Invasive Plant Management Plan

Sitka Tribe of Alaska
February 19, 2026

Kayaaní Commission & Resource Protection Department
Prepared by Sienna Reid, Kayaaní Commission Coordinator

Acknowledgements

Atlein Gunalchéesh

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Introduction

Sitka Tribe of Alaska (STA) is the federally recognized tribal government for Sheet'ká (Sitka, Alaska) with over 4,881 Tribal citizens. As a tribal government, STA is responsible for the health, safety, welfare, and cultural preservation of its tribal citizens.

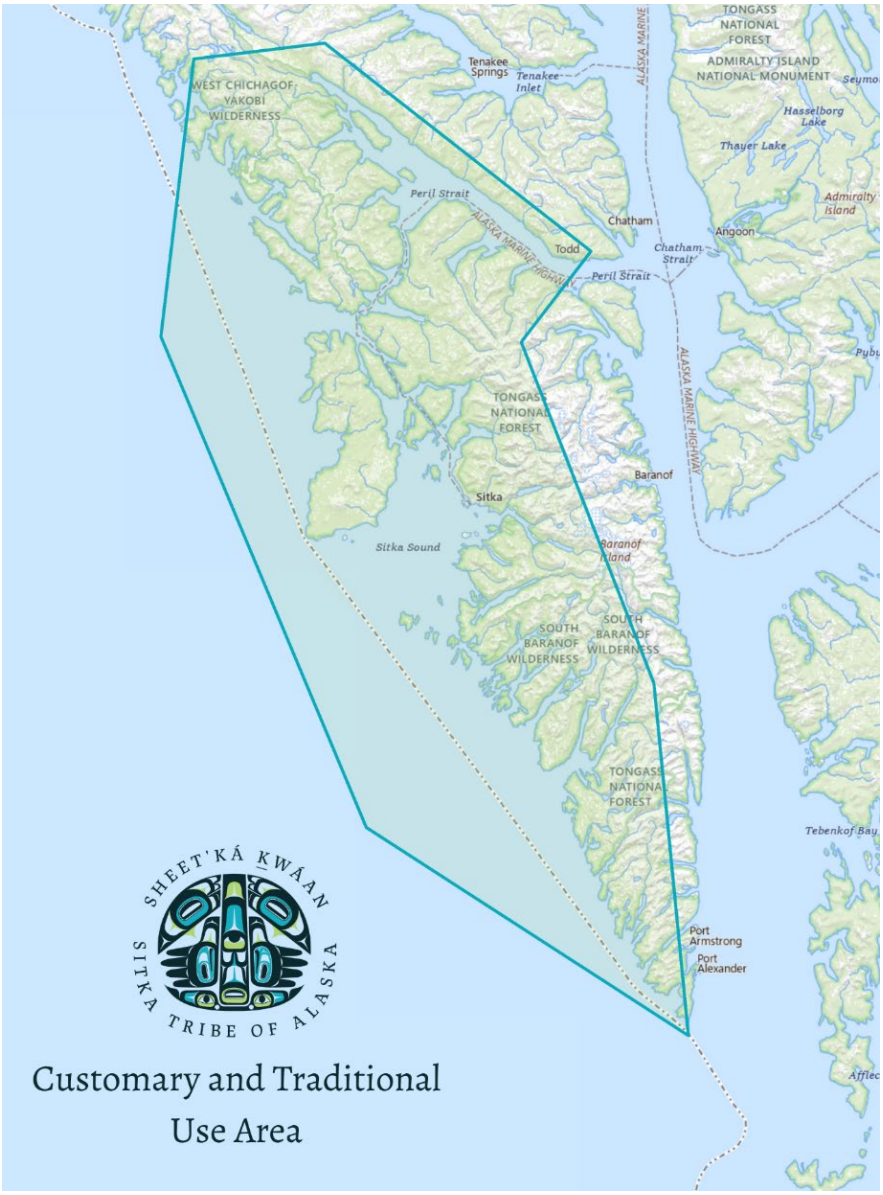

Figure 1. Map of Sitka Tribe of Alaska's Customary and Traditional Use Area.

Sitka Tribe of Alaska's jurisdiction includes "all lands constituting the Native Village of Sitka and the areas formerly known as 'Indian Possessions' and 'Cottage Settlement', and to all surrounding areas of Indian Country, if any, including all customary and traditional use and access areas in the vicinity of Baranof Island, Chichagof and surrounding islands, and all fee lands and allotments and lands owned by Sealaska, Inc. or Shee-Atika, Inc. located therein (the Native corporations established pursuant to the Alaska Native Claims Settlement Act (Pub. L. 92-

203) as amended to hold the land and other benefits provided by Congress in partial compensation for the extinguishment of the Tribe's aboriginal land rights), to the fullest extent permitted by federal and tribal law" (Sitka Tribe of Alaska 2021). See Figure 1. above for a map of the Customary and Traditional Use Area (i.e. Traditional Territory).

STA's Kaγaaní Commission (Plants Commission), established in 1998, is a group of Tribal Elders and experienced plant harvesters working together to protect the native plants of Sheet'ká Kwáan Territory and to preserve Tlingit plant knowledge. Haa kaγaaní (our plants) provide for us in the form of foods, medicines, and materials for cultural arts, tools, and technologies. The STA Invasive Plant Management Plan arose from concerns of Sitka Tribal citizens about the presence of invasive plants on the Sitka road system, and their impacts on the local environment and subsistence harvesting activities.

Purpose

The vibrant rainforests that were once described as "pristine" and "untouched" by Western explorers have always been known to the Tlingit people as respectfully managed and tended-to ecosystems. Tlingit people have been transporting distant plant materials for thousands of years; we have oral histories of our ancestors bringing red cedar, potatoes, bamboo, and a variety of other plants to Sheet'ká through travel and trade. However, through colonization, urbanization, and global climate change, our resilient lands and waters have faced rapid change with little time to adapt. As settlers from different regions of the world have made their way to Sheet'ká, so have exotic plants. Some of these exotic plants exhibit traits that make them excellent competitors against the native flora; these we call invasive plants.

Invasive plants are species that are non-native to a region and cause harm to the ecosystem, the economy, and/or human health. They possess certain biological advantages that help them dominate local habitats and can be difficult to control once a population is established. Invasive plants, at one time limited to their native ranges, now spread more easily in a globalized world. Ports and terminals where boats, ships, and planes arrive in Southeast Alaska's isolated island communities are typically hotspots for new invasive species, as are roadside corridors where ornamental garden escapees make their first jump into the wild.

The Sitka Tribe of Alaska's Kaγaaní Commission is tasked with protecting native plants and their traditional teachings. Invasive plants have become a greater threat to native flora over the past several years as tribal citizens have noticed them displacing local subsistence species. To track and control these invasive species in Sheet'ká, STA's Kaγaaní Commission and Resource Protection Department have developed an Invasive Plant Management Plan with support from the U.S. Forest Service and many regional and community partners. This plan outlines the role of Sitka Tribe in continuing to defend our Traditional Territory against invasive plants through inventory, prevention, and control measures.

Inventory

As settlers moved to Sitka, they brought exotic garden ornamentals and stowaway seeds and weeds which increased Sitka's non-native plant populations. The goal of inventory work in Sitka

is to document which invasive plants are present in Sitka, where they are found, and the qualities of their infestations.

Data Review to Establish a Baseline

Sitka's invasive species monitoring has been sporadic with inventories being carried out by several different agencies and organizations, each with varying survey areas, methods, and goals. Staff at STA compiled and reviewed previous efforts to document invasive plants in Sitka (Table 1.). These reports and maps created a starting point for staff to target specific species and their locations.

Date	Invasive Plant Work	Agency or Organization
2004	Final Report on Invasive Plants in Southeast Alaska	Sitka Conservation Society
2004-2012	Exotic plant inventories, removal, and control within the Sitka National Historical Park	National Park Service
2007	Non-Native Plant Inventory of the Sitka/Hoonah Area	USDA Forest Service
2014	Invasive Plants Management Plan for Sitka (Unpublished)	Southeast Soil & Water Conservation District; USDA Forest Service
2022	Jozef Slowik Knotweed Inventory	UAF Cooperative Extension Service

Table 1. Details of known invasive plant projects in Sitka, Alaska, 2004-present.

Platforms such as iNaturalist are also utilized in reviewing Sitka's invasive plant infestations. iNaturalist is an online platform which allows users to act as citizen scientists and upload observations of plants, fungi, and animals. An iNaturalist project called "Introduced Plant Species of Alaska" automatically gathers observations of non-native plant species within the state, which facilitates locating invasive plants.

Additionally, University of Alaska Anchorage's Alaska Center for Conservation Science (ACCS) hosts a statewide database for invasive plants called the Alaska Exotic Plants Information Clearinghouse (AKEPIC). This database stores invasive plant data from partner agencies and organizations within an interactive ArcGIS map. ACCS has also developed an invasive plant ranking system specific to Alaska which considers ecological impacts, biological characteristics, and effort required to control or eradicate, among other factors.

By utilizing local invasive species reports, iNaturalist observations, the AKEPIC database, and reports made by Tribal citizens and community members, STA staff developed a list of Sitka's known invasive plant species and their locations to inform inventory work.

Identifying Priority Species

Sitka Tribe of Alaska staff developed a ranked list of invasive plant species (see Appendix A) to determine which species would be prioritized in initial inventory field work. Invasive plants that had been documented in the Sitka area by the time of plan development were included on the list. Priority species were determined by considering each species' prevalence on the Sitka road system, impact on ecology and subsistence, and AKEPIC invasiveness rankings.

Invasive plants designated as high priority are those recommended for immediate documentation and monitoring, community education and prevention efforts, treatment plan

developments, and control or removal efforts. Lower priority invasive plants are those with lower AKEPIC invasiveness rankings and comparatively less impact on local plants and ecosystems. Some of these lower priority weeds have a high prevalence in Sitka (i.e. *Ranunculus* spp., *Taraxacum* spp., *Digitalis purpurea*, etc. are effectively naturalized), yet their environmental and tribal impact are minimal.

Through the review and ranking of Sitka's invasive plants, STA staff identified Itadori as the highest-priority exotic plant in Sitka. According to AKEPIC's non-native plant species list, Itadori ranks 87 on the invasiveness scale from 0 to 100; an extremely high ranking, second only to *Myriophyllum spicatum* (Eurasian watermilfoil) in Alaska. In fact, Itadori has been listed as invasive or noxious in ten states (USDA Natural Resources Conservation Service, n.d.) and other countries such as the United Kingdom.

Itadori

Itadori, or knotweed (*Reynoutria japonica* Houtt., synonyms *Fallopia japonica*, *Polygonum cuspidatum*), is a perennial shrub native to East Asia which was first documented in Southeast Alaska in 1981 (Alaska Center for Conservation Science 2024). The large, leafy plant can be identified by its broad, spade-shaped leaves, its hollow, zigzagging reddish-brown stems and twigs, and small white flowers. Itadori can grow up to 10 feet tall, forming dense thickets. Its underground growth is similarly extensive, with thick rhizomes able to sprawl nearly 20 feet (Klein 2011). In Alaska, Itadori primarily reproduces vegetatively from rhizomes, with small fragments (as little as 700mg) able to produce new plants (Klein 2011).

The plant's affinity for riparian, wetland, and disturbed roadside habitats has enabled it to thrive in the Tongass, using a variety of competitive characteristics to displace native plants and continue to spread. Rhizomes grow quickly, utilizing allelopathy (biochemicals released by an organism) to slow and stop growth in surrounding vegetation and stems grow in high density clusters forming monocultures. Furthermore, Itadori's height makes it resistant to trampling, and smaller plants are shaded by the tall, broad leaves in the growing season. In autumn, small plants are smothered by falling leaf litter.

Tribal citizens, many of which rely on roadside berry patches for their summer harvesting, have noted the impact of Itadori on native species such as anáanáx̲ tléix̲w (salmonberry, *Rubus spectabilis*), ch'eix̲' (thimbleberry, *Rubus parviflorus*), and shaax̲ (gray currant, *Ribes bracteosum*). These berry species feed Tribal citizens as well as wildlife from birds and deer to bears. When native plant populations cannot stand up to invasive plant infestations, the delicate balance in our rainforest ecosystem is threatened. In addition to impacts on plants, Itadori's tendency to grow near freshwater sources has been known to degrade vital habitat for anadromous fish by choking out streams and rivers (Figure 2) and damage infrastructure by breaking through pavement and building foundations.

Figure 2. Invasive *Reynoutria japonica* encroaches on a culvert adjacent to Halibut Point Road in Sitka, Alaska. Photo by Sienna Reid, STA (2024).

For the duration of STA's Invasive Plant Management planning phase, staff have focused their time on inventory, prevention, and control of invasive Itadori in Sitka. As a result, Itadori will be highlighted as an example of current inventory, prevention, and eradication efforts in the Invasive Plant Management Plan. The intention is that STA's Itadori management work will serve as a framework that can be adapted to include other high priority species (Appendix A) in subsequent phases of the project.

Roadside Inventory and Infestation Mapping

The goal for the initial 2024 field season was to carry out invasive plant inventories across the Sitka road system, focusing primarily on revisiting known infestations and identifying new sites of high concern. STA staff were trained by project manager Joni Johnson (Invasive Plant and Pesticide Use Coordinator with Forest Health Protection; State, Private, and Tribal Forestry, U.S. Forest Service) in USFS invasive plant inventory techniques.

Together, USFS and STA surveyed sections of town important to Tribal citizens, including accessible subsistence harvest spots, critical ecological habitats, residential areas, and cultural sites along roads and trails. The inventory spanned a large portion of Sitka's main highways

(Halibut Point Road and Sawmill Creek Road), transportation hubs (ferry terminal and airport), industrial zones, and core downtown area. Many previously recorded sites were ground-truthed and updated to include more detailed information, and new sites were logged (Figure 3). Data collected from the infestations is described in Table 2.

Data Type	Description
Date and time	Date and time of observation are crucial for tracking changes over time.
Plant species, using USDA plant symbol	Species are identified by USDA Plant Symbol (e.g. *Polygonum cuspidatum* = POCU6), making records compatible with USFS database.
Infestation ID	Individual infestations are given IDs for tracking over time. If the site has been previously mapped by a partner organization, STA collects data under the original infestation ID and notes that the site is a revisit. e.g. STA-POCU6-025 refers to STA's 25th *Polygonum cuspidatum* observation.
Polygon shapefile of perimeter and GPS location	Through the Field Maps app, observers can plot the perimeter of each infestation by manually placing points to create a polygon, or by livestreaming their location as they walk around the infestation. Polygons help track changes in the severity of each infestation over time.
Percent coverage	Percent coverage refers to the percent coverage of the invasive plant within the plotted polygon. This value can range from 0 to 100, depending on the plant's spread and presence or absence of other species.
Count	Count refers to the number of invasive individuals within the larger infestation. This can be determined by counting individual stems, estimating, or describing as "too many to count."
Distribution	The infestation's distribution can be described as grouped/clumped, linear, even, or variable.
Priority	Priority rankings (low, medium, high, very high) are decided by the observer and informed by factors such as invasiveness ranking, impacts (current and potential), and perceived difficulty in control and/or eradication efforts.
Notes	The observer may make notes on the infestation, including impacts to surrounding vegetation, habitat, subsistence users, and infrastructure; landowner; and control strategies.
Photo	Photos linked with each observation can aid land managers in identifying the site and tracking changes over time.

Table 2. Descriptions of invasive plant field data collected to the USFS Invasive Species Mobile group.

STA staff recorded inventory data through the ArcGIS Field Maps app which was regularly synced to the USFS Invasive Species Mobile (ISM) group hosted on ArcGIS Online. ISM compiles USFS and partner invasive species records into a single nationwide map. USFS Alaska Region staff periodically sync their records to AKEPIC for public viewing. New ISM records from the 2024 season, as well as older documented infestations in Sitka, were made available to STA.

Using the ArcGIS Online interface provided by the National Tribal Geographic Information Support Center (Tribal GIS®), STA staff have developed internal maps for STA records.

Figure 3. 2024 Invasive Knotweed Inventory Map displaying new and revisited *Reynoutria japonica* sites on the Sitka road system. Map prepared by Sienna Reid, STA (2025).

Points on the online maps are linked with the field data gathered throughout the inventory process. In 2026 and onward, STA staff will maintain internal invasive plant maps, including the invasive knotweed map, as a resource for the community, share maps and inventory findings with collaborators and the community, and continue to grow mapping capabilities and data sovereignty by developing an STA-owned field data collection application.

Inventory Goal 1: Maintain up-to-date invasive plant inventory maps

Timeframe: Annual

Actions:

- Revisit known high-priority plant infestations to document status (spread or control successes)
- Expand on-the-ground documentation by conducting roadside invasive plant inventories on previously unmapped roads
- Pull new infestations from public data sources mentioned above
- Recruit community partners and/or the public to cover more areas and species

Inventory Goal 2: Develop STA-owned data collection application for data sovereignty

Timeframe: ~1 year

Actions:

- STA staff request technical assistance from partners (Tribal GIS, USFS, Southeast Alaska Watershed Coalition, etc.) in creation of a Field Maps app for data collection
- STA project staff train additional STA staff and partners in data collection techniques to increase mapping capacity

Prevention through Outreach and Education

As stated in our project narrative, one of the main goals of the Invasive Plant Management Plan is to increase public awareness of invasive plants. Early intervention can make a world of difference when it comes to preventing the spread of invasive species. The longer invasive plants go untreated, the more extreme the eradication measures become.

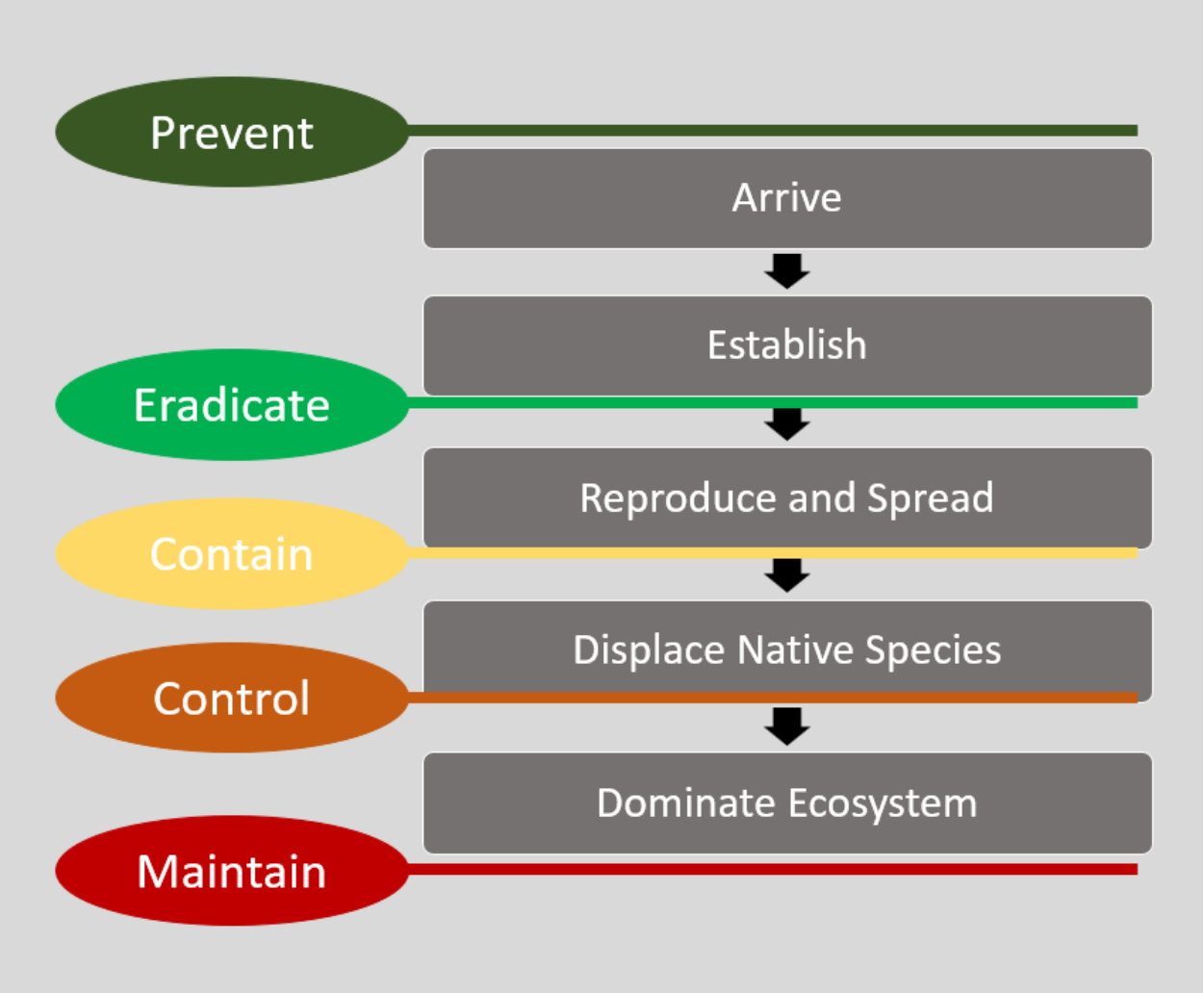

Figure 4. Stages of Biological Invasion & Levels of Control. Graphic by Jacqueline Foss, USFS (2025).

Staff at Sitka Tribe of Alaska developed outreach and education opportunities to increase invasive plant awareness in Sitka. These materials and programs will continue to be used and

developed to increase awareness and engagement and will be adapted to include priority species (See Appendix A). Staff strengthened partnerships with land managers and local environmental and recreation organizations, leading to collaborative and community-centered work and resource sharing.

Education and Community Outreach

Sitka Tribe began initial invasive plant education efforts in spring 2024 with support from USFS (Table 3). STA led Sitka High School's Traditional Ecological Knowledge class through an activity which explored the impacts of invasive plants on vegetation density and biodiversity. Each class visit involved development of classroom plans and educational materials such as worksheets, plant identification guides, presentations, and activity guides; they provide a starting point for consistent collaboration with Sitka schools and the potential to evolve into annual STA education projects such as Herring Camp and Clam Camp.

Date	School	Description
Spring 2024	Sitka High School	Staff led an activity exploring invasive plant impacts on local vegetation, and relationships between density and biodiversity with the SHS Traditional Ecological Knowledge class.
Fall 2024	Blatchley Middle School	STA staff spent three days with the BMS Get Outside and Forest Exploration classes, covering southeast Alaska ecology, native and invasive plant identification, and invasive plant prevention and control methods.
Spring 2025	Sitka High School	STA staff led SHS Biology students through an activity exploring invasive plant impacts on local ecosystems and presented on STA's field work, outreach efforts, and next steps.
Fall 2025	Mt. Edgecumbe High School	STA staff visited MEHS Biology and Environmental Science classes to share their work in the Resource Protection Department, including the importance of native plants to people and place, and the impacts of invasive species.
Fall 2025	Sitka High School	STA staff coordinated with local USFS staff and the Alaska Department of Transportation and Public Facilities to lead SHS Biology students through Sitka's first known invasive knotweed control efforts on the state managed Right-of-Way (ROW). Students learned about the effects of invasive species and participated in the tarping of four knotweed infested sites.

Table 3. Descriptions of the invasive plant education efforts carried out in Sitka schools facilitated by STA staff.

In addition to youth education, broader community outreach was done in the form of community events and shared online resources. In September 2024, STA staff co-hosted "Invasive Plants of Sitka: A Community Information Session" in partnership with the U.S. Forest

Service and the Southeast Alaska Watershed Coalition (SAWC). The purpose of the meeting was to provide information on the Kayaaní Commission's invasive plant project and discuss invasive plant concerns in the community.

Following the presentation, attendees had a chance to ask questions and discuss invasive plant needs in the community. Overwhelmingly, citizens Sitka want to help; many attendees voiced the need to not only educate on invasive species but instruct on what people can do to aid control efforts. One idea was for STA to develop treatment prescriptions for the infestations identified in the field season and communicate them with the landowner/land manager of the sites. Another idea was to create a publication or social media campaign teaching Sitkans how to identify invasive plants, evaluate treatment options, and manage yard waste responsibly.

Figure 5. E. Reed, Regional Invasive Plant Coordinator at SAWC, presents the impacts of invasive knotweed at the 2024 Invasive Plants of Sitka talk. Photo by Sienna Reid.

Taking community feedback into account, staff have continued to provide invasive plant project updates at monthly Kayaaní Commission meetings and share invasive plant identification guides, treatment recommendations, and prevention measures through flyers, emails, website and social media posts, and community events.

Outreach Goal 1: Keep Sitkans informed on STA's invasive plant management work

Timeframe: Ongoing

Actions:

- Make inventory maps available to community and regional partners

- Present maps, field findings, and other invasive plant resources at community events
- Maintain and expand relationships with Sitka teachers to continue youth education in the classroom

Outreach Goal 2: Promote prevention of invasive species

Timeframe: Ongoing

Actions:

- Familiarize community members with highly invasive plant species (priority species list)
- Create and share PSAs and social media content regarding invasive plants management on the individual level (e.g. plant ID guides, responsible handling of yard waste, etc.)
- Respond to invasive plant reports by advising Sitkans on invasive plant management, assisting in treatment planning, and connecting them with invasive plant experts

Collaborative Planning with Partners

Another facet of outreach efforts includes work to strengthen partnerships with relevant government agencies and local organizations. In March 2025 the Sitka Tribe of Alaska hosted a Collaborative Knotweed Planning Meeting to bring land managers, outdoor maintenance workers, and environmental and recreation organizations together to discuss and plan for the control of invasive plants, especially invasive knotweed, in Sitka. Meeting attendees included representatives on the federal (U.S. Forest Service), state (AK Department of Transportation and Public Facilities, AK State Parks), and local (City & Borough of Sitka Public Works Department) levels. Local organizations were represented by executive directors of both Sitka Trail Works and Sitka Conservation Society.

STA staff made a presentation which shared background on the STA Kaγaaní Commission, the Invasive Plant Management Plan, field work findings, and an overview of eradication options. USFS staff facilitated a guided round-table discussion covering topics such as prevention and control of invasive plant species, inventory and outreach ideas, and promoting creative uses of invasive plants in foods, medicines, and dyes. The group then shared community resources that they could contribute from their respective agencies and organizations. Overall, there was a strong interest in collaborating for effective invasive plant management, with the limited factors being funding and staff capacity.

The meeting concluded with the formation of a list of action items to keep up the momentum. Several of the items were completed within the year including:

- Producing flyers and social media posts regarding plant ID, reporting resources, regional contacts, etc.
- Releasing a PSA detailing responsible yard waste disposal around the time of the annual City-wide spring clean up
- Collaborating with Sitka Trail Works on an Invasive Plant Hike as part of their summer hike series
- Connecting partners with Alaska Certified Applicator training opportunities (for use of herbicide)
- Continuing to lead invasive plant education in Sitka High School science classes

Action items from the Collaborative Knotweed Planning Meeting that have not been completed at time of Plan completion, but should guide future project directions include:

- Designing a variety of informational one-pagers tailored to different demographics (e.g. contractors, gardeners, hikers, Tribal citizens), emphasizing the risks that invasive plants pose to foods, lands, culture, and infrastructure
- Assessing potential for formal management agreements through MOUs between landowners or establishment of a Community Integrated Species Management Area (CISMA)
- Discussing opportunities for expanding focus to more invasive species

Collaborative Goal 1: Strengthen working group of community partners to address invasive plant inventory, outreach, and control

Timeframe: ~1 year

Actions:

- Facilitate Planning Group meeting(s) to stay tuned into current goals and projects
- Share PSAs and social media content (Outreach Goal 2) directly with Planning Group partners to expand the reach
- Invite Planning Group to cohost and participate in outreach events such as presentations or panel discussions, to better address needs of the community
- Encourage, support, and assist in invasive plant control efforts on land managed by Planning Group partners
- Publicize or expand reach by invitation to grow Planning Group, especially targeting grounds-workers (currently underrepresented) such as contractors and property maintenance staff
- Seek funding opportunities that can fund positions across partner organizations

Reporting New Infestations

One simple way for members of the community to get involved with STA's invasive plant work is by reporting invasive plants to the STA Kaγaaní Commission Coordinator. Infestations of high-priority invasive plants or unfamiliar plants can be reported for identification, documentation, and in some cases, treatment recommendations. Concerned citizens may reach out to the Kaγaaní Commission Coordinator. Reports should include the plant's location (e.g. addresses, landmarks, or GPS locations), impact, and photo(s). STA is especially interested in invasive plant infestations that are impacting Tribal citizens and their customary and traditional resources. Many of these reporting options are promoted within STA's community outreach materials.

For invasive plant identification, reporting, advising, and questions in Sitka:

- Sienna Reid, Kaγaaní Commission Coordinator
  Sitka Tribe of Alaska
  sienna.reid@sitkatribe-nsn.gov; (907) 747-7111
- Jacqueline Foss, Soil, Ecology, Botany Program Manager
  Tongass National Forest, USDA Forest Service
  jacqueline.foss@usda.gov; (907) 747-4246

Through the planning process, STA has partnered with many invasive plant experts across the region to offer the most accurate and helpful information to those wanting to learn more about invasive plants or perhaps seek help in controlling invasives on their property.

For invasive plant identification, reporting, advising, and questions in Southeast Alaska:

- E.M. Reed, Regional Invasive Plant Coordinator
  Southeast Alaska Watershed Coalition
  reed@sawcak.org

For treatment and control on state, private, and Tribal lands (statewide):

- Joni Johnson, Invasive Plant and Pesticide Use Coordinator
  Forest Health Protection; State, Private, and Tribal Forestry
  USDA Forest Service
  joni.m.johnson@usda.gov; (907) 772-5884

For state lands (state-maintained highways, Alaska State Parks):

- Tammy Davis, Invasive Species Program Coordinator
  Alaska Department of Fish and Game
  Alaska Invasive Species Hotline: 1-877-468-2748
- Jess Parks, Statewide Environmental Analyst/Integrated Pest Management
  Alaska Department of Transportation

Eradication and Control

As discussed in the prevention section above, as invasive plant infestations establish and spread, control and removal interventions become more drastic. Each invasive plant species has different physical characteristics and biological traits to survive and spread, and thus each species will vary in the methods needed to eradicate them. In invasive species management, there are three main types of control strategies: biological, mechanical, and chemical control. A fourth category – cultural control – refers to prevention and mitigation tactics discussed in the previous section.

During the roadside inventory process, STA staff were involved in treatment planning for various invasive plant infestations. Treatment plans are recommendations to the landowner or land manager on how to best eradicate or control invasive plants on their property. Treatments must be made specific to each individual site and depend on the species present, how well established the infestation is (how long it has been there), and the goals of the landowner and/or manager. Additionally, many government landowners have regulations on types of control (such as restrictions on herbicide application), further complicating management planning and execution.

Biological

One factor that makes invasive species so difficult to remove is that they often have no natural predators in the new habitat that they have colonized. Biological control refers to the use of

natural enemies to suppress an invasive species population. A large risk of biological control is that the introduced predator, parasite, or pathogen may become an invasive species itself without ecological checks and balances. At this time, there are no biocontrol agents approved for use on invasive plants in the state of Alaska (Graziano et al. 2019).

Mechanical

Mechanical control refers to the removal or control of invasive plants through physical means, such as mowing, cutting, hand-pulling, digging, burning, and shading, among others. Mechanical treatments are the preferred strategy of STA whenever possible and effective.

In October 2025, STA implemented a mechanical treatment on four Itadori infestations in partnership with AK DOT&PF, USFS Sitka Ranger District and Sitka School District. The sites were identified in roadside inventories, determined to be suitable candidates for control through tarping, and approved for control by AK DOT&PF. The tarps were installed as part of Sitka High School biology classes' ecology unit, where students learned the impact of Itadori on their local ecosystem and participated in the first known active control of invasive knotweed on the state-managed road.

Figure 6: Students in Sitka High School's biology class cover an invasive knotweed patch with a tarp along Sawmill Creek Road. Photo by Naomi Paulson, STA (2025).

The first tarps laid on the ROW marked a huge success for collaborative management of our shared resources. Students were encouraged to check on the tarps that they installed, which will be in place for at least the next several growing seasons. Maintaining the tarps will be a

community-effort, led by STA. Following the installation, the work was featured in a Daily Sitka Sentinel article, further increasing community awareness, and STA social media posts.

Not all mechanical strategies are effective on all species, so it is critical to ensure that the methods used will have the intended effect. For example, soil and habitat disturbance created from mowing or digging up Itadori can inadvertently increase the size and density of the infestations and spread rhizome fragments to uninfested areas. Therefore, these approaches are not the preferred method of control and require high levels of caution and diligence. The effectiveness of these methods are mixed and likely inappropriate on their own for large or well-established populations. However, tarping can be effective on small, less-established patches of invasive knotweed if diligently maintained over multiple growing seasons (several years).

In future control efforts, STA hopes to continue strengthening its partnerships and community involvement opportunities to grow capacity and area covered. Itadori will remain a priority species until it is functionally eradicated; however, the Tribe also aims to target more of a variety of invasive plants in coming years in response to Tribal citizen observations and concerns.

Control Goal 1: Maintain and expand Itadori tarping control sites

Timeframe: Ongoing

Actions:

- Monitor and maintain tarp sites installed in 2025 through at least 2028
- Post informational signage at tarp sites about the project, including contact information
- Work with AK DOT&PF to install more Itadori tarp sites on the Sitka road system
- Expand tarping sites by
- Use tarp installation as a learning opportunity by involving youth, Planning Group partners, Tribal citizens, and community members.
- Evaluate effectiveness of the initial four SMC Itadori tarp sites annually, and at the three-year mark determine if tarping will continue

Control Goal 2: Explore mechanical control options for other high-priority invasive plants

Timeframe: ~1 year

Actions:

- Hold listening sessions or surveys to document impact of high-priority invasives on Tribal citizens, community members, and culturally important resources
- Research and discuss the locations of high-priority invasive plant species in Sitka (e.g. *Phalaris arundinacea L.*, *Impatiens glandulifera*, *Hieracium aurantiacum*, etc.) and their removal with Planning Group partners

Chemical

Chemical treatment of invasive plants with herbicides or other compounds is another common control and eradication method. For infestations occurring on Right-of-Ways herbicides may only be applied by certified applicators. In other cases, a supervising certified applicator must be present for others to assist. There are currently no certified applicators in Sitka, which makes chemical control unrealistic and unsustainable for management efforts at present. There has

been some interest and initiative by partner agencies and organizations to obtain herbicide applicator training and certification in the near future.

In chemical control, timing is a key factor. For Itadori, herbicides are most effective when applied at the end of the growing season. As perennial plants die back in the fall, their energy stores move from leaves, flowers, and stem back into the roots and rhizomes for winter. Herbicides applied above ground at this stage get transported into the roots, injuring and/or killing the plant. UAF Cooperative Extension Service, AK DOT&PF, and USFS Alaska Region published Best Management Practices: Controlling The Spread of Invasive Plants During Road Maintenance which describes the most effective herbicides and application methods (when mechanical removal is not practical) for a variety of invasive plants found in Alaska.

Chemical treatment has not been and will not be implemented by STA due to concerns about the impact on the surrounding environment; however, STA acknowledges that under severe circumstances chemical control can be the most effective strategy for invasive plant removal. At the core of STA's management approach is a strong desire to protect native environments, organisms, and tribal citizens' access to our traditional lands and resources.

If community partners decide to move forward with chemical control of invasive plants, STA will recommend and assist with implementing alternative methods (mechanical if possible). If all other options have been exhausted and it is determined that chemical treatment will be the only effective technique for invasive plant removal at a specific site, STA urges those implementing the chemical treatment to move forward with extreme caution, carefully following all label instructions. At minimum, we ask on behalf of our tribal citizens for full transparency about the chemicals used, application methods, and plans to minimize impact on non-target species. It is critical to present adequate notice and signage on-site of herbicide use to maintain a respectful and safe relationship with the citizens of Sitka.

Conclusion

STA is interested in continuing to lead invasive plant inventory, prevention, and control work in Sheet'ká. The active management of Itadori has been a powerful learning tool to develop STA's ability to manage invasive plants in Sitka. Perhaps the most valuable lesson learned in the planning process is that management is not possible without the support and collaboration of our many partners. STA will continue to maintain and grow these relationships for the maximum benefit of our tribal citizens and the protection of our lands, waters, natural resources, and cultural heritage for future generations.

A simple budget for one year of Invasive Plant Management Plan implementation is below:

Implementation Needs	Cost estimate (1 year):
Personnel	
Kayaaní Commission Coordinator (25%) - wages	$20,059.95
Kayaaní Commission Coordinator - fringe	$1,735.19
Travel	

Conference attendance (e.g. Alaska Invasive Species Workshop) for KCC and Commissioner	$2,500.00
Supplies	
Office supplies	$500.00
Program supplies (field gear, etc.)	$1,000.00
Indirect Costs	
STA Indirect (49.06% for 2026)	$12,655.09
Grand Total	$38,450.23

While limited funding has been secured for implementation over the next five years (2026-2031), it falls short of meeting project needs in terms of staff time and supply needs. STA staff and Kayaaní Commission will continue to search for funding sources to support invasive plant work, ensuring the Invasive Plant Management Plan may be implemented for years to come.

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Appendix A: Priority Invasive Plant Species for Inventory and Control Efforts

Species	Common Name	AKEPIC Invasiveness Ranking *red* = 1st priority *yellow* = 2nd priority	Native Lookalikes	Impacted Ecosystem
Fallopia japonica	itadori, Japanese knotweed	87/100		moist habitats, waste areas, roadsides, old homesites, neglected gardens
Phalaris arundinacea L.	reed canary grass	83/100		streambanks, wet meadows
Impatiens glandulifera	ornamental jewelweed	82/100	western touch-me-not (*Impatiens noli-tangere*)	Riparian zone, wetlands, beach meadows, neglected gardens
Hieracium aurantiacum	orange hawkweed	79/100	orange agoseris (*Agoseris aurantiaca*)	sub-alpine, meadows, rangelands, pastures, forest borders, roadsides, disturbed areas
Cirsium arvense	Canada thistle, creeping thistle	76/100		roadsides, forest edges, forest openings
Vicia cracca	bird vetch	73/100	giant vetch (*Vicia gigantea*), American vetch (*Vicia americana*), marsh pea (*Lathyrus palustris*), beach pea (*Lathyrus japonicus*), alpine sweetvetch (*Hedysarum alpinum*)	roadsides, forest edges and openings, thickets
Sonchus arvensis	field sowthistle	73/100	*Taraxacum ceratophorum, T. alaskanum, T. kamtschaticum, T. phymatocarpum, T. trigonolobum*	roadsides, disturbed sites, old home sites, coves and beaches

Linaria vulgaris	yellow toadflax, butter and eggs	**69/100**		roadsides, waste places
Cytisus scoparius	Scotch broom, common broom	**69/100**		urban, roadsides
Geranium robertianum	herb Robert, Robert's geranium	**67/100**		roadsides, yards
Leucanthemum vulgare	oxeye daisy	**61/100**		roadsides, meadows, clearcuts, disturbed sites
Tanacetum vulgare	common tansy	**60/100**		roadsides, ditches, streams, beach meadows