



# AquaDePTH: Aquatic Disease and Pathogen Repository

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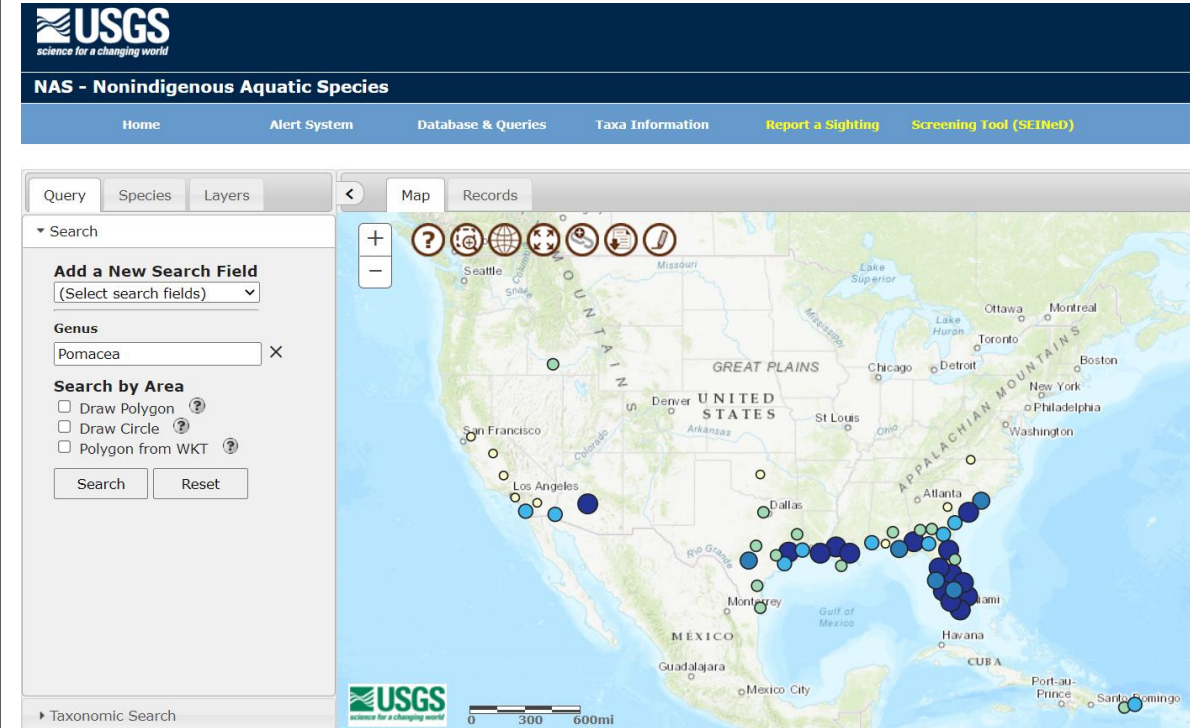
# AquaDePTH Goals

- Develop a national repository to support **aquatic animal** diseases and **pathogen biosurveillance**
- **Freshwater** and **marine** aquatic pathogen and disease information
  - Monitor fish kill and aquatic pathogen trends spatially and temporally
  - Curate historically published data, previous records, and new data
- Host USGS data and invite cooperators to share their information
- Potential to host **state and tribal** fish health data for visibility in one searchable database
- Build on the **long-term success** of USGS Nonindigenous Aquatic Species (**NAS**) repository; a resource that has been operational since 1990

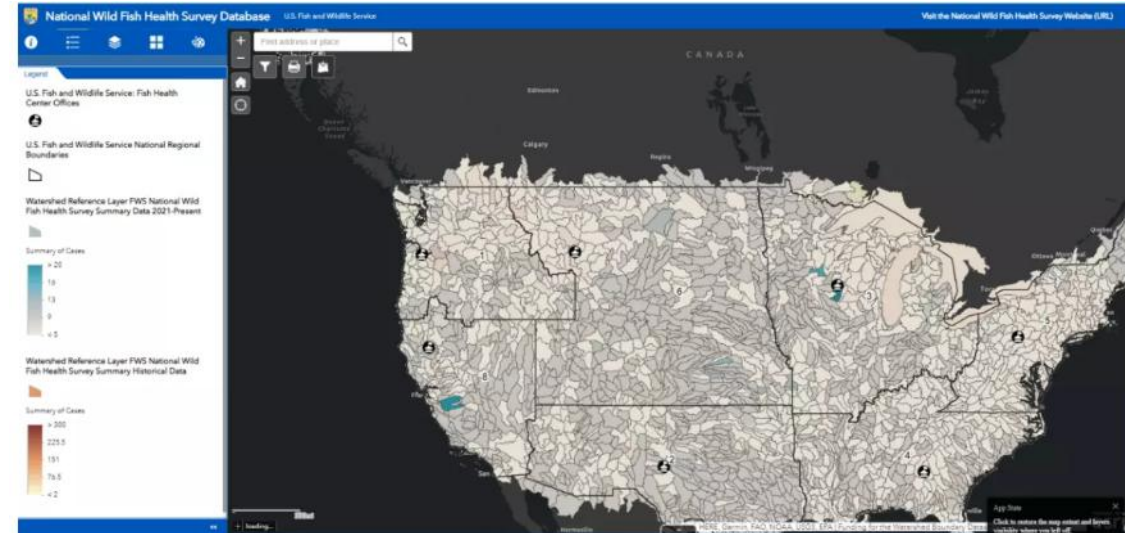


# Funding

- American Rescue Plan Act 2021 H.R. 1319 funding to USFWS
  - “Research and extension activities to strengthen early detection, rapid response, and science-based management to address wildlife disease outbreaks...”
- USGS subaward
  - AquaDePTH extension to NAS**
  - Expand capabilities of the National Wildlife Health Center (National Wildlife Disease Database)



# Interoperable with other databases



- Overlay data with existing resources
  - USFWS National Wild Fish Health Survey
  - WHISPers USGS wildlife health portal
  - USGS National Wildlife Disease Database
- Inclusive of diverse aquatic species

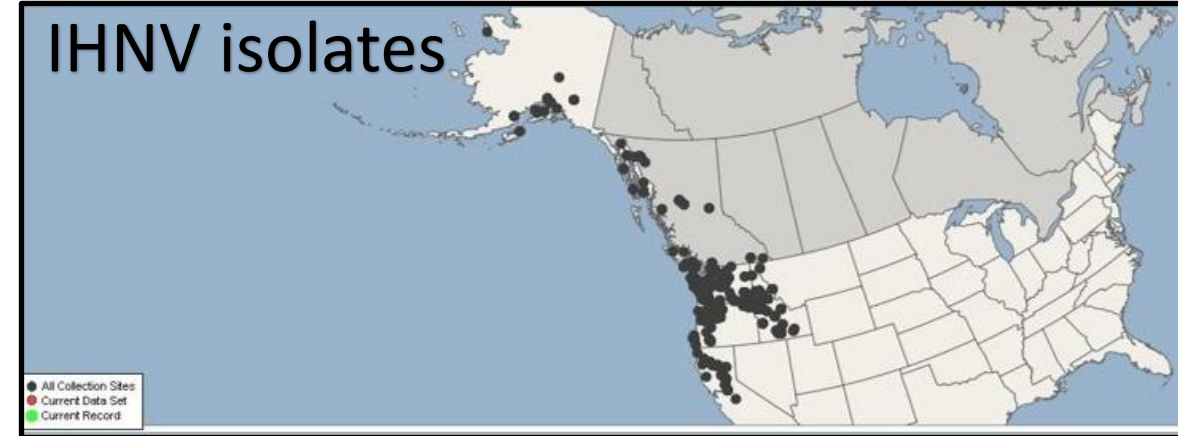
## WHISPers: wildlife health data portal



# Existing data and other databases to inform development

- Data rescue for USGS data on aquatic rhabdoviruses (G. Kurath)

- Nearly 30 years of data tracking IHNV epidemiology
- Used extensively by agencies to understand risks of viral spread

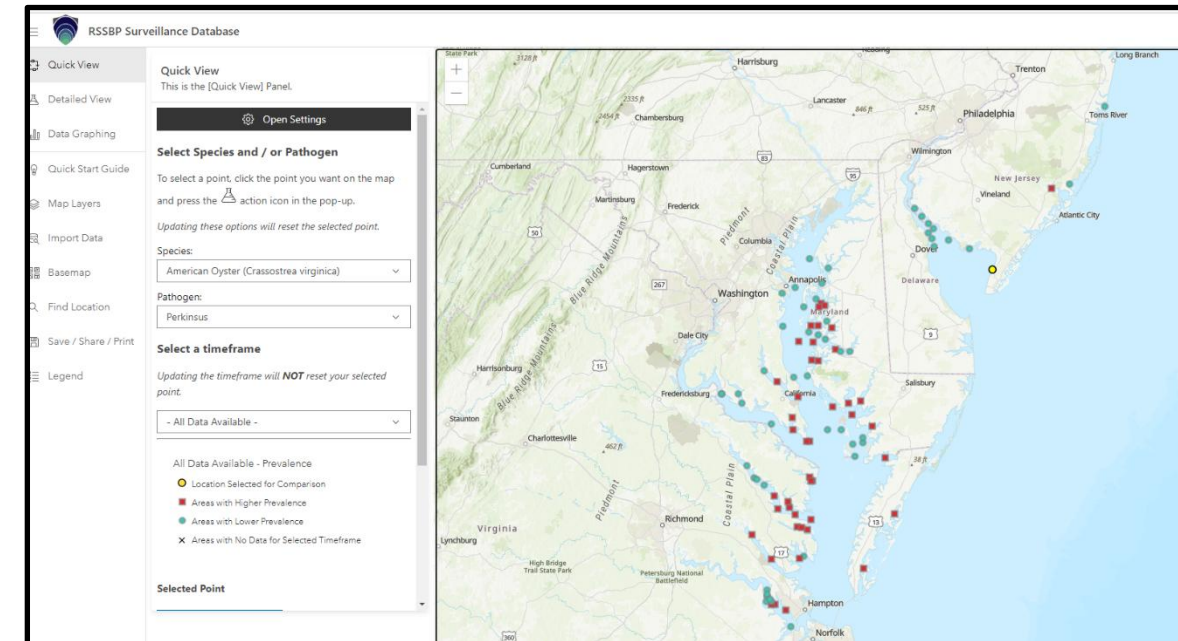


- Regional shellfish pathogen surveillance program database

- Database to support shellfish
- seed movements for aquaculture
- Goals to expand nationally



\*State fish health data



# Surveillance

## Similarities/differences

# Mortality

- No event summary required
- Always for select infectious agents- no undetermined or environmental causes
- Prevalence data will be reported
- Pooling of tissue is common

- Geographic info
- Environmental data
- Host info
- Person/lab doing testing
- Fit for purpose testing methods
- Organs/samples for testing
- Genetic sequence data for agents

- Event Summary
  - Magnitude of mortality
  - Other species impacted
  - Space for background info
- Undetermined diagnosis?
- Environmental causes
  - Bypass lab info and lab testing
- Prevalence data not as important; pooling not common

# Two types of data streams for database

## Surveillance

users

## Mortality

- Pathogen-driven
  - Will always have a condition or infectious agent in mind to search
- Will have a set sample size to ensure detection at a certain confidence level.
- I want to know all areas where VHSV has not been detected.
- I want to determine how detection of VHSV has changed over time.

- Host-driven searches
- I want to know incidence of Largemouth Bass mortality over time.
- I want to know how common fish kills are in a certain region.
- What is the most frequent cause of mortality in trout farms nationwide?
- I want to know all coral bleaching events over time.
- Generate criteria for mortality reporting!



# AquaDePTH: Timeline

FY23-24

Building advisory group to  
inform database  
development for the  
duration of the project

FY25

Develop required  
elements including public  
landing page and  
dashboard

FY26

Finalize database and  
public launch

# Discussion and Questions



NAS - Nonindigenous Aquatic Species

Screening Tool (SEINeD)

