Kenai Peninsula Cooperative Weed Management Area

Annual Report 2019

Invasive plant infestations reduce the biological, agricultural, recreational, and economic value of the land, decrease native plant populations, and degrade ecosystems. In order for management efforts to be successful, a broad-scale and coordinated approach is necessary to systematically integrate detection of invasive species and respond rapidly with a variety of treatment methods (manual, mechanical, and chemical).

The Kenai Peninsula Cooperative Weed Management Area (KP-CWMA) embodies and implements this integrated management approach through numerous partnerships, coordinated by the Homer Soil and Water Conservation District (HSWCD).

Taking a regional approach, we collaborate on surveying and monitoring, education and outreach, and treatment implementation throughout the 6-million acres of the Kenai Peninsula, the 10-mile Kenai Isthmus at Portage, Turnagain Arm, and communities across Kachemak Bay: Seldovia, Port Graham and Nanwalek. Summer 2019 brought challenges to invasive species management including drought, wildfire and record high temperatures.

2019 Community Weed Pulls tackled White Sweet Clover and Bird Vetch in the communities of Hope, Seward, Sterling and the City of Kenai.

KP-CWMA Partners & Funding

	The Alaska Department of Transportation & Public Facilities (DOT&PF) continued a road improvement project along the Sterling Highway between milepost (MP) 58-79. Through an agreement with the U.S. Fish and Wildlife Service (USFWS), DOT&PF is funding invasive species monitoring within the DOT&PF right-of-ways (ROW) within the Kenai National Wildlife Refuge and funding invasive plant management within the project corridor for five years post-construction, a first in Alaska. DOT&PF used certified weed-free gravel (required) and top soil (when available) for the project, as stipulated in the permit from USFWS. For years, DOT&PF has required their contractors use certified local weed-free seed and weed-free Best Management Practices. DOT&PF also assisted with Homer Soil & Water Conservation District (HSWCD) utilizing the DOT&PF Integrated Vegetation Management Plan (IVMP) to treat invasive weed infestations for 19 sites on the Kenai Peninsula, overseeing paperwork and conducting pre- and post-season site visits of herbicide-treated infestations along the ROWs in 2019.
	Alaska State Parks Clam Gulch to Kachemak Bay actively monitored for local invasive species during the 2019 season. AK State Parks staff worked with Cook Inlet Aquaculture Association (CIAA)'s Hatchery Manager at the Tutka Bay Lagoon Hatchery to monitor the Orange Hawkweed infestation, providing information on control and eradication, and a follow-up site visit with HSWCD and the Cooperative Extension Service (CES). CIAA is working diligently to control this infestation. AK State Parks requested that Best Management Practices (BMP) be utilized by Homer Electric Association (HEA) to access China Poot Bay easement. This included cleaning and inspection of equipment before crossing Kachemak Bay, use of weed free seed, and restoration of areas denuded of vegetation. Outreach occurred to neighboring homeowners of Anchor Point State Park properties, identifying and explaining the issue of Orange Hawkweed being transplanted with vegmats for restoration purposes. They also incorporated invasive species outreach into the volunteer campground hosts' spring training. HSWCD and CES presented on identification and reporting of invasive species. AK State Parks also participated in the CWMA meeting to revise the Reed Canarygrass (RCG) Strategic Plan, and identified that a RCG action plan for State Parks would be to identify any infestations between Clam Gulch and Kachemak Bay.

FOREST SERVICE US DEPARTMENT OF AGRICULTURE	The Chugach National Forest (CNF) partnered with Homer SWCD and the Kenai Watershed Forum (KWF) to tackle high-priority invasive plant treatments and surveys on the Kenai Peninsula, in Portage, Whittier, and along Turnagain Arm. The Forest Service treated a total of 129.6 acres with herbicide (including gravel pits) and manually/mechanically controlled 43.5 acres of invasive plants. Within the boundaries of the Chugach National Forest, all non-native plant species were treated. Working with CWMA partners, the Forest Service assisted with community weed pulls in Seward, Girdwood and Hope. Through the Resource Advisory Committee (RAC) grants, the USFS helped fund projects within the KP-CWMA: Thank you!
Cook Inlet AQUACULTURE ASSOCIATION	In May and August Cook Inlet Aquaculture Association staff checked on the barrier between South Lake (Hilda/Sepu) and Beck Lake (formerly infested with elodea) to ensure it was still standing and blocking vegetation from moving downstream. They also checked the area around the barrier for elodea and found none. After consultation with John Morton with the US Fish & Wildlife Service it was decided to remove the barriers in between the two lakes rather than renew the permit. The barriers nets were removed in September. CIAA is actively treating the Orange Hawkweed Infestation at Tutka Bay Lagoon Hatchery, incorporating BMPs from a site visit by CES and HSWCD. CIAA also hosted the KP-CWMA public workshop on Invasive Species in April 2019, providing a space to stage a boat, ATV, bikes and other equipment for invasive species cleaning demonstrations. Thank you!
COPPER RIVER WATERSHED PROJECT	Copper River Watershed Project (CRWP) funded the following projects by the Kenai Watershed Forum and Homer Soil & Water Conservation District: • HSWCD: 2019 Proposal to Eradicate Invasive Terrestrial Plants within the Kenai Peninsula-Cooperative Weed Management Area (Controlled Orange Hawkweed at Alyeska Resort; Seldovia Reed Canarygrass Project; Increased field technology support (iPads); and Chemical treatment of central Kenai infestations). Thank you!
KENAI SOIL & WATER CONSERVATION DISTRICT	In 2019, Kenai Soil & Water Conservation District (KSWCD) certified 91 acres at eight sites through its Weed-Free Gravel Program. KSWCD launched the program in 2014 after the Kenai National Wildlife Refuge adopted weed-free gravel requirements for oil and gas development within the Refuge. The program expanded in 2016 with help from KP-CWMA and a Special Issues grant from the Western IPM Center and has ensured a steady supply of certified gravel for a multi-year highway improvement project between Sterling and Cooper Landing.

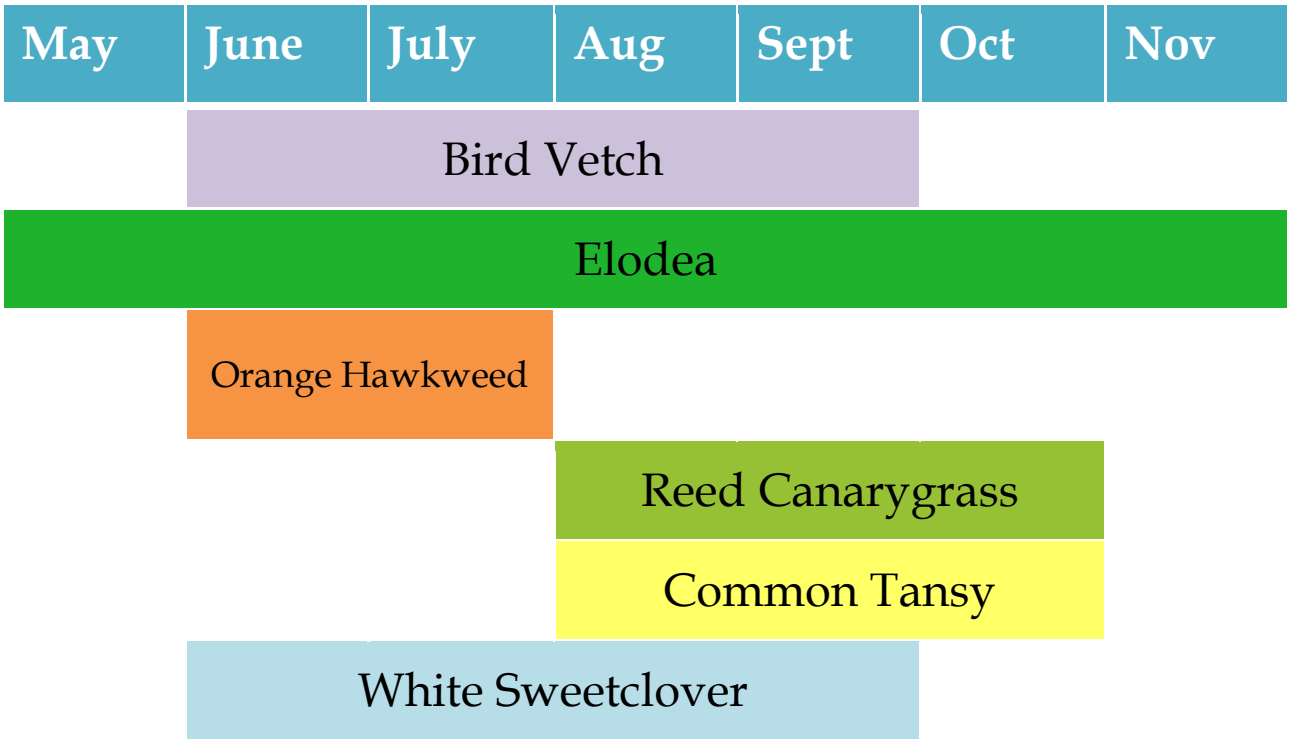
Homer Soil & Water Conservation District	Homer Soil and Water Conservation District (HSWCD) coordinates the KP-CWMA. In 2019 the coordinator organized the Invasive Species Public Workshop in April, managed permitting for invasive plant treatments along the Seward and Sterling Highways, established a new data collection method using the ArcCollector App with new iPads, surveyed and treated plants at Bradley Lake, inspected HEA's equipment before it was transferred across Kachemak Bay, surveyed the Orange Hawkweed infestation at Tutka Bay Lagoon Hatchery, and designed and implemented a Reed Canarygrass drone mapping pilot project. HSWCD, in partnership with the KWF and Alien Species Control surveyed 142 acres for high priority species, treated 39 acres for 10 high priority species, and surveyed 166 acres of Reed Canarygrass to support the aerial imagery surveys. HSWCD's work spanned the Kenai Peninsula from treating Orange Hawkweed at Alyeska Resort (30 acres), White Sweetclover at the Isthmus at Portage, to providing technical assistance for Reed Canarygrass control in Seldovia Native Village across Kachemak Bay. Outreach events included organizing the April Invasive Species Workshop at CIAA; presenting at two Healthy Chatter events in Seldovia; organizing and participating in the KDLL Kenai Conversation radio program on Reed Canarygrass. Additionally, the kenaiweeds.org website is maintained by HSWCD, and weekly posts are made to the KP-CWMA Facebook page. A huge thank you to Laura Miller for donating a collection of facebook posts. The KP-CWMA Coordinator is also a member of the Statewide Alaska Weed Free Committee and Governing Board, represents the Kenai Peninsula in the Statewide Elodea Working Group, and is a Statewide Alaska Invasive Species Partnership (AKISP) board member. Funding for this work was from the USFWS, USFS, and CRWP. Thank you! HSWCD has submitted a proposal to USFWS to increase the KP-CWMA capacity in 2020. The proposal is under review.
NATIONAL PARK SERVICE	The invasive plant management team at Kenai Fjords National Park (KFNP) continued to focus on retreating all known invasive plant populations and surveying other high visitor use areas to detect any newly established populations. Thirteen invasive plant species were documented in the park in 2019. A total of 64.85 acres across the park were surveyed, 0.10 acres of infestations were hand pulled, and 1.61 acres treated with herbicide, with most of our treatment in the Exit Glacier Area and 7 sites along the coast. Three restoration projects were completed in the Exit Glacier Area and seed was collected from 10 native plant species. Addison Lake was surveyed for Elodea for the first time this summer. Rake throw surveys were completed around the lake and only native aquatic plants were identified. Four Environmental DNA (eDNA) samples were taken around the lake and have been sent to the lab for analysis. The lake does not seem to be at a high risk for infestation since it is not used by float planes.

	In partnership with the KP-CWMA, including Chugach National Forest and Kenai Watershed Forum, Kenai Fjords National Park participated in the Seward Community Weed Pull at the Seward Middle School. There were 22 participants who pulled 573 pounds of *viccia cracca* and *linaria vulgaris*. With a grant awarded to the Kenai Watershed Forum from the Seward Community Foundation, free pizza and drinks were provided. KFNP presented a Best Management Practice talk to help reduce the spread of invasive plants to a Student Conservation Association (SCA) trail crew working and camping in the park for the summer, and presented to all Interpretive Rangers during their spring training. Two boot brush stations at Exit Glacier trail heads are maintained with interpretive signs, and the park's Facebook page is updated with invasive plant information throughout the summer.
	The Kenai Peninsula Borough Roads Commission received a presentation on Invasive Plant Management from Homer SWCD and KWF staff. Discussions centered around Bird Vetch in Borough right-of-ways and Reed Canarygrass management.
	The Kenai National Wildlife Refuge (KNWR) treated Hilda and Seppu Lakes for elodea in 2019. Stormy, Daniels, Sports and Beck Lakes were monitored for elodea, but none was found and no treatment necessary. In September, a sixth infestation of Elodea was discovered on the Kenai Peninsula at Sandpiper Lake. In partnership with Alaska Dept of Fish and Game, the 8 lakes/ponds south of Sandpiper were surveyed and no elodea detected. USFWS will treat Sandpiper Lake after ice-out in spring 2020. USFWS continues to conduct an early detection and rapid response (EDRR) approach that targets all access points into the Refuge interior (public trailheads, boat launches, and campgrounds; commercial oil and gas leased areas; and the Refuge's maintenance yard and the aircraft hangar). 2019 KNWR management response included herbicides (treated 53 sites, totaling 36 acres), weed pulls, boot brush station maintenance (installed two new boot brushes that had been worn out), and provide informational brochures and local newspaper articles to increase public awareness. Hilcorp, the company which leases the Swanson River oil and gas fields on the Refuge, contracted Alien Species Control, LLC to ensure that infestations were monitored and managed. Alien Species Control has done a phenomenal job at controlling infestations. USFWS submitted a proposal for Emergency Response Funds for Elodea to the Exxon Valedez Oil Spill Trustee Council. The proposal has yet to be reviewed by the Council.

	USFWS fisheries office provided funding for "Invasive Species Control in the Western Cook Inlet" to Tyonek Tribal Conservation District. Activities included Northern Pike suppression, identification of lakes susceptible to Elodea infestation, and education/outreach. Thank you! Additionally, the following projects were funded on the Kenai Peninsula. Thank you! • Invasive Plant Control (IPC) Grant: Kenai Peninsula Invasive Plant Program to HSWCD • Fish Habitat Partnership (FHP): Elodea Eradication & Non-Target Species Impact Study within the Kenai Peninsula to the KWF • Drone mapping over the mouth of Bishop Creek – a huge thank you to Mark Laker with KNWR • An internal proposal to USFWS was drafted with HSWCD to increase capacity for the KP-CWMA in 2020. The proposal is under review.
	During 2019, the Kenai Watershed Forum continued supporting the goals of the KP-CWMA by implementing EDRR throughout the Kenai Peninsula. This included performing Elodea surveys in 26 high priority lakes in the central Kenai Peninsula region. KWF assisted Homer Soil & Water Conservation District in continued eradication efforts for invasive terrestrial plant species. These treatments (chemical and manual) took place in all corners of the Kenai Peninsula. KWF assisted HSWCD and USFWS with a pilot project to determine the efficacy of drone imaging in determining reed canarygrass presence. Here, KWF personnel collected ground truthing data within Bishop, Beaver, and Slikok Creeks. In 2019, KWF sought to expand upon educational outreach revolving around invasive species through weed pull/educational events in Seward, Hope, Sterling, and Kenai. KWF was joined by the Kenai National Wildlife Refuge YCC crew, a volunteer group from Apogee Adventures, various community members, City of Kenai Parks and Recreation Department personnel, as well as personnel from the USFWS, USFS, NPS and SCA during the weed pull events. KWF was also joined by Stream Watch personnel and volunteers in an outreach event where reed canarygrass seed heads were clipped at the Russian River recreation site. Invasive species project work was completed with funding from USFWS, HSWCD, CRWP, USFS and the Seward Community Foundation. Thank you!
	University of Alaska Fairbanks Cooperative Extension Service (UAF CES) helped with individualized pest identification and research-based management solutions, with an emphasis on maintaining the AK Weeds ID app. Over 450 community members connected with the Soldotna CES Agents. CES hosted all four quarterly CWMA meetings this past year at their Soldotna office – Thank you! The 2019 Annual Invasive Species conference was hosted in Fairbanks this year.

	Seldovia Village Tribe (SVT) received a Fish Habitat Partnership grant to hire an invasive plant surveyor in 2019 who mapped 50 locations of non-native species with an invasiveness ranking of 50 or higher, a total of 37.5 acres. All data will be submitted to Alaska Exotic Clearing House (AKEPIC) in spring 2020. SVT worked with HSWCD, DOT, Seldovia Native Association and Dibble Creek Gravel to mechanically remove reed canarygrass from Jakolof Bay Rd. Unfortunately this project was unable to be completed in 2019. Two Healthy Chatter Outreach events focused on identifying and managing Invasive Species occurred in 2019 with over 35 participants. Community members continue to connect with Cindy Mom (SVT staff) with their questions about invasive plants. Thank you to Kenai Fish Habitat Partnership for funding!

Calendar of Invasive Plant Chemical Treatments on the Kenai Peninsula



High Priority Species – *All sites chemically treated in 2018 were visited in 2019 and retreated if necessary*

Invasive Plant Species	2019 Integrated Pest Management Techniques & Long-Term Goals
Canada Thistle *Cirsium arvense*	Also called Creeping Thistle, three locations are known on the Kenai Peninsula: Seward Hwy site (MP 54.8) was treated with herbicide; two sites along East End Rd in Homer were surveyed (they will be treated in 2020). Long-term goal: eradicate infestations from Kenai Peninsula.
White Sweetclover *Melilotus alba*	White Sweetclover infestations were monitored and treated at seven locations in 2019 along the Sterling Hwy, in the City of Kenai, City of Hope, Portage Glacier Hwy, and at Bradley Lake Hydroelectric site. Long-term goal: eradicate infestations from Kenai Peninsula.
Common Tansy *Tanacetum vulgare*	Pockets of Tansy exist on the Kenai Peninsula, mostly due to flower garden escapement. Three sites were manually dug up in 2019 and others surveyed in Soldotna, Kenai and Homer. Long-term goal: eradicate infestations from Kenai Peninsula.
Bird Vetch *Vicia cracca*	Bird Vetch infestations are small, yet widely disbursed throughout the Peninsula and are being managed through hand-pulling and herbicide applications. Seventeen sites were monitored, manually dug up, or chemically treated in 2019. One site treated in Homer in 2018 appears to no longer be infested. Long-term goal: eradicate infestations from Kenai Peninsula.
Orange Hawkweed *Hieracium aurantiacum*	Orange Hawkweed is widespread and prevalent across the Kenai Peninsula. The wind dispersed seeds and the number of infestations are managed through point eradication and containment. Five sites along the Seward and Sterling Hwys were chemically treated, and the hillside at Alyeska Resort was chemically treated.
Reed Canarygrass *Phalaris arundinacea*	USFWS, USFS, KWF, HSWCD and the Seldovia Village Tribe worked together on projects to tackle selected infestations of Reed Canarygrass (RCG). RCG is widespread over the Kenai Peninsula, so members of the CWMA strategically focused their approach to combat the following priority infestations in 2019: Russian River Campground; Rabbit Run Road; Jakolof Bay Road; Bradley Lake
Elodea *Elodea canadensis & nutallii*	Elodea is the only known submerged aquatic invasive plant in Alaska. KNWR treated Hilda and Seppu Lakes (North-South Lakes) for elodea in 2019. It is believed elodea has been eradicated from Stormy, Daniels, Sports and Beck Lakes. They were monitored throughout the summer and no elodea was detected. In September, a sixth infestation of Elodea was discovered on the Kenai Peninsula at Sandpiper Lake. Long-term goal: eradicate and respond quickly to new infestations.
Additional Species Controlled	At select locations point eradication and containment are implemented through a variety of chemical, mechanical and manual techniques for: Narrowleaf Hawksbeard (*Crepis tectorum*); Narrowleaf Hawkweed (*Hieracium umbelletum*); and Meadow Hawkweed (*Hieracium caespisotum*).

2019 Accomplishments

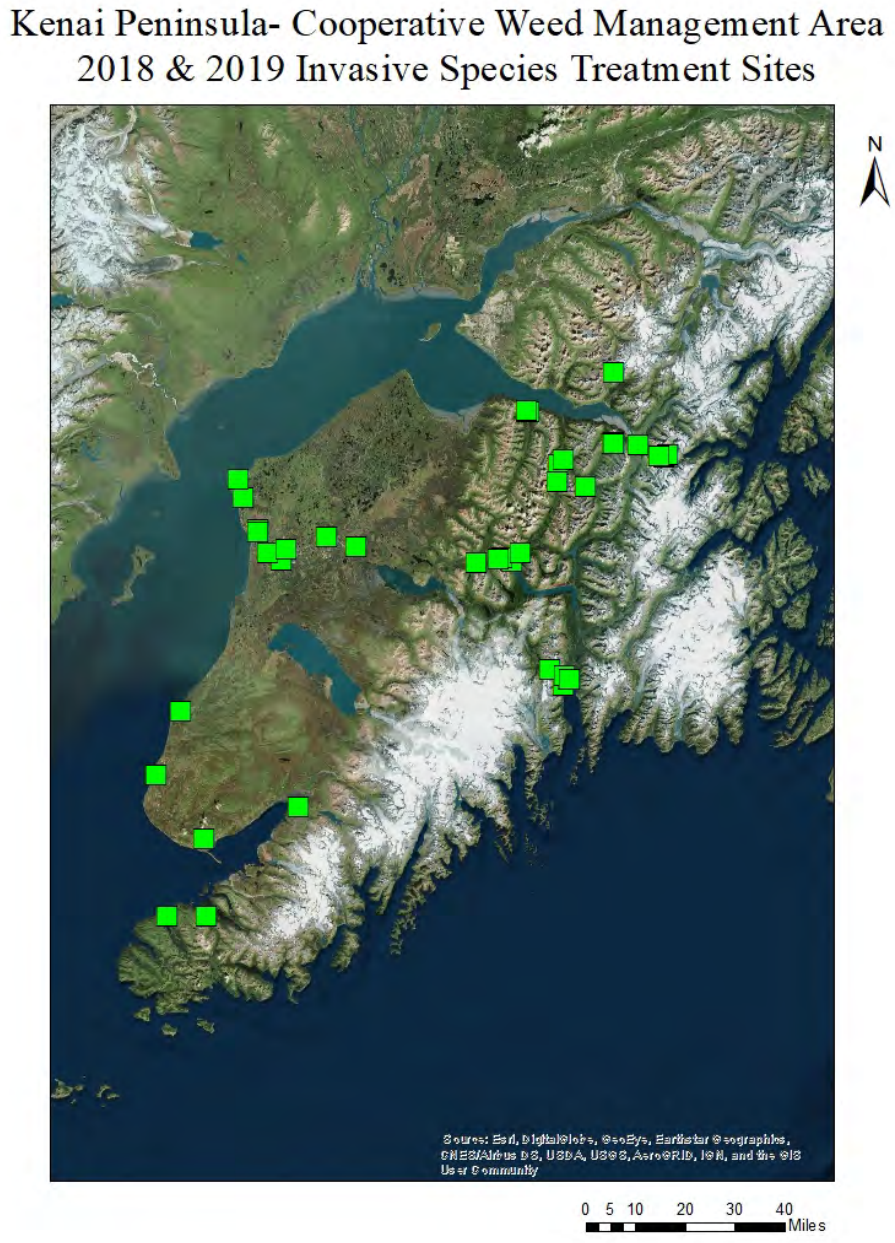
Quarterly	In-person meetings Social media & kenaiweeds.org maintained	Soldotna, AK
March	Seldovia Healthy Chatter Presentation	Seldovia, AK
April	Community Workshop	Kenai, AK
July	Hope Transfer Station Apogee Adv. Weed Pull Seward Middle School Community Weed Pull	Hope, AK Seward, AK
August	City of Kenai Community Weed Pull Seldovia Healthy Chatter Presentation	Kenai, AK Seldovia, AK
September	Bishop Creek Drone Mapping of Reed Canarygrass Statewide Invasive Species Strategic Plan Workshop	Nikiski, AK Anchorage, AK
October	Alaska Invasive Species Conference	Fairbanks, AK
Ongoing	Reed Canarygrass Strategic Plan revised IPM Plan for Eradicating Elodea ver.6 completed	

2019 IMPACTS and METRICS

65	Acres Treated for Aquatic Weeds
250	Acres Treated for Terrestrial Weeds
7830	Acres Surveyed for Aquatic Weeds (over 37 lakes and 10 miles of streams)
501	Acres Surveyed for Terrestrial Weeds
128	# of People Reached Through Community Weed Pulls and Presentations
120	# of General Public People Reached Through Workshop & Presentations/Booths

Geo-Database of Invasive Species Infestations

The KP-CWMA Coordinator (HSWCD) maintains a spatially referenced shapefile of infestations monitored and treated collaboratively within the KP-CWMA. This does not replace nor compete with AKEPIC, rather it is a tool that allows the CWMA to track information required for permitting and reporting on controlled invasive species sites. It is critical for ease of communication among the partners, and for tracking/monitoring treatment and control techniques over time on DOT right-of-ways and private lands.



For more information, e-mail Katherine Schake: katherine@homerswcd.org

Resources, Publications & Presentations

Alaska Citizen Monitoring Portal - Pest Identification and Reporting Portal
https://www.uaf.edu/ces/ipm/cmp/ Since 2010, this online tool has allowed the public to be first responders and citizen scientists for the identification and location of pests in Alaska. UAF averages 100 insect & plant submissions annually.

Alaska Spruce Beetle Resource Webpage
http://www.alaskasprucebeetle.org/ Launched in 2018, this state resource is for one of the larger IPM areas of concern for forest pests in communities across Alaska. This website is maintained in cooperation with the UAF Cooperative Extension Service, USDA Forest Service, and the Alaska Division of Forestry.

Alaska IPM Facebook Page
https://www.facebook.com/Alaska.IPM/ Avg. 22 posts during a 12-month period, 312 followers

Alaska IPM Online Learning Modules
http://ces.open.uaf.edu Maintained annually for pesticide applicators and public.

Alaska Integrated Pest Management on YouTube (Outreach Videos)
Submitting Plant Samples for Identification
https://www.youtube.com/watch?v=9UEAW7ar3vo&t=40s (4 minutes, 75 views)
Prunus padus (Bird Cherry) and Prunus virginiana (Chokecherry) Invasion of Alaska.
https://www.youtube.com/watch?v=RJFipjCNkk8 (7 minutes, 331 views)

Alaska Weeds ID App
https://toolkit.climate.gov/tool/alaska-weeds-id-mobile-app
Created in 2015, updated in December 2017. A free mobile application for identification and reporting invasive weeds in Alaska. The app works for both IOS and Android devices. It includes an interactive key, and form to report sightings of potential invasive weeds or get identification help. The app development was done in partnership with the University of Georgia and others, with support of the Western Alaska Landscape Conservation Cooperative and funding from the U.S. Geological Survey and U.S. Fish and Wildlife Service.

Alaska's Invasive Plant Mini-Grants. Chantel Adelfio. Presentation at 2018 Alaska Invasive Species Workshop.

Challenges and successes with preventing and managing aquatic invasive species in Alaska. Aaron Martin. Presented at the 2019 Innovations in Invasive Species Management Conference in Coeur d'Alene, ID.

Choking Out the Chokecherry: Effective Basal Bark Treatments of Prunus Padas, An Invasive and Toxic Plant Invading the Boreal Forests of Alaska. Gino Graziano. Presentations at 2018 Alaska Invasive Species Workshop and 2019 Innovations in Invasive Species Management Conference in Coeur d'Alene, ID.

Early Detection, Still Responding; An Update on the Status and Challenges of Spotted Knapweed Management Efforts on the Turnagain Arm. Gino Graziano. Presentation at 2018 Alaska Invasive Species Workshop.

Elodea on the Kenai Peninsula: Why it's a big deal and what we're doing about it." John Morton. Presentation for the Soldotna Rotary Club.

Elodea plant species sees intriguing explosion. *Kenai Peninsula Clarion.* John Morton. October 2018. https://www.peninsulaclarion.com/sports/refuge-notebook-elodea-plant-species-sees-intriguing-explosion-2/

How to Succeed as a Cooperative Weed Management Area: History and Current Strategy of the Kenai CWMA. Janice Chumley. Presentation at 2018 Alaska Invasive Species Workshop.

Homer Soil and Water Conservation District Newsletter Articles. *"What is a Cooperative Weed Management Area?"* Katherine Schake. Spring 2019. https://www.homerswcd.org/newsletters/19%20Spring%20Newsletter%20final%20(1).pdf
"Have You Seen These Invasive Plants?" Katherine Schake. Fall 2019. https://www.homerswcd.org/newsletters/Fall_2019_Newsletter.pdf

Human dimensions of aquatic invasive species in Alaska: Lessons learned while integrating economics, management and biology to incentivize early detection and rapid response. Toby Schwoerer and John Morton. *Alaska: Economic, Environmental, and Social Issues*. Chapter 1. ISBN: 978-1-53613-437-7

Industry Appreciation Day: Outstanding Fish Habitat Conservation. John Morton received this award in 2018. Other individuals involved in the elodea management partnership were recognized in this article: https://www.peninsulaclarion.com/sports/refuge-notebook-elodea-partnership-recognized/

Integrated Pest Management Practices on the Kenai: Early Detection Rapid Response in Action. Betty Charnon, Janice Chumley and Jennifer Hester. Presentation at 2018 Alaska Invasive Species Workshop.

Integrated Pest Management Programs in Alaska and Future Opportunities. Casey Matney. Presentation at 2018 Alaska Invasive Species Workshop.

Introduction to the Kenai Peninsula CWMA. Katherine Schake. Presentation at 2019 Kenai Fish Habitat Partnership Science Symposium.

Invasive Plants along Kenai Peninsula Borough Roads. Maura Schumacher and Katherine Schake. Presentation in 2019 to KPB Roads Commission.

Invasive species (seemingly) everywhere you look. KDLL. The Kenai Conversation. John Morton, Jen Hester & Rob Massengill. https://www.kdll.org/post/kenai-conversation-invasive-species-seemingly-everywhere-you-look#stream/0

Invasive Plant Management in Kenai Fjords National Park: 2018 and 2019 Summary Reports. Geier, G. S., and C. L. Kriedeman. Invasive plant management in Kenai Fjords National Park: 2018 summary report. Natural Resource Report NPS/KEFJ/NRR—2019/1926. National Park Service, Fort Collins, Colorado. https://irma.nps.gov/DataStore/Reference/Profile/2260301

KBBI Radio Program: Coffee Table. Janice Chumley, Jennifer Hester & Matt Steffy. 2018. https://www.kbbi.org/post/coffee-table-july-

Keep Alaska Wild & Free from Invasive Plants! Katherine Schake and Kyra Wagner. Presentation in March 2019 at Seldovia Village Tribe Healthy Chatter Event.

Keep Alaska Wild & Free from Invasive Plants! Katherine Schake and Jennifer Hester. Presentation at 2019 Alaska State Parks Campground Host Training.

Kenai Peninsula CWMA Facebook Page
https://www.facebook.com/kpcwma/ 55 posts and 67 followers during 2019.

Managing Invasive Plants On Oil and Gas Fields Within the Kenai National Wildlife Refuge. Beth Sharp, Hilcorp. Presentation at 2018 Alaska Invasive Species Workshop.

The Nudge of a Worm: Invasive European Earthworms Change Alaskan Forests. Matthew L. Bowser. Presentation at 2018 Alaska Invasive Species Workshop.

Prunus Control in Alaska. Tim Stallard and Gino Graziano. Presentation at 2019 Alaska Invasive Species Workshop.

Reed Canarygrass – a Cautionary Tale. KDLL Radio, The Kenai Conversation. Marcus Mueller, Katherine Schake and Maura Schumacher. Recorded, not yet aired.

Responding rapidly to Elodea – the first freshwater invasive plant in Alaska. John Morton, Matt Bowser and Todd Eskelin. Presented at the 2018 Innovations in Invasive Species Management Conference in Nashville, TN.

The tension between managing invasives and translocating species to places they've never occurred before to facilitate climate adaption. John Morton. Presented at the 2019 Innovations in Invasive Species Management Conference in Coeur d'Alene, ID.

US Fish and Wildlife Service Alaska Regional Director's Excellence Award as an Outstanding Partner. Janice Chumley received this award in 2018.