Prevention

Goal A: Prevent the introduction and spread of invasive weeds and agricultural pests.

Prevention is the most critical aspect of invasive plants and agricultural pest management. Establishing strong prevention measures such as quarantine and inspection of commodities that are common vectors of invasive plants and agricultural pests can be significantly less expensive than resource losses and management expenses for established invaders.

Trade of commodities, particularly those that likely harbor pests such as hay, horticultural plants, imported fire wood, and gravel or fill material are a significant pathway for the introduction of invasive weeds and agricultural pests. Intentionally introduced invasive weeds and agricultural pests have the advantage of active participation by humans in spreading individuals, and result in significant spread to natural and agricultural lands. Insects and other pests of agriculture may be introduced deliberately for other reasons including: bio-control agents, pets, and as game species. Livestock and other imported animals may be vectors if they carry a pest disease or contain a weed seed on their fur or in their digestive tract. Packaging materials may also be important vectors of invasive weeds and agricultural pests, in particular, wood packaging materials which can carry invasive insects such as Asian Longhorned Beetle.

The horticulture and forage trade are two critical pathways of introduction and spread that have been well studied in Alaska (Table 3). Studies assessing hay imported into Alaska, have shown the potential threat of introduction this pathway poses (Conn 2006). These studies suggest action can be taken to considerably reduce the risk of introduction of invasive weeds from these pathways.

Alaska has several important prevention authorities under the Department of Natural Resources (DNR) and the Division of Agriculture (DOA). Included amongst these is the authority to regulate the entry of seeds, plants, horticultural products, and products related to horticulture or agriculture (*AS 03.05.010*). Inspections and quarantines of products may be established to prevent introductions (*AS 03.05.010*). Maintenance of statewide databases for invasive plants and agricultural pest are authorized (*AS 03.05.027*), and can facilitate prevention of the intrastate movement of pests. Education of the public to assist in prevention of invasions is also an authority of the DNR (*AS 03.05.027*).

Under the above described authority, the DOA has established regulations. Seed regulations exist to prevent seeds on the "prohibited" or "restricted" noxious weeds list from being sold deliberately or imported as a contaminant above allowable tolerances (*11 AAC 34.020*). Further, anything found to be contaminated with these seeds may be regulated by the DOA, and required to be free of these seeds or returned to the point of origin (*11 AAC 34.077*). Quarantines and inspection stations may be adopted for seeds, "pests" of plants, and things that may harbor pests (*11 AAC 34.105- 11 AAC 34.190*).

Table 2. Contaminant species found in nursery stock

Contaminant species found in nursery stock
Canada thistle, *Cirsium arvense*
Narrowleaf hawksbeard, *Crepis tectorum*
Perennial Sowthistle, *Sonchus arvensis*
Common Tansy, *Tanacetum vulgare*
Western salsify, *Tragapogon dubious*
Common Mullein, *Verbascum Thapsus*
Foxtail barley, *Hordeum jubatum*

Table 2 *shows species of highest concern that were found as contaminants in the study completed by Conn et al. 2008.*

Table 3. The level of concern for nursery stock contamination based on nursery plant type and planting medium

Planting mediums and plant types of greatest concern	Planting mediums and plant types of least concern
Soil-based potting mixes	Soil-less potting mixes
Mineral potting mixes	Vegetable starts and herbs
Perennial plants	Bare root perennials*
Small woody vegetation	
Large woody vegetation	
Balled and burlapped vegetation	

Table 3 *lists the types of plants and growing media that are of greatest concern, and media of least concern, according to Conn et al. 2008.*

**Bare root perennials were not included in Conn et al. 2008 because they are not transported in a growing medium. The study analyzed growing media of plants for sale.*

Public Identified Priorities

Participants in scoping for this strategic plan identified a screening process to determine the invasive potential of an imported plant or agricultural pest as important to highly important. Participants felt it is important to identify unintentional pathways for introduction of invasive weeds and agricultural pests. Participants felt increasing inspections of vectors is highly important to prevention. Participants felt it is important to encourage certification and use of weed free forage, straw and gravel. Respondents to the survey felt it is

important to establish inter and intrastate quarantines for invasive weeds and agricultural pests. However, individual comments indicated this step could do more to harm industry than is necessary at the current time. Survey respondents did feel it was important for the state to require appropriate measures to clean vectors of invasive weeds and agricultural pests before they are brought into the state. Overwhelmingly survey respondents felt that establishment of best management practices are highly important to the state.

Objective 1:
Facilitate production and distribution of certified weed free products.

Action Strategies

1. Provide annual training for individuals who will certify hay fields and gravel pits as weed free.
   Suggested participants: DNR, DOA, SWCD, public land managers, CWMA, CES, DOT
   Timeline: June 2012

2. Distribute previously developed information to producers and purchasers of hay/straw.
   Suggested participants: DNR, DOA, SWCD, public land managers, CWMA, CES, DOT
   Timeline: June 2012

3. Develop weed free gravel certification program.
   Suggested participants: SWCD, public land managers, CWMA, DNR, DOA, DOT, gravel producers.
   Timeline: Summer 2013

4. Determine potential availability of and need for weed free forage and weed free gravel in Alaska, including the increase in profit for producers of such products.
   Suggested participants: SWCD, CWMA, DOA, forage, straw and gravel producers, DOT, public land managers
   Timeline: March 2012

5. Using data developed in action 4 of this objective, encourage state and federal land managers to adopt policies that include using certified weed free materials on public lands.
   Suggested participants: DNR, DOA, DOI, USDA
   Timeline: October 2012

Objective 2:
Prevent introductions by addressing vectors that spread invasive weeds and agricultural pests.

Action Strategies

1. Increase inspection of articles and vectors by at least one type of commodity associated with a key pathway for spreading invasive weeds and/or agricultural pests.
   Suggested participants: DNR, DOA, APHIS, CBP
   Timeline: June 2012

2. Educate two new groups per year that are potential importers of invasive species or vectors.
   Suggested participants: SWCD, CWMA, CES, DNR, DOA, APHIS, DOF
   Timeline: June 2016

3. Identify high priority carriers and vectors of invasive weeds and agricultural pests.
   Suggested participants: SWCD, CWMA, CES, DNR, DOA, APHIS, ARS, DOF, others
   Timeline: June 2012

4. Require appropriate measures to clean identified high priority carriers and vectors of invasive weeds and agricultural pests.
   Suggested participants: DNR, DOA, APHIS, CBP, BLM-AFS
   Timeline: June 2013

5. Establish Best Management Practices (BMP) for land managers to aid in preventing the introduction and spread of invasive weeds and agricultural pests.
   Suggested participants: Public land managers, DOT, DNR, DOA, CES, SWCD, NRCS, NMFS, USFS, USFWS, DOF, Native Corporations and Associations
   Timeline: Summer 2012

6. Encourage travelers to wash vehicles at approved locations before or shortly after entering the state of Alaska by way of road or ferry.
   Suggested participants: DOT, DOA, CES, USFWS, CBP
   Timeline: Summer 2011

7. Educate purchasers and importers of aquatic plants about identified invasive aquatic species to prevent their introduction to Alaska.
   Suggested participants: DOA, ADFG, CES, USFWS, NMFS aquarium and pet trade, horticultural trade
   Timeline: February 2012