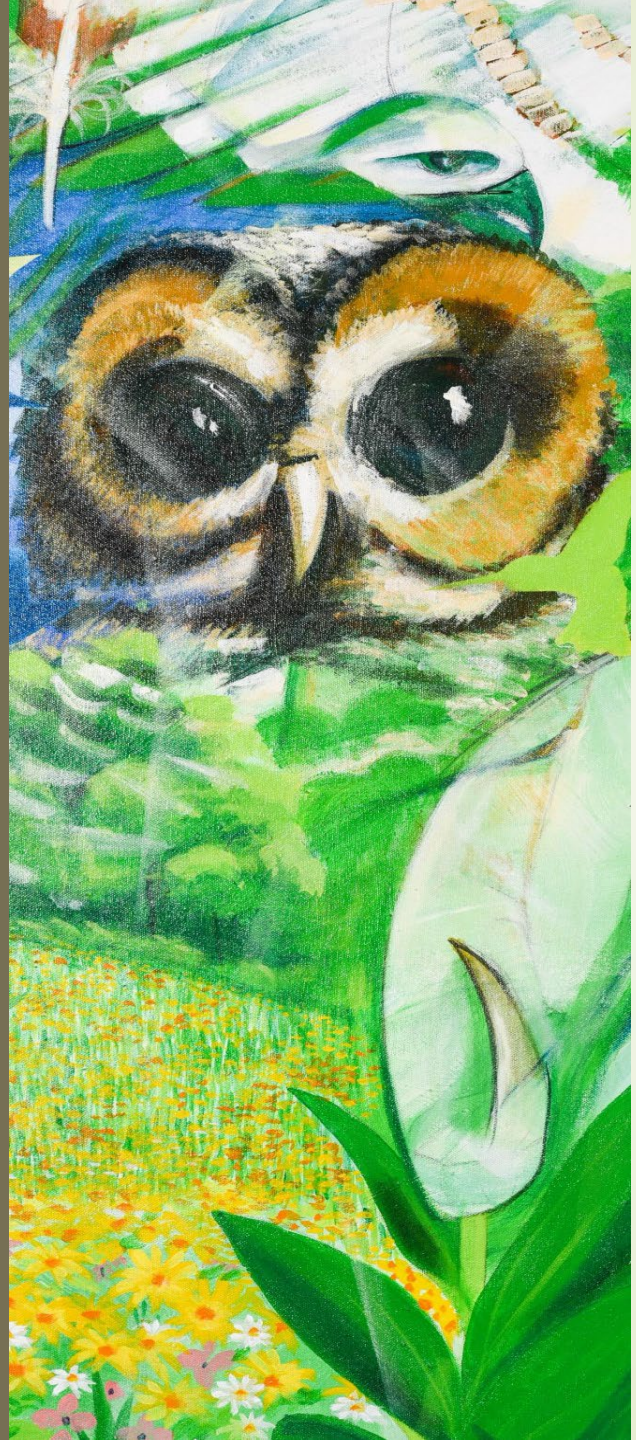


Islands Trust Conservancy
Speaker Series

BC Conservation Data Centre (CDC)

cdcdata@gov.bc.ca

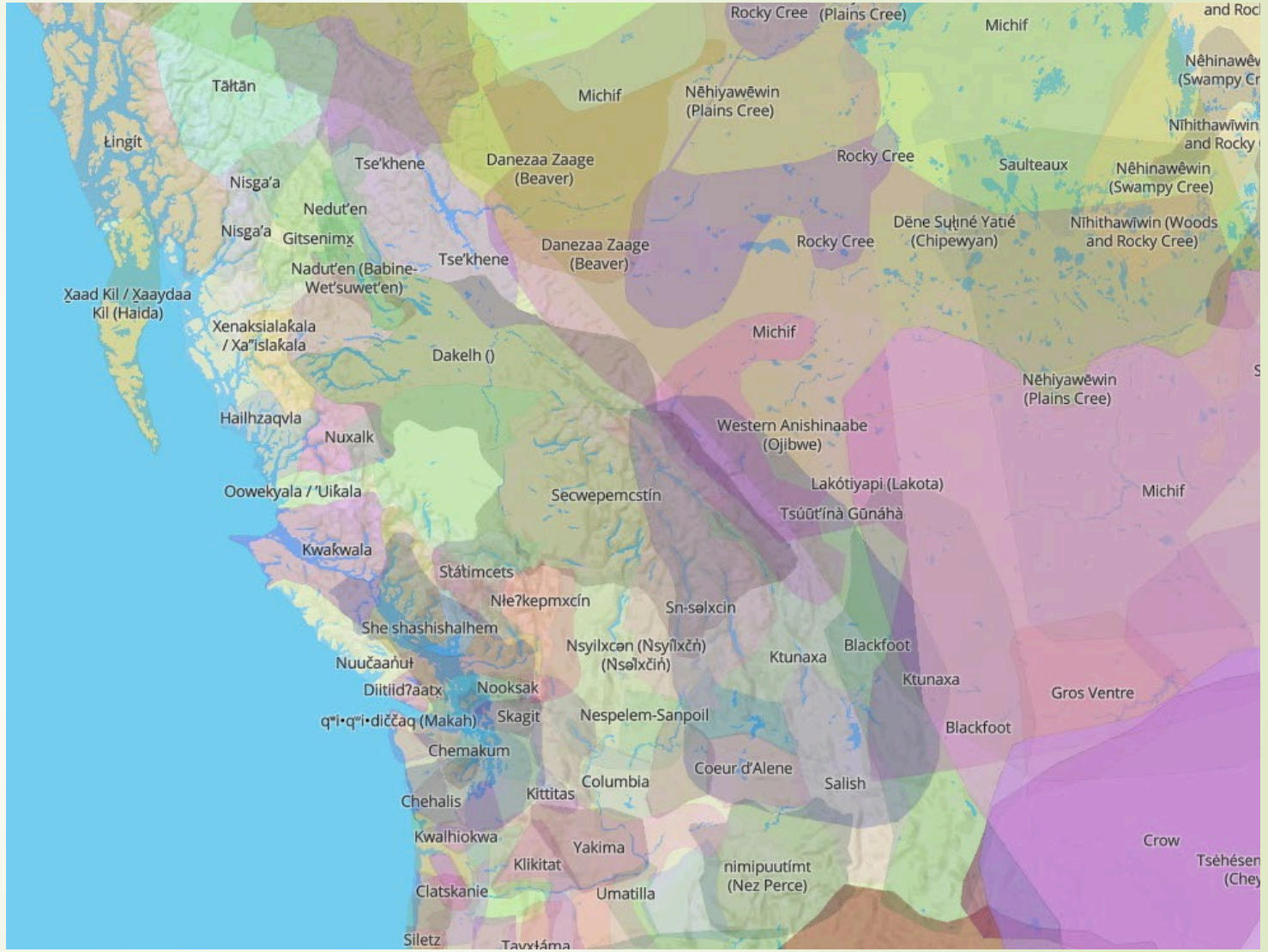
Knowledge Management Branch

Ministry of Water, Land and Resource Stewardship

April 2023

The CDC carries out its work on the traditional territories of Indigenous Nations throughout British Columbia.





Languages: https://native-land.ca/



Ryan Batten. Montana larkspur, blue-listed

Presentation Outline

- BC CDC Background
- CDC Core Functions
- BC Conservation Status Ranks
- Element Occurrences
- Other CDC Spatial Products
- Data Submission
- How to Access BC CDC data
  - Tools Overview

- Tools Demo
  - BC Data Catalogue
  - BC Species and Ecosystems Explorer
  - CDC iMap

BC CDC Background

BRITISH COLUMBIA | Ministry of Water, Land and Resource Stewardship

NatureServe | NatureServe Canada

NatureServe: The Power of the Network

- Over 60 network members in the U.S. and Canada
- Providing science-based data to support biodiversity conservation
- Common methods for assessing and mapping species and ecosystems at risk
- Common cloud-based platform (Biotics)
- Data integration and sharing across jurisdictions

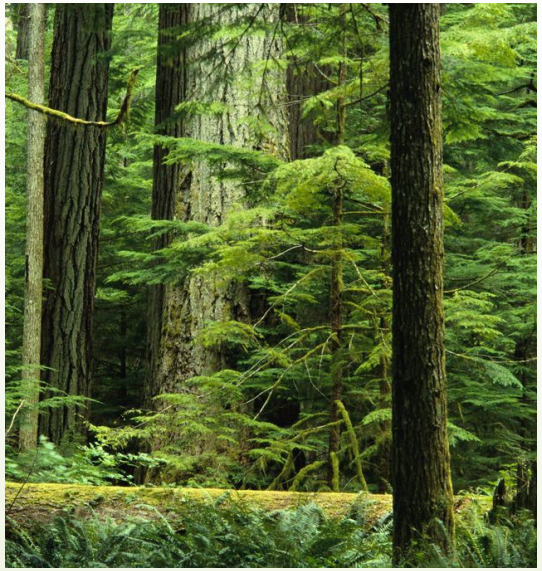
BC CDC
Staff and Units

- ECOLOGY
- BOTANY
- ZOOLOGY
- DATA MANAGEMENT
- MANAGER

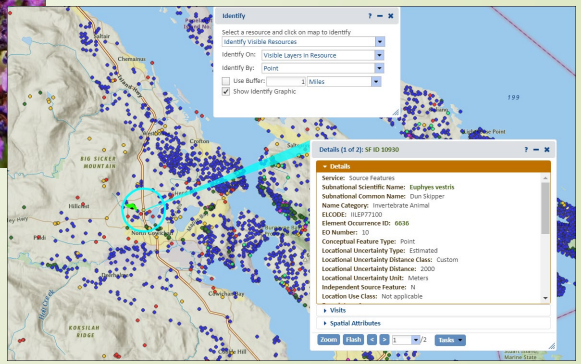


Ryan Batten









CDC Core Functions

- **Compile** lists of species & ecological communities (Elements)
- **Assess** the risk of extirpation: Conservation Status Assessments
- **Map** locations of species & ecological communities at risk
- Make data and information **accessible**



Ryan Batten. Gulf Islands

Compile Lists of Species and Ecological Communities (Elements)

Element: A recognized classification (taxa) of plant, animal or ecological community (the biological unit that we track in BC)

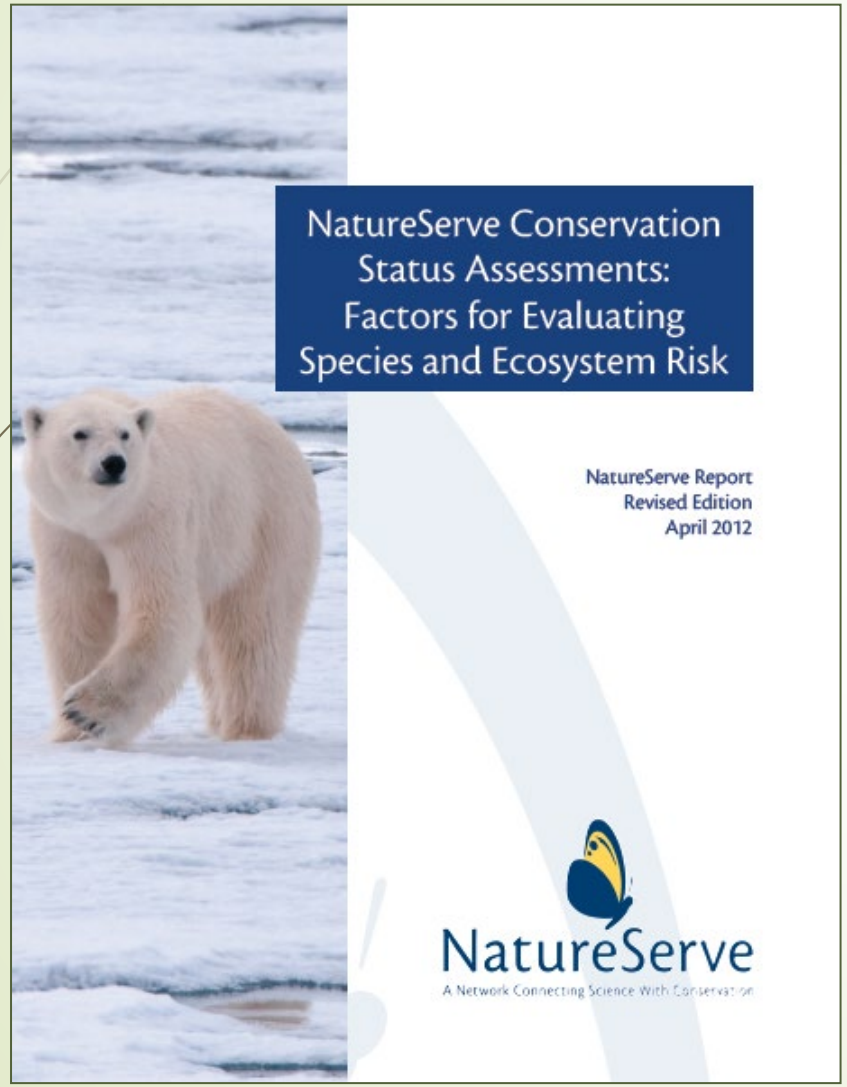
View provincial lists of elements through BC Species and Ecosystems Explorer (BCSEE):

- Vertebrates 
- Invertebrates 
- Vascular Plants 
- Bryophytes (Mosses, Liverworts and Hornworts) 
- Lichens 
- Macrofungi 
- Ecological communities 

Currently over 24,000 elements reported through BCSEE!

Refer to BCSEE for the standard scientific and common names in B.C.

Assess the Risk of Extirpation: Conservation Status Assessments



RARITY

- Range Extent
- Area of Occupancy
- Population Size
- Number of Occurrences
- Number of Occurrences with Good Viability/Ecological Integrity
- Environmental Specificity

THREATS

- Threats (calculator)
- Intrinsic Vulnerability

TREND

- Long-term Trend
- Short-term Trend
- *(past trends)*

BC Conservation Status Ranks



H. Zell | Oregon Dept of Fish & Wildlife | Noel Reynolds | Dave Fraser | Jsayre64

S1 **S2** **S3?** **S4** **S5**

Increasing Extinction Risk

- S1 – Critically Imperiled
- S2 – Imperiled
- S3 - Vulnerable
- S4 – Apparently Secure
- S5 - Secure

- range ranks/uncertainty (e.g. S1S2, S2?)
- SNR +
- global ranks (G Ranks) and national ranks (N Ranks)

BC Red, Blue and Yellow Lists

Simplified groupings of conservation status ranks.
Non-regulatory!

Red List: SI (critically imperiled), S2 (imperiled), SH (possibly extirpated), SX (presumed extirpated)

Blue List: S3 (vulnerable)

Yellow List: S4 (apparently secure) or S5 (secure)

Yellow sand-verbena – S3, BLUE List



Ryan Batten

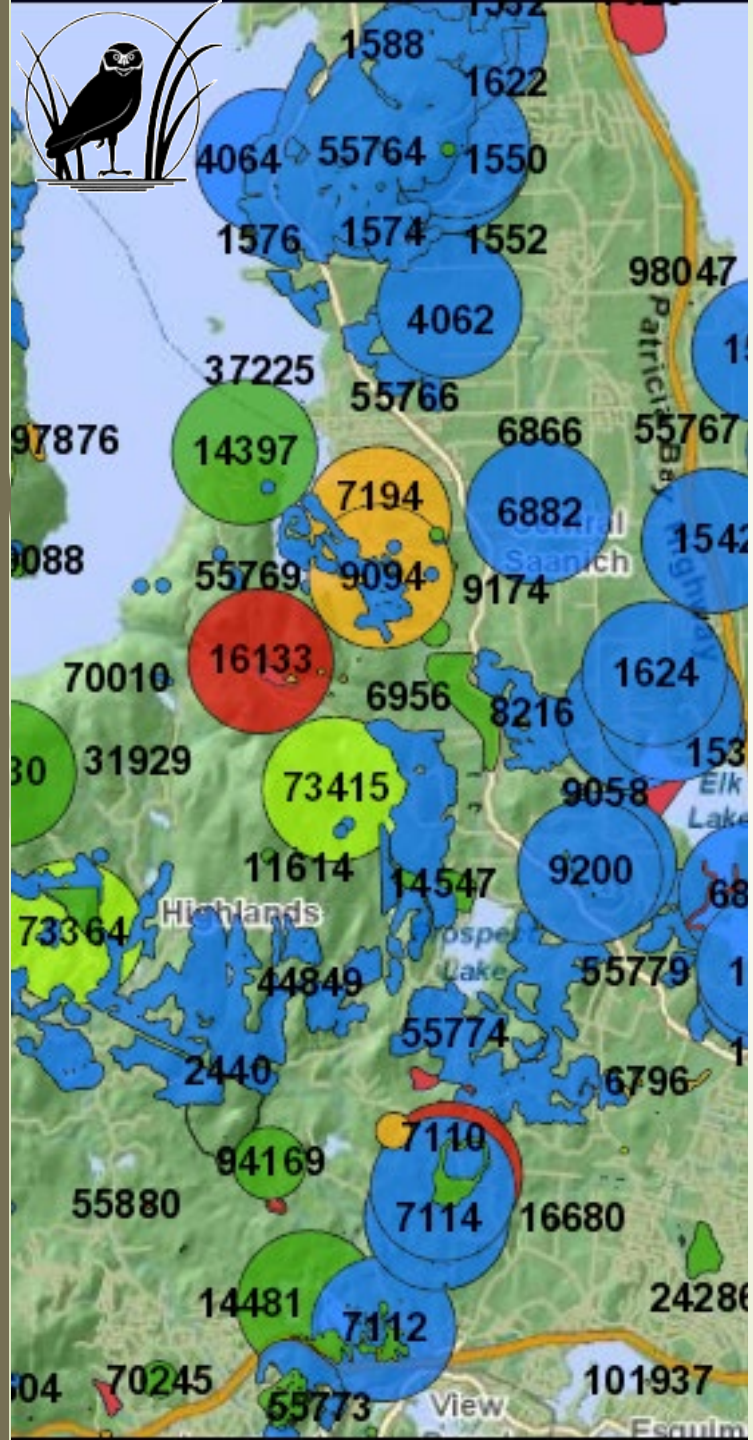
Black knotweed-yellow sand-verbena ecosystem– S1, Red List



Dave Ingram



Ryan Batten. MT Maxwell



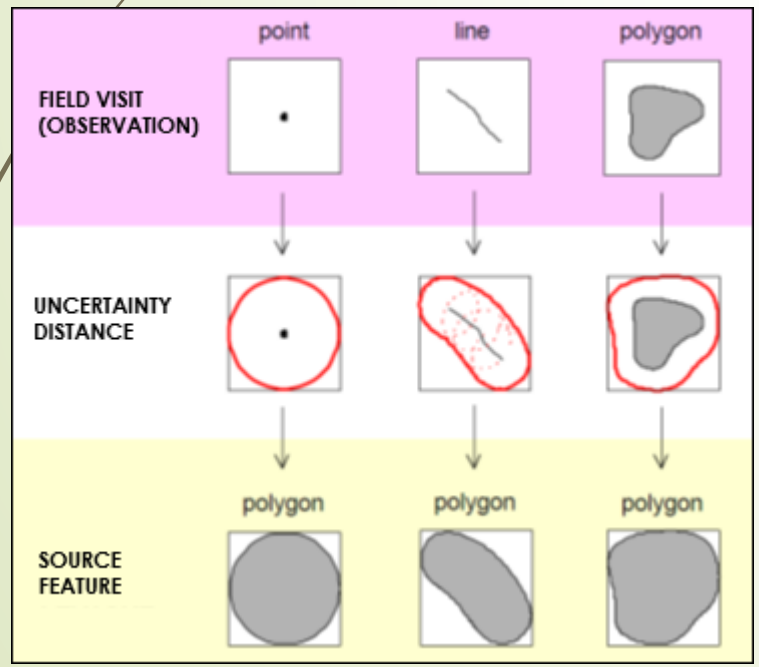
Map Element Occurrences (EO)

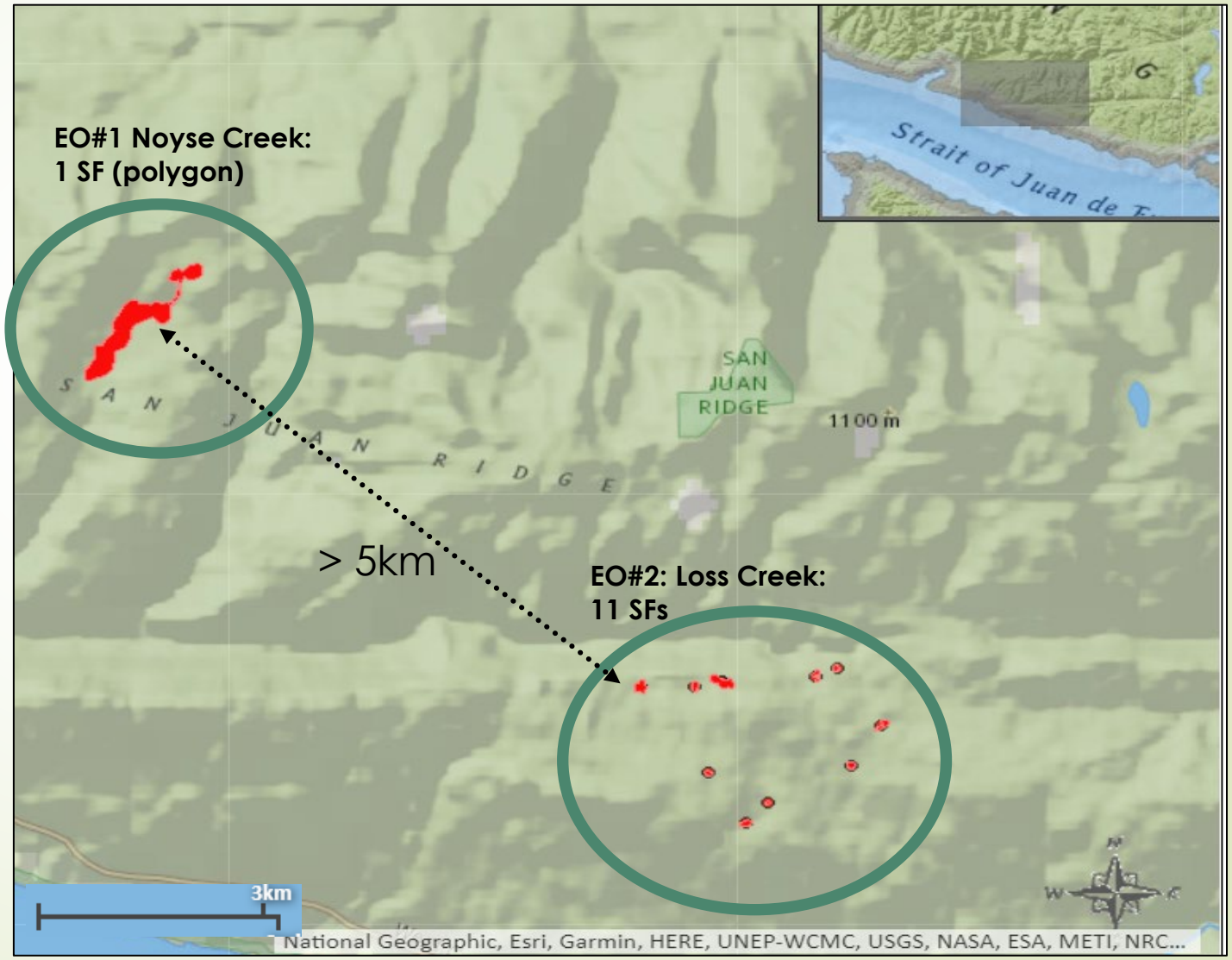
- Documents where a species or ecological community is, or was, present
- Vetted observation
- Has practical conservation value
  - Potential continued (or historic) presence and/or regular recurrence at a given location
  - Sustains the survival of the species/ecological community (not just any observation)
- Represents a population based on dispersal and breeding
- What we know, not what we suspect
- EOs are always polygons that reflect locational uncertainty of the source data
- NatureServe provides guidance for determining what is an EO for a species

EO Example: *Rana aurora*, Northern Red-legged Frog, S3, Blue-listed



Photo: Mike Pearson





Element Occurrence Data Sources

- Government of B.C. Data and Information
  - EcoCat Reports
  - Survey Data
  - Telemetry Data
  - Incidental Observations
  - Fish Observations
  - Terrestrial Ecosystem Mapping
  - Predictive Ecosystem Mapping
  - Sensitive Ecosystems Inventory
- COSEWIC* reports
- Recovery/Management Plan reports (ECCC/BC)
- Museums
- Citizen Science
  - E-Fauna/E-Flora
  - iNaturalist
  - E-Bird
  - GBIF
- BC CDC Submissions



- Reliable?
- Practical Conservation Value?
- Minimum Data Requirement?
  - Observer name
  - Date observed
  - Species name
  - Location



Mapped as EO

EO Ranked for viability/ ecological integrity

* The Committee on the Status of Endangered Wildlife in Canada

CDC Element Occurrence layers

Public layers

- ❑ Species and Ecosystems at Risk – Publicly Available Occurrences – CDC
- ❑ Species and Ecosystems at Risk – (Extirpated and Historical) Publicly Available Occurrences – CDC
- ❑ Species and Ecosystems at Risk – (Masked Secured) Publicly Available Occurrences – CDC

Restricted layers

- ❑ Species and Ecosystems at Risk – Secured Occurrences Susceptible to Persecution - CDC
- ❑ Species and Ecosystems at Risk – Secured Occurrences Proprietary - CDC

- BC Data Catalogue
- iMapBC applications including CDC iMap, Habitat Wizard

Open Information & Open Data

2011: Province of B.C.'s Open Information and Open Data Policy

The protection and recovery of species and ecosystems is dependent on access to the best available data and information.

Categories of Secure CDC Data

- The species or ecosystem is determined to be susceptible to harm
- The data and information are proprietary



Photo Credit: David Shackleton



Photo Credit: Ryan Batten

Secure CDC Data and Information Display



BRITISH COLUMBIA BC Species & Ecosystems Explorer

CDC Mapped Locations

How are Secure Data and Information Requests Managed?

Contact cdcdata@gov.bc.ca

- Provide your precise area of interest
- Provide details about the activities expected to occur
    - Data security training module
    - Confidentiality and Non-Reproduction Agreement.
    - **Every request screened before release**

CDC – Other Spatial Data



DOCUMENTED:

ELEMENT OCCURRENCES



POTENTIAL:

RANGE DATA



LIKELY:

SPECIES HABITAT MODELS

BC CDC Uses and Users

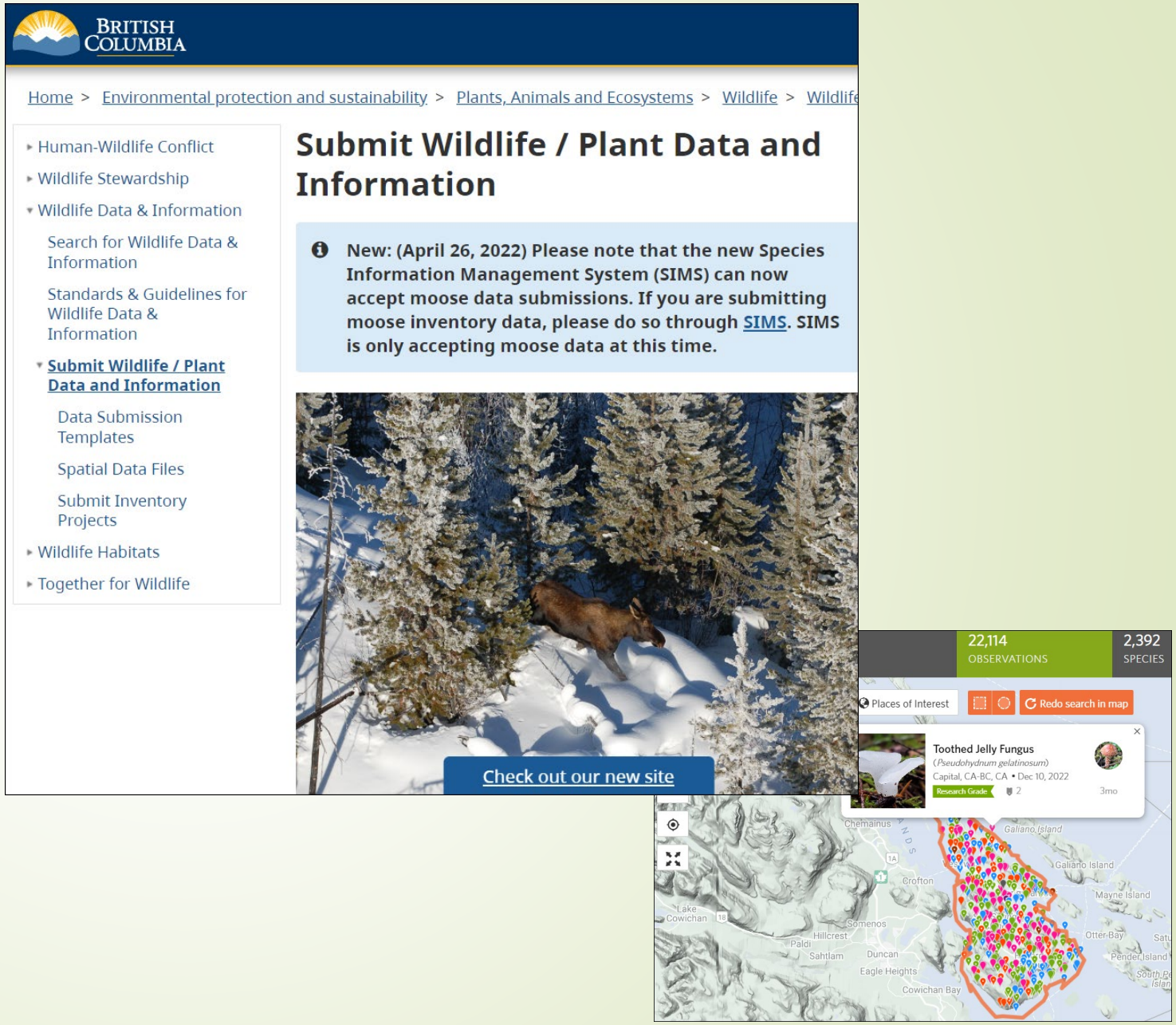
project review and environmental assessment	environmental reporting	education
guiding inventory	academic research	informing legislation
provincial recovery plans	land stewardship	SARA* recovery strategies
Critical Habitat mapping	habitat rehabilitation	species habitat modeling
public awareness	land acquisition	global and national ranks

- Federal Government
- COSEWIC
- Provincial Government
- Local Government
- First Nations Government
- Crown Corporations
- Academia
- Industry
- NGOs/Land Trusts
- Environmental Consultants
- Public
- NatureServe
- NatureServe Canada

* Federal Species at Risk Act

Data Submissions – we want your data!

- How to submit data:
  - Species Inventory data submission site
    - SPI_Mail@gov.bc.ca
  - Strong preference for open data
  - Minimum information needed:
    - Who, what, where, when… and how it's doing!



CDC In a Nutshell…

What's in B.C.?

How is it doing in B.C.?

Where is it potentially found?

Where is it known to be found?

How is it doing at that location?

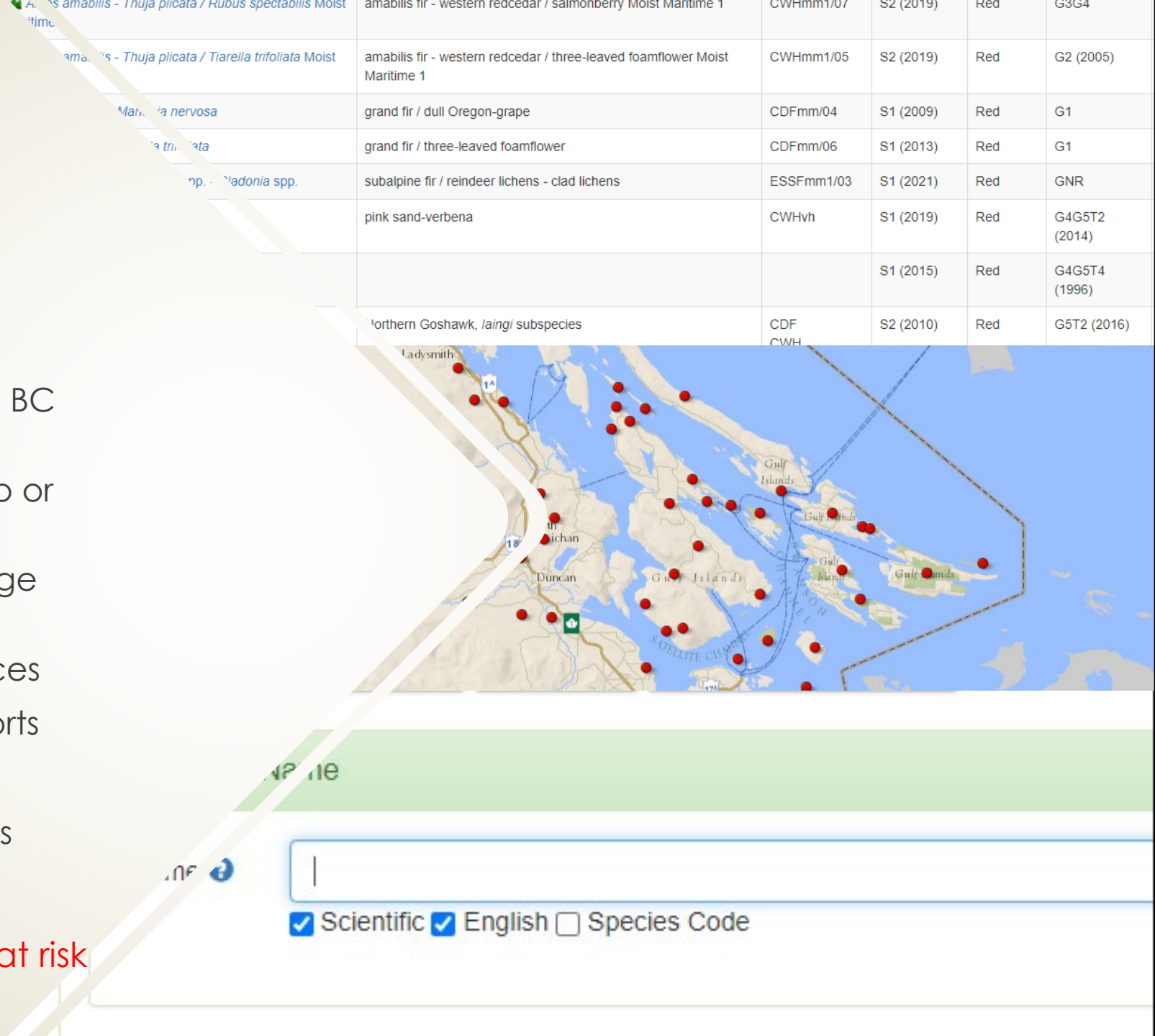


Ryan Batten. elegant centipede

BC Species and Ecosystems Explorer (BCSEE)

- Search by element
- Generate lists based on status, BC List or legal designation
- Generate lists by species group or community group
- Search by area, based on range (occur or potentially occur)
- Find Best Management Practices
- View summary and status reports
- Export results to Excel, PDF
- Overview of mapped locations

Island Trust: 350 potential elements at risk

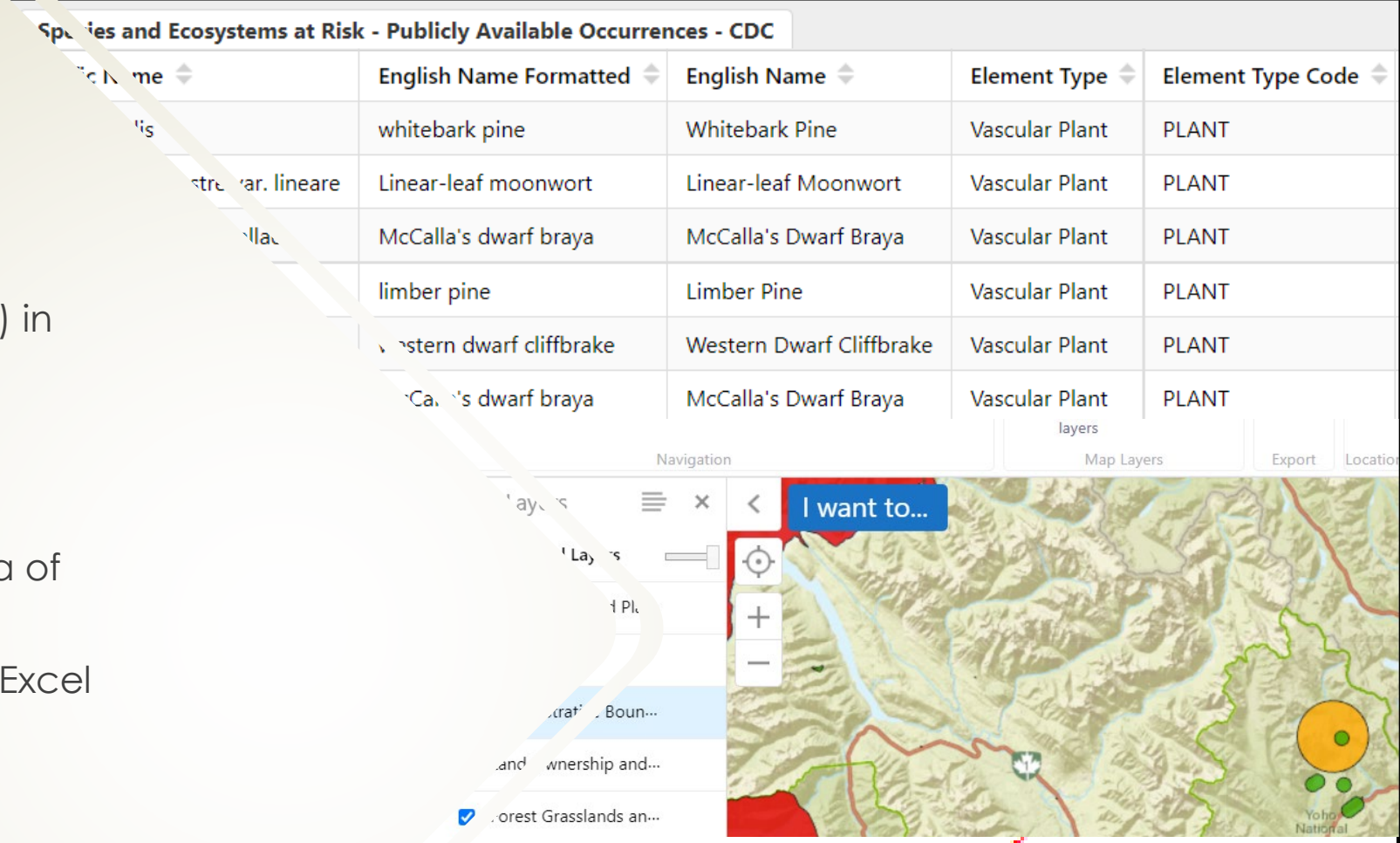


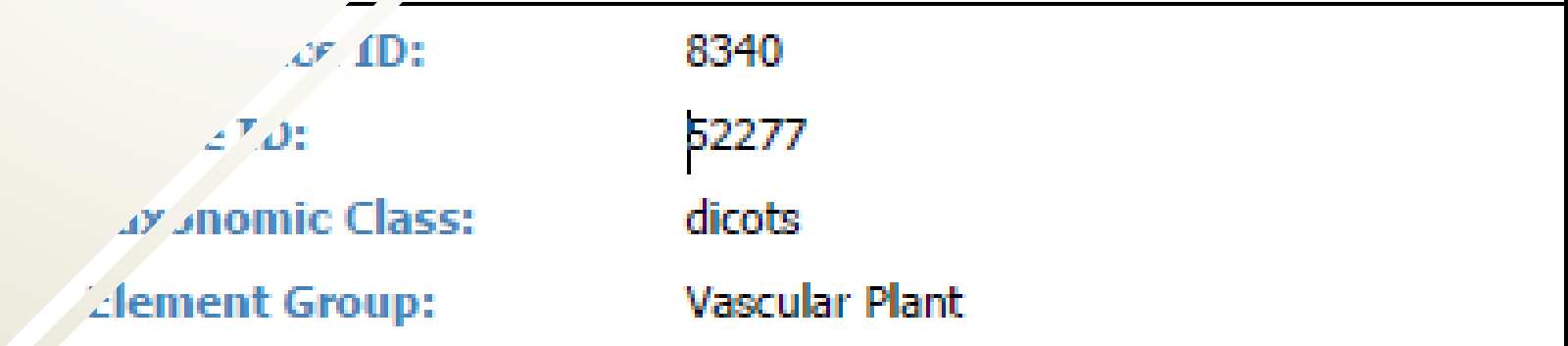
CDC iMap

- View Element Occurrences (EOs) in your area
- Search for EOs for an element
- View detailed EO report
- Look for secure data in your area of interest
- Export results to shapefile or csv/Excel
- Add additional data layers

Islands Trust Area:
541 mapped Element Occurrences

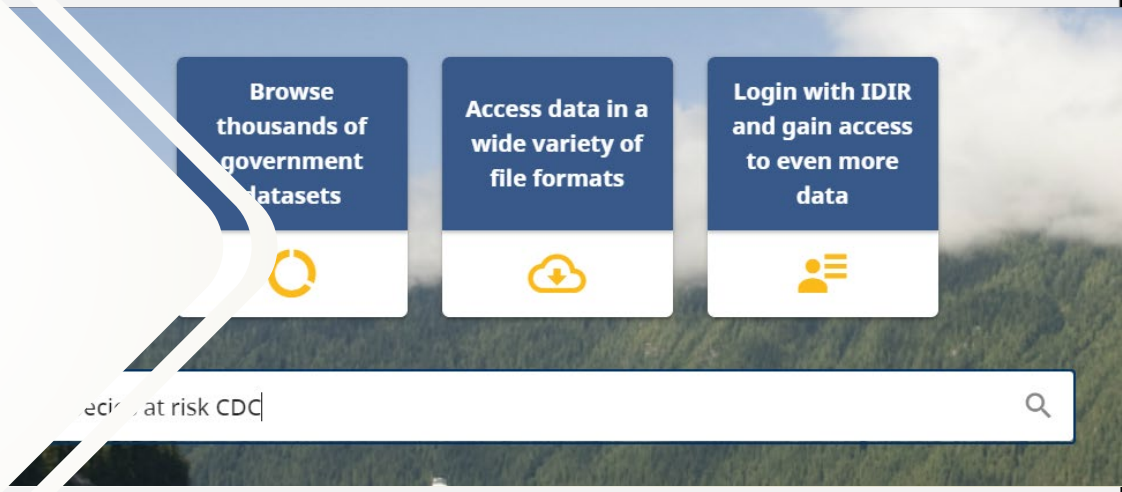
- 513 publicly available
- 18 secured susceptible to harm
- 10 secured private land





BC Data Catalogue

- View Metadata
- Search for applications, spatial data, web services
- Download to gdb, shapefiles, kml
- Connect via web map service
- View field definitions
- Find data contacts



cdcdata@gov.bc.ca

Ecosystems

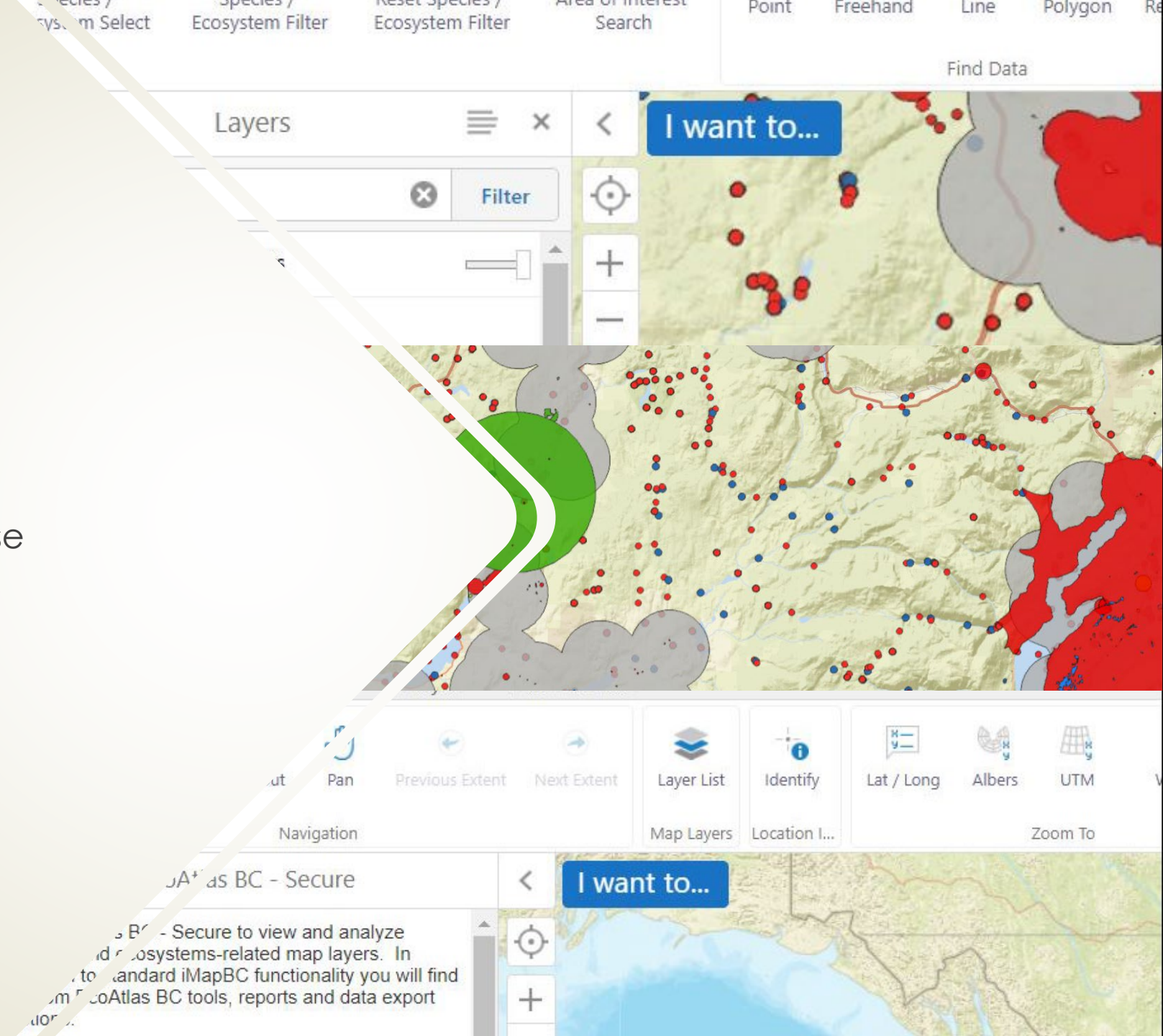
Point of Contact

Debbie Webb

rvation Data Centre's spatial view of publicly available, known locations of species and communities at risk. This spatial view is split into the "Publicly Available Occurrences" layer (Extirpated and Historical) Publicly Available Occurrences" layer. The Extirpated and Historical layer includes element occurrences that have a last observation date greater than 40 years ago and element

EcoAtlas BC … coming soon!

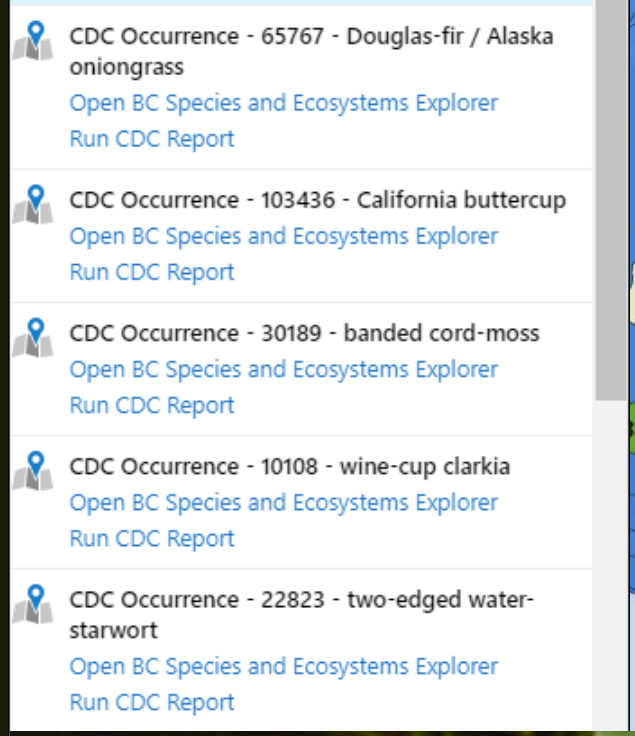
- Replace Habitat Wizard and CDC iMap (and CDC iMap secure)
- Reduce confusion over which mapping application to use
- Bring together best of both applications
- Former CDC tools expanded to be more inclusive
- Updated list of pre-loaded data layers



Questions?

then… DEMO!

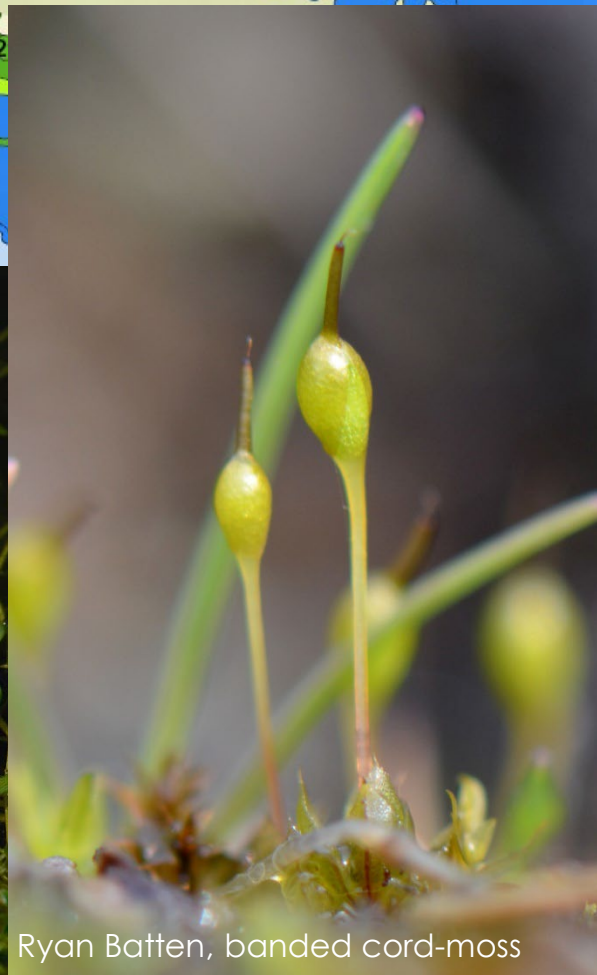
cdcdata@gov.bc.ca







Ryan Batten, diverse-leaved water-starwort



Ryan Batten, banded cord-moss