ac Pure Live Seed (broadcast), certified noxious weed free
 - d. Common Oats (an annual that works good) verify if this is an exotic]
100 lbs/ac Pure Live Seed (broadcast), certified noxious weed free
 - e. Annual Rye (annual that may have potential allopathic issues)
20 lbs/ac Pure Live Seed (broadcast), certified noxious weed free
3. Cover lightly with mulch: Spread straw or other weed-free mulch material over seeded areas (about 90lbs/1000 sq. ft.). Mulch should cover soil completely, but not to bury the seeding to restrict plant growth.

The following should be completed later:

4. Place willow and alder stakes/bundles (locally cut) along water edges.
5. Find and transplant native herbaceous and shrubby plants on to surfaces as desired to enhance wildlife and fish habitat.

**The UA Plant Materials Center has native Alaska grass seed available for purchase.

Information in this Appendix is courtesy of the USDA Natural Resources Conservation District, Kodiak.