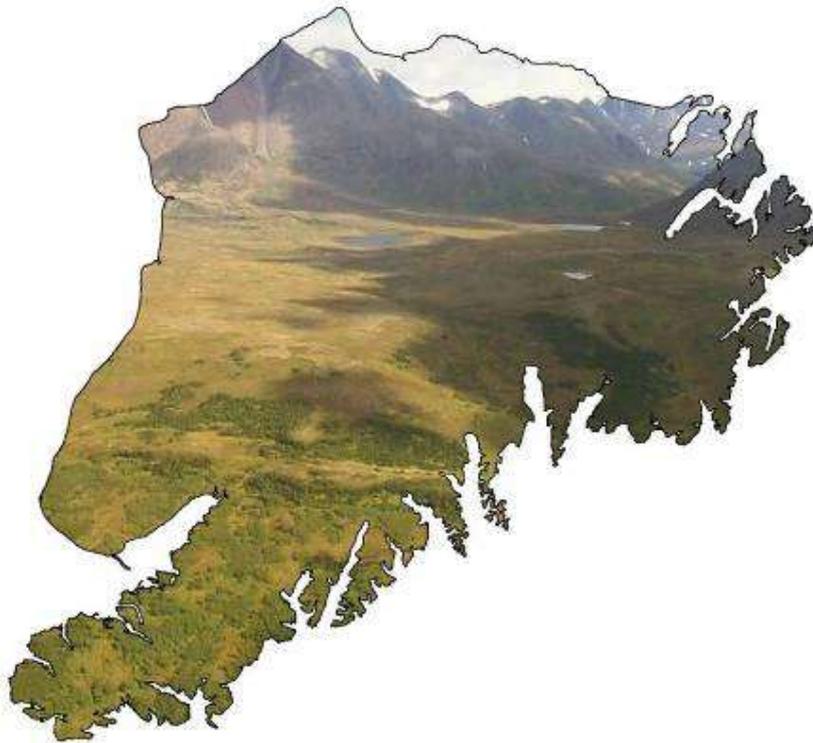


11 10 Years of Combating Non-Native Plants on the Kenai Peninsula



John Morton
Kenai National Wildlife Refuge





KP-CWMA Mission

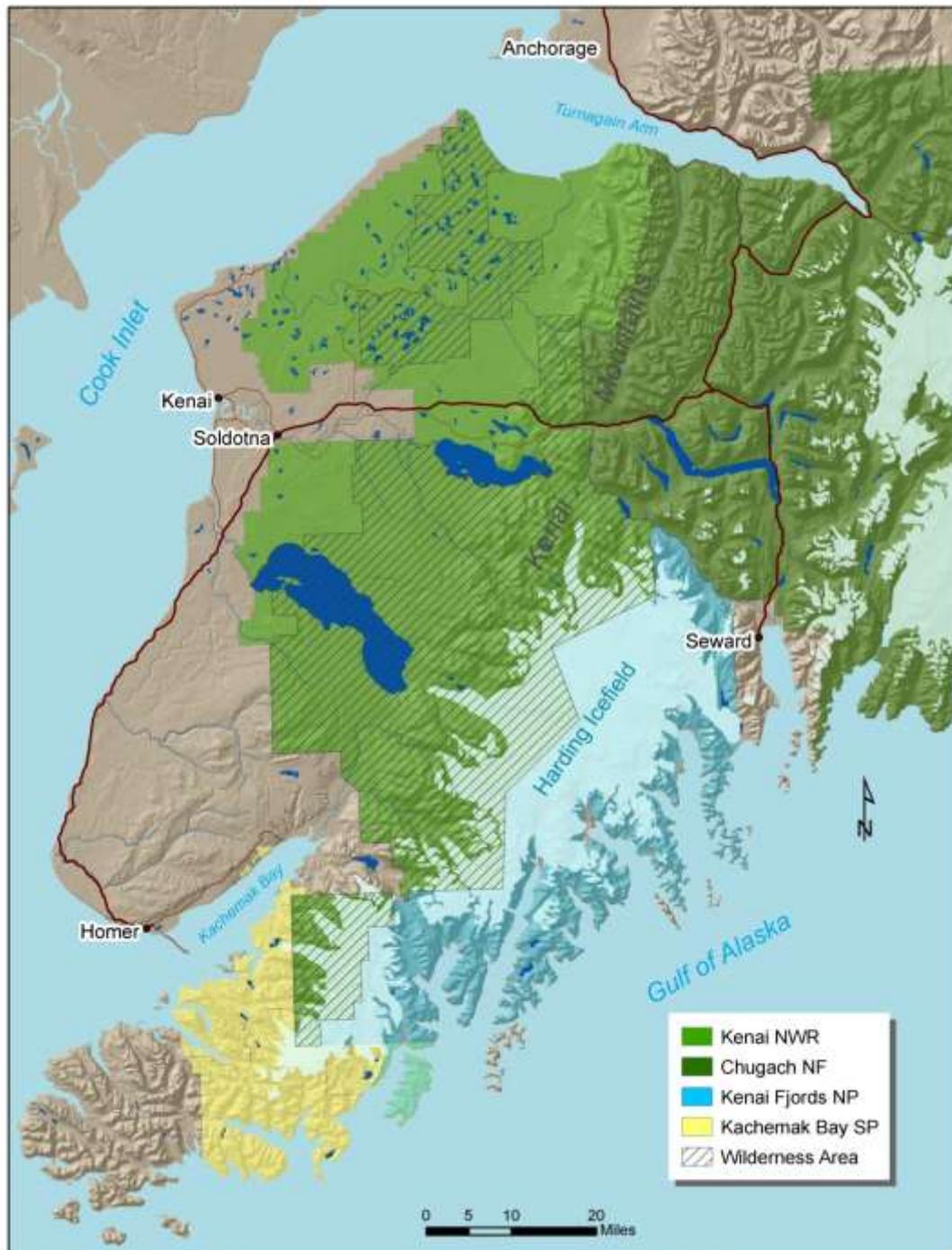


- Prevent the introduction, reproduction and spread of designated noxious weeds and other invasive plants into and within the Kenai Peninsula
- Reduce the extent and density of newly established invasive plants to minimize spread and damage to natural resources
- Implement the most economic, effective and safe control methods for priority species
- Facilitate cooperation among those working to manage invasive plants on the Kenai Peninsula



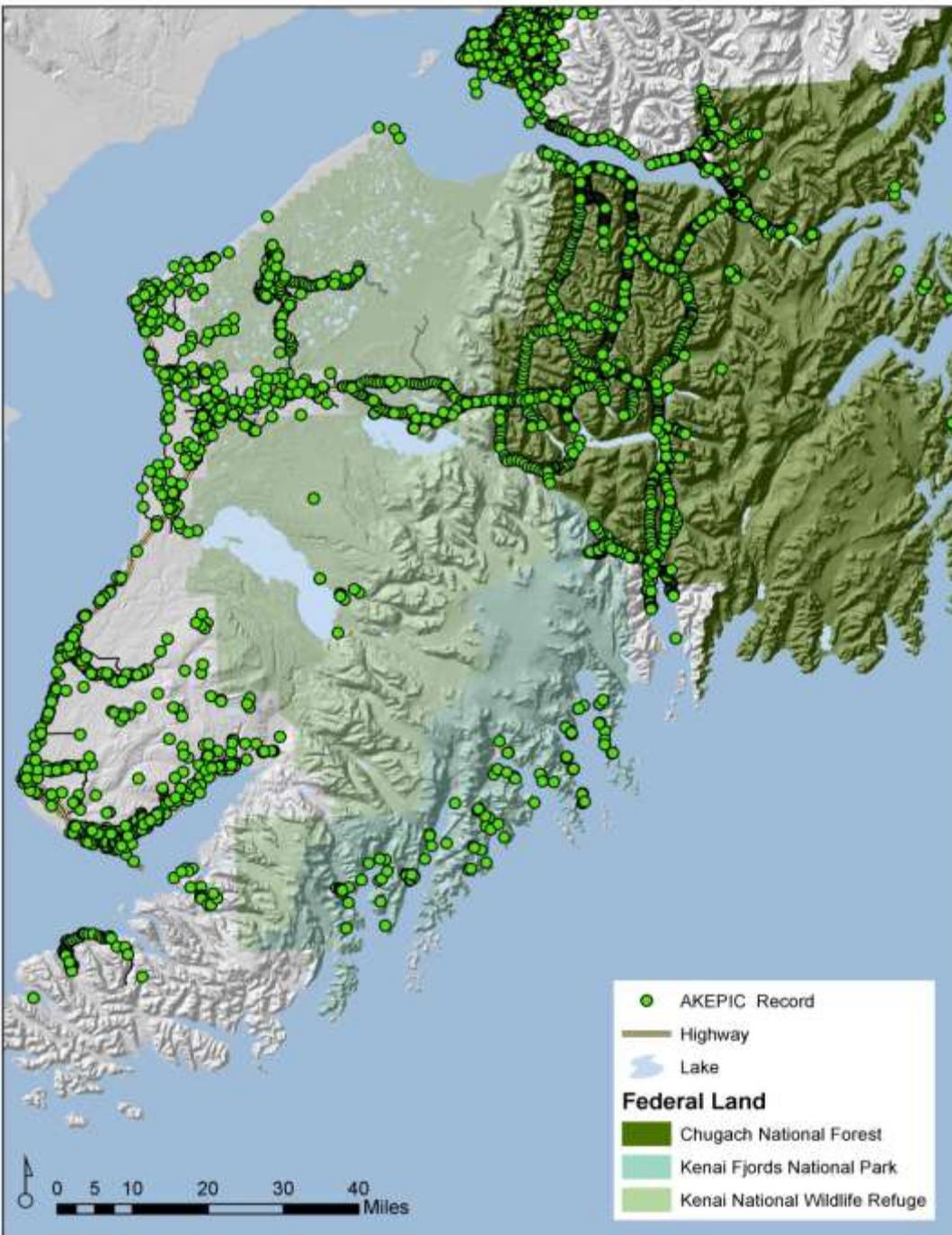
3230B

6/14/2004 9:36am

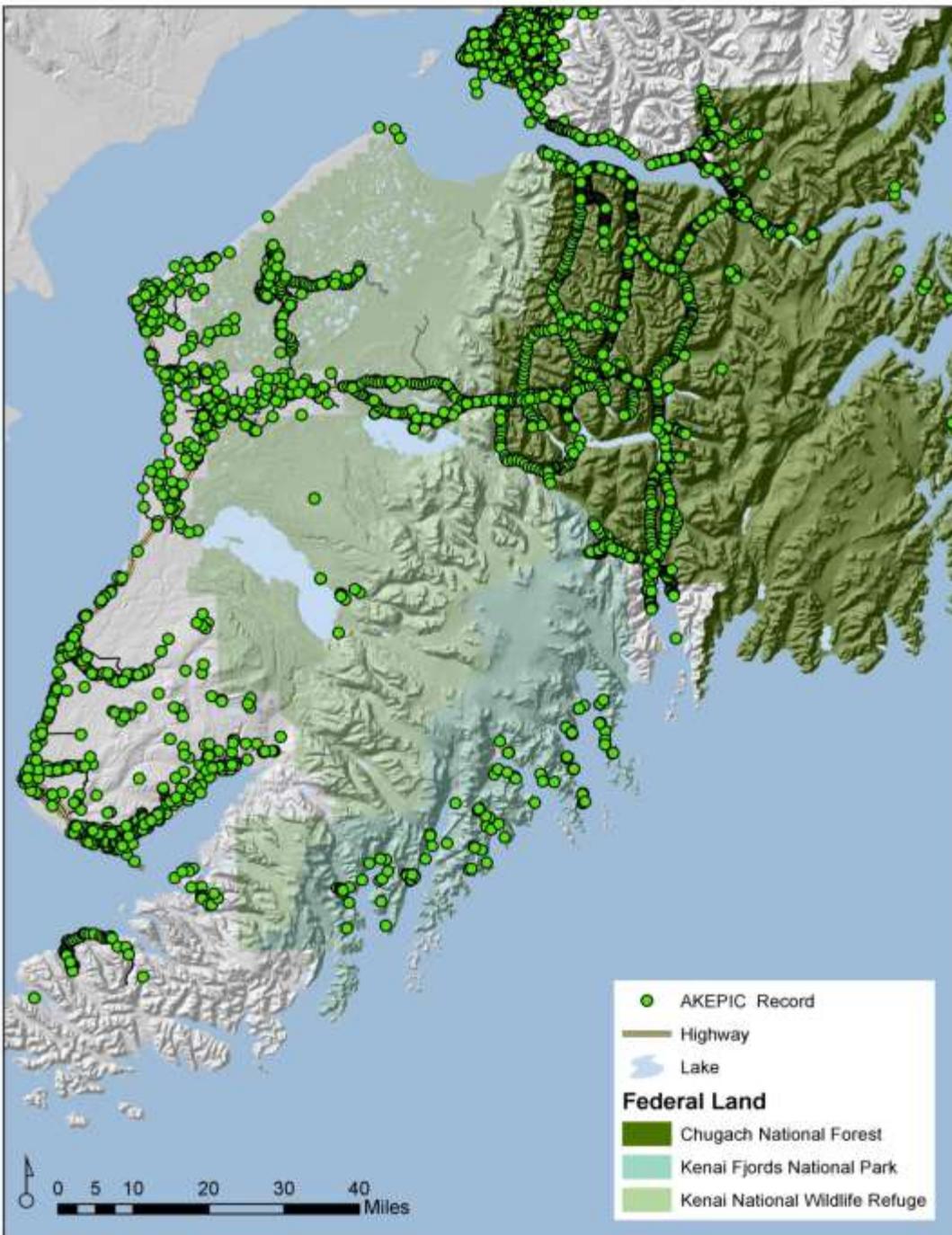


- ✓ 1,800+ miles of seismic lines
- ✓ 3,016 miles of road, crossing anadromous streams at 381 locales
- ✓ 1.4 million vehicles per year on the Sterling Highway
- ✓ 238,800 acres of private lands divided into 55,000 parcels
- ✓ 2.2% human population growth
= 1,000 new residents/year
= 1.5 housing units/day
- ✓ 175 miles wildland-urban interface

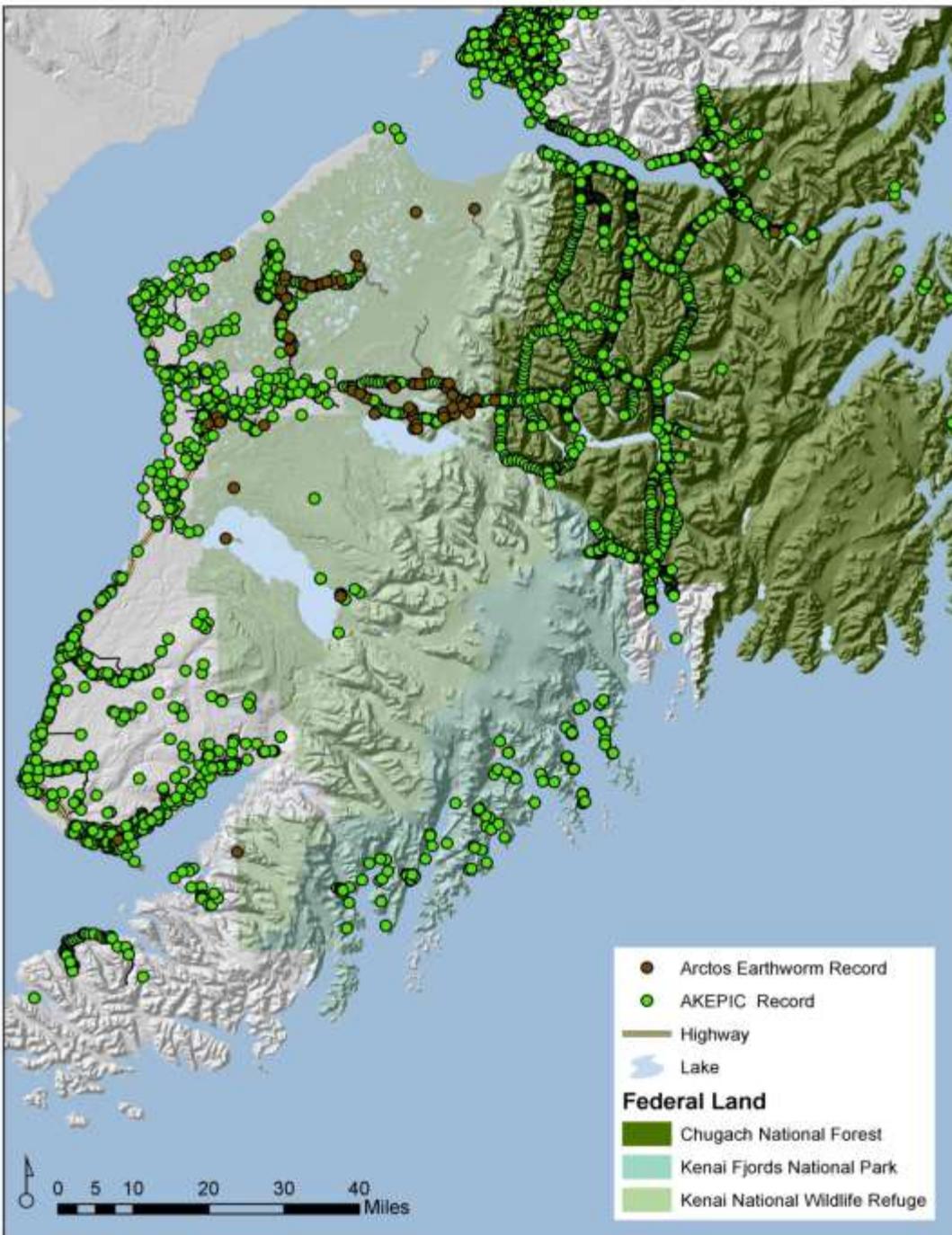
22,174 AKEPIC records
representing ~110 exotic
vascular plant species



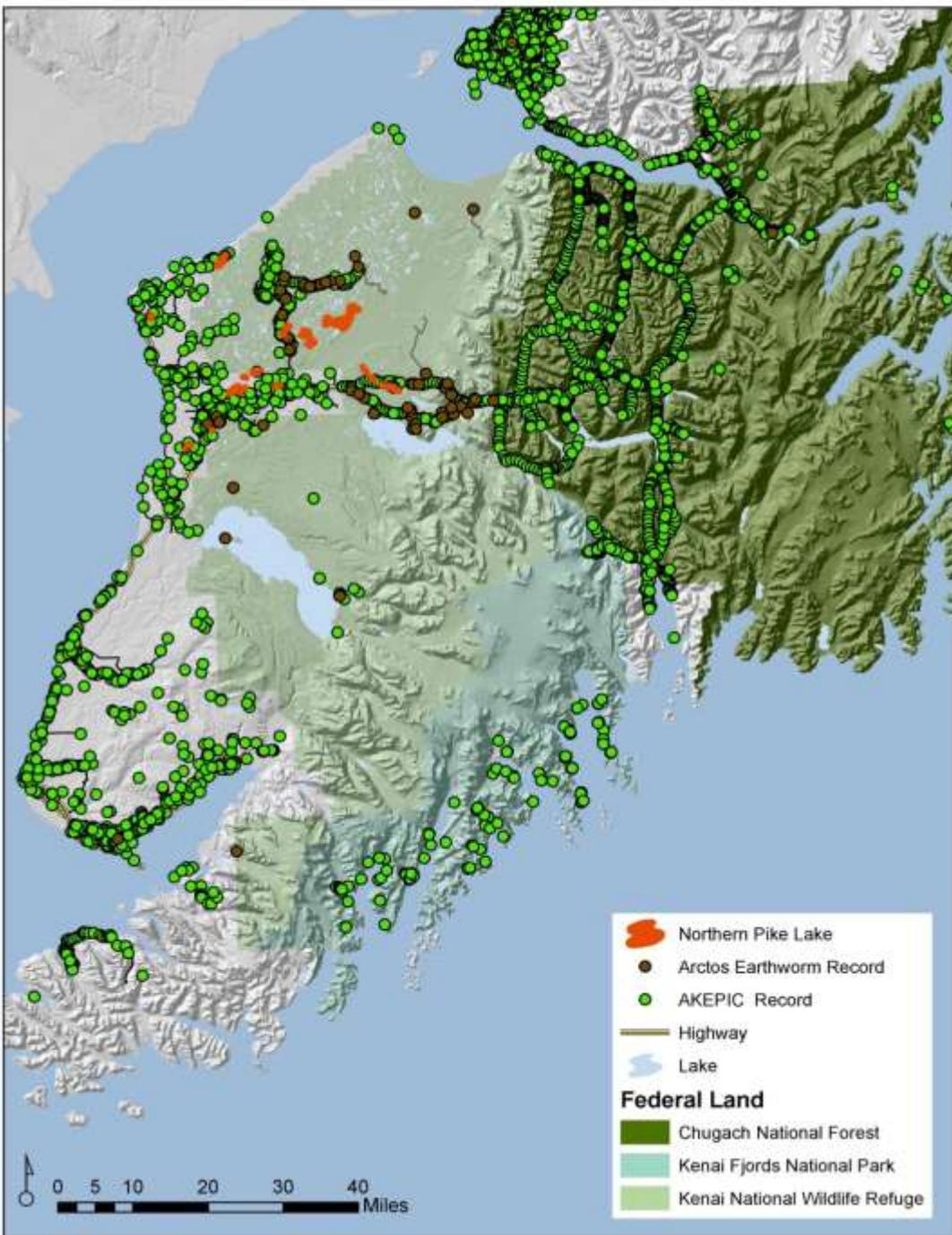
18 AKNHP ranking >60
9 AK noxious weeds



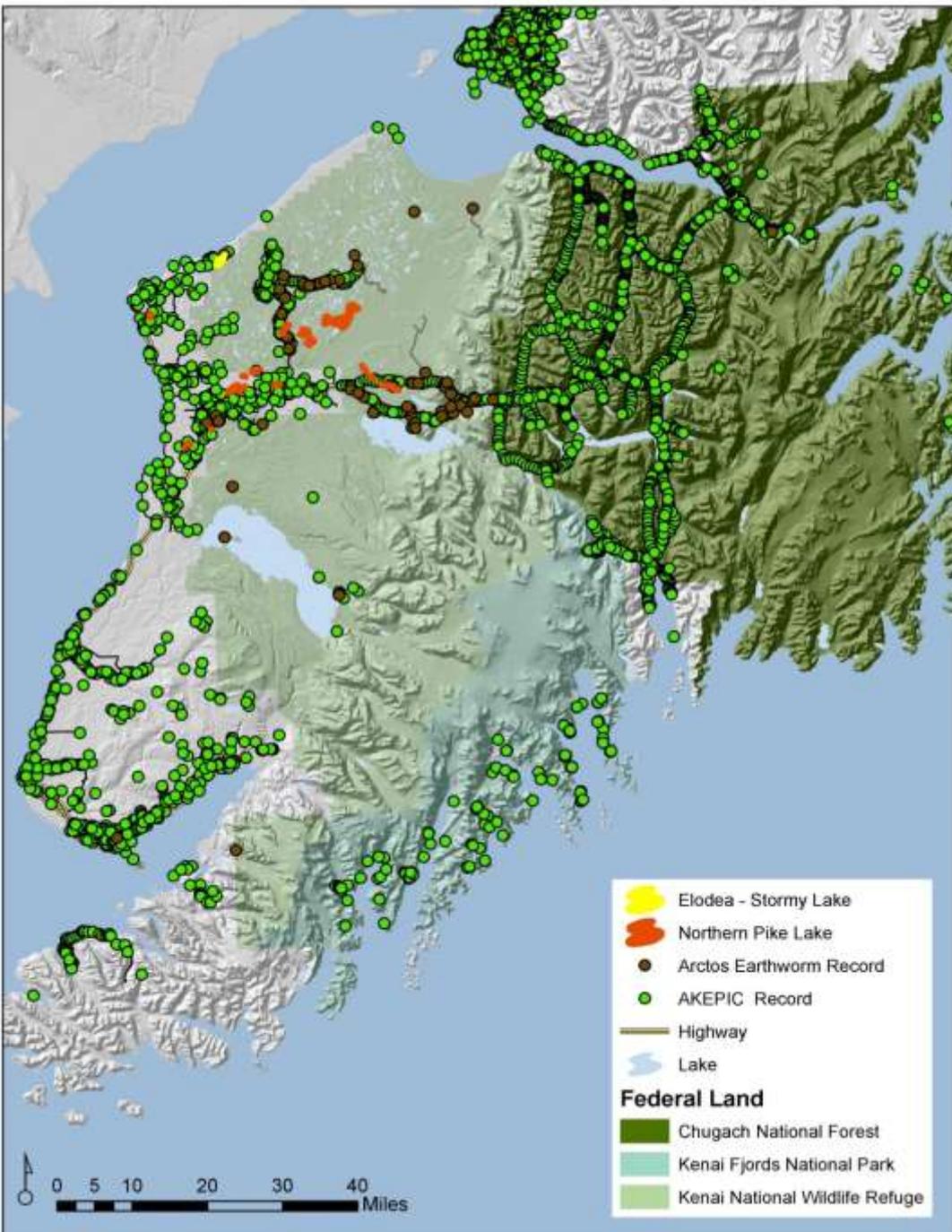
4 species (3 genera)
of exotic earthworms



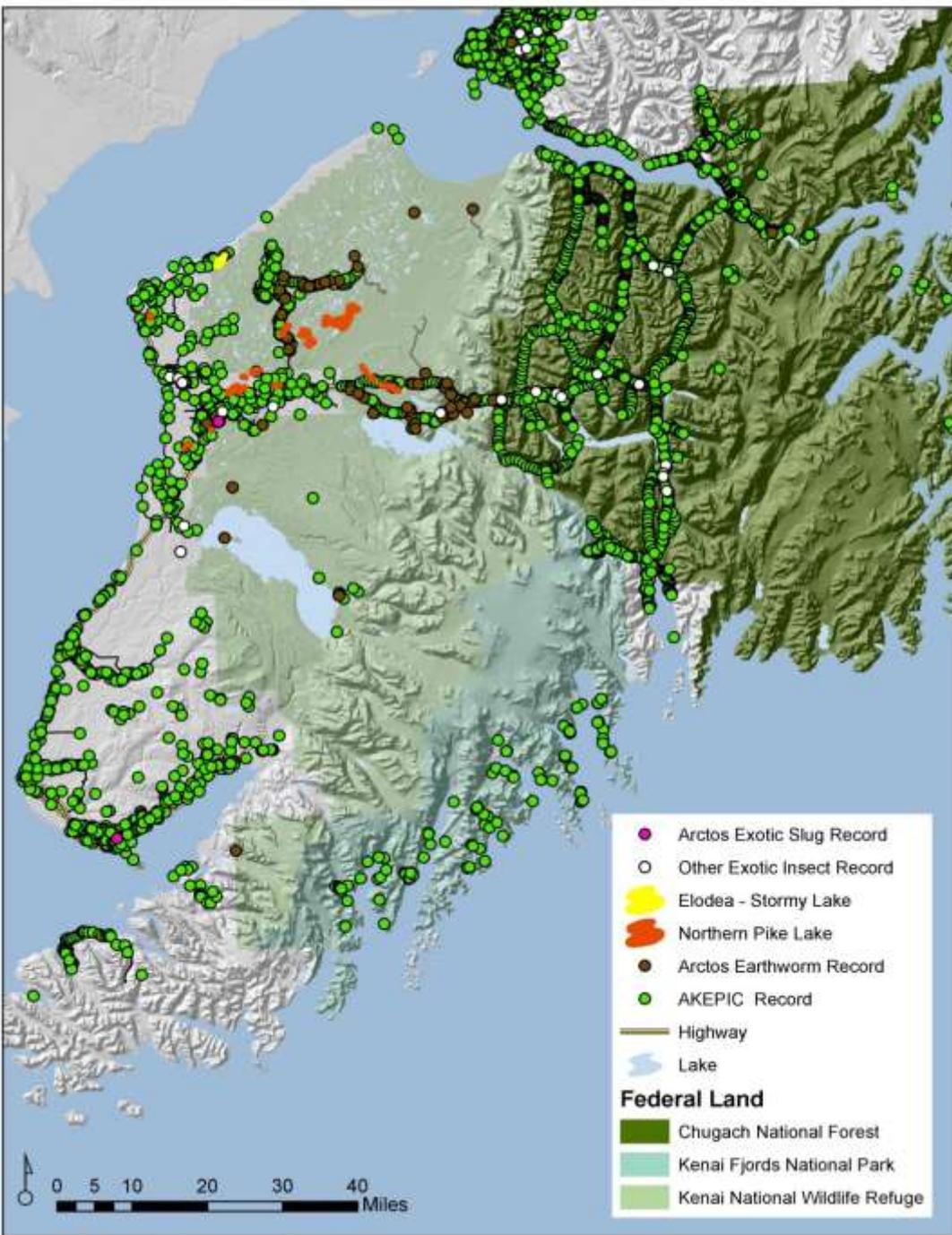
14+ lakes have introduced northern pike



2 lakes have Elodea



2 slugs
several insects





2003: USFS helps fund CWMA coordinator

2003: 1st Weed Workshop

2005: Begin CWMA MOU

2006: KP-wide RCG inventory

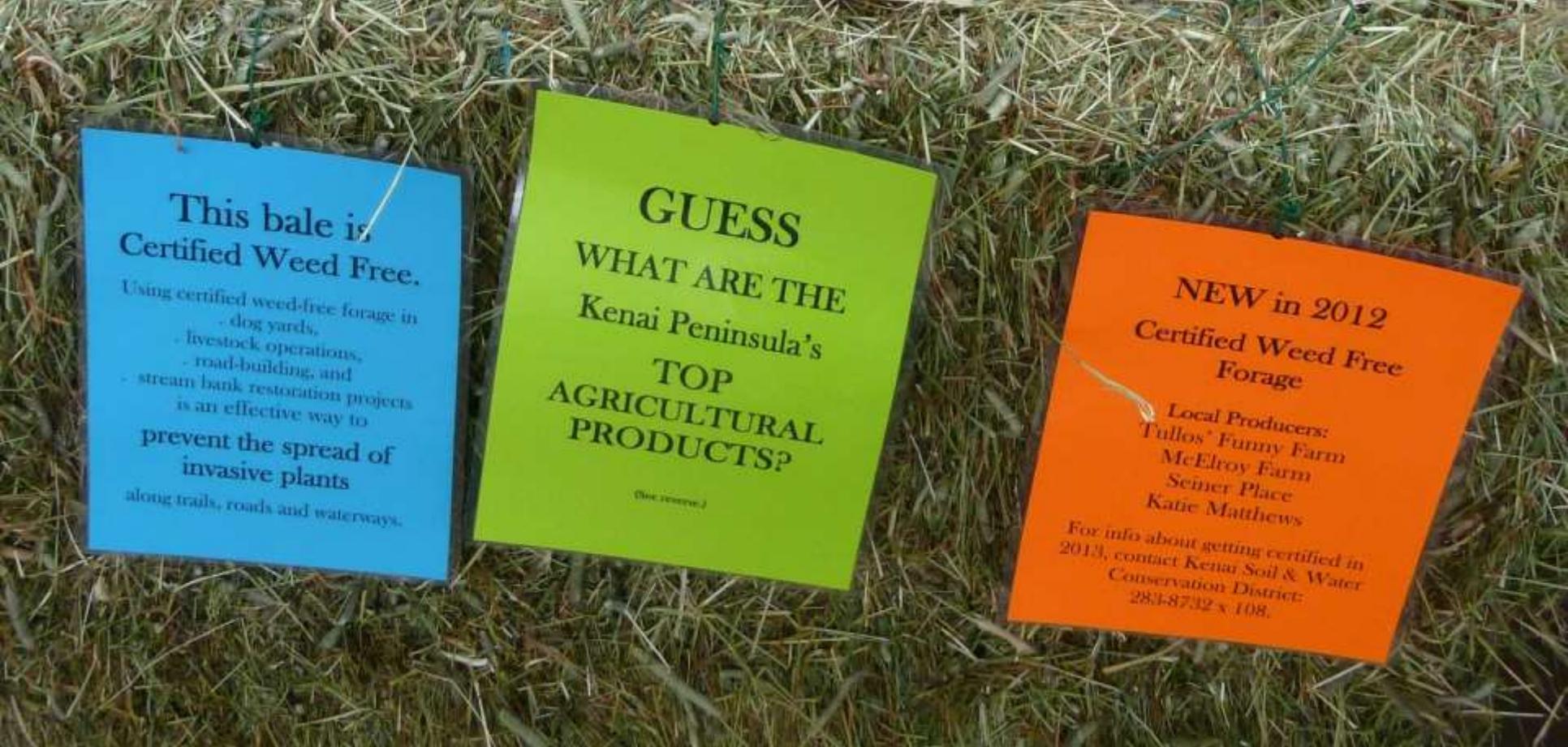
2007-08: Orange hawkweed control demonstration

2007-10: Melilotus eradication on Anchor River and head of Kachemak Bay,
perennial sowthistle , Canada thistle on southern peninsula

2007: EPA funds Sue Galatowitsch/Tim Miller on RCG

2007: CWMA Strategic Plan

2009: CWMA website



2011: District volunteers trained to conduct Certified Weed-Free Forage field inspections

2012: Certified Weed-Free Forage program launched with 4 KP hay growers getting 216 acres certified

2012: Central Kenai Peninsula Road Projects follow-up. Student intern Olivia Pfeifer monitored 11 miles of ROWs reseeded during 2010 or 2011



- 2010-12: ~2700 volunteers, 261 acres, 1243 bags (vetch, hawkweed, oxeye daisy, B&E, RCG, Melilotus, foxglove, sheep sorrel)
- 2011: chemical control of creeping buttercup on Resurrection Trail
- 2011: chemical control of RCG
- 2011: Caines Head SRA: chemical control of orange hawkweed





DANDELION SUNDAY

Sunday, June 4

Kenai National Wildlife Refuge
Headquarters in Soldotna 1 - 4 PM

**FREE ICE CREAM
SUNDAES!** Rain or Shine

for everyone who brings a plastic grocery bag
full of dandelion flowers and seed heads

Prize awarded for: Most Sensitive Sites (i.e. Trailheads), Family Totals, and Most Plants with Seeds



Please help keep invasive plants from taking over disturbed soils along your favorite trails, streams, and natural places.

Free invasive plant guides will be available to aid in mapping locations of plants such as: Canada Thistle, Tansy, Toadflax, Oxeye Daisy, Narrowleaf Hawkweed, Orange Hawkweed, Herringbone, Bird Vetch, and others.

Questions?

Call Kenai National Wildlife Refuge 907.326.1021 | Cooperative Extension Service 907.326.4141 | Kenai Watershed Forum 907.344.9

2006: 1st Dandelion Sundae

2007: KPB Borough Invasive Weeds Proclamation

2007: outreach at Kenai Peninsula Fair

2007: DEC-certified herbicide applicator program



**Kenai Peninsula Borough
Alaska
Proclamation**

WHEREAS, Alaska Weed Awareness Week is June 24th through June 30th 2007 and in recognition of the importance of promoting education of our natural environment; and

WHEREAS, to officially recognize Alaska Weed Awareness Week and encourage the importance of education on Invasive Plant Species and their detrimental habits; and

WHEREAS, education increases awareness for not introducing invasive plants, and helps to promote removal of these plant species and to keep healthy native plant diversity; and

WHEREAS, *spreading the word and not the weed*, keeps our Borough economically healthy for business, recreation, fisheries, tourism, and future stewards of our lands; and

WHEREAS, the Kenai Peninsula Borough wants to inspire more participation in education and recognition of invasive species through activities that foster growth in the local community and through Alaska; and

WHEREAS, cultivating and supporting northern growers, landscapers, farmers and land stewards is of importance to everyone in Alaska.

NOW THEREFORE, I, John J. Williams, Mayor of the Kenai Peninsula Borough, do hereby proclaim the week of June 24th through June 30th 2007 as

Weed Awareness Week

on the Kenai Peninsula, and encourage our citizens to pay special attention during these days to inform ourselves and others about the importance of keeping invasive plants off the Kenai Peninsula and promote weed pulls, prevention of introduction of invasive species and recognition of the importance of keeping the Kenai Peninsula the magnificent place it is.



John J. Williams
Kenai Peninsula Borough Mayor





2009: Pulling and tarping RCG on Slikok, Beaver Creeks
2010: RCG weedpull at Bing's Landing



- 2003: Duffy et al 1997-98 surveys
- 2003: 1st public weedpull
- 2003/05: trail inventory
- 2007: road inventory
- 2007: native plant garden





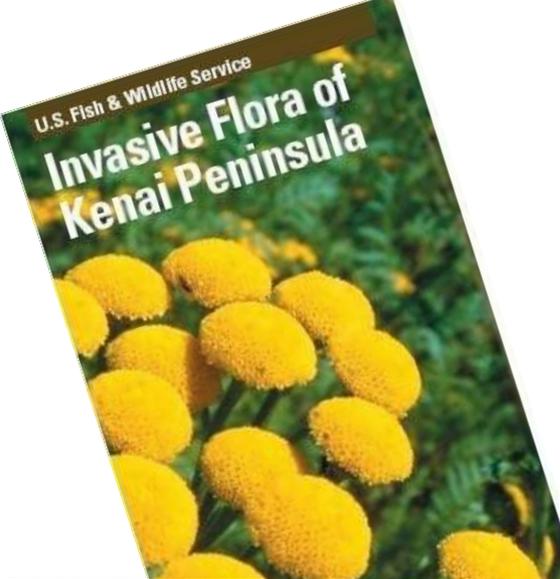
- 2010: Spencer Lake area control
- 2011: Russian River (RCG)
- 2011: fund Jen Kain (AACD)
- 2011: forestwide road/trail resampling
- 2012: Weed Smackdown in Seward





- 2004: joins NPS AK Regional Exotic Plant Management Team
- 2006: 1st annual Exit Glacier Weedpull with USFS & RBCA
- 2006: dandelion, timothy found in Nuka Bay
- 2007: survey all walkable beaches
- 2011: 1st herbicide use to control dandelions
- 2011: Installed bootbrush and interpretive signs at Exit Glacier
- 2012: Weed Smackdown in Seward





- 2005: Caleb Slemmons surveys human-disturbed areas
- 2006: CSU establishes 74 permanent monitoring plots
- 2007: Hansen Horse Trail, Glacier Crk Fire



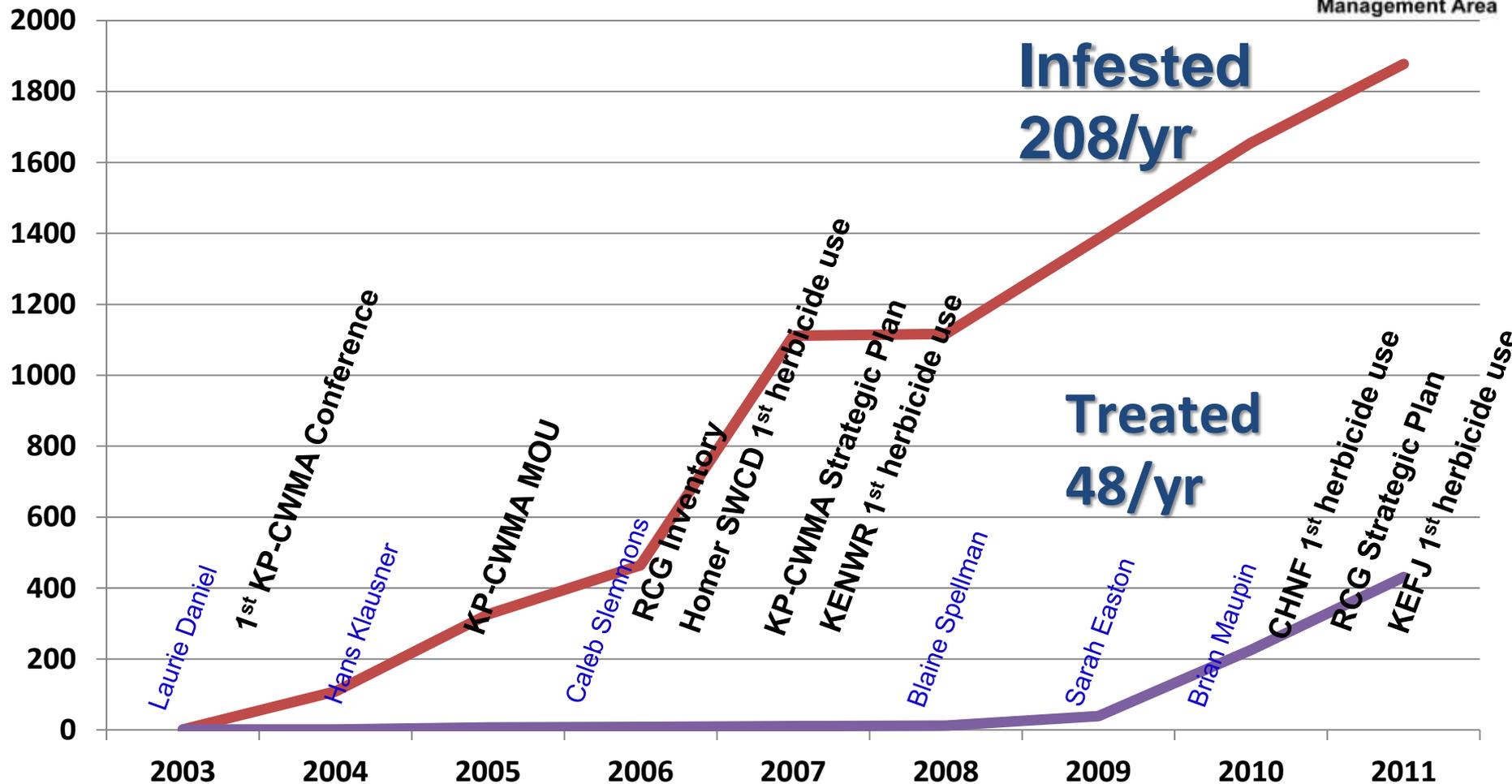


2007: Begin herbiciding hangar
2008: Begin treating all access points
2009: Begin treating Swanson oil and gas field





KP-CWMA milestones



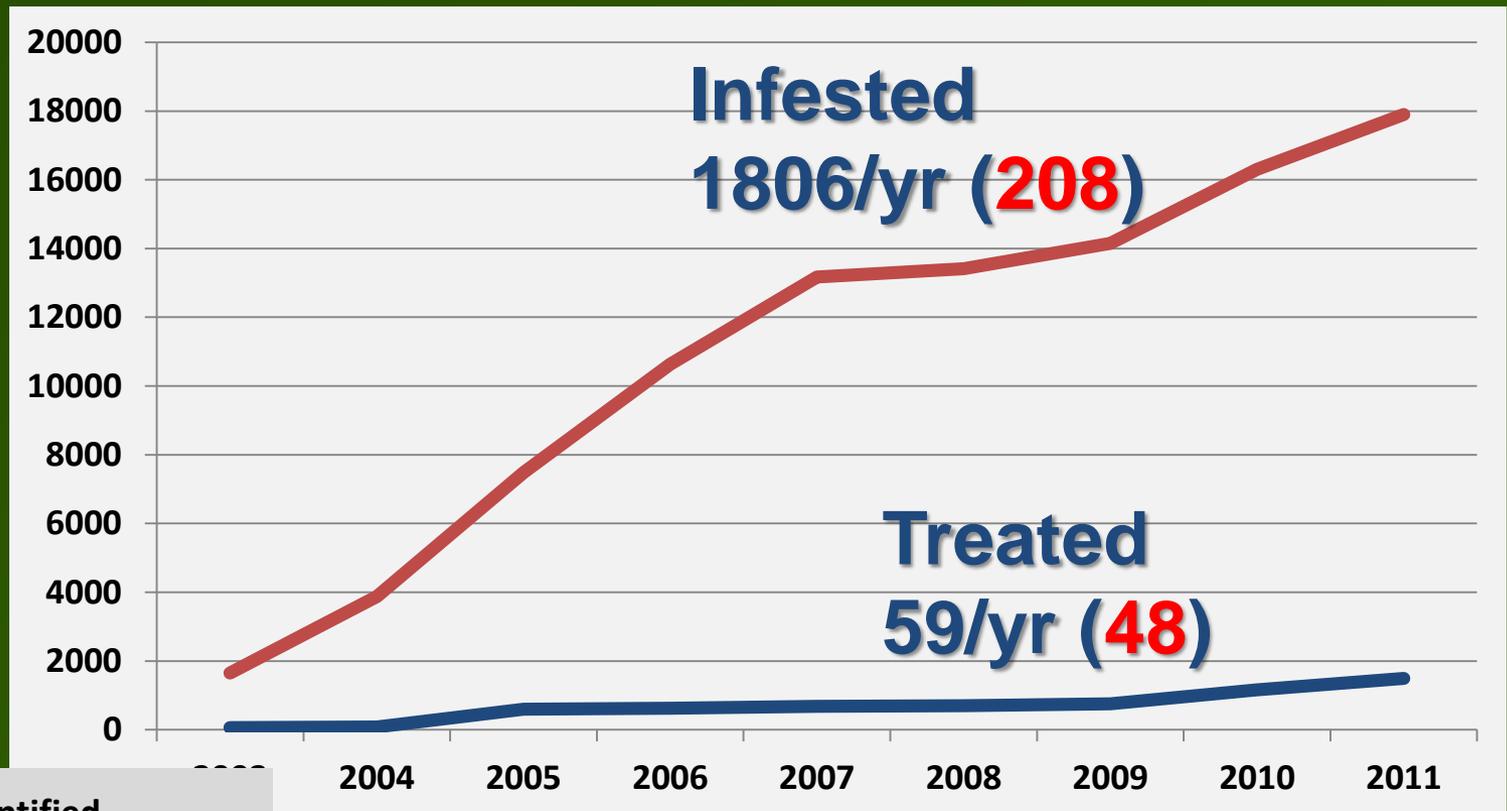
**Infested
208/yr**

**Treated
48/yr**

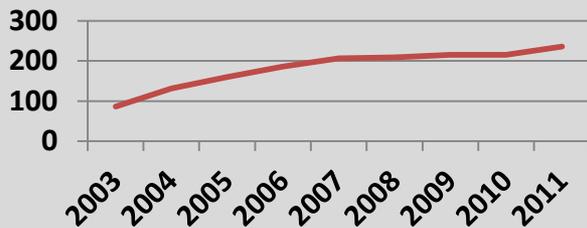
Cumulative acres reported in AKEPIC for Kenai Peninsula

THE GOOD NEWS:

We are the heavy hitters statewide



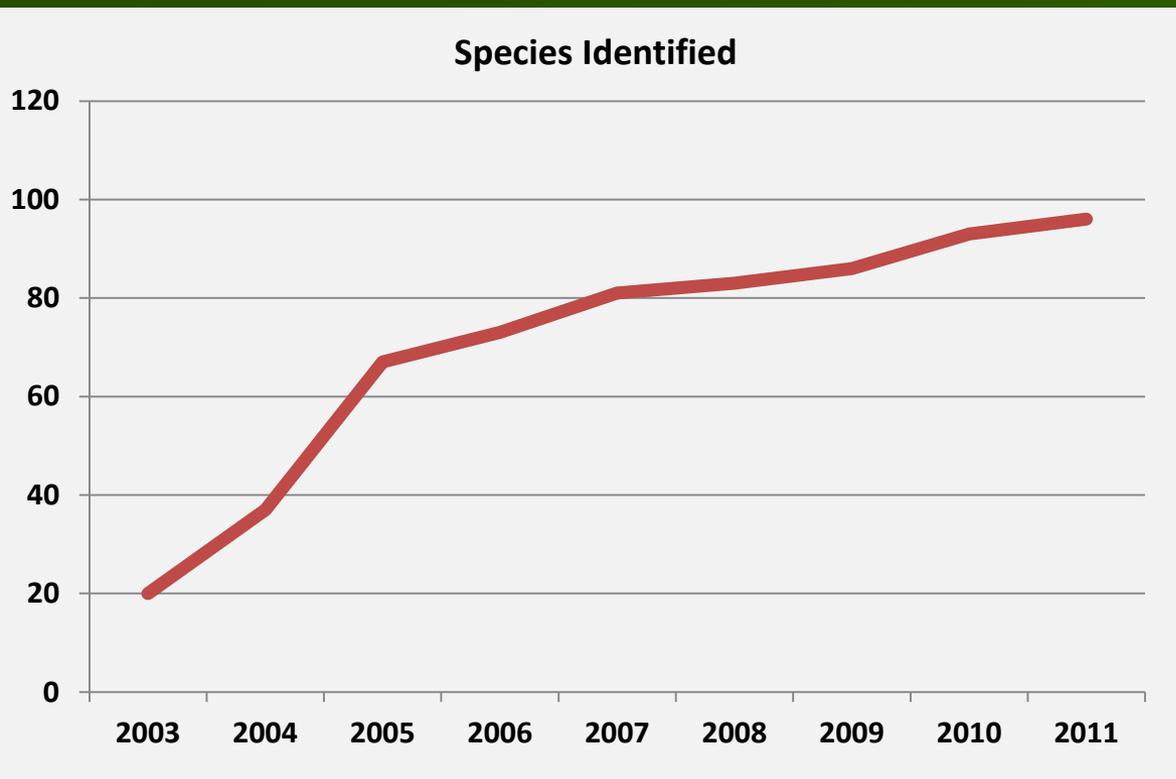
Species Identified



~50% of exotic species in AK occur on KP

THE BAD NEWS:

We've only eradicated 4 exotic species from the Kenai Peninsula



Spotted knapweed
Scotch broom
Columbia ragwort
German madwort



Wind-dispersed plants will overrun the refuge in the next 2 years

The answer is blowing in the wind





Birds vetch in Cooper Landing



Birdsfoot trefoil
Alsike clover
Common timothy



Birdsfoot trefoil
Oxeye daisy
Alsike clover



Orange hawkweed
Oxeye daisy



Butter and eggs



White sweetclover

Buckets of acceptability

Past

Present

Future

cost

waited too long

Lost cause

paperwork

wind dispersed

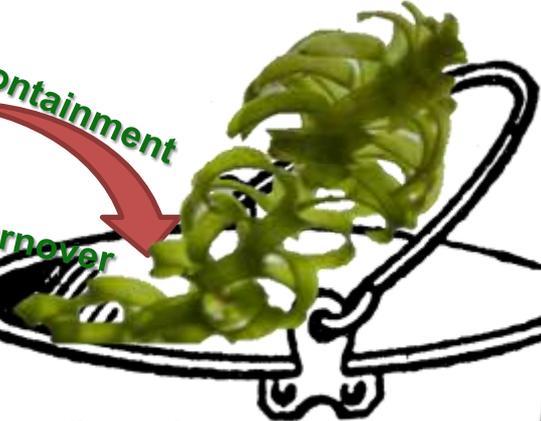
accept containment

personnel turnover

- clovers
- narrowleaf hawksbeard
- narrowleaf hawkweed
- orange hawkweed
- common dandelion
- pineapple weed
- common plantain
- timothy

- reed canarygrass
- bird vetch
- field sowthistle
- birdsfoot trefoil
- sweetclover
- Elodea
- hempnettle

- Spartina
- Hydrilla
- spotted knapweed
- western cheatgrass
- Japanese knotweed
- scotch broom
- ???



KP-CWMA Management Goals - 2007



| Common name | CHUGACH NF | KENAI NWR | KENAI FJORDS NP | HOMER SWCD | KENAI SWCD | ALASKA SWCD |
|--|-----------------------|------------------|----------------------------|-----------------------|-------------------|------------------------|
| bird vetch | eradicate | eradicate | | eradicate | contain | eradicate |
| bull thistle | | | | eradicate | | |
| butter and eggs | control | eradicate | eradicate | contain | contain | |
| Canada thistle | | | | eradicate | eradicate | |
| cheat grass | | ** | | | | |
| common tansy | control | eradicate | | eradicate | eradicate | |
| hempnettle (spp.) | control | contain | | contain | contain | |
| meadow hawkweed (H. caespitosum) | | contain | | | | |
| mouseear hawkweed (H. pilosella) | | | | | eradicate | |
| narrowleaf hawkweed (H. umbellatum) | eradicate | control | | | contain | |
| orange hawkweed | eradicate | eradicate | | contain | contain | |
| ornamental jewelweed | | | | | eradicate | |
| oxeye daisy | control | eradicate | eradicate | contain | contain | |
| perennial sowthistle | eradicate | | | eradicate | | |
| quackgrass | control | contain | | contain | contain | |
| reed canarygrass | eradicate | control | | contain | contain | |
| scentless false mayweed | control | eradicate | | eradicate | eradicate | eradicate |
| scotchbroom | | eradicate | | | eradicate | |
| spotted knapweed | | | | | eradicate | |
| white sweetclover | control | contain | | eradicate | | |
| yellow sweetclover | control | eradicate | | | | eradicate |

KP-CWMA Management Goals - 2013



Default management goal for any exotic plants new (or newly re-introduced) to the Kenai Peninsula is eradication by the most appropriate method

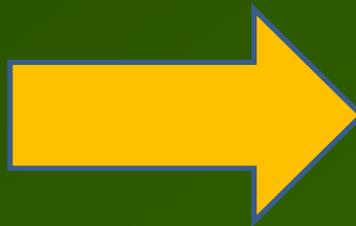
| Common name | Scientific name | ERADICATE | CONTAIN |
|--------------------------|--|-----------|---------|
| Bird Vetch | <i>Vicia cracca</i> | X | |
| Bull Thistle | <i>Cirsium vulgare</i> | X | |
| Butter and Eggs | <i>Linaria vulgaris</i> | | X |
| Cattail | <i>Typha latifolia</i> | X | |
| Creeping thistle | <i>Cirsium arvense</i> | X | |
| Cheatgrass | <i>Bromus tectorum</i> | X | |
| Common Tansy | <i>Tanacetum vulgare</i> | X | |
| Meadow hawkweed | <i>Hieracium caespitosum</i> | X | |
| Ornamental jewelweed | <i>Impatiens glandulifera</i> | X | |
| Oxeye daisy | <i>Leucanthemum vulgare</i> | | X |
| Perennial Sowthistle | <i>Sonchus arvensis</i> | X | |
| Quackgrass | <i>Elymus repens</i> | | X |
| Reed canarygrass | <i>Phalaris arundinacea</i> | | X |
| Scentless false mayweed | <i>Tripleurospermum inodorum</i> | X | |
| Scotchbroom | <i>Cytisus scoparius</i> | X | |
| Spotted knapweed | <i>Centaurea stoebe</i> | X | |
| Waterweed | <i>Elodea canadensis & nuttallii</i> | X | |
| Yellow/White sweetclover | <i>Melilotus officinalis</i> | X | |

New yardstick to measure success

- ✓ Rather than acres or # infestations treated
- ✓ 97 of 127 watersheds are free of reed canarygrass
OR
- ✓ 4 species were eradicated from the Kenai Peninsula



AND WE NEED TO KEEP IT THAT WAY!



Questions????