

Improving EDRR Efforts through Collaboration and Information Sharing

Presenting Author: Nicole D. Hernandez ¹

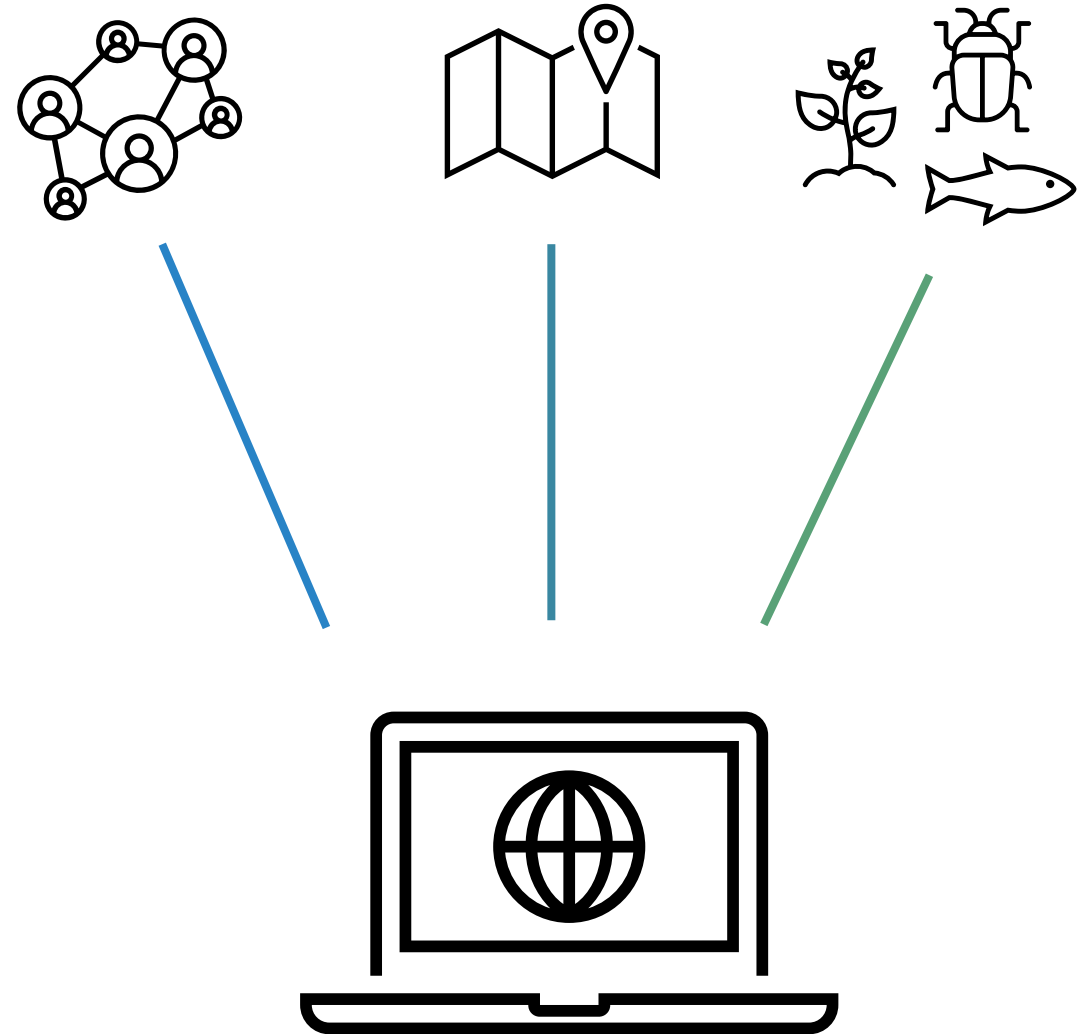
Corresponding Authors: Aimee C. Agnew¹, Wesley M. Daniel² and Brian E. Reichert¹

Fort Collins Science Center¹
Wetland and Aquatic Research Center²



Siren: the National EDRR Information System

Siren is a web application for invasive species information and collaboration, supporting EDRR efforts at local, state, regional, and national scales.



Siren is a Web Application

An official website of the United States government [Here's how you know](#)

USGS
science for a changing world

EDRR
NATIONAL FRAMEWORK

EDRR ▾ Maps ▾ Network ▾ About ▾ My Projects ▾ [→ Sign In](#)

BETA

Siren: the National EDRR Information System

The National EDRR Information System supports a national framework for early detection of and rapid response to invasive species.

[View More Data](#)

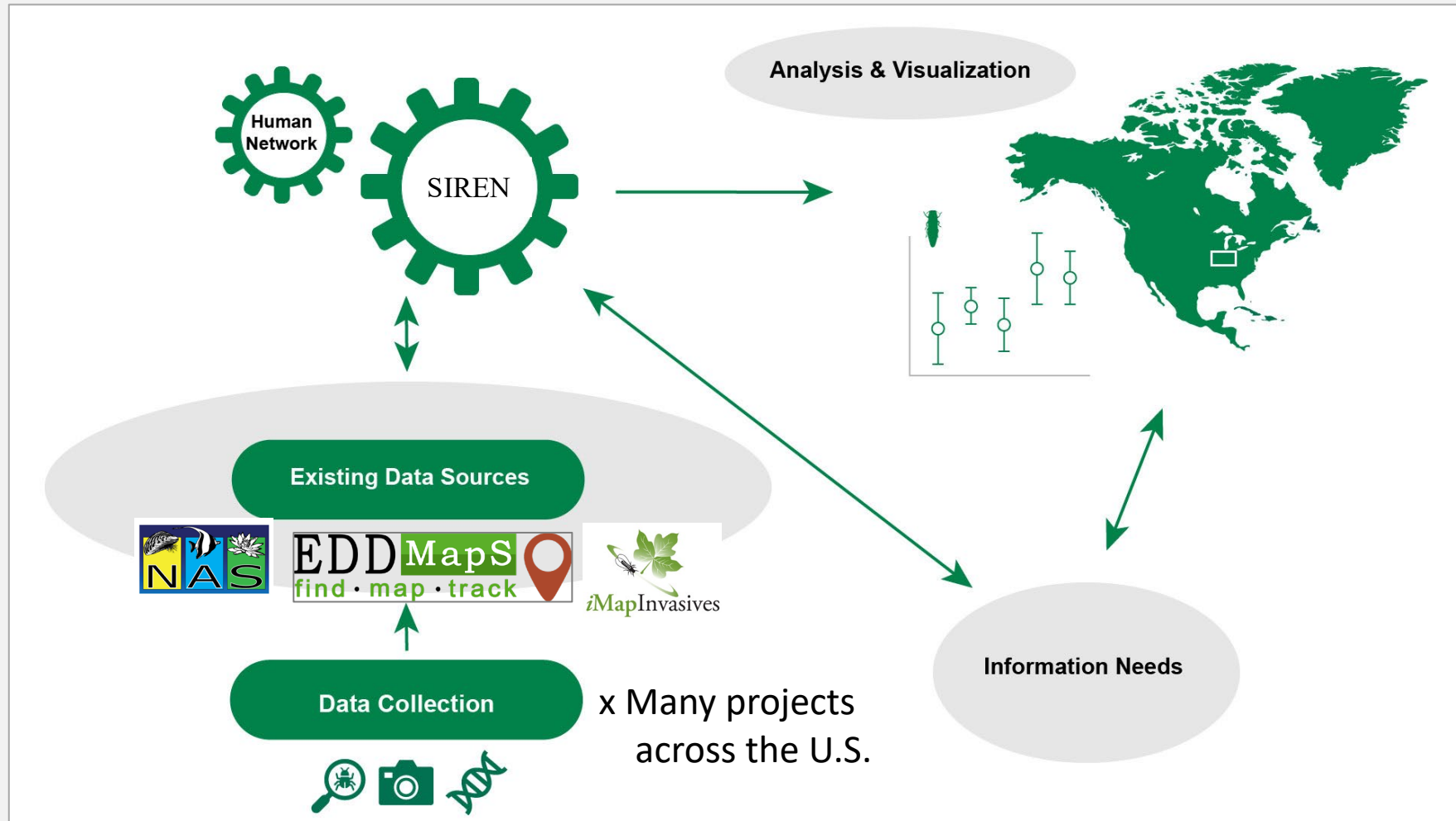
On this page

- Siren
- What is EDRR?
- EDRR in Action
- Species Pages
- Planning Resources
- Response Resources
- Detection Resources
- Report Resources
- Network
- About
- Subscribe to Our Newsletter

What is EDRR?

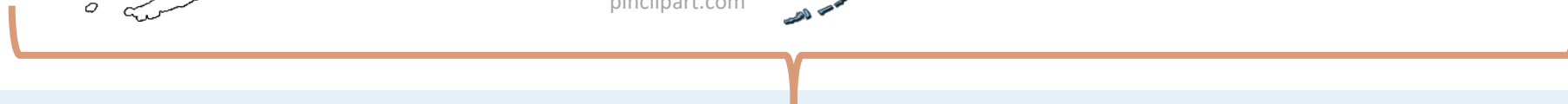
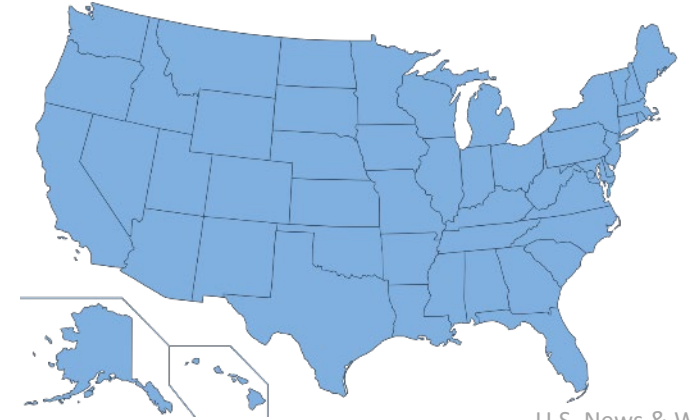
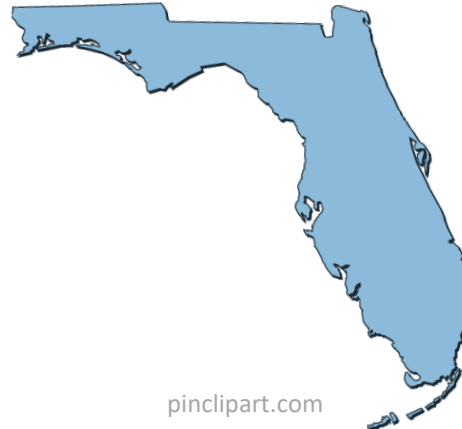
Early Detection and Rapid Response (EDRR) is a proactive strategy in managing invasive species. Unlike traditional invasive species control, which focuses on containment and eradication after an invasion has occurred, EDRR emphasizes early identification and swift action at the initial stages of invasion. The primary goal is to detect invasive species in their early establishment, enabling a prompt and cost-effective response to prevent widespread impacts.

Workflow of Siren



SIREN TOOLS/RESOURCE & DATA INTEGRATION

Invasive species EDRR efforts are ongoing at local, county, state, regional, and national levels



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USGS
science for a changing world

EDRR [EDRR](#) [Maps](#) [Network](#) [About](#) [My Projects](#) [Sign In](#)

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What is EDRR?

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*Preliminary Information-Subject to Revision. Not for Citation or Distribution

SIREN – TOOL & RESOURCE INTEGRATION

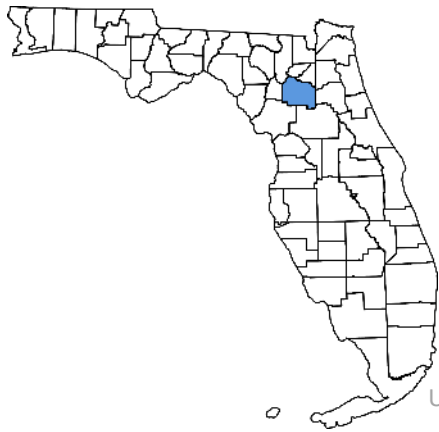
Ok, but what input has Siren received in the building process?

1. Community of Practice Groups

2. Invited talks & Conferences

3. Travel and Outreach

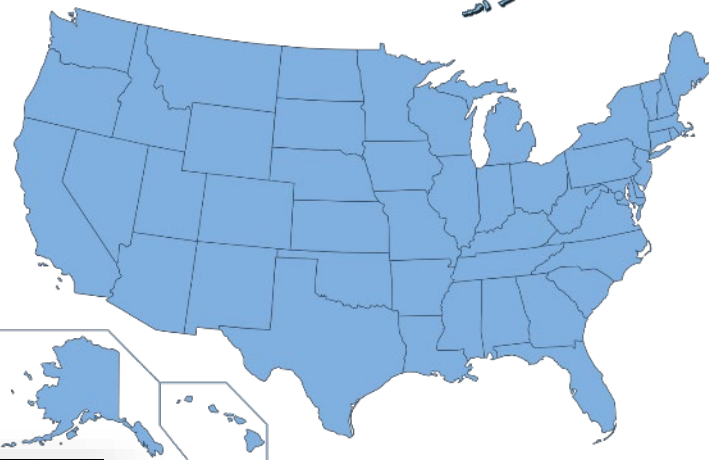
Siren's tools,
resources,
and overall
usability



U.S. News & World Report



pinclipart.com



U.S. News & World Report

Siren's Four Community Of Practice (CoP) Groups

Virtual meetings held ~bi-monthly to address different stages of EDRR

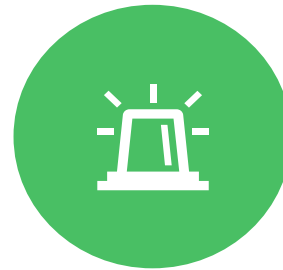
CoP groups are open to anyone working with EDRR efforts across the U.S. and its territories



PLAN



DETECT



RESPOND



REPORT

Siren's Four Community Of Practice (CoP) Groups

The screenshot shows the USGS EDRR website interface. At the top, there is a navigation bar with the USGS logo and the tagline "science for a changing world". Below this, the EDRR National Framework logo is visible. The main navigation menu includes "EDRR", "Map", "Network", "About", "My Projects", and a "Sign In" button. A dropdown menu for "EDRR" is open, displaying four main categories: "Plan", "Respond", "Detect", and "Report".

- Plan**
 - Horizon Scans
 - Risk Assessments
 - Planning Template
 - Example Plans
- Respond**
 - Invasive Species Policy
 - AIS Rapid Response Fund
 - IInSRRT
- Detect**
 - eDNA Toolbox
 - Species Identification
- Report**
 - Report an Invasive Species
 - Report an Action

On the left side of the dropdown menu, there are links for "What is EDRR?" and "Species Pages". Below the menu, a large map of the United States is visible, with numerous red vertical bars indicating data points across the country.

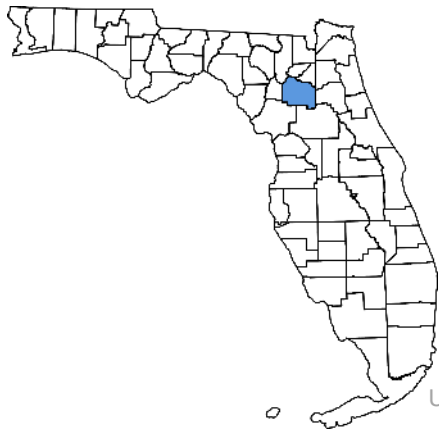
SIREN - DATA INTEGRATION

Ok, but how is Siren getting this information?

1. National EDRR Framework

2. EDRR projects at local, state, regional, and national levels

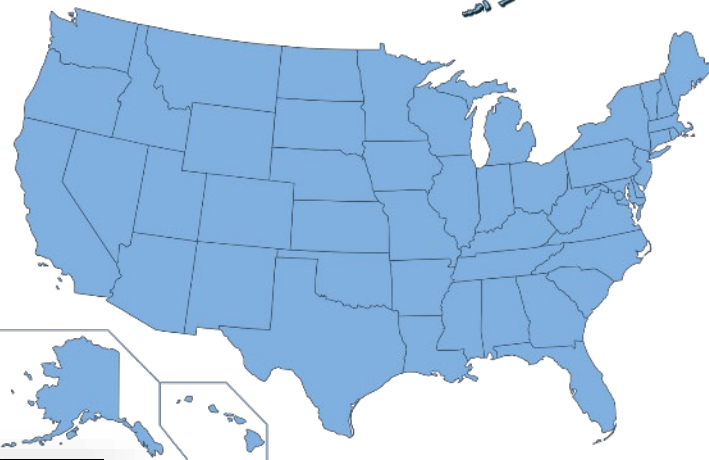
Siren's
Data
Partners



U.S. News & World Report



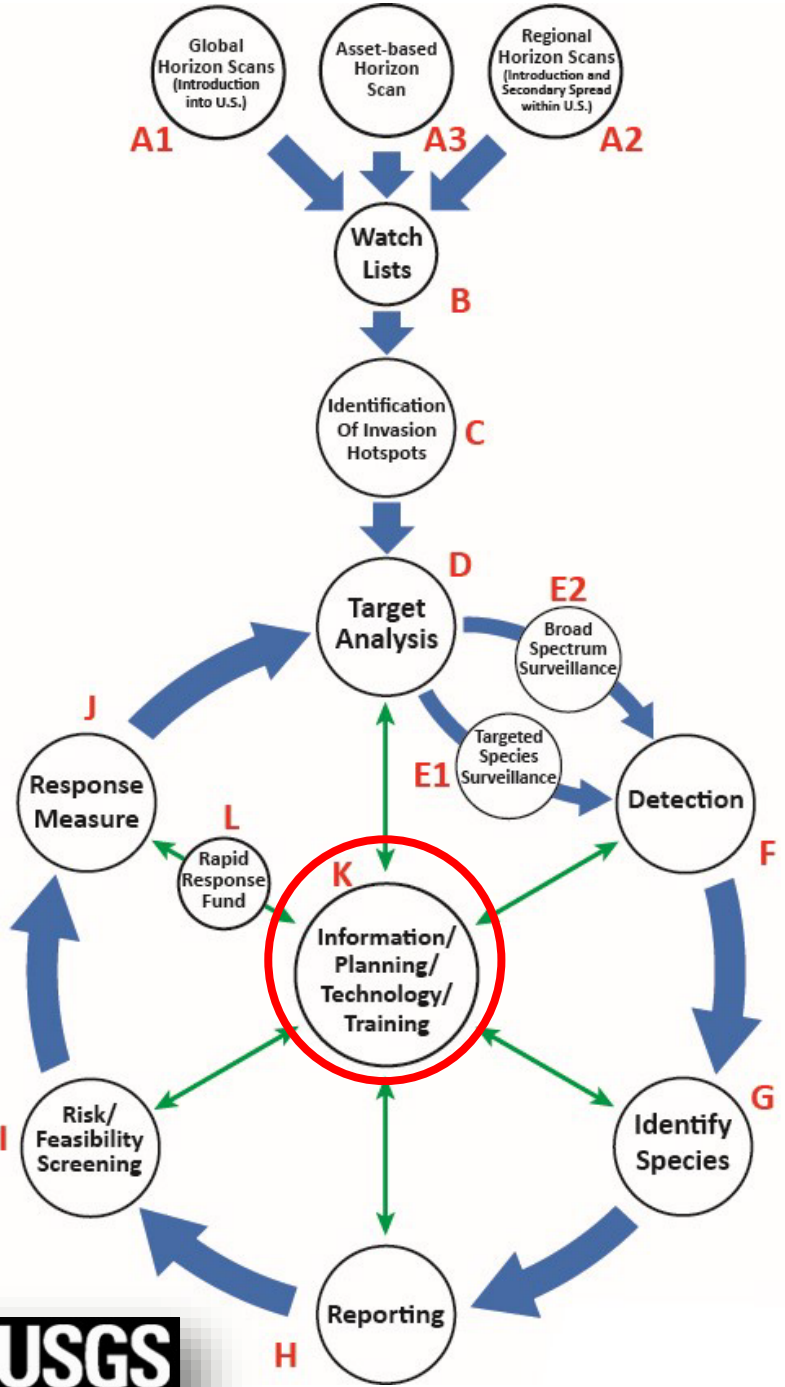
pinclipart.com



U.S. News & World Report

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- 1. National EDRR Framework
- 2. EDRR projects at local, state, regional, and national levels

Siren's Data Partners



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What are the National EDRR Framework Projects?

PLAN

1. Horizon Scans
(Global and Regional)
2. Hotspot Analysis and Mapping
3. INHABIT
Terrestrial Plant
predictive modeling

DETECT

1. Genetic Material Repository and Sharing Network
Library of genomic DNA
2. Genetic Marker Development
3. Resource Managers
eDNA Toolbox
4. eDNA Point of Use
Detection
5. READI-Net Automated eDNA
Surveillance
6. Molecular Lab Network
7. Asset-based Protection: Early
Detection Surveillance

RESPOND

1. Rapid Response Fund for
Aquatic Invasive Species
2. DOI Interjurisdictional
Invasive Species Rapid
Response Team (IInSRRT)

PLAN, DETECT, RESPOND, and REPORT

1. Siren: the National Early
Detection and Rapid
Response Information System

Scan Here!

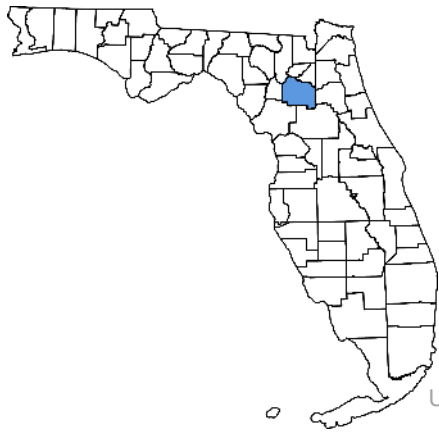


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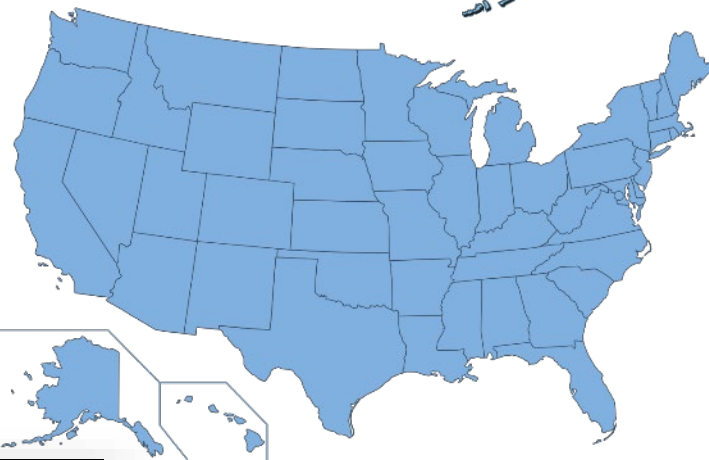
Siren's
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U.S. News & World Report

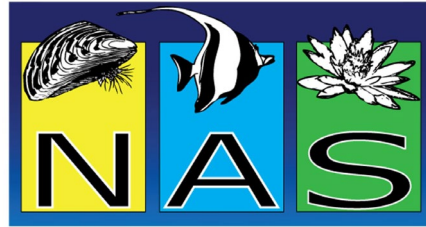


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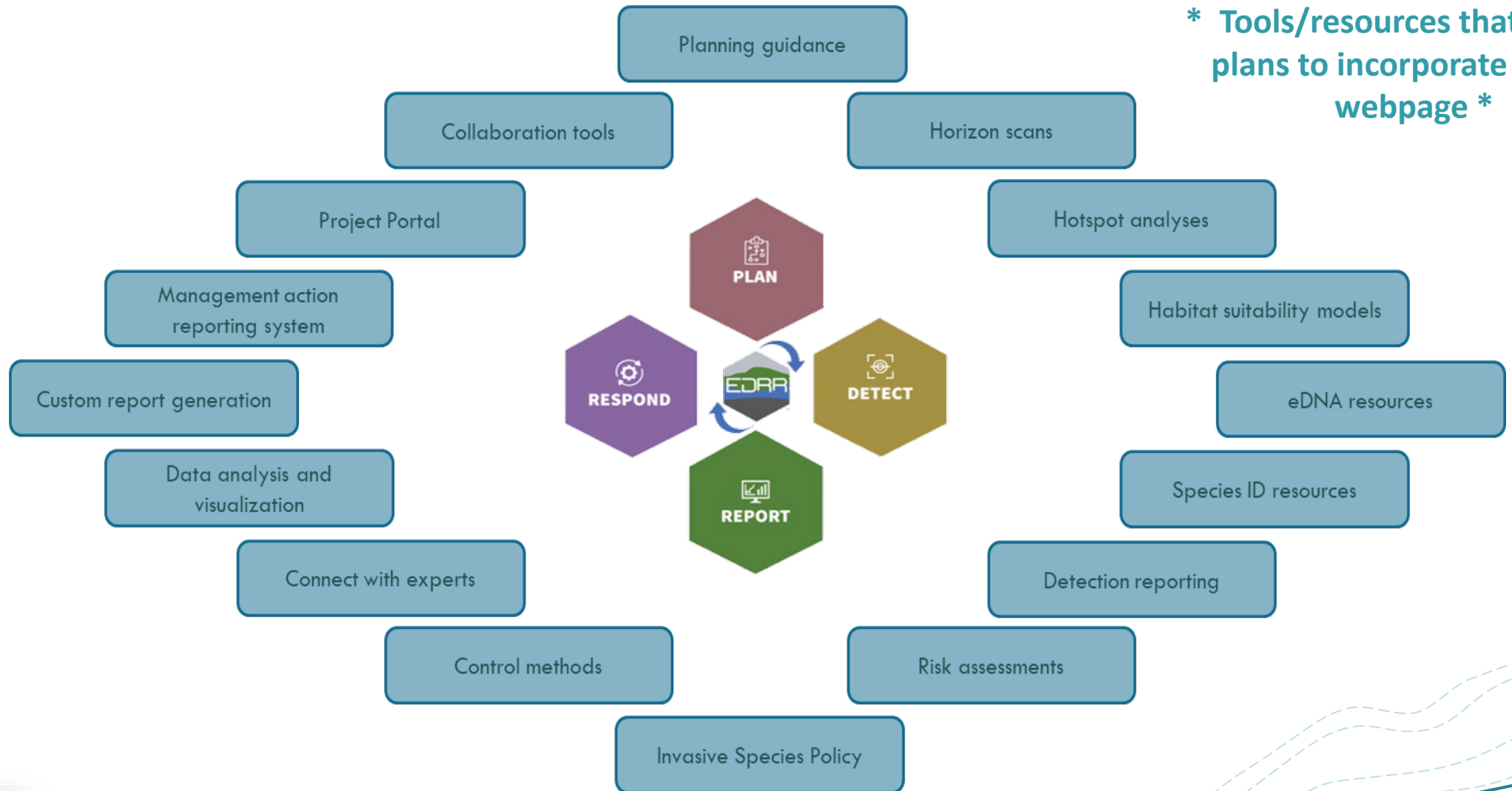
U.S. News & World Report

Siren's Current Data Partners



& Whoever else is interested!

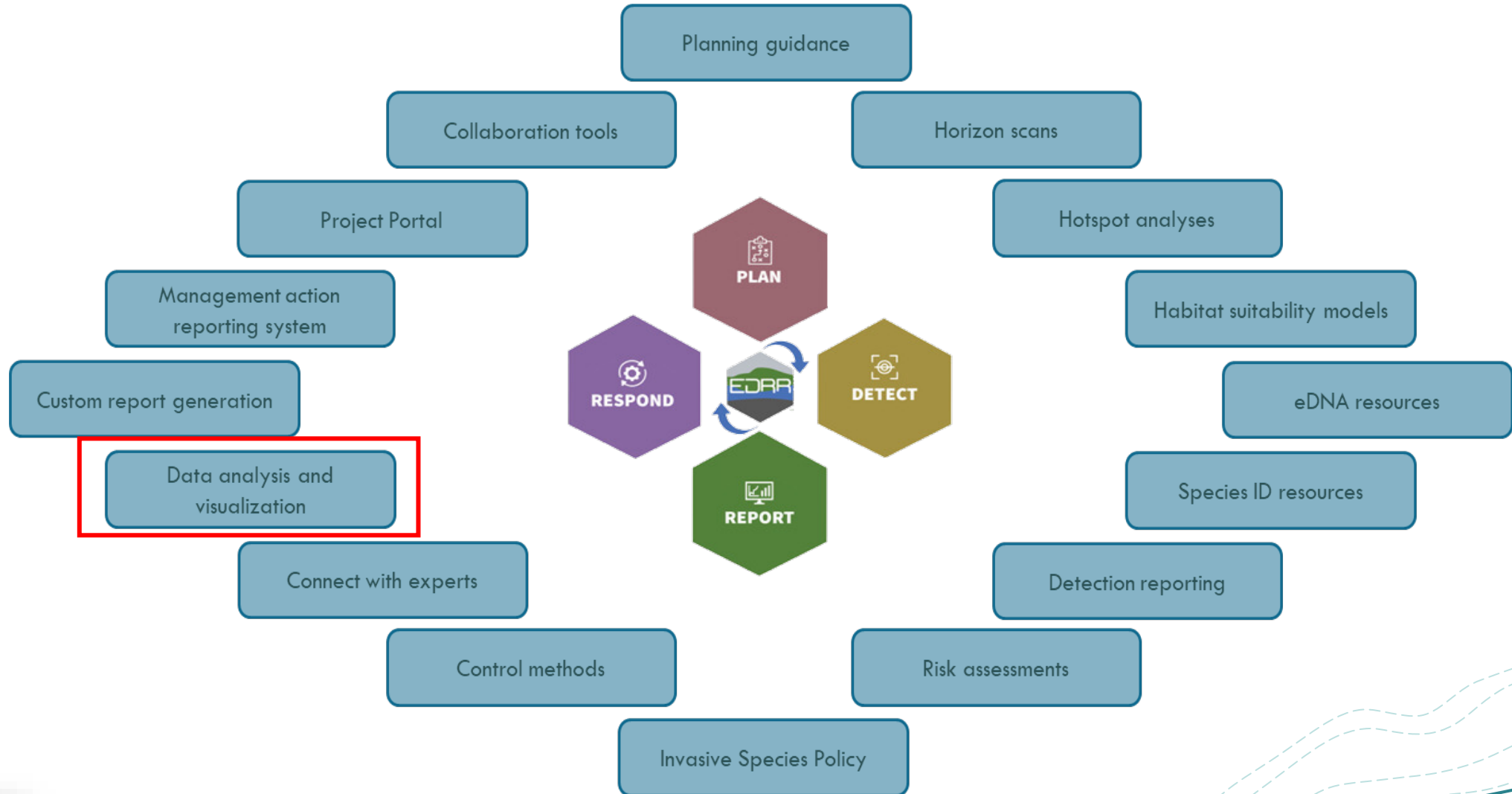
How will everything tie together?





WEBSITE DEMO WALKTHROUGH

How will everything tie together?



Siren's Species Pages

An official website of the United States government [Here's how you know](#) ▾

USGS
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EDRR
NATIONAL FRAMEWORK

EDRR ^ Map ▾ Network ▾ About ▾ My Projects ▾ [→ Sign In](#)

What is EDRR?
Species Pages
Siren the EDRR Info System

Plan

- Horizon Scans
- Risk Assessments
- Planning Template
- Example Plans

Respond

- Invasive Species Policy
- AIS Rapid Response Fund
- IInSRRT

Detect

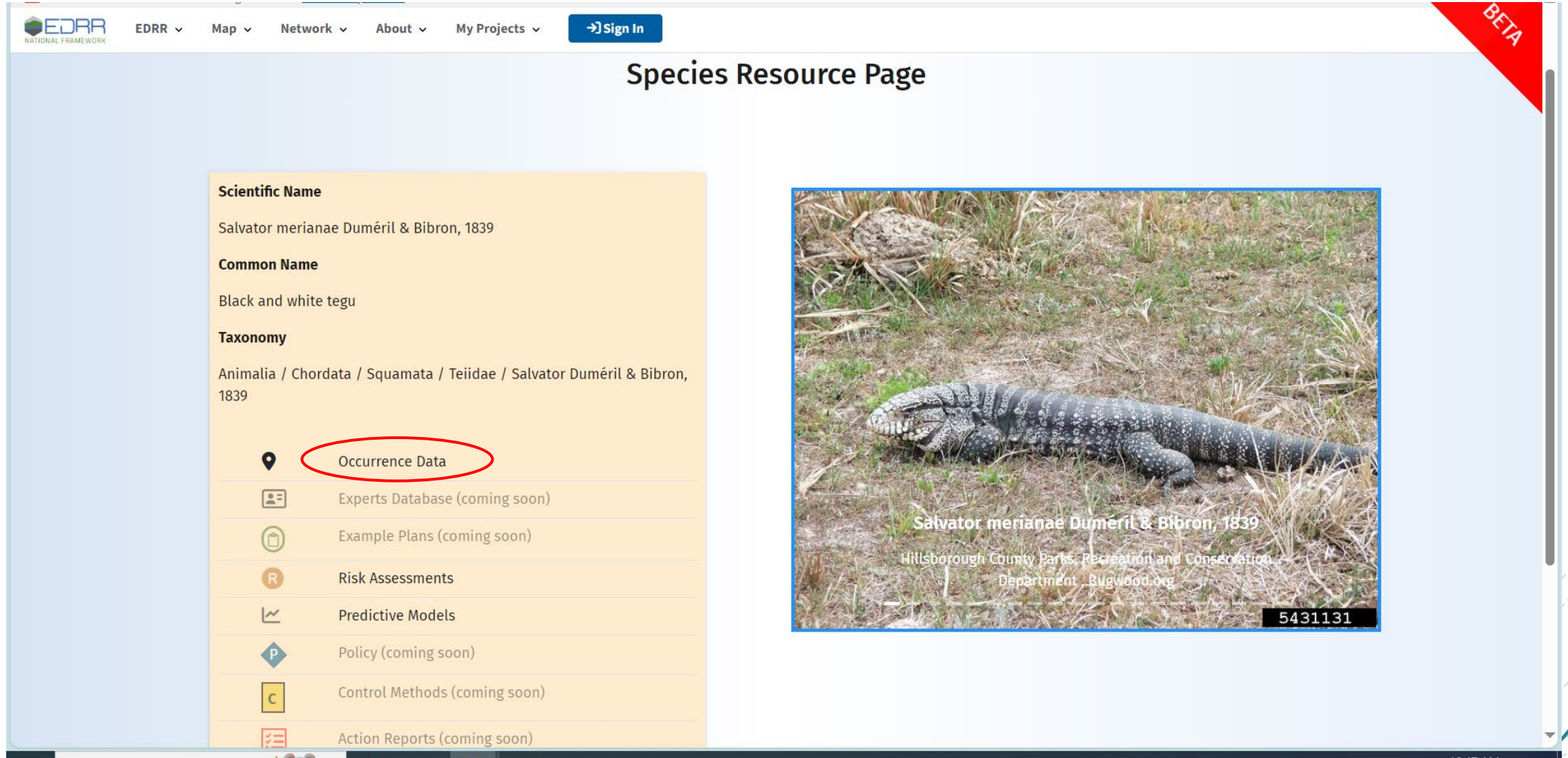
- eDNA Toolbox
- Species Identification

Report

- Report an Invasive Species
- Report an Action

The National System framework and rapid species.

Siren's Website Menu



The screenshot shows the Siren's Website Menu for the Species Resource Page. The top navigation bar includes the EDRR National Framework logo, menu items for EDRR, Map, Network, About, and My Projects, and a Sign In button. The page title is "Species Resource Page". On the left, a sidebar lists various data types: Occurrence Data (circled in red), Experts Database (coming soon), Example Plans (coming soon), Risk Assessments, Predictive Models, Policy (coming soon), Control Methods (coming soon), and Action Reports (coming soon). The main content area features a photograph of a Black and white tegu lizard. Below the photo, the scientific name "Salvator merianae Dumeril & Bibron, 1839" is displayed, along with the source "Hillsborough County Parks, Recreation and Conservation Department Bugwood.org" and the ID number "5431131". A red "BETA" banner is visible in the top right corner.









EDRR NATIONAL FRAMEWORK | EDRR ▾ | Map ▾ | Network ▾ | About ▾ | My Projects ▾ | → Sign In

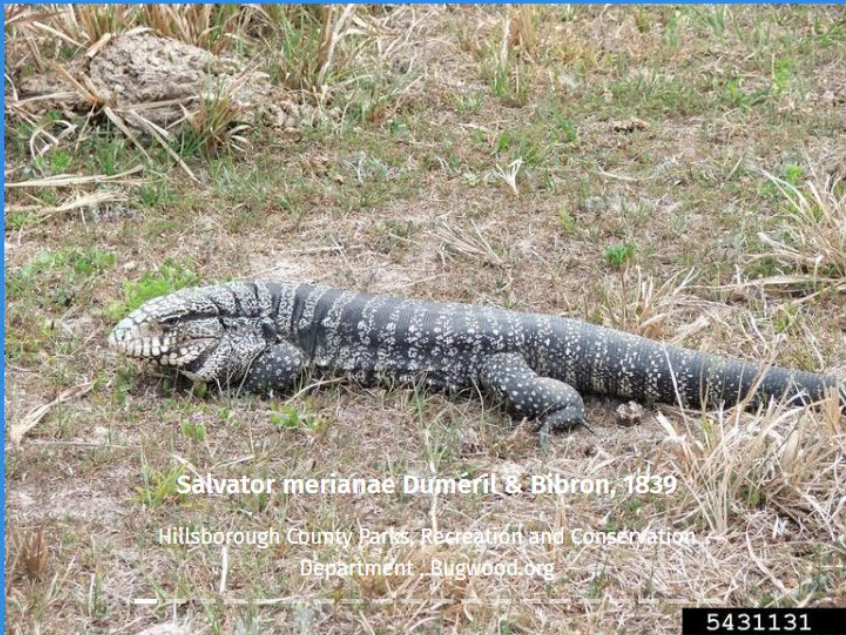
Species Resource Page

Scientific Name
Salvator merianae Duméril & Bibron, 1839

Common Name
Black and white tegu

Taxonomy
Animalia / Chordata / Squamata / Teiidae / Salvator Duméril & Bibron, 1839

-  **Occurrence Data**
-  Experts Database (coming soon)
-  Example Plans (coming soon)
-  Risk Assessments
-  Predictive Models
-  Policy (coming soon)
-  Control Methods (coming soon)
-  Action Reports (coming soon)



Salvator merianae Dumeril & Bibron, 1839
Hillsborough County Parks, Recreation and Conservation
Department Bugwood.org
5431131

BETA

Occurrence Data within Siren

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EDRR NATIONAL FRAMEWORK EDRR Map Network About My Projects [Sign In](#)

BETA

Filters

Taxonomy

Species Search

Salvator merianae

Genus Search

Family Search

Group

Habitat

Area

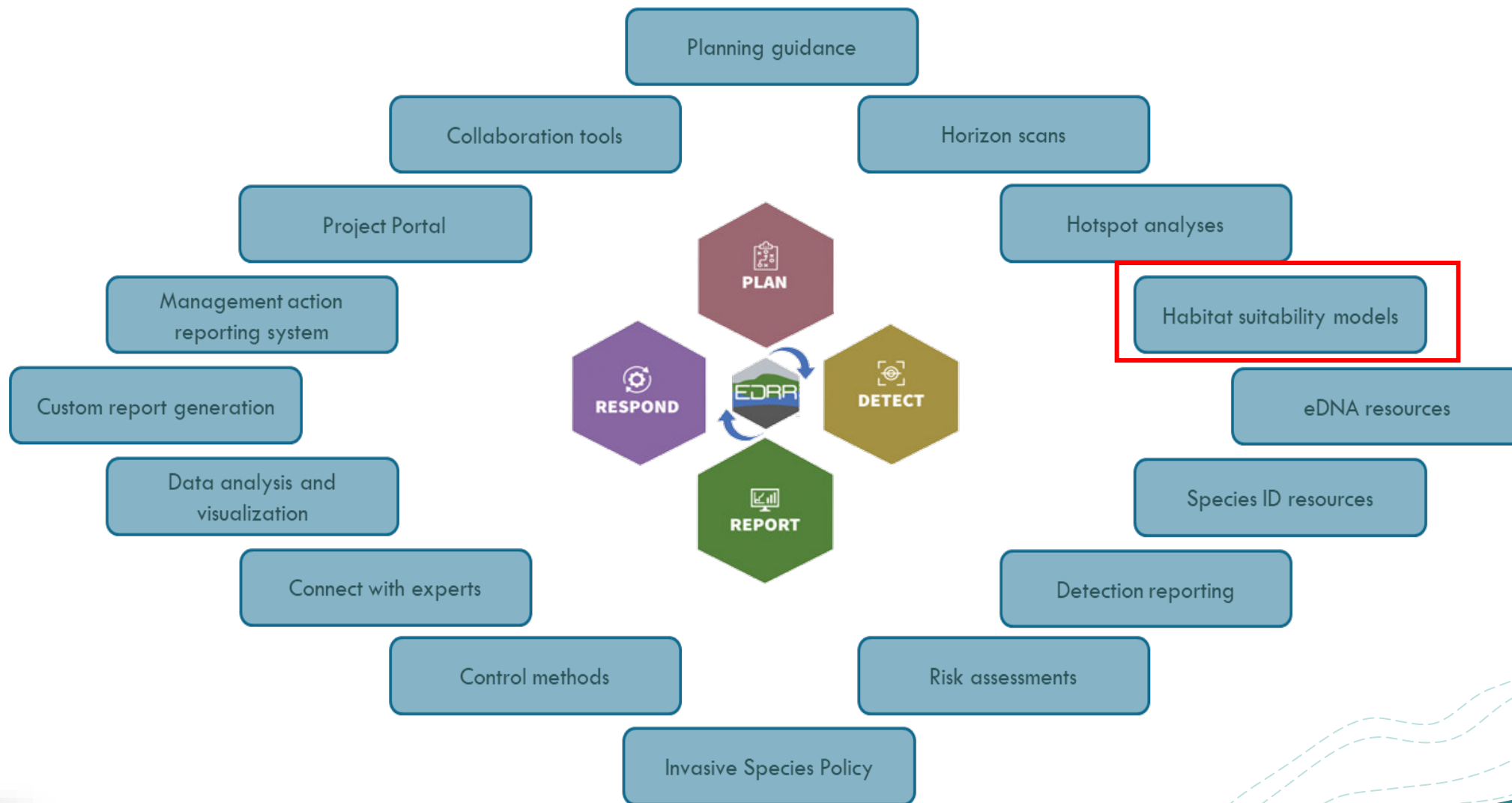
HUC2

HUC4

Map Resource Table Occurrence Data

Scientific Name	Common Name	Date	State	County	Data Source
Salvator merianae	Black And White Tegu	5/24/2010	FL	Miami-Dade	EDDMapS
Salvator merianae	Black And White Tegu	5/21/2010	FL	Miami-Dade	EDDMapS
Salvator merianae	Black And White Tegu	5/20/2010	FL	Miami-Dade	EDDMapS
Salvator merianae	Black And White Tegu	5/17/2010	FL	Miami-Dade	EDDMapS
Salvator merianae	Black And White Tegu	5/12/2010	FL	Miami-Dade	EDDMapS
Salvator merianae	Black And White Tegu	4/30/2010	FL	Miami-Dade	EDDMapS
Salvator merianae	Black And White Tegu	4/15/2010	FL	Miami-Dade	EDDMapS
Salvator merianae	Black And White Tegu	4/15/2010	FL	Miami-Dade	EDDMapS
Salvator merianae	Black And White Tegu	4/25/2010	FL	Miami-Dade	EDDMapS
Salvator merianae	Black And White Tegu	5/10/2010	FL	Miami-Dade	EDDMapS
Salvator merianae	Black And White Tegu	5/4/2010	FL	Marion	EDDMapS
Salvator merianae	Black And White Tegu	6/15/2010	FL	Miami-Dade	EDDMapS
Salvator merianae	Black And White Tegu	6/14/2010	FL	Hillsborough	EDDMapS

How will everything tie together?



Habitat Suitability Models in Siren

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EDRR NATIONAL FRAMEWORK EDRR Map Network About My Projects Sign In

Species Resource Page

Scientific Name
Schinus terebinthifolia

Common Name
Brazilian peppertree

Taxonomy
Plantae / Tracheophyta / Magnoliopsida / Schinus L.

Occurrence Data

Experts Database (coming soon)


Example Plans (coming soon)

Risk Assessments

Predictive Models

Policy (coming soon)

Control Methods (coming soon)



Predictive Models for Schinus terebinthifolia
Click on a button below to open the resource

INHABIT

folia Raddi
Natural Research Service,
g

UGA0002012

BETA

The INHABIT Tool & Habitat Suitability

USGS
science for a changing world

INHABIT | Map | Management Summaries By Species | Management Summaries By Unit | Model Details | About

Welcome to the **Invasive Species Habitat Tool (INHABIT)**.

Please Select a Species of Interest:
Schinus terebinthifolius

[Click here to download the current map from ScienceBase.gov](#)

Choose your map type to display:
Comprehensive (more inclusive)
Balanced
Targeted (more restricted)

Limit Environmental Extrapolation ?
Yes

Display model training data:
No

Display range ploygon:

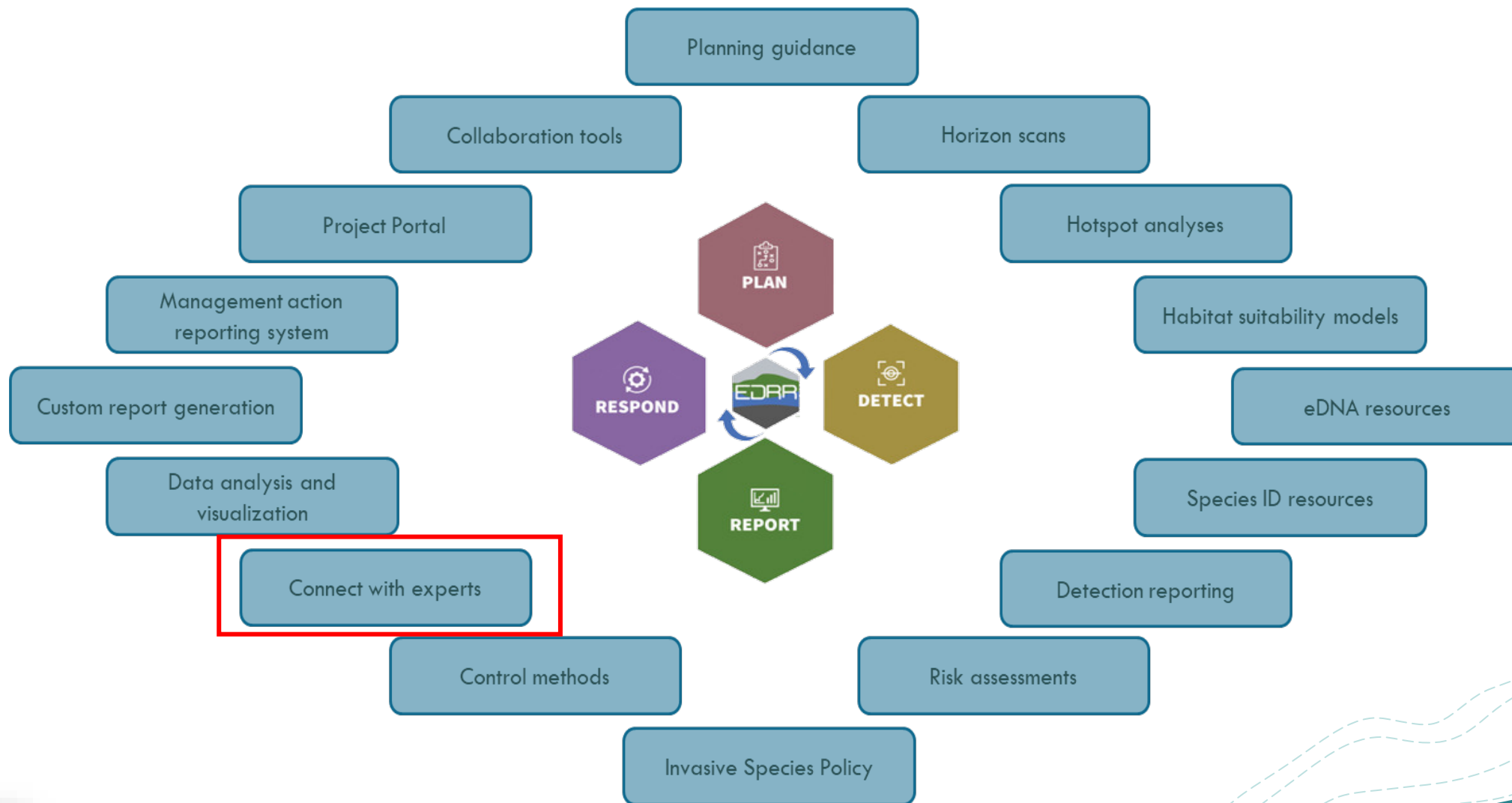
Model Agreement
High
Medium
Low
Extrapolation
No Data

1000 km
500 mi

UNITED STATES
MEXICO
CUBA

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U.S. Department of the Interior | DOI Inspector General | White House | E-gov | No Fear Act | FOIA

How will everything tie together?



The Experts Database in Siren

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EDRR NATIONAL FRAMEWORK EDRR Map Network About My Projects Sign In

Our Network
Expert Database
Get Involved

Filter Map Distribution

List of 55 Experts

A imee Agnew Job Title: Program Coordinator Location: 2150 Centre Ave # C, Fort Collins, CO 80526 Mid-Atlantic	A lasdair Mejia Job Title: Test Expert Location: 123 First Street, Fort Collins, CO 80526 Interior West
A lexis Randall Job Title: Test Expert Location: 123 First Street, Fort Collins, CO 80526 Interior West	A lfe Levy Job Title: Test Expert Location: 123 First Street, Fort Collins, CO 80526 N/A
A nas Owens Job Title: Test Expert Location: 123 First Street, Fort Collins, CO 80526 N/A	A nnie Prince Job Title: Test Expert Location: 123 First Street, Fort Collins, CO 80526 Coastal West
A udrey Castaneda Job Title: Test Expert Location: 123 First Street, Fort Collins, CO 80526 N/A	C oral Schaefer Job Title: Test Expert Location: 123 First Street, Fort Collins, CO 80526 Great Lakes

Select a state :

How to use the map :
Select a location using the Location dropdown menu above or by clicking on the map. Click again to unselect. US Territories are found in the Location dropdown menu.

- States with experts in our database
- Selected states

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The Experts Database in Siren

List of 55 Experts

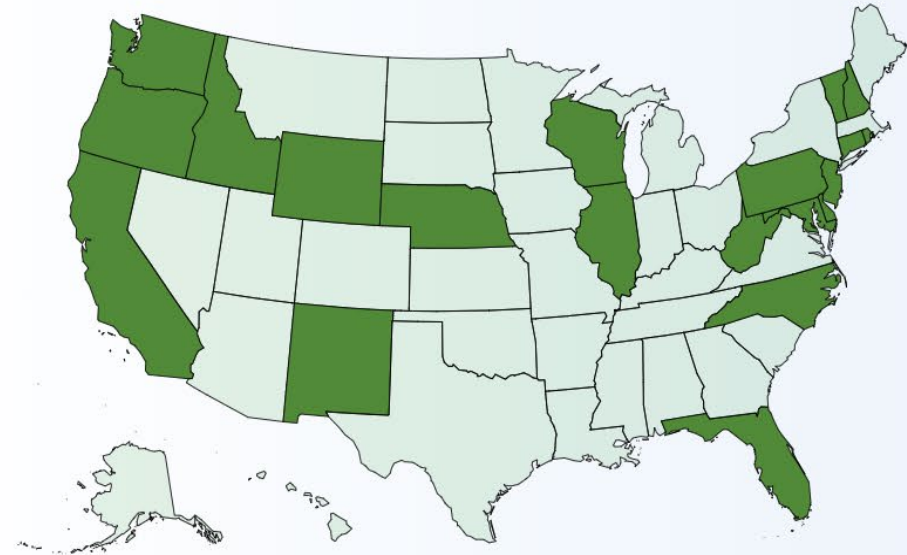


Name: Alfie Levy
Affiliation: Test Org
Job Title: Test Expert
Location: 123 First Street, Fort Collins, CO 80526
Topics of expertise:
Regions/states:
Website: usgs.gov
Profile (3-5 sentences): This is a test, I am not a Biologist

Contact me

Back to list

Select a state :

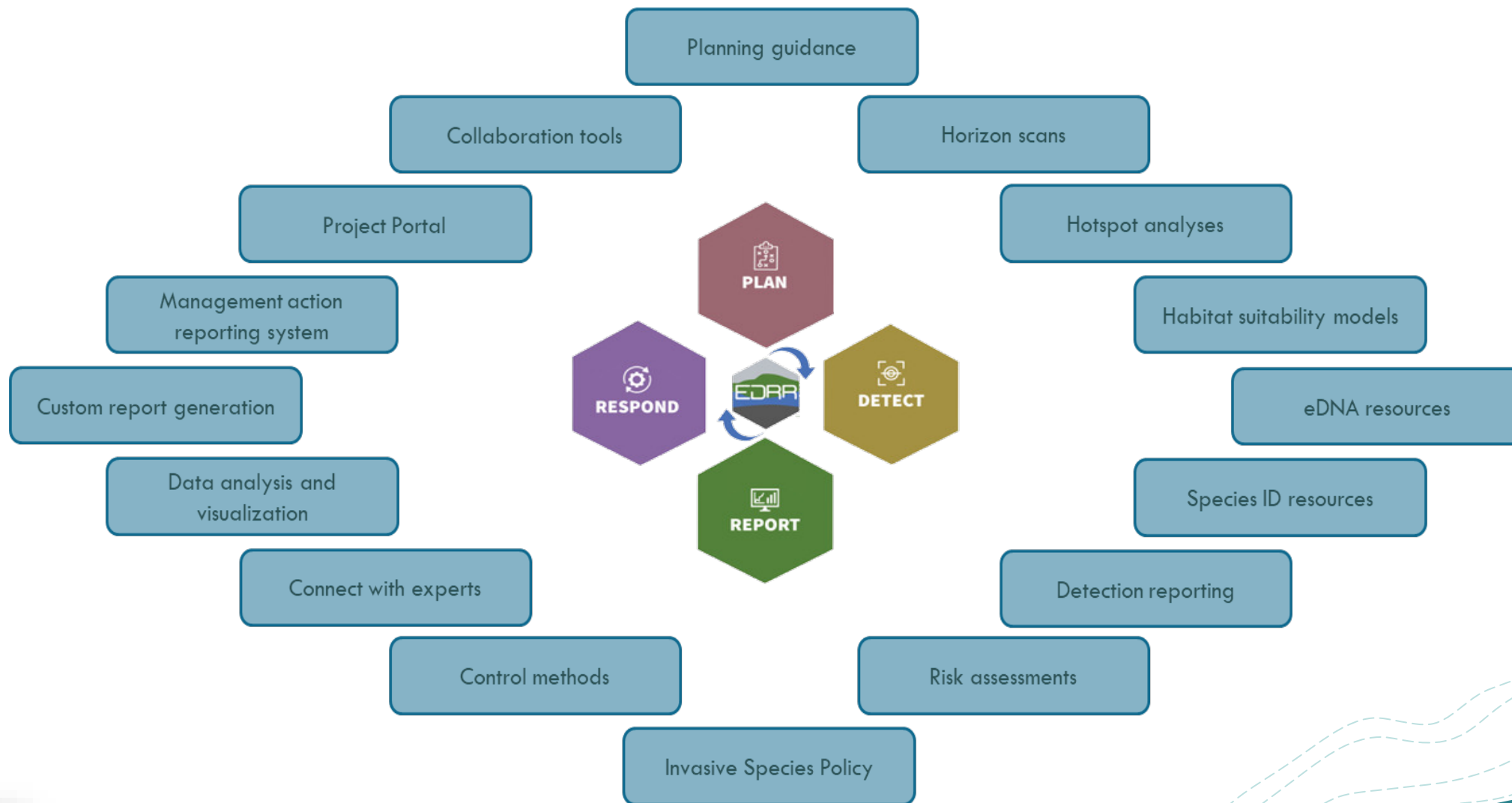


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Select a location using the Location dropdown menu above or by clicking on the map. Click again to unselect. US Territories are found in the Location dropdown menu.

- States with experts in our database
- Selected states

How will everything tie together?



Be on the Lookout!

Siren aims to launch its V1 website to the public by the end of **Summer, 2024!**



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Siren: The National EDRR Information System

Outreach and Communications



Brian Reichert
Program Co-lead
Fort Collins Science Center
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Wesley Daniel
Program Co-lead
Wetland and Aq. Res. Cen.
USGS



Aimee Agnew
Program Coordinator
Fort Collins Science Center
USGS



Nicole Hernandez
Outreach Coordinator
Fort Collins Science Center
USGS

Technology and Development



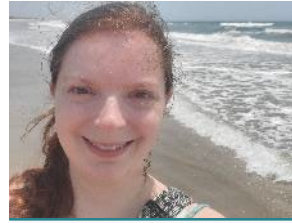
Scott Brown
Computer Scientist
Fort Collins Science Center
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Changrui Yuan
Computer Scientist
Fort Collins Science Center
USGS



Harrison Pickett
Computer Scientist
Fort Collins Science Center
USGS



Diane Mickelson
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USGS



Yannick Edaye
Computer Scientist
Contractor
Colorado State University

Information and Infrastructure



Cayla Morningstar
Biologist
Wetland and Aq. Res. Cen.
USGS



Matt Neilson
Fishery Biologist
Wetland and Aq. Res. Cen.
USGS



Ian Pfingsten
Botanist
Wetland and Aq. Res. Cen.
USGS



Emily Dean
Researcher
Wetland and Aq. Res. Cen.
USGS

What are the Next Steps?

We would love to hear back from you!

If you have any feedback on what tools/resources you would **like to see incorporated into Siren**, or if you are interested in **becoming a data partner**, please reach out to us!

Aimee Agnew
Program Coordinator
aagnew@usgs.gov

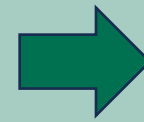


Nicole Hernandez
Outreach Coordinator
nhernandez@usgs.gov



Thank you! Questions?

*Scan here if you're interested in joining
our Community of Practice Group*



aagnew@usgs.gov
nhernandez@usgs.gov



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