

An Introduction to the
Information, Planning and Conservation System
and
the Avian Knowledge Network

4 February 2016

What is IPaC?

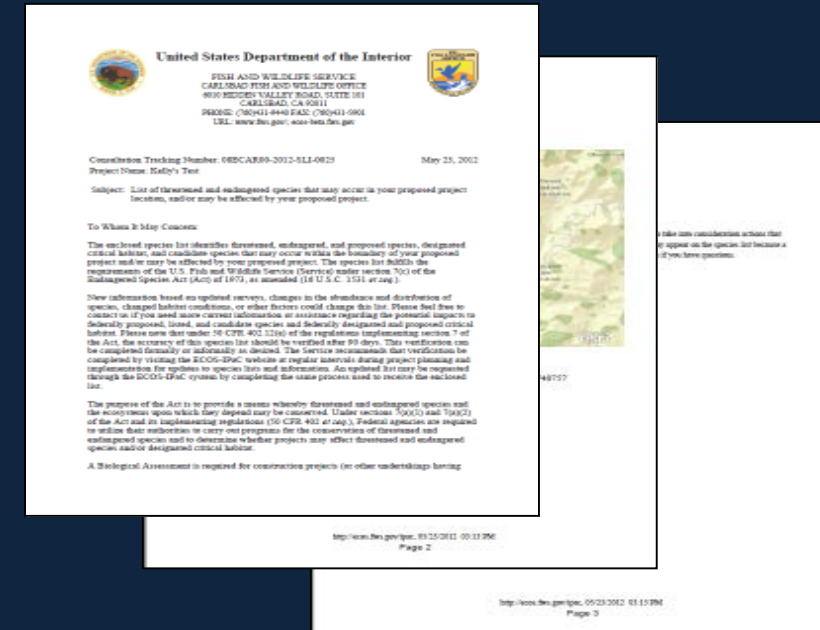
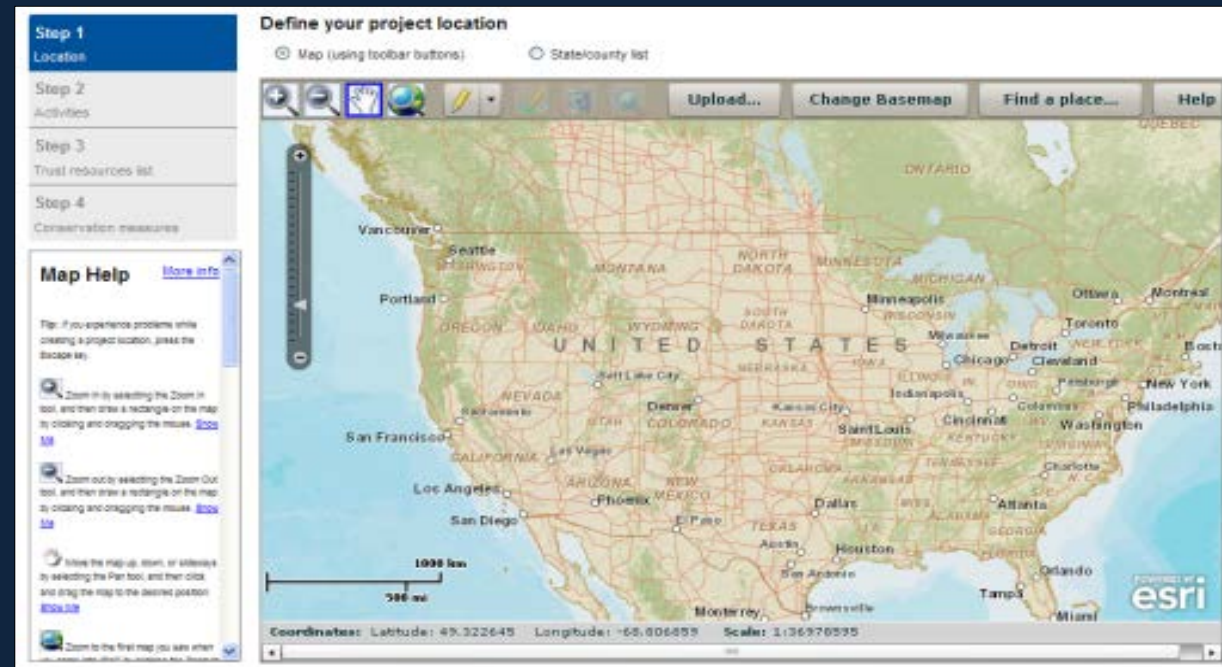
Information, Planning and Conservation system

- An online conservation planning tool
- Available to the public
- Tool to:
 - assess how project activities impact natural resources
 - provides recommendations to avoid or minimize those impacts

IPaC Delivers Information

Species Lists

Information, Planning, and Conservation



Conservation Measures



Benefits of IPaC

- Early access to species information
- “One stop shop” – includes ESA and MBTA species
- Links project impacts to species and locations
- Meaningful conservation measures
- Streamline environmental reviews
- Reduce workload



Two Current Aspects of IPaC

- A list of species present at your project site
 - FUNCTIONAL TODAY
- An assessment of project impacts and the conservation measures to reduce those impacts
 - Software and Infrastructure Developed
 - Identifying resources to “build” the effects pathways

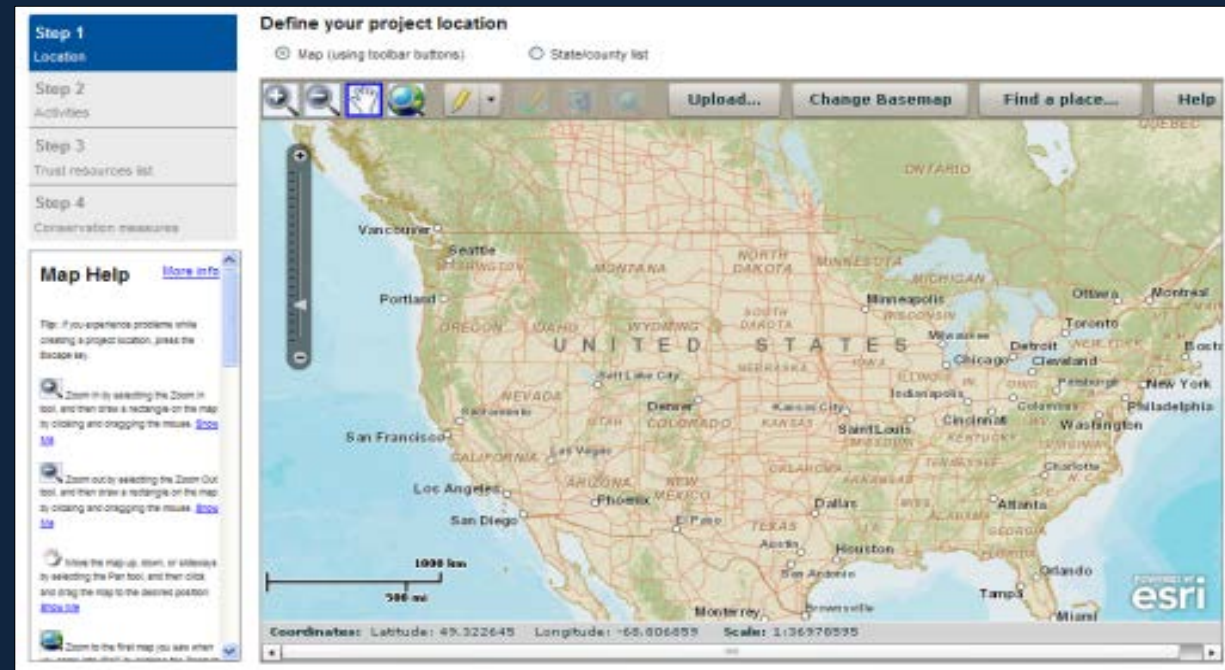
IPaC Delivers Species Lists

Let's See How

<http://ecos-beta.fws.gov/ipac/>

IPaC Delivers Conservation Measures

Information, Planning, and Conservation



Species Lists



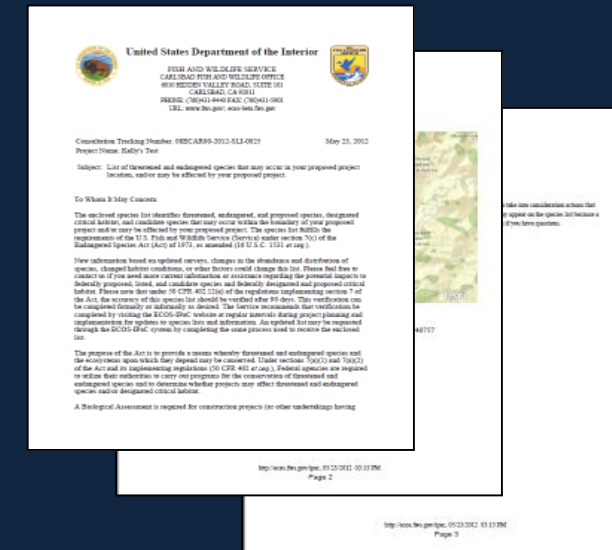
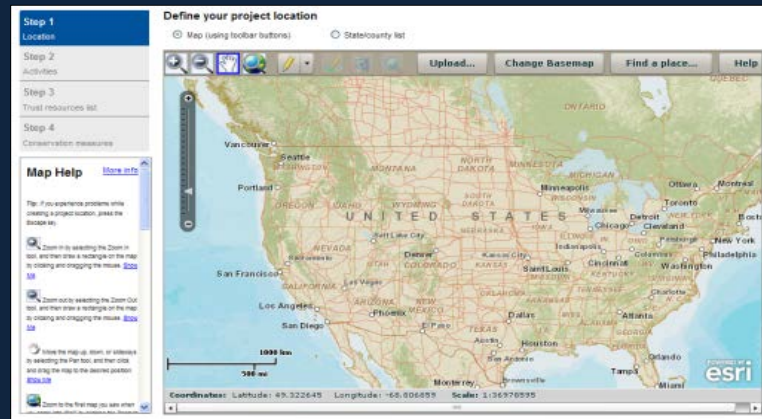
Conservation Measures



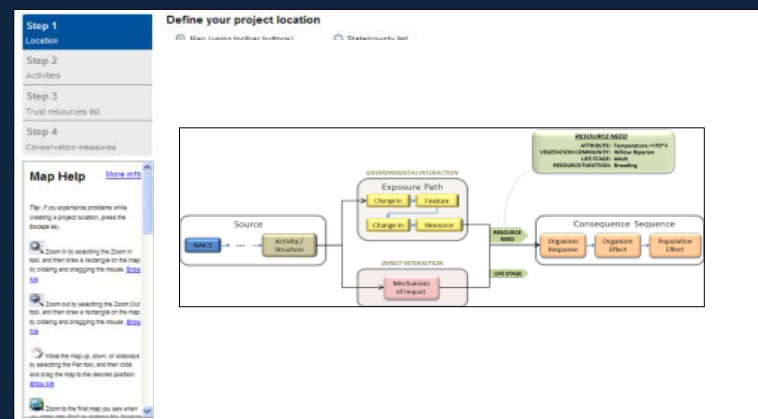
IPaC and the Effects Pathway Model

Information, Planning, and Conservation

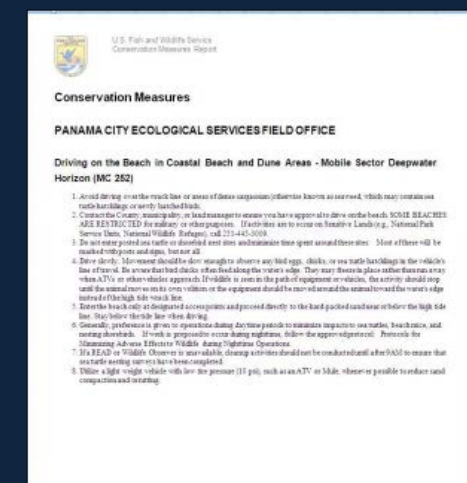
Species Lists



Effects Pathway Manager



Conservation Measures



Stressor Management

What is a Stressor?

A stressor is any *alteration of* or *addition to* the environment that affects resources upon which birds depend



Stressor Management

- Stressors separate the *problem* from the *activity*
 - Often, the *activity* cannot be avoided
 - *Problems* can be avoided or minimized
- Use Effects Pathway to link cause and effect relationships between project and birds
- A pro-active approach that advises solutions to address the problem

Avian Stressors

Common stressors include:

- Artificial Light
- Human Presence
- Chemicals
- Invasive Species
- Noise
- Structural additions

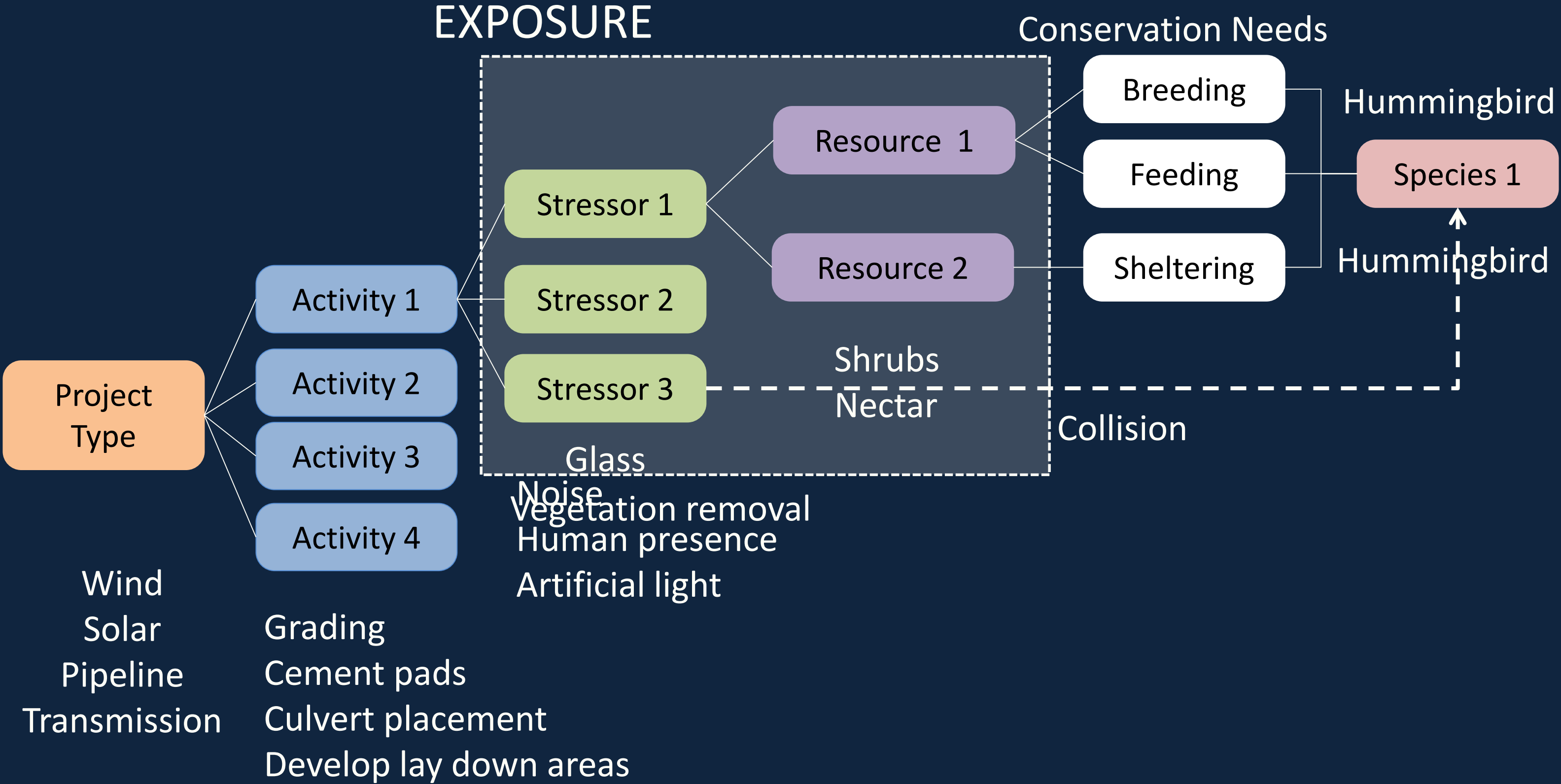


© EL Kershner

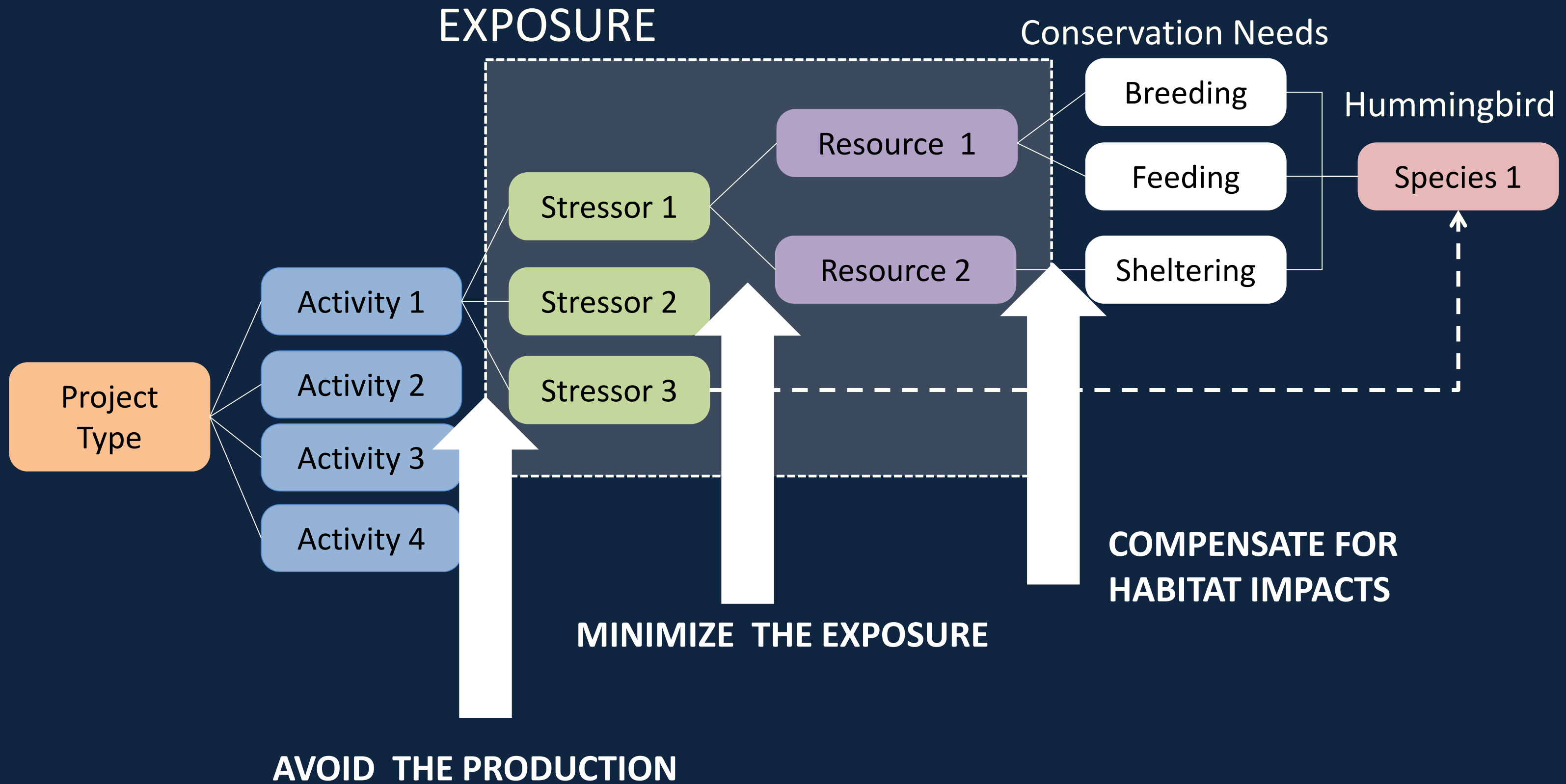
Effect Pathways

The Effect Pathway is a structured method for identifying and organizing the various data elements important to describing causal relationships.

EFFECTS PATHWAY



Conservation Measures



IPaC Delivers Conservation Measures


Let's See How

<http://ecos-beta.fws.gov/ipac/>

IPaC Developments

Select Your Activities

http://ecos.fws.gov/ipac/wizard/chooseActivities!prepare.action

 **U.S. Fish & Wildlife Service**
IPaC - Information, Planning, and Conservation System
Environmental Conservation Online System

Search

IPaC Home Page **Initial Project Scoping** Project Builder Updated Species List FAQs

Step 1
Location

Step 2
Activities

Step 3
Trust resources list

Step 4
Conservation measures

Describe your project

Select your project type:
Deepwater Horizon Oil Spill Response

Select your project's activities: [\[Select all\]](#) [\[More info\]](#)

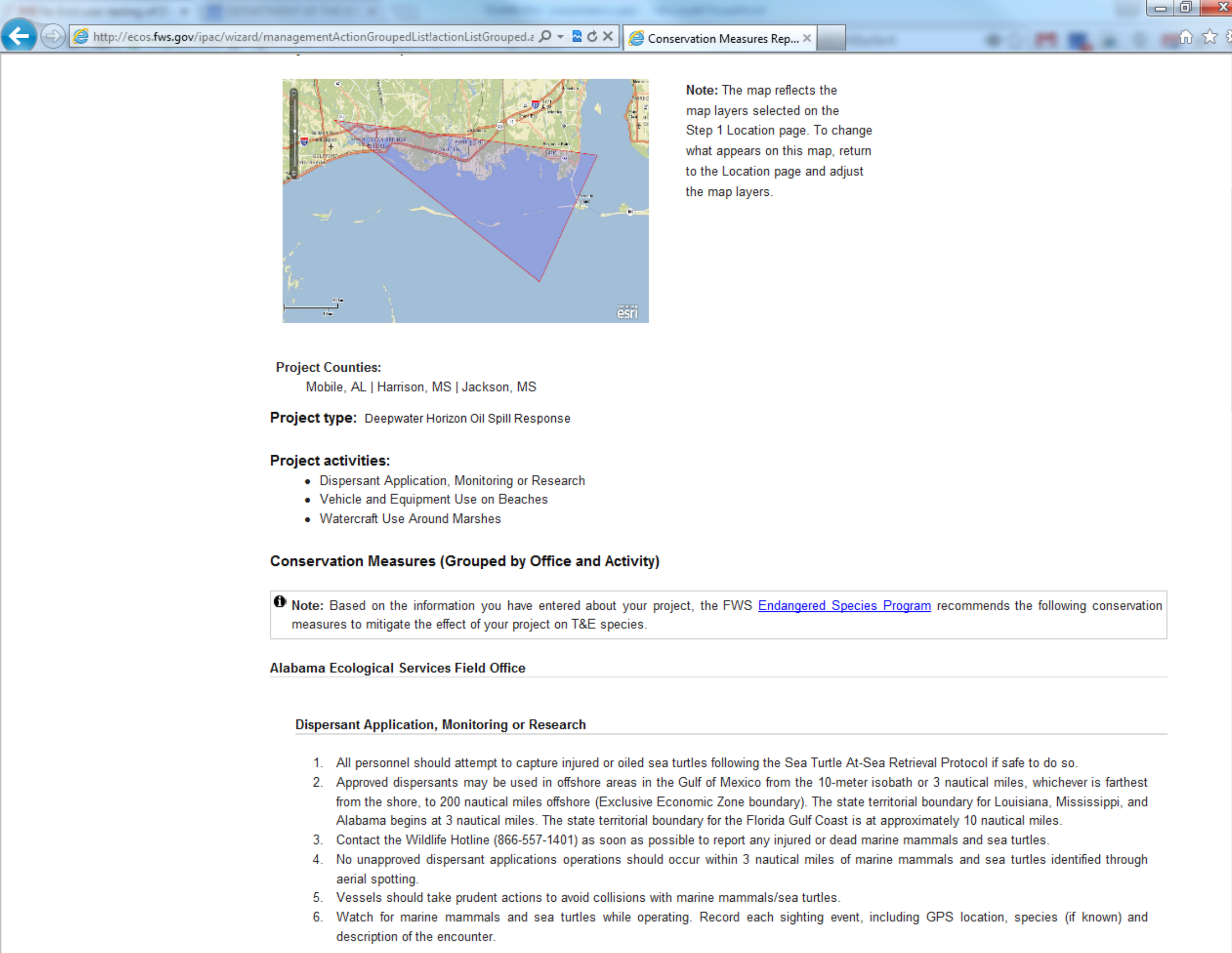
- Aircraft Use over Coastal Lands and Waters
- Dispersant Application, Monitoring or Research
- Driving on the Beach in Coastal Beach and Dune Areas - Mobile Sector Deepwater Horizon (MC 252)
- Manatee Protection Guidance for Boat Operations Related to Deepwater Horizon Oil Spill Response
- Nearshore Habitat Boom and Beach Boom Installation and Maintenance during Daytime Hours for All Marine Wildlife
- Nearshore or Nearmarsh Boom/Sorbent Installation, Operation, Maintenance, and Recovery
- Observing and Reporting Oiled, Injured, or other Wildlife
- Offshore In-Situ Burning of Oil
- Removal of Oil from Beaches (hand tools, mechanical methods, sorbents) at Night (between sunset to sunrise).
- Removal of Oil from Beaches (hand tools, mechanical methods, sorbents) during daytime operations (sunrise to sunset)
- Removal of Oil from Offshore Habitats with Skimmers
- Sea Turtle Nest Protection Protocols for Cleanup Crews on Florida Panhandle, Alabama, Mississippi and Louisiana Beaches
- Use of Sorbent on Nearshore Habitats and Beaches
- Vehicle and Equipment Use on Beaches
- Watercraft Use Around Marshes
- Watercraft Use in Nearshore (non-Marsh) Habitat

Last updated: April 22, 2015

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IPaC Developments

Receive your conservation measures



The screenshot shows a web browser window with the URL <http://ecos.fws.gov/ipac/wizard/managementActionGroupedList?actionListGrouped.z>. The page displays a map of the Gulf of Mexico with a red boundary and a blue shaded area. To the right of the map is a note: "Note: The map reflects the map layers selected on the Step 1 Location page. To change what appears on this map, return to the Location page and adjust the map layers." Below the map, the project details are listed: "Project Counties: Mobile, AL | Harrison, MS | Jackson, MS", "Project type: Deepwater Horizon Oil Spill Response", and "Project activities: Dispersant Application, Monitoring or Research; Vehicle and Equipment Use on Beaches; Watercraft Use Around Marshes". A section titled "Conservation Measures (Grouped by Office and Activity)" contains a note: "Note: Based on the information you have entered about your project, the FWS [Endangered Species Program](#) recommends the following conservation measures to mitigate the effect of your project on T&E species." Under the heading "Alabama Ecological Services Field Office", the activity "Dispersant Application, Monitoring or Research" is detailed with six numbered instructions.

Note: The map reflects the map layers selected on the Step 1 Location page. To change what appears on this map, return to the Location page and adjust the map layers.

Project Counties:
Mobile, AL | Harrison, MS | Jackson, MS

Project type: Deepwater Horizon Oil Spill Response

Project activities:

- Dispersant Application, Monitoring or Research
- Vehicle and Equipment Use on Beaches
- Watercraft Use Around Marshes

Conservation Measures (Grouped by Office and Activity)

Note: Based on the information you have entered about your project, the FWS [Endangered Species Program](#) recommends the following conservation measures to mitigate the effect of your project on T&E species.

Alabama Ecological Services Field Office

Dispersant Application, Monitoring or Research

1. All personnel should attempt to capture injured or oiled sea turtles following the Sea Turtle At-Sea Retrieval Protocol if safe to do so.
2. Approved dispersants may be used in offshore areas in the Gulf of Mexico from the 10-meter isobath or 3 nautical miles, whichever is farthest from the shore, to 200 nautical miles offshore (Exclusive Economic Zone boundary). The state territorial boundary for Louisiana, Mississippi, and Alabama begins at 3 nautical miles. The state territorial boundary for the Florida Gulf Coast is at approximately 10 nautical miles.
3. Contact the Wildlife Hotline (866-557-1401) as soon as possible to report any injured or dead marine mammals and sea turtles.
4. No unapproved dispersant applications operations should occur within 3 nautical miles of marine mammals and sea turtles identified through aerial spotting.
5. Vessels should take prudent actions to avoid collisions with marine mammals/sea turtles.
6. Watch for marine mammals and sea turtles while operating. Record each sighting event, including GPS location, species (if known) and description of the encounter.

Future Development

- Integrate Avian Knowledge Network and IPaC
 - Improve temporal and spatial distribution data
 - Improves conservation measures delivery

Avian Knowledge Network

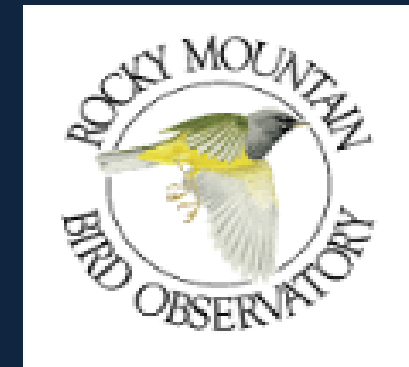
What is it?

A partnership

Enables decisions

Conservation and management of birds

Our Foundation in Partnerships



Avian Knowledge Network

- Provides the architecture to:
 - Archive
 - Organize
 - Access
 - Explore
 - Analyze data
- Coordinates activities among governmental and non-governmental organizations.

Avian Knowledge Network

What is the problem?



Avian Knowledge Network

Allows Access to Quality Bird Data
...to improve conservation outcomes for birds.

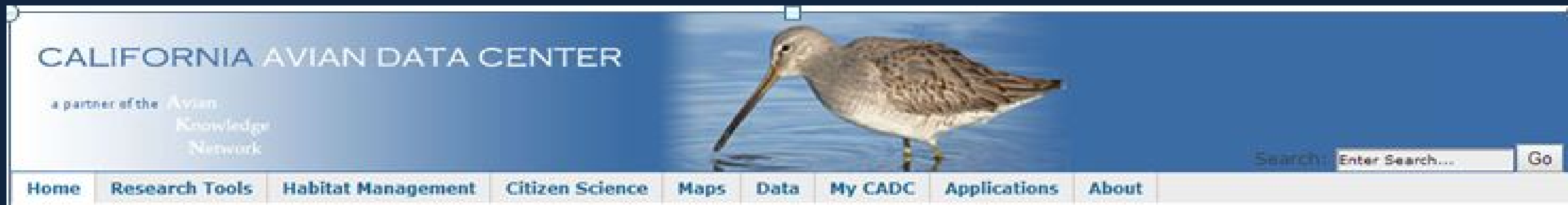
Avian
Knowledge
Network

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The goal of the AKN is to understand the patterns and dynamics of bird populations across the Western Hemisphere.

Observations	106,691,727
Locations	1,033,080
Taxa	11,655
Partners	51

Avian Knowledge Network How Does It Work?

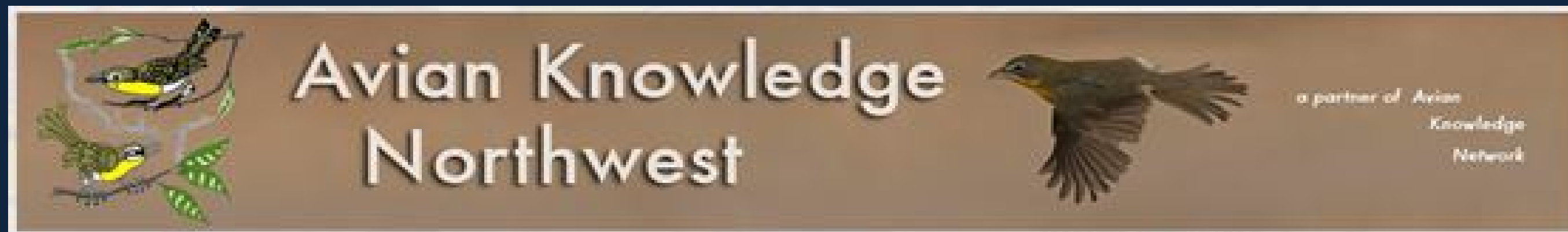


CALIFORNIA AVIAN DATA CENTER

a partner of the Avian Knowledge Network

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Avian Knowledge Northwest

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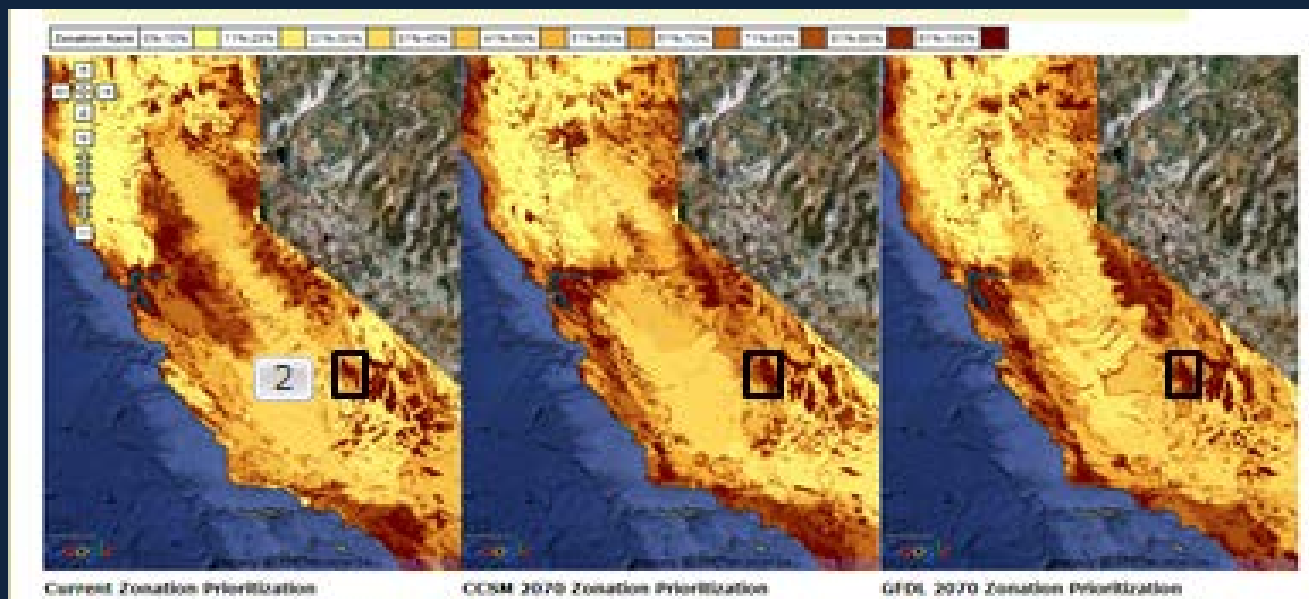
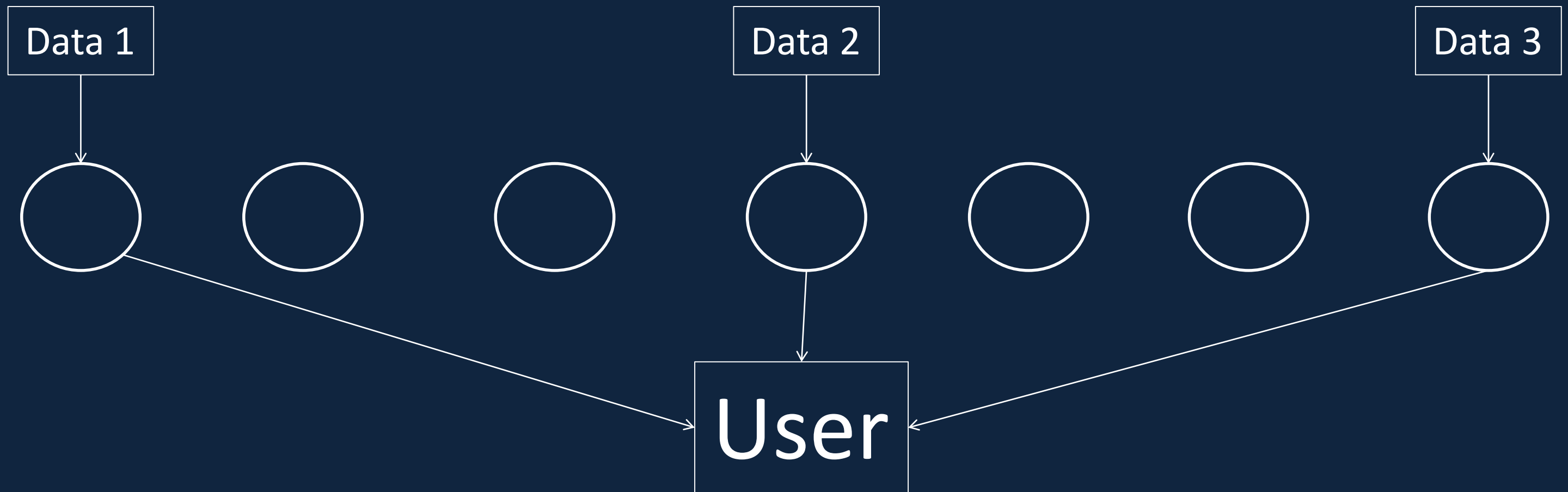
INTEGRATED WATERBIRD MANAGEMENT AND MONITORING

Managers and scientists working together to optimally manage waterbirds

[HOME](#) [HISTORY & BACKGROUND](#) [PROTOCOLS & DATA FORMS](#) [FAQ](#) [CALENDAR OF EVENTS](#)

Avian Knowledge Network

How Does It Work?

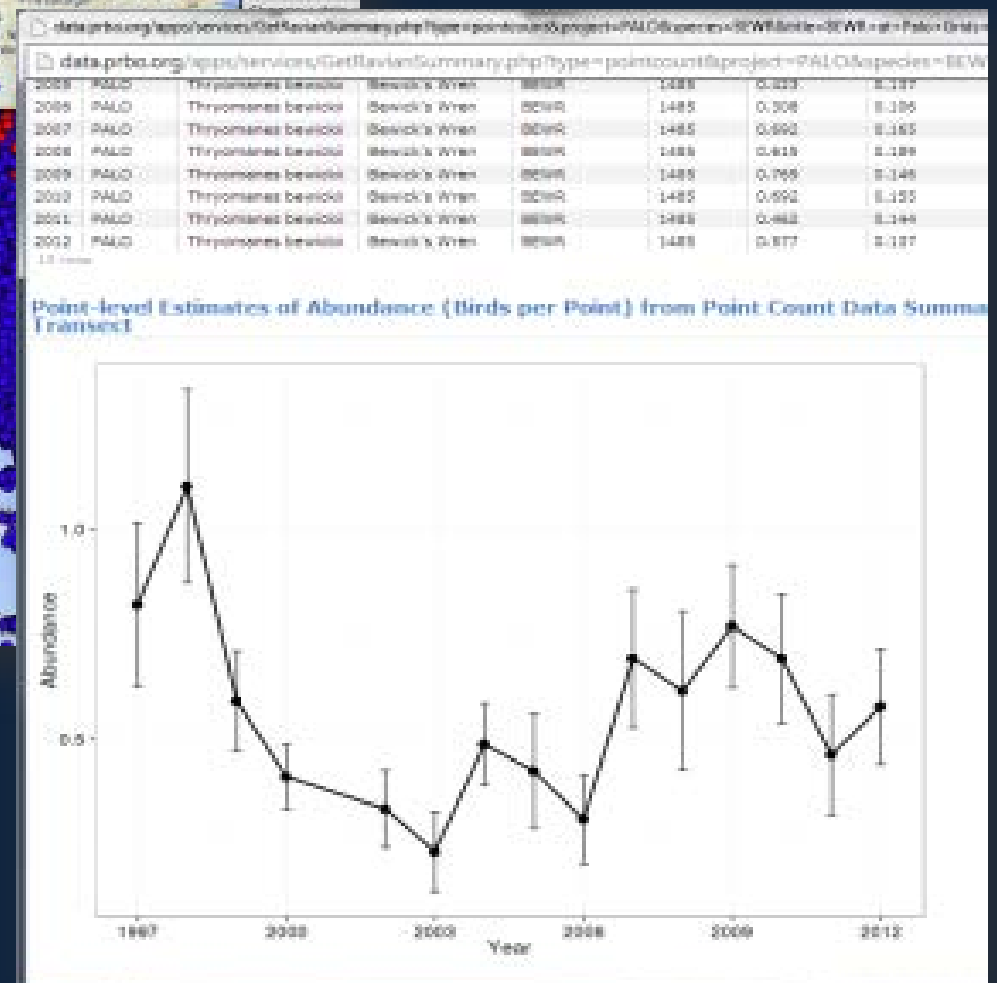
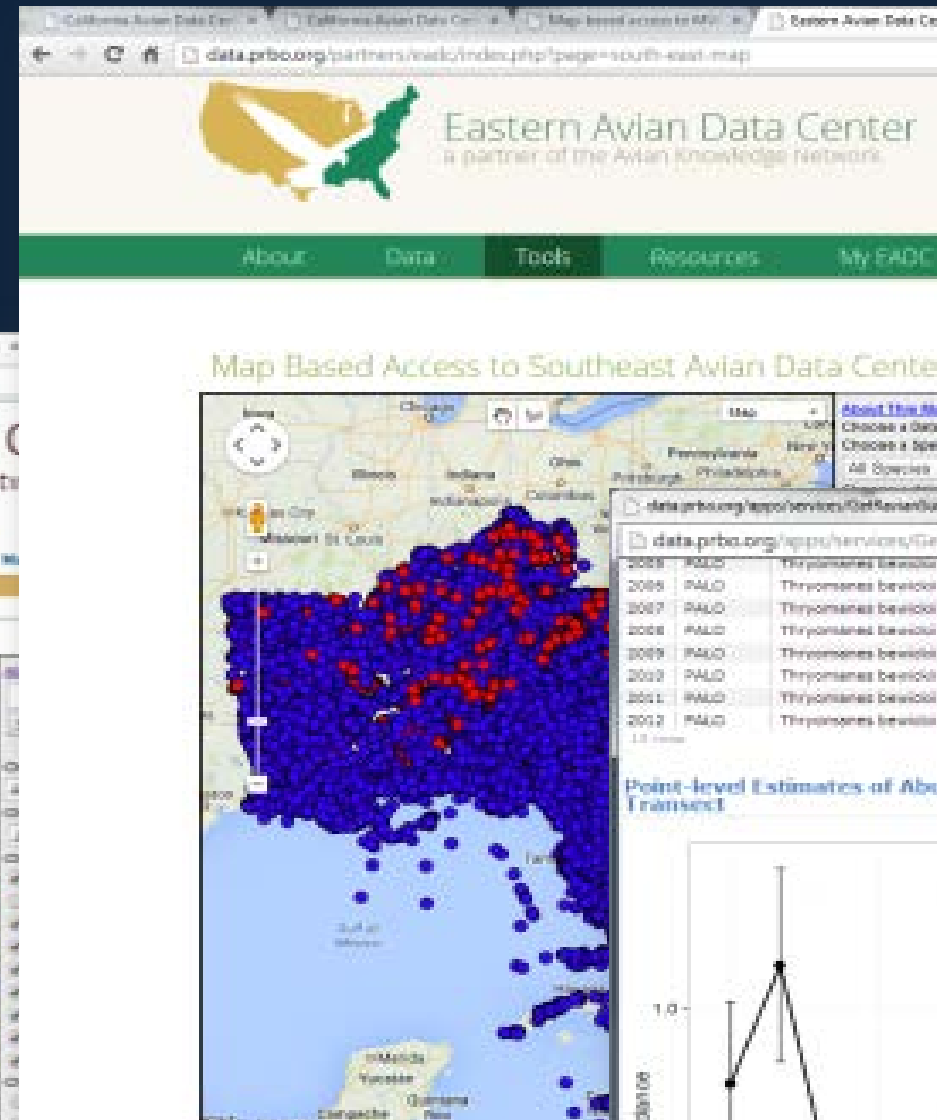
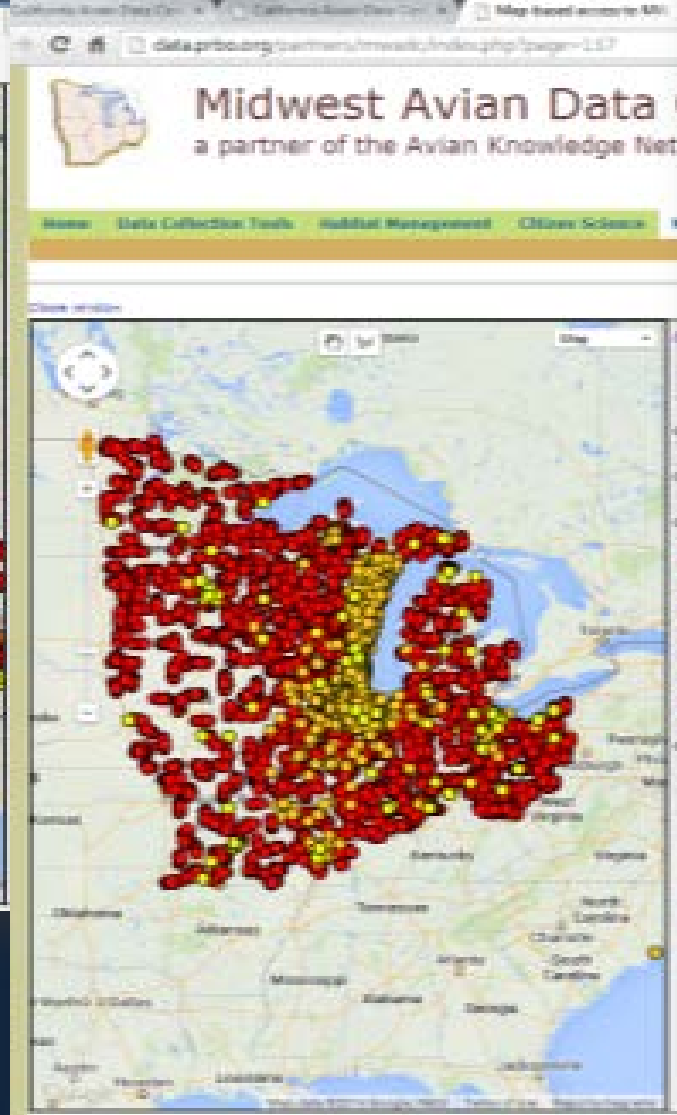
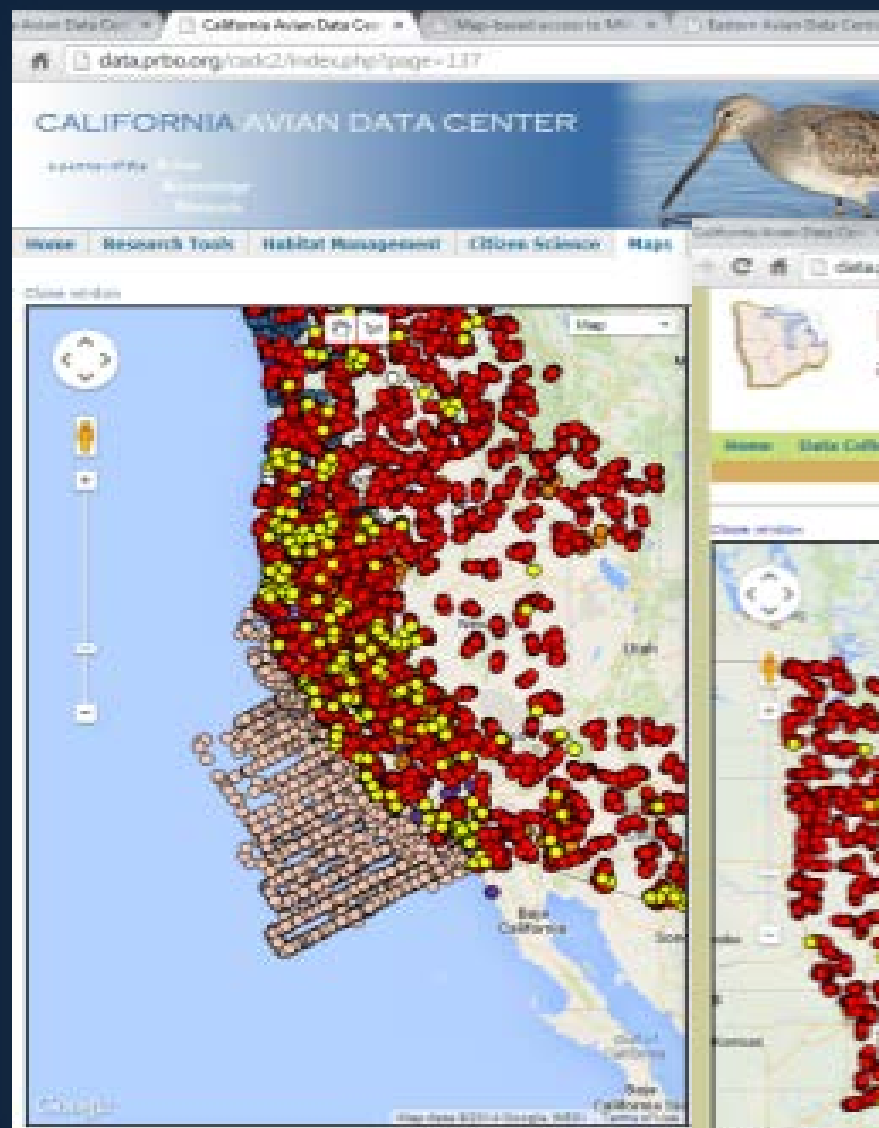


Locations: Saginaw, Michigan (SAGINAW/ASSOCIATED NATIONAL WILDLIFE REFUGE)

Species	Jan	Feb	Mar	Apr
Swan Goose (Domestic type)				
Greater White-fronted Goose				
Graylag Goose (Domestic type)				
Snow Goose				
Ross's Goose				
Snow/Ross's Goose				
Cackling Goose				
Trumpeter				

Tools – Tailored to Needs

Ensuring consistency and format of datasets



General Tools

Distribution and Abundance Data

Map-Based Access to Avian Data Summaries for the Midwest

Lake Maria State Park

Collections: All collections
Months: 1 - 12

[1990](#) | [1992](#) | [2003](#) | [2006](#) | [2007](#) | [2009](#) | [2011](#) | [All Years](#) |

(unid. race) Dark-eyed Junco (1)
American Crow (10)
American Goldfinch (6)
American Robin (2)
American White Pelican (5)
Bald Eagle (2)
Bank Swallow (2)
Barred Owl (1)
Belted Kingfisher (1)
Black-capped Chickadee (20)
Blue-gray Gnatcatcher (1)
Blue Jay (13)
Brown-headed Cowbird (3)
Canada Goose (1)
Chipping Sparrow (3)
Clay-colored Sparrow (1)
Common Redpoll (20)
Common Yellowthroat (16)
Double-crested Cormorant (1)
Downy Woodpecker (3)
Eastern Kingbird (1)
Eastern Phoebe (6)
Eastern Wood-Pewee (3)
Field Sparrow (6)
Golden-crowned Kinglet (1)
Gray Catbird (3)
Great Blue Heron (6)
Great Crested Flycatcher (1)

Choose a Data Collection

- Breeding Bird Survey
- eBird
- MAPS Stations
- Bird Conservation Network
- Important Bird Areas of Minnesota Monitoring

Choose a Map Overlay

- States
- Bird Conservation Regions
- Counties
- Audubon Important Bird Areas
- Watersheds
- US Fish and Wildlife Service
- US Protected Areas Database
- Marine Protected Areas
- NREL Wind Energy Potential
- Map Labels

Choose a Species

All Species

Filter Species Periodically by Month

Jan Dec

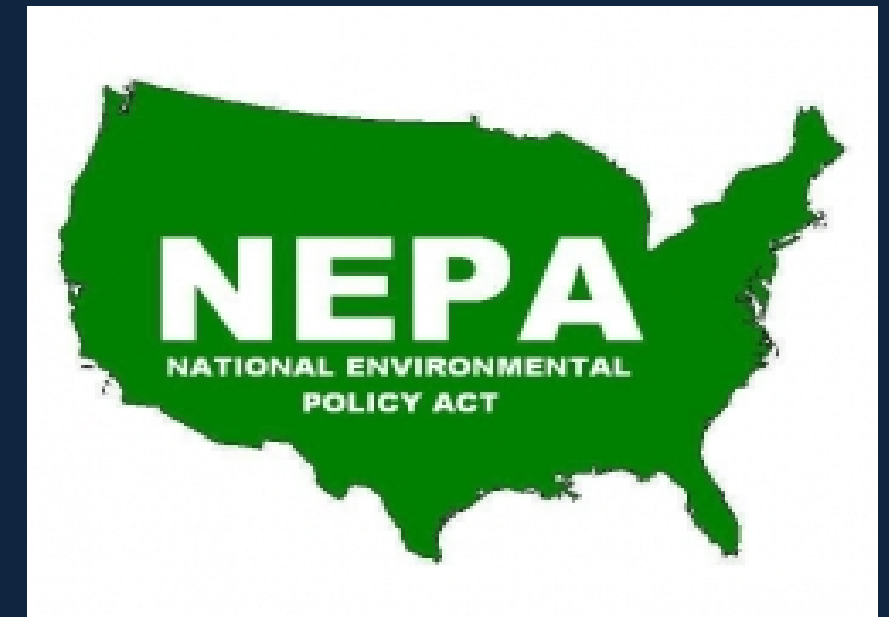
Draw a Custom Polygon

Hand icon Polygon icon

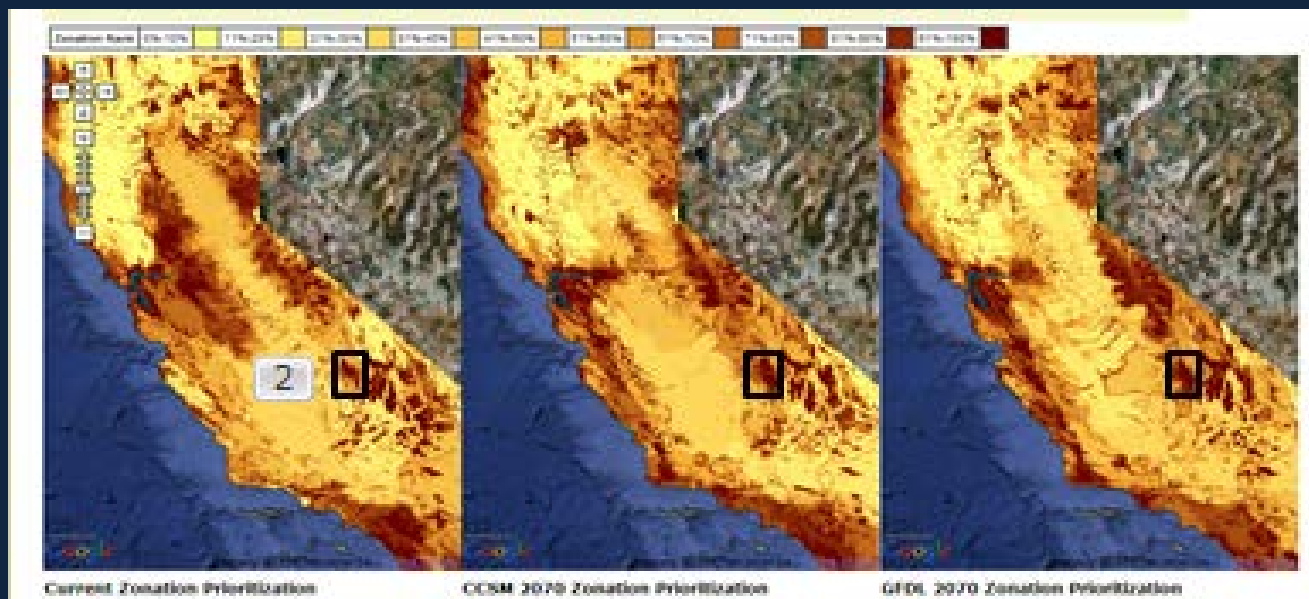
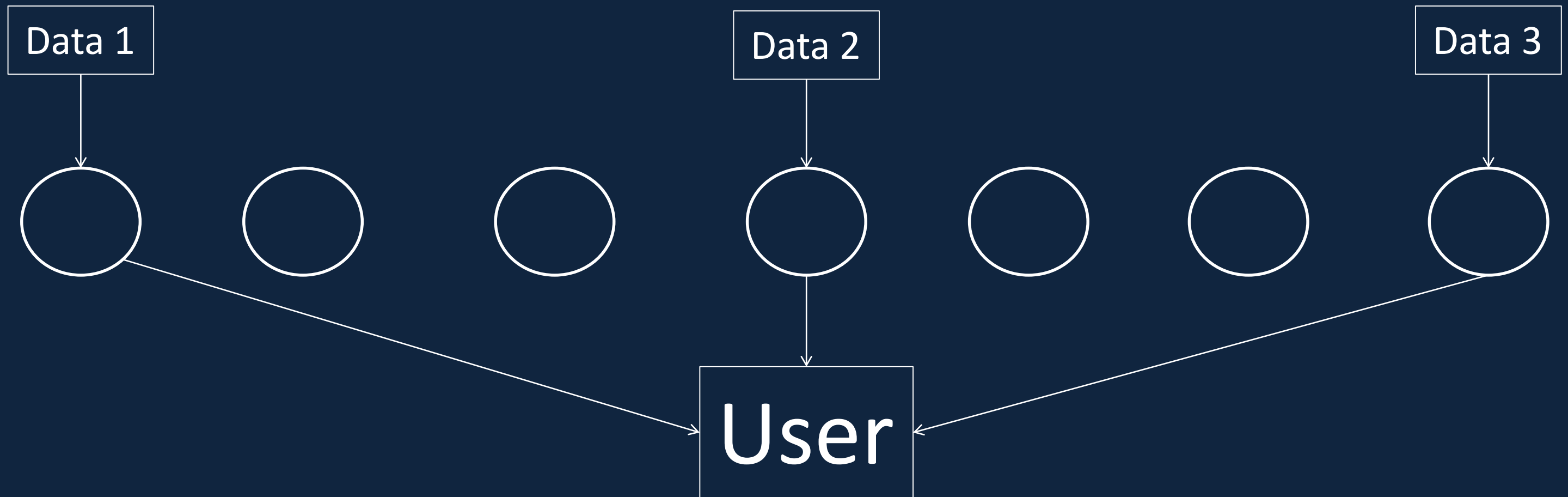
New Developments

Meeting Partner Needs

- Federal Agencies desire tools for:
 - Data management – archive
 - Environmental review needs
 - Land management actions
 - **Data access and decision support**



Avian Knowledge Network

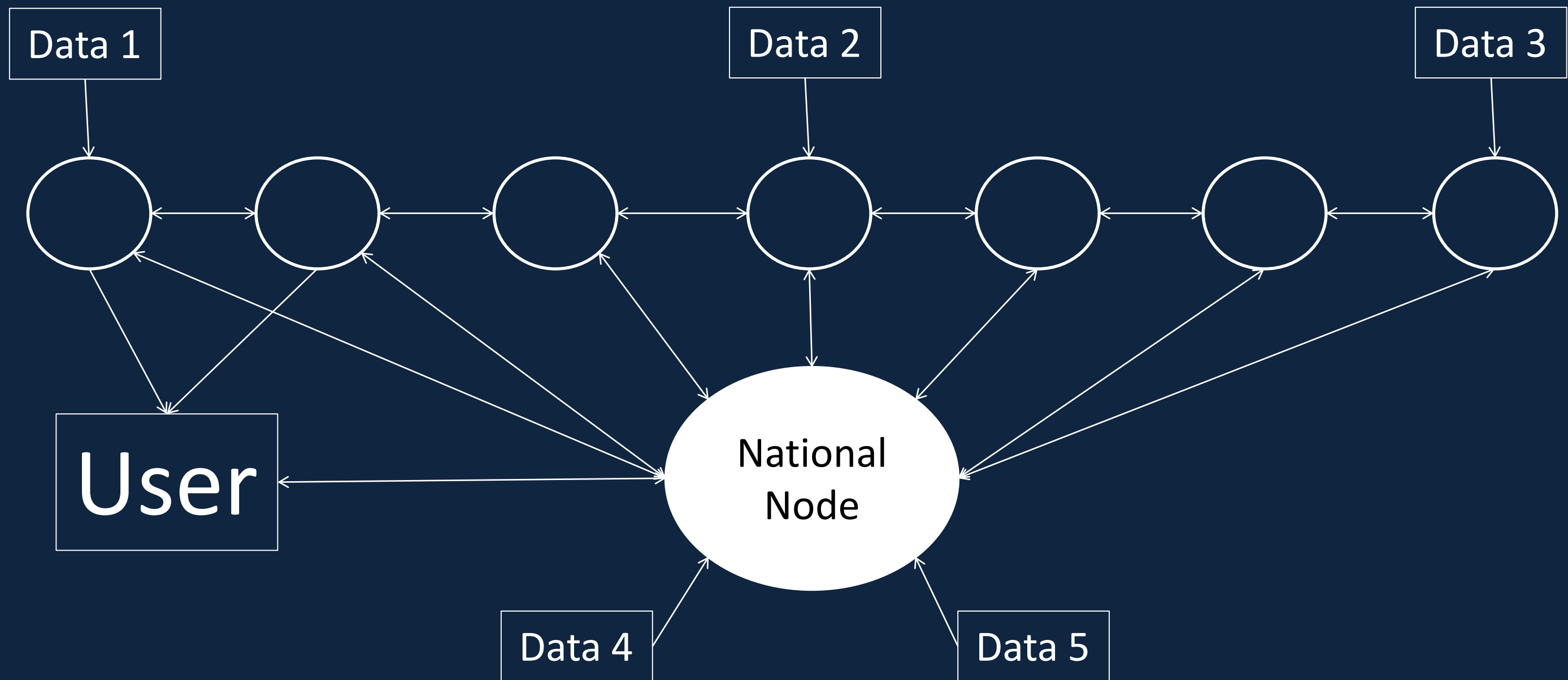


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Greater White-fronted Goose	█	█	█	
Graylag Goose (Domestic type)		█		
Snow Goose	█	█	█	█
Ross's Goose		█		
Snow/Ross's Goose		█		
Cackling Goose	█	█	█	
Trumpeter Swan	█	█	█	█

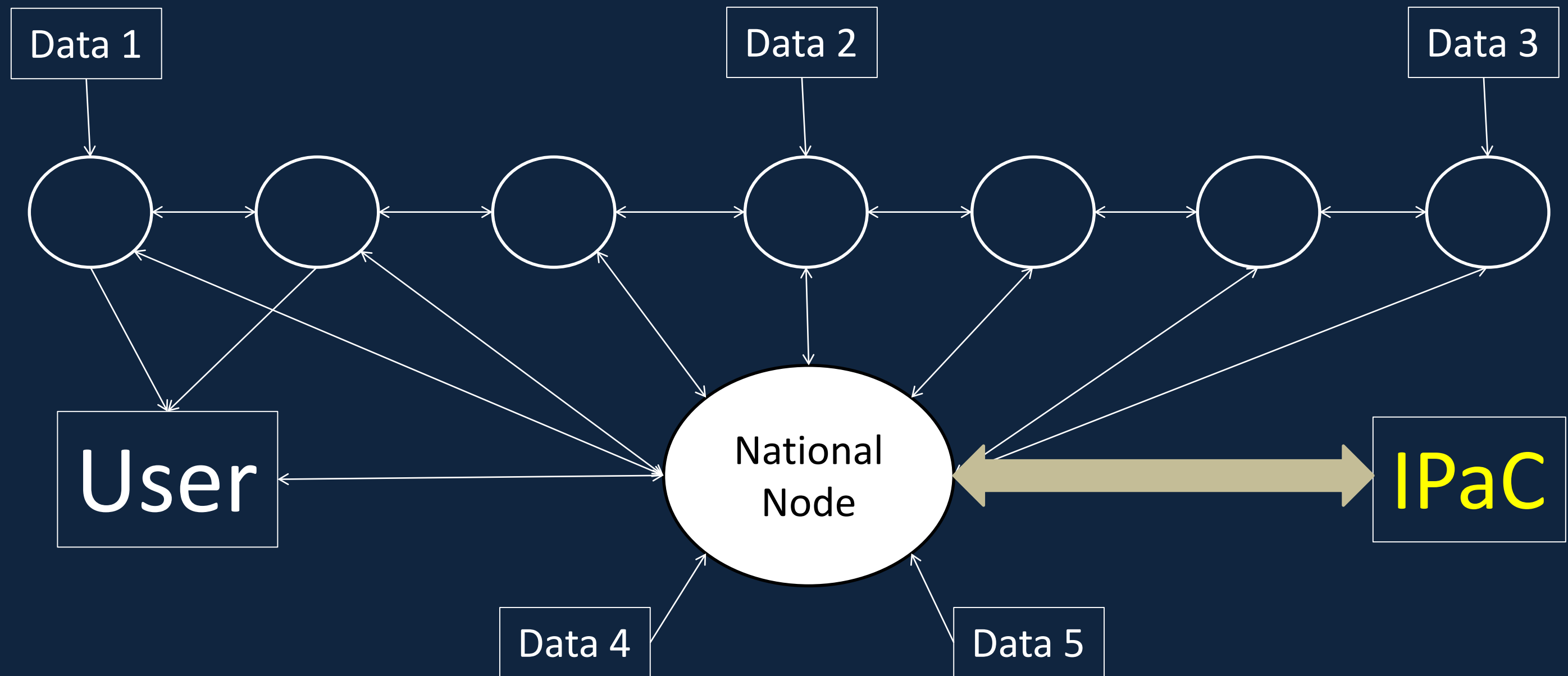
Avian Knowledge Network

What is the Future?



THIS IS A MAJOR ADVANCEMENT

Avian Knowledge Network Tool Integration



Avian Knowledge Network IPaC Integration

The screenshot displays the IPaC (Information for Planning and Conservation) web interface. The top navigation bar includes tabs for OVERVIEW, DESIGN, RESOURCES, IMPACT ANALYSIS, REGULATORY DOCUMENTS, SAVE, and SHARE. Below this, there are filters for Endangered species, Migratory birds, Wildlife refuges, and Wetlands. The main content area shows a list of bird species with their distribution data across the months of the year. The species listed are:

- American Oystercatcher (*Haematopus palliatus*) - Year-round
- American Bittern (*Botaurus lentiginosus*) - Season: Breeding
- Bald Eagle (*Haliaeetus leucocephalus*) - Year-round
- Black Skimmer (*Rynchops niger*) - Season: Breeding
- Black Rail (*Laterallus jamaicensis*) - Season: Breeding
- Black-billed Cuckoo (*Coccyzus erythrophthalmus*) - Season: Breeding

Each species entry includes a small image and a table of distribution data for each month (Jan to Dec). The data is represented by green bars of varying heights, indicating the presence or relative abundance of the species in each month. For example, the American Oystercatcher has a small bar in January and a larger bar in July. The American Bittern has a small bar in May and a larger bar in June. The Bald Eagle has a small bar in January and a larger bar in July. The Black Skimmer has a small bar in May and a larger bar in June. The Black Rail has a small bar in May and a larger bar in June. The Black-billed Cuckoo has a small bar in May and a larger bar in June.

AKN
Distribution
data

QUESTIONS?