

Swinomish Integrated Weed Management Program



Incipient population of Purple loosestrife (Aglands)

A noxious weed survey was conducted in 2009 to map the type and distribution of noxious weeds on Tribal trust lands. This survey provided the base information to develop a weed control strategy and a coordinated control effort. The survey confirmed the Reservation has substantial infestations of knapweeds, knotweed, purple loosestrife, various thistles, scotch broom, English ivy and other state listed noxious weeds occurring over its 7500 acres of uplands and freshwater wetlands. The Tribal trust lands on the Reservation directly adjacent to the Swinomish Channel consist primarily of sandy dredge spoils where knapweed and scotch broom are displacing the ecologically important bunchgrasses and other native plants that became established in these dry, dune-like habitats. The northernmost portion of the Reservation on the shoreline of Padilla Bay, adjacent to State Route 20, has large infestations of knapweeds, thistle and Scotch broom. This area is a critical location for control efforts due to the on and off Reservation traffic vectors for weed seeds. Additionally, the Reservation has several open space areas that, due to their isolation, have either limited invasions of noxious weeds or are otherwise relatively straightforward to restore. Natural areas like these are becoming increasingly rare on and off Reservation, and represent an important cultural resource that the Tribe desires to maintain weed free. Finally, numerous areas within the Reservation have been replanted with native plants as part of restoration projects. Until the planted vegetation becomes well established, noxious weeds like thistle and non-native blackberry can completely overgrow it in short order. Weed control efforts are required to allow the native plants to establish and thrive.

Swinomish Noxious Weed Management Objectives

- control/suppress non-native invasive plant infestations
- protect public health
- protect native plants
- protect ecosystem/restore ecosystem function
- maintain/improve water quality
- prevent erosion
- enhance biodiversity

Weed Control Partnerships

Tribal weed control efforts are coordinated with several government and non-government agencies, including the BIA, the Washington Department of Agriculture, and the Skagit County Noxious Weed Control Board, in order to increase the effectiveness of programs, utilize available expertise, and make most the efficient use of funding opportunities.

Integrated Weed Management

The concept of integrated weed management (IWM) has existed for several decades, and in the last decade has become accepted as a framework for weed control programs.

IWM refers to the use of all suitable weed control methods to keep weed populations below the economic injury level. Methods include cultural practices, use of biological, physical, and genetic control agents, and the selective use of herbicides. In other words, utilizing a combination of control strategies intended to result in the most effective control of the target weed species. The term “effective control” refers to both the economics of the control effort and the effectiveness or mortality success strategies used.

Integrated Weed Management incorporates five control strategies: cultural, biological, physical, genetic and chemical (herbicides).

Biological control has historically meant the use of insects to control noxious weeds. Since most noxious weeds are exotics (not native to N. America or a specific region), most biological control agents are insects which naturally evolved with a weed species in its native land. Usually these bio-control insects are specific to a particular weed species and impact the plant through defoliation of the leaves or by boring into the root/vascular system of the plant. This type of control can occur with adult insects, their larva or both. Biological control can be effective but usually requires long periods before effects are noticed. For many types of weeds, a biological control is either unavailable or of limited effectiveness. Certification of a specific biocontrol, done by the USDA and WSDA, can be both an expensive and prolonged process.

The use of cultural control methods primarily refers to the prevention of noxious weed infestations through the modification or elimination of land use practices by humans which may indirectly cause or aid in the spread of noxious weeds.

Physical control strategies often serve as the foundation of integrated weed management efforts. Physical control usually falls under three categories: 1) manual control, which can be as simple as hand pulling of the weed species to eliminate individuals and reduce the seed source for usually very small infestations, to using hand tools like a hoe, loppers or a machete; 2) mechanical control, which involves the use of power tools (chainsaws/ clearing saws) and heavy equipment (tractors & bulldozers); 3) control via fire, which is normally achieved through the use of prescribed burns.

In the past two decades, vast amounts of resources have gone into the development of safe and effective herbicides. For the majority of weed infestations of any significant size, the selective use of herbicides is a practical necessity to accomplish the objectives of a control effort. The decision to selectively use herbicides requires a comprehensive planning effort and is site, as well as species, specific. There are five important questions that must be answered when considering the use of herbicides as an element to an integrated control approach:

- 1) What herbicides are effective in producing a high level of mortality with a minimal need for re-treatment?
- 2) What are the effects of the herbicide on non-target species, including the residual effects?
- 3) What is the most effective and cost-efficient mode of application?
- 4) Are properly trained personnel available to apply the herbicide?
- 5) Are there local, state or federal restrictions for the use of a particular herbicide?

Elements and Phasing of the Swinomish IWM program

The elements of the Swinomish IWM program include Prevention, Eradication and Management, Education and Outreach, Survey, and Funding:

1. Prevention (includes exclusion, early detection, and rapid response). Preventing an infestation avoids associated costs of control.

Exclusion objectives:

- Prevent inadvertent or deliberate introduction of noxious weeds
- Institute a weed-free forage and erosion control program
- Incorporate noxious weed control into land use permitting
- Employ community outreach and education on noxious weeds

Early detection objectives:

- Detect infestations of noxious weeds as soon as possible
- Train volunteers and the general public to identify and report on noxious weed detections.
- Continuously update the weed inventory with new weed discoveries

Rapid response objectives:

- Rapidly respond to new, incipient noxious weed infestations before they get a chance to spread.
- Maintain the capability to rapidly eradicate newly discovered noxious weed populations before they become significant infestations.

2. Eradication, Management and Monitoring

Noxious weed problems must be identified and prioritized, and a plan of action developed to implement control efforts. The plan and subsequent implementation may include the containment of large-scale weed infestations, eradication of smaller weed populations, re-vegetation of controlled sites, monitoring and adaptive management.

Eradication, management, and monitoring objectives:

- Develop an annual Swinomish weed management plan using the results of the active survey component and in accordance with the objectives and considerations outlined in the Tribal Noxious Weed Control Policy.
- Eradicate Class A weeds and Class B weeds designated for control in this region of the State.
- Control isolated populations of other noxious weeds to prevent larger infestations
- Monitor for effectiveness and adapt as required
- Contain infestations to prevent further spread until future eradication or suppression actions can be taken

3. Education, Awareness and Outreach.

Often residents have little understanding of how noxious weeds negatively impact the community, economy and natural resources of the Reservation. Education and outreach facilitate partnership and buy in from Tribal departments and the local Tribal and non-Tribal residents.

Education, Awareness and Outreach objectives:

- Maintain at least one licensed herbicide applicator within the Environmental Management program
- Provide a weed and land restoration curriculum to La Conner Schools and the NW Indian college

- Conduct training on weed identification and control
- Work with federal, state, county, and non-governmental organizations on local weed control efforts.
- Create an identification pamphlet on the top 12 noxious weeds of the Reservation.
- Organize noxious weed control work parties during Swinomish Earth Day
- Give noxious weed identification and control instruction to Tribal and non-Tribal groups on the Reservation.

4. Survey and Mapping.

Prior to beginning major weed control projects, it is important to identify and record the weed species present, the size of the area infested, the density of the infestation, whether adjacent areas are under threat of invasion, soil and range types affected and other site factors pertinent to successfully managing weed-infested areas. In the case of new, isolated weed populations, the inventory phase may also incorporate a rapid response capability.

Survey, Inventory and Mapping objectives:

- Develop Swinomish GIS layers for Class A, B, and C noxious weeds
- Update the noxious weed layers yearly to include all controlled areas and new discoveries.
- Promote internships and student projects on survey, inventory and mapping.

5. Funding and Finance:

Weed control can be expensive. If it is not budgeted for and additional funding is not actively pursued out, weed control won't happen, and the problem will worsen and become more expensive to control the following year.

Funding and finance objectives:

- Maintain a baseline weed control budget line in the Tribe's General Fund.
- Pursue grants for noxious weed control
- Incorporate weed control into permitting fees as practical
- Make use of volunteers for weed control projects
- Develop a baseline noxious weed budget to maintain continuity and consistency in the Tribe's weed control program, and to be used as a cost share to facilitate grant awards.
- Pursue available grants from governmental and non-governmental organizations to assist in funding the Tribe's noxious weed control efforts