

# Collaborating Across Borders: Parks Canada, NatureServe Canada and NatureServe

---

---

Monday  
April 26, 2010



# Agenda

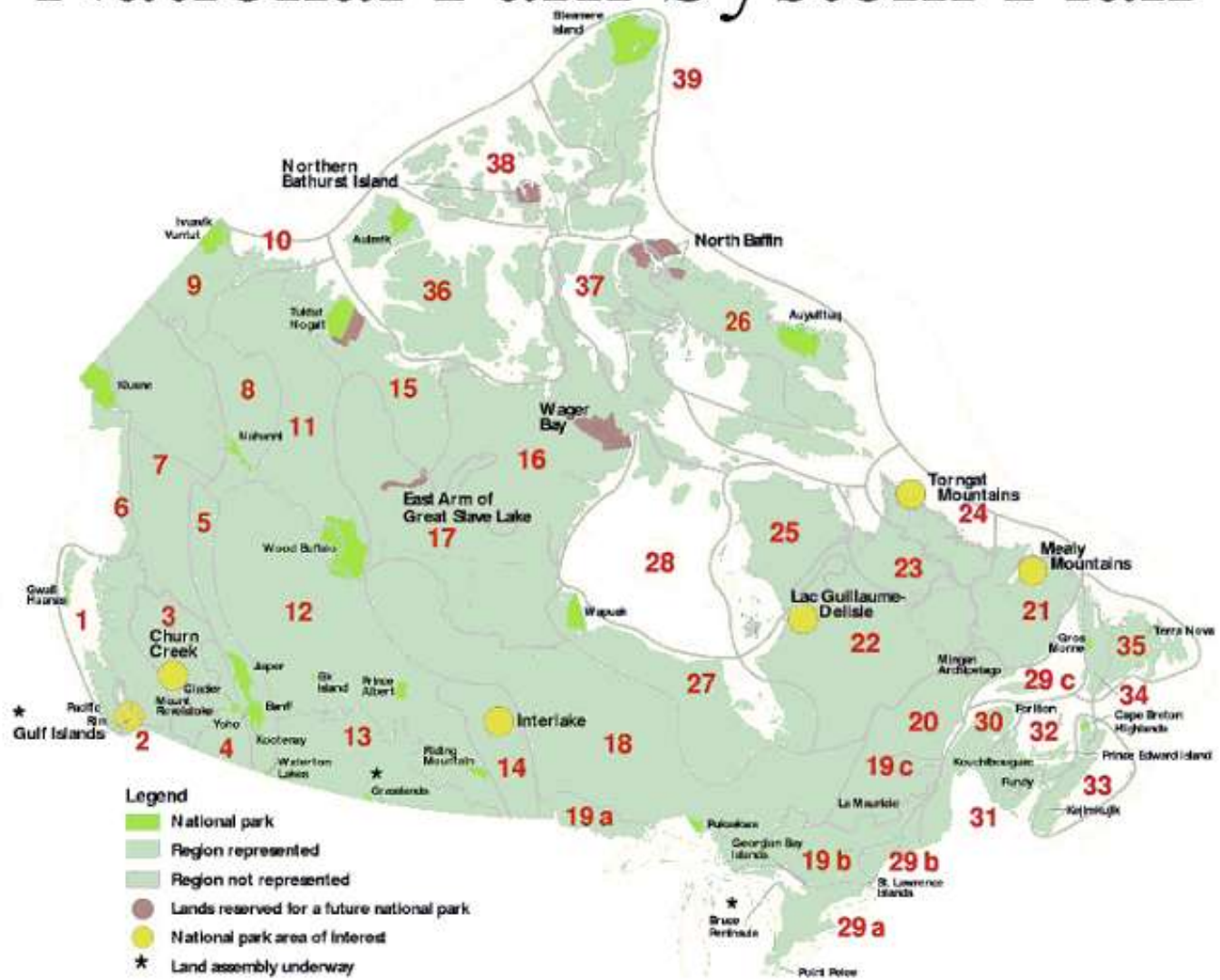
- Introduction to Parks Canada Agency (PCA)
- Introduction to NatureServe Canada and the Canadian network of conservation data centres (CDCs)
- Brilliant outcomes of the partnership
- Demonstration of a key product of the partnership: Kestrel – an observation data management system

# Parks Canada Agency

- *41 National Parks, 2 National Marine Conservation Area's and 155 Historic sites.*
- *Manage approximately 3% of Canada's landmass.*
- *Largest landholder in the country.*
- *Over 5000 employees.*



# National Park System Plan



## Biodiversity data are important for Parks Canada business processes such as:



## Biodiversity Information Management Needs in Parks Canada:

- standardize data across all parks to support regional and national ‘roll-ups’ and assessments
- integrate data with other federal & international agency data
- easy access to data by all Parks Canada staff (field, regional and national) to guide decision making across all parks
- build on existing systems and methods that support biodiversity information management (‘don’t recreate the wheel’)



## How NatureServe is uniquely positioned to meet Parks Canada's biodiversity information needs:



- data management system and standard taxonomic data successfully supports the ability to roll-up species data
- NatureServe network standards allows Parks to benefit from data already developed across the western hemisphere
- building web services and a new data sharing framework to increase the ability to access NatureServe data
- data management system and methods in development for over 30 years that supports the effective management of species data

# The NatureServe Network

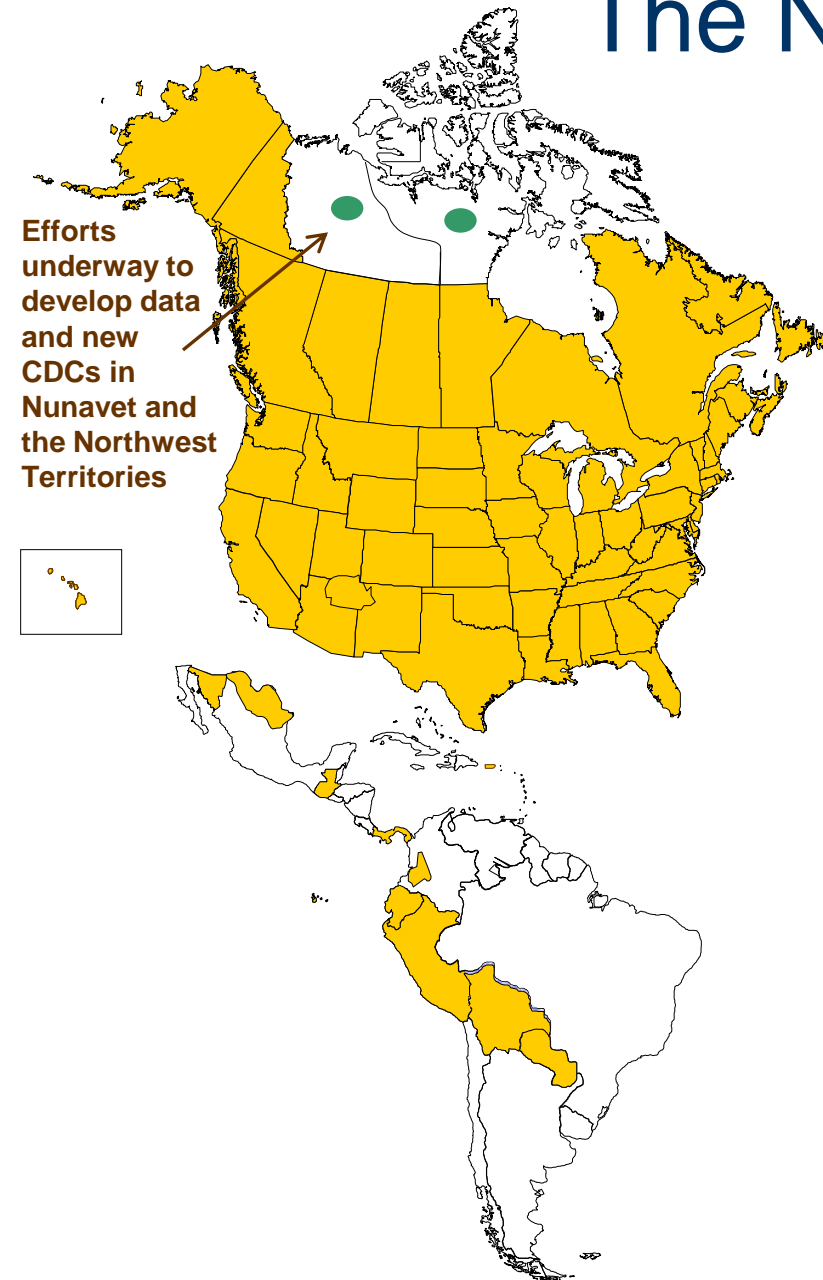
**80 inventory and monitoring programs with 800+ staff across the Western Hemisphere**

- Most comprehensive source of high quality data for at-risk species and ecological units
- Common Standards and Methodology
- Common Goals and Purpose
- Shared History
- Sharing Data and Innovations

**54 U.S. programs**

**8 Canadian programs**

**16 Latin American /  
Caribbean programs**



Efforts underway to develop data and new CDCs in Nunavut and the Northwest Territories

# NatureServe Canada

- A conservation non-profit in Canada
- Represents the CDC network in Canada
- Supports biodiversity conservation priorities in Canada
- Senior Staff:
  - Doug Hyde, Executive Director
  - Marilyn Anions, Director of Science

The screenshot shows the NatureServe Canada website. At the top left is the logo, a butterfly above the text "NatureServe Canada". To the right of the logo is the tagline "A Network Connecting Science with Conservation" and a paragraph: "Providing the scientific basis for effective conservation, NatureServe Canada and its network of conservation data centres are the trusted source for information about rare and endangered species and threatened ecosystems." In the top right corner, there is a link for "Français". Below the header is a navigation menu with tabs for "About Us", "Visit Local Programs", "Get Data", "Products and Services", "Publications", and "Conservation Issues". The main content area features a large landscape photo of Cypress Hill in Eastend, Saskatchewan, with a caption "Cypress Hill, Eastend, Saskatchewan. Photo by Kevin Murphy." Below the photo is a section titled "Conservation Data Centres" with a map of Canada showing provincial boundaries and the text "Click the map to visit a NatureServe Canada member program." To the right of the map are links for "Support Us", "Offices", "Feedback", "Site Map", "Credits", and "NatureServe Website". On the right side of the page, there is a "NatureServe Explorer" section with a butterfly icon and a search bar, followed by "News & Highlights" with two news items: "NatureServe Canada names new Executive Director (December 2008)" and "New Discoveries in Canada (December 2008)". Below that is a "Biodiversity Insights" section with the title "Sentinels on the Wing: The Status and Conservation of Butterflies in Canada (June 2009)" and a small photo of purple flowers.

# Outcome of NS-PCA Partnership: Shared Expertise Significantly Increases Data Quality and Capacity for Conservation Action

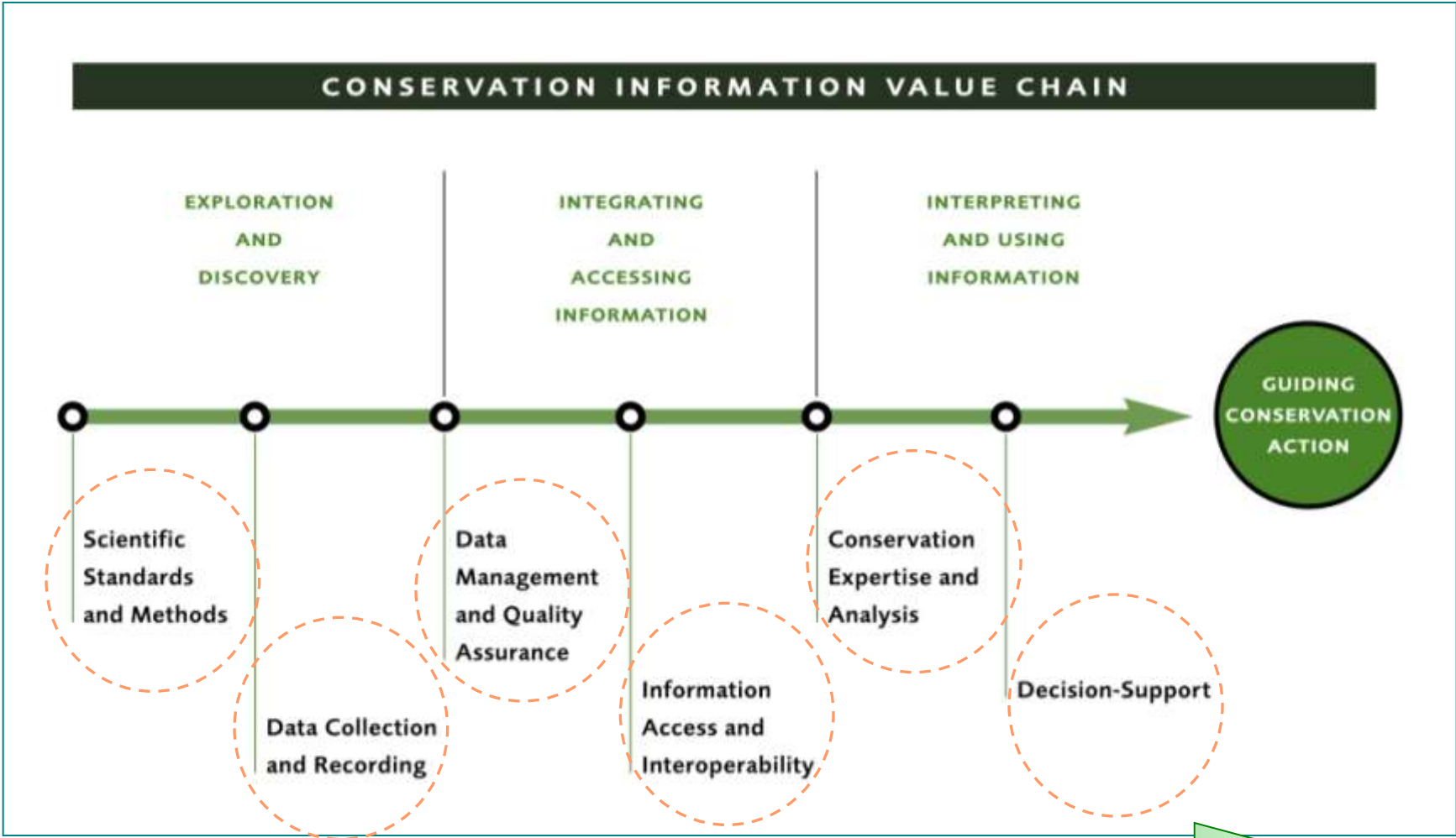
- Expertise and data from Canadian member programs used by:
  - COSEWIC to develop candidate species lists for assessment
  - Species at Risk Act to inform species status listings
  - Parks Canada staff in development of Detailed Assessment
- Partnership with NatureServe Canada contributed to a positive evaluation by the Auditor General of Canada of Parks Canada's ability to meet SARA requirements



# What is unique about this partnership?

- It is a true partnership
- Parks Canada contributes:
  - to the development of conservation data standards,
  - to the development of more comprehensive data for species in parks,
  - to the development of data management systems,
  - and integrates data from the parks into the NatureServe data network

# Parks Canada Contributing to every step in the Value Chain



*Standards – Handheld – Kestrel – Biotics – Web Services – NatureServe Explorer – Landscape - Vista*

# Outcome of NS-PCA Partnership: System (Kestrel) that supports standard online management of observation data

Standards – Handheld – **Kestrel** – Biotics – Web Services – NatureServe Explorer – Landscape - Vista

## Data Collection and Recording

- *Web-based data entry*
- *Data: observations*
- *On-line mapping via ArcGIS Server*
- *National taxonomic web service published from Biotics (other sources possible)*
- *Import point, line and polygon data*
- *Basic reporting*
- *Export GML, CSV*
- *Facilitates Data Sharing*
- *Secure access*
- *Localizable*

The image displays three screenshots of the Observations DMS web application interface. The top-left screenshot shows the 'Observations List' page, featuring a table with columns for 'Action' and 'Common Name'. The table lists actions such as 'Actions' and 'Actions' for species like 'Columbia Spotted Frog', 'Northern Flying Squirrel', and 'Leopard Frog'. The top-right screenshot shows the 'Edit Location - Eva Lake' page, which includes a map of the location and a form for entering coordinates (Latitude, Longitude, Zone) and other details. The bottom screenshot shows the 'User Account Information' page, which contains a form for user registration or profile management, including fields for 'First Name', 'Last Name', 'Email Address', 'Phone', and 'Password'.

Standards – **Handheld – Kestrel** – Biotics – Web Services – NatureServe Explorer – Landscape - Vista

## Observation Data Collection – Field and Office Project Synergies

### Handheld Project

- Flexible data models
  - ✓ Taxon-based
  - ✓ Location-based (gridded)
- Template authoring tool \ template library
- Upload template onto handheld unit for data collection
- Download data collected to interim database

### Kestrel Project

- Current activity - Redesign backend
  - ✓ More scalable
  - ✓ Improve performance
- Next Steps
  - ✓ Able to handle gridded structure
  - ✓ Add ability to utilize templates created via Template Authoring Tool



# Outcome of NS-PCA Partnership: Investing in Local Data Enhancements Benefits All

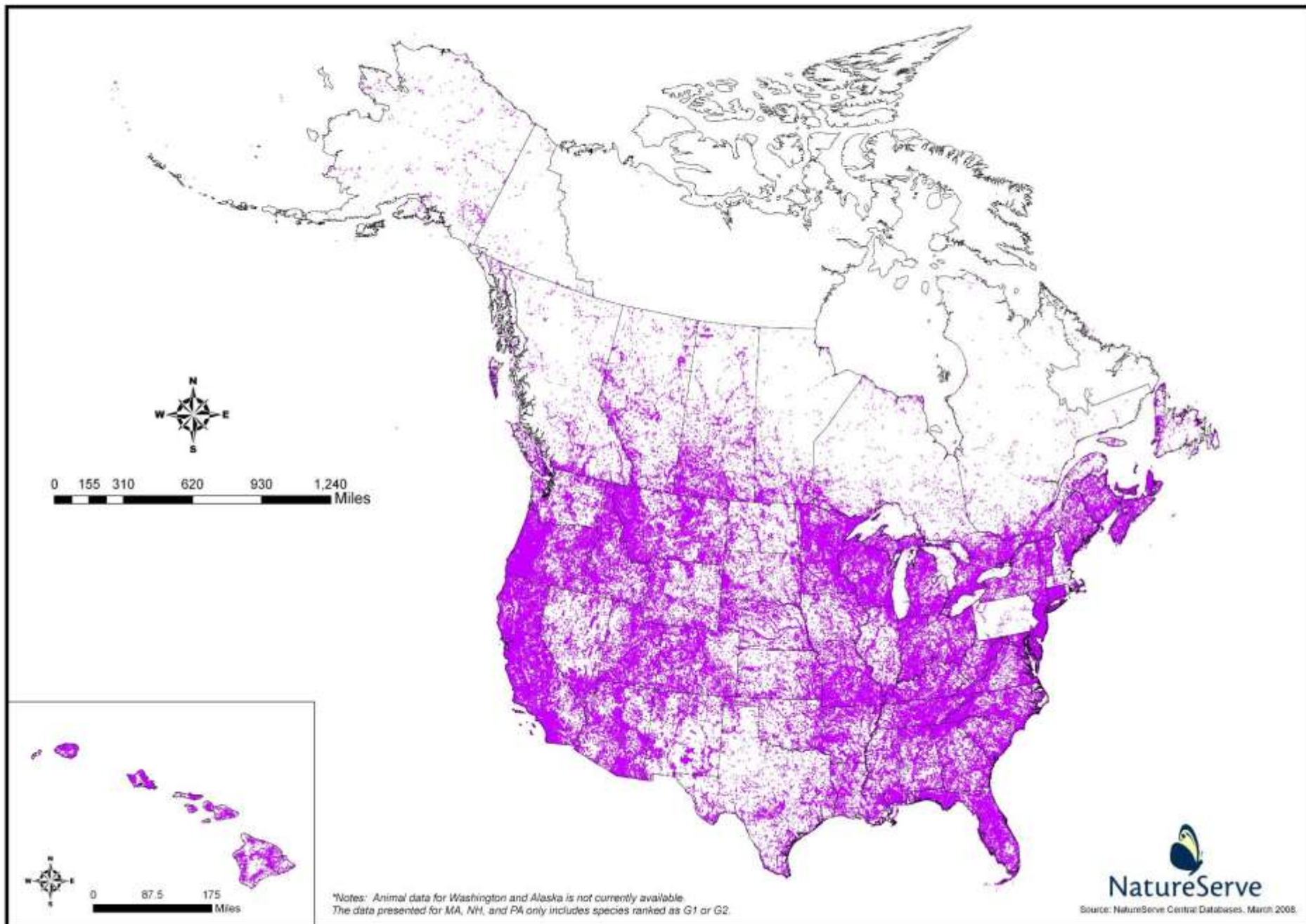


Fiscal Year 2009-2010 Data Improvements		# of Records on PCA Lands						# of Records not on PCA Lands but are PCA Lead Species				Total # of Records Added or Updated
		SARA	COSEWIC	GRANK (G1-G3, T1-T3)	PCA Lead Species	Other	Total # of Records	SARA	COSEWIC	GRANK	Total # of Records	
EOs	Created New EOs	40	49	36	16	335	395	36	36	8	36	43
	Edited/Updated Existing EOs	55	66	67	30	286	377	184	153	92	184	56
	Refined EO Tabular Data (Includes updates to EO Data and Last Observation)	81	102	71	65		308	229	229	111	229	53
Source Features	Created New Source Features	2085	2096	302	2012	473	2594	1109	1109	78	1109	370
	Edited/Updated Existing Source Features	2058	2064	364	2093	326	2483	1451	1452	512	1452	393
Observations	Observations added to existing source features or observations used to create new source features	2764	2832	747	2325	1088	3994	1244	1244	183	1244	523

*Over \$200,000 CAD/year contributing to local and national data improvements*



# Element Occurrence Point Data For All Tracked Species\*



# Working Together

## **Parks Canada:**

- Create observation data (using new NatureServe web-based observation data system - Kestrel)
- Provide observation data to CDCs for incorporation into the aggregated database

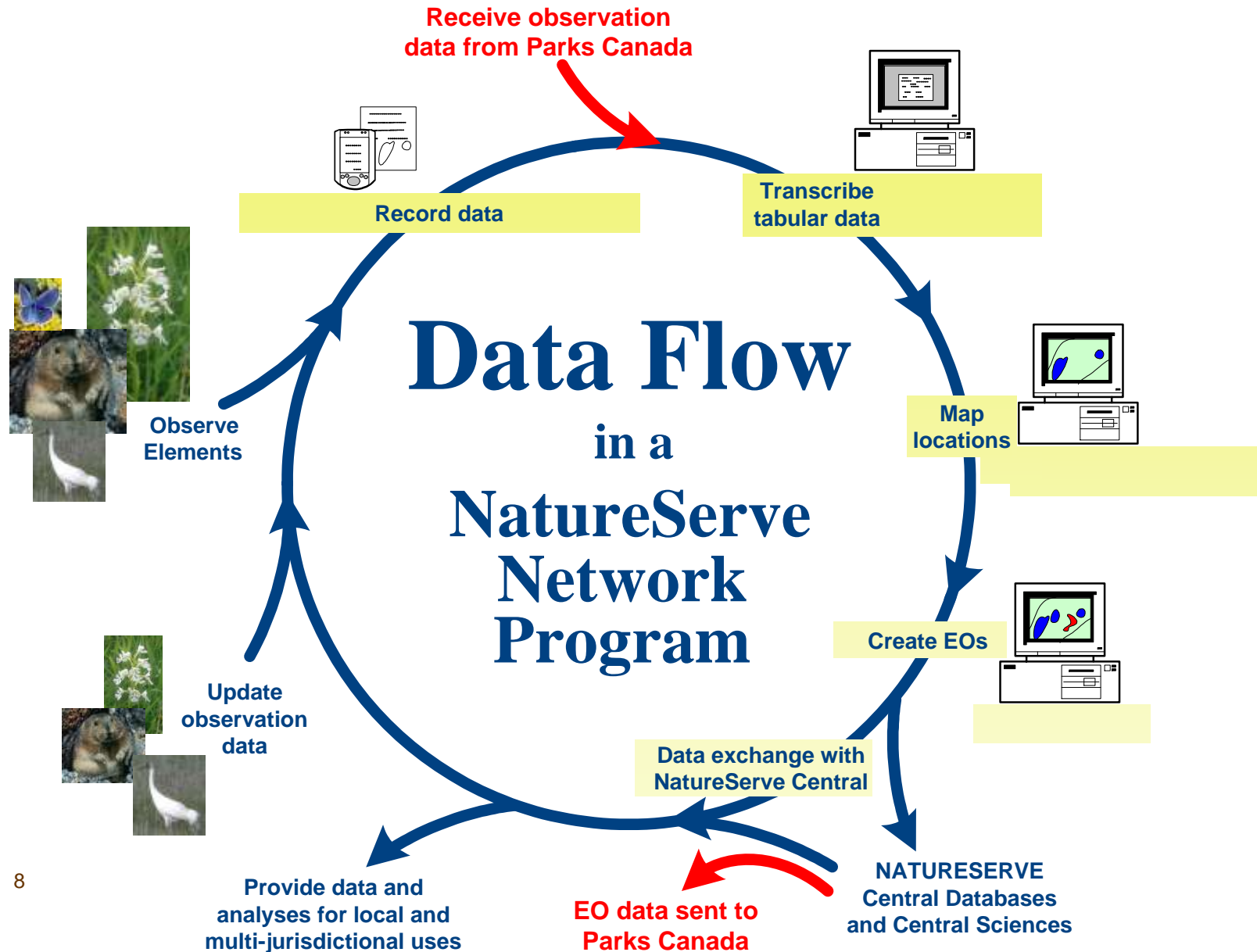
## **Conservation Data Centres:**

- Ongoing development and management of observations and EOs across Canada
- Creation & Update of EOs based on observation data provided by Parks Canada

## **NatureServe Canada and NatureServe:**

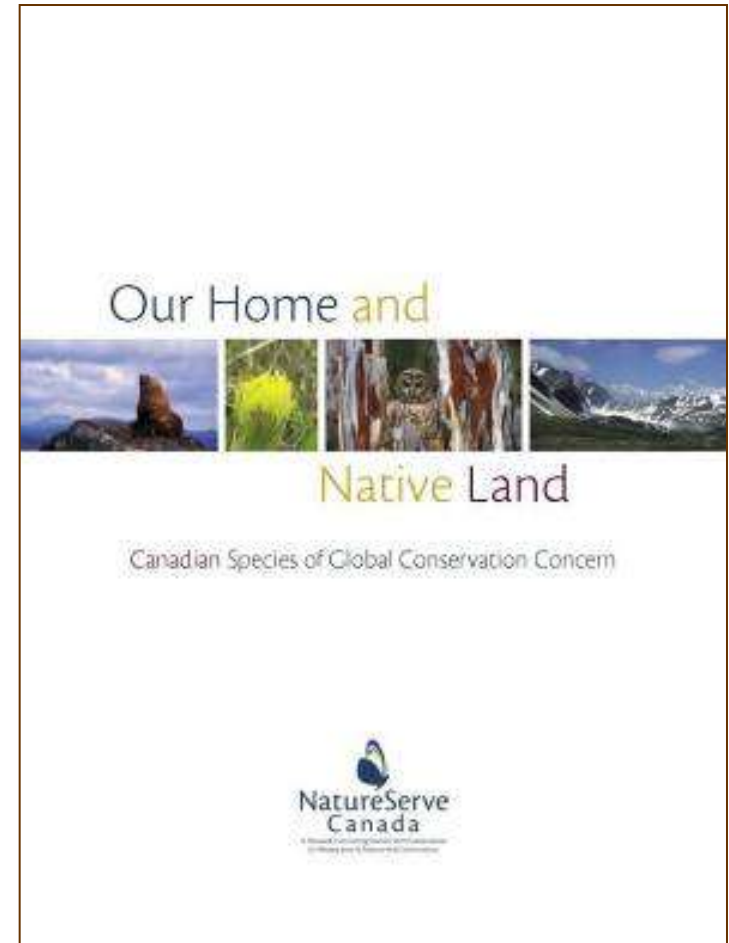
- Ongoing development of range-wide conservation data including SARA and other Canadian status data
- Aggregation of EO and Observations data from CDCs
- Provision of aggregated data from CDCs to Parks Canada
- Development of tools & standards to support priority information needs

# Leveraging Current Data, Systems, and Processes

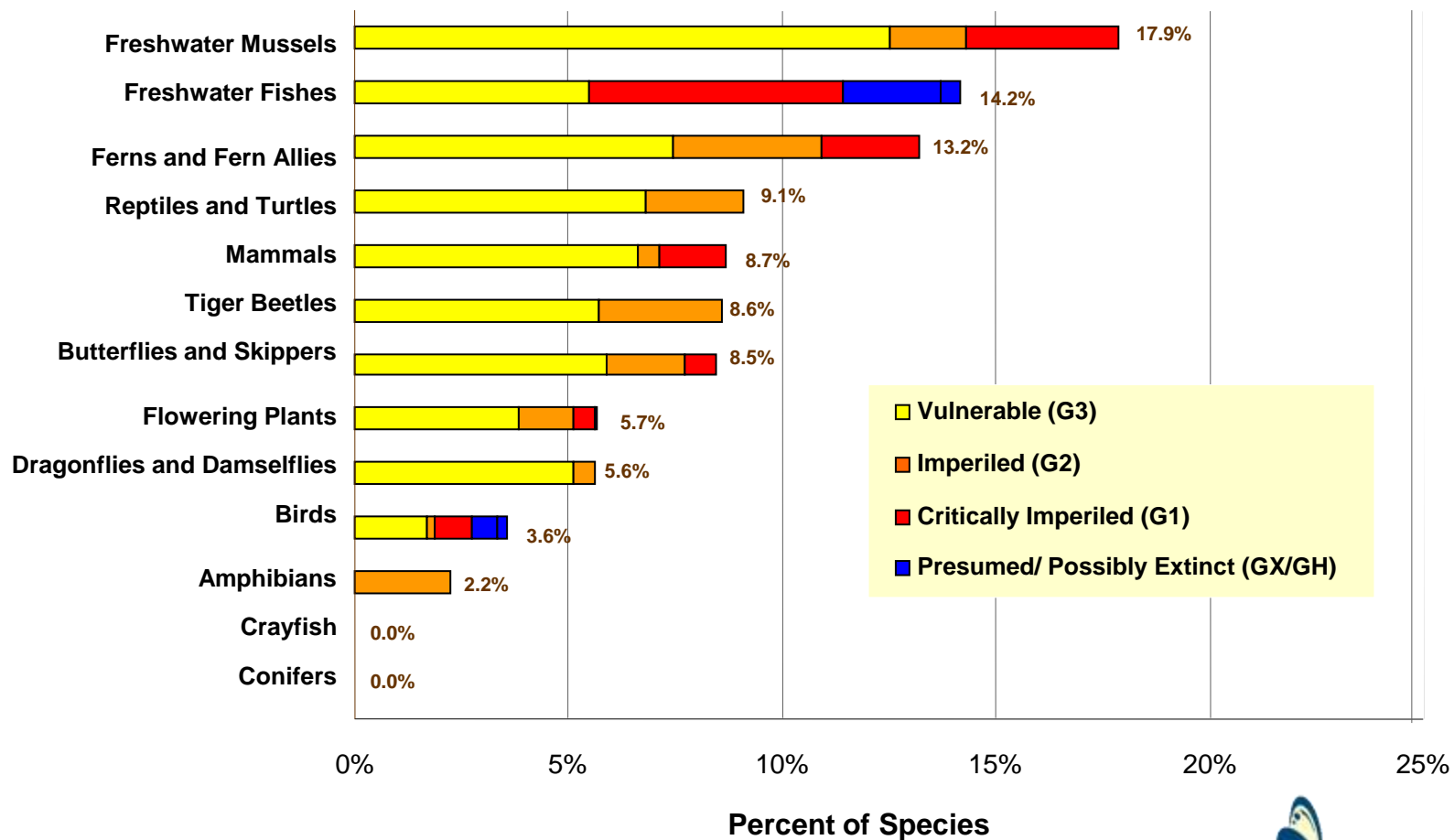


# Outcome of NS-PCA Partnership: Rollup of Standardized Data enables National Analyses of Conservation Needs

- Scientific report, published Fall 2005
- First-ever nationwide assessment of Canada's globally at risk species (6.4% or 362 species are globally at risk)
- Co-authored by Syd Cannings, Marilyn Anions, Bruce Stein



# Canadian Species of Global Conservation Concern by Plant and Animal Group



Data Source: NatureServe central databases, with review by Canadian CDCs. 2005.



# Canadian Butterflies: Status and Trends



An overall analysis and assessment of the state of butterfly population health in Canadian ecosystems, including regional stories, case studies, factor analysis, and recommendations for conservation and research.

Contributors: Dr. Peter Hall (author); NatureServe Canada network of Conservation Data Centres; Regional experts.

# Benefits to Parks Canada and the Wider Conservation Community

- **Cost Effective**
  - Leverage current standard methods, data and data management systems - in development for over 30 years
  - Partnership adds capacity in data management, inventory and planning
  - Participation in development of new methods (significant areas, predictive range mapping, trends, etc.)
- **Benefits Wider Conservation Community**
  - Through the collaborative development of standards, data and systems – results available to all
- **Better Informed Conservation Decisions**
  - Ability to plan across jurisdictions and consider data for entire range of a species or ecosystem

# **By developing standards and tools collaboratively we benefit the larger conservation community**

- *How can we better leverage the limited funding for development of biodiversity conservation data and systems?*
- *How can we create a more unified conservation community, by creating similar partnerships across the globe?*



*Photo by James E. Henderson*