

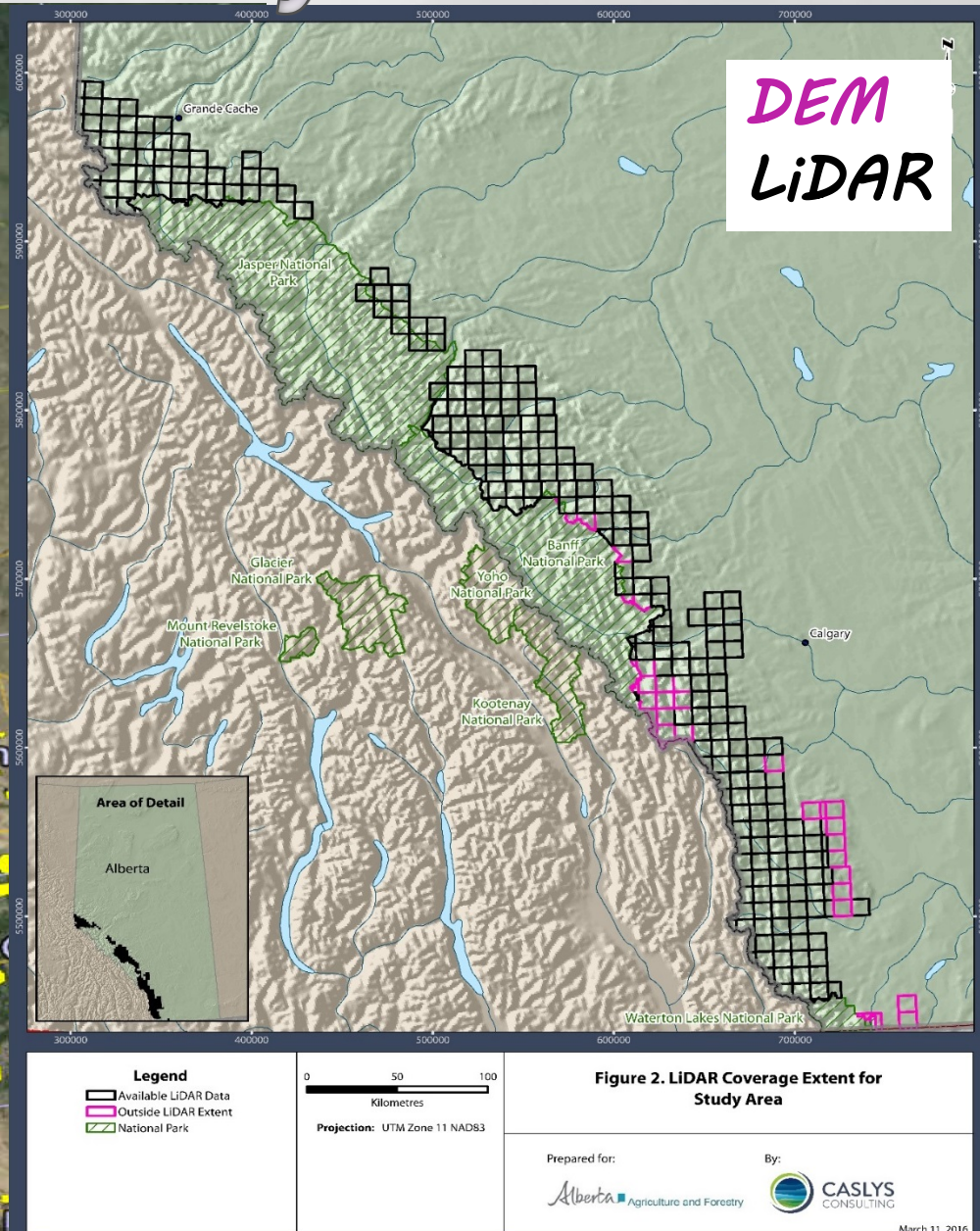
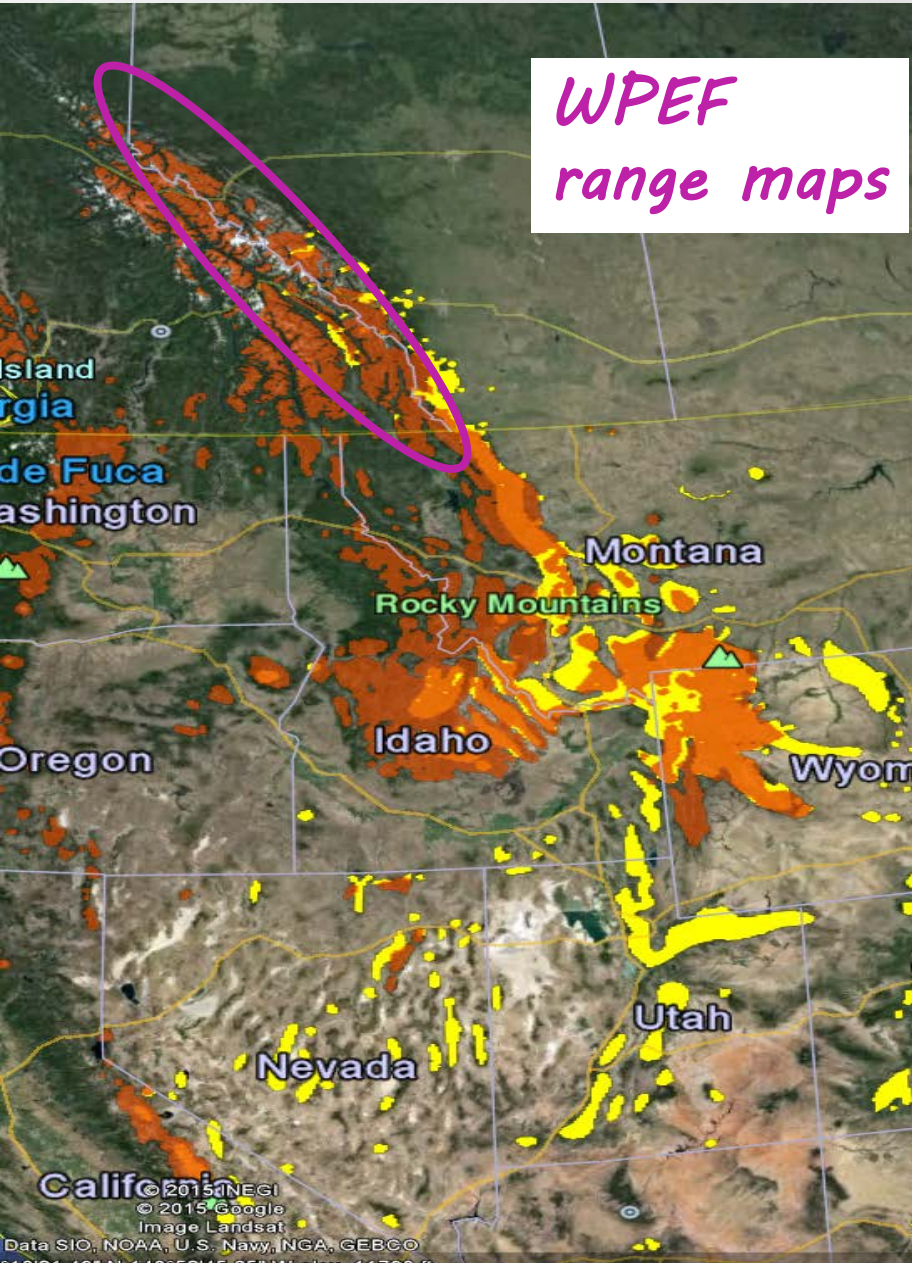
Alberta Update: Whitebark and Limber Pine Recovery Policy & Action

Alberta Recovery Implementation Team Co-chairs:

Robin Gutsell, AEP Status Biologist

Jodie Krakowski, AAF Forest Genetics Specialist

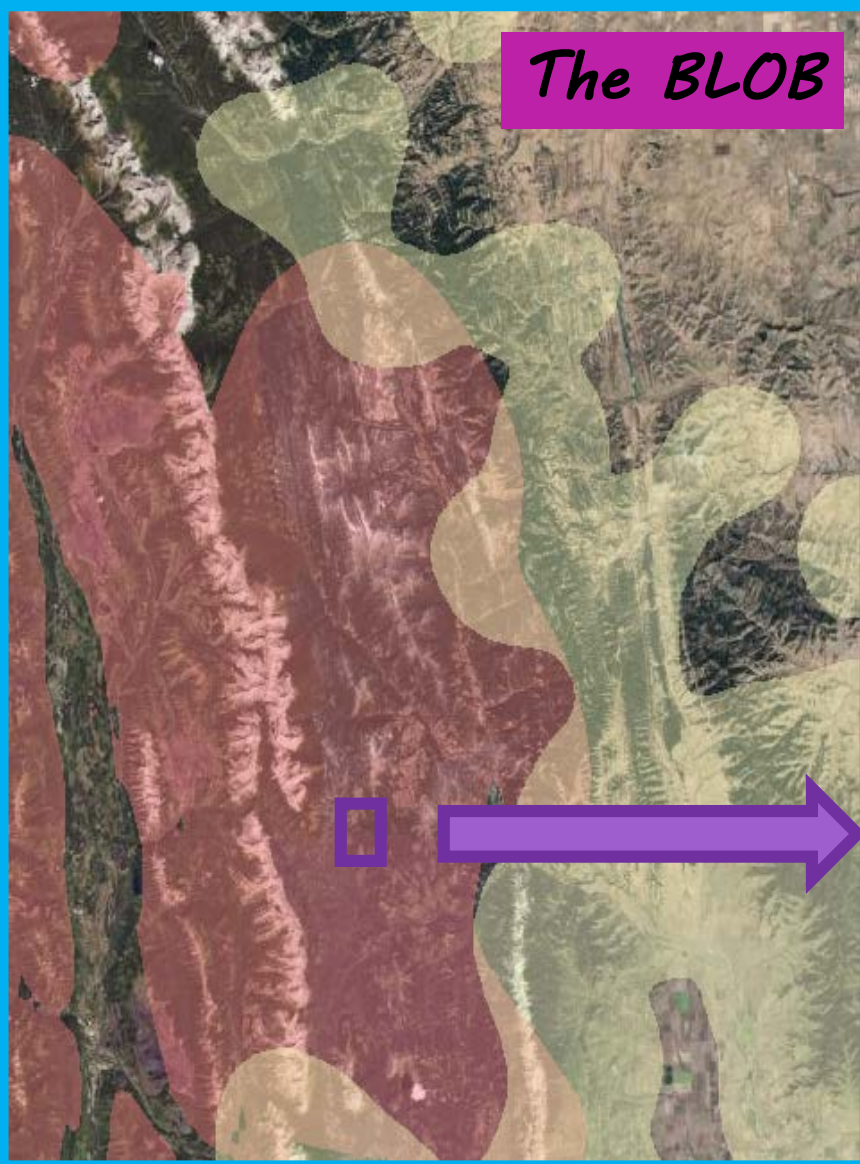
Habitat suitability models



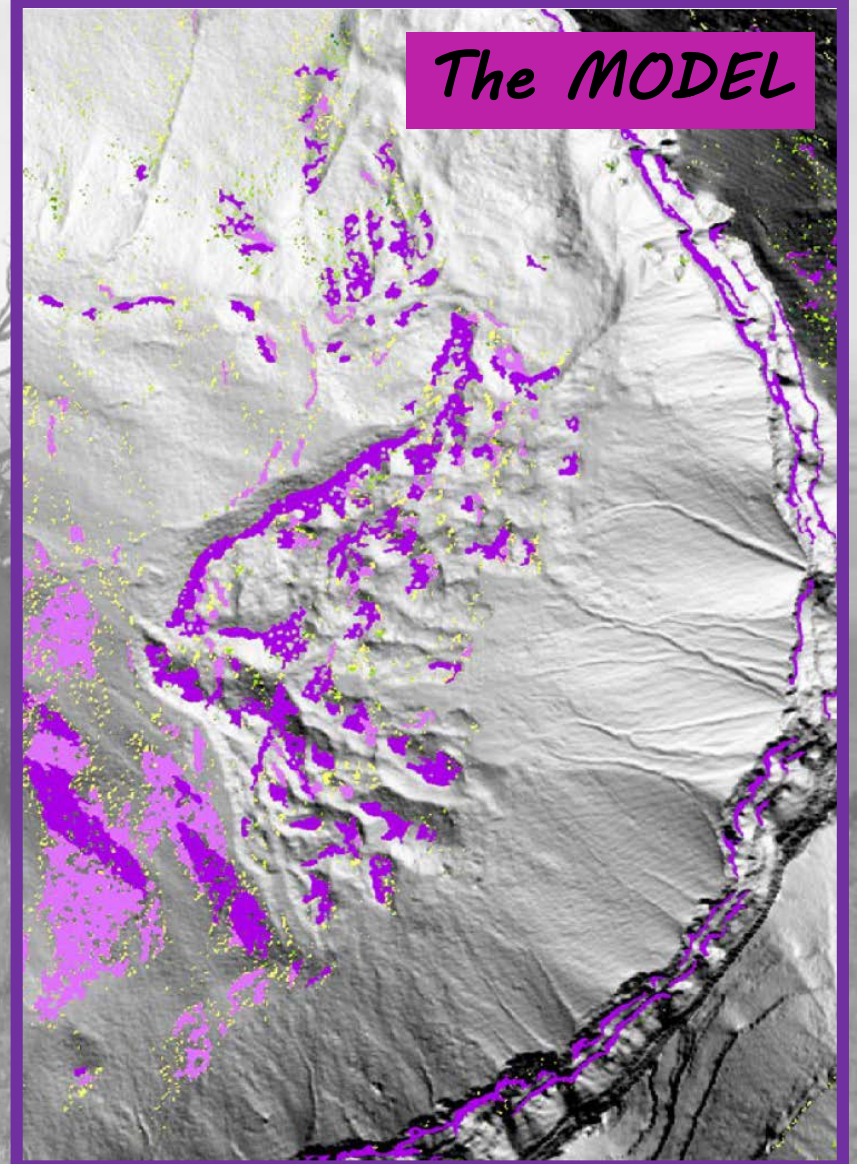
Habitat suitability models

Presence modelling

The BLOB

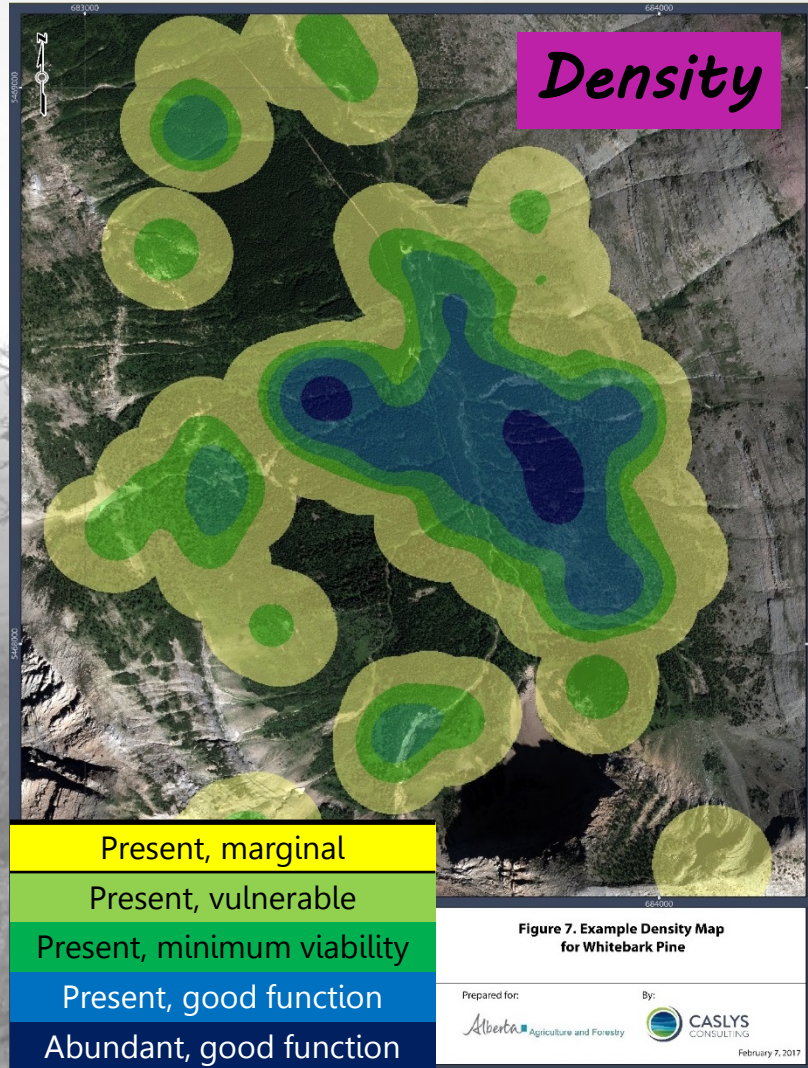


The MODEL



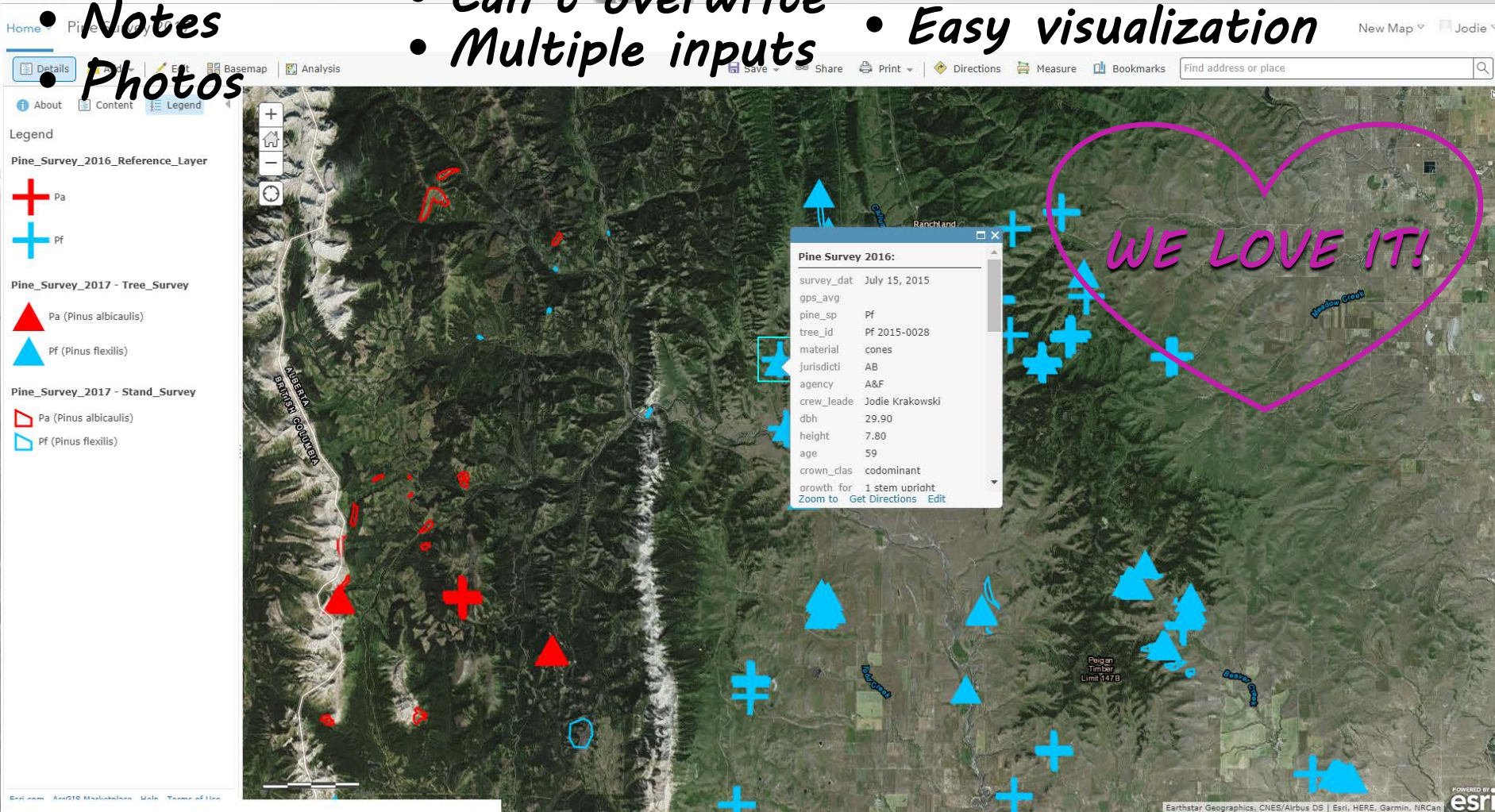
Habitat suitability models

Density thresholds for viability & management



ESRI Collector

- Plus trees
- Polygons
- Density data
- Notes
- Photos
- Customizable
- Online backup
- Responsive help
- Can't overwrite
- Multiple inputs
- Log in from anywhere
- iOS or Android
- Many export options
- Easy visualization



Plus trees

AB Government

Alberta provincial	2015	2016*	2017**
Limber	84	51	82
Whitebark	0	47	12
Possible (follow up)	15	0	27
Parent trees assessed		399	4
Sent for screening	50 L 7 W	50 L 8 W	0 L 0 W
*no seed crop 2016			
**12 trees collected – poor 2017 seed crop			

Screening - AB Gov & Parks Canada

All Alberta (+Mt Robson PP)	2010	2011	2014	2015	2016	2017	Total
Limber – Dorena				60	50	0	110
Limber – Coeur D'Alene	10	10					20
Whitebark - Kalamalka			3	18	17	0	38
Whitebark – Coeur D'Alene		29	11	26	9		75
Total by year	10	39	14	104	76	0	243

Plus trees

NATURE CONSERVANCY
CROWNEST CONSERVATION AREA
CERVO II PROPERTY
Foot Access Only
Hunting with Permission Only
For more information: 547-242-1243 or www.natureconservancy.ca

Agencies, First Nations,
NGOs, private landowners



Monitoring transects

Used to set regional priorities

Every 5 years: 2019 reassessment


Northernmost whitebark pines: Kakwa 2016



Citizen science: ESRI Survey123

Save The Pine

Pine Species
Whitebark pine



Damage or Disease

- Blister Rust
- Mountain Pine Beetle
- Rodent bark chewing
- Don't know

Access

- Hike

Load time on Windows 1.5 seconds

✓ Validate Input



Save The Pine

Caches data out of range

Take Photo

Save Location - press button
hold button for waypoint averaging

No Location

Press to capture location using a map

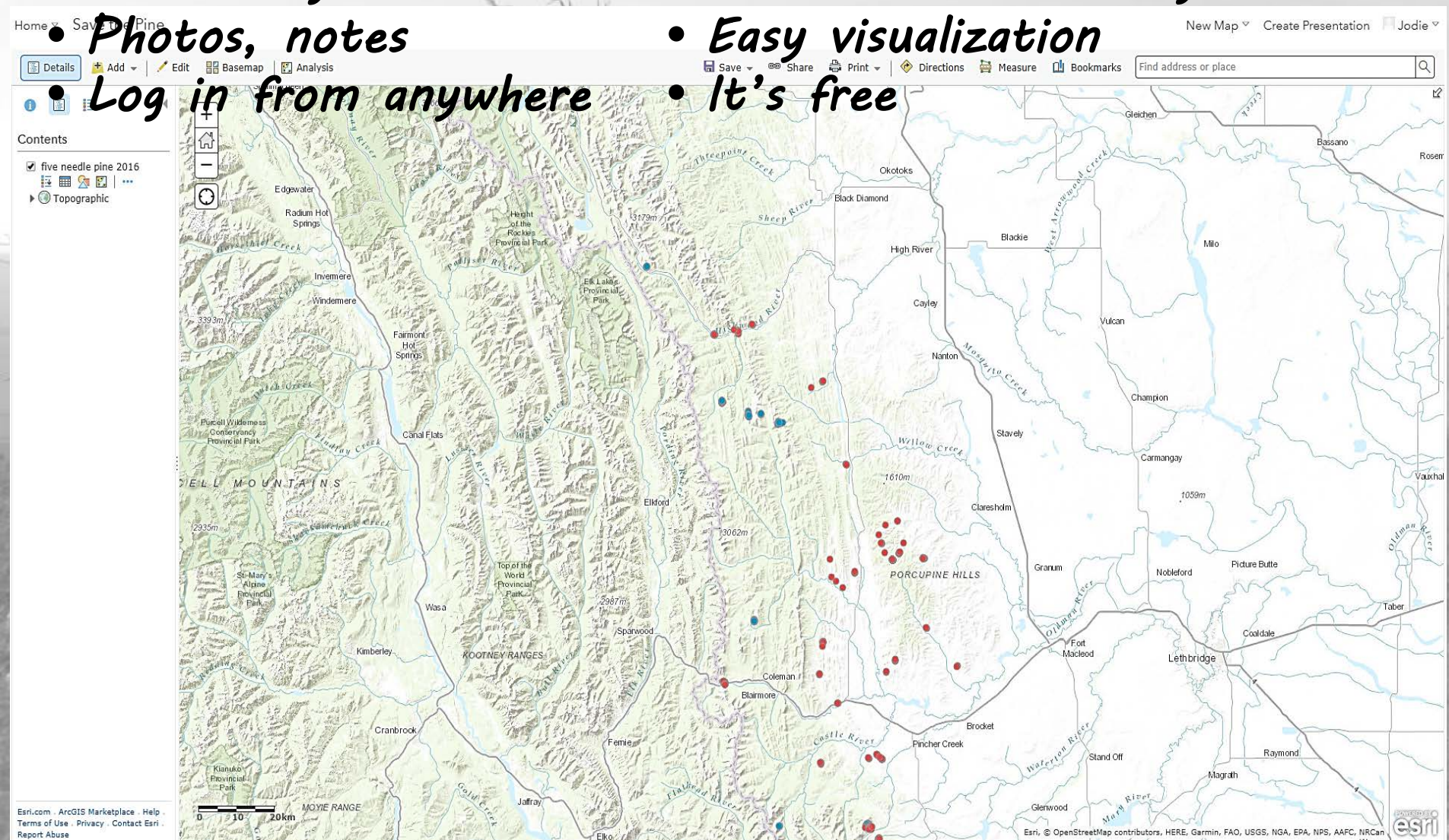
Enter location

Load time on Windows 1.5 seconds

✓ Validate Input

Citizen science: ESRI Survey123

- Points, polys, lines
- Build using Excel
- Photos, notes
- Log in from anywhere
- Android or iOS
- Caches if out of range
- Easy visualization
- It's free



Whitebark and Limber Pine Recovery



www1.agric.gov.ab.ca/\$department/deptdocs.nsf/all/formain16311?open&tree=no



What's so special about whitebark and limber pine?

Alberta has two endangered tree species: whitebark pine (*Pinus albicaulis*) and limber pine (*Pinus flexilis*). These species are endangered because they have been declining rapidly across their ranges. They grow slowly, only starting to produce cones around age 40 (limber pine) and 50 (whitebark pine). Reversing their decline is a long-term commitment. Without healthy populations of these keystone trees, their ecosystems would no longer provide the habitat and values that animals and people depend on, including slope stabilization; a rich source of food for birds, bears and small mammals; headwater streamflow control; subalpine tree island formation; and windswept scenic beauty.

Sustaining and conserving these trees means focusing on more than just the tree. Both of these tree species have evolved very heavy, large wingless seeds so they can't be dispersed by wind. Whitebark and limber pine both depend on the Clark's nutcracker, a bird in the jay family, to reproduce. After countless generations of co-evolution, whitebark pine cones don't open when the seeds are ripe. The nutcracker pecks open the cones, extracts the large seeds that are high in protein and fat, and caches them in the ground with its beak (The nutcracker can store about 100 seeds at a time in a special throat pouch). Each nutcracker plants about 100,000 seeds and digs up about 30,000 each year from memorized locations as its main food. Survivors grow into seedlings. Limber pine cones open, but only seeds cached by nutcrackers germinate.



Threats to whitebark and limber pine

Four main threats affect these species. The key to recovery is to reverse or lessen the damage caused by these threats.

- › White pine blister rust
- › Mountain pine beetle
- › Wildfire suppression and succession
- › Climate change



For more information on whitebark and limber pine in Alberta please follow the links below.

- [Status of the Limber Pine in Alberta \(2007\)](#) -- Aug 14, 2017
- [Status of the Whitebark Pine in Alberta \(2007\)](#) -- Aug 14, 2017
- [Alberta Limber Pine Recovery Plan \(2014-2019\)](#) -- Aug 14, 2017
- [Alberta Whitebark Pine Recovery Plan \(2013-2018\)](#) -- Aug 14, 2017
- [Partners and Accomplishments](#) -- Aug 14, 2017
- [Living on the Edge, Story Map](#) -- Sept 1, 2017



ESRI Story Map

*A versatile extension tool - many formats
Also free!*

Secure | <https://esrd.maps.arcgis.com/apps/Cascade/index.html?appid=d69f30908553449baef93beb7f7689e7>

Apps | govt | ArcGIS - Sign In | Recreational Access

Other bookmarks



Whitebark Pine

[https://esrd.maps.arcgis.com/apps/Cascade/index.html?
appid=d69f30908553449baef93beb7f7689e7](https://esrd.maps.arcgis.com/apps/Cascade/index.html?appid=d69f30908553449baef93beb7f7689e7)

Living on the Edge

Alberta's Whitebark and Limber Pine



Provenance tests

- Limber pine 2016: 2 sites: AB, CO, 30 pops, 145 families*
- thanks USDA-FS, UBC, AAF Rocky Mountain House!
Whitebark pine 2017... coming soon: 1 in a BC series
- thanks BC FLNRORD



Recovery plans

Time to update and merge - implementation is tracked



Alberta Whitebark Pine Recovery Plan 2013-2018



Alberta Species at Risk Recovery Plan No. 34



Alberta Limber Pine Recovery Plan 2014-2019



Alberta Species at Risk Recovery Plan No. 35

Recovery plans

First plans written by multi-stakeholder team

New plans -same or revise in-house and get outside review



Not anticipating large shift in approach - streamline

New format - more Indigenous input

Recovery plans

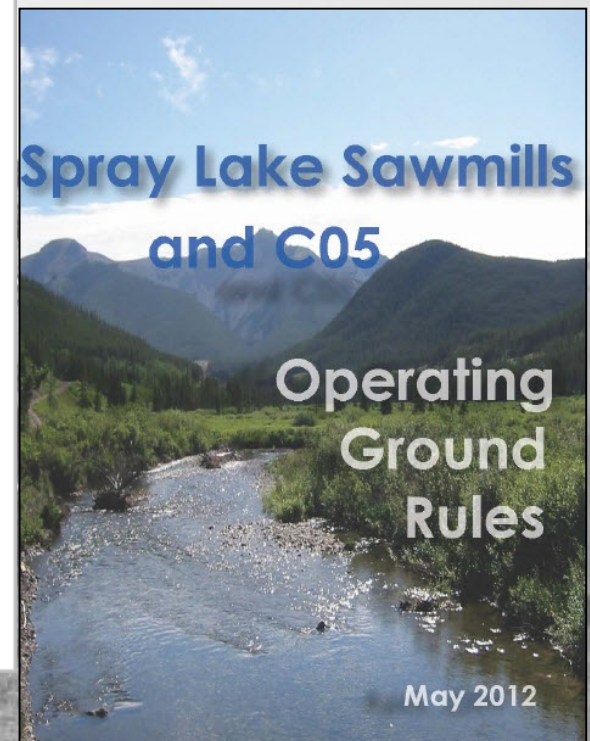
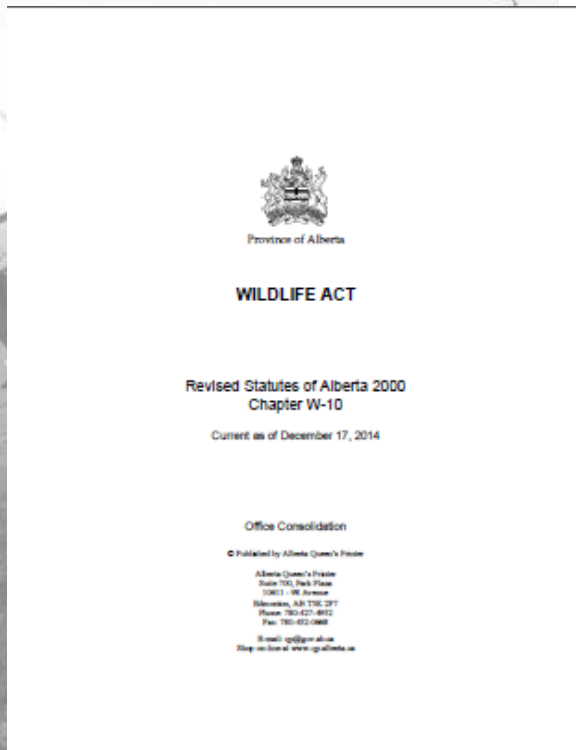
Implementation by government team - Prov. Forestry, SAR & Parks; Parks Canada Agency - parallel plans



Mostly in protected areas, some on crown land outside parks, very little (limber) on private land (some on NCC land)

Policy

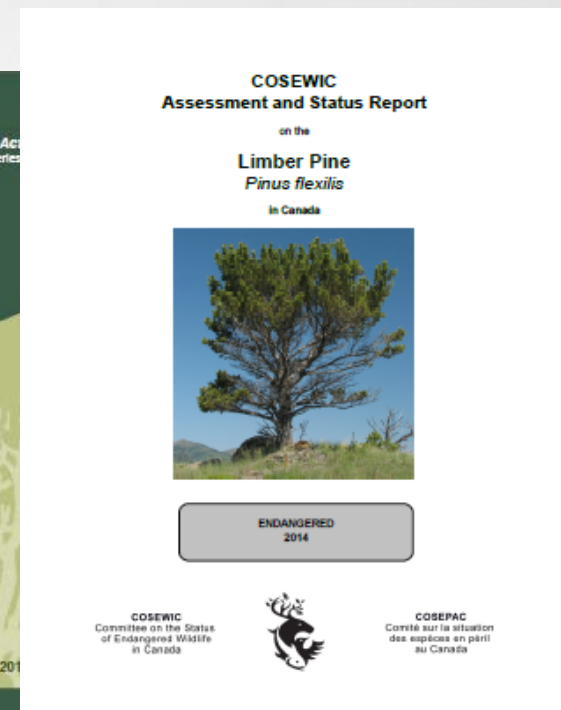
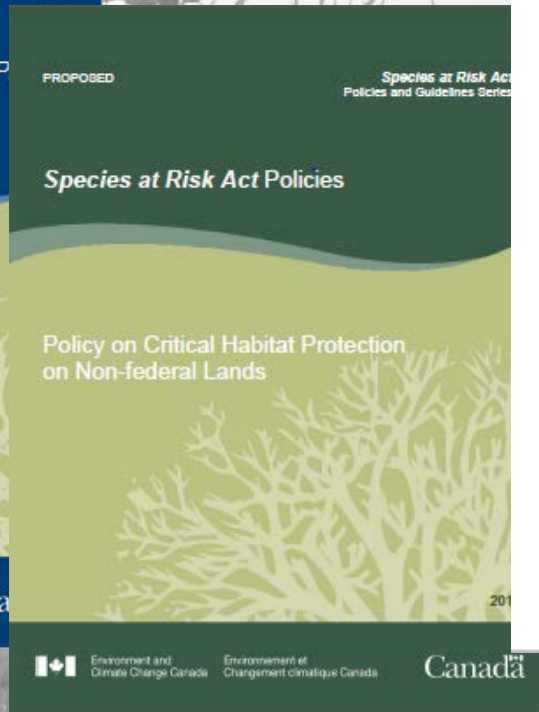
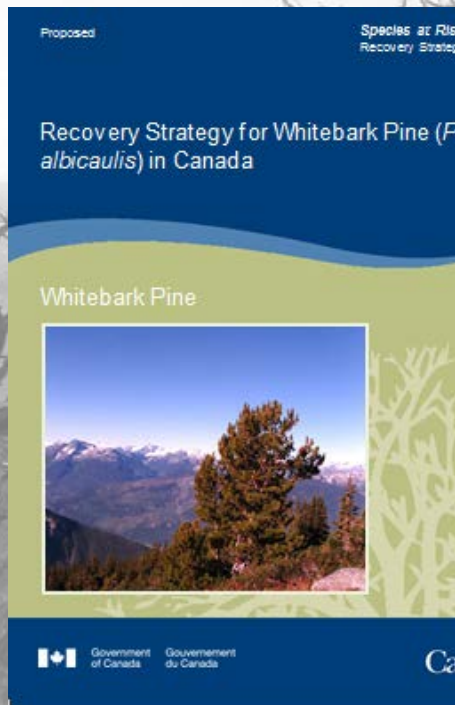
Policy Gaps - plant SAR still not protected; few habitat tools



*Land management not always in our control
Guidelines and enforcement ability depend on activity*

Federal Recovery

Federal whitebark recovery plan still coming · when final, critical habitat identified; need to review CH protection (CHPA)



Limber pine federal listing still in process, followed eventually by recovery strategy

Human-caused mortality

Outside of protected areas, so far only few requests to destroy 5-needle pine



Reviewed on a case-by-case basis; no legislative ground for refusal, offer guidance and request mitigation