A Data Visualization Tool for Incorporating Migratory Bat Records into Wind Energy Siting Decisions

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In collaboration with the Conservation Biology Institute

Approach:

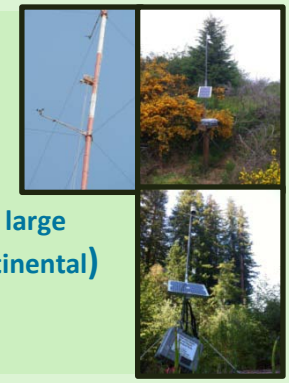
Provide A Central Clearinghouse for Detections of Migratory Bats

Facilitate a "value-added" use of existing datasets

- **Site-specific evaluations (e.g., wind facilities)**
- **Restoration sites**
- **Student projects**
- **White-nose Syndrome monitoring**
- **"Backyard" bat detectors**

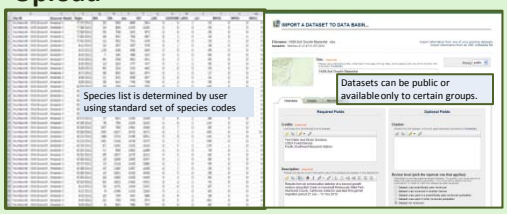
All can help address questions at large spatial scales (e.g., regional, continental)

Allow ready comparison of detections among sites and over time



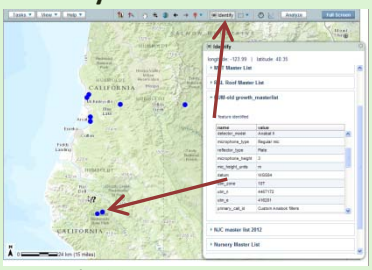
Product To Date: A module within DATA BASIN

Upload



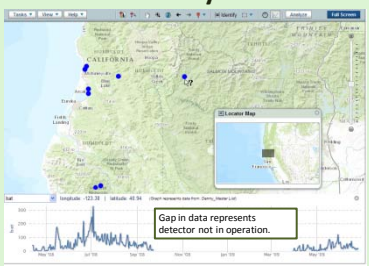
Users upload standard EXCEL files of species detections by night with metadata

Identify



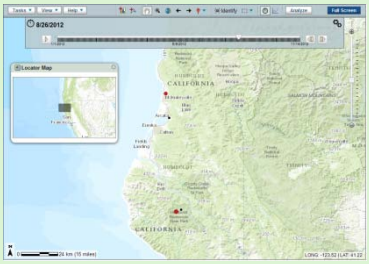
Locations of 9 echolocation monitoring stations operating in northwestern Califiornia between 2007 – 2012. **Station metadata displayed with a click .**

Visualize Activity Patterns



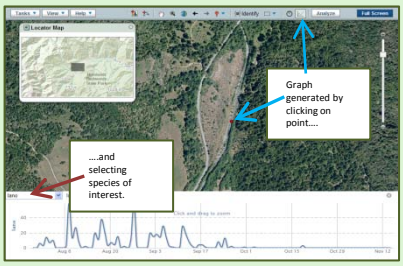
Locations of 9 echolocation monitoring stations operating in northwestern California between 2007 – 2012. Graph depicts total bat activity from eastern-most site.

Compare Among Sites



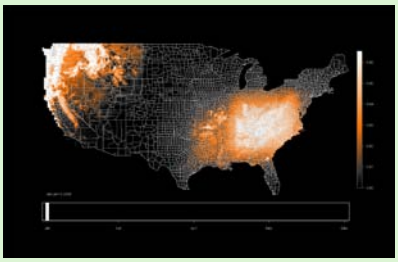
Detections (red dots) of Silver-haired Bats (LANO) at 2 locations versus 2 detector locations that did not detect (black dots) LANO on August 26, 2012

Details of Site/Species



Pattern of Silver-haired Bat (LANO) detections during Fall 2012 (graph) from a location (red dot) in Humboldt Redwoods State Park in northwestern California

A Long-term Vision



Animated occurrence map of Winter Wren on Jan 5, 2008. Predictions modeled habitat, climate, and human population information. Image from **ebird.org**

Questions that can be addressed:

- **Are activity rates of migratory bats at wind energy facilities higher/lower than other site types?**
- **What types of habitat features (e.g. Ridges, Rivers) do bats use during migration?**
- **When do migration rates peak across North America?**
- **Where are migratory corridors for bats?**
- **Where are hot spots of winter bat activity?**

What's Next?

- **Attract datasets to the portal**
- **Attract funding to support enhanced functionality, long-term maintenance and database support**
- **Support for individual detections and capture records?**

Who Can Participate?

Anyone with an echolocation dataset can participate:

- **All Detector Types**
- **All Species ID methods – just specify**
- **Expected availability – Spring 2013**