



Integrated Invasive Species Management Strategy Focusing on Early Detection and Rapid Response for the Anchorage Cooperative Invasive Species Management Area

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I. Introduction

Invasive species are defined as non-native species whose introduction causes or is likely to cause economic or environmental harm or harm to human health ([Executive Order 13112](#) ([Section 1. Definitions](#))). Across the United States, invasive species have become a growing issue affecting all ecosystems. The State of Alaska's geographic isolation and relatively extreme climate have historically limited the arrival of invasive species. There is a growing number of invasive species present and spreading in the State, with many additional species likely to arrive in the future due to the worldwide effects of climate change. Invasive species threaten Alaska's natural resources by reducing biodiversity, decreasing food availability for wildlife, and affecting salmon habitat, among other concerns. Alaska has the opportunity to avoid many of the problems invasive species cause in the rest of the United States by preventing the arrival of new species and managing infestations of existing species.

Ideally, invasive plant and noxious weed management is based on a multifaceted approach to address the full scope of the problem in an area. More commonly, management is approached with a focus on treating specific infestations, guided by narrowly defined objectives that vary depending on land management and ownership. While treatment of specific invasive plants and sites is a critical component of an effective management strategy, assessing at a landscape level results in successful long-term solutions.

As the largest community and transportation hub in the state, the Municipality of Anchorage (MOA) has a high potential for invasive species introductions and the spread of existing species to remote areas across the state. In May 2019, the Anchorage Assembly adopted the 2019 Anchorage Climate Action Plan. This action plan highlights the negative impacts of invasive species on natural habitats for fish and wildlife and anticipates that a warmer climate would be more favorable to invasive species. The plan's *Objective 24* is to "Reduce the establishment and spread of invasive species (plants, insects, aquatics, wildlife) to make our urban forest more resilient to environmental change."

II. The ANC-CISMA

A cooperative invasive species management area uses a broad-scale, landscape approach that places specific species and treatment sites in context with the geographic distribution of invasive plants, susceptible habitats, and feasibility of management.

Guided by the philosophy that "invasive species do not respect land ownership and boundaries", the Anchorage Cooperative Invasive Species Management Area (ANC-CISMA) is a forum for land owners and managers to collaborate, coordinate, and share information in order to prevent the introduction and spread of harmful species and more effectively manage existing problematic species.

The ANC-CISMA is intended to bring together those responsible for invasive plant management within the region to develop common management objectives, set realistic management priorities, facilitate effective treatment, and coordinate efforts in logical geographic boundaries with similar land types, use patterns, and priority species.

The ANC-CISMA is composed of interested agencies, organizations, tribal entities, landowners, and other groups throughout the Municipality of Anchorage. Participants a signed cooperative agreement, referred to as the Memorandum of Understanding (MOU). The MOU was originally established in 2008 with the purpose of formally recognizing the organization and intention of the group. Though the ANC-CISMA does not have a current MOU, it continues to operate and pursue its original intention.

III. ANC-CISMA Goals and Strategies

This Integrated Invasive Species Management Strategic Plan was developed to coordinate resources dedicated to invasive plant control for a more effective and efficient approach to stewarding the lands in the Municipality of Anchorage. This section outlines the ANC-CISMA goals and strategies for managing invasive plant species. The ANC-CISMA members will create annual work plans that align with the management goals of both the agency or organization and the ANC-CISMA.

- A. Organizational Goal: Promote efficient and effective communication and coordination among pertinent organizations and the public.
 1. Strengthen ANC-CISMA by maintaining and growing active partnership.
 2. Utilize GIS resources to share, analyze, and display data and develop effective management strategies to meet ANC-CISMA goals.
 3. Document ANC-CISMA's approaches through this plan and supplementary documents, such as annual work plans and species-specific plans. Update this plan every 5 years.
- B. Education and Outreach Goal: Elevate awareness of invasive species within the ANC-CISMA boundary.
 1. Continue public education and outreach efforts to engage the public in preventing the introduction and spread of invasive species.
 2. Continue and expand efforts to prevent the introduction and spread of invasive species in operations by promoting the adoption of Best Management Practices (BMPs).
 3. Increase public understanding of Integrated Pest Management and of the factors considered when choosing to apply herbicides.
 4. Education and contact private property owners to encourage prevention and control of invasive plants, especially in areas with high conservation value.
- C. Monitoring and Research Goal: Know the extent of invasive species populations within the ANC-CISMA boundary sufficiently to guide management decisions and improve management methods.
 1. Inventory priority locations with known potential for introductions of new or priority species.

2. Facilitate research to expand invasive species management strategies through identifying needs and questions, developing and testing control protocols, and expanding field trials.
3. Employ both visual and systematic surveying to monitor post treatment effects and track effectiveness to guide future management efforts.
 - a. Simple: Personnel will conduct visual reconnaissance of the treated area after chemical application to determine the presence or absence of target plants, and/or desirable vegetation.
 - b. Systematic: Within selected infestations, sample plots will be established to document changes in target plant densities, and species composition and cover of desirable vegetation.

D. Management Goal: Implement this Integrated Invasive Species Management Plan to lessen threats from invasive plant species within the ANC-CISMA boundary. Integrated management systems and EDRR are explained in more detail in Appendix A.

1. Prevent and eradicate highly and extremely invasive species that are currently rare or not present in the Municipality of Anchorage (A list).
2. Use Early Detection and Rapid Response practices for A, B, or C list species in Chugach State Park and other highest priority areas.
3. Contain widespread, highly, and extremely invasive species within the urban areas to protect adjacent natural areas and prevent spread into wildlands (B list).
4. Suppress highly and extremely invasive species in suburban greenbelts and parks to slow their spread, promote ecological integrity, and reduce secondary impacts to community values such as public safety and sight distance along trails (B list).
5. Suppress highly and extremely invasive species along state, municipal, and local roads, and at airports and floatplane lakes, to slow spread toward natural areas and areas with no infestations (B list).

DI. Restoration Goal: Manage infestations in a way that promotes self-sustaining plant communities of non-invasive species, indigenous or not depending on land managers' goals.

1. Plan and adapt management techniques to promote the establishment of desired species. Use active restoration techniques if necessary to set the trajectory toward desired non-invasive plant communities.
2. Monitor and document the effectiveness of management techniques in producing the desired vegetation condition. Share both positive and negative results with fellow practitioners.
3. Control infestations in priority areas before they degrade native vegetation to the degree that active restoration is needed. If infestation has a modest canopy cover (50% or less) native species should be able to fill in without active restoration.

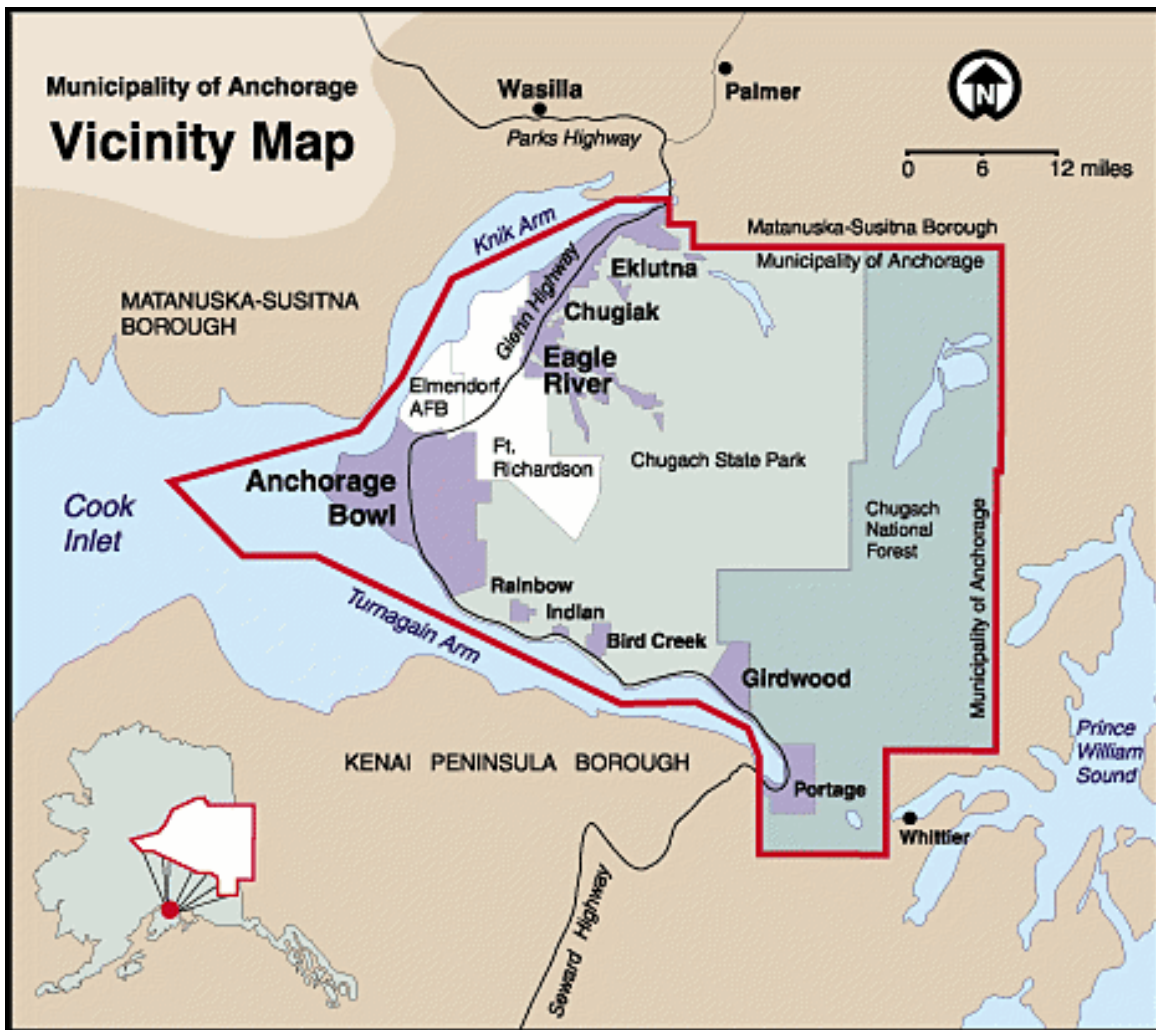
IV. ANC-CISMA Boundary and Units

A. Boundary

The ANC-CISMA boundary aligns with the Municipality of Anchorage. There are a wide variety of land managers, including Chugach State Park, United States Forest Service (USFS) Chugach National Forest, Joint Base Elmendorf-Richardson (JBER), Municipal Parks and Roads, State of Alaska Department of Transportation & Public Facilities (DOT&PF) roads and airports, Anchorage Coastal Wildlife Refuge (ACWR), private landowners, Bureau of Land Management (BLM) Campbell Tract, and several utilities.

Multiple partners of the ANC-CISMA have current Integrated Pest Management plans (IPMP), including JBER, USFS Chugach National Forest, and BLM Campbell Tract. Contact the agencies for more information.

This strategic plan applies voluntarily to land managers involved in the Municipality of Anchorage. It is designed to be a guiding document to align goals and strategies, and facilitate coordinated action.



B. Units

Interested CISMA partners met to identify lands where management of invasive plants is important and possible. The CISMA partners grouped these lands into units they estimated to have comparable conservation value and ability to manage. A unit might have value for its conservation or as a suburban buffer adjacent to land of high conservation value. These units are described in Table 1 and shown on Map 1. Note that boundaries between lands that are labeled important for invasive plant management must be drawn as a line on a map but, in practice, managers need to consider them as a broader transition. Note also that some of the land units include private property; these lands are considered in this plan so they can be prioritized for outreach and for providing technical assistance to owners who want to manage invasive species on their property.

A U.S. Fish and Wildlife Service staff member led interested ANC-CISMA partners through a workshop to prioritize these land units. The team used a modeling tool to rank areas for Early Detection and Rapid Response based on their conservation value, the risk of invasion, and the proximity to existing infestations, using available infestation data and their personal knowledge of the land units. The final report is available at [fws.ghttps://ecos.fws.gov/ServCat/Reference/Profile/164150ov](https://ecos.fws.gov/ServCat/Reference/Profile/164150ov)

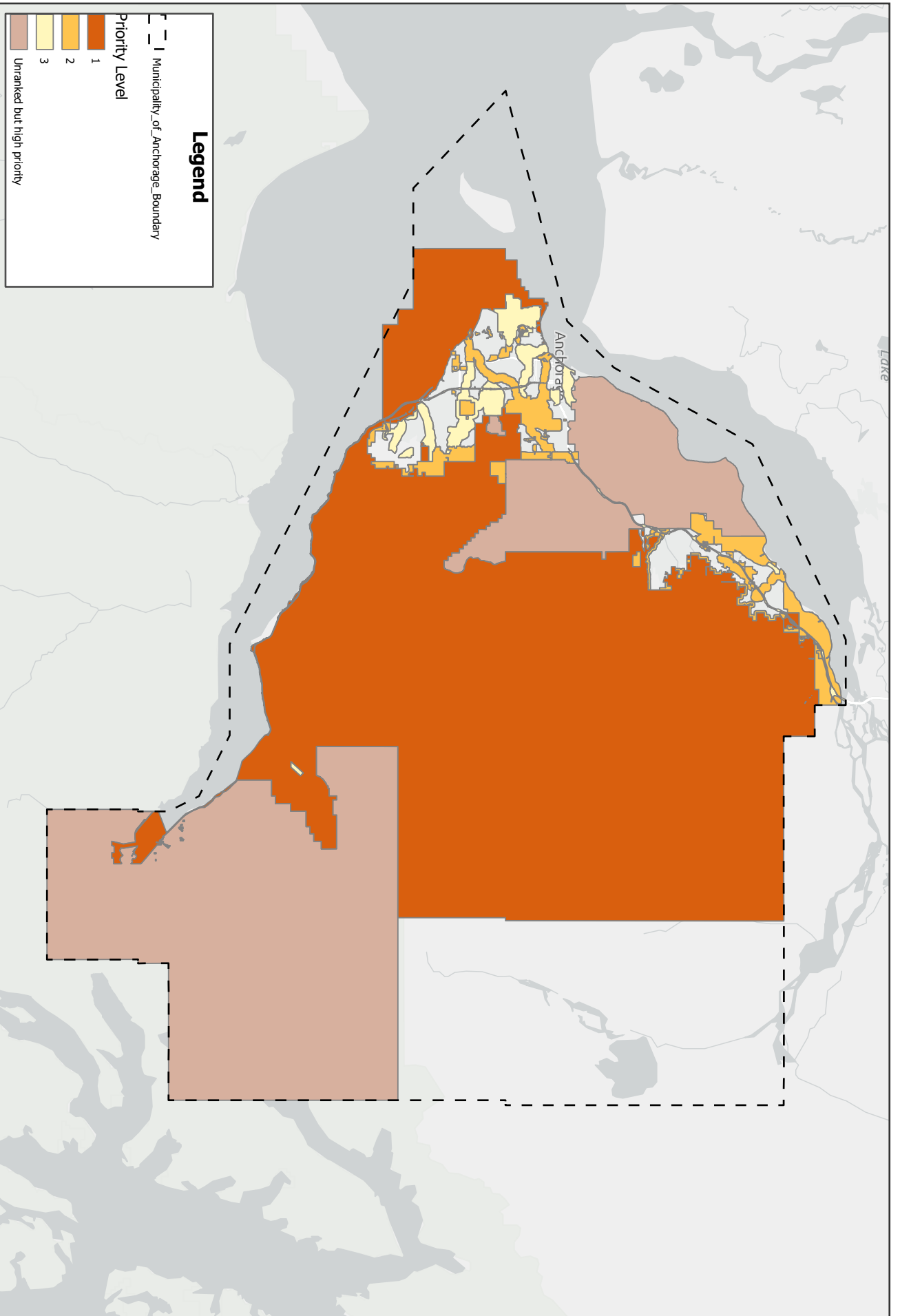
Species and areas were ranked using The Invasive Plant Inventory and Early Detection Prioritization Tool (IPPT) developed by the USFWS (U.S. Fish and Wildlife Service and Utah State University. 2021). The tool is available for download at <https://ecos.fws.gov/ServCat/Reference/Profile/140613>. The IPMP handbook is available for reference at <https://ecos.fws.gov/ServCat/DownloadFile/192142> (Block G and Others. 2022).

The units of Anchorage were created through multiple strategic meetings with partners and ranked by the ANC-CISMA through a prioritization process (see VII. C for more information on the prioritization process used). Rankings and areas are displayed in Table 1 and Map 1 below.

Table 1. ANC-CISMA Units, descriptions, and priority level. Colors correspond with Map 1.

Area	Description	Priority Level
Anchorage Coastal Wildlife Refuge (ACWR)	Encompasses a major wetland that protects waterfowl, shorebirds, salmon, and other fish and wildlife species and their habitat for public recreation use. This includes private and public lands adjacent to Anchorage Coastal Wildlife Refuge which can serve as a vector of spread of invasive species into critical wildlife habitat.	1
Chugach State Park (CSP)	A large protected natural area with important ecological and recreational value. There is limited access to the wilderness, with limited and easily identifiable vectors of invasion. Far North Bicentennial Park is included in this area.	1
Upper Turnagain Arm	Consists of Turnagain Arm southeast of Girdwood, including the Portage Valley and private lands. Seward Highway runs through this area and is a critical control point for the spread of invasive species to and from the Kenai Peninsula, Prince William Sound, and Chugach National Forest, which is not included in this area.	1

Large and Isolated Lands	Includes large and isolated natural parks, undeveloped MOA, private, and State land, and some privately owned lands adjacent.	2
Private and Public Lands bordering Chugach State Park	The private and public lands bordering Chugach State Park serve as major vectors of transmission of invasive species from urban areas into natural areas. These lands include access roads, peninsulas of land extending into CSP, Limited Road Service Areas, Municipality of Anchorage Parks, undeveloped private land, Girdwood, Bird, and Indian.	2
Wide Creek Corridors	Contains wide creek corridors with contiguous conservation-dedicated public land, plus contiguous undeveloped areas, including Chester Creek and Campbell Creek Greenbelts, Eagle River, and Peters Creek.	2
Floatplane and Powerboat lakes	Includes lakes where floatplanes, power boats, or other motorized vehicles are allowed and may serve as vectors of invasive species spread.	2
Narrow Creek Corridors	Consists of narrow creek corridors which are more urbanized and with incomplete greenbelts. These include Ship Creek, Little Survival Creek, Rabbit Creek, Little Campbell Creek, and Fish Creek.	3
Ted Stevens International and Small Airports	Small airports serve as vectors of spread from Anchorage to remote areas in Alaska. The international airport is extensive, under one manager, whose invasive species management may affect or be affected by how adjacent lands are managed.	3
Seward Highway	Consists of the Seward Highway south of Potter Marsh extending to Girdwood. Within the Municipality of Anchorage, much of the Seward Highway is within the Chugach State Park Boundary, serving as a vector of spread into natural areas.	3
Glenn Highway	Consists of the Glenn Highway from Muldoon Road to the Knik River/MOA boundary. The Glenn Highway passes through more developed areas and connects to other ROWs that serve as vectors to Chugach State Park such as Eagle River Road, Hiland Road, and Eklutna Road corridors.	3
JBER		Unranked
Chugach National Forest (CNF)		Unranked



Anchorage Cooperative Invasive Species Management Area (CISMA) Prioritized Areas

Kenai Peninsula Borough, Matanuska-Susitna Borough, GIS, Municipality of Anchorage, State of Alaska, Esri, TomTom, Garmin, SafeGraph, FAO, MET/NASA, USGS, EPA, NPS, USFWS



Map 1: ANC-CISMA prioritized areas ranked from highest to lowest priority.

V. Species Classification, Species Prioritization, and Management Actions

A. Invasive and Noxious Weed Classification

- a. The State of Alaska Prohibited and Restricted Noxious Weeds List (11 AAC 34.020.) identifies 14 prohibited and 9 restricted noxious weeds, though there are more species of concern in the ANC-CISMA area that are not included.
- b. Alaska Center for Conservation Science (ACCS) created The Invasive Plant Ranking System for Alaska to recognize the level of threat posed by different non-native plants (2008 Carlson et al). Under this system, plants are ranked by a panel of biologists on a scale of 0-100 based on their biology, potential environmental impacts, habitats they can invade, number of regions of Alaska where they can grow, and feasibility of control. The information to compile these ranks comes from extensive reviews of the scientific literature about what is known about these species from around the world, typically before we have had a chance to see what these species will do in Alaska.

Alaska Invasive Plant Ranking system rankings:

- | | |
|--|---|
| 1. 80 or higher - “Extremely invasive” | 4. 50-59 – “Modestly invasive” |
| 2. 70-79 – “Highly invasive” | 5. 40-49 – “Weakly invasive” |
| 3. 60-69 – “Moderately invasive” | 6. 39 or lower – “Very Weakly invasive” |

B. ANC-CISMA Invasive Species Management Prioritization:

ANC-CISMA partners met in late 2022 to create species lists using AKEPIC data, previous studies and surveys, local knowledge, and legal regulations. Species are listed in Table 2.

- i. Primary Concern (A List):
Non-native species that are considered invasive, have a limited distribution in the Municipality of Anchorage and have an Invasiveness rank of >60.
- ii. Secondary Concern (B list):
Non-native plant species that are considered invasive and relatively widespread and established in the Municipality of Anchorage and have an Invasiveness rank of >60.
- iii. Tolerate (C List):
Non-native plant species that are widespread in the Municipality of Anchorage and the State of Alaska.
- iv. Watch (W list):
Non-native species that are considered invasive, are not currently observed in the Municipality of Anchorage and have an Invasiveness rank of >60, and non-native plant species of unknown invasiveness have limited distribution in the Municipality of Anchorage

**Table 2: ANC-CISMA INVASIVE AND NOXIOUS WEED SPECIES CLASSIFICATION
(UPDATED December 2023) ¹AKNHP Invasiveness Ranking included**

Note: Table 1 is not an all-inclusive list of invasive species, potentially invasive, and established invasive species within the ANC-CISMA geography. Rather, this list reflects partner priorities for treatment actions and awareness at this point in time.

Primary Concern (A list)	Secondary Concern (B list)	Tolerate (C list)	Watch (W list)
Knotweed Species (87) <i>Fallopia bohemicum</i> ; <i>F. japonica</i> ; <i>F. sachalinensis</i>	Reed canarygrass (83) <i>Phalaris aurundinacea</i>	Oxeye daisy (61) <i>Leucanthemum vulgare</i>	Ornamental jewelweed (82) <i>Impatiens glandulifera</i>
Elodea spp. (79) <i>canadensis</i> , <i>nuttallii</i>	European bird cherry & Chokecherry (74) <i>Prunus padus</i> & <i>P. virginiana</i>	European mountain ash (59) <i>Sorbus aucuparia</i>	Eurasian water-milfoil (90) <i>Myriophyllum spicatum</i>
Purple loosestrife* (84) <i>Lythrum salicaria</i>	White & Yellow Sweetclover (81) <i>Melilotus alba</i> & <i>officinalis</i>	Amur chokecherry (45) <i>Prunus maackii</i>	Smooth Cordgrass (86) <i>Spartina alterniflora</i>
Meadow hawkweed (79) <i>Hieracium caespitosumpepp</i>	Orange hawkweed* (79) <i>Hieracium auranticum</i>	Butter and eggs* (69) <i>Linaria vulgaris</i>	American white waterlily (80) <i>Nymphaea odorata</i> ssp. <i>Odorata</i>
Spotted knapweed (86)* <i>Centaurea stoebe</i> ssp. <i>micranthos</i>	Creeping buttercup (72) <i>Ranunculus repens</i>		Broadleaved pepperweed* (71) <i>Lepidium latifolium</i>
Creeping thistle* (76) <i>Cirsium arvense</i>	Bird vetch* (73) <i>Vicia cracca</i>		Garlic mustard (70) <i>Alliaria petiolata</i>
Perennial & Moist sowthistle* (73) <i>Sonchus arvensis</i> ; <i>Sonchus arvensis</i> ssp. <i>Uliginosus</i>	Common tansy (60) <i>Tanacetum vulgare</i>		Tansy ragwort (63) <i>Senecio jacobaea</i>
Cheatgrass (78) <i>Bromus tectorum</i>	Siberian peashrub (74) <i>Caragana arborescens</i>		False spirea (Unranked) <i>Sorbaria sobifolia</i>
Bull thistle (61) <i>Cirsium vulgare</i>	Tall buttercup (60) <i>Ranunculus acris</i>		Leafy spurge (84) <i>Euphorbia esula</i>
Crownvetch (68) <i>Coronilla varia</i> (aka <i>Securigera varia</i>)	Rampion bellflower (64) <i>Campanula rapunculoides</i>		Scotchbroom (69) <i>Cystis scoparius</i>
			Mouse ear hawkweed (63) <i>Hieracium pilosella</i>
			Taratain honeysuckle (69) <i>Lonicera tatarica</i>

*Currently listed as a prohibited or restricted noxious weed by Alaska State Statute (11AAC 34.020)

¹AKNHP Ranking is an Alaska-specific invasiveness ranking (a high rank indicates greater invasiveness) provided by the Alaska Natural Heritage Program. Current ranking and methodology available at: https://accs.uaa.alaska.edu/wp-content/uploads/Invasiveness_Ranking_System_for_Non-Native_Plants_Alaska.pdf

C. Management Actions

ANC-CISMA determined management actions for each species based on the location priority (Table 1) where the species occurs as well as the species priority (Table 3). For example, the decision to treat an A List (primary concern) plant such as spotted knapweed would land at Early Detection and Rapid Response anywhere the plant is found in the Anchorage Bowl (Table 3). B List (secondary concern) plants, on the other hand, would fall into the Early Detection and Rapid Response management action only in the Priority 1 landscapes, whereas Priority 2 landscapes would fall into the control and contain management action shown in Table 3.

Table 3: Prioritization matrix of management actions by species list and priority area.

		Area Priority Level		
		1	2	3
Species Priority List	A	EDRR	EDRR	EDRR
	B	EDRR	EDRR Control and contain	Control and contain
	C	Control and contain	Tolerate	Tolerate
	W	Monitor	Monitor	Monitor

Definitions:

- EDRR: Early Detection and Rapid Response, eradication
- Control and contain: Prevent the spread outside the ANC-CISMA boundary and into critical habitats within the boundary.
- Tolerate: Establish thresholds for control action, monitoring when feasible, control when practical to reach desired site conditions.
- Monitor: Monitor for new species that are not present in Anchorage, for species already present in Anchorage, continue monitoring if populations begin to spread aggressively or show increased invasiveness.

VI. Invasive Plants Currently Recorded in Anchorage Cooperative Invasive Species Management Area

Anchorage presents a unique Alaska environment for invasive species inventory, monitoring, and study. It has vast connected green belts and large public lands. These areas intersecting with the urban interface supply constant propagule pressure and have created interest in conducting impact studies, surveys for new species in the area, and ongoing passive and informal surveys for spreading species. Here we will summarize significant surveys and scientific studies with data in the AKEPIC dataset.

The first formal surveys were conducted by David Roon for *Prunus padus* on the stream edges of Campbell and Chester Creeks. Roon's survey efforts were part of a study of impacts on salmonid food webs and was published in Roon et al. 2016. Other formal surveys have been conducted by the Alaska Center for Conservation Science (ACCS), formally known as the Alaska Natural Heritage Program. The ACCS surveys were conducted for all non-native and invasive species along the 4 major trails through Anchorage parks (Cortes-Burns and Flagstad 2009), in the Campbell tract managed by the BLM (Flagstad et al. 2009), and along all the major roads (Klein et al 2012). Since these surveys were conducted there have been many informal surveys of trails, trailheads, lakes for Elodea, and passive efforts by citizens and weed scientists. There is also an ongoing surveillance program to trap the invasive spongy moth by the University of Alaska Fairbanks Cooperative Extension Service (UAF CES) in cooperation with the Alaska Division of Agriculture and the US Department of Agriculture (USDA) Plant Health Inspection Service. Even though the most formal surveys for invasive plants are more than 12 years old, there is fairly good data on invasive plant presence. Still, more information and new detections can be gained from new surveys, and continued surveys for other invasive species are necessary.

Existing survey results and other non-native plant records are currently available through the Alaska Exotic Plant Inventory Clearinghouse (AKEPIC) database at <https://accs.uaa.alaska.edu/invasive-species/non-native-plants/>.

“Invasive species” are defined as non-native to the ecosystem under consideration and whose introduction is likely to cause economic or environmental harm or harm to human health (USDA Executive Order 13112). A list of full list non-native plants recorded in the ANC-CISMA shown in Appendix B was created from non-native plant species listed for Alaska (AKEPIC, 2005 & 2019), and includes those ranked on the Alaska Invasiveness Scale (AK Invasiveness Ranking System, 2019). A few species were also included because of their biology, status as a noxious weed elsewhere, or their potential to spread in habitats common in Anchorage. The purpose of the invasive plant list in Appendix B, and the intent of this plan, is to narrow the list of species for coordinated management to those that are considered highly invasive (Table 1) and of limited distribution. This is meant to be a living document, to be updated every 5 years. A comprehensive list of non-native species recorded in Alaska is available on the AKEPIC website (<https://aknhp.uaa.alaska.edu/apps/akepic/>).

VII. References

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VIII. Appendices

Appendix A.

Integrated Management System Prioritizing Early Detection and Rapid Response

Integrated weed management "... is a system for the planning and implementation of selected methods of management for preventing, containing, or controlling undesirable plant species or group of species using all available strategies and techniques" (Federal Noxious Weed Act, 1974.) Together these strategies and techniques are economically and environmentally more effective than any single option. Control methods are available and prescribed on a species or infestation basis.

The goal of early detection and rapid response (EDRR) is to locate incipient populations of invasive plants and eradicate them before they begin to spread. This approach, as defined by the National Invasive Species Council (2003), is the most effective means for eradicating invasive species and is intended to be the keystone of invasive plant management within the ANC-CISMA. The ANC-CISMA will work with relevant agencies, organizations, tribal landowners, and other groups throughout the Municipality of Anchorage to gain permission to respond to newly arrived species quickly, identifying if an EDRR approach is needed depending on invasiveness, and treating them if necessary. The integrated management tools listed below encompass EDRR as well as preventing the introduction, spread, and controlling existing invasive plants in general.

Integrated management strategies described in this plan consist of: A. Prevention and Education, B. Inventory, C. Treatment Methods, D. Monitoring, and E. Revegetation & Restoration.

A. Prevention and Education

Prevention measures are practices that reduce the potential for the introduction, establishment, and spread of weeds. Prevention is the most cost-effective and successful way to manage noxious weeds. It is considered a high priority for strategic planning.

The best ways to promote prevention are:

- 1) Institutionally – by adopting Best Management Practices - BMPs (hygiene and construction practices) such as cleaning equipment, using weed-free topsoil and seed.
- 2) Regulatory – by outlawing the sale or movement of harmful species (e.g., Noxious listing for plants that outlaws their sale).
- 3) Outreach – by educating landowners on harmful species to avoid planting and adopt hygiene practices such as "Play, Clean, Go" or "Clean, Drain, Dry" with their boats and waders to avoid spreading aquatic invasive species between water bodies.

Education efforts for the ANC-CISMA will focus on new and potential invaders to improve awareness of these species and facilitate public reporting of early infestations as part of an early detection and rapid response network.

B. Inventory

The collection, documentation, and storage of information (i.e. inventory) of the extent and location of invasive weeds within the ANC-CISMA are a critical part of integrated management. A current inventory of weed species provides necessary information for establishing site-specific and regional priorities, and management objectives, and for prescribing treatment methods.

C. Treatment Methods

The following IPM techniques for weed control will be considered on a site-specific and species-specific basis: Prevention, Manual/Mechanical, Cultural, and Chemical. Biological control is not expected to be a treatment option in the near future for the ANC-CISMA.

Invasive species tend to be challenging to kill and control by any method. Even the most effective methods often need to be timed carefully and correctly implemented to maximize effectiveness. For all control methods, the off-target impacts need to be considered. Regional and landowner-specific goals and objectives should be considered and discussed as plans for control are developed.

D. Monitoring

Monitoring of the site for several years following treatment is essential if eradication is the goal for the site. A species is considered to be locally eradicated when the seed bank, based on persistence reported in scientific literature, has been extinguished. Persistent species will likely take five or more years of follow-up control and monitoring.

Cooperators are interested in the effectiveness of prescribed actions on the target plant and the response of desirable vegetation. Monitoring will help determine if treatments and management activities are accomplishing the goals and objectives established by ANC-CISMA partners.

E. Revegetation & Restoration

Each treatment site should be evaluated for revegetation potential before treatment. Is revegetation necessary and what prescription best suits the habitat and management conditions? If revegetation is desired, develop a plan for implementation as appropriate ([NPS 2018](#)). Revegetation can be necessary not only for erosion control but also used as a tool to reduce the likelihood of invasive plants reinvading newly opened areas.

APPENDIX B. NON-NATIVE PLANT SPECIES RECORDED IN ANCHORAGE with Alaska invasiveness ranking and/or noxious weed rating (UPDATED JANUARY 2024)

Invasive plants in Alaska are ranked by local ecologists on an invasiveness scale of 0—100. Invasiveness ranks take into account a species’ ecological impacts, biological characteristics (ability to reproduce and spread), and the feasibility of control. This system is described in the Invasiveness Ranking System for Non-Native Plants of Alaska (Carlson et al. 2008).

How invasive is a plant on the list? Ranks of:

- **80 or higher** are considered “Extremely invasive”
- **70---79** – “Highly invasive”
- **60---69** – “Moderately invasive”
- **50---59** – “Modestly invasive”
- **40---49** – “Weakly invasive”
- **39 or lower** – “Very Weakly Invasive”

According to the Invasiveness Ranking System for Non-Native Plants of Alaska, species ranked 70 and higher are considered to be very threatening to Alaska. Species ranked 50-69 also pose significant risks to Alaska’s ecosystems. Species ranked below 50 are not thought to significantly alter ecosystem processes and plant communities. Only those non-native plants that have been ranked in Alaska or with a noxious weed designation are included in the table below.

USDA Code	Scientific Name	Noxious Weed ¹	AK Noxious Weed ²	Common Name	AKNHP Ranking ³
ACPT	<i>Achillea ptarmica</i> L.			sneezeweed	46
ALGE2	<i>Alopecurus geniculatus</i> L.			water foxtail	49
ALPR3	<i>Alopecurus pratensis</i> L.			meadow foxtail	52
AMRE	<i>Amaranthus retroflexus</i> L.	✓		redroot amaranth	45
ANCO2	<i>Anthemis cotula</i> L.	✓		stinking chamomile	41
ARMI2	<i>Arctium minus</i> Bernh.	✓		common burdock	49
BEIN2	<i>Berteroa incana</i> (L.)	✓		hoary alyssum	Not Ranked
BRHO2	<i>Bromus hordeaceus</i> L.			soft brome	62
BRNA	<i>Brassica napus</i> L.	✓		rape	47
BRRA	<i>Brassica rapa</i> L.	✓		field mustard	50
BRTE	<i>Bromus tectorum</i> L.	✓		cheatgrass	78
CAAR18	<i>Caragana arborescens</i> Lam.			Siberian peashrub	74
CABU2	<i>Capsella bursa-pastoris</i> (L.)	✓		shepherd's purse	40
CARA	<i>Campanula rapunculoides</i> L.			rampion bellflower	64
CEFOV2	<i>Cerastium fontanum</i> Baumg. ssp. <i>Vulgare</i>	✓		big chickweed	36
CEGL2	<i>Cerastium glomeratum</i>	✓		sticky chickweed	36
CEMO	<i>Centaurea montana</i> L.			perennial cornflower	46
CEST8	<i>Centaurea stoebe</i> L.	✓		spotted knapweed	86
CHAL7	<i>Chenopodium album</i> L.	✓		lambsquarters	37
CIAR4	<i>Cirsium arvense</i> (L.)	✓	✓	Canada thistle	76
CIVU	<i>Cirsium vulgare</i> (Savi)	✓		bull thistle	61
CLTA2	<i>Clematis tangutica</i>	✓		golden tiara clematis	Not Ranked
COCA5	<i>Conyza canadensis</i> (L.)	✓		Canadian horseweed	Not Ranked
COMA2	<i>Conium maculatum</i> L.	✓		poison hemlock	Not Ranked
COSI82	<i>Cotoneaster simonsii</i>			Simons' cotoneaster	42
CRTE3	<i>Crepis tectorum</i> L.	✓		narrowleaf hawksbeard	56
DAGL	<i>Dactylis glomerata</i> L.			orchardgrass	53

DESO2	<i>Descurainia sophia</i> (L.)	✓		herb sophia	41
ELODE	<i>Elodea</i> Michx. sp.	✓		waterweed	79
ELRE4	<i>Elymus repens</i> (L.)	✓	✓	quackgrass	59
ELSI	<i>Elymus sibiricus</i> L.			Siberian wildrye	53
EUNE3	<i>Euphrasia nemorosa</i>			common eyebright	42
FACO	<i>Fallopia convolvulus</i> (L.)			black bindweed	50
GABI3	<i>Galeopsis bifida</i> Boenn.			splitlip hempnettle	50
GATE2	<i>Galeopsis tetrahit</i> L.		✓	brittlestem hempnettle	50
HEMA3	<i>Hesperis matronalis</i> L.	✓		dames rocket	41
HIAU	<i>Hieracium aurantiacum</i> L.	✓	✓	orange hawkweed	79
HICA10	<i>Hieracium caespitosum</i>	✓		meadow hawkweed	79
HIPI2	<i>Hieracium piloselloides</i>	✓		tall hawkweed	Not Ranked
HIUM	<i>Hieracium umbellatum</i> L.			narrowleaf hawkweed	51
HOJU	<i>Hordeum jubatum</i> L.			foxtail barley	63
HOVU	<i>Hordeum vulgare</i> L.			common barley	39
HYPE	<i>Hypericum perforatum</i> L.	✓		St. Johnswort	52
HYRA3	<i>Hypochaeris radicata</i> L.	✓		hairy cat's ear	44
IMGL	<i>Impatiens glandulifera</i>	✓		ornamental jewelweed	82
LAAL	<i>Lamium album</i> L.			white deadnettle	40
LASQ	<i>Lappula squarrosa</i> .	✓	✓	European stickseed	44
LEAU2	<i>Leontodon autumnalis</i> L.			fall dandelion	51
LEDE	<i>Lepidium densiflorum</i>			common pepperweed	25
LELA2	<i>Lepidium latifolium</i> L.	✓	✓	broadleaved pepperweed	71
LEVU	<i>Leucanthemum vulgare</i>	✓		oxeye daisy	61
LIVU2	<i>Linaria vulgaris</i>	✓	✓	butter and eggs	69
LOCO6	<i>Lotus corniculatus</i> L.			bird's-foot trefoil	65
LOMU	<i>Lolium multiflorum</i>			Italian ryegrass	41
LOPE	<i>Lolium perenne</i> L.			perennial ryegrass	52
LUPOP2	<i>Lupinus polyphyllus</i> Lindl. ssp. polyphyllus			bigleaf lupine	71
LYSA2	<i>Lythrum salicaria</i> L.		✓	purple loosestrife	84
MADI6	<i>Matricaria discoidea</i>			pineappleweed	32
MEAL2	<i>Melilotus albus</i>	✓		white sweetclover	81
MELU	<i>Medicago lupulina</i> L.			black medick	48
MEOF	<i>Melilotus officinalis</i> (L.)			yellow sweetclover	69
MESAF	<i>Medicago sativa</i> L. ssp. falcata (L.)			yellow alfalfa	64
MESAS	<i>Medicago sativa</i> L. ssp. sativa			alfalfa	59
MYSC	<i>Myosotis scorpioides</i> L.	✓		true forget-me-not	54
NYODO	<i>Nymphaea odorata</i> ssp. odorata	✓		American white waterlily	80
PACR80	<i>Papaver croceum</i> Ledeb.			Iceland poppy	39
PELA22	<i>Persicaria lapathifolia</i> (L.)	✓		pale smartweed	47
PEMA24	<i>Persicaria maculosa</i>	✓		spotted ladythumb	47
PHAR3	<i>Phalaris arundinacea</i> L. (cultivar)			reed canarygrass	83
PHPR3	<i>Phleum pratense</i> L.			timothy	54
PLMA2	<i>Plantago major</i> L.		✓	common plantain	44
POAN	<i>Poa annua</i> L.		✓	annual bluegrass	46
POAV	<i>Polygonum aviculare</i> L.	✓		prostrate knotweed	45
POBO10	<i>Fallopia xbohemica</i>			Bohemian knotweed	87

POCO	<i>Poa compressa</i> L.	✓		Canada bluegrass	39
POPR	<i>Poa pratensis</i> L. ssp. <i>irrigata</i> or <i>Poa pratensis</i> L. ssp. <i>Pratensis</i>			spreading bluegrass or Kentucky bluegrass	52
PRMA9	<i>Prunus maackii</i> Rupr.			Amur chokecherry	45
PRPA5	<i>Prunus padus</i> L.			European bird cherry	74
PRVI	<i>Prunus virginiana</i> L.			chokecherry	74
RAAC3	<i>Ranunculus acris</i> L.	✓		tall buttercup	60
RARE3	<i>Ranunculus repens</i> L.	✓		creeping buttercup	72
RORU	<i>Rosa rugosa</i>	✓		rugosa rose	72
RUAC3	<i>Rumex acetosella</i> L.	✓		common sheep sorrel	51
RUCR	<i>Rumex crispus</i> L.	✓		curly dock	48
RULO2	<i>Rumex longifolius</i> DC.	✓		dooryard dock	48
SAOF4	<i>Saponaria officinalis</i> L.	✓		bouncingbet	34
SEJA	<i>Senecio jacobaea</i> L.	✓		tansy ragwort	63
SESY	<i>Senecio sylvaticus</i> L.			woodland ragwort	41
SEVA4	<i>Securigera varia</i> (L.)			crownvetch	68
SEVU	<i>Senecio vulgaris</i> L.	✓		old-man-in-the-Spring	36
SILA21	<i>Silene latifolia</i>	✓		bladder campion	Not Ranked
SINO	<i>Silene noctiflora</i> L.	✓		nightflowering silene	42
SIVU	<i>Silene vulgaris</i>	✓		bladder campion	42
SOAR2	<i>Sonchus arvensis</i> L.	✓	✓	field sowthistle	73
SOARU	<i>Sonchus arvensis</i> L. ssp. <i>Uliginosus</i>	✓	✓	moist sowthistle	73
SOAS	<i>Sonchus asper</i> (L.)		✓	spiny sowthistle	46
SOAU	<i>Sorbus aucuparia</i> L.			European mountain ash	59
SOOL	<i>Sonchus oleraceus</i> L.	✓		common sowthistle	46
SPAR	<i>Spergula arvensis</i> L.			corn spurry	32
SPRU	<i>Spergularia rubra</i> (L.)			red sandspurry	34
STME2	<i>Stellaria media</i> (L.)			common chickweed	42
TAOF	<i>Taraxacum officinale</i>	✓		common dandelion	58
TAVU	<i>Tanacetum vulgare</i> L.	✓		common tansy	60
THAR5	<i>Thlaspi arvense</i> L.	✓		field pennycress	42
TRDU	<i>Tragopogon dubius</i>			yellow salsify	50
TRHY	<i>Trifolium hybridum</i> L.			alsike clover	57
TRIN11	<i>Tripleurospermum inodorum</i> (L.)	✓		scentless false mayweed	48
TRPR2	<i>Trifolium pratense</i> L.			red clover	53
TRRE3	<i>Trifolium repens</i> L.			white clover	59
VETH	<i>Verbascum thapsus</i> L.	✓		common mullein	52
VICRC	<i>Vicia cracca</i> L. ssp. <i>cracca</i>		✓	bird vetch	73
VITR	<i>Viola tricolor</i> L.			johnny jumpup	34

¹ **Noxious Weeds** – Species currently listed as noxious weeds by one or more states in the US (outside of Alaska) according to the USDA Plants Database at <http://plants.usda.gov>

² **AK Noxious Weeds** – Also currently listed as a noxious weed by Alaska State Statute (11 AAC 34.020)

³ **AKNHP Ranking** is an Alaska-specific invasiveness ranking (a high rank indicates greater invasiveness) provided by the Alaska Natural Heritage Program. Current ranking and methodology available at:

<http://aknhp.uaa.alaska.edu/botany/akepic/non-native-plant-species-list/#content>