



# CLIMATE CHANGE ADAPTATION PROGRAM

## Agricultural Pest Identification & Management Tools for the Cariboo

### Summary

Funding for this project has been provided by the Governments of Canada and British Columbia through the Canadian Agricultural Partnership, a federal-provincial-territorial initiative. The program is delivered by the Investment Agriculture Foundation of BC.

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*Regional  
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**BC AGRICULTURE & FOOD  
CLIMATE ACTION  
INITIATIVE**

Cariboo, British Columbia, 2020

# Agricultural Pest Identification & Management Tools for the Cariboo

*Project Summary*

## **Cariboo — Agricultural Pest Identification & Management Tools for the Cariboo: Project Summary**

Prepared by *Invasive Species Council of BC*,  
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Learn more at

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The ISCBC would like to thank their Cariboo Advisors and the ISCBC staff, *Susan Staniforth* and *Kseni Kolodka*.

The Project Oversight Committee included:

- *Duncan Barnett*, Cariboo Cattlemen's Association
- *Rob Borsato*, Kersley Farmers' Institute
- *Lynda Archibald*, Cariboo Growers
- *Nicole Pressey* and *Susanna Acheampong*, BC Ministry of Agriculture
- *Emily Sonntag*, Cariboo Regional District
- *Samantha Charlton* and *Emily MacNair*, BC Agriculture & Food Climate Action Initiative

The cover photo is provided by *Frank Peairs*, Colorado State University, Bugwood.org.

Cariboo Agricultural Adaptation Working Group included representatives representation from:

- BC Forage Council
- Cariboo Cattlemen's Association
- Cariboo Growers
- Kersley Farmer's Institute
- Cariboo Regional District
- BC Ministry of Agriculture
- BC Agriculture & Food Climate Action Initiative

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Climate Action Initiative  
BC AGRICULTURE & FOOD



## **Cariboo Adaptation Strategies Agricultural Pest Identification and Management Tools for the Cariboo**

Project Number: CB13

Project Region: Cariboo

### **PROJECT SUMMARY REPORT INVASIVE SPECIES COUNCIL OF BC**

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#### **Introduction**

Agriculture is an important industry in the Cariboo-Chilcotin region of BC. As temperatures warm, particularly winter temperatures, the range and prevalence of diseases and invasive species is anticipated to shift. A changing climate may increase their spread, and even allow new species to move into the region. The Priority Pests of the Cariboo-Chilcotin final report prepared for the Kersley Farmers' Institute (Powell, 2018), ranked current and emerging agricultural pest threats based on each pest's current and potential distributions. It also identified a significant gap in regional support activity and resources. The report identified six recommendations to support pest management in the Cariboo-Chilcotin.

This "Agricultural Pest Identification and Management Tools for the Cariboo" project directly addresses the recommendation "to enhance producer education and connection to information", and also supports two additional actions identified in the report: (1) to employ layered management strategies, and (3) expand and refine pest monitoring.

The project objectives focused on increasing the knowledge of agriculture producers of the awareness and impacts of agricultural invasive species as well as their ability to identify and report them. This is especially important to enable early detection and reporting of high-risk pests. The project developed a range of tools and resources specific to the Cariboo region to support the implementation of best management practices to reduce the introduction and spread of invasive species. The project also targeted youth and youth clubs in the region to provide relevant resources and support youth in being able to identify and report agricultural pests. The project includes four main components: training, information resources, reporting and monitoring, and communications.

### **PROJECT COMPONENTS**

#### **Training:**

##### **Objectives**

Develop and deliver training resources and sessions specifically targeted to the agriculture sector.

##### **What We Accomplished**

An initial workshop was held April 16, 2019 in Williams Lake for 34 participants, where soil experts, regional invasive species experts, Ministry of Agriculture entomologist and invasive plant experts provided invasive species management information, training and resources. A second session was held January 18, 2020 at the Kersley Farmers' Institute as part of their Annual Speakers' Conference: best practices for invasive species management



were reviewed and identification and reporting tools were provided. A number of presentations at industry association meetings were also provided, including Cariboo Cattlemen's AGM, North Cariboo Agriculture Development Advisory Council, Williams Lake Food Policy Council, and the BC Soils Conference.

## Information Resources:

### Objectives

Update and/or develop and provide resources and information to agriculture producers on impacts, identification and management practices for high priority pests.

### What we Accomplished

**New Fact Sheets:** High priority pest species were selected using the BC provincial priority species list, the Priority Pests of the Cariboo-Chilcotin Final Report, and the 2017 CCCIPC Regional Strategic Plan. A total of 3 fact sheets were finalized that provide extensive identification information, photos and management information on: Five Alert Invasive Species for the Cariboo, Brown Marmorated Stink Bug and Perennial Pepperweed. All fact sheets were reviewed by technical experts and the Project Oversight Committee and will be available online and as print resources.

**Phone App:** Since the start of the project, ISCBC has reviewed the Report Invasives App to identify how to improve its functionality and ability to handle and respond to reports. The Council has confirmed the process for verifying data that is submitted and how it analyzed and shared. Research was completed to determine which key invasive species for the Cariboo region were not yet included in the provincial reporting phone apps. Some key species identified included brown marmorated stink bug, true armyworm, western corn rootworm, and quackgrass. Two of these species, true army worm and western corn root worm, are being added to Report Invasive and verification processes were established. Over this project, ISCBC provided orientation and support to agriculture producers on the use and purpose of the apps in order to support their activities. In addition, and beyond the scope of this project, information for the Weeds BMP app on three additional invasive plant species of interest to the region (slender false brome, North Africa grass, and European common reed) was developed and submitted for future inclusion.

**Two new Webinars:** Two webinars were identified, and experts solicited for topics of major concern to the Cariboo agricultural sector. On December 11, 2019, Dan Johnson, Professor of Environmental Science at the University of Lethbridge, presented "Grasshoppers of Concern in the Cariboo". 42 participants attended.

On January 29, 2020, Dave Ralph, Operations Manager for ISCBC and a provincial invasive plant expert, presented "Responding to Agricultural Weeds in the Cariboo" to 58 participants. A section on how to use the Weeds BMP and the Report Invasives Apps was also included in the webinar. These webinars were recorded and are available free for viewing, along with all the other webinars ISCBC has produced.

See the links below to access the webinars and review the ISCBC webinar archives.

["Grasshoppers of Concern in the Cariboo"](#)

["Responding to Agricultural Weeds in the Cariboo"](#)

["Webinar Archives"](#)

## Reporting and Monitoring:

### Objectives

To support and engage agriculture producers, along with youth, to identify and report agriculture pests through online reporting via a phone app for diseases, insects, invasive plants and animals.

### What we Accomplished

Two regional workshops and several information sessions included information on downloading the Report Invasives phone app and the Weeds BMP phone app, as well as hands-on demonstrations of how to use the apps for attendees (BC Soils Conference, Kersley Farmers' Institute Annual Speakers' Conference). In addition, the phone apps were profiled at all industry association meetings and presentations. The "[Responding to Agricultural Weeds in the Cariboo](#)" webinar included a section on how to download and use the Weeds BMP and the Report Invasives apps. Also, a number of youth presentations at schools and clubs included resources and demonstrations on identifying and reporting invasive species. The youth guide as well as the three new fact sheets all have the reporting apps information included.

## Communication:

### Objectives

To develop communications materials targeting producer association and youth groups to raise awareness of high priority pests and what actions to take to avoid their spread.

### What we Accomplished

A range of presentations and outreach activities were provided to local sector associations, school groups, clubs and events throughout the region. These included industry meetings, farmers markets, Christmas markets and fairs, school presentations, and youth group outings.

**A Youth Activity Guide** was developed using the research completed for key invasive agricultural pests. Several artists were commissioned to provide artwork and activity formats. The guide includes an introduction, definitions, and five engaging activities including a scavenger hunt, a "spot the vectors of spread" drawing, identification quizzes, and insect life cycle drawing. The guide has been printed and is also available free for download on the ISCBC website, with the individual activity sheets also available for download and reproduction.

Twenty communications releases were developed and distributed to local organizations and associations for inclusion in their newsletters and outreach efforts, including the project Oversight Committee, the Cattlemen's Associations, Cariboo Central-Interior Poultry Producers, BC Forage Council, BC Apiculture, local Indigenous governments and the Kersley Farmers' Institute. The releases included information on how to manage and report invasive species by using the Weeds BMP and Report Invasives apps.

The BC Cattlemen's Association magazine "BC Beef" requested an article from ISCBC on current and emerging invasive species that are of key interest to cattle producers, and this is expected in their spring issue.

## LESSONS LEARNED & RECOMMENDATIONS

The “Agricultural Pest Identification and Management Tools for the Cariboo” project was a success, with all deliverables and objectives met, hundreds of agricultural sector producers contacted with new resources developed, and youth activities and outreach completed. The new resources and webinars that were developed and produced through the project are in high demand and will continue to help build awareness of the importance and impacts of invasive species to the agricultural sector, as well as supporting identification and reporting.

Participant engagement during the workshops and presentations was successful and many key resources were distributed to sector members. One recommendation would be to create and distribute additional worksheets for workshop audiences for even higher engagement and participation.

More in-person and online training workshops have been requested throughout the region. It is recommended to develop and present additional workshops that are tailored to specific sector members such as ranchers, growers, and Indigenous members in the region. Videos and additional online training webinars could also be developed to reach participants unable to attend presentations and workshops; it is recommended that these digital offerings be posted after any in-person workshops are complete, so as to not deter attendance at the events.

School and youth group presentations were well received and are in high demand, as are the new youth activity guides for public events, clubs and community activities. It is recommended that “train the trainer” professional development workshops for teachers and non-formal educators be developed and hosted, in order to support further outreach across a larger audience. Additional presentations about specific agriculture topics for schools and more youth resources and opportunities for hands-on community events for youth are also recommended, including weed pulls, youth club events, poster and art contests and projects, and hosting awareness raising events and fairs.


The new fact sheets and phone app additions have helped fill a need for current information on high risk agriculture species for the agricultural sector. It is recommended that current and emerging research on new and high-risk agricultural pest species that pose risks to the region due to a changing climate be carefully monitored, and that punctual and timely outreach activities be scheduled to alert the sector as soon as is feasible. In correlation with the up to date research, new resources on emerging pest species should be developed to ensure producers are aware of and can quickly report these potential pests.

An additional recommendation would be to create fact sheets for specific producers, such as beekeepers, cattle ranchers, outback tourism operators, etc. with more specialized information about agricultural pests relevant to their industry that could target impacts and production quality.

In order to increase and enhance the knowledge on agricultural pests in the Cariboo, government officials would like to see increased samples submitted for identification and cataloguing.

The phone apps are an excellent tool for both identification and reporting of species, and





outreach to raise awareness of these tools should be continued. In correlation with emerging research on potential agricultural species and climate change, new species should be continually added to the Weeds BMP and Report Invasives apps to ensure they are current and that producers can identify and report them. An associated recommendation is to hold more training workshops/sessions for how to report agricultural pests using the Report Invasives app.

In summary, with increased awareness, knowledge of best practices and accessible tools, agricultural producers, youth and other community members are more attentive to agricultural pests, have the tools to identify and report them and can take action to manage their spread. With better informed producers, consumers and youth of pest issues and management options, the Cariboo agriculture sector is better prepared to deal with current agricultural pests as well as recognize and report new introductions.