HB

330

Louanne Christian

From: Jeanne Ostnes
Sent: Monday, March 10, 2008 11:14 AM
To: Suzanne Cunningham; Rep. Les Gara
Cc: Louanne Christian
Subject: FW: Fireweed and Lupine (draft)

From: Wright, Stoney J (DNR) [mailto:stoney.wright@alaska.gov]
Sent: Monday, March 10, 2008 11:07 AM
To: Jeanne Ostnes
Cc: Havemeister, Franci A (DNR); Lesh, Melanie G (DNR)
Subject: Fireweed and Lupine (draft)

Jeanne,
Both tall fireweed and lupine have been have been studied by the Plant Materials Center. While we have been successful in mechanically collecting tall fireweed from wild stands, we have not been successful in either planting production fields or using it in revegetation projects as a seeded component. There are some germination issues that need to be resolved before it is a viable species for revegetation. It is also an extremely small seed that most commercial growers are not yet ready to work with in a production field. We have had more success with dwarf fireweed with regard to establishment. But on the other hand it is more difficult to harvest. Only two growers (we are aware of) in the state have attempted to harvest wild stands. They have collected in the range of 2-4 pounds of clean seed. This has not been marketed to the broader seed market and has been sold by packets or use in specialty packets of wild flowers. Until these difficulties are overcome in production and cleaning neither tall or dwarf will be viable choices for seed production. The possibility of using fireweed in conjunction with seeded grasses hasn't even been examined to our knowledge. There will be some likely competition issues to get it established with the grasses needed to control erosion along roadways.

Lupine is more available, however most of the seed we see in Alaska comes from Iceland. It is of Alaskan origin but grown in Iceland. The Icelandic government has made a concreted effort to grow this species for restoration of overgrazed land and restoration of volcanic ash lands which covers vast tracts of land in Iceland. The species is falling out of favor in some quarters of Iceland, since it is considered as an invasive species. Now the excess seed is being marketed in Alaska. The species grows well on the pure volcanic soils in Iceland but is much more difficult to commercially produce in Alaska where the soils are not pure volcanic ash. To date we have been unsuccessful in getting either lupine or fireweed in commercial production in Alaska.

Both are tall species and could create sighting distance problems if used on highways. Intentionally planting these species on highway rights-of-way will create added maintenance costs associated with mowing to maintenance of sighting distances. This will be an unintended negative consequence of using either species on highway right of ways.

In closing both species are of interest to the PMC but all the production and use problems have not yet been resolved. Both will eventually enter the commercial seed industry in Alaska but we are not there yet.

Stoney Wright

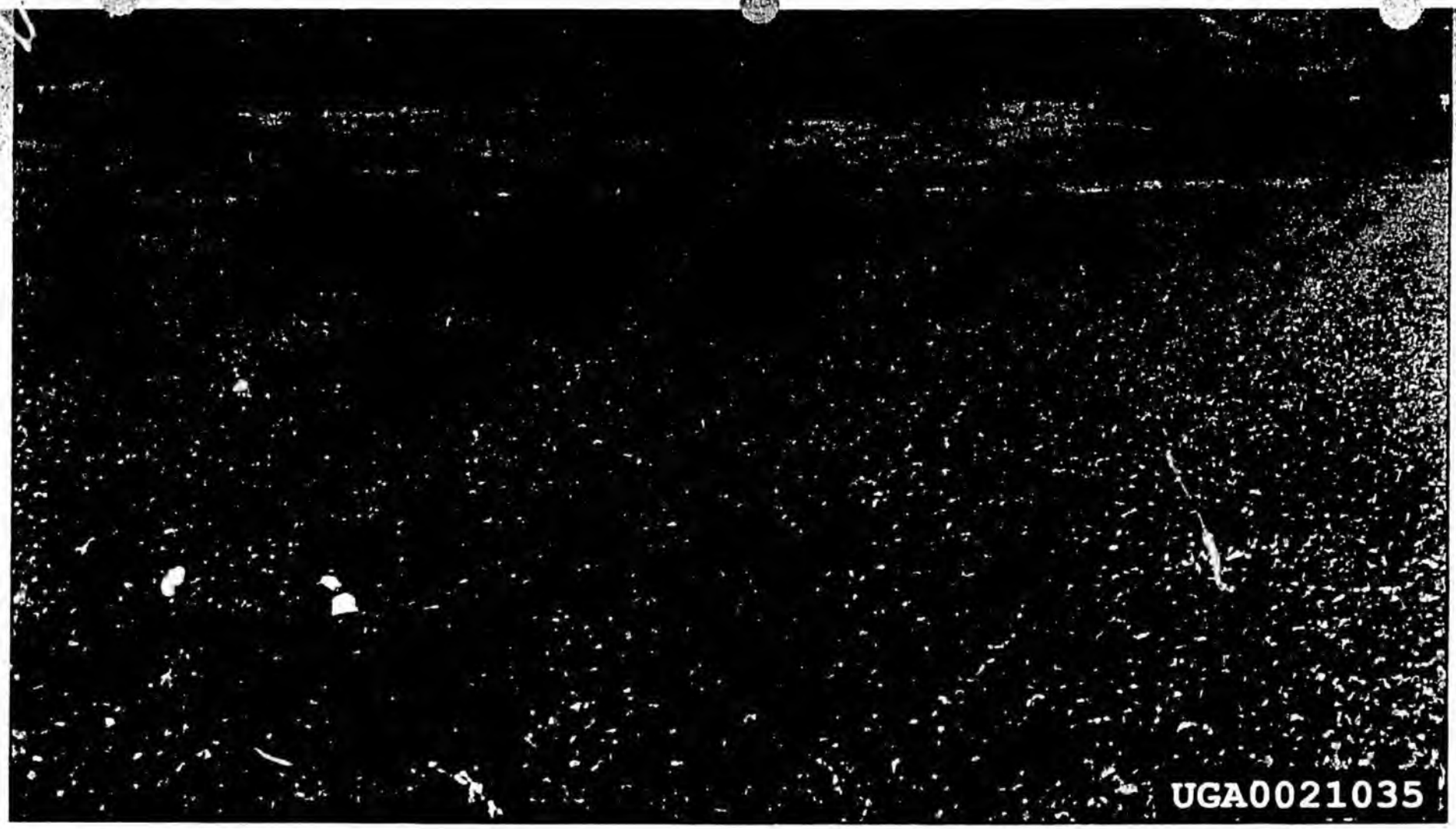
The Alaska Committee for
Noxious & Invasive Plants
Management

Jamie Nielsen, UAF Cooperative Extension Service
Telephone: (907) 786-6315
Email: ffjmn@uaf.edu

Gino Graziano, Alaska Association of Conservation Districts
Telephone: (907) 354-1227
Email: ginograziano@alaskaswcds.org

Invasive Plants IMPACTS

- Agriculture
- Tourism
- Wildlife
- Fisheries
- Subsistence Resources
- Land Values
- "…economic or environmental harm or harm to human health." (Executive Order 13112)



Norman E. Rees, USDA Agricultural Research Service, Bugwood.org

Spotted knapweed

• Costs the state of Montana 14 million per year in direct economic impacts. Now spread over nearly 6 million acres.

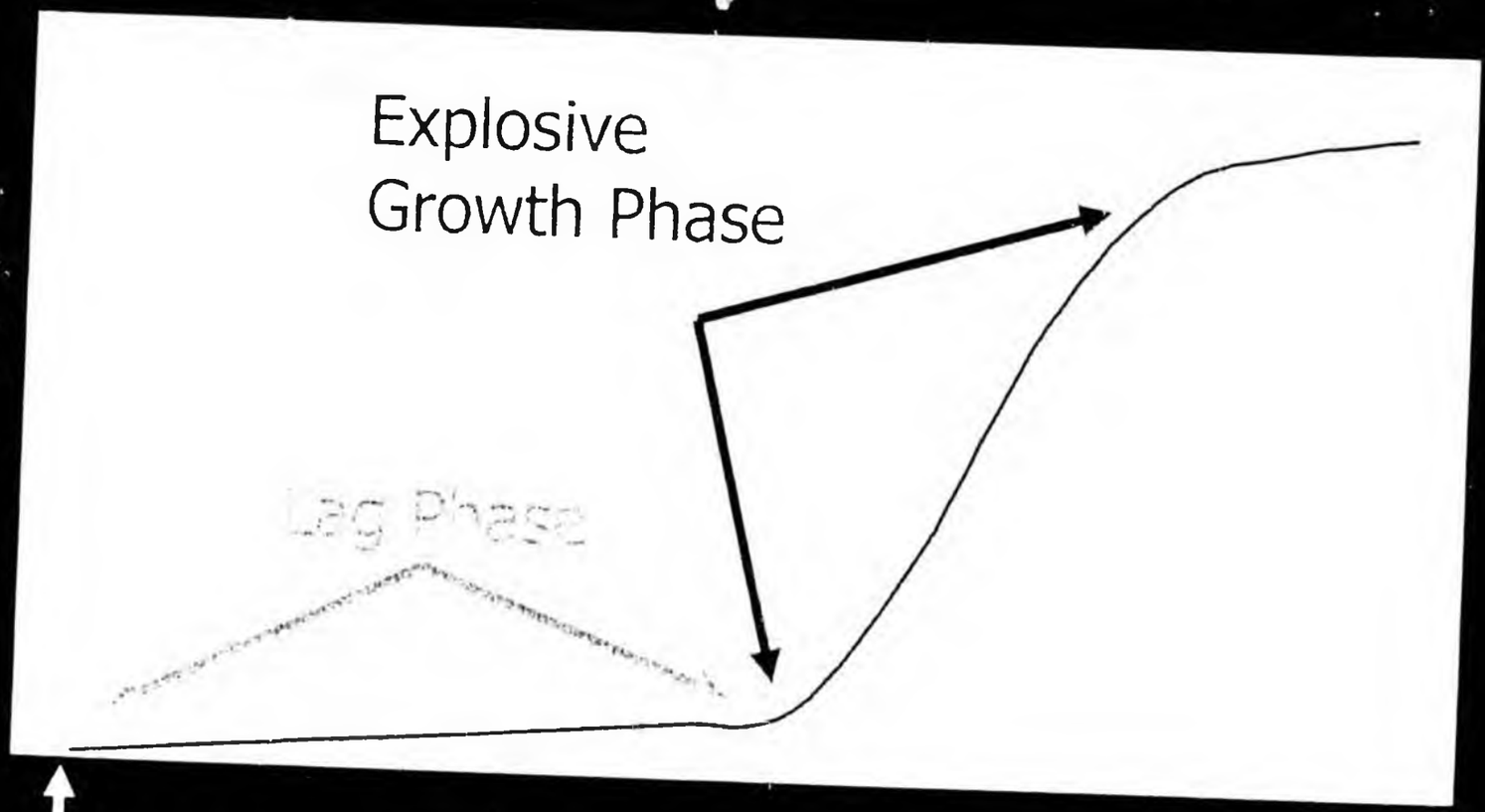
Purple Loosestrife

- Control efforts cost US economy $45 million per year
- Clogs wetlands, blocks fish passage

Leafy Spurge

- Costs agricultural producers and tax payers in the Dakotas, Montana, and Wyoming $144 million per year.
- Caustic latex (sap) causes blisters, blindness

Weed Invasion Curve



Slide courtesy of Tim Miller, Washington State University

Laying the groundwork for successful invasive plants prevention and management:

WHAT, WHERE, WHY

Laying the Groundwork- the "WHAT"

http://akweeds.uaa.alaska.edu/akweeds_ranking_page.htm

Alaska Weed Ranking Project - Microsoft Internet Explorer provided by USDA Forest Service

File Edit View Favorites Tools Help

Back Search Favorites Media

Address http://akweeds.uaa.alaska.edu/akweeds_ranking_page.htm Go Links

Weed Ranking Project

Alaska Natural Heritage Program

major funding from

US Forest Service, State and Private Forestry

in cooperation with

National Park Service, Alaska Support Office

USDA, Agricultural Research Service

UAF, Cooperative Extension Service

US Geological Survey, Alaska Biological Science Center

UAA Alaska Natural Heritage Program

Home

Workshop & Training Presentations

Alaskan Non-native Species Literature and Websites

Collaborators

Below are two tables. The [illegible] lists non-native species present in Alaska the [illegible] lists non-native species currently not recorded in Alaska.

They are also available below as MS Excel tables:

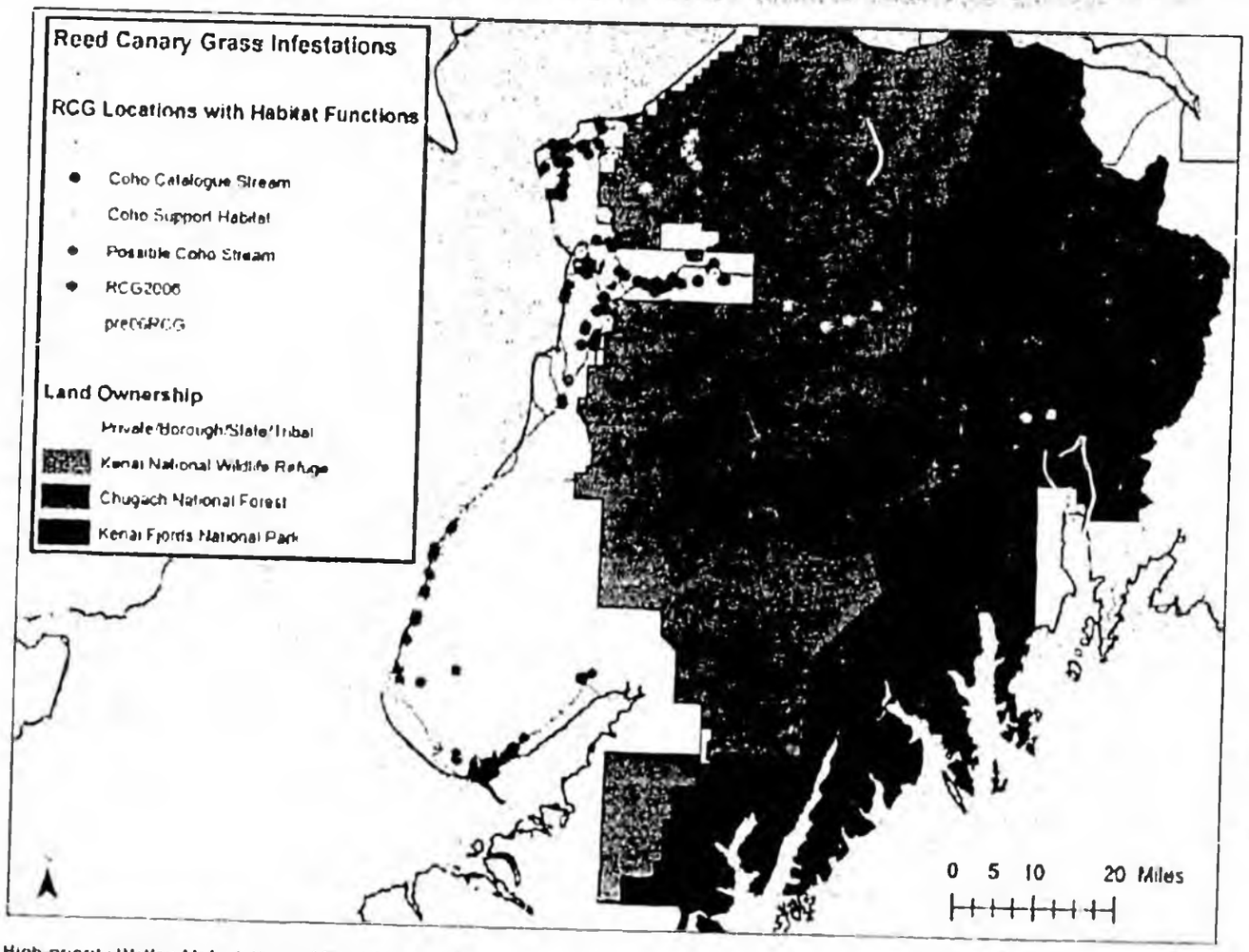
[illegible] (Excel table) [illegible] (Excel table)

Non-native species PRESENT in Alaska

Species Biography	Risk Assessment Report	Scientific Name	Common Name	Rank 0-100 (low-high)	Climate similarity of Alaska ecogeographic regions and areas where the species occurs		
					South Coastal	Interior Boreal	Arctic Alpine
[illegible]	[illegible]	*Achillea millefolium* var *millefolium* L.	common yarrow	48	Yes	Yes	Yes
[illegible]	[illegible]	*Achillea ptarmica* L.	sneezewort	46	Yes	Yes	Yes
[illegible]	[illegible]	*Alliara petiolata* (Bieb.) Cavara & Grande	garlic mustard	70	Yes	No	No
[illegible]	[illegible]	*Anthemis cotula* L.	Mayweed chamomile, dog fennel	41	Yes	Yes	No
[illegible]	[illegible]	*Bromus inermis* ssp. *inermis* Leyss.	smooth brome	62	Yes	Yes	Yes
[illegible]	[illegible]	*Bromus tectorum* L.	cheatgrass	78	Yes	Yes	Yes
[illegible]	[illegible]	*Campanula rapunculoides* L.	Creeping bellflower	64	Yes	Yes	Yes
[illegible]	[illegible]	*Capsella bursa-pastoris* (L.) Medik. L.	shepherd's purse	40	Yes	Yes	Yes
[illegible]	[illegible]	*Caragana arborescens* Lam	Siberian pea shrub	63	No	Yes	Yes
[illegible]	[illegible]	*Centaurea biebersteinii* DC	spotted knapweed	88	Yes	Yes	No
[illegible]	[illegible]	*Cerastium fontanum* ssp *vulgare* (Hartman) Greuter & Burdet & *C. glomeratum* Thuil	mouse-ear chickweed, big chickweed & sticky chickweed	39	Yes	Yes	Yes
[illegible]	[illegible]	*Chenopodium album* L.	lambsquarters	35	Yes	Yes	Yes
[illegible]	[illegible]	*Cirsium arvense* L. Scop	Canada thistle	76	Yes	Yes	Yes
[illegible]	[illegible]	*Cirsium vulgare* (Savi) Ten	bull thistle, common thistle	61	Yes	Yes	Yes
[illegible]	[illegible]	*Convolvulus arvensis* L.	field bindweed, morning glory	58	Yes	Yes	Yes
[illegible]	[illegible]	*Cotula coronopifolia* L.	common brassbuttons	42	Yes	No	No
[illegible]	[illegible]	*Crepis tectorum* L.	narrow-leaf hawk's beard	43	Yes	Yes	Yes
[illegible]	[illegible]	*Cytisus scoparius* (L.) Link	English broom, Scotch broom	69	Yes	No	No

Laying the Groundwork- The "WHERE"

AKEPIC: The Alaska Exotic Plants Information Clearinghouse

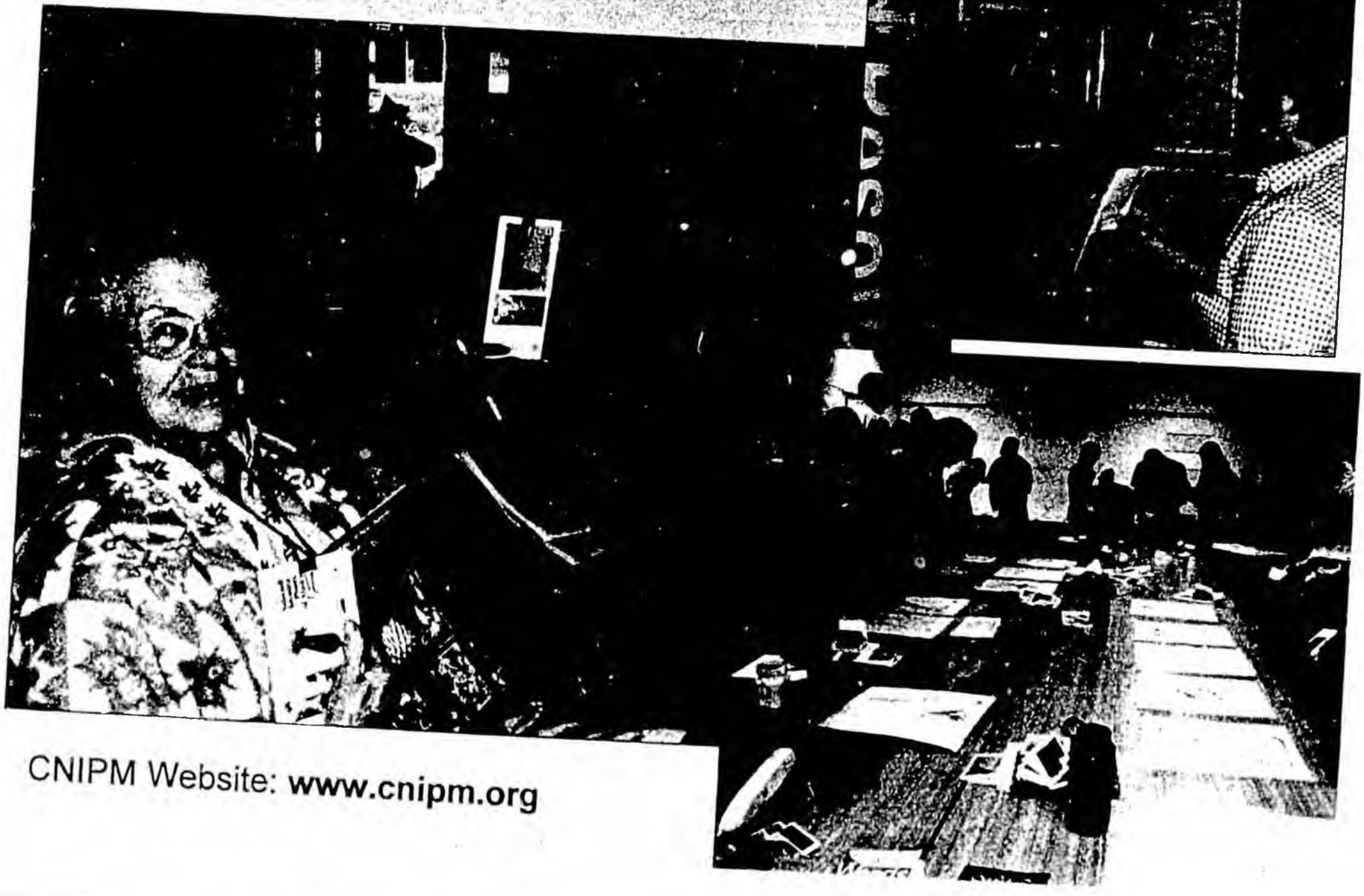


High-priority Wetland Infestations of Reed Canary Grass
Recorded on Western Kenai Peninsula, 2006

http://akweeds.uaa.alaska.edu/

Laying the Groundwork- the "WHY"

Public Awareness



CNIPM Website: **www.cnipm.org**

CNIPM Recommendations

I. Develop a Noxious and Invasive Plant Management Program within the Department of Natural Resources

CNIPM Recommendations

II. Appoint a State Weed Coordinator for the program and provide administrative support

CNIPM Recommendations

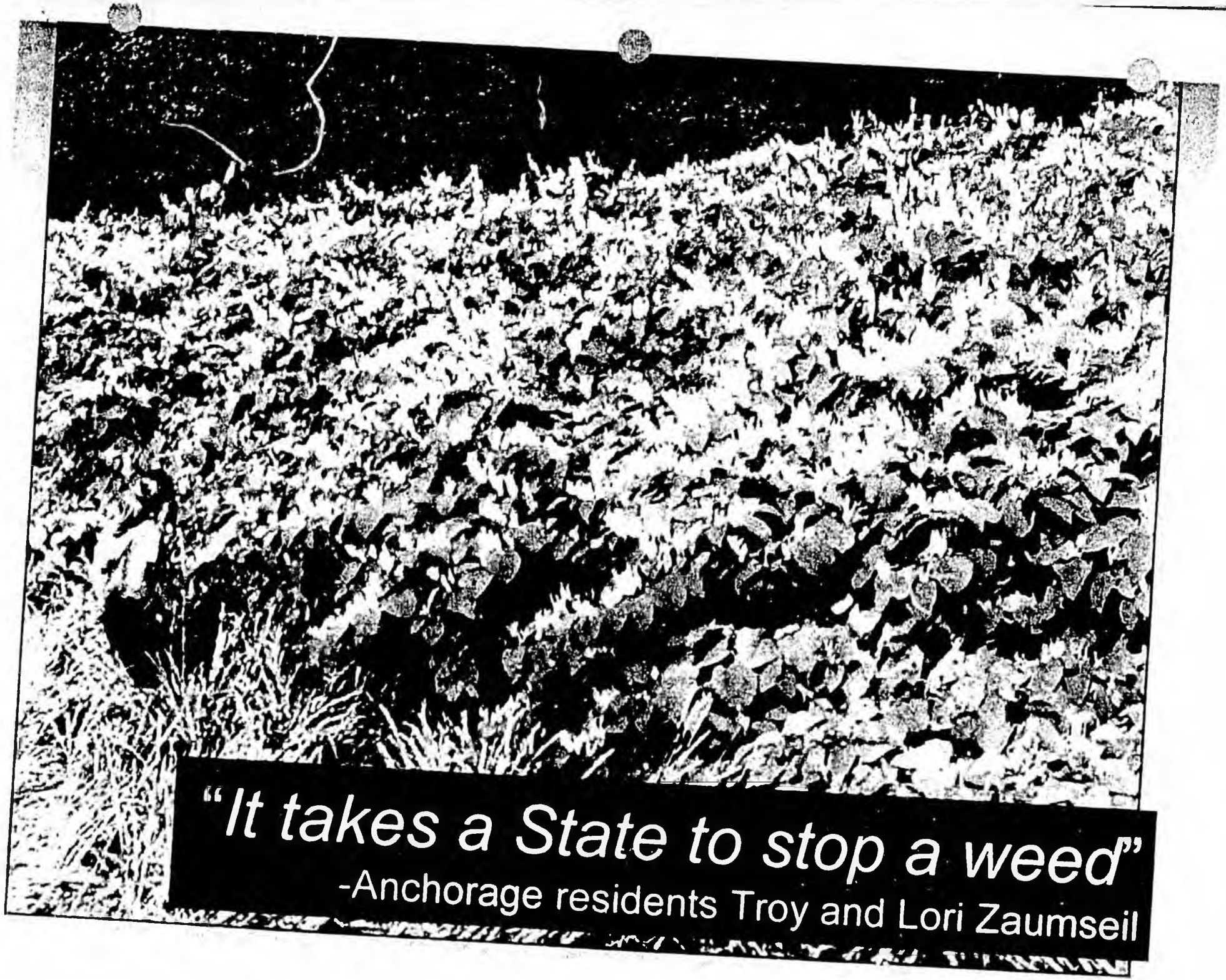
III. Create a **State Weed Board** with representatives from a broad range of stakeholders to:

- Provide recommendations to state agencies
- Develop a **Statewide Weed Management Plan**
- Seek outside funding for state weed prevention and management efforts

Need for a Weed Board

- Coordination Imperative- weeds don't respect boundaries
- Groundwork has been laid, now we need an overarching system of support from the state
- Don't need to reinvent the wheel- other states provide lessons, templates, and examples
- Act now to safeguard AK resources and economy- never cheaper than TODAY

Citizens are working in their communities, but...


"It takes a State to stop a weed"
-Anchorage residents Troy and Lori Zaumseil

The Alaska **C**ommittee for
Noxious & **I**nvasive **P**lants
Management

Jamie Nielsen, UAF Cooperative Extension Service
Telephone: (907) 786-6315
Email: ffjmn@uaf.edu

Gino Graziano, Alaska Association of Conservation Districts
Telephone: (907) 354-1227
Email: ginograziano@alaskaswcds.org

Changes from HB 330 to CS for HB 330

Original HB 330 formed Article 2 in AS 41.10. This would be in Chapter 10, Soil and Water Conservation of Title 41, Public Resources.

The original bill formed a board and identified the powers and the duties of the board. It delineated advisory groups of the board, agency cooperation and joint operations. The original HB 330 also formed a noxious weed and invasive plant management fund.

The CS for HB 330 reincarnates as a state coordinator employed or appoint by the Commissioner of Natural Resources. It is now in Title 3, Agriculture and Animals, Chapter 5, Powers and Duties of Commissioners of Natural Resources and Environmental Conservation. It forms a new section, 027.

This bill will allow the Commissioner of Natural Resources to employ or appoint a state coordinator for noxious weed, invasive plant, and agricultural pest management and education. This coordinator will work through the Division of Agriculture along with state departments, agencies and institutions. This person will bring together the afore mentioned entities in addition to the University of Alaska Cooperative Extension Service and the Alaska Association of Conservation Districts. Through this coordination the State of Alaska will develop a strategic plan. More importantly, a start toward limiting economic loss and adverse effects to the state's agricultural, natural, and human resources because of the presence and spread of noxious weeds, agricultural pests, invasive terrestrial and aquatic plants in the state.

ALASKA STATE LEGISLATURE
House Resources Committee

Carl Gatto, Co-Chair

State Capitol Building, Room 108
Juneau, AK 99801-1182
Phone (907) 465-3743
Fax (907) 465-2381
Rep_Carl_Gatto@legis.state.ak.us

Craig Johnson, Co-Chair

State Capitol Building, Room 126
Juneau, AK 99801-1182
Phone (907) 465-4993
Fax (907) 465-3872
Rep_Craig_Johnson@legis.state.ak.us

Sponsor Statement
An Act relating to Noxious Weed, Invasive Plant and Agricultural Pest Management and Education
CS for HB 330

In recent years, well established and expanding populations of highly invasive plants have been documented in Alaska. These species pose a serious threat to Alaska's agriculture, tourism, wildlife, fisheries, land values, and subsistence resources. Alaska is in a unique position to avoid the scope of problems now impacting all 48 contiguous states and Hawaii.

Many of the invasive plants in Alaska are not yet widespread and can be controlled relatively quickly and more cheaply by taking action now. Alaska needs an updated state noxious weed list, updated state regulations, and a designated state agency with the resources to adequately address this emerging issue. A need exists to build upon the strength of existing programs, to improve areas that are weaker, and integrate efforts into an efficient unified state response to the threat.

Private, local, state, and federal organizations and citizens' groups are working together to raise awareness about invasive plants and keep our communities invasive weeds-free. Representatives of public and private organizations with an interest in controlling and preventing the spread of noxious weeds and invasive plant continue to need a mechanism for cooperation, collaboration, and development of statewide plans of action to meet this threat.

This bill will allow the Commissioner of Natural Resources to employ or appoint a state coordinator for noxious weed, invasive plant, and agricultural pest management and education. This coordinator will work through the Division of Agriculture state departments, agency and institutions. This person will bring together the afore mentioned entities with the University of Alaska Cooperative Extension Service and the Alaska Association of Conservation Districts. Through this coordination the State of Alaska will develop a strategic plan. More importantly, a start toward limiting economic loss and adverse effects to the state's agricultural, natural, and human resources because of the presence and spread of noxious weeds, invasive terrestrial and aquatic plants in the state.

LEGAL SERVICES

DIVISION OF LEGAL AND RESEARCH SERVICES
LEGISLATIVE AFFAIRS AGENCY
STATE OF ALASKA

(907) 465-3867 or 465-2450
FAX (907) 465-2029
Mail Stop 3101

State Capitol
Juneau, Alaska 99801-1182
Deliveries to: 129 6th St., Rm. 329

MEMORANDUM

February 4, 2008

SUBJECT: Sectional Summary (HB 330) (Work Order No. 25-LS1062\E)

TO: Representative Craig Johnson
Attn: Jeanne Ostnes

FROM: Alpheus Bullard
Legislative Counsel

You have requested a sectional summary of the above-described bill.

As a preliminary matter, note that a sectional summary of a bill should not be considered an authoritative interpretation of the bill and the bill itself is the best statement of its contents. If you would like an interpretation of the bill as it may apply to a particular set of circumstances, please advise.

Section 1. Adds a new article to AS 41.10 (Soil and water conservation) entitled: "Article 2. Noxious Weeds and Invasive Plants."

41.10.200. States that it is the purpose of the article to limit economic loss and adverse effects to the state resulting from noxious weeds and invasive plants.

41.10.210. Establishes a Noxious Weed and Invasive Plant Board.

41.10.220. Provides for board membership.

41.10.230. Establishes that board members are not entitled to compensation other than per diem and travel expenses.

41.10.240. Provides for board meetings.

41.10.250. Provides that the board will choose a presiding officer from its members.

41.10.260. Allows the board to employ staff and contract for services relating to matters within its authority.

41.10.270. Establishes the powers and duties of the board.

41.10.280. Provides that the board may establish advisory groups.

41.10.290. Provides that state efforts shall be in cooperation with federal noxious weed and invasive plant laws and initiatives.

41.10.300. Establishes that state departments, agencies, and institutions shall cooperate with the board.

41.10.310. Provides that the board may engage in joint operations related to noxious weeds and invasive plants with other persons, political subdivisions of the state, Native villages or regional corporations, the federal government, or Canada.

41.10.320. Creates a noxious weed and invasive plant management fund as an account within the general fund.

41.10.330. Directs the commissioner of natural resources, the commissioner of fish and game, the commissioner of environmental conservation, and the commissioner of transportation and public facilities to adopt regulations to implement the article.

41.10.399. Defines terms.

Section 2. Provides for the initial terms of board members.

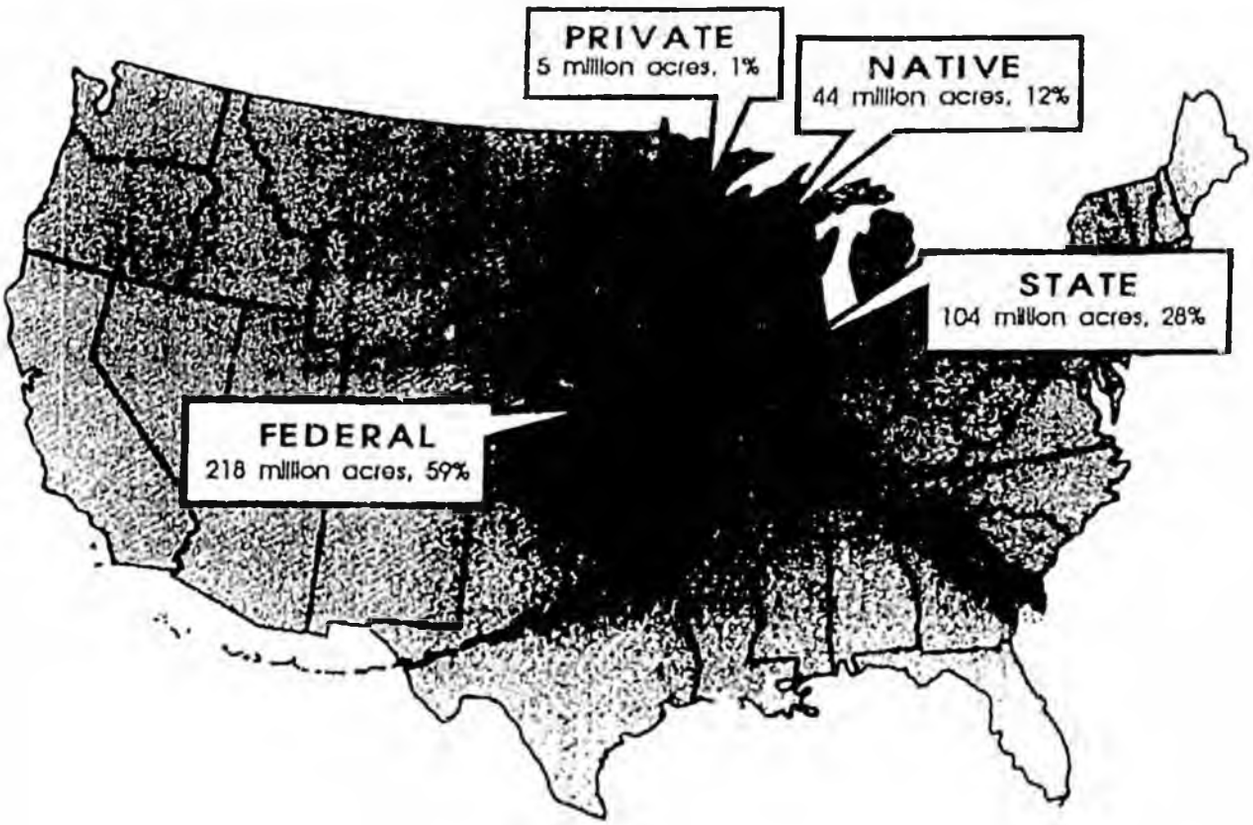
Section 3. Establishes a deadline for the board's first meeting.

Section 4. Instructs the Revisor to amend AS 41.10 to conform with the Act's creation of a new article.

If you have questions, please do not hesitate to contact me.

TLAB:med
08-079.med

WHO OWNS ALASKA?



STATE OF ALASKA

DEPT. OF TRANSPORTATION AND PUBLIC FACILITIES
OFFICE OF THE COMMISSIONER

SARAH PALIN, GOVERNOR

3132 Channel Drive
Post Office Box 112500
Juneau, Alaska 99811
Phone: 907-465-8365
Fax: 907-465-3900

February 13, 2008

The Honorable Ralph Samuels, Chairman
Alaska Climate Impact Assessment Commission
State Capitol, Room 204
Juneau, AK 99801-1182

Dear Representative Samuels:

This is in response to your December 14, 2007 letter requesting department input regarding budgetary impacts and engineering and construction considerations from perceived climate changes involving flooding, erosion, and permafrost degradation.

The Department of Transportation and Public Facilities (DOT&PF) manages the State's transportation infrastructure in a very challenging environment with many of the State transportation facilities in the Alaska's interior, northern, and southwest region's underlain by ice-rich permafrost. The department has been battling the effects of warming/melting permafrost for decades. Our Maintenance and Operations Divisions spend an average of $10 million annually to combat melting permafrost on our highway system. The $10 million annual figure realistically represents only a fraction of the actual need and therefore this cost may need to increase, perhaps dramatically, if the recent warming trend continues. However, at this point, the department does not have or collect the data necessary to accurately account for permafrost mitigation costs for our entire transportation infrastructure or predict supplemental costs associated with the future impacts of climate change. Doing so would require changing the department's current practices and a significant investment in additional resources. Damages to the public infrastructure could be large, but there is little reliable information detailing the degree and location of impacts.

As part of our mission to manage the State's transportation infrastructure, we have assessed the potential future effects of climate warming trends. Provided below is a list of potential impacts to department's transportation infrastructure and our operations if the climate warming trend continues.

- A longer seasonal transition period from Fall to Winter and Winter to Spring may require a different and potentially more costly approach to snow and ice control.
- The longer seasonal transition may lead to changes in weight restriction policies - both in terms of weights allowed and the length of time the restrictions will be in place.

Providing safe and efficient [illegible] transportation and public facilities and services.

- An increase in the rate of degrading permafrost is likely to increase highway and airport surface distress requiring an increase in both maintenance and capital expenditures to address the resulting safety problems. In some cases this may require the reevaluation of current design, construction and maintenance practices.

- The majority of roads in the interior, particularly around Fairbanks and north of Fairbanks, traverse areas underlain by ice-rich permafrost and will likely require substantial rehabilitation/ reconstruction and/or relocation if the warming trend continues.

- Increased Active Layer Detachments (slope sloughing and failures) on slopes adjacent to the highway system that result from the thawing of ice-rich surface layers. The thawing of these ice-rich slopes leads to a form of mass wasting. The potential for damage to the highway infrastructure is high and will require a pro-active geotechnical approach to prevent impacts to the transportation system. Even in less extreme instances, the mud-flow sloughing of cut banks fills ditches and plugs culverts, which will result in higher maintenance costs.

- A significant percentage of our airports in northern, western and interior Alaska are built over permafrost that will require significant rehabilitation/reconstruction and/or relocation if their foundations thaw.

- A number of our public buildings in northern, western and interior Alaska are built over permafrost that will require significant rehabilitation/reconstruction and/or relocation if their foundations thaw. These facilities include the majority of M&O maintenance stations.

- Embankments built over permafrost will need to be thicker to prevent the underlying ground from thawing. This will add to the cost of rehabilitation and reconstruction as more fill materials will be required.

- The continued warming trend will likely result in the increase in erosion of shorelines and riverbanks which will impact any facility constructed adjacent to the waterbody.

- Aufeis problems will likely increase as melt water flows out of warming zones of permafrost, requiring additional maintenance.

- Glacial fed rivers and streams will likely experience increased flows with the potential for flooding and the cutting of new, unanticipated stream channels. Highways such as the Copper River Highway and segments of the Richardson Highway may experience increased flooding requiring larger culverts and/or larger bridges.

- An increase in the frequency and severity of hot days could result in more highway and airport problems related to asphalt softening and traffic-related pavement damage and rutting.

- Milder winters, with more freeze-thaw cycles, would accelerate road deterioration and increase maintenance costs.

- If the timing, frequency, form and/or intensity of precipitation change in the future, then related natural processes, including debris flows, avalanches and floods, would likely increase with the resulting effect of increased repair costs.

- Coastal communities and their infrastructure are vulnerable to accelerated coastal erosion due to storm activity and wave action eroding shorelines once protected by shore-fast sea ice. As the climate continues to warm, coastal erosion will increase as sea ice retreats and coastal storms become more frequent.

- Coastal communities and their infrastructure are vulnerable to a rise in the sea level. A rise in the sea level could result in the required relocation on many public facilities as well as entire communities.

- As the Geophysical Institute has determined, warming temperatures are altering the blend of vegetative growth on the North Slope of Alaska. Extending this affect to all of Alaska leads to the conclusion that we may well face increased vegetation throughout our more northern areas, and face increasing demands for vegetation management that have never cropped up before.

- The slowly increasing temperatures being forecast by scientists will allow a variety of invasive plants to prosper in Alaska, which will pose new challenges and demands on our maintenance forces.

- The climatic warming trend, combined with an increase in transportation energy costs, will probably lead to alterations in the current vehicle "mix" (i.e., personal automobiles versus mass transit; buses and trains). Our transportation system is not well adapted to a dramatically different vehicle mix than has been experienced over the previous 50 years.

- The maintenance and operations fleet is totally dependent on the combustion of diesel - now shifting to ultra-low sulphur diesel. When viewing these vehicles in the sense of their carbon footprint, we are considering what tomorrow's fleet will be comprised of.

The department is currently assisting several communities that have already been affected by changing climate conditions. The department is actively involved in planning for designing and/or constructing shoreline protection, facility relocation, drainage improvements, and permafrost protection measures. We have active projects in Kivalina, Newtok, Kotzebue, Nome, Unalakleet, Shishmaref, Noatak, Allakaket, and Alakanuk.

To date, the department has not systematically studied the need for or implemented specific changes, policies or regulations to address the potential effects of climate change. At this point in time, we do not have the available data to accurately assess and determine required policy or procedural changes. As stated above, climate change can potentially impact the transportation infrastructure in a multitude of ways – melting/warming permafrost, sea level rise, increased river and shore erosion, increased scour of bridge foundations, increased storm frequency and

intensity, and increasing temperatures. We need to increase the collection and density of data ranging from stream flow records, precipitation and other weather related data records, geotechnical and foundation information, hazards mapping, and other hydrologic data. Our engineering staff needs the appropriate level of data to predict and determine more effective approaches for adapting to changes in climate. As an example, increased precipitation and runoff, storm intensities, and sea-ice conditions will potentially require new and/or revised hydrologic calculations for sizing culverts, designing bridges and their foundations, and erosion control structures. However, at this stage, we are lacking sufficient meteorological information to recommend changes in our planning and engineering processes.

The department will continue to address the impacts of climate change as they occur and will continue to investigate alternative design, construction, and maintenance techniques to address the changing environment that we work in. Right now we need accurate data to be able to design for future impacts to our transportation assets. By partnering with the University of Alaska and other State and Federal agencies we are addressing the most immediate needs for communities already being impacted and identifying the critical information we need to gather to be able to address future impacts of climate change.

Sincerely,

Leo von Scheben, P.E., L.S., M.B.A.
Commissioner

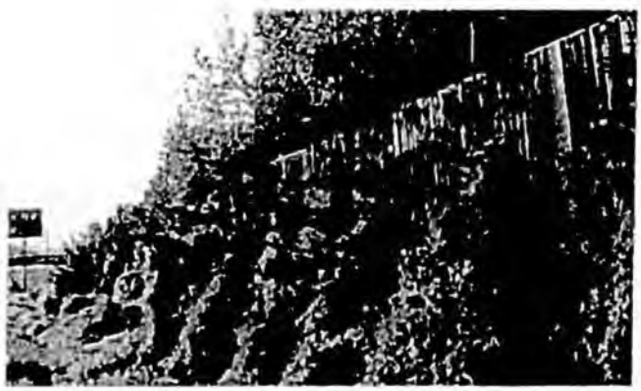
cc: Larry Hartig, Commissioner, Department of Environmental Conservation
Frank T. Richards, P.E., Deputy Commissioner of Highways & Public Facilities, DOT&PF
Mary Siroky, Legislative Liaison, DOT&PF

USDA

A Chance to Catch the Problem Early

Noxious and invasive plants are a problem in Alaska, but land management agencies are working together to keep it from growing into an unmanageable one.

Biologists and land managers thought Alaska's remoteness offered protection from the introduction of noxious and invasive plants. However, the state now has well-established infestations of several invasives, including Canada thistle (*Cirsium arvense*), White sweetclover (*Melilotus alba*), Japanese knotweed (*Polygunum cuspidatum*), and bird vetch (*Vicia cracca*). These, along with other invasive species, now threaten to invade Alaska's forests, riparian areas, and its nonforested wetlands.



Bird vetch (*Vicia cracca*) crawling up and over planted spruce along the Seward highway in Anchorage (*Photo by Michael Rasy*)

Invasive plants are aggressive nonnative plants that have been introduced without the insect predators and plant pathogens that help keep them in check in their native habitats. Noxious weeds are a subset of invasive plants legally defined by each state or province.

Cooperative Effort

Alaska is in a unique position to keep its invasive plant problem from growing into an ecological quagmire. The costs can be low if we quickly identify, control and/or eradicate infestations.

In 2000, six state agencies, eight federal agencies and many nongovernmental organizations in Alaska began working together to address the introduction of invasive and noxious plant species. Under a memorandum of understanding, the agencies developed a plan and laid the groundwork for cooperative surveys, education, prevention, control, and eradication of invasive plant species. The Forest Health Protection Program of State and Private Forestry has a new emphasis to help address invasive plants. The program has provided $100,000 to accelerate the excellent cooperative efforts already underway. The program focuses on the following five areas:

Inventory and Monitoring

The cooperating agencies are first focusing on inventory, using uniform field survey protocols and reporting. We are also determining how best to merge existing databases into a statewide Geographic Information System (GIS) invasive plant layer that will hold existing and future weed survey information. State and Private Forestry is providing seed money for the project. The Alaska Geospatial Data Clearinghouse, operated by the US Geological Survey, is also cooperating in the effort.

State and Private Forestry is also providing funding to the Integrated Pest Management Program, a part of the Alaska Cooperative Extension Service, for invasive species surveys.

The inventory effort in 2002 will be near Anchorage in south-central Alaska. Anchorage is the state's major population center and one of the primary locations for invasive plant introductions. Inventory work will also continue in the Delta Junction and Fairbanks areas, and within Alaska's national parks. Data from these new and continuing surveys will be added to the new "invasives" GIS layer. These inventories will help direct inventory dollars, guide eradication efforts and will serve as a principle monitoring tool.

Left: Japanese knotweed (*Polygunum cuspidatum*) found in an estuary on the Tongass National Forest in SE Alaska. (*Photo by Brad Krieckhaus*)

Above: White sweetclover (*Melilotus alba*) found along the road in Denali National Park. (photo by Roseann Densmore)

Above: Canada thistle (*Cirsium arvense*) in a Anchorage city park, most likely brought in with tree plantings (*Photo by Corlene Rose*)

Above: Flower of Bird vetch (*Vicia cracca*) the plant shown in the photo on the front of this story.

Education

Web-based and printed informational materials about specific invasive plants in Alaska are being developed. This information will help landowners recognize and work on controlling and eradicating invasive species. A web-based field guide to noxious and other weeds of Alaska will be created to assist the general public as well as those doing the inventories.

Coordination

State & Private Forestry funds are being used in support of an invasive plant species coordinator who will facilitate information exchange between agencies. A statewide steering committee may be set up to streamline decision making across agencies.

Research

Once the preliminary invasive plant inventory work has been completed, literature searches and research will begin to determine the best treatment options for these invasive plant species in Alaska.

Eradication and Control

Several eradication projects are already underway, including:

1) a Japanese knotweed eradication project on Baranof Island

2) a white sweetclover trial control project along the Stikine River, Wrangell District, Tongass National Forest

3) a cooperative project between Kenai Fjords National Park and the Seward Ranger District (Chugach National Forest) to control and eradicate invasives before they reach the recently deglaciated moraines of Exit Glacier

4) a roadside dandelion pulling project in Denali National Park

Further information on the Alaska invasive plant network is available online at www.invasivespecies.gov/geog/state/ak.shtml

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Forest Service, Alaska Region
S&PF, Forest Health Protection
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644-3681

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ALASKA Region
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When is eradication of exotic pest plants a realistic goal?

M. Rejmánek[1] and M. J. Pitcairn[2]

[1]Section of Evolution and Ecology, University of California, Davis, CA 95616, USA.
[2]California Department of Food and Agriculture, Integrated Pest Control Branch, 3288 Meadowview Road, Sacramento, CA 95832, USA

Abstract Using a unique data set on eradication attempts by the California Department of Food and Agriculture on 18 species and 53 separate infestations targeted for eradication in the period 1972-2000, we show that professional eradication of exotic weed infestations smaller than one hectare is usually possible. In addition, about 1/3 of infestations between 1 ha and 100 ha and 1/4 of infestations between 101 and 1000 ha have been eradicated. However, costs of eradication projects increase dramatically. With a realistic amount of resources, it is very unlikely that infestations larger than 1000 ha can be eradicated. Early detection of the presence of an invasive taxon can make the difference between being able to employ offensive strategies (eradication), and the necessity of retreating to a defensive strategy that usually means an infinite financial commitment. Nevertheless, depending on the potential impact of individual weedy species, even infestations larger than 1000 hectares should be targeted for eradication effort or, at least, substantial reduction and containment. If an exotic weed is already widespread, then species-specific biological control may be the only long-term effective method able to suppress its abundance over large areas.

Keywords Costs of eradication; early detection; eradication effort; exotic pests; initial infestation; invasive plants; noxious weeds.

INTRODUCTION

Many control methods and their combinations (usually involving mechanical, chemical, and biological means) are available to managers for containing, controlling, or eradicating harmful alien plants. However, sound management strategies demand an objective means for setting priorities. Undoubtedly, exotic taxa with large-scale environmental impacts ("transformers" – see Richardson *et al.* 2000, Rejmánek *et al.* 2002) should always be targets for control and eradication. But when is complete eradication a realistic goal? There are numerous examples where small infestations of invasive plant species have been eradicated. These include *Silybum marianum* on Santa Barbara Island and *Osteospermum fruticosum* on Santa Cruz Island, California (Junak *et al.* 1993; Junak pers. comm.), *Pueraria phaseoloides* in Galapagos (Soria *et al.* 2002), and nine species on Rangitoto Island (Wotherspoon and Wotherspoon 2002). There are also several encouraging examples where widespread alien animals have been completely eradicated (Dahlsten and Garcia 1989; Chapuis and Barnaud 1995; Priddel *et al.* 2000; more examples are in this volume). Can equally widespread and difficult alien plants also be eradicated? We try to answer this question by using a unique data set on exotic weed eradication attempts by the California Department of Food and Agriculture.

The California Department of Food and Agriculture (CDFA) is actively involved in preventing the establishment and invasion of "noxious weeds." The Food and Agricultural Code of California defines a noxious weed as "any plant species which is, or is liable to be, detrimental or destructive to agriculture, silviculture, or important native species, and difficult to control or eradicate." Each noxious weed is given a pest rating (A, B, C, or Q) which indicates the most appropriate action to be taken against it (O'Connell 1999). An "A" rated weed is subject to action by the CDFA and County Agricultural Commissioner Offices including eradication, quarantine, containment, rejection of shipments, or other holding actions. A "B" rated weed is subject to State action only when found in a nursery; otherwise action is at the discretion of the local County Agricultural Commissioner. A "C" rated weed is not subject to State action other than to provide for general cleanliness in nurseries, otherwise action is at the discretion of the local County Agricultural Commissioner. Those weeds that are widespread and can no longer be eradicated are usually given a "C" rating. A weed is rated "Q" when it is newly detected and seems likely to significantly impact agriculture. These weeds are treated as "A" rated until they are fully evaluated. Currently, there are 128 plant species that are listed as "noxious" by CDFA: 45 are "A" rated, 55 are "B" rated, 24 are "C" rated, and 4 are "Q" rated.

Eradication and other actions directed at "A" rated weeds are performed by personnel in the Integrated Pest Control Branch of CDFA and the County Agricultural Commissioner Offices who work closely together to detect and eradicate exotic weeds state-wide. When a new infestation of an "A" rated weed is detected, the site is visited and size of the infestation is delimited. Two estimates of infestation size, net and gross, are obtained. Gross infestation size is the area over which the weed is distributed. Net infestation size is the area to which treatment is actually applied. Gross infestation size is the area that must be surveyed in return trips following control treatments.

Eradication efforts consist of a series of control treatments to the infestation over several years. Control treatments can include herbicide applications, cultivation, removal of infested soil, and mechanical removal. For large infestations, a crew of workers is required; for small infesta-

Pages 249-253 in Veitch, C. R. and Clout, M. N. (eds.). *Turning the tide: the eradication of invasive species*. IUCN SSC Invasive Species Specialist Group. IUCN, Gland, Switzerland and Cambridge, UK

tions, only one individual may complete the work. Following initial treatment, the site is visited several times to examine the area for regrowth or seedling recruitment. This effort is repeated until no plants are found in subsequent visits. Eradication is considered successful when no plants are recovered from the initial infested area for three consecutive years.

To date, 14 exotic weeds have been successfully eradicated from California: whitestem distaff thistle (*Carthamus leucocaulos*), dudaim melon (*Cucumis melo* var. *dudaim*), giant dodder (*Cuscuta reflexa*), serrate spurge (*Euphorbia serrata*), Russian salttree (*Halimodendron halodendron*), blueweed (*Helianthus ciliaris*), tanglehead (*Heteropogon contortus*), creeping mesquite (*Prosopis strombulifera*), heartleaf nightshade (*Solanum cardiophyllum*), Torrey's nightshade (*Solanum dimidiatum*), Austrian peaweed (*Sphaerophysa salsula*), wild marigold (*Tagetes minuta*), Syrian beancaper (*Zygophyllum fabago*), and meadowsage (*Salvia virgata*) (O'Connell 1999). With the exception of *Cucumis* (16 and 32 ha), all gross infestations were smaller than 10 ha and most of them were smaller than one hectare when they were detected.

MATERIAL AND METHODS

Complete information on eradication effort was obtained for 53 infestations of 18 "A" rated species (Table 1). CDFA biologists assigned to the Detection and Eradication Districts for the State of California, CDFA, provided the data. For each weed infestation, the following information was obtained: (1) size of infestation after delimitation (both net and gross area), (2) date first found, (3) total number of visits to the site to date, (4) effort per infestation (number of person hours devoted to the site to date, including travel time to and from the site), and (5) current status of the infestation. The data are summarised in this contribution.

RESULTS

The relation between the mean eradication effort (work hours) and five initial gross infestation area categories is summarised in Table 2 and Fig. 1. The good news is that professional eradication of exotic weed infestations smaller than one hectare is usually possible. Furthermore, about 1/3 of all infestations between 1 ha and 100 ha and 1/4 of infestations between 101 and 1000 ha have been eradicated. Costs, however, increase dramatically. (An approximate estimate of direct costs in USD can be obtained by multiplying work hours in Fig. 1 and Table 2 by USD96; this includes salaries, cost of transportation, and cost of herbicides and equipment). With a realistic amount of resources, it is very unlikely that infestations larger than 1000 ha can be eradicated.

Interestingly, in the first four infestation-size categories, where at least some eradications were successful (Table 2), mean eradication effort per infestation is consistently greater for ongoing projects than for eradicated infestations. This indicates that, in general, completed eradications were not successful because of the greater effort.

Table 1 List of "A" rated weeds in California for which eradication information was obtained.

Scientific name	Common name	No. infestations	Eradicated/ongoing
Terrestrial species			
Alhagi pseudalhagi	camelthorn	5	1/4
Carduus nutans	musk thistle	1	0/1
Centaurea diffusa	diffuse knapweed	6	5/1
Centaurea iberica	Iberian thistle	3	1/2
Centaurea maculosa	spotted knapweed	3	2/1
Cirsium ochrocentrum	yellowspine thistle	3	1/2
Cucumis melo var. *dudaim*	dudaim melon	1	1/0
Cuscuta reflexa	giant dodder	1	1/0
Euphorbia esula	leafy spurge	2	1/1
Halimodendron halodendron	Russian salt tree	1	1/0
Linaria angustifolia ssp. *dalmatica*	Dalmatian toadflax	1	1/0
Onopordum acanthium	Scotch thistle	13	6/7
Onopordum illyricum	Illyrian thistle	1	0/1
Peganum harmala	harmel	2	0/2
Physalis viscosa	ground cherry	1	1/0
Salsola damascena	Damascus saltwort	1	0/1
Aquatic species			
Hydrilla verticilata	hydrilla	5	2/3
Alternanthera philoxeroides	alligatorweed	3	1/2

Another confounding factor could be a bias created by differences in species representing small and large infestations. This would be particularly serious if large infestations consisted of more persistent species than smaller infestations. However, the trend remains the same even within individual species (Fig. 2). Finally, while the eradication effort increases with the area of infestation, the effort per hectare decreases at the same time (Table 2). This suggests that even infestations of >1000 ha could be eradicated, but the eradication effort per hectare would have to be greater. It is important to point out that all three successful eradications of gross infestations >100 ha (Table 2) represented relatively-small net areas (*Linaria angustifolia*: 0.49 ha; *Onopordum acanthium*: 0.20 ha; *Physalis viscosa*: 0.92 ha).

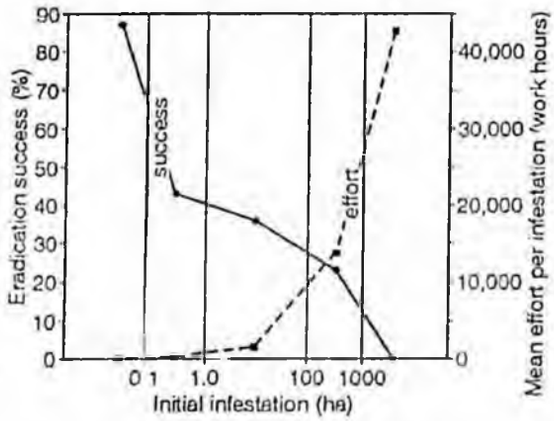

Fig. 1 The dependence of the eradication success (%) and the mean eradication effort per infestation (work hours) on the initial size of infestations. Based on the data for eradication projects of 18 noxious weed species and 53 independent infestations in California (see Table 1).

DISCUSSION

Obviously, a substantial increase in resources for exclusion and early detection of exotic weeds would be the most profitable investment. Without any data, or based on very limited data, others (Auld *et al.* 1987; Chippendale cited in Hobbs and Humphries 1995; Cook and Setterfield 1996; Braithwaite and Timmins 1999; Panetta 1999; Smith *et al.* 1999; Weiss 1999) already made this point. Surprisingly, however, practical implementations are still very rare. We suggest that in all concerned countries, teams of professional botanists should be created for rapid detection and assessment of new infestations of exotic plants. Early detection of the presence of an invasive and harmful taxon can make the difference between being able to employ feasible offensive strategies (eradication) and the necessity of retreating to a defensive strategy that usually means an infinite financial commitment.

Attempts to eradicate widespread invasive species, especially those that do not have any obvious environmental impacts (including suppression of rare native taxa), may be not only hopeless but also a waste of time and resources (Groening and Wolschke-Bulmahn 1992). Volunteers and donors, who would be otherwise willing to participate in eradication of serious pests, may be discouraged by such projects.

Nevertheless, depending on the potential impact of individual weedy species, even infestations larger than 1000 hectares should be targeted for eradication effort, or, at least, substantial reduction and containment. A notable example of a successful containment is the parasitic weed *Striga asiatica* in parts of North and South Carolina (Kaiser 1999). In the 45 years of the eradication programme, the initial gross infestation on 20 000 km² was reduced to 2800 ha of very light occurrences. The cost, however, was more than USD 250 million (R. E. Eplee, pers. comm.). Another exceptionally successful project is the practically complete eradication (98% of properties on which it is known to occur) of *Bassia* (*Kochia*) *scoparia* over the past eight years in Australia (3277 ha; 15,536 work hours; R. Randall, pers. comm.).

Table 2 Areas of initial gross infestations (at the beginning of eradication projects) of exotic weeds in California, numbers of eradicated infestations, numbers of ongoing projects, and mean eradication effort for five infestation area categories. The data include 18 species of noxious weedy species (two aquatic and 16 terrestrial) representing 53 separate infestations. NA – not applicable.

		Initial infestation (ha)				
		<0.1	0.1-1	1.1-100	101-1000	>1000
No. of eradicated infestations		13	3	5	3	0
No. of ongoing projects		2	4	9	10	4
Mean eradication effort per infestation (work hours)	Eradicated	63	180	1496	1845	-
	Ongoing	174	277	1577	17 194	42 751
Mean eradication effort per hectare (work hours)	Eradicated	NA	807	103	6	-
	Ongoing	NA	792	648	26	16

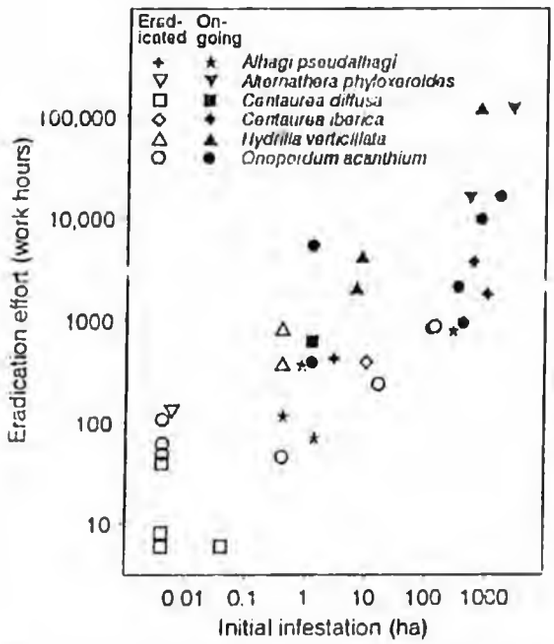

Fig. 2 The dependence of eradication effort on the size of initial infestations of six noxious weedy species in California. This diagram also indicates that eradication of aquatic weeds (*Alternathera* and *Hydrilla*) is more demanding.

In general, however, when an exotic weed is already widespread (>10 000 ha), species-specific biological control (if feasible) may be the only long-term effective way to suppress its abundance over the invaded area. Many successful weed biocontrol projects have been accomplished in Australia, California, South Africa, and other countries (Nechols 1995; Julien and Griffiths 1998; Olckers and Hill 1999; Pemberton 2000). Needless to say that as biological control agents are usually exotic taxa themselves, serious attention must be paid to their possible non-target effects (Louda *et al.* 1997; Wajnberg *et al.* 2001).

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The Economic Costs of Delaying Invasive Weed Control: An Illustration based on Nevada's Tall Whitetop Initiative

Mark Eiswerth, Research Assistant Professor
Wayne Johnson, State Integrated Pest Management Specialist
Steve Lewis, Extension Educator
Larry Hughes, Douglas County Weed District Manager

1. Introduction

Tall whitetop (*Lepidium latifolium*), also known as perennial pepperweed, is an alien weed that is invading watersheds in Nevada and throughout the West. In Nevada, thousands of acres of tall whitetop infest the lower Truckee River, Lake Tahoe, the West and East Walker Rivers, and much of the riparian lands of the Carson and Humboldt watersheds. Invasions of tall whitetop began along streams and in wet meadows, but now tall whitetop is observed at significant distances away from the riparian areas in upland, dry sites and is spreading to other parts of the state.

Tall whitetop roots do not stabilize stream banks. When they are present, banks erode more easily, polluting streams with silt and debris.

Tall whitetop negatively impacts both the ecology and economy of an area, and eventually the entire state (Young et al., 1995; Donaldson and Johnson, 1999; Olson, 1999; USDA, 1999; Auton et al., 2000).

Tall whitetop out-competes natives, forming monocultures that exclude other plants and animals.

It crowds out desired vegetation and tends to quickly form a monoculture, thereby reducing plant and animal biodiversity. Since it does not provide good habitat for wildlife, it reduces the diversity and numbers of animals such as deer, elk, waterfowl, and other birds. In addition, it does not provide good forage for livestock and imposes costs on farmers who must control its spread in croplands and pastures. Negative economic impacts occur in two distinct ways. First, property owners and land managers who must control tall whitetop are forced to

incur out-of-pocket expenditures, for example on labor, herbicides, and revegetation necessary for successful treatment of the weed. Second, until tall whitetop is controlled, its presence yields damages (in the form of foregone benefits) due to lost uses of the land (e.g., grazing, cropping, and outdoor recreation).

The flowers of tall whitetop are deceivingly beautiful. Do not let them go to seed.

This short manuscript illustrates how the costs of tall whitetop control rise as control actions are delayed and infestations grow. Essentially, how much will it cost me if I treat an infestation today compared to the cost if I wait, say, five years to treat it? Will delay be cost effective? These are important questions that deserve scrutiny by landowners, land managers, funding authorities, and other stakeholders faced with competing needs and scarce financial resources.

For our illustration we use cost data collected for one of the tall whitetop control projects recently commenced under Nevada's Tall Whitetop Initiative (Initiative) funded by the 1999 Nevada State Legislature. The Initiative was launched in 2000 by University of Nevada Cooperative Extension with the objective of quickly implementing a suite of tall whitetop management projects throughout the state. We focus on one Initiative project in particular, conducted in Douglas County, Nevada, because complete and detailed cost data were reported to us for that site. Data included labor and supply costs, as well as some limited information on capital equipment costs. However, we focus only on non-equipment costs since we lack good data on the link between infestation size and the need to buy more equipment. Consequently, costs are figured conservatively throughout. Our results are illustrative for a larger set of sites in Nevada and the West that either 1) are currently infested with tall whitetop or 2) may likely become infested in the future.

The next section briefly summarizes out-of-pocket costs in the first year (2000) of the project. To illustrate how costs would have increased if the project had been delayed, we concentrate on costs that vary in proportion to infestation size. Section 3 presents the impacts on costs that would have resulted from a delay in tall whitetop control. Section 4 offers concluding remarks.

2. Year One Project Costs

The control of tall whitetop is not a one-time proposition. Though control expenses may be highest at the outset of the effort, actions over time are necessary (follow-up spraying, revegetation, etc.). For example, the Douglas County project (Project) on which we focus is a planned ten-year effort. Of course, if control of tall whitetop at a particular site is postponed to the future, the infestation will grow and therefore the control costs will rise in every year of a multi-period management effort. *However, we illustrate solely the impacts of a delay on the first year of the Project, since cost data are currently available only for Year 1 (2000).* As well, estimated future costs are not adjusted for future inflation. Consequently, *the results are very conservative and represent an understatement of what may actually occur.*

In this analysis we focus on what are termed variable costs. We define variable costs as those that vary directly according to the size of the infestation. These include expenditures for labor, chemicals, and seed for revegetation. We intentionally exclude capital costs associated with purchase and maintenance of equipment such as trucks and sprayers necessary for chemical application, because these are fixed costs that would not increase in continuous

fashion if the infestation were to grow in size. Of course, were the infestation to grow sufficiently,

> Tall whitetop invasions negatively impact the economy as 1) costs of control and 2) damages—lost use of land for grazing, cropping, recreation and wildlife habitat.

it would be necessary to purchase additional capital equipment at some point. By excluding consideration of capital costs and any amortization associated with them, we simplify the analysis and also deliberately adopt a conservative approach. This underestimates the incremental costs of postponing weed control.

Variable project costs for Year 1 (2000) are summarized in Table 1. Labor costs, which include costs of labor for both control and revegetation ($7,325), constitute the largest cost category and account for over half the total variable costs ($12,647). Chemical costs ($3,635) are the second largest category and account for almost thirty percent of the total costs. Revegetation (seed) costs ($1,687) are a relatively small proportion of the total, but this can vary widely across different project sites and in some cases seed costs can be much higher.

Table 1. Variable costs for Year 1 (2000) of the Douglas County Tall Whitetop Control Project.

Cost category	Year 1 costs
Labor [a]	$7,325
Chemical costs	$3,635
Revegetation (seed purchase costs)	$1,687
Total Year 1 variable costs	**$12,647**

[a] Includes labor for chemical application, hand pulling, revegetation, mapping, supervision/administration, and volunteer labor. Since volunteer labor (which accounted for an estimated 40 hrs of labor in Year 1) does not impose out-of-pocket costs but nevertheless should be included in an economic accounting framework because it constitutes an opportunity cost, we apply a conservative shadow price of $10/hr (equal to about 25% of typical hourly applicator costs) to yield an estimated $400 in volunteer labor.

3. Cost Impacts of Delaying the Start of the Control Project

In this section we illustrate the impacts on Year 1 project costs that we would see if initiation of the tall whitetop control project were to be delayed for between two to ten years beyond 2000. It is reasonable to expect the Project costs to be affected because we know that tall whitetop infestations rapidly expand when left uncontrolled by humans. At what rate would we expect the infestation at the Project site to grow if control efforts had not been undertaken? While there is some uncertainty on this point and expansion rates vary according to site-specific conditions, the existing literature provides us with good information to characterize a range of likely rates.

As one recent reference point, Smith et al. (1999) examined the growth rates of a variety of different invasive weeds in diverse locations around the western United States. That study found an average expansion rate of approximately 24% per year, with relatively high rates in early years and lower growth rates as an infestation matures. This figure is close to the estimated annual average growth (27%) of spotted knapweed (*Centaurea maculosa*) in Montana since 1920 (Sheley et al., 1996). Smith et al. also note that their projected expansion rates for the early years of small infestations are in the range of the 60% growth rates found in the literature (e.g., Callihan and Evans, 1991; Roche et al., 1994).

Given these data, we estimate impacts on costs assuming three different annual average expansion rates: 10%, 20%, and 30%. These rates bracket the annual average rates found in the literature, but are well below the higher rates for small infestations noted above. Given the relatively small acreage of tall whitetop present at the Douglas County Project site (75 acres), it is reasonable to expect that 10%-30% is a conservative range of assumptions for the expansion rates and, if anything, may understate the rapid growth of which small infestations are capable.

Table 2 shows the impacts on Year 1 Project costs of delaying the Project's commencement by various numbers of years, with start dates ranging from 2000 to 2010. The second column in the table displays Year 1 costs by startup year assuming an annual average expansion rate for tall whitetop equal to 10%. The third and fourth columns display Year 1 costs for the higher expansion rates of 20% and 30%, respectively.

Table 2. Impact of delaying Douglas County Tall Whitetop Project startup on Year 1 variable costs, considering three annual infestation expansion rates. [a]

Project startup year	Year 1 Project costs, considering tall whitetop infestation annual expansion rates[b]		
	10%	20%	30%
2000	$12,647	$12,647	$12,647
2002	$15,303	$18,212	$21,373
2004	$18,516	$26,225	$36,121
2006	$22,405	$37,764	$61,045
2008	$27,110	$54,380	$103,165
2010	$32,803	$78,307	$174,350

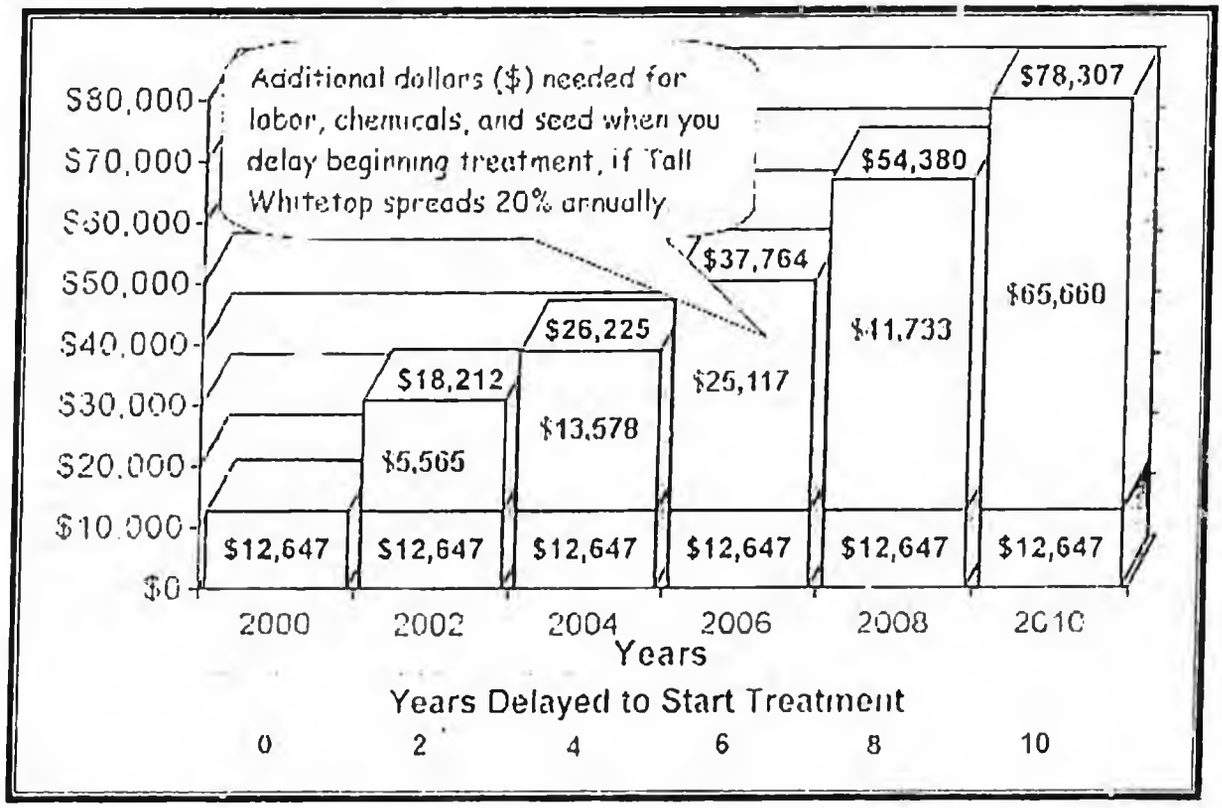
[a] Costs are expressed in current (not present) value dollars (i.e., neither a discount rate nor a rate for anticipated inflation are applied to future costs as these may be offsetting adjustments).

[b] This table illustrates only how Year 1 Project costs would have increased in the event of delay in the Project commencement. Postponing control would also increase costs in each of the other nine years of this ten-year Project, but we do not assess the impacts in those years because the necessary data on costs and tall whitetop bounce back rates are not yet available. For this and other reasons mentioned in the text (conservative expansion rate scenarios, omission of capital costs for weed control and not allowing for inflation), the results shown here tend to underestimate the increase in costs that would result from a delay in the Project startup.

As demonstrated in Table 2, postponing tall whitetop control efforts has a significant impact on how much money is spent on control. Even under a modest expansion rate of 10%, delaying control by 6 years would cause Year 1 costs alone to almost double, rising from $12,647 in 2000 to $22,405 in 2006. If the expansion rate were double this amount (20%), postponing control efforts for six years would cause Year 1 costs to almost triple, rising from $12,647 in 2000 to $37,764 in 2006. An expansion rate of 30% would cause Year 1 costs (six years delayed) to rise to over $60,000. It is important to keep in mind that the highest expansion rate we model (30%) is actually quite close to the average annual rate observed for spotted knapweed in Montana over the last eight decades (27%). Many invasive species, including tall whitetop, have similar or greater expansion rates, particularly in the early years of an infestation. Figure 1 illustrates graphically the estimated rise in costs as tall whitetop control is delayed, assuming our "middle" scenario of a 20% expansion rate.

The cheapest and easiest invasive weed to control is the first one!

Figure 1.Year 1 variable costs for tall whitetop control by project start year at 20 percent annual expansion rate of weeds in Douglas County, NV.



4. Conclusions

Entities faced with demands to spend money on invasive weed control are often besieged by multiple, competing demands to devote resources to a number of other needs as well. This is the case for federal and state agencies and legislative bodies, counties, municipalities, weed districts, irrigation districts, watershed management authorities, and private producers and landowners. Competing demands for scarce funds often result in a delay in expending dollars and efforts on invasive weed management.

The results of our assessment show in a very conservative manner why it is important to adopt a dynamic perspective when deciding how and when to spend money on invasive weed control *instead of* other activities and programs. Because of the peculiar characteristics of the ecological problem posed by tall whitetop and other invaders (i.e., explosive growth), the costs of control multiply rapidly over time. Therefore a failure to devote resources to infestation problems today requires the decision maker to spend appreciably larger sums of money even a small number of years from now. At the highest expansion rate modeled in our assessment (which is well within the range of data observed for invasive weeds in the West), even a four-year delay in beginning a control program would cause the eventual Year 1 control costs to nearly triple. A ten-year delay would cause Year 1 costs to rise by more than a factor of ten.

Do not delay beginning treatment of tall whitetop. Every year you wait adds to the expense of managing this invasive weed.

It is important to bear in mind that our assessment only examines, and very conservatively at that, the impacts on out-of-pocket costs in the first year of the tall whitetop Project. Of course, postponing control would also increase costs in each of the other nine years of this ten-year Project as well. For this and other reasons mentioned above (conservative expansion rate scenarios, omission of capital costs for weed control and not including rates of inflation), our results tend to be "conservative." That is, they underestimate the increase in control costs that would have resulted from a delay in commencement of this Tall Whitetop Initiative Project in Douglas County. In addition, our assessment does not deal with the rapid accumulation of economic damages from invasive weeds (foregone benefits such as grazing and recreation) that occur over time as control is postponed. These lost benefits certainly would escalate rapidly and may in fact constitute a greater economic loss to a community than the out-of-pocket costs demonstrated here.

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Weeds and their implications to Property Value

by Ron Eng, CDFA

Real estate is one of the largest purchases a person makes in her or his lifetime, often involving a loan with security based on the purchase property. With so much on the line, it is the seller's responsibility to represent the subject property accurately so that a potential buyers will know whats they are getting and what to expect after the close of escrow. Fraudulent misrepresentation or omissions place the property sellers and their agents in legal jeopardy. I will describe two short stories as examples of disclosure and the implications weed infestations have on a community.

In California in 1976, a seller used an agent to list his property for sale - a 3,000 square foot home on an acre of land, with a pool and guesthouse. Shortly after the new owner took occupancy, land subsidence caused sizable damage to the driveway. She then discovered that the floor of the guesthouse was not level and that the doorways were not square, which made closing doors difficult. The seller had needed to restabilize the soil on at least two occasions, which lead to speculation that this was what prompted the sale. The buyer learned that the property was built upon fill that was not properly engineered for stability and compaction. She brought suit against the seller and his agents for failure to disclose material defects prior to the time of sale. Despite a court appeal by the realtors, the law was upheld against them, and the seller became insolvent following the first judicial decision.

The case made it clear that disclosure requirements can have far-ranging implications, as they include anything that may impact the material value of residential property. In 1984, a California law was passed based on the case described that requires full disclosure of all defects materially affecting the value of residential property that are known or *should be known*, to be revealed to potential buyers before sale. Weeds can be a part of this. For example, if a property for sale is described as "for horses," the potential buyer should know of any weeds toxic to livestock or difficult to control that exist on the property so that they can determine if any weed elimination work is needed to make it suitable for horses. Realtors who represent buyers and sellers are responsible for providing due diligence to their clients so that transactions occur with understanding of all parties in mutual trust. Since realtors earn a percentage of the sales price in transactions, it is their fiduciary duty to provide protection to their clients and prevent unfair business advantage or fraud. California sellers are required by law to disclose any thing affecting the material value of the property to potential buyers prior to sale.

The immediate property is not the only land affected by the presence of weeds. In Montana, a film celebrity created conflict with the local community by refusing to use herbicides on his ranch. Although Seagal had filed a weed control plan with the County Agent, he did not take action to eliminate the weeds on his property. Adamantly

against using herbicides, the celebrity was at odds with long-time ranching neighbors who controlled their weeds. He blocked outside access to his weed-infested ranch, escalating tension and isolating himself from the irate local community. When a new owner bought the celebrity's ranch, the ranchers assumed that he would be just as resistant and difficult. The new owner received a cold welcome from the his neighbors, but responded by admitting he knew nothing about ranching and would support the locals by assisting with weed control. He conducted a fundraiser to buy new weed control equipment for shared community use. The new owners also kept their ranch open to welcome neighbors, and actively sought out their ranching advice. Slowly, the locals came to accept the new residents.

In Montana, weeds were the source of two distinct non-neighborly issues: a failure to follow through on weed control, and removing access to the property. Weeds are everyone's problem, especially in rangeland management, so if even just one ranch owner refuses to control weeds on his property, nearby ranchers have no chance of maintaining the control because of re-infestation at their borders. It is true that infestation disclosure can potentially reduce sale value (although likely less the cost of being sued). A recreational land sale in Oregon lost some value due to weeds, devalued $200,000 off of the original $2 million price. Similarly, grazing land in Montana has lost sale value from $400/acre to about $200/acre due to invasive and difficult to control weeds. The value of grazing land is based upon the ability of livestock to find adequate forage and the land's ability to support grazing long term. Ranch land leases are often described in cow-calf units that represent the amount of feed available to support a cow and/or calf on a given acreage of land. Land with high unit value, or, land that can support large numbers of livestock, has more value. Pristine grazing lands are prized, but are under continuous threat of invasion by noxious weeds. If no maintenance is done to prevent weed infestations, eventually desirable feed grasses are crowded out and there is less feed availability over time. Thus, unmaintained property is a costly nuisance for everyone.

Relatively benign, pampas grass "swallows" a home in the background. Noxious weeds may create a real estate devaluation to the immediate landholders and their at-risk neighbors.

Photo by Deborah Seiler

While real estate transactions continue to occur without the disclosure of weed problems, it is uncertain if disclosure requirements will change and extend to existing weed vegetation problems. In any case, it is best to disclose all information about the property for sale that may cause a change in property value. A good buyer's agent will provide protection to their client's needs and concerns by examining the property and requiring a professional evaluation or inspection of such things, similar to a home inspection that is typical prior to sale. The real estate business is litigious because of the high value involved. An experienced and skilled real estate agent's service is well worth the commission they earn, both for the buyer's peace of mind and the seller's protection. ❖

Economic Effects on Invasive Weeds on Land Values (from an Agricultural Banker's Standpoint)

Charles Weiser

From: Exotic Pests of Eastern Forests, Conference Proceedings - April 8-10, 1997, Nashville, TN, Edited by: Kerry O. Britton, USDA Forest Service & TN Exotic Pest Plant Council

The year was 1954, four young 4-H members were traveling to a livestock judging workout. Ben Barrett, the county agent, stopped the car and escorted the young men to a weed patch located on the adjacent railroad right-of-way. **"Take a good look-this is leafy spurge. If you ever see it in your area, let me know. It is almost impossible to control."**

My next encounter with leafy spurge came in the spring of 1963. As Assistant Ward County Extension Agent, I became aware of leafy spurge infestation in Ward County. There were an estimated 2,000 acres in a seven-township area centering on the "Brooks Ranch" area. It was found in patches from 200 square feet to 10 acres in size. These patches were in road ditches, coulee bottoms, and fence lines.

The county agent and myself used square rod demonstration plots and personal contacts to try and convince landowners to organize a control program. We had very little success.

The excuses were many:

1. It's too expensive; the state should pay the bill;
2. It came in along the railroad; they should clean it up;
3. What's the problem-it's been here since the mid 30's and hasn't spread very fast.

A few individuals started control programs on their land, and those areas are relatively clean today.

By 1972 (10 years later), the acreage infested in Ward County had doubled to around 4,000 acres. There was now some spurge in all 57 townships in the county. The concern level of the landowners had increased, and the county began a limited control program along county roads, but control on private land was limited due to the high cost per acre of chemical control.

By 1982 (10 years later), the acreage doubled again to around 8,000 acres. The county commissioners were considering scrapping the control on roadsides; they had not seen very much done on the private land, and wondered why they were spending money on road ditches if the adjacent landowners didn't do anything. At the same time, the state legislators changed the weed laws, allowing counties to levy 3 mills of property tax to be used for weed control. In addition, the Legislature appropriated state funds which were divided among the counties which levied the 3 mills. The combination of county and state funds could be used to cost share spurge control on private lands.

This cost share approach on private lands was instituted in 1983. In my county and state, funds cover 70% of the cost. The landowner pays approximately 30%.

The acreage of leafy spurge continued to increase to a high of around 12,000 acres in 1990.

After watching control results from1983 to 1990, more and more farm operators took part. Estimated acreage infested in 1994 showed a drop to around 10,000 acres of which 8,000 had control measures applied.

Over the time frame of 1962 to 1992, the area of leafy spurge in North Dakota doubled every 10 years from 200,000 acres in 1962 to an estimated high of 1,000,000 acres in 1992.

In 1994, Agricultural Economists at North Dakota completed studies of the annual economic impacts of leafy spurge on grazing lands and wildlands in the four state area (North Dakota, South Dakota, Montana, and Wyoming).

The methods and detail of the studies are available from North Dakota State University (NDSU). In the interest of brevity, please allow me to summarize their findings for North Dakota.

Annual Grazing Land Impact In North Dakota

Grazing Acres	1,426,000
Infested Acres	625,900
% Infested	5.48%
Lost AUM's of Grazing	459,000
Value lost AUM's	6,876,000
Lost expenses & returns	17,317,000
Direct economic impacts	24,193,000
Secondary (economic impacts)	53,989,000
Combined economic impact	78,182,000

Annual Wildland Impacts in North Dakota

Wildland acres	4,899,000
Infested acres	350,300
% Infested	7.15%
Reduction soil water conservation	514,100
Reduction wildlife recreation	2,111,600
Direct economic impact	2,625,700
Secondary economic impact	5,291,000
Total economic impact	9,790,000

Annual impact on grazing	$78,182,000
Annual impact on wildlands	$9,790,000
Total:	**$87,972,000**

Take this annual loss over 10 years and the resulting combined loss is staggering!

Now, let's look at the effects of this weed on land values.

The basic value of any income producing investment is based on the projected income flow the investment will produce. This holds true for stocks, bonds, land, apartment buildings, etc.

If the income stream shrinks, so does the value (price) of the investment. Likewise, if income streams increase, so does the value of the investment.

Alien plants which invade native grazing lands, all affect carrying capacity negatively. They crowd out productive and usable forage plants lowering carrying capacity. As carrying capacity shrinks, so does the income stream. As income streams shrink, so does value of the asset.

Remember the Brooks Ranch? Leafy spurge acreage increased to the point where over 50% of the acres were infested. The owners decided to sell. Two brothers who were neighbors purchased the ranch in 1975, at full market value. Farm Credit Services financed the purchase. Within three years, they had deeded back most of the pasture land to Farm Credit Services and were financially distressed.

It took Farm Credit Services until early 1991 to sell the property. I visited with Jeff Haugen, the appraiser for FCS regarding prices and value. He said his knowledge of sales indicated that this type of pasture should have sold for $100 to $125 per acre. Because of the lowered carrying capacity due to leafy spurge, the price dropped to $40/acre. Jeff, also related that he was surprised it was that high. By the time it was sold, much of the pasture was 100% covered by spurge.

This drop in value of 60% is a real loss in value.

Another documented case came from Klamath County, Oregon. In the year 1988, a 1,360 acre ranch was taken over by the county to cover unpaid taxes caused by unproductivity because of leafy spurge. Estimated value for similar clean land was $125 to $150/acre. ($170,000 to $204,000).

The county put the ranch up for sale with minimum bids set at $17,000 for taxes due. The first try at selling failed with bids below that level. Eventually, it was sold to a party who lives in California for $27,500, with the stipulation he had to control the spurge. In 1995, I called Francis Roberts, the county weed supervisor in Klamath County, to confirm the information. He indicated he had confirmed the prices with county officials and had called the current owner. The owner had spent close to $60,000 through 1994 (6 years) on control measures. The weed supervisor indicated he has a serious problem and has made little headway in control. This drop in value from $170,000 to $27,500 shows a loss of approximately 83% in value on this ranch.

As an agricultural lender, I am interested in the longterm values of my collateral. Most agricultural loans run for terms of over 10 years up to 20 to 30 years. If my collateral value declines due to invasive alien weeds, my loan may be in jeopardy. Likewise, reduced income due to alien invasive weeds lowers income from the land. This lower income will affect the borrower's ability to repay the loan.

Because of these effects on value and income, I am not interested in real estate loans where my collateral has invasive alien weeds.

All invasive weeds cause loss of native plants and changes in wildlife habitat. Losses of desirable habitat translates to losses of wildlife numbers. A case in point is the loss of elk habitat in Montana due to infestation of spotted knap weed. Another is wetland degradation due to purple loosestrife.

In some areas, noxious invasive weeds are an out-and-out eyesore. They cheat us of the surroundings we once found a pleasure to behold.

An unqualified impact of aliens and invasive weeds on less intensively managed wildlands is their potential to act as a nusery or seed bank from which to spread.

The bottom line is a devastating loss in incomes, land values, wildlife habitat, and the aesthetic value of wild places.

Our natural resource heritage depends on everyone's involvement.

You, as land managers, cannot stand by and let alien weeds continue to expand their range because it is "too" expensive to control them.

The highest cost you will ever pay is the lost income and drop in value as the alien plants take over.

The lowest cost is for early and continued control at first appearance. That first $1 spent on small patchs will save income, land values, and the extremely high costs of control later!

There is an old Indian proverb. "We don't inherit the land from our ancestors, we borrow it from our children."

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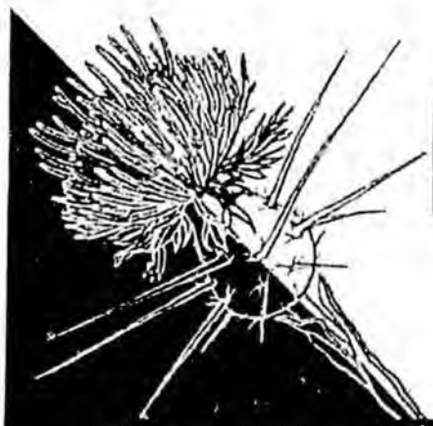

NOXIOUS TIMES

A Quarterly Publication of the California Interagency Noxious & Invasive Plant Committee

In This Issue

Eradication: Goal or Pipe dream?

BY ROBERT LEAVITT, CDFA

The concept of pest eradication in general, and weed eradication in particular, is controversial in that many believe that eradication is an impossible goal. However, the California Department of Food and Agriculture (CDFA) has experienced that weed eradication is indeed achievable, given the right approach. I will herein illustrate some of the principles of weed eradication and outline some characteristics of a successful eradication program.

What exactly does eradication mean? It means that every plant or plant part capable of reproduction is removed from a defined area - the county serving as the traditional CDFA area boundary. To contrast eradication with control, eradication is the removal of all plants or plant parts capable of reproduction, whereas control means the temporary suppression of plant germination, emergence, or growth sufficiently enough so that crop, forest, range production, highway safety, water movement, or other goals can be achieved for a season. Once eradication is accomplished, treatments can stop; with control, treatments must continue year after year.

Eradication *continued on page 3*

Did you Know: Artichoke Thistle

BY ROBIN MARUSHIA AND JANET GARCIA, UC RIVERSIDE

Cardoon

CDFA file image

Artichoke Thistle

The names artichoke thistle and cardoon have long been used interchangeably when discussing the invasive plant *Cynara cardunculus* in California. However, there is a biological basis for separating the two common names, even though they are taxonomically in the same species.

Cardoon, as some gardeners know, is actually an old-fashioned vegetable popular in Italy. In fact, cardoon is a horticultural intermediate between the wild type of *C. cardunculus* and its most domesticated form, the globe artichoke. Few people would mistake globe artichoke for its ancestor. Domestic artichokes are, in general, completely spineless (except

Thistle *continued on page 7*

Eradication *continued from front page*

Principles of Weed Eradication and Characteristics of a Successful Eradication Program

Weed eradication programs are most effective at the "pioneer" stage of weed invasion. Non-native weeds can be thought of as invaders. A new weed can move from an alien situation (outside California's borders) into the state via various pathways. Man-made vectors include car and truck traffic, aircraft, boats and ships, pack animals, and hikers; natural vectors may bear alien plants on wind, rivers, streams, water fowl, and wild life. Once introduced, the new weed forms "pioneer" populations: populations that are relatively small and not yet a permanent feature of the plant community. Many weed infestations probably die out at this stage from natural causes, such as competition from native vegetation. However, a small number of new weeds have the biological and agronomic ability to adapt and grow well in their new home, and they begin to proliferate and overcome the native vegetation. This is the "colonization" stage. If nothing is done to stop the spread of the weed, it eventually becomes a part of the state's ecology in an "establishment" stage (see Figure 1).

CDFA file image

Roads are prime vectors for weed spread. Here, Scotch broom overhangs a mountain road.

The appropriate weed control strategy depends upon the stage of invasion of a new weed. When the weed is alien, outside California, prevention and exclusion strategies are appropriate and usually effective. These include the California Border Stations that intercept truck and trailer traffic, and in some locations passenger car traffic, to inspect for agricultural products that could bring unwanted insects, diseases, and weeds into the state. Once a weed has entered the pioneer stage of invasion, the most appropriate control strategy is eradication. It is at this stage, and the beginnings of the colonization stage, that eradication techniques have a reasonable chance of being successful. Once well into the colonization stage or beginning of the establishment stage of invasion, weed populations are too large and widespread for eradication, and control strategies must be adopted. (See Figure 1).

The smaller the original population, the greater the likelihood of eradication success. As the World Conservation Union states in its guidelines, "The best opportunities for eradicating or containing an invasive species are in the early stages of invasion, when populations are small and localized" (IUCN 2006). Rejmanek and Pitcairn (2002) studied the history of successful weed eradication projects by the CDFA (Table 1) and concluded that, "With the exception of *Cucumis* [dudaim melon] ... all gross infestations [that were successfully eradicated] were smaller than 10 ha and most of them were smaller than one hectare when they were detected" (Rejmanek and Pitcairn 2002).

In addition to the successfully completed eradication programs listed in Table 1, the CDFA also has many on-going weed eradication programs, including hydrilla, alligatorweed, wormleaf salsola, Scotch thistle, and camelthorn. Based on this experience, I believe that weed eradication programs can be divided into three phases, as follows: the "discovery" phase, the "control" phase, and the "eradication" phase.

The discovery phase starts with the first discovery of a new weed in California, and can usually be described by a population that is limited in area, but growing and spreading, with many pioneer populations around the main infestation. This phase usually requires treatment with a low cost weed control method that can be applied over a larger area. Herbicide use is the most common treatment for this situation, although some mechanical treatments may also be effective.

Figure 1: *Stages of Invasion*

Alien — *Introduction* — *Pioneer* — *Colonization* — *Establishment*

Appropriate Control Strategies:

Prevention/Exclusion — *Eradication* — *Control*

Table 1:
Weeds eradicated by CDFA in California:

Heartleaf nightshade	*Whitestem distaff thistle*
Dudaim melon	*Torrey's nightshade*
Giant dodder	*Austrian peaweed*
Serrate spurge	*Wild marigold*
Russian salttree	*Syrian beancaper*
Blueweed	*Meadowsage*
Tanglehead	*Creeping mesquite*

The control phase starts after weed control treatments begin and the initial population begins to decline. Small pioneer populations are controlled or eradicated. As the number of plants declines, weed control treatments need to become more directed. Spot sprays of herbicides and hand removal may become effective treatments. In the eradication phase, only isolated plants, zero plants or plant parts are found. This phase requires the use of highly directed treatments when these isolated plants are detected, making spot sprays of herbicides and hand removal of individual plants and underground plant parts the most commonly used techniques.

The eradication phase is also characterized by long term survey and monitoring of previous infested sites to ensure discovery of any new plants that emerge. The level of total effort may not decrease in the eradication phase, but the bulk of the work shifts from treatment of existing populations to survey and search for surviving plants or plant parts (seeds, tubers).

To be successful, weed eradication requires adequate government authority and support of the local community. In general, government authority is required to establish quarantine zones and support eradication programs. Quarantine zones are needed to prevent movement of a new weed into non-infested areas, but also to ensure that new introductions are not being made into an area with an active eradication program. Government support of eradication programs is generally necessary for two reasons: first, the complete removal of all plants or plant parts from even a small area often requires considerable costs, which individual landowners are usually not willing or able to make; and second, all infested properties in given area must cooperate with the eradication effort if it is going to succeed. It makes no sense to eradicate a given weed from one property only to allow it to grow and spread unimpeded across the fence.

The California Legislature has given the CDFA authority and responsibility to eradicate noxious weeds from California. The Legislature has specifically named two weeds in the Food and Agriculture Code to be eradicated, hydrilla and camelthorn (Food and Agriculture Code Sections 7303 and 6048, respectively.) The Legislature has given the CDFA authority to control or eradicate other weeds (Food and Agriculture Code Sections 403, 5004, 5021-5027) and those weeds are named by regulation (California Code of Regulations Title 3 Section 4500.) In addition, the CDFA acts on behalf of the United States Department of Agriculture in the control and eradication of federally listed noxious weeds within the state.

To carry out the responsibility to control and eradicate noxious weeds, the CDFA classifies weeds according the actions it intends to take (CDFA 2006). The CDFA considers all listed noxious weeds to be a threat to the ecology and/or economy of the state. The CDFA rates weeds in four classes: A, B, C, or Q. For A-rated weeds, the CDFA considers them, based on survey information available, limited in extent of infestation - roughly at the "pioneer" or early "colonization" stages of invasion. A-rated weeds are subject to statewide eradication and cannot be sold by plant nurseries or in other channels of trade. B-rated weeds are more widespread in distribution at the "colonization" or early "establishment" stages of invasion. B-rated weeds are subject to local eradication, at the discretion of the county Agricultural Commissioner, and cannot be sold by plant nurseries. C-rated weeds are generally widespread and subject to local control activities. The Q rating is a temporary rating and the CDFA treats these weeds as A-rated weeds until a full risk analysis can be completed. This rating system may be refined in the near future, but the essential goal of rating weeds according to the size of the infestation and potential risk/impacts to agriculture and the environment will remain.

The CDFA has found that local community support is vital to the success of an eradication program. Community groups include, but are not limited to, Native American tribes, environmental groups, fishing, hunting, boating and other outdoor recreational enthusiasts, and local city and county governments. The CDFA conducts extensive public education and outreach to explain its actions and the reasons for those actions, including the consequences of inaction. The CDFA has found that local communities can be very supportive of eradication programs once they understand the rationale behind them.

CDFA file image

Herbicide spraying aims to control and reduce a weed at a specific site

In addition to authority and local community support, a successful eradication effort needs an on-the-ground program. Based on the CDFA experience, I can define four components to such a program: early detection, rapid response, environmental compliance and monitoring, and long-term commitment. Early detection means finding a new weed as early in the "pioneer" stage of invasion as possible, which requires constant survey of high-risk areas (highways, airports, marinas, campgrounds) by as many eyes as possible, including help from the public to see and report a new weed. A botany laboratory must be maintained by CDFA to correctly identify any suspect new weed. Rapid response means that the CDFA and landowners bring all appropriate resources to bear against the new introduction in a timely manner, which may necessitate that plans, required permits, and funding sources be identified ahead of time. Appropriate control strategies must be implemented, usually including, but not limited to, herbicides and mechanical control. Environmental compliance means that the treatment program must be in compliance with all environmental laws, including the California Environmental Quality Act, and the federal Endangered Species Act. The CDFA has a policy of conducting an environmental monitoring program for all of its eradication programs, including monitoring foliage, soil, air, and water, depending upon the nature of the treatment program. Long-term commitment means that funds and manpower must be dedicated to follow up survey and treatment for several years after the last plants are detected to ensure that hidden seeds or tubers don't germinate, become established, and start a new introduction.

In conclusion, I believe that weed eradication is an achievable goal. The CDFA has been conducting weed eradication projects for decades, with an impressive track record. The key is to detect new weed introductions as early as possible, especially in the "pioneer" phase, respond rapidly with appropriate weed control techniques, maintain environmental compliance, and follow up with surveys and treatments for the long-term. ❖

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IUCN 2006. IUCN GUIDELINES FOR THE PREVENTION OF BIODIVERSITY LOSS CAUSED BY ALIEN INVASIVE SPECIES 6. Eradication and Control. IUCN SSC Invasive Species Specialist Group, Gland, Switzerland and Cambridge, UK. www.iucn.org/themes/ssc/pubs/policy/invasivesEng.htm

Rejmanek, M and M.J. Pitcairn 2002. When is eradication of exotic pest plants a realistic goal?, pages 249-253. In Veitch, C.R. and Clout, M.N. (eds.) Turning the Tide: the eradication of invasive species. IUCN SSC Invasive Species Specialist Group, Gland, Switzerland and Cambridge, UK. www.issg.org/Eradicat.html

Aquarium and Pond Plants of the World: An interactive identification and information guide

An upgrade from slower and often confusing paper keys, the CD-ROM Aquarium and Pond Plants of the World (2004) offers a computer-based guide to identify over 125 common aquatic plants by floral and vegetative characteristics. CDFA's Shaun L. Winterton, an insect biosystematist, created the program under the joint sponsorship between the USDA and APHIS.

The identification key runs on the Lucid3 player, easily downloaded during CD installation. The key is available online at www.lucidcentral.org. All plant profiles include color photographs and/or illustrations of a larger size and number than traditional paper keys can accommodate. While the online key offers immediate access, there is an advantage to ordering the CD. For one thing, internet connection is not required after downloading Lucid player, and the CD also runs an easy step-by-step tutorial on how to best use the key for first time users, which is lacking online. Furthermore, the CD contains information such as the Federal Noxious Weeds List, a glossary, a weed profile browsing section, and a list of some water-tolerant terrestrial plants commonly sold for aquariums.

Initially designed as a diagnostic tool for regulatory officials needing to quickly and accurately identify and screen aquarium plant imports, Aquarium and Pond Plants of the World is a useful tool for anyone interested in aquatic plants - including researchers, botanists, nursery managers and wholesalers.

Winterton and Lucid plan to expand and upgrade the second edition of the key with over 140 genera, which will be available online later this year at www.lucidcentral.org.

To request a CD copy of this product, fax Terrence Walters, Lucid Coordinator at (970) 482-0924, or write him at:
USDA APHIS PPQ CPHST
2301 Research Blvd., Suite 108, Fort Collins, CO 80526 ❖

Interested in more plant identification CD-ROMs? See also "Grass and Grass-Like Weeds of California" and "Broadleaf Weeds of California" at www.cal-ipc.org/resources/booksandcds/index.php.

Alaska Conservation Alliance

Uniting for Alaska's Future

February 15, 2008

Representative Johnson
State Capitol
Juneau, Alaska 99801

Re: **HOUSE BILL NO. 330** – Noxious Weed and Invasive Plant Board

Dear Representative Johnson

On behalf of the Alaska Conservation Alliance (ACA), a consortium of 40 Alaska-based conservation groups, I want to acknowledge and applaud your foresight to create a Noxious Weed and Invasive Plant Board. Invasive species present not only an ecological hazard but a serious threat to our economy and quality of life in Alaska. While Alaska has largely been spared, many other states have been hard hit with the impacts of invasive species, and this proactive bill will help the state establish procedures and protocol to deal with both established and potential invasive plants and noxious weeds.

Given the environmental and economic importance of this bill, I would like to respectfully suggest the following additions in order to more effectively meet the bill's overall goals. ACA would strongly encourage that the Plant Board be required to take a least toxic approach to plant management. While herbicides can be effective at managing invasive plant species they do contaminate soil and water bodies, harm other plants and animals, and lead to bioaccumulation of toxics and herbicide tolerance. Since biological and mechanical weed control can often be both cost-efficient and effective we think it is good policy to use herbicides only as means of last resort and then when necessary use the least toxic herbicide in the least amount to be effective.

To accomplish this policy objective, we suggest amending Sec. 41.10.270 (3) to read as follows:

(3) develop and annually review a comprehensive state strategic plan for the management of noxious weeds and invasive plants based on resources including <u>a least toxic approach to control and eradication,</u> and priorities identified by the board in consultation with federal, state, municipal, and public groups, including the conceptual design for a national Early Detection and Rapid Response System for Invasive Plants;

This simple amendment directs the experts to develop the specifics of a least toxic approach to the control and eradication of invasive plants. More importantly including this policy directive will ensure that we don't exchange one set of environmental problems for another.

PO Box 100660, Anchorage Alaska 99510 · Ph. 907.258.6171 · Fax 907.258.6177
PO Box 22151, Juneau Alaska 99802 · Ph. 907.463.3366 · Fax 907.463.3312 · www.akvoice.org

Second, the definition of invasive species should be amended so that it does not include species natural northern migration due to the effects of global climate change. As warming increases, a species former range may be extended northward; as such, it does not fit the typical definition of an invasive species. This could be accomplished by making sure that "alien" does not include indigenous species to Alaska that may be naturally extending their range in response to the effects of climate change.

I strongly encourage you and the Alaska Legislature to incorporate these changes and pass HB 330. This bill will help get us ahead of a troublesome and expensive curve. It is in the best, common interest of Alaskans. Thank you for your time and consideration.

Sincerely

Kate Troll

Kate Troll
Executive Director

PO Box 100660, Anchorage Alaska 99510 · Ph. 907.258.6171 · Fax 907.258.6177
PO Box 22151, Juneau Alaska 99802 · Ph. 907.463.3366 · Fax 907.463.3312 · www.akvoice.org

Alaska Committee for Noxious and Invasive Plant Management

House Resources Subcommittee,

The Board of Directors for the Alaska Committee for Noxious and Invasive Plants Management (CNIPM) would like to provide members of the House Resources Subcommittee with information about invasive plant threats to natural resources and invasive plant management efforts in Alaska and other states.

Noxious weeds and invasive plants have proven worldwide to be a threat to natural resources because they compete with crops and native plants, degrade fish and wildlife habitat, and can decrease property values. Worldwide, estimated annual costs of invasive species are $1.4 trillion. Idaho spends $300 million a year on invasive species control, and Montana spends $14 million a year on just one weed, spotted knapweed. In Alaska, spotted knapweed has been found at more than 10 sites. Many other invasive plants have been found in Alaska in similarly small populations that will expand beyond control without prompt management. Managing invasive plants when they are in small, incipient populations is recognized by experts as the most cost effective way to prevent the problem from getting out of control. Alaska has a unique opportunity *in prevention*; to avoid natural resource losses, direct and indirect economic impacts and extensive herbicide use that others are experiencing.

Over the last eight years professionals and the public have discovered well-established and expanding populations of highly invasive plants in Alaska. These highly invasive plants are a threat to agricultural production, forestry, fisheries, tourism, subsistence resources, waterfowl, large and small game, and non-timber forest products such as wild berries. All of these resources are keystones to Alaska's natural-resource based industries and subsistence uses. Professionals in Alaska and outside can demonstrate that Alaska's invasive plant problem is growing. However, swift coordinated management will prevent major losses to resources and expenditures of state funds.

Other states such as Oregon, Washington and Idaho have established coordinated efforts for invasive plant management through the establishment of noxious weed and invasive plant boards. Successful invasive plant management boards include an appropriate range of stakeholders such as land managers from state agencies, representatives of industries affected by the issue and experts in the field of invasive plant management.

Noxious weed and invasive plant management boards develop and regularly review statewide strategic plans for invasive plant prevention and management. Plans provide coordination and direction to state agencies and local weed management efforts. Strategic plans are also pre-requisites to acquisition of federal funds available

under the Federal Noxious Weed Act. Strategic plans demonstrate state commitment and cooperation with local efforts.

State weed boards often establish funds to provide financial assistance for local weed management efforts. Federal funding sources expect state matching dollars towards projects. Federal funds are often ephemeral, and are selected through a competitive process at the national level. States with established invasive plant management funds have support that will allow for management to continue in the absence of available federal dollars or changes in federal priorities.

Questions have been raised whether the board to be created by HB 330 should cover all types of invasive species, including such organisms as marine zebra mussels and agricultural diseases such as potato blight. While this idea was considered it has shortcomings with regards to invasive plant management.

Several states with successful invasive species management efforts have a weed board dedicated to managing only invasive plants to simplify listing species for management, provide adequate number of appropriate experts and stakeholders, and facilitate coordinated management. There are numerous plant species of concern for Alaska, requiring input from plant experts and stakeholders. Coordination needs are unique with invasive plants due to their ability to quickly spread across multiple land ownership boundaries. Invasive animals and/or diseases also require significant coordination efforts. However, potato blight and zebra mussel, for example, require management efforts from a primary agency, in this case the Department of Natural Resources (DNR) Division of Agriculture and Alaska Department of Fish and Game (ADF&G), respectively. On the other hand, a single species of invasive plant may be found growing within the management purview of Department of Transportation, ADF&G, DNR, and private property holders.

Other states have advised Alaska that, in order for a state weed board to be successful, Alaska needs two things: knowledge of invasive plants that occur in or threaten the state, and established local management efforts. We have these things. A scientific ranking of over 100 invasive plant species located in the state is complete and available online alongside results of survey efforts for these invasive plant species. Local efforts to manage invasive plants have begun through all the Soil and Water Conservation Districts and five established Cooperative Weed Management Areas, regional groups that coordinate work across jurisdictional boundaries.

The background work has been done to pave the way for a successful state weed board in Alaska. The need is great and the opportunity to *prevent* major invasive plant problems in Alaska will not last forever. Now is the time to take action.

Thank you for your time on this important issue.

CNIPM board
Jamie Nielsen (Chair)
Gino Graziano (Vice-Chair)

Alaska Association of Conservation Districts

1700 E. Bogard Rd. Suite 203 • Wasilla, AK 99654
907-373-7923 • fax 373-7192

Eric Wade, Executive Director
aacd@mtaonline.net

Representative Craig Johnson
State Capitol, Room 126
Juneau, AK 99801-1182

Representative Craig Johnson,

The board of the Alaska Association of Conservation Districts (AACD) voted to support House Bill 330 (HB 330):

"An Act relating to management of noxious weeds and invasive plants; establishing the Noxious Weed and Invasive Plant Board; and establishing the noxious weed and invasive plant management fund."

As an organization that promotes development of natural resources in manners that conserve their use for future generations, the AACD is concerned with the effect that unmanaged invasive plants will have on natural resources. The AACD has responded by funding an Invasive Plant Program with support from the USDA Forest Service, Natural Resource Conservation Service and others. A noxious weed and invasive plant management board will provide the structure and direction needed for the state to lead efforts in noxious weed and invasive plant management.

Noxious weeds and invasive plants have proven worldwide as a threat to natural resources by displacing native and desirable plants, reducing forage and wildlife shelter, altering ecosystems and in some cases permanently changing environmental conditions. Worldwide, estimated annual costs for invasive species are $1.4 trillion. Idaho spends $300 million a year on invasive species control, and Montana spends $14 million a year on just one weed, spotted knapweed. In Alaska, spotted knapweed has been found at just more than 10 sites. Other invasive plants are similarly in small populations that will expand without management. Alaska has a unique opportunity to avoid losses in resource production and costs of management that other states such as Montana are experiencing.

AACD fears Alaska's unique opportunity to manage invasive plants in a relatively inexpensive manner is departing with each passing summer. Over the last 8 years professionals have discovered well established and expanding populations of highly invasive plants in Alaska. These highly invasive plants are a threat to natural resources related to agricultural production, forestry, fisheries, tourism, subsistence resources, water fowl, large and small game, and non-timber forest products such as wild berries. All of these resources are keystones to Alaska's natural resource based economy and subsistence uses. State support of organized efforts to prevent new

introductions and manage invasive plants that are already here will prevent impacts to the economy from invasive plant related losses in natural resource production.

HB 330 will make significant advances in establishing invasive plant management in Alaska. Other states such as Oregon, Washington and Idaho are beginning to see success in invasive plant management from their established noxious weed and invasive plant boards. In Alaska, establishing a noxious weed and invasive plant management board with the proposed structure will ensure that the appropriate state agencies, producers of natural resources and experts in the field of invasive plant management are cooperating in planning for invasive plant management and developing inter and intra-agency policy changes.

HB 330 tasks the noxious weed and invasive plant management board with developing a strategic plan for invasive plant management. This plan will provide the direction to state agencies and local weed management efforts that is needed to coordinate their efforts. A strategic plan will initiate the state program that is necessary to acquire federal funds available under the Federal Noxious Weed Act. When applying for federal assistance, local efforts will benefit from a statewide strategic plan as it will demonstrate state commitment and cooperation with local efforts.

HB 330 establishes a noxious weed and invasive plant management fund to support the board and weed management efforts around the state. Federal funding sources expect state matching dollars towards projects. This fund will provide state matching dollars necessary to support local efforts in acquiring federal assistance.

The AACD board believes HB 330 represents the best structure to further state involvement in invasive plant management. This involvement is necessary to prevent losses to natural resources from invasive plants.

Sincerely,

Eric Wade
Executive Director
Alaska Association of Conservation Districts

Letter to State Legislators

We are Troy and Lori Zaumseil. We live in Anchorage, we are Alaskans and we believe there is a crisis looming that threatens every aspect of what makes Alaska unique in all the world. Every day noxious, invasive plants are encroaching more and more into the eco-system of Alaska--choking, diminishing and forever changing the natural make up of our land--the same is happening in nearly every other state in the union, costing each of them millions and millions of dollars every year. The good news is that because of Alaska's remote setting, we have the best advantage over all those states to prevent invasive plant species infestation. What is completely unbelievable to us, is that Alaska has almost no safeguards in place to do this! We are asking you as someone who has sworn to protect the interests of Alaska and her citizens to read on and become part of the solution.

We are far from the most knowledgeable persons on the subject of invasive species and the policies that deal with them, but we have become personally impassioned and involved after finding 3 plants during the course of our spring gardening shopping that were infested with invasive species. One of them contained a Canada Thistle, which is listed in Alaska statute as a prohibited noxious weed. We sought resolution through Home Depot directly, expecting that they would act swiftly and make corrections to avoid sanctions from the Division of Agriculture. However, Home Depot refused to take action regarding the stock in their stores even after we notified them of our findings, so we felt we had no choice but to contact the Department of Agriculture and the USDA State Plant Health Coordinator.

What we learned is that while there is a statute that has a list of prohibited noxious weeds--that list is over 20 years old and in desperate need of updating. The problem is that what should be a simple act of adding a newly discovered problem plant to the list takes a year or more to happen--more than enough time for an aggressive invader to be permanently established and on its way to costing the state of Alaska millions in futile attempts to control and eradicate. Worse than that, as we have come to discover, is even though there is a statute, there is now allowance for enforcement, measuring compliance, levying penalties for violations or follow up. So although we made a report to these state agencies, they are limited by budget, lack of manpower and a statute with no real backbone. Essentially, in this case where a known entry point for a prohibited noxious weed is identified, there exists no means of addressing those responsible. The response from Home Depot has been almost non-existent and now we see why. This must change!!

There are a lot of dedicated experts putting forth extraordinary efforts to address invasive noxious plants in Alaska. They are working on how to control and eradicate these plants, they are spending time and energy educating the public about why it's important to be vigilant, they are working on studying the effects invasive plants have on every aspect of the environment, wildlife, livestock, property values, tourism and natural habitats. They are all fighting a losing battle if Alaska doesn't step up her defenses on the front end of this problem--PREVENTION. There are many states who have had to accept that millions of acres are just lost to them--over run by Star Thistle or Leafy Spurge and other invasive plants. These states lose hundreds of millions of dollars every year fighting to contain further spread, in reduced agriculture production, property values lowered, etc. We have found many reports that detail this and can provide many more statistics. Experts in the field all agree that prevention, by far, is the least expensive and most effective means of addressing noxious weeds.

To stop invasive species from ever getting in to Alaska, we need workable laws that allow the experts on the subjects to add and subtract known threats in real time. The current statutes are antiquated--drawn up to address agriculture and farming issues in the state half a century ago--they need to be updated to reflect the current age of retail box stores, mail order nurseries and property owners with access to them. These new statutes must address specific issues and penalties for non-compliance. There should be an enforcement office who can field reports regarding invasive species and have the authority to act on them, do site inspections at retail outlets with the authority to issue warnings and fines if the situation merits and lastly work

with property owners to control invasive species on their land and stay compliant. Our experience with Home Depot is proof positive that big business will not police themselves out of concern for OUR natural resources. We have to find a way to make them care and enforceable regulations are the start!!

If prevention costs $1, but fighting the problem after the fact costs $1000, and the dollar isn't spent, then there is a failure to protect that financial interest. Please don't let the citizens of Alaska down. As someone sworn to protect the interests of the citizens you serve, we are bringing the battle to you, please pick up arms and join us in addressing this problem while it is the most manageable it will ever be. Each day another plant goes to seed, another noxious weed finds its way into Alaska gardens, into the moose and caribous forage, into the pastures, residential properties and on to hiking trails. The problem will never be easier to solve than it is today.

We are working to make all Alaskans aware of the changes that need to take place. We have been contacted by the Anchorage Daily News and Mother Earth News has expressed an interest in having me write about our quest. We find people every day who assumed that there was enforcement and safeguards in place to protect Alaska from invasive plants and we are determined to find those people in larger number and bring them all into this grassroots movement to affect change.

Thank you for your time. We ask that you make room for this matter on your calendar and we look forward to working with you.

Troy and Lori Zaumseil
9015 Dewberry St
Anchorage, AK 99502
907-245-2373

Agriculture, Department of

Decision Unit Summary

Decision Unit	Agency Request			Governor's Recommendation		
	FTP	General	Total	FTP	General	Total
3.00 FY 2008 Original Appropriation	237.25	20,533,300	47,284,600	237.25	20,533,300	47,284,600
4.10 Reappropriation	0.00	0	44,000	0.00	0	44,000
4.30 Supplemental	0.00	0	0	0.00	9,000,000	9,000,000
4.60 Deficiency Warrants	0.00	255,000	255,000	0.00	255,000	255,000
4.70 Revenue Adjustments	0.00	(255,000)	(255,000)	0.00	(255,000)	(255,000)
5.00 FY 2008 Total Appropriation	**237.25**	**20,533,300**	**47,328,600**	**237.25**	**29,533,300**	**56,328,600**
7.00 FY 2008 Estimated Expenditures	**237.25**	**20,533,300**	**47,328,600**	**237.25**	**29,533,300**	**56,328,600**
8.10 FTP or Fund Adjustments	0.00	0	0	0.00	0	0
8.20 Object Transfers	0.00	0	0	0.00	0	0
8.30 Transfer Between Programs	0.00	0	0	0.00	0	0
8.40 Removal of One-Time Expenditures	(1.00)	(8,286,000)	(9,165,700)	(1.00)	(17,286,000)	(18,165,700)
9.00 FY 2009 Base	**236.25**	**12,247,300**	**38,162,900**	**236.25**	**12,247,300**	**38,162,900**
10.10 Employee Benefit Costs	0.00	229,900	537,600	0.00	221,900	518,800
10.20 Inflationary Adjustments	0.00	63,900	150,800	0.00	17,900	104,800
10.30 Replacement Items	0.00	509,600	1,142,700	0.00	110,800	695,900
10.40 Interagency Nonstandard Adjustments	0.00	2,500	5,300	0.00	2,500	5,300
10.60 Change In Employee Compensation	0.00	54,400	167,300	0.00	272,000	836,500
11.00 FY 2009 Total Maintenance	**236.25**	**13,107,600**	**40,166,600**	**236.25**	**12,872,400**	**40,324,200**
Administration						
12.01 Ag In the Classroom	0.00	0	75,000	0.00	0	0
Animal Industries						
12.01 Animal Programs	0.00	200,000	200,000	0.00	0	0
12.02 Rangeland Monitoring	0.00	50,000	50,000	0.00	0	0
12.03 Removal of Limited Service Positions	0.00	0	0	(3.00)	0	0
Agricultural Resources						
12.01 Governor's Initiative - Water Projects	0.00	0	0	0.00	5,000,000	5,000,000
Plant Industries						
12.01 Plant Investigator	0.00	89,600	89,600	0.00	0	0
12.02 Eurasian Water Milfoil	0.00	4,000,000	4,000,000	0.00	4,000,000	4,000,000
12.03 Invasive Species	0.00	89,100	129,100	0.00	86,500	126,500
12.04 Gypsy Moth Survey	0.00	77,000	99,500	0.00	77,000	99,500
12.05 Gov's Initiative - Garden	0.00	0	0	0.00	1,500	1,500
Marketing and Development						
12.01 Idaho Rural Partnership	1.00	135,000	310,000	1.00	135,000	310,000
12.02 RediFit	0.00	0	55,000	0.00	0	55,000
Soil Conservation Commission						
12.01 NRCS Rent	0.00	40,000	40,000	0.00	0	0
12.02 Water Quality Program	0.00	425,000	425,000	0.00	0	0
12.03 Loan Program	0.00	500,000	500,000	0.00	0	0
12.04 Insurance For Districts	0.00	35,000	35,000	0.00	0	0
12.05 District Audits	0.00	60,000	60,000	0.00	18,000	18,000
13.00 FY 2009 Total	**237.25**	**18,808,300**	**46,214,800**	**234.25**	**22,190,400**	**49,934,700**

Invasive Plants

A Growing Threat to Alaska's Ecology and Economy

Issue

In recent years, well established and expanding populations of highly invasive plants have been documented in Alaska. These species pose a serious threat to Alaska's agriculture, tourism, wildlife, fisheries, and subsistence resources.

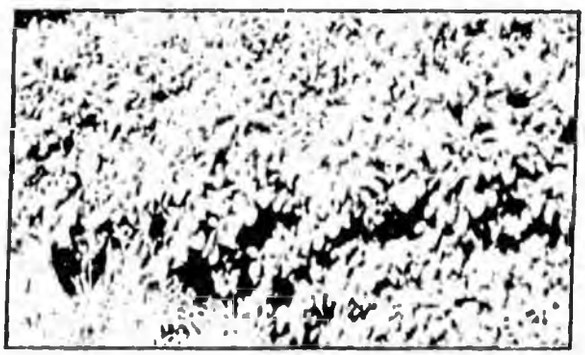
Alaska is in a unique position to avoid the extensive invasive plant problems that plague the rest of the U.S.

Addressing this situation NOW will yield benefits for years to come.

Most introduced plant species are beneficial to Alaskans. We enjoy them in our gardens and they are agricultural staples.

However, a small subset of introduced plants is invasive. These non-native plants aggressively spread into places where they are not wanted.

People and vehicles generally spread invasive plants from human habitation centers outwards along transportation routes (roads, airports and float ponds, trails and rivers) as they move materials and goods.



Japanese knotweed taking over a salmonberry patch in Juneau, AK

Invasive plants threaten riparian areas and the species that depend upon them.

Facts

- Invasive species threaten Alaska's ecosystems by displacing native plants, reducing wildlife forage and shelter, altering ecosystem dynamics, and in some cases permanently changing environmental conditions.
- Annual damage from invasive species worldwide estimated at $1.4 trillion.
- Idaho is estimated to spend $300 million per year on invasive species control.
- One weed – spotted knapweed – now costs Montana over $14 million/year and covers over 5 million acres. In Alaska, this species has been found at over 10 sites from Ketchikan to Anchorage.
- The number of new invasive plants found in Alaska continues to rise each year.
- Many of the invasive plants in Alaska are not yet widespread and can be controlled quickly and cheaply by taking action NOW.

January 29, 2008

Trish Wurtz
P.O. Box 82864
Fairbanks, AK 99708

Dear Ms Wurtz

Thank you for your comments regarding invasive plants in Alaska and HB330. It is critical that the public be able to share their opinions and comments to their representative and I truly appreciate your comments.

Invasive plants are a growing concern for Alaska, especially with global warming affecting migration. The proposed bill provides a means to limit the possible damage. The bill is scheduled to be heard in the House Resources Committee on February 11th at 1:00 p.m. You can send a letter of support or call in to testify during the hearing. I have also forwarded your information to the Committee to be included as part of the public testimony and debate.

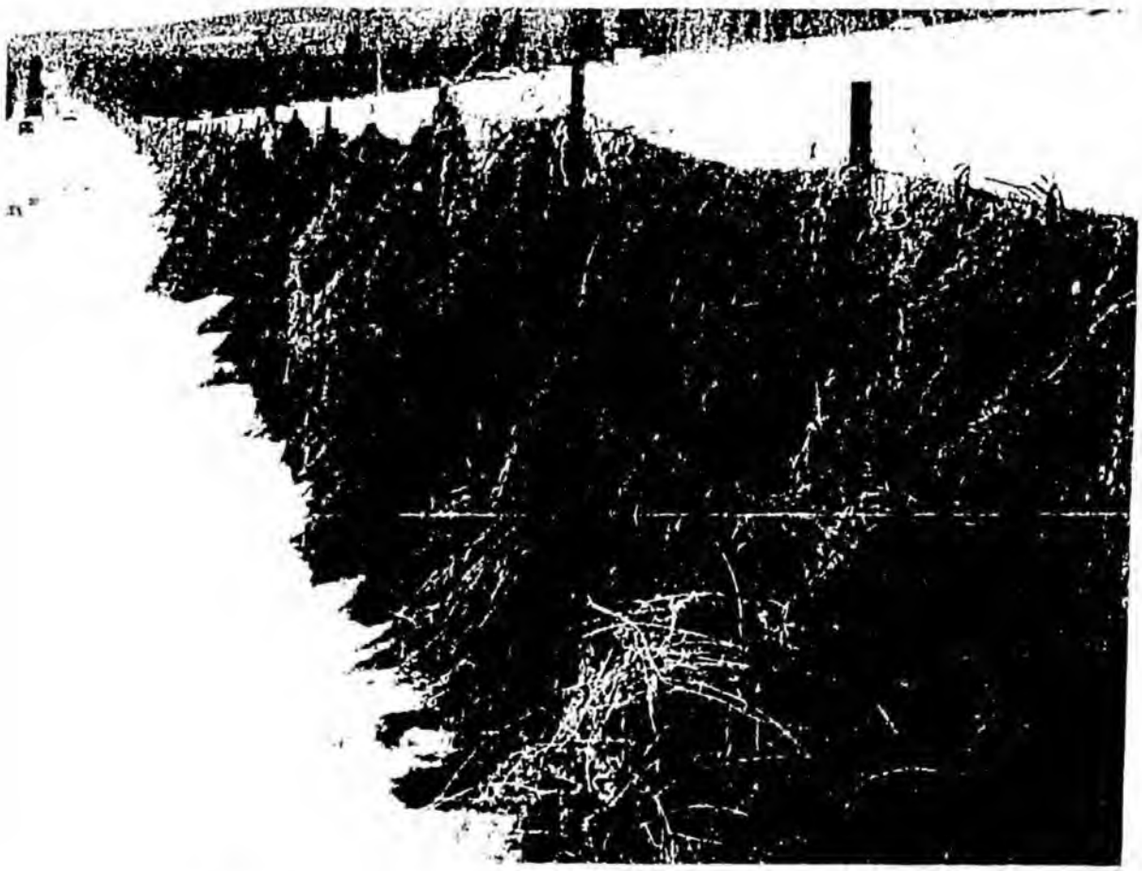
As a member of the House Resources Committee, I will deliberate the bill and I will take your concerns under consideration in the committee and later on the House Floor.

I always enjoy listening to Fairbanksans and will work hard for our city. Please feel free to contact me if I can be of any assistance in the future.

Working hard for Fairbanks families,

Representative Scott Kawasaki
District 9 Fairbanks

PLS / CC JOHNSON



Invasive bird vetch covering a fence at the UAF experimental farm

Dear Rep. Kawasaki, 1/22/08

Invasive plants are not yet a big problem in Alaska, but there's cause for concern. About a hundred species that are known to be aggressive invaders elsewhere have been found in Alaska, and they are beginning to spread like crazy.

Alaska still has lots of pristine land left. We need the weed board that Representative Johnson has proposed in house bill 330. The weed board needs some start-up funds, too.

Alaska needs to act before invasive plants become a big problem here. We need to act now, before the big problems occur. Please support bill 330.

Sincerely,

Trish Wurtz

Trish Wurtz
Box 82864
Fairbanks, AK 99708

:e to see you
: Kenton's memorial
ork party.

rom: AKCANWIN@aol.com [mailto:AKCANWIN@aol.com]
Sent: Thursday, January 31, 2008 9:15 PM
To: Rep. Carl Gatto
Subject: Invasive Weeds House Bill 330

Dear Representative Gatto

We are Troy and Lori Zaumseil. We have been very active around Alaska on the issue of invasive weeds and we are writing to ask for your support with **House Bill 330**. This bill addresses the threat to Alaska from noxious, invasive weeds that are becoming more and more established in Alaska. Invasive weeds have begun to compromise fish passage in Alaskan waterways, encroach onto agricultural acreage and overtake residential and public land. Each of these has the potential to affect Alaska through lowered property values, reduced wildlife forage and lower salmon harvests. We know that many legislators are talking about "holding the line on spending" and "being conservative with Alaska's finances" and that is always the right thing to do. But as Troy and I are speaking in front of community councils and other groups we are explaining that enacting this legislation IS the fiscally responsible thing to do. There is ample proof and forewarning that Alaska WILL incur losses and expense if we don't address invasive, noxious weeds and address it NOW. We must put the framework in place to prevent and control this threat and minimize these kinds of losses and resulting unavoidable expense--a formal weed program will do that, as well as make federal funds available to Alaska. Alaska is in a position to catch this problem in its early stages, we can not afford to squander that advantage. Representative Craig Johnson has been working with the Committee for Noxious and Invasive Plant Management (CNIPM) to develop **House Bill 330**. Troy and I have been speaking to community councils and other groups to make them understand why spending a dollar of their tax money now will save them thousands later. We have also been asked to speak at the Alaska Forum on the Environment and at the Alaska Botanical Gardens Spring Conference--the threat from invasive weeds is being recognized by citizens all over the state. Perhaps most important to us is our invitation to speak in Washington D.C. at the National Invasive Weeds Awareness Week. We will be traveling to D.C. in a couple weeks to address the opening session and meet with Alaska's federal representatives on this issue. We want to carry the message that Alaska is fighting the good fight and responding to this threat to her ecology, economy and environment. Please add your voice and support to this important legislation and encourage other legislators to do the same. The up front expense is minimal compared to what we stand to preserve in natural resources and save in financial losses later.

Thank you for your time and consideration.

Troy and Lori Zaumseil

From: Bradleyhouse@acsalaska.net
Sent: Wednesday, February 06, 2008 2:41 AM
To: Rep. Craig Johnson
Cc: nakadaninja@msn.com
Subject: HB 330

Hi Craig-

I spoke with Nicole Syren, her family owns Bells Nursery/Mosesian Farms of Alaska. I asked she review the bill and give me her opinion.

She did offer a couple of observations.

1.) The definition of "invasive plant" – she is not comfortable with (line 13 – 14, page 6) "plant subspecies alien to the state". Her concern is some of the plants grown at the nurseries do not originate from Alaska and makes it subject to interpretation. She feels that could be taken out without affecting the goal of the bill.
2.) The conflict with this bill is pesticide regulations. The Mosesian Farms "sanitize" their soils before use to prevent weed growth. She stated that the regulation trend is for "watered down pesticide" use. As a result, they are becoming less effective in their fight to prevent weed growth. Responsible use of higher potency pesticides could greatly reduce the proliferation and increase of noxious weeds. (This comment is FYI.)
3.) The three appointed members of the board should be from the nursery/farm/greenhouse industries for knowledge and balance of debates due to the complexities of external influences others on the board may be unaware of that are not in the business.

Thanks for your work!

-Berni Bradley

Cc: Theresa, please forward this to Nicole

USDA United States Department of Agriculture | Forest Service | Alaska Region | State & Private Forestry
3301 'C' Street, Suite 202
Anchorage, AK 99503-3956

File Code: 3400
Date: September 11, 2007

The Honorable Craig Johnson
Representative, House District 28
State House
716 W 4th Avenue, Suite 640
Anchorage, AK 99501

Dear Representative Johnson:

Thank you for your interest and support of the Forest Service Invasive Plant Program in Alaska. Your e-mail inquiry regarding our Fiscal Year 2008 budget for this program was forwarded to me by Jeanne Ostnes of your staff. As you know we do not yet have an appropriation, but have no reason to assume that funding will be different from previous years. In Fiscal Year 2007, the Alaska Region of the Forest Service was allocated $243,000 for invasive plants management on non-federal lands. All of those funds were distributed to cooperators and partners, such as University of Alaska Cooperative Extension Service, Alaska Association of Conservation Districts, Alaska Natural Heritage Program, and the Municipality of Anchorage. With these funds, and others leveraged from cooperators, 110 acres of treatment were planned for accomplishment.

I plan to attend the September 20 meeting to discuss invasives in Alaska and look forward to a dialogue with representatives from your office and others. Our long standing partner and grant recipient in the invasive plant program, the University of Alaska Fairbanks Cooperative Extension Service, will also be represented by Jamie Nielsen. Additionally at that time, I expect to be able to announce the selection of our new Invasive Plant Program Coordinator for Alaska.

If you need additional information, please contact me at (907) 743-9451.

Sincerely,

STEPHEN E. PATTERSON
Acting Director, State & Private Forestry

cc: Jeanne Ostnes