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# Report #15

## Aboriginal Community Toolkit for Invasive Plant Management



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*Special recognition to the leadership and vision of the Williams Lake Indian Band for providing support and guidance on the development of this toolkit.*

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We acknowledge the following individuals for their assistance and on-going contribution to help stop the spread of invasive plants in BC.

### **Aboriginal Working Group Sub-Committee:**

**Volunteers:** Kirk Dressler, Williams Lake Indian Band; Byron Louie, Williams Lake Indian Band; Kristy Palmantier Ministry of Environment; Doug August; Merci Hillis, Northwest Invasive Plant Committee; Denise Birdstone, Tobacco Plains Indian Band; and Trish McKinney, Cariboo Chilcotin Coast Invasive Plant Committee.

**Working Team:** Laurie Vaughan, Fraser Basin Council; and Gail Wallin, Elaine Armagost, Tracy Thomas, and Julianne Leekie of the Invasive Plant Council of BC.

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Canada



Indian and Northern  
Affairs Canada

Affaires indiennes et  
du Nord Canada



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## SPOTLIGHT: Williams Lake Indian Band



The Williams Lake Indian Band (WLIB) is a Northern Shuswap Tribe, located in central British Columbia. This area is known as the Cariboo region and for the famous Williams Lake Stampede. Highway 97 and BC Rail cross through WLIB Indian Reserve #1, to provide access and transport goods to Northern British Columbia, Bella Coola, and the Chilcotin region. Since the 1970s, the high volume of traffic along these corridors has helped result in a major orange hawkweed infestation on the reserve and in the area.

In 2002, the Williams Lake Indian Band's Natural Resource Department Director, Kristy Palmantier presented at a "Weeds Know No Boundaries" workshop and participated in the two year development of an Invasive Plant Strategy for BC. Palmantier has played a key role in the formation of the Invasive Plant Council of British Columbia (IPCBC) and Cariboo Chilcotin Coast Invasive Plant Committee (CCCIPC). Today, she continues to volunteer her time as the Chair of both the IPCBC and the IPCBC Aboriginal Working Group.

In 2006, WLIB, in partnership with IPCBC, completed aerial flights to create GIS maps. Since then, there have been partnerships that have resulted in on-the-job training and employment opportunities for band members, the development of an invasive plant inventory system, and a management strategy for Indian Reserve lands. The Band strategy, developed in 2010, has identified four priority invasive plant species and targeted areas to manage.

To raise awareness of the threat and to assist other Aboriginal communities in protecting their lands, the WLIB and IPCBC secured funding from Indian and Northern Affairs Canada to develop this Aboriginal Toolkit. For more information, please contact Byron Louie or Kirk Dressler at WLIB or [info@cccipc.ca](mailto:info@cccipc.ca).

## 1.0 Aboriginal Communities and the Invasive Plant Problem

Invasive (non-native) plants pose a threat to the environment, health, safety, and economics. Due to their ability to form monocultures, they can damage existing plant communities. Invasive plants out-compete British Columbia's native, crop, and forage plant species for essential resources such as nutrients, sunlight, and water. Invasive plant species usually have no natural predators in BC, giving them a great competitive advantage against desirable vegetation.

Due to their impacts and rapid spread, invasive species and plants are globally recognized as a serious threat, and international, national, and provincial regulations have been developed to address this problem. At this time, there are no federal regulations that have been developed for Indian Reserve lands. Each Aboriginal community is responsible to manage the invasive plant problem separately. In addition, there is no invasive plant specific funding provided to most Aboriginal communities.

### 1.1 Top Five Reasons for Aboriginal Communities to Get Involved

#### 1. Stewards of the Land:

For thousands of years, Aboriginal peoples and communities have survived as hunters and gatherers. To keep the land healthy, people took only what they needed during the spring, summer, and fall to survive the winter season. During the seasons, Aboriginal people would gather berries and herbs and hunt for small prey such as birds and fish and hunt for larger animals such as moose, deer or elk. Animal and plant species and populations were kept in abundance; they were excellent stewards of the land.

Some Aboriginal communities did not have to travel to gather their foods; instead they closely managed the fish and crops that were provided within their territories. For centuries these values have been practiced and are still ingrained in Aboriginal people and their communities. In all aboriginal communities, interest in the land extends past Indian Reserve boundaries.



Bitterroot (*Lewisia rediviva*)  
I. Gardiner

## 2. Community Orientation:

Aboriginal people are community oriented. In the past, each family would have an area that they hunted, fished, or harvested plants. The food would be shared or traded amongst the different families. After the creation of the *Indian Act*, the different families were centralized on Indian reserve lands. These families continued their seasonal rounds and the practices of sharing. All of the Aboriginal communities celebrate traditional practices, such as naming, births, and deaths with feasts. Aboriginal communities usually are comprised of the different family groups that make decisions collaboratively through community planning sessions or by a Chief and Council.

## 3. Traditional Foods and Medicinal Plants:

Traditional Aboriginal foods are being affected by the loss of biodiversity caused by invasive plants and other alien species. In 1998, the World Conservation Union declared invasive species to be the second largest threat to biodiversity on the planet, second only to habitat loss. In BC, it is estimated that 25% of endangered species, 31% of threatened species, and 16% of species of special concern are impacted by invasive alien species.

Traditionally, food was traded between Aboriginal communities like today's commodities as traditional foods and medicinal plants grow only in certain areas. The majority of the medicine plants grow in riparian areas where these plants require clean water, little ground disturbance and shade from healthy trees. Aboriginal people continue to rely on the traditional plants for their medicines.

## SPOTLIGHT: Cowichan Tribes Community Champion - Doug August Sr.



Doug August Sr.

*Doug August Sr. has a passion to protect traditional lands from invasive plants. His example, both through his employment choices and volunteer efforts, is an inspiration to others to make a difference in their communities.*

*Doug is of Coast Salish descent; Sume'lh is Doug's Hul'qumi'num name from his mother's side. Mother Dorothy August is from Lekwammen (Songhees). Father Cicero August is from S'amuna – Cowichan. Doug has strong cultural teachings from both the Lekwammen and Cowichan. His Traditional Ecological Knowledge (TEK) has made him keenly aware of the impact that invasive species have on traditional food and medicinal plant gathering areas.*

*Doug has worked as an Enforcement Officer with Fisheries and Oceans Canada; this experience enhanced his TEK with scientific knowledge of ecosystems and biodiversity. Nature Conservancy Canada-Cowichan Preserve and the Garry Oak Ecosystems Recovery Team are of particular interest to Doug. He volunteers his time to ensure that private landowners are aware of this complex ecosystem and to rehabilitate the areas with native plants, shrubs, and Garry oak trees; both on and off tribal lands.*

*Doug participated in the Invasive Plant Council of BC's (IPCBC) seven-day training course in 2009 and worked as a crew supervisor during the summer season. The Coastal Invasive Plant Committee (CIPC) recommended him to private landowners to manage their giant hogweed problem. He also volunteers on the IPCBC Aboriginal Working Group to increase awareness of invasive plants at the community level.*

## SPOTLIGHT: Northwest Invasive Plant Committee (NWIPC)



The NWIPC operating area covers west of the Rocky Mountains to the Pacific Ocean, including Haida Gwaii and north of Quesnel to the Yukon border.

At a very early stage, NWIPC recognized the importance of having an Aboriginal workforce because of their demographics and knowledge of the land. For example, 70% of Gitksan people live in their traditional territories and make up 80% of the total population in this northern area.

The Gitksan, "People of the River of Mist," is comprised of five communities who have become the example for creating partnerships. The Gitksan traditional territory occupies 30,000 km<sup>2</sup> and they have been involved in invasive plant management and partnerships for over a decade.

In 2004, the Gitksan representatives and NWIPC successfully acquired funding from the Inter-Ministerial Invasive Plant Committee to deliver the "Weeding Out The Invaders" invasive plant management program. The head office is located in Gitanmaax Village in Old Hazelton. The project was led by the Midskeena Watershed, one of the nine watersheds under the Gitksan Watershed Authority. The program had five goals:

1. Train and develop skills in invasive plant management amongst five Gitksan communities;
2. Create awareness and information to native and non-native communities;
3. Collaboratively develop and inventory of invasive plants in the territory;
4. Develop and implement an invasive plant management plan; and
5. To monitor and manage invasive plants.

The NWIPC has also developed partnerships with the Gitga'at, Haisla, MacLeod Lake Indian Band, Saik'uz, Nisga'a, Tahltan, Nadleh Whuten and the Haida Nation. They are actively developing connections with Moricetown. For more information, please visit [www.nwipc.org](http://www.nwipc.org) or contact Merci Hillis at: [firstnations@nwipc.org](mailto:firstnations@nwipc.org).



Giant Hogweed (*Heracleum mantegazzianum*)  
B. Brown

### 4. Health and Safety

Invasive plants can directly affect human health and safety in many ways. Giant hogweed (*Heracleum mantegazzianum*) produces skin burns that can cause blisters and long-term scarring. The large, sharp spines of gorse (*Ulex europaeus*) are unsafe to humans and the berries of bittersweet nightshade (*Solanum dulcamara*) and spurge laurel (*Daphne laureola*) are poisonous. Some allergies, including hay fever, are caused by invasive species like spotted knapweed (*Centaurea biebersteinii*) and Scotch broom (*Cytisus scoparius*).

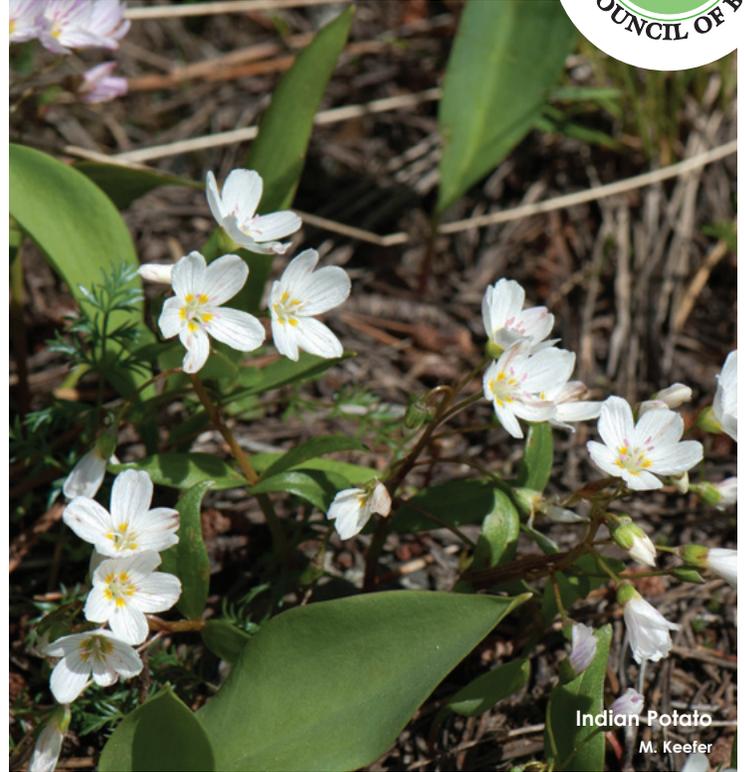
Invasive plants affect right-of-ways and transportation corridors when their rapid establishment and growth (up to 30cm per day for some species) decrease access to equipment and structures, reduce sightlines for drivers and animals, and increase the risk of accidents and collisions.

Some invasive species are also extremely flammable and can disrupt natural fire cycles, causing an increase fuel bed load and frequency of fires. Most Indian Reserves are located in isolated and remote locations in BC that have little fire protection.

## 5. Economic Opportunities

Invasive plants have a wide range of detrimental impacts on agricultural, ranching, gravel, and forest industries. They can harbour insects and crop diseases and in many cases, act as alternative hosts. They reduce crop quality and market opportunities and can decrease farm income by reducing yields by an average of 10 to 15%; ranchers may lose up to 75% of their grazing opportunities. Every year BC farmers and ranchers lose an estimated \$50 million in crop revenue as well as pay several million dollars for control measures such as herbicides and cultivation.

In forestry, invasive plants compete with seedlings for light, nutrients, and water, reducing yield. Many Reserve have gravel; if gravel becomes infested by invasive plants, it has the potential to rapidly spread across the land. Invasive plant infestations can also impact tourism; it can be expensive to keep a park or golf course weed-free. Overall, the control of invasive plants increases operating costs and legal liabilities for agriculture, ranching, and natural resource sectors.



Indian Potato  
M. Keefer

## 2.0 Toolkit Overview, Scope and Purpose

The purpose of this toolkit is to provide a resource for Aboriginal communities and staff in British Columbia who would like to be involved in invasive plant management. This toolkit is intended to be useful for Aboriginal communities who do not yet have a noxious weed or invasive plant program as well as those who would like to expand or change their current program and respond with Pest Management Plans on their asserted territories. This toolkit provides information, guidance, and builds linkages that create awareness and support across key agencies. It is also meant to enhance invasive plant management capabilities amongst government agencies, industry, Aboriginal, and non-native communities to increase and build upon existing expertise and support. This toolkit includes information on how to:

- Upgrade the environmental and community knowledge of Aboriginal communities;
- Develop or update invasive plant management framework and policy options for

use by bands, for invasive plant management activities on Indian Reserve land, and asserted traditional territory;

- Respond and manage pest management plans received as a referral from Provincial and Federal government agencies, industry and non-native communities; and
- Identify who has the authority in developing strategic partnership agreements between, regional invasive plant committees, government, industry, Aboriginal organizations, and communities.

### 2.1 Aboriginal Approaches to Planning and Decision Making

The majority of Aboriginal communities receive their legal jurisdiction for the management of noxious weeds from the *Indian Act*. Funding is allocated to communities through their Operating and Maintenance Budgets from Indian and Northern Affairs Canada (INAC). These funds are usually allocated to operate and repair community buildings and maintain roads. The simplest method to get authorization for noxious weed management is from the Chief and Council through a Band Council Resolution (BCR). BCRs are usually intended to give authorization for a particular matter, not to prescribe a permanent



rule. An example BCR is attached as **Appendix 1**.

The Band Council can also develop bylaws consistent with the *Indian Act* or with any regulations made by a Federal Ministry regarding the destruction and control of noxious weeds. Once a bylaw has been developed, it becomes a permanent rule that cannot be easily changed. An example bylaw is attached as **Appendix 2**.

Many Aboriginal communities are removing themselves from the *Indian Act* through Land Claims, Agreements, or the development of land codes under the *First Nations Lands Management Act*. In these agreements, Aboriginal communities may delegate authority, other than law-making authority, to any Tribal Council, regional or national body established by Aboriginal communities or to any other legal entity in Canada. A delegation is not valid except by written agreement with the delegate. Jurisdiction is granted under public works, community infrastructure and local services for the collection, removal and disposal of waste and noxious, offensive or unwholesome

substances. Aboriginal law prevails over federal law, so long as the health and safety standards and technical codes are at least equivalent to federal standards and technical codes.

Aboriginal communities may enter into agreements with Canada or other governments in Canada concerning both land and water resources that are on or adjacent to the Indian Reserve land, or where an Aboriginal interest may be affected. Since 1997, there have been a number of court rulings that establish Aboriginal rights and title in traditional territories. Aboriginal people have a wide variety of interests including employment and economic opportunities; protection of culture and heritage; environmental quality, and rights and title.

## 2.2 Overview of Agencies involved in Invasive Plant Management in BC

There are a number of agencies and jurisdictions that are adjacent to Reserve lands involved in invasive plant management in BC. Coordinated regional programs that promote invasive plant management across jurisdictions are recommended so that Aboriginal governments are not working in isolation. The following table is an overview of Aboriginal, federal, provincial, and local government involvement and jurisdiction:

Agency/ Organization	Jurisdiction and/or Role
<b>Federal</b>	
National Aboriginal Forestry Association Branch Office 613-233-5563 Head Office 613-625-2233	To increase and support Aboriginal involvement in forest management and related commercial activities, while staying committed to holistic values. <a href="http://www.nafaforestry.org/">www.nafaforestry.org/</a>
Indian and Northern Affairs Canada – BC Region 1-866-553-0554	Authority granted under the <i>Indian Act</i> for Indian Reserve land. Grants management authority, funding and support services through Acts, Agreements and Land Claims. <a href="http://www.ainc-inac.gc.ca/ai/arp/index-eng.asp">www.ainc-inac.gc.ca/ai/arp/index-eng.asp</a>
Parks Canada 1-888-773-8888	Protects and presents nationally significant examples of natural and cultural heritage and fosters public understanding in ways that ensure ecological and commemorative integrity. <a href="http://www.pc.gc.ca">www.pc.gc.ca</a>
Department of Fisheries and Oceans 1-604-666-0384	Delivers programs and services that support sustainable use and development of Canada's waterways and aquatic resources. <a href="http://www.dfo-mpo.gc.ca/about-notre-sujet-eng.htm">www.dfo-mpo.gc.ca/about-notre-sujet-eng.htm</a>
Canada Border Services Agency (CBSA) 1-800-461-9999	The CBSA delivers a variety of programs and services for people and trade, designed to enforce laws and keep safety and health threats out of Canada. <a href="http://www.cbsa-asfc.gc.ca/agency-agence/program-eng.html">www.cbsa-asfc.gc.ca/agency-agence/program-eng.html</a>
Transport Canada	Federal transportation corridors, such as railway, highway, and pipeline corridors.
<b>Provincial</b>	
First Nations in BC	There are 203 Aboriginal communities in BC that are represented by a Chief and Council. <a href="http://fnbc.info/users/admin">http://fnbc.info/users/admin</a>
Assembly of First Nations 604-922-7733	Is a Political Territorial Organization (PTO) that represents and communicates to 203 First Nations in BC. It is a regional arm of the National Assembly of First Nation (AFN). <a href="http://www.bcafn.ca">www.bcafn.ca</a>
Union of BC Indian Chiefs 604-684-0231	Support the work of Aboriginals at the community, nation or international level, for the recognition of aboriginal rights and respect for aboriginal cultures and societies. <a href="http://www.ubcic.bc.ca">www.ubcic.bc.ca</a>
First Nation Summit 604-926-9903	The FNS is comprised of a majority of First Nations and Tribal Councils in BC and provides a forum for First Nations in British Columbia to address issues related to Treaty negotiations as well as other issues of common concern. <a href="http://www.fns.bc.ca">www.fns.bc.ca</a>
BC Leadership Council	The Leadership Council of BC participates in regional assemblies hosted by BCAFN, UBCIC and FNS and engages in open socio-political discussion to provide direction and mandates.
BC First Nations Forestry Council 604-921-4488	Provides support to BC First Nations with respect to forestry-related matters. <a href="http://www.fnforestrycouncil.ca">www.fnforestrycouncil.ca</a>
First Nations Energy and Mining Council	Promotes recognition, support, cooperation and coordination for Aboriginals in the energy and mining sectors. <a href="http://fnbc.info/fnemoc/protocols/resolutions">http://fnbc.info/fnemoc/protocols/resolutions</a>
First Nations Technology Council 888-921-9939	Supports the full integration of technologies to improve the quality of life for all Aboriginal people. <a href="http://fnbc.info/fntc">http://fnbc.info/fntc</a>
First Nations Agriculture Association 778-469-5040	Assisting Aboriginal communities and producers to build capacity and develop their agriculture, agri-food, or traditional agricultural based businesses. <a href="http://www.fnala.com">www.fnala.com</a>

Provincial	
Ministry of Agriculture	Oversees agriculture, aquaculture, and food industry development in the province. <a href="http://www.gov.bc.ca/agri/">www.gov.bc.ca/agri/</a>
Ministry of Energy, Mines and Housing	Responsible for electricity and alternative energy, housing policy, mines and mineral resources, titles, offshore oil and gas, and oil and gas. <a href="http://www.gov.bc.ca/empr/contacts.html">www.gov.bc.ca/empr/contacts.html</a>
Ministry of Environment, including the Environmental Assessment Office	Responsible for climate change, air quality, pollution and waste, conservation officer services, ecosystems, BC parks, water, oceans and marine fisheries. <a href="http://www.gov.bc.ca/env/">www.gov.bc.ca/env/</a>
Ministry of Forest, Land and Natural Resource Operations	Responsible for regional management of range, FrontCounter BC, BC Timber Sales, recreation sites and trails, archaeology, heritage, GeoBC, regions, fish, lands, wildlife and habitat, statutes, regulations, authorizations, licensing and permitting. <a href="http://www.gov.bc.ca/for/">www.gov.bc.ca/for/</a>
Ministry of Aboriginal Relations and Reconciliations	Focused on closing the social and economic gaps between Aboriginal citizens and other British Columbians. <a href="http://www.gov.bc.ca/arr">www.gov.bc.ca/arr</a>
Union of British Columbia Municipalities	UBCM is an organization that has served and represented the interest of local governments in BC. UBCM initiates, monitors, interprets and reacts when changes could have an effect on local governments and the communities they serve. <a href="http://ubcm.ca/">http://ubcm.ca/</a>
Invasive Plant Council of BC 1-888-WEEDSBC or 250-392-1400	Through province-wide cooperation and coordination, the Invasive Plant Council of BC (IPCBC) is working to minimize the negative ecological, social, and economic impacts caused by the introduction, establishment, and spread of invasive species. <a href="http://www.invasiveplantcouncilbc.ca/about-us/">www.invasiveplantcouncilbc.ca/about-us/</a>
Regional Weed Committees of BC	There are 12 independent regional weed committees located across the province that work on invasive plant management in a variety of capacities <a href="http://www.invasiveplantcouncilbc.ca/committees/">www.invasiveplantcouncilbc.ca/committees/</a>



Hot Spots crew on the Tobacco Plains Reserve.  
E. Armagost

### 3.0 Invasive Plant Management Plan Development

The purpose of this section is to provide a concise set of steps along with resources to simplify the invasive plant management process. These guidelines are based on the *Seven Steps to Managing your Weeds* manual, developed by the Open Learning Agency in cooperation with the BC Ministry of Agriculture, Food and Fisheries in 2002. This manual is available at: <http://www.weedsbc.ca/pdf/7StepsToManagingYourWeeds.pdf>

**Before you begin, use the following link: <http://www.invasiveplantcouncilbc.ca/committees/regional-committees>, to find out who your regional invasive plant committee coordinator is. Your coordinator will be able to help find available resources, provide information and, guidance throughout the entire planning process.**

#### Step 1. Identify & Map the Management Area

Mapping the management area will provide a basis for decision making and long-term planning. The map should include the management area, resources within that area along with any areas that are endangered, culturally significant, and those areas with known invasive plant infestations.

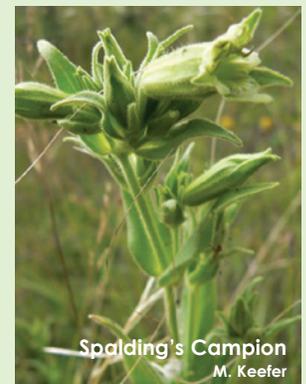
### SPOTLIGHT: Tobacco Plains Indian Reserve

The Tobacco Plains Indian Reserve is 4322 hectares and supports a small community of Ktunaxa who use the area for hunting, gathering, and economic ventures. The Reserve is part of the northern end of the Paluse grasslands and lies north of the Canada - US border; as such it is often a pathway for new invaders moving north.

In the late 1990s, a rare threatened plant was found on the Tobacco Plains Reserve, called Spalding's campion (*Silene spalding*). Tobacco Plains was the only location in Canada where this plant could be found and it was classed as Critically Imperiled. It was believed that there were less than 250 individual plants of this species in Canada and under 15,000 globally. This incredible rarity triggered a review based on the Species At Risk Act (SARA), and led to the writing of a Recovery Plan. Several years of overgrazing along with conifer encroachment and off road vehicle use negatively affected the population of Spalding's campion and allowed invasive plants to become established. Funding for Tobacco Plains to manage the rare plant was non-existent, the band had no capacity and yet the Critically Imperiled designation demands heightened stewardship and protection. Tobacco Plains has been working to secure funding with little success.

In 2009 and 2010, the Invasive Plant Council of BC provided field crews that completed an invasive plant inventory and worked with Michael Keefer, of Keefer Ecological Services Ltd., to learn how to identify the Spalding's campion. The crews collected GPS locations of the Spalding's campion and hand-pulled high priority invasive plants. Moth mullein, (*Verbascum blattaria*) was identified as a new invader and was treated in 2009 and 2010; however, moth mullein remains to be recognized provincially as invasive.

In 2009, leafy spurge, an incredibly challenging invasive plant, was discovered on the reserve; Spalding's campion was present within the infestation. The combination found on Tobacco Plains of a Critically Imperiled plant living amongst one of the world's most invasive plants presents a unique situation and treatment decisions are incredibly complicated.



Spalding's Campion  
M. Keefer

A team has been struck to help with these types of decisions and is called the Spalding's Recovery Team. A permit has been issued by the Species at Risk Organization allowing Tobacco Plains to apply pesticide to treat the leafy spurge in 2011. The band is still working to secure funding for treatment.

## SPOTLIGHT: Williams Lake Indian Band - Invasive Plant Management Plan Development

### Step 1

The first Vice-chair for the Cariboo Chilcotin Coast Invasive Plant Committee (CCCIPC) was Williams Lake Indian Band (WLIB) member, Kristy Palmantier. She saw the importance of WLIB collaborating with the CCCIPC to help protect traditional areas from invasive plants. The area was mapped through collaboration in 2006.

### Step 2

In 2006, a group interested in invasive plants met at WLIB (Sugarcane). They noticed the massive loss of indigenous grasslands and economic opportunities, such as hay and gravel sales, to invasive plant infestation. The concern was also high for the potential negative effects and increased operating expense the plants would have on the newly established golf course. Thus, together with the CCCIPC, an inventory was conducted. Aerial pictures are taken annually of the invasive plants in bloom to show the damage on a larger scale. WLIB members took notes about where the plants were moving and any new infestations. CCCIPC helped the WLIB determine invasive plant management that had been carried out in the traditional area and shared information on the invasive plants that should be watched for during the inventory.

### Step 3

WLIB has been working with the CCCIPC to set measurable goals for reserve land to preserve, maintain, and protect their values and interests. The objective to reach this goal is on-going management of the four main invasive species that are infesting the reserve as well as watching for plants that might move in. Other goals and objectives include wildlife, community safety, water quality, and education.

### Step 4

Priorities have been set in terms of which plants and areas are most important to deal with first. This is based on resources available, the type of management needed to control each plant species, and the extent of the invasive plant infestation.

### Step 5

The WLIB and CCCIPC have discussed many management strategies. First and foremost is education and awareness to the band members. For the on-ground management of plants around the reserve, two types of management plans are set: one for the high traffic areas, and another for low traffic areas.

### Step 6

The WLIB and CCCIPC have discussed all available management strategies. Manual control, biological control, and chemical control have all been used. The groups work together to decide what the best options are for each species and site. For the extensive knapweed infestation throughout the reserve, biological control is the most desirable option. But where the knapweed is in the community, manual and chemical treatments have been used. There is an option to use cattle to start controlling invasive plants which may be added to the plan in the future.

### Step 7

Monitoring is a very important step in the program as it shows the results of the management practices. The CCCIPC is working with the WLIB to set up some permanent transects to monitor the effectiveness of the knapweed biocontrol agent in low traffic areas.

### Actions:

- ✓ Find what maps already exist. You can draw directly on an existing base map or even draw a base map for a small area; for example, a parking lot or street.
- ✓ A basic map of the management area can be made using the BC Ministry of Natural Resource Operations (NRO) Invasive Alien Plant Protocol (IAPP) mapping tool located at: [http://webmaps.gov.bc.ca/imf5/imf.jsp?site=mofr\\_iapp](http://webmaps.gov.bc.ca/imf5/imf.jsp?site=mofr_iapp)

## Step 2. Conduct an Invasive Plant Inventory

Once the management area is mapped, it is time to identify the invasive plant species that are present. If the area is large, you may need to do some prioritizing to figure out which section to do first. In addition, other agencies may have done work in or near the management area that could help reduce the workload. In addition, you need to prioritize which areas need to be inventoried first. You may want to start with traditional hunting grounds, berry picking sites, or sensitive habitat sites including riparian areas and endangered habitat.

Find out what inventory work/mapping and or treatment of invasive plants has been done within the management area.

Work may have been conducted by various jurisdictions including but not limited to:

- BC Hydro - [http://transmission.bchydro.com/transmission\\_system/maps/](http://transmission.bchydro.com/transmission_system/maps/)
- Fortis BC - [www.fortisbc.com/pages/default.aspx](http://www.fortisbc.com/pages/default.aspx)
- Federal Government, Parks Canada
- BC Ministry of Environment, BC Parks - [http://www.env.gov.bc.ca/bcparks/explore/regional\\_maps/hundredmile.html](http://www.env.gov.bc.ca/bcparks/explore/regional_maps/hundredmile.html)
- Ministry of Forest, Land and Natural Resource Operations (IAPP) - <http://www.for.gov.bc.ca/hra/plants/index.htm>
- CN Rail
- Municipal Governments
- BC Regional Districts - <http://www.bcstats.gov.bc.ca/data/pop/maps/rdmap.asp>
- Ranches
- Grazing leases
- Local community/environmental groups and organizations

#### Actions:

- ✓ Add all jurisdictions and their respective work areas to the management area map.
- ✓ Before you start, find out which species of invasive plants are common in your area and those that pose a serious threat that haven't arrived yet. You need to be able to identify the plants and learn when the best time to identify them is in your region.
- ✓ There are many resources to help you identify invasive plants. For a basic provincial guide to invasive plants see the *Field Guide to Noxious Weeds and Other Selected Weeds in British Columbia* at: <http://www.agf.gov.bc.ca/cropprot/weedguid/weedguid>.

**If there are plants that you do not recognize, take a photo or bag and press a sample for your local coordinator or invasive plant specialist to identify. Locating small invasive plant infestations is crucial to the eradication of new unwanted species.**

### Step 3. Set Management Goals and Objectives

The purpose for setting goals and objectives is to help guide the planning process. Goals are generally very broad and objectives are more specific and measurable. Each goal will have more than one objective.



Examples:

- Goal - Increase the annual yield of hay.
  - a. Objective – Eliminate over grazing in pastures over three years.
  - b. Objective – Reduce the area of infestation in pastures by 50% over two years.
- Goal - Preserve riparian habitat and species.
  - a. Objective – Remove the Japanese knotweed from the management area in one year.
  - b. Objective – Increase the abundance of native plants by 50% in degraded riparian areas within the management area over five years.

#### Actions:

- ✓ Add your goals and objectives to your management plan.

### Step 4. Set Priorities for Invasive Plant Management

There are two parts to consider when prioritizing invasive plants: **species** and **location**. Relatively aggressive species need to be treated first and so do high priority locations, such as high traffic areas.

To make sure you manage the most aggressive plants first, refer to the *Field Guide to Noxious Weeds and Other Selected Weeds in British Columbia* and contact your regional coordinator or local agrologist for regional information. In addition, you can use the BC Invasive Plant Core Ranking Process to help determine which plants to treat/manage first: <http://www.for.gov.bc.ca/hra/invasive-species/index.htm>

Priority sites include areas that are not infested, small or single plant infestations, or areas that



receive high traffic and are therefore sources of spread. Large infestations are generally not high priority treatment sites.

**Actions:**

- ✓ Add the locations and species to the management plan and map.

### Step 5. Select Management Strategies

There are many invasive plant management strategies. Generally, for invasive plant management to be effective, more than one strategy will need to be used on any one infestation in order to meet your management goals and objectives. The strategies that you select will be used in **Step 6**. Below is a list of invasive plant management strategies:

- **Prevention** – education, minimizing soil disturbance, and many more
- **Physical strategies** – mowing, burning, hand pulling, tillage
- **Cultural strategies** – crop rotation
- **Livestock grazing**
- **Biological control**
- **Use of herbicides**

For more information and examples of management strategies, go to: <http://www.weedsbc.ca/pdf/7StepsToManagingYourWeeds.pdf>

**Actions:**

- ✓ Work with your regional coordinator and or your local agrologist, or invasive plant management specialist to determine the most appropriate management strategies. Add these into your plan.

### Step 6. Develop an Integrated Invasive Plant Management Plan

Integrated pest management or IPM refers to the use of more than one management strategy to eradicate, control or manage pests; in this case, invasive plants. An integrated management plan will include the use of various strategies, over time in your management area depending on the invasive species that are present and the funding available.

**Actions:**

- ✓ Work with your regional coordinator to develop an integrated invasive plant management plan.

### Step 7. Develop a Monitoring Plan

In order to decide whether or not the management strategies that you have chosen are working or if there are changes that need to be made, you will need to monitor your management area. In order to be effective, a monitoring plan needs to be easy to follow, and maintained consistently over time. A basic monitoring plan needs to outline exactly where in the management area to go, when to go there, and what to measure. Clear records and field notes must be kept in order for the information to be useful.

For more information regarding monitoring plans, go to: <http://www.weedsbc.ca/pdf/7StepsToManagingYourWeeds.pdf>

For a detailed guide to the development of a monitoring plan, go to: <http://www.ilmb.gov.bc.ca/risc/pubs/teecolo/habitat/index.html>

**Actions:**

- ✓ Draft a monitoring plan using the information and resources above and work with your regional coordinator to make sure that it will be effective.
- ✓ Use the checklist in **Appendix 3** to track your progress.

## 4.0 Responding to Pest Management Plans

### 4.1 Purpose

Aboriginal communities receive Pest Management Plan (PMP) referrals from industry and government for mining, forestry operations, highway maintenance, and oil and gas development. Aboriginal people are concerned about protecting moose and deer calving areas, travel corridors, riparian zones, and animal licks as these areas are typically visited for berry picking and traditional foods and drinks. Every community can benefit from a guide to assist them in working with these agencies to respond and develop integrated pest management planning within their asserted traditional territories.

### 4.2 Resources

The BC Ministry of Environment has created the *Draft Guideline for Integrated Pest Management Proponents* that outlines how to conduct consultation with Aboriginal communities. It is advised that Aboriginal groups read the document to determine the Ministry of Environment's recommended process for consultation. Failure to respond within the prescribed time period can result in the proponent being given approval to carry out their plans. This document is found at the Ministry of Environment website under the Integrated Pest Management Section under Publications and Guides in the First Nations Section. The link is: [http://www.env.gov.bc.ca/epd/ipmp/first\\_nations\\_cons\\_guide/pdf/complete\\_guide.pdf](http://www.env.gov.bc.ca/epd/ipmp/first_nations_cons_guide/pdf/complete_guide.pdf)

The Integrated Vegetation Management Association of British Columbia (IVMA of BC) is a recognized organization of professional people dedicated to the responsible practice of all aspects of vegetation management. The IVMA works for and provides information to its members in British Columbia and across Canada. More information about IVMA can be found on their website: <http://www.ivma.com/>

The Invasive Plant Council of BC is a non-profit society working to coordinate invasive plant management in British Columbia. Information regarding invasive plants can be found on their website along with several reports and Targeted



Hot Spots crew doing inventory of invasive plants on Vancouver Island.  
D. August

Invasive Plant Strategies can be found at: [www.invasiveplantcouncilbc.ca/](http://www.invasiveplantcouncilbc.ca/)

Regional weed committees are located throughout the province and are available to provide expertise to Aboriginal groups in technical knowledge of invasive plants, prevention and treatment options including herbicides. Contact information for these non-profit societies can also be found on the Invasive Plant Council of BC's website above.

### 4.3 Legislation

A Pest Management Plan (PMP) is a legislative requirement of the *Integrated Pest Management Act* and its regulation. This legislation is delivered and monitored by the Ministry of Environment. A document exists on the MoE website that discusses how to interpret the Act and how to prepare a PMP. This resource may offer valuable guidance for Aboriginal people, and is found at: <http://www.env.gov.bc.ca/epd/ipmp/pdf/phase1notes.pdf>

### 4.4 Responding to a PMP Referral

Consultation is meant to be a two-way process; it begins when your group receives a referral notice requesting a response. If you choose to respond, it is advisable that your written response outlines when and how you wish to be consulted and clearly state your needs and interests to the proponent. Response to referrals needs to be made within the identified time period or it may not be taken into consideration.



For example, consultation guidelines that were used to respond to referrals were developed by the Northern Secwepemc te Qelmučw (NStQ), the Treaty arm of the Northern Shuswap. The consultation guidelines were developed and endorsed by Motion # 09-06-03-06 which guides how governments and third parties will engage the NStQ on proposals, issues, and activities within the Secwepemcul'ecw (Territory). To receive a copy of consultation guidelines, contact the Northern Shuswap Tribal Council at: 250-392-7361

### Considerations

Aboriginal groups should consider neighbouring groups who may be sharing information with the proponent regarding the proposed plan. It is recommended the overlapping traditional territories be discussed in order to present a collaborative response. The status of your group is of utmost importance as there are several stages of treaty negotiation throughout the province.

Determining involvement and authority of representatives are important first steps. Where implications of unjustified infringement exist, consult with the affected Chief and Council. If your group has an existing bylaw, BCR, or other relevant agreement, refer to the existing agreement for guidance.

Training about pesticide use and target plants should be considered. The Invasive Plant Council of BC has designed an eight-day training course that focusses on invasive plants, the damage they cause, and treatment options. There is also a one-day refresher course focussed on aboriginal values.

A large portion of the training course focuses on pesticide application in a sound manner.

A Pest Management Plan (PMP) is approved for a five-year term and is required by companies who apply pesticide on a land base of more than 20 hectares per year. A PMP is required for companies managing invasive plants on public land where more than 50 hectares are treated in a year. Mosquito control also requires a PMP where treatment will be delivered on more than one hectare of water. It is recommended that you refer to chapter three of the *Handbook for Pesticide Applicators and Dispensers*. This book summarizes what is required in a PMP and outlines what notifications and signage are required on treated sites. The book is available from the Queen's Printer, call 250-356-0475.

### Step 1: Structuring the Process

Discuss the process itself; some proponents require only a simple consultation process while others are more complex. Your Aboriginal group is entitled to negotiate the structure of the process which best suits your political and administrative structures, priorities, and capacities. Information exchange must follow the principles of recognition and respect for your group, rights, and reconciliations.

### Step 2: Response to Referral

The information you receive from the proponent should be sufficient to enable your group to make fully informed decisions in regard to the proposal. Your written response letter should include a statement of how the proposed



Kispiox Community Weed Pull.  
M. Hillis



Disposing of invasive plants in the Cowichan Valley,  
Vancouver Island.  
D. August

activity is anticipated to be of benefit and/ or detriment to your rights and interests and a traditional territory map showing that the basis for the claim lies within that territory.

### Step 3: Discussion and Negotiation

**If your group operates with existing referral guidelines or similar protocol, ensure that you follow them during this process.**

If the initial plan, or portions of the plan, does not adequately meet the needs or interests of your group, there are ways to work cooperatively to find common ground. Begin by opening a line of communication with the proponent to discuss the preferred changes to the PMP and to organize a field visit. Next, set a meeting with the proponent, the traditional land holder(s), and/ or band representatives to show how the plan could potentially adversely affect your interests. It is advisable to provide alternative solutions to mitigate possible impacts.

### Step 4: Agreement

When you have successfully completed the negotiation process, print two copies of the agreed upon PMP and have both parties sign and date each of the copies. By reaching an agreement, you are exercising your ancestral and

inherent constitutional rights.

### Step 5: Follow-up

If possible, organize field visits to the treated sites to see the affects of treatment on the ground. In areas where herbicide was used, only enter after the no-entry period has expired; the no-entry period is dependent on the herbicide used. This information is available on the herbicide label. Make field notes of all positive and any negative changes that you see for future reference.

If time allows, follow-up with the proponent(s) to help build positive, ongoing relationships. These relationships will foster the exchange of technical and Traditional Ecological Knowledge, benefiting everyone involved.

**The above steps have been used to create a checklist for information exchange found in Appendix 4. It is recommended that all activities taken in the five steps listed above be accurately documented for future reference.**





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## Appendix 1 - Sample Band Council Resolution

Indian and Northern Affairs Canada offers a 'fillable' form that the following information can be cut and pasted into. The form contains information regarding your band. The form is located at: <http://www.ainc-inac.gc.ca/ap/frms/gv/80-005-eng.pdf>

### A Band Council Resolution to Provide Management of Invasive Plants

WHEREAS:

- 1) Invasive plants pose a threat to our band member's environment, health, safety and economics on Indian reserve land; and
- 2) Invasive plants pose a threat to our traditional lands affecting foods, medicinal plants and animals by overtaking their habitat.

BE IT THEREFORE RESOLVED THAT:

- 1) The **[NAME OF FIRST NATION]** representing the interests of the people in the traditional territories recognizes the threat caused by the invasive plants.
- 2) The **[NAME OF FIRST NATION]** hereby grants **[NAME OF REPRESENTATIVE OR DEPARTMENT]** authority to pursue funding on behalf of the nation to remove and manage the invasive plants on Indian reserve land/or traditional territories off reserve lands.
- 3) The **[NAME OF FIRST NATION]** hereby grants **[NAME OF REPRESENTATIVE OR DEPARTMENT]** authority to destruct and control of invasive plants on **[INSERT NAME OF INDIAN RESERVE LAND]**.
- 4) The **[NAME OF FIRST NATION]** hereby grants **[NAME OF REPRESENTATIVE OR DEPARTMENT]** authority to destruct and control invasive plants according to the relevant laws of the Province of British Columbia.
- 5) The **[NAME OF FIRST NATION]** hereby grants **[NAME OF REPRESENTATIVE OR DEPARTMENT]** authority to enter into agreements with provincial or federal governments of Canada and/or agencies concerning invasive plants on reserve lands or adjacent to reserve lands where Aboriginal rights and interests may be affected.

## Appendix 2 - Sample Bylaw

Bylaw #\_ EFF [DATE]  
CONTROL OF NOXIOUS WEEDS

The Council of the [NAME OF FIRST NATION] at a meeting held [DATE AND LOCATION] makes the following bylaw pursuant to paragraph (j) and (r) of Section 80 of the *Indian Act*.

Bylaw No. [#]

A bylaw to provide for the destruction and control of noxious weeds in [NAME OF INDIAN RESERVE], in the Province of British Columbia.

- a) The holder of a certificate of possession or occupant of any lease land within the reserve shall cut or cause to be cut down or otherwise destroy all noxious weeds growing thereon as often in each year as is deemed necessary to prevent them from going to seed.
- b) All home owners within the reserve shall cut or cause to be cut down or otherwise destroy all noxious weeds growing thereon as often in each year as it is deemed necessary to prevent them from going to seed within 30 meters of their house and other building structures.
- c) All traditional land owners within the reserve shall cut or cause to be cut down or otherwise destroy all noxious weeds growing thereon as often in each year as is deemed necessary to prevent them going to seed.
- d) The [NAME OF DEPARTMENT OR REPRESENTATIVE] appointed by the Council shall give notice in writing to the holder of a certificate of possession or occupant of any land where noxious weeds are growing and in danger of going to seed or vegetatively spreading requiring him/her to have the same removed and destroyed within seven days from the service of such notice, and in the event of such holder of a certificate of possession.
- e) Any person who violates any of the provisions of this bylaw shall be guilty of an offense and shall be liable for all costs incurred to remove the noxious weed or will be evicted from their residence, or both fine and eviction.

## Appendix 3 - Checklist for Developing an Invasive Plant Management Plan

Step	Notes	Date
1. Identify & Map the Management Area - <i>Check around for maps that may already exist.</i>		
2. Conduct an Invasive Plant Inventory - <i>Collect samples of any plants that you don't recognize.</i>		
3. Set Management Goals and Objectives - <i>Goals are broad and objectives are measurable.</i>		
4. Set Priorities for Invasive Plant Management - <i>Aggressive invaders, small infestations, and high traffic areas are all priorities for ip management.</i>		
5. Select Management Strategies - <i>You will likely choose several strategies to use for any single infestation.</i>		
6. Develop an Integrated Invasive Plant Management Plan - <i>This is where you put all of the pieces together to meet your long-term goals.</i>		
7. Develop a Monitoring Plan - <i>Make sure that it is simple and easy to follow.</i>		

## Appendix 4 - Checklist for Responding to Pest Management Plan Referrals

Steps	Actions	Comments	Date
1. Structuring the Process	<ul style="list-style-type: none"> <li>• Identify authority of representatives or department.</li> <li>• Review any maps and air photos of reserve lands and areas of interest.</li> <li>• If required, contact neighbouring groups with overlapping interest areas.</li> <li>• Research internal policies and procedures for information exchange guidelines.</li> <li>• Review internal Band Council Resolutions or bylaws.</li> <li>• Identify how the proposed activity is anticipated to be of benefit and/or detriment to your rights and interests.</li> </ul>		
2. Response to Referral	<ul style="list-style-type: none"> <li>• Prepare notice to proponent indicating that your group is interested in engagement.</li> <li>• Identify how the proposed activity is anticipated to be of benefit and/or detriment to your rights and interests.</li> <li>• Include a traditional territory map showing that the basis for the claim lies within that territory.</li> <li>• Include any wishes for field visit or other information or resources your group deems necessary.</li> </ul>		
3. Discussion and Negotiation	<ul style="list-style-type: none"> <li>• Open a line of communication with the proponent to discuss the preferred changes to the PMP Request.</li> <li>• Request clarification or further information from proponent that will assist your group in making a fully informed decision.</li> <li>• Organize a field visit if needed.</li> <li>• Explore training and employment opportunities.</li> <li>• Provide alternative solutions to mitigate possible impacts.</li> </ul>		
4. Agreement	<ul style="list-style-type: none"> <li>• Print two copies of the agreed upon PMP and have both parties sign and date each copy.</li> </ul>		
5. Follow-up	<ul style="list-style-type: none"> <li>• If possible, organize field visits to the treated sites to see the affects of treatment on the ground.</li> <li>• Follow-up with the proponent(s) to help build positive, ongoing relationships.</li> <li>• These relationships will foster the exchange of technical and Traditional Ecological Knowledge, benefiting everyone involved.</li> </ul>		