

## **Appendix D – Noxious Weeds and Invasive Plants**

### **Contents**

- Alaska Exotic Plants Information Clearinghouse (AKEPIC) Species List
- Bureau of Land Management (BLM) – IM 2022-008 Invasive Plant Prevention and Management

## Invasive Species Identified Along the Proposed Action Alignment

Source: Alaska Exotic Plants Information Clearinghouse

Scientific Name	Common Name	Invasiveness Ranking
<b>TERRESTRIAL CORRIDOR</b>		
<i>Lepidium densiflorum</i> Schrad.	common pepperweed	25
<i>Taraxacum officinale</i> F.H. Wigg.	common dandelion	58
<i>Hordeum jubatum</i> L.	foxtail barley	63
<i>Melilotus officinalis</i> (L.) Lam.	yellow sweetclover	69
<i>Vicia cracca</i> L. ssp. <i>cracca</i>	bird vetch	73
<i>Bromus inermis</i> Leyss.	smooth brome	62
<i>Matricaria discoidea</i> DC.	pineappleweed	32
<i>Melilotus albus</i> Medik.	white sweetclover	81
<i>Poa pratensis</i> L. ssp. <i>irrigata</i> (Lindm.) H. Lindb. or <i>Poa pratensis</i> L. ssp. <i>pratensis</i>	spreading bluegrass or Kentucky bluegrass	52
<i>Polygonum aviculare</i> L.	prostrate knotweed	45
<i>Leucanthemum vulgare</i> Lam.	oxeye daisy	61
<i>Hieracium umbellatum</i> L.	narrowleaf hawkweed	51
<i>Chenopodium album</i> L.	lambsquarters	37
<i>Crepis tectorum</i> L.	narrowleaf hawkbeard	56
<i>Trifolium hybridum</i> L.	alsike clover	57
<i>Plantago major</i> L.	common plantain	44
<i>Spergularia rubra</i> (L.) J.& K. Presl	red sandspurry	34
<i>Tanacetum vulgare</i> L.	common tansy	60
<i>Sonchus arvensis</i> L.	field sowthistle	73
<i>Capsella bursa-pastoris</i> (L.) Medik.	shepherd's purse	40
<i>Trifolium pratense</i> L.	red clover	53
<i>Linaria vulgaris</i> Mill.	butter and eggs	69
<i>Elymus repens</i> (L.) Gould	quackgrass	59
<i>Prunus padus</i> L.	European bird cherry	74
<i>Lolium perenne</i> L.	perennial ryegrass	52
<i>Lolium multiflorum</i> Lam.	Italian ryegrass	41
<i>Poa annua</i> L.	annual bluegrass	46
<b>RIVER CORRIDOR</b>		
<b>Tanana</b>		
<i>Sinapis arvensis</i> L.	charlock mustard	-
<i>Lactuca tatarica</i> (L.) C.A. Mey	blue lettuce	-
<b>Rampart</b>		
<i>Melilotus officinalis</i> (L.) Lam.	yellow sweetclover	69
<i>Trifolium lupinaster</i> L.	lupine clover	57
<i>Vicia cracca</i> L. ssp. <i>cracca</i>	bird vetch	73
<i>Trifolium hybridum</i> L.	alsike clover	57
<b>Stevens Village</b>		
<i>Chenopodium album</i> L.	lambsquarters	37
<i>Descurainia sophia</i> (L.) Webb ex Prantl	herb sophia	41
<i>Lepidium densiflorum</i> Schrad.	common pepperweed	25
<i>Matricaria discoidea</i> DC.	pineappleweed	32
<i>Melilotus albus</i> Medik.	white sweetclover	81

Scientific Name	Common Name	Invasiveness Ranking
<i>Plantago major</i> L.	common plantain	44
<i>Taraxacum officinale</i> F.H. Wigg.	common dandelion	58
<i>Vicia cracca</i> L. ssp. <i>cracca</i>	bird vetch	73
<i>Hordeum jubatum</i> L.	foxtail barley	63
<i>Lappula squarrosa</i> (Retz.) Dumort.	European stickseed	44
<b>Beaver</b>		
<i>Elymus repens</i> (L.) Gould	quackgrass	59
<i>Bromus inermis</i> Leyss.	smooth brome	62
<i>Chenopodium album</i> L.	lambsquarters	37
<i>Crepis tectorum</i> L.	narrowleaf hawksbeard	56
<i>Descurainia sophia</i> (L.) Webb ex Prantl	herb sophia	41
<i>Lepidium densiflorum</i> Schrad.	common pepperweed	25
<i>Linaria vulgaris</i> Mill.	butter and eggs	69
<i>Matricaria discoidea</i> DC.	pineappleweed	32
<i>Plantago major</i> L.	common plantain	44
<i>Polygonum aviculare</i> L.	prostrate knotweed	45
<i>Taraxacum officinale</i> F.H. Wigg.	common dandelion	58
<i>Hieracium aurantiacum</i> L.	orange hawkweed	79
<i>Hordeum jubatum</i> L.	foxtail barley	63
<i>Caragana arborescens</i> Lam.	Siberian peashrub	74
<i>Lappula squarrosa</i> (Retz.) Dumort.	European stickseed	44
<b>Fort Yukon</b>		
<i>Elymus repens</i> (L.) Gould	quackgrass	59
<i>Bromus inermis</i> Leyss.	smooth brome	62
<i>Chenopodium album</i> L.	lambsquarters	37
<i>Crepis tectorum</i> L.	narrowleaf hawksbeard	56
<i>Descurainia sophia</i> (L.) Webb ex Prantl	herb sophia	41
<i>Lepidium densiflorum</i> Schrad.	common pepperweed	25
<i>Linaria vulgaris</i> Mill.	butter and eggs	69
<i>Matricaria discoidea</i> DC.	pineappleweed	32
<i>Medicago sativa</i> L. ssp. <i>falcata</i> (L.) Arcang.	yellow alfalfa	64
<i>Medicago sativa</i> L. ssp. <i>sativa</i>	alfalfa	59
<i>Melilotus albus</i> Medik.	white sweetclover	81
<i>Melilotus officinalis</i> (L.) Lam.	yellow sweetclover	69
<i>Plantago major</i> L.	common plantain	44
<i>Polygonum aviculare</i> L.	prostrate knotweed	45
<i>Stellaria media</i> (L.) Vill.	common chickweed	42
<i>Taraxacum officinale</i> F.H. Wigg.	common dandelion	58
<i>Vicia cracca</i> L. ssp. <i>cracca</i>	bird vetch	73
<i>Hordeum jubatum</i> L.	foxtail barley	63
<i>Caragana arborescens</i> Lam.	Siberian peashrub	74
<i>Prunus padus</i> L.	European bird cherry	74
<i>Lappula squarrosa</i> (Retz.) Dumort.	European stickseed	44

Source: Alaska Exotic Plants Information Clearinghouse. 2023 Non-Native Plant Data. Accessed October 6, 2023.

<https://accs.uaa.alaska.edu/invasive-species/non-native-plants/>



# United States Department of the Interior



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Date Stamped 4/15/2022

In Reply Refer To:  
1740 (931) P

Instruction Memorandum No. 2022- 008

Expires: 04/30/2025

To: All BLM Alaska Employees

From: State Director

Subject: Invasive Plant Prevention and Management

**Program Area:** Applies to all program areas

**Purpose:** The purpose of this instruction memorandum (IM) is to provide consistent implementation-level direction to prevent the introduction and spread of invasive plant species on BLM managed lands. There is a need for a standard set of stipulations and a priority invasive plant list to ensure 1) invasive species management requirements are implemented consistently across the state to protect BLM managed lands; 2) authorized land users are aware of their role in proactive invasive species management; and 3) there is compliance with applicable policy and guidance. This policy applies to internal and external authorized activities and is intended to complement any existing Resource Management Plan requirements.

**Policy/Action:** This IM applies to all new BLM-authorized activities.<sup>1</sup> It provides standard stipulations required to be used on BLM authorizations, commensurate with the size and intensity of the activity (Attachment 1) and defines BLM Alaska priority invasive plants (Attachment 2).

**Timeframe:** This IM is effective immediately.

**Budget Impact:** This policy is expected to reduce costs to BLM Alaska in the future. Without the proactive management of invasive species, costs to BLM associated with invasive species management would likely increase in the future due to the increased spread of unmanaged

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<sup>1</sup>Per the 3809 Handbook, Section 4.4.2, pre-determined stipulations for mine operations are not allowed, however, these stipulations may be considered through the NEPA analysis and required as conditions of approval, to prevent unnecessary or undue degradation.

invasive plant species. Prevention and early detection have shown to be more successful and cost-effective approaches to managing invasive species than allowing invasive species to establish. Authorized users may incur costs for needed treatment and control prescriptions.

**Background:** The John D. Dingell, Jr. Conservation, Management, and Recreation Act of 2019 amended the Fish and Wildlife Coordination Act to provide direction (in 16 USC 666c–1) for each department to develop a strategic plan for protecting water, oceans, coasts, and wildlife from invasive species. This amendment directs the Secretary of the Interior through the BLM to take into consideration the economic and ecological costs of action or inaction during development of strategic plans. In response, DOI updated Part 524 of the Departmental Manual on Invasive Species Management in 2020 (DOI 524 DM 1), which directs the Bureaus to implement measures to prevent the introduction, establishment, and spread of invasive plant species; detect and rapidly respond to invasive species; and eradicate or control populations of invasive plant species that are established. DOI 524 DM 1 also directs the Bureaus to use best management practices in all activities to reduce risks associated with invasive plant species, which include but are not limited to natural resources management, construction or development, fire management, permitting, and monitoring.

Since most invasive plant species in Alaska are found in areas disturbed by human development, prevention and early detection are emphasized in this policy. In the long term, this approach will be the most cost-effective method, both economically and ecologically, in controlling invasive species.

**Authority:** Fish and Wildlife Conservation Act (1934), as amended through P.L. 116-188; Federal Noxious Weed Act (1974); Federal Lands Policy and Management Act, 43 U.S.C. § 1737 (1976); Executive Order 13112 (1999), as amended by Executive Order 13751 (2016); Plant Protection Act, 7 U.S.C. § 7701 (2000); John D. Dingell, Jr. Conservation, Management, and Recreation Act (2019).

**Manual/Handbook Sections Affected:** This policy is in conformance with the Integrated Vegetation Management Handbook (H-1740-2), BLM Manual 6100-National Landscape Conservation System Management (2012), and Department Manual on Environmental Quality Programs Series 31: Part 524 - Invasive Species (2020).

**Coordination:** This IM has been coordinated with Field and District Offices, AK-930 Division of Resources, AK-940 Lands and Realty, Alaska Fire Service, and HQ-220 Division of Forestry, Rangeland, and Vegetation Resources.

**Contact:** If you have any questions regarding this IM, contact Ann Erickson, BLM Alaska Botany, Forestry, Range Programs Lead, 907-271-1985, [aerickson@blm.gov](mailto:aerickson@blm.gov).

Signed by:

THOMAS  
HEINLEIN

Digitally signed by THOMAS HEINLEIN

Date: 2022.04.15 11:48:53 -08'00'S

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Sandra Christine

Administrative Assistant

## 2 Attachments

1 –Standard Stipulations Required for Invasive Plant Management (4 pp)

2 - Priority Invasive Plant List (2 pp)

## Attachment 1 - Standard Stipulations Required for Invasive Plant Species Management<sup>1</sup>

### I. Stipulation Template for All Ground Disturbing Activities (Saleable Mineral Authorizations, Leasable Mineral Authorizations, Right-of-Way Grants, and Timber Authorizations):

**A. Responsibilities:** The permittee/grantee/contractee is responsible for costs and coordination related to invasive species management to ensure that activities of the permittee/grantee/contractee do not result in the introduction, establishment, or spread of Bureau of Land Management (BLM) Alaska (AK) Priority Invasive Plants (PIP) (Attachment 2) for applicable periods of the permit.

**B. Initial Inspection:** Permittee/grantee/contractee shall conduct a survey of PIP prior to conducting any on site project work to establish a baseline of any pre-activity infestations within the project area. Survey areas shall include all access roads or ancillary features associated with the area of operations, as defined by the plan of operations, and records of occurrence of PIP shall be reported to the Alaska Exotic Plants Information Clearinghouse (AKEPIC) and the AO. Use of best available data, including consultation of the AKEPIC, may satisfy this requirement when the project is small in scale and scope, and it is determined acceptable in advance of project commencement by the AO.

**C. Preventative Measures:** Permittee/grantee/contractee shall develop project-specific preventative measures based upon standard best management practices for preventing the introduction and spread of invasive species. See list of suggested resources for developing project-specific preventative measures in Section III. Preventative measures shall include but may not be limited to the following:

1. Permittee/grantee/contractee shall ensure that all equipment, vehicles (e.g., trucks, trailers, watercraft, aircraft), and gear is free of visible soil, seeds, and vegetative parts before deploying to the project site.
2. Permittee/grantee/contractee shall not park or stage equipment, supplies, or materials in areas known to be infested with PIP. When feasible, activities shall commence from known un-infested areas and progress toward known infested areas.

**D. Monitoring:** Permittee/grantee/contractee shall regularly survey the project area during the growing season for occurrence of PIP during the life of the permit/grant/contract and for two growing seasons thereafter unless evidence of PIP is documented, in which case treatment and additional monitoring may be determined necessary by the AO.

1. Surveys shall include lands encompassed by all access roads or ancillary features associated with the permittee/grantee's area of operations, as defined by their plan of operations.
2. **Specific to Saleable Materials (Mineral Materials):** Prior to any new disposals, the permittee/contractee will implement an invasive species inspection, monitoring, and treatment program for PIP as follows:
  - a) Material shall be inspected in the area of origin prior to movement once per growing season by permittee/grantee/contractee. If gravel/borrow area contains any PIP, then:

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<sup>1</sup> Per the 3809 Handbook, Section 4.4.2, pre-determined stipulations for mine operations are not allowed, however, these stipulations may be considered through the NEPA analysis and required as conditions of approval, to prevent unnecessary or undue degradation.

- (1) Area upon which gravel/borrow material is mined must be treated to prevent seed formation, seed ripening, or dissemination of the seed or propagative parts capable of producing a new plant.
- (2) When opening a new gravel pit or expanding an existing gravel pit with PIP present, topsoil and material should be removed and stockpiled. Infested material should not be moved off property or placed in vehicle traffic areas.

**E. Treatment:** If treatment is necessary to eradicate infestations that result from the activities of the permittee/grantee/contractee (i.e., documented establishment or spread of PIP above the baseline of pre-activity infestations) (Section I.B.), permittee-proposed treatment methods must receive concurrence from the AO. If the permittee/grantee/contractee fails to perform the necessary treatment, the BLM may initiate treatment at the expense of the permittee/grantee/contractee. The permittee/grantee/contractee shall reimburse the BLM the cost of the treatment. The BLM will proportionally apply any cost incurred among all authorized users of the site.

**F. Reporting:** Inspection and monitoring reports based upon a visual inspection that document initial inspection, monitoring, and treatment should be provided annually by December 31 to the AO and include:

1. Inspector's name
2. Inspection date
3. Map showing total area surveyed and any PIP location (center point GPS location and polygon delineating boundaries of infestations). Report should include electronic map files (ArcGIS compatible).
4. For any PIP infestations detected include:
  - a) Species identification for each PIP
  - b) Estimation of infestation size (number of plants or acreage)
  - c) Photographs showing the general extent of infestation and close-up photographs of individual plants.
  - d) Any treatment methods/strategies proposed for BLM approval.

## **II. Stipulation Template for Special Recreation Permits and other Non-Ground Disturbing Activities (Special Forest Products, Grazing, Research, Filming, etc.).**

**A. Responsibilities:** The permittee is responsible for costs and coordination related to invasive species management to ensure that activities of the permittee do not result in the introduction, establishment, or spread of PIP for applicable periods of the permit.

**B. Initial Inspection:** In lieu of an initial inspection conducted by the applicant, the BLM may use best available data by consulting the AKEPIC and notify an applicant of known PIP occurrences to establish a baseline of any pre-activity infestations within the project area.

**C. Preventative Measures:** Permittee shall develop project-specific preventative measures based upon standard best management practices for preventing the introduction and spread of invasive species. See list of suggested resources for developing project-specific preventative measures in Section III. Preventative measures shall include but may not be limited to the following:



1. Permittee shall ensure that all equipment, vehicles (e.g., trucks, trailers, watercraft, aircraft), and gear is free of visible soil, seeds, and vegetative parts before deploying to the project site and before moving from areas of known PIP infestations.
2. Permittee shall not park or stage equipment, supplies, or materials in areas known to be infested with PIP. When feasible, activities shall commence from known un-infested areas and progress toward known infested areas.
3. The permittee shall only use feed (e.g., hay cubes, hay pellets), bedding (straw), mulch, erosion control materials, and seed that is certified as weed-free through the [Alaska DNR Weed-Free certification programs](#). Other sources, including stockpiled material from the site, may be approved by the AO on a case-by-case basis.
4. For operations in waterbodies, when moving equipment or personnel through waterbodies on the way to the project site or before transporting watercraft and aquatic gear (i.e., hip boots, waders, and bait containers) to the authorized use area, permittee shall:
  - a) Remove any aquatic plants, animals, and mud attached to watercraft and equipment,
  - b) Drain water from boat, motor, bilge, live wells, and bait containers, and
  - c) Spray all watercraft and equipment with high pressure water or dry for at least 5 days
5. If the operation involves floatplanes, permittee shall:
  - a) Inspect and remove aquatic plants from floats, wires or cables, and water rudders, transom, bottom, chine, wheel wells and float step area and
  - b) Pump water from floats.
  - c) Before takeoff, do not taxi through heavy plant growth and do raise/lower water rudders to clear off plants.
  - d) After takeoff, raise/lower water rudder several times to free aquatic plant fragments while over the water being left or over land.

**D. Monitoring:** Permittee is not required to monitor for PIP.

**E. Treatment:** If treatment is necessary to eradicate infestations that result from the permitted activities (i.e. documented establishment or spread of PIP above the baseline of pre-activity infestations) (Section II.B.), permittee-proposed treatment methods must receive concurrence from the AO. If the permittee fails to perform the necessary treatment, the BLM may initiate treatment at the expense of the permittee. The permittee shall reimburse BLM for the cost of the treatment. The BLM will proportionally apply any cost incurred among all authorized users of the site.

**F. Reporting:** If PIP are incidentally observed, report species, location and size of infestation (number of plants/area of infestation) to the AO for reporting to AKEPIC.

### III. Resources

Suggested resources for more information on Alaska species identification and best management practices for preventing the introduction and spread of invasive species that may be used to develop project-specific preventative measures:

Alaska Department of Transportation and Public Facilities (DOT&PF). 2014. Disposal and Control of Invasive Plant Species. Prepared for Alaska DOT&PF Southeast Region. Prepared by Three Parameters Plus, Inc. Fairbanks, AK. 64 pp. Available:  
[https://dot.alaska.gov/stwddes/desenviron/assets/pdf/resources/se\\_invasive\\_final.pdf](https://dot.alaska.gov/stwddes/desenviron/assets/pdf/resources/se_invasive_final.pdf)

University of Alaska Fairbanks (UAF) Cooperative Extension Service. 2014. Best Management Practices Controlling the Spread of Invasive Plants During Road Maintenance. Published by the UAF Cooperative Extension Service in cooperation with the United States Department of Agriculture and Alaska DOT&PF. Available:  
[https://dot.alaska.gov/stwdmno/ivmp/documents/Best\\_Management\\_Practices.pdf](https://dot.alaska.gov/stwdmno/ivmp/documents/Best_Management_Practices.pdf)

Alaska Exotic Plants Information Clearinghouse (AKEPIC): <https://accs.uaa.alaska.edu/invasive-species/non-native-plants/>

Cal-IPC. 2012. Preventing the Spread of Invasive Plants: Best Management Practices For Transportation and Utility Corridors. Cal-IPC Publication 2012-1. California Invasive Plant Council, Berkeley, CA. Available at [www.cal-ipc.org](http://www.cal-ipc.org)

Flagstad, L.A., H. Cortés-Burns, and C. Greenstein. 2019. Identification of non-native plants in Alaska. Alaska Natural Heritage Program, University of Alaska Anchorage. 219 pp. Available:  
<https://accs.uaa.alaska.edu/invasive-species/publications/>

Fleming, J. 2005. Vehicle Cleaning Technology for Controlling the Spread of Noxious Weeds and Invasive Species. USDA Forest Service. Available: <https://www.fs.fed.us/eng/pubs>.

Graziano, G., S Seefeldt, and L. Clayton. 2014. Best Management Practices: Controlling the Spread of Invasive Plants During Road Maintenance. PMC-00342. Available:  
<http://cespubs.uaf.edu/publications/>

US Bureau of Reclamation and US Army Corps of Engineers. 2012. Inspection and Cleaning Manual for Equipment and Vehicles to Prevent the Spread of Invasive Species. Tech Memo No. 86-68220-07-05. Available: <https://www.usbr.gov/mussels/prevention/>

USFWS Region 7 Aquatic Invasive Preventions Guidelines. 2018.  
[https://www.fws.gov/r7/fisheries/invasive/pdf/Region%207%20Aquatic%20Invasive%20Species%20Prevention%20Guidelines\\_Final\\_083018.pdf](https://www.fws.gov/r7/fisheries/invasive/pdf/Region%207%20Aquatic%20Invasive%20Species%20Prevention%20Guidelines_Final_083018.pdf)

## Attachment 2 –Priority Invasive Plant List

BLM Alaska has developed this list of state-wide priority invasive plant species to help direct invasive species management within AK BLM lands (Table 1). BLM may update this list annually by March 15 to include and prioritize other invasive species of concern to BLM. The BLM Alaska Priority Invasive Plant (PIP) List was developed based upon the North American Invasive Species Management Association (NAISMA) and Alaska Department of Natural Resources Certified Weed Free Products Program guidance (<http://plants.alaska.gov/invasives/weed-free-gravel.htm>) with recommendations from the Alaska Weed-Free Material Committee and the University of Alaska, Alaska Center for Conservation Science. The BLM Alaska PIP List includes 32 plants from the Alaska Weed Free Gravel Certification List of Species (NAISMA list) that are currently known to be present in Alaska and adjacent regions, as identified through analysis of known distribution (AKEPIC, 2021) and consultation with the US Fish and Wildlife Service Regional Invasive Species Program Coordinator, University of Alaska Center for Conservation Science, USDA Forest Health Protection program, USDA Agricultural Research Service, US Geological Survey, National Park Service, and University of Alaska Fairbanks Cooperative Extension Service (Carlson et al. 2008; Nawrocki et al. 2011).

Table 1. BLM Alaska Priority Invasive Plant List

Scientific Name	Common Name
<u>Terrestrial Species</u>	
<i>Arctium minus</i>	common burdock
<i>Avena fatua</i>	wild oats
<i>Berteroa incana</i>	hoary alyssum
<i>Carduus nutans</i>	musk thistle
<i>Centaurea stoebe</i>	spotted knapweed
<i>Cirsium arvense</i>	Canada thistle
<i>Conium maculatum</i>	poison hemlock
<i>Convolvulus arvensis</i>	field bindweed
<i>Elymus repens</i>	quackgrass
<i>Euphorbia esula</i>	leafy spurge
<i>Galeopsis</i> sp.	hempnettle
<i>Hesperis matronalis</i>	dame's rocket
<i>Hieracium aurantiacum</i>	orange hawkweed
<i>Hieracium caespitosum</i>	yellow (meadow) hawkweed
<i>Hypericum perforatum</i>	St. Johnswort
<i>Leontodon autumnalis</i>	hawkbit/fall dandelion
<i>Leucanthemum vulgare</i>	oxeye daisy
<i>Linaria dalmatica</i>	dalmatian toadflax
<i>Linaria vulgaris</i>	yellow toadflax
<i>Lythrum salicaria</i>	purple loosestrife
<i>Melilotus albus, M. alba, M. officinalis</i>	sweetclover, white sweetclover, yellow sweetclover
<i>Phalaris arundinacea</i>	reed canarygrass
<i>Fallopia X bohemica</i>	Bohemian knotweed
<i>Fallopia convolvulus, syn. Polygonum convolvulus</i>	black bindweed/wild buckwheat

<i>Fallopia japonica</i> var. <i>japonica</i>	Japanese knotweed
<i>Fallopia sachalinensis</i>	giant knotweed
<i>Prunus padus</i>	European bird cherry
<i>Ranunculus acris</i>	tall buttercup
<i>Jacobaea vulgaris</i>	tansy ragwort
<i>Sonchus arvensis</i>	perennial sowthistle
<i>Tanacetum vulgare</i>	common tansy
<i>Verbascum thapsus</i>	common mullein
<i>Vicia cracca</i>	bird vetch
<u>Aquatic Species</u>	
<i>Elodea</i> sp.	waterweed

Alaska Exotic Plant Information Clearinghouse (AKEPIC). (2021). AKEPIC Database (<http://aknhp.uaa.alaska.edu/apps/akepic/>). Alaska Center for Conservation Science, University of Alaska, Anchorage. Accessed (March 2, 2022).

Carlson, M.L., I.V. Lapina, M. Shephard, J.S. Conn, R. Densmore, P. Spencer, J. Heys, J. Riley, and J. Nielsen. 2008. Invasiveness Ranking System for Non-Native Plants of Alaska. USDA Forest Service, R10-TP-143. 218 pp. Available: [https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/fsbdev2\\_037575.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsbdev2_037575.pdf)

Nawrocki, T.W., H. Klein, M.L. Carlson, L.A. Flagstad, J. Conn, R. DeVelice, A. Grant, G. Graziano, B. Million, and W. Rapp. 2011. Invasiveness Ranking of 50 Non-Native Plant Species for Alaska. Report prepared for the Alaska Association of Conservation Districts. Alaska Natural Heritage Program, University of Alaska Anchorage. Anchorage, Alaska. 253 pp. Available: <https://accs.uaa.alaska.edu/invasive-species/publications/>