

Alaska Invasive Species Partnership



Strategic Plan 2023 - 2028

Acknowledgements

This plan was developed collaboratively with engaged stakeholders of the Alaska invasive species community. Many agencies and organizations participated in identifying priorities for future invasive species work in Alaska. These parties engaged in setting goals, strategies, and action items for this Alaska Invasive Species Partnership (AKISP) Strategic Plan, in order to protect the unique environments, cultural practices, and economies of the state.

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Executive Summary

Alaska's 375 million acres of private and multiple-use public lands necessitates a commitment for collaboration amongst state and federal agencies, local boroughs/municipalities (including villages), tribal governments, and the public. Stewardship and management for sustainability of our aquatic and terrestrial resources requires leadership, partnership, and foresight. Invasive species remain one of the overlooked threats to Alaska's culturally treasured and economically important resources. Defined as non-native species whose introduction causes, or is likely to cause, economic or environmental harm or harm to human, animal, or plant health, invasive species cause significant economic losses and are considered the second most important threat to biodiversity after habitat loss worldwide. Fortunately, the lands and waters of Alaska support some of the world's most intact landscapes with healthy populations of native fish and wildlife. These functional landscapes and the native species they support are relied on for subsistence ways of life, recreational and commercial practices, and provide global benefit. However, negative impacts to ecologically and economically valuable resources are occurring and are expected to expand as introduction pathways and habitat suitability for invasive species increases.

The Alaska Invasive Species Partnership (AKISP) facilitates engagement and provides leadership on invasive species prevention and management to conserve the natural flora and fauna of Alaska at risk from invasive species. To identify gaps and align resources towards shared priorities, members of the AKISP developed the Alaska Invasive Species Strategic Plan (Plan) for implementation over the next five years. During the Fall of 2019, a consortium of more than forty partners that represent the diversity of the AKISP met to consider existing and future strategic needs for invasive species management in Alaska. Participants were grouped according to their expertise and/or preference. Each work group (marine, freshwater, terrestrial, and general) developed a list of strategies and actions to improve the ability for natural resource agencies, tribal entities, local organizations, researchers, and members of the public to address invasive species and protect the ecosystems and economies that make Alaska unique. The output from each work group has been categorized in the Plan according to typical classifications commonly used by state, federal, tribal, and non-governmental entities involved with invasive species planning and management.

The Plan has five categories: Policy and Resources; Outreach and Education; Prevention; Management; and Research and Technology. The strategies and actions defined under each category are intended to guide partnership member activities and collaboration at statewide, regional, and local levels across terrestrial, marine, and freshwater habitats. The AKISP Board of Directors will use this plan to inform development of annual work plans and promote collaboration amongst partners. Implementation of the strategies are the responsibility of the partnership as a whole through the actions of relevant affiliated entities. Like implementing effective integrated pest management plans, the Plan will be consulted annually, will inform the AKISP Work Plan, and will be updated every five years.

Alaska is in a strong position to prevent new introductions and the spread of existing invasive species by evaluating and promoting effective policies and early detection actions. Yet, a willingness to devise new approaches is essential to address the unique challenges posed by increased activity via human-mediated pathways into vast, remote, northern landscapes. Members of the AKISP recognize that no one entity has adequate capacity to address invasive species as a whole across the state. Even if one could, our neighboring jurisdictions compel us to operate under the same mission when focusing on invasive species threats. Synchrony in our efforts is essential to efficient use of resources for successful prevention, early detection, assessment, and response management.



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Alaska Invasive Species Partnership

Vision and Mission

Vision Statement

Alaska's diverse environmental, cultural, and economic resources are free from the impacts of invasive species.

Mission Statement

We provide statewide leadership to prevent, detect and manage invasive species in Alaska by facilitating and fostering invasive species awareness, knowledge and information sharing, and collaboration among diverse stakeholders.

Alaska Strategic Planning Goals/Objectives

State, federal, and tribal agencies work with local governmental and non-governmental entities, industry, and private stakeholders to establish guidance for prevention, detection, and response to invasive species throughout Alaska. The efforts identified within this plan stem from the base of knowledge established within corresponding plans developed individually or in collaboration among various agencies and stakeholders.

A series of stakeholder workshops and meetings provided guidance and input on how AKISP members can improve future invasive species work in Alaska. The planning team and workshop participants sought to produce a task-oriented, prioritized framework from which a collaborative, statewide multi-taxa invasive species Alaska Strategic Plan (Plan) could be developed.

The goals of this Plan are:

1. To foster improved collaboration among decision-makers, resource managers, scientists, and community members involved in natural resource and invasive species management.
2. Identify and propose ways to fill gaps in core categories of invasive species management: policy and resources; outreach and communication; prevention; management; research and technology.

Introduction

The patchwork of ownership of the 375 million acres of private and public lands and 6,640 miles of coastline composing Alaska necessitates a commitment to cooperation among all who have a stake in the management of the natural environment, the economy, and the rich cultural heritage of the state.

Invasive species do not respect jurisdictional boundaries, which is why state, federal, tribal, and local governmental entities and associations, conservation organizations, the business community, stakeholders, and the public must collaborate to address the threats invasive species pose to Alaska's culturally treasured and economically important resources. The sustainability of aquatic and terrestrial assets, (e.g., forests, fish and wildlife, water supplies, agriculture and wild foods, and other natural resources) requires stewardship, leadership, and partnership. Clearly, no agency alone has adequate capacity to address invasive species on a statewide, landscape scale. Even if one could, our neighboring jurisdictions compel us to operate collectively under the same mission. Thus, motivated by urgency, shared effort, and aspiration to achieve common goals, the AKISP developed this Strategic Plan. Synchrony in our efforts is essential to efficient use of resources for successful prevention, early detection, management, assessment, and response to existing and new invasions.

Cooperation among members of AKISP (2019–present) formerly known as the Alaska Committee for Noxious and Invasive Plant/Pest Management (CNIPM 2000–2018), and efforts of the Alaska Invasive Species Working Group (2007–2016) over the past twenty years has advanced policy, collective planning, and integration of invasive species considerations into management actions, and yet, gaps remain. The AKISP has made significant advancement in raising awareness about invasive species of concern, transmittal pathways, and reporting platforms. To increase reporting of known and/or suspected invasive species, AKISP's website promotes reporting tools hosted by members. Whether found during environmental surveys or observations from the public, the location and status of established invasive species populations informs management actions and furthers early detection efforts. AKISP members contribute data to platforms such as the Alaska Exotic Plants Information Clearinghouse (AKEPIC) and the Alaska Non-indigenous Aquatic Species Clearinghouse (AKNASC) to provide public access to this information. In part, these achievements were a motivation to prepare this plan. AKISP understands what is needed to protect Alaska resources from negative impacts from invasive species, and is poised to take action in the years ahead.

Goals, Strategies, and Evaluation Measures

AKISP identified five categories to frame goals, strategies, actions, and evaluation measures: Policy and Resources; Outreach and Education; Prevention; Management; and Research and Technology. The strategies and actions defined under each category are intended to guide Partnership member activities and collaboration at statewide, regional and local levels. Evaluation measures are included to track progress. A list of AKISP entities that were able to commit to the specific goals in the plan is provided in Appendix 1.

Planners envision this comprehensive document to be updated every five years to incorporate regular addendums to address emerging information, and to be utilized and adopted by invasive species practitioners, managers, and governing entities to promote cohesive progress.

Policy and Resources

Goal A: Ensure invasive species policies align among members of the AKISP

Strategies and Actions:

- A.1. Standardize terminology used in AKISP agreements and activities
- A.2. Inventory existing policies and mandates of the members of the AKISP
- A.3. Identify and catalog gaps in existing policies and laws (state, federal, tribal, and local)
- A.4. Identify stakeholders and interested parties to assist with closing gaps
- A.5. Propose and provide technical input for policies that address gaps, vector and pathway management, and prevention and management best practices
- A.6. Promote implementation and enforcement of existing policies
- A.7. Develop outreach materials for management and enforcement agencies that promote policies and enforcement actions
- A.8. Develop and seek standard classifications based on status of invasive and nonindigenous species
 - * Maintain lists of nonindigenous species by classification
 - * Review and update lists of classified species, as appropriate
 - * Standardize data collection and reporting among AKISP members

Evaluation Measures: Success based on singular or maintained completion of tasks

- » Report on existing policies and mandates of AKISP members which have a nexus to invasive species
- » Document in a white paper the policies pertaining to invasive species and define the gaps
- » Number of stakeholders identified to close gaps in policy and law
- » Number of revised policies adopted
- » Number of known violations resulting in punitive action
- » Number of outreach materials developed and disseminated
- » Number of regulatory classifications for nonindigenous species
- » Number of invasive species classified
- » Number of updated lists of classified species



Staff of the Metlakatla Indian Community placing Fukui traps to capture the invasive European green crab.

Policy and Resources

Goal B: Obtain adequate and sustainable funding to implement the AKISP strategic plan

Strategies and Actions:

- | | |
|--|--|
| B.1. Inventory and prioritize funding needs | B.3. Advocate for and obtain funding |
| B.2. Investigate and maintain an inventory of funding opportunities | * Establish early detection and rapid response fund |
| * Long-term sustainable funding for recurring and routine work | * Identify entities and stakeholders to acquire and manage funding |
| * Sustainable funding for short-term/one-time emergency response efforts | B.4. Identify key stakeholders and advocates to champion financial needs |



Creeping thistle growing along a roadside in Southeast Alaska.

Evaluation Measures:

- » Within the first year after approval of the Strategic Plan, prioritized projects have a defined budget and funding sources identified
- » The number of prioritized projects that have been funded
- » Budgets for prioritized projects lacking funding have been outlined for at least three collaborative projects
- » A shareable list of prioritized funding sources by project-type is developed and maintained annually
- » Number of identified stakeholders and advocates are engaged with supporting project funding
- » At least one fund for early detection and/or rapid response has been established
- » Number of proposals funded, and amount of funding obtained, particularly in relation to the number of proposals submitted

Policy and Resources

Goal C: Foster partner collaboration to improve invasive species management

Strategies and Actions:

- | | |
|--|---|
| C.1. Expand, maintain, and formalize partner collaboration | C.6. Conduct gap analyses of partner roles and responsibilities |
| C.2. Identify existing and potential partners and define their roles and responsibilities in a Memorandum of Understanding | C.7. Provide trainings and foster opportunities to encourage new partners to collaborate on invasive species actions |
| C.3. Inventory existing agreements established among members of the partnership | C.8. Create agreement templates to formalize partnership (e.g., Memorandum of Understanding, Memorandum of Agreement) to inspire action and prevent or reduce potential conflict (e.g., support CISMAs and CWMAs) |
| C.4. To maximize the capacity of partners, provide a platform to exchange/share information and resources | |
| C.5. Identify gaps in engagement in invasive species management and fill those gaps | |

Evaluation Measures:

- » The AKISP MOU has been revised and signed by individuals or organizations participating in the AKISP within one year of plan adoption
- » A list of agreements formalizing collaboration among members is available and shareable
- » An Alaska Invasive Species Workshop is held annually
- » AKISP maintains monthly membership meetings and an email group, and the number of participants is recorded and shareable
- » Annually, a list of points of contact for potential new partners is generated
- » Potential new partners are invited to join the AKISP listserv, monthly meetings, and annual workshops
- » The AKISP board and committees develop relationships with potential partners
- » An evaluation documenting partner Roles and Responsibilities that identifies gaps for achievement of effective invasive species management
- » Number of trainings, presentations, and meetings with new partners and interest groups highlighting opportunities for collaboration on invasive species management actions
- » Approved guidance and similar documentation developed and adopted by partners
- » Number of organizations/agencies/individuals meaningfully engaged
- » Number of templates available to partners who wish to formally engage in collaboration

Policy and Resources

Goal D: Support and align efforts with an Alaska Invasive Species Council

Strategies and Actions:

- D.1. Provide technical support to those involved in establishing an invasive species council, as well as members of the executive and legislative branches of government
- D.2. Provide support to an invasive species council as requested
- D.3. Advocate for securing funding for a council coordinator
- D.4. Define the role of AKISP in relation to an invasive species council
- D.5. Together with the invasive species council, define standards for coordination, collaboration, and communication amongst the invasive species council, AKISP, and other coordinating bodies, such as Cooperative Weed Management Areas (CWMA), Cooperative Invasive Species Management Areas (CISMA), Soil and Water Conservation Districts (SWCD) and Tribal Conservation Districts (TCD)

Evaluation Measures:

- » Number and type of technical support provided to the State of Alaska toward establishment of an invasive species council by calendar year
- » In the first year following establishment of an invasive species (IS) council, collaborate to define roles and responsibilities of the invasive species council and AKISP
- » Clear standards for coordination, collaboration and communication among invasive species management/coordination entities are established by informal or formal agreements



Treatments of reed canarygrass in the Chugach National Forest, Russian River Recreation Area

Policy and Resources

Goal E: Promote institutional capacity for invasive species stewardship

Strategies and Actions:

- E.1. Encourage and support governmental and non-governmental agencies, tribal, and local organizations to have a clearly identified invasive species coordinator, point of contact or team
- E.2. Fully staff and establish stable funding for invasive species positions
- E.3. Create opportunities for internships with IS coordinators
- E.4. Create opportunities for enrollment in education systems where programs or projects have an invasive species focus
- E.5. Promote early detection and rapid response (EDRR) coordination by establishing regional partnerships (e.g., CISMAs)
- E.6. Identify training needs of AKISP members and the public and provide opportunities to address those needs
- E.7. Garner engagement by rural and tribal environmental coordinators and communities

Evaluation Measures:

- » Number of resources agencies and organizations with dedicated invasive species point of contact or staff
- » Number of funded IS positions across partnership member entities
- » Number of under-funded or vacant IS positions within member entities
- » Number of new intern positions to work on invasive species
- » Number of students enrolled in invasive species projects or programs, at all levels
- » Number of active regional partnerships established statewide
- » An established list of training needs is maintained and shareable among partners
- » Number of trainings offered to close identified gaps
- » Number of rural and tribal coordinators and communities engaged in a calendar year



Minnow trapping juvenile salmonids to rescue them ahead of invasive northern pike eradication.

Outreach and Communication

Goal A: Stakeholders are informed about invasive species and inspired to take action

Strategies and Actions:

- | | |
|--|--|
| A.1. Update and maintain the AKISP website with the purpose of raising awareness by providing information and resources about invasive species and the AKISP | A.6. Distribute Best Management Practices (BMPs) promoting behavior changes for prevention to target audiences |
| A.2. Keep stakeholders informed about known invasive species populations and emerging issues | A.7. Identify outreach and communication needs for diverse audiences |
| A.3. Raise awareness about invasive species reporting tools using communication channels | A.8. Develop and disseminate culturally relevant and inclusive outreach materials |
| A.4. Promote participation with community-based and citizen science invasive species early detection monitoring programs | A.9. Inform AKISP members and non-members about public comment periods when invasive species are included in or affected by new or changing statutes, regulations, bills, or permit requirements |
| A.5. Update, adopt, implement, and maintain an approved AKISP communication plan | A.10. Develop a watch list of invasive species for Alaska |

Evaluation measures:

- » The AKISP website is maintained monthly to provide relevant invasive species content
- » AKEPIC and the AKNASC are maintained and easily accessible
- » The AKISP website and member media resources provide updated information about known invasive species populations, such as location and magnitude
- » The AKISP promotes use of reporting tools on their website and in outreach campaigns
- » Members maintain reporting tools and promote use to increase ease of reporting observations of suspect organisms
- » Annually collate number of reports across reporting platforms
- » The AKISP communication plan is updated and adopted by the board
 - * Number of tasks identified in the plan have been achieved
 - * Number of new relationships established with priority audiences identified in the updated communication plan



Partners work to dig up purple loosestrife from an Anchorage wetland.



Elodea was discovered in Badger Slough Fairbanks, 2010 after a guide to freshwater plants in Alaska was published.



Green crabs are a new invasive marine species in Alaska.

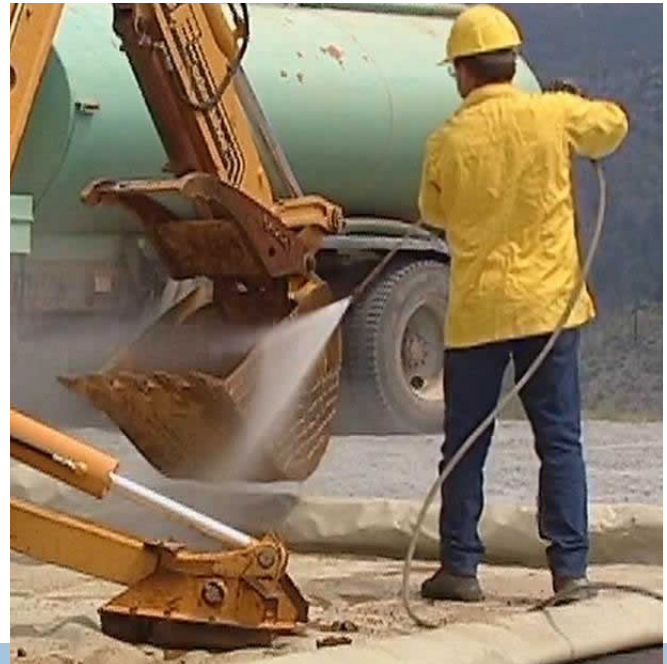
- » Number of audiences to receive BMPs
- » Number of outreach campaigns developed, adopted, and promoted
 - * Common messages, slogans, and icons are promoted in outreach campaigns
- » Number of materials prepared for and disseminated to identified audiences
- » Number of materials developed for non-English language speakers
- » A clearinghouse of outreach campaigns is developed and available to members
- » AKISP identifies invasive species on a Watch List
- » A number of outreach materials are developed to raise awareness about the species on the Watch List

Prevention

Goal A: Prevention and early detection of invasive species is improved by evaluation of pathways and vectors

Strategies and Actions:

- A.1. Utilize assessment tools to evaluate risk of invasive species introductions by pathway
- A.2. Develop standards for prioritizing locations important for preventing introduction and spread by species/pathway/vulnerability/presence
- A.3. Periodically update assessments evaluating the risk of invasive species introduction and spread



Cleaning equipment regularly to remove propagative parts of plants is an important best management practice.

Evaluation Measures:

- » Number of pathways evaluated for risk of invasive species introduction
- » Parameters are identified and clearly defined when prioritizing locations for invasive species prevention efforts
- » Pathway and vector risk assessments are updated on an agreed upon schedule
- » Number of assessment tools implemented to evaluate risk of introduction
- » Number of pathways and vectors with identified BMPs



Equipment can carry invasive plants from one place to another if they are not cleaned regularly.



Inspecting gravel pits for invasive plants is important to prevent spreading them to new areas during construction projects.

Prevention

Goal B: Invasive species introductions and spread are prevented by implementing best management practices

Strategies and Actions:

- | | |
|--|--|
| <ul style="list-style-type: none">B.1. Invasive species funding focuses on preventionB.2. Promote parity among member entities to enact prevention methods, such as use of BMPsB.3. Evaluate existing BMPs for invasive species prevention and gapsB.4. Develop and implement standardized BMPs for pathways and vectors to limit the introduction and spread of invasive species | <ul style="list-style-type: none">B.5. Conduct a gap analysis on use of BMPs in AlaskaB.6. Evaluate adoption of BMPs and other prevention programs and trainingsB.7. Create opportunities for standardized training programsB.8. Promote use of Hazard Analysis Critical Control Point (HACCP) planning as a BMP for projects |
|--|--|

Evaluation measures:

- » Number of prevention efforts funded annually
- » Complete an evaluation of prevention methods, including BMPs, used by member entities
- » List of pathway and vector BMPs is created and shareable
- » New BMPs created to fill gaps in partnership with IS experts
- » BMPs are disseminated to target stakeholders in conjunction with outreach campaigns
- » Use of BMPs analyzed to identify gaps in usage by member entities, target audiences, and stakeholders
- » Number of entities and audiences implementing BMPs identified
- » List the number and type of training programs established and trainings offered
- » Number of member projects which implement HACCP planning as a BMP



Revegetation of disturbed sites can provide competition for invasive species.

Management

Goal A: Increase participation in early detection monitoring and reporting of invasive species

Strategies and Actions:

- | | |
|--|--|
| A.1. Develop standards for early detection surveys for terrestrial, freshwater, and marine systems | A.8. Identify and catalog reporting portals/ platforms |
| A.2. Integrate early detection surveys into existing monitoring programs | A.9. Incentivize involvement in early detection and reporting |
| A.3. Develop new early detection monitoring programs where there are gaps | A.10. Ensure reports across all platforms are investigated |
| A.4. Develop trainings to inform AKISP members how to identify species for early detection | A.11. Analyze and expand reporting demographics |
| A.5. Identify taxonomic experts needed to identify species upon detection | A.12. Support, maintain, and improve web platforms and portals for GIS interface for tracking invasive species |
| A.6. Develop clear and transparent communication practices among entities receiving reports | A.13. Develop minimum standards for inventory and monitoring of known infestations across and within terrestrial, freshwater, and marine systems |
| A.7. Leverage existing outreach opportunities for increased reporting by the public | |

Evaluation Measures:

- » Early detection monitoring surveys comply with formal and informal standardized protocols
- » Number of programs monitoring environmental parameters that are also engaged in early detection monitoring for invasive species
- » Number of new early detection monitoring programs established by calendar year
- » Number of member entities offering training for early detection monitoring
- » Number of member entities attending trainings for early detection monitoring
- » List of contacts for experts in taxonomy created and shareable
- » Entities receiving reports of invasive species understand and utilize best communication practices
- » Catalog available reporting tools and make available to members and the public
- » List incentives by audiences for engagement in early detection monitoring programs
- » Annually consolidate and report number of IS reports received, verified, and nullified
- » Demographics of invasive species reporters described
- » Minimum standards for inventory and monitoring invasive species are available and disseminated to member entities

Management

Goal B: Encourage broad engagement in citizen science and community-based early detection monitoring

Strategies and Action Items

- B.1. Conduct an inventory and evaluate existing community-based and citizen science early detection monitoring programs and their target species to identify gaps
- B.2. Assess availability of resources for citizen science programs and address limitations of capacity
- B.3. Increase public awareness of community-based early detection monitoring and citizen science opportunities and reporting portals
- B.4. Develop and provide training modules and distribute guides to citizen scientists
- B.5. Ensure citizen science monitoring equipment is available for distribution



Youth involvement in early detection is a large part of invasive species management in Alaska. Here the Metlakatla Indian Community is preparing to deploy traps for the invasive European green crab.

Evaluation Measures:

- » List of citizen science programs by species has been developed and is shareable
- » List of community-based early detection programs by species created and shareable
- » Number of existing and new citizen scientist volunteers and community-based early detection monitors engaged in each program
- » List gaps in early detection monitoring programs
- » Number of new or enhanced community-based and citizen science programs
- » Report on assessment of citizen science programs
- » Communication channels, including the AKISP and member websites, provide information about citizen science and community-based monitoring opportunities and reporting tools
- » Number of trainings and training guides available or newly developed that have been disseminated through communication channels
- » Number of locations surveyed, and species detected by citizen science volunteers involved in early detection monitoring
- » Availability of early detection monitoring equipment disseminated through communication channels

Management

Goal C: Known invasive species populations are addressed

Strategies and Actions:

- C.1. Prioritize management of known invasive species populations
- C.2. Develop species-specific management plans for high priority species
- C.3. Share information on control practices
- C.4. Develop and maintain a list of priority management projects with budgets and/or proposals to respond to emerging funding opportunities



Staff of the Kenai Watershed forum preparing for invasive plant treatments in Portage, Alaska.

Evaluation Measures:

- » Number of invasive species prioritization efforts
- » Number of agencies and management areas with prioritized lists of invasive species
- » Number of species-specific management plans developed
- » Number of species-specific management plans implemented
- » Number of control practices utilized by partners disseminated among management entities
- » Number of state agencies with Integrated Pest Management (IPM) plans
- » A list of priority management projects with identified budgets that are ready when funding becomes available

Management

Goal D: Rapid response occurs when new invasions are identified

Strategies and Actions:

- D.1. Analyze and identify gaps in authorities and jurisdictions as they relate to response actions
- D.2. Inventory rapid response capacity available to partners
- D.3. Establish strategic stockpiles of expendable supplies
- D.4. Develop and implement response protocols when a new invasive species is detected or when a high value location becomes infested
- D.5. Standardize BMP protocols for rapid response
- D.6. Investigate implementing models, such as the Incident Command System, for rapid response
- D.7. Streamline permitting with state and federal agencies for rapid response
- D.8. Streamline response planning for state and federal regulatory requirements to expedite rapid response timing
- D.9. Improve planning among agencies to facilitate rapid response



Signal crayfish, established in the Buskin Watershed, Kodiak Island, prey upon salmon eggs and reduce biodiversity in shoreline habitat.

Evaluation Measures:

- » Roles and responsibilities of member entities clearly defined as they relate to response to invasive species
- » A list of response plans, communication plans, available equipment, and potential funding opportunities is available to all partners
- » A statewide working group is established to standardize BMPs for rapid response, eradication, control, and containment
- » Rapid response plans include response protocols
- » Number of rapid response events, collaborating entities, results of response, and improvements made at subsequent events
- » MOAs/MOUs are in place to facilitate rapid response among partners
- » Number of approved programmatic Environmental Assessments

Research and Technology

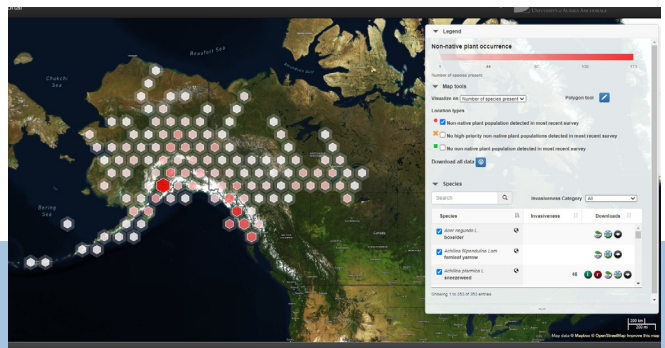
Goal A: Alaska invasive species data is available to the public via open access

Strategies and Actions:

- A.1. Maintain and enhance existing platforms for data sharing and user access
 - * Expand information clearinghouses to be able to query by taxa and jurisdictional boundary
 - * Standardize and enhance metadata subscriptions
- A.2. Increase data access for stakeholders
- A.3. Create or facilitate creation of new data platforms, as needed
- A.4. Develop and implement data standards for collection, import/export, sharing, storage, and query
- A.5. Expand information sharing capacity to include Integrated Pest Management plans and response plans; BMPs; and lessons learned from management actions



A northern pike. While native in other parts of Alaska, pike aren't native to Southcentral Alaska. Photo: ADF&G/Rob Massengill



The Alaska Exotic Plant Information Clearinghouse hosts a data portal for submissions of invasive plant locations in Alaska.

Evaluation Measures:

- » Annual reports describe the total number and the annual number of platform visits and usage, submissions, and downloaded reports for all data platforms
- » Existing portals are maintained annually, and data is uploaded at regular intervals
- » New platforms are funded, supported, and available to users
- » A working group develops standards for data collection, handling, sharing, and use
- » A clearinghouse of plans (e.g., IPM, rapid response, management) is available to users

Research and Technology

Goal B: Explore and endorse research and technology for invasive species knowledge building

Strategies and Actions:

- B.1. Catalog past and ongoing research projects
- B.2. Develop a database of known researchers/resource managers/experts by taxa and research program
- B.3. Create a list of research questions that need to be addressed
- B.4. Create and prioritize a list of desired research projects and estimated budgets
- B.5. Identify information gaps for current invasive species in Alaska
- B.6. Identify information gaps for high priority species of concern for Alaska's "Watch list"
- B.7. Identify existing funding mechanisms specifically for research on invasive species
- B.8. Conduct a network analysis of existing partnerships (including location and roles) to identify coverage and gaps



A member of the Alaska Invasive Plant Management Team sprays for sweetclover at the entrance of Denali National Park and Preserve. NPS Photo

Evaluation Measures:

- » A list of research projects categorized by past, ongoing, and needed is created and shareable
- » A database of researchers/research collaborators, resources managers, experts classified by topic, taxa and research program is created and shareable
- » A list of research ideas, projects, and gaps in information is created for species known to occur in Alaska and those on the Watch List has been created and is shareable
- » Forums held to discuss research needs and gaps
- » Increased research collaboration among partners

Research and Technology

Goal C: Prioritize research and technology needs

Strategies and Actions:

- C.1. Identify new technologies available for invasive species management
- C.2. Develop standards for use of new technologies
- C.3. Identify research that would be conducted if funds became available
- C.4. Identify means to increase capacity for research
- C.5. Provide resource support and communicate funding opportunities to partners for research addressing invasive species information gaps
- C.6. Invasion dynamics are studied to improve investment in prevention rather than post invasion management



Giant hogweed in Kake, Alaska is extremely tall and phytotoxic causing sensitivity to sunlight leading to burns.

Evaluation Measures:

- » Report on new technologies for invasive species management in use regionally, nationally, and internationally
- » A working group is formed to develop standard protocols for new technologies for invasive species management in Alaska
- » A working group is formed to develop standard protocols for new research on invasive species management in Alaska
- » Annual report of financial support provided, or funding gaps identified for invasive species research (e.g., USFWS/ADF&G's co-op unit graduate students)
- » Research on invasive species in Alaska is funded



The invasive colonial tunicate, *Didemnum vexillum* or Dvex, shown smothering native coralline algae and tube worms growing on an old jug retrieved from Whiting Harbor, Sitka.

Appendices

Appendix 1: Summary of Entities

The following tables indicate the Plan categories and primary goals with the entities that made informal commitments to help achieve strategies and actions related to the respective goal. The initial informal commitments were captured during the 2019 facilitated planning workshop and have been arranged to fit the goal that is most related. Entities had an additional opportunity to remove or add their name to the list prior to completion of the Plan (e.g., 2022 AKISP workshop work session). The list of entities represents those that were involved in the planning process at the time of development and offered resources to accomplish the goals, strategies, and action herein. The AKISP encourages all entities to work together to achieve this plan, regardless if the entity is listed under the various actions at the time of final printing.

Policy and Resources

Ensure invasive species policies align among members of the AKISP

- ADEC, ADF&G, ADNRR, APU, BLM, Invasive Species Control LLC, Anchorage and Homer SWCDs, NOAA, NPS, USCBP, USFS, USFWS

Obtain adequate and sustainable funding to implement the AKISP strategic plan

- APU, ADF&G, ADNRR, CIAA, Homer SWCD, KBNERR, NOAA, NPS, UAF cooperative Extension, USFS, USFWS

Partner collaboration improves invasive species management

- ADF&G, ADNRR, Anchorage/Homer/Fairbanks/Salcha-Delta SWCDs, KBNERR, NOAA, NPS, Sun'ag Tribe of Kodiak, TTCD, USFS State and Private Forestry, USFWS

Support and align efforts with an Alaska Invasive Species Council

- All

Promote institutional capacity for invasive species stewardship

- All, AKISP Board and Committees

Outreach and Communication

Stakeholders are informed about invasive species and inspired to take action

- ADEC, ADF&G, ADNRR, Alaska Sealife Center, BLM, CIAA, Kenai Watershed Forum, KBNERR, Anchorage/Homer/Fairbanks/Salcha-Delta SWCDs, NOAA, NPS, PWSRCAC, UAA/ACCS, UAA/ISER, UAF, USFS, USFWS

Prevention

Prevention and early detection of invasive species is improved by evaluation of pathways and vectors

- ADF&G, APU, NPS, SERC, UAA/ACCS, USGS, USFWS

New invasive species introductions are prevented by implementing best practices

- ADEC, ADF & G, BLM, NPS, Anchorage/Homer/Fairbanks/Salcha-Delta SWCDs, Sun'ag Tribe of Kodiak, TTCD, USFS, USFWS

Management

Increase participation in early detection monitoring and reporting of invasive species

- ADF&G, Anchorage/Homer/Fairbanks/Salcha-Delta SWCDs, NPS, SERC, USFWS

Encourage broad engagement in citizen science and community based early detection monitoring

- ADF&G, ADNR, Anchorage/Homer/Fairbanks/Salcha-Delta SWCDs, KBNERR, NOAA, NPS, UAF-CES, UAA/ACCS/UoG, USFWS

Known invasive species populations are addressed

- ADF&G, Anchorage/Homer/Fairbanks/Salcha-Delta SWCDs, KBNERR, NOAA, NIPS, Sun'aq Tribe of Kodiak, USFS State and Private Forestry, USFWS

Rapid response occurs when new invasions are identified

- ADEC, ADF&G, ADNR, Anchorage/Homer/Fairbanks/Salcha-Delta SWCDs, BLM, NIPS, Sun'aq Tribe of Kodiak, USFS State and Private Forestry, USFWS

Research and Technology

Alaska invasive species data is available to the public via open access

- ADEC, ADF&G, ADNR, BLM, Homer/Fairbanks/Salcha-Delta SWCDs, KBNERR, NOAA, NPS, SERC, UAA/ISER, UAA/ACCS, UAF-Co-operative Extension, USFWS

Explore and endorse research and technology for invasive species knowledge building

- ADF&G, ADNR, APU, NOAA/USFWS through ANSTF, NPS, UAA-SERC, UAA/ISER

Prioritize research and technology needs

- ADF&G, ADNR, BLM/NOAA, NPS, UAA/ISER, USFWS, USFS

Appendix 2: List of Definitions

Definitions are pulled from a variety of sources and agreed upon by the AKISP membership.

Advocate

To support or argue for (a cause, policy, etc.): to plead in favor of. This includes a broad range of activities from community and policy-maker relationship building, education, engagement, and outreach

Alaska Exotic Plant Information Clearinghouse

A database and mapping application that provides geospatial information for non-native plant species in Alaska and neighboring Canadian Territories

Best Practices

A method, technique, action, or behavior to be implemented by the public and/or target audiences that has been generally accepted as superior to other alternatives because it often produces results that are superior to those achieved by other means or because it has become a standard way of doing things (e.g., complying with legal or ethical requirements)

Best Management Practices

Practices and actions developed for landowners, industries, agencies/organizations, and the public as a standard, proactive approach to prevent the introduction and manage the spread of invasive species

Cooperative Invasive Species/Weed Management Area

A partnership of federal, state, and local government agencies, tribes, individuals, and various interested groups that manage invasive species/plants in a defined area

Citizen Science

The collection and analysis of data relating to the natural world by members of the public, typically as part of a collaborative project with professional scientists

Containment

Species are geographically contained and are not increasing beyond the perimeter of the infestation. Treatment within established infestations may be limited, but populations are controlled or eradicated outside those areas

Control

Eradicating, suppressing, reducing, or managing invasive species from areas where they are present and taking steps, such as the restoration of native species and habitats, to reduce the effects of invasive species and to prevent further invasions

Decontamination

A treatment that can involve a series of procedures to kill invasive species

Early Detection and Rapid Response

An approach to managing invasive species that was originally derived from the Federal Interagency Committee for the Management of Noxious and Exotic Weeds, consisting of 1) Detection and reporting; 2) Identification and vouchering; 3) Rapid assessment; 4) Planning; and 5) Rapid response to eradicate infestation

Ecosystem

The complex of a community of organisms and its environment

Eradication

When an invasive species is eliminated from the geographic area, including all viable offspring, seeds, and propagules

Geographical Information System

A system that creates, manages, analyzes, and maps all types of data

Hazard Analysis Critical Control

An internationally recognized systematic method of identifying and managing risk. Natural resource management activities are evaluated by describing the activity, identifying risks, and establishing points where actions are needed to prevent transmitting invasive species

Incident Command System

As defined by the National Incident Management System, refers to the combination of facilities, equipment, personnel, procedures, and communications operating within a common organizational structure designed to aid in the management of resources during incident response

Indigenous Species

Categorized as being a type of native species. Rather than being confined to a specific area, indigenous species tend to be more widely dispersed and adaptable. Because of the unique evolutionary processes they have undergone, indigenous plants and animals are considered to be strong enough to adjust to diverse surroundings and can spring back to life in areas in which they had previously disappeared. This re-population can be achieved either through natural means or by way of human intervention

Inspection

A careful and critical examination of something that could spread invasive species, such as equipment, vehicles, watercraft, goods, and materials

Introduction

The intentional or unintentional escape, release, dissemination, or placement of a species into an ecosystem as a result of human activity

Invasive Species

With regard to a particular ecosystem, a non-native organism whose introduction causes or is likely to cause economic or environmental harm, or harm to human, animal, or plant health. This is the amended federal definition of invasive species from Executive Order 13751

Integrated Pest Management

An ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, chemical control, manual control, and/or mechanical control

Metadata

Data that describes other data, providing a structured reference that helps to sort and identify attributes of the information it describes

Monitoring

To observe and check the changes in the status and demographics of resources, species, habitats, or ecological communities. Monitoring is also the collection of information to determine the effectiveness of management actions in meeting the prescribed objectives

Native Species

With respect to a particular ecosystem, a species that, other than as a result of an introduction, historically occurred or currently occurs in that ecosystem

Non-native Species

A species that originated somewhere other than its current location and has been introduced to an area where it now lives

Non-indigenous Species

An individual, group, or population of a species that is introduced into an area or ecosystem outside of its historic native geographic range. Synonymous with “alien,” “non-native,” “exotic,” and “introduced”

Non-indigenous Fish

Means a species of fish that is not native to the body of water in which the fish is released or intended to be released, according to Alaska Statute 16.35.210. In Alaska regulations, “fish” means any species of aquatic finfish, invertebrate, or amphibian, in any stage of its life cycle.

Noxious Weed

According to the Federal Noxious Weed Act of 1974: “Any living stage (including seeds and reproductive parts) of a parasitic or other plant of a kind which is of foreign origin, is new to or not widely prevalent in the U.S., and can directly or indirectly injure crops, other useful plants, livestock, poultry, or another interest of agriculture, including irrigation, navigation, fish and wildlife resources, or the public health”

Restricted and Prohibited Weed List

Federal and state defined lists of harmful invasive plants regulated by federal and state governments. See Alaska code (11 AAC 34.020)

Pathway

- a. The means by which an invasive species is transported from one location to another.
- b. The means and routes by which invasive species are introduced into new environments.

Pest

Per Alaska Administrative Code (18 AAC 90.990), pest includes any insect, rodent, nematode, fungus, weed, and other forms of terrestrial or aquatic plant or animal life, bacterium, virus, or other microorganism, except a virus, bacterium, or other microorganism on or in a living human or other animal

Policy

A law, regulation, procedure, administrative action, incentive, or voluntary practice of governments and other institutions

Prevention

Practices that reduce the potential for the introduction, establishment and spread of invasive species

Quarantine

Any intentional movement of quarantined species, except for the purpose of identification, must be permitted through the Division of Agriculture (11 AAC 34.145; 11 AAC 34.150)

Species

A group of organisms all of which have a high degree of physical and genetic similarity, generally interbreed only among themselves, and show persistent differences from members of allied groups of organisms

Stakeholders

Interested parties that include, but are not limited to, state, federal, tribal, and local government agencies, academic institutions, the scientific community, nongovernmental entities, including environmental, agricultural and conservation organizations, trade groups, commercial interests, and private landowners

Taxa

A taxon (singular) is a group of one or more populations of an organism or organisms seen by taxonomists to form a unit

Vector

- a. The specific means by which an invasive species moves within a particular pathway (e.g., a ship, agricultural products, boots, etc.)
- b. A biological pathway for a disease or parasite.

Watch List

A list of invasive species to be prioritized for surveillance, reporting, and other possible responses in order to reduce the risk of impact to valued assets. Watch lists are basic, yet multi-functional tools for the early detection of and rapid response to invasive species. (Reaser, et.al. 2020)

Appendix 3: List of Entity Acronyms

ADF&G	Alaska Department of Fish & Game	NMFS	National Marine Fisheries Service
DSF	Division of Sport Fish	NOAA	National Oceanic and Atmospheric Administration
ADEC	Alaska Department of Environmental Conservation	NPS	National Park Service
ADNR	Alaska Department of Natural Resources	NWR	National Wildlife Refuge
DOT&PF	Alaska Department of Transportation and Public Facilities	SERC	Smithsonian Environmental Research Center
AKISP	Alaska Invasive Species Partnership	SWCD	Soil and Water Conservation District
ANSTF	Aquatic Nuisance Species Task Force	TCD	Tribal Conservation District
APU	Alaska Pacific University	UAA	University of Alaska Anchorage
ARR	Alaska Railroad	UAA/ACCS	Alaska Center for Conservation Science
BLM	Bureau of Land Management	UAA/ISER	Institute of Social and Economic Research
CBP	Customs and Border Protection	UAF	University of Alaska Fairbanks
CES	Cooperative Extension Service	UGA	University of Georgia
CIAA	Cook Inlet Aquaculture Association	USCBP	U.S. Customs and Border Protection
CISMA	Cooperative Invasive Species Management Area	USDA	United States Department of Agriculture
CWMA	Cooperative Weed Management Area	USFS	United States Forest Service
EPA	Environmental Protection Agency	USFWS	United States Fish & Wildlife Service
KBNERR	Kachemak Bay National Estuary Research Reserve		