

# The *new* Avian Knowledge Network

Leo Salas – Point Blue Conservation Science

Katie Koch – U.S. Fish & Wildlife Service

Chris Eberly –Department of Defense Partners in Flight



# Outline

- Brief history of the AKN
- AKN 2.0: Nodes as Decision Support Systems
  - What makes a node?
  - (What a node is not)
- How does the AKN help conserve birds?
- How is the AKN working with DOD?

# Acknowledgments



eBird



# About Point Blue

Formerly PRBO Conservation Science, founding member of the AKN



# About the Midwest Coordinated Bird Monitoring Partnership

<http://midwestbirdmonitoring.ning.com/>



WELCOME TO THE MIDWEST COORDINATED BIRD MONITORING PARTNERSHIP!

 Edit



The Midwest Coordinated Bird Monitoring Partnership is a regional network committed to informed bird conservation decisions through enhanced coordination and exchange of monitoring information. Since 2009, we have been accomplishing these goals through regular workshops, an interactive website, registry of Midwest bird monitoring programs, focused working groups, and a state-of-the-art system for data management and decision support.

The following pages will help orient you to our partnership:

[About Us](#) - Discover the people and organizations that comprise the Midwest Coordinated Bird Monitoring Partnership

[Our Work](#) - Access documents, reports, publications, and our registry of Midwest bird monitoring programs.

[Midwest Avian Data Center](#) - Our regional node of the Avian Knowledge Network supports a

KATIE KOCH

[Sign Out](#)

 [Inbox](#)

 [Alerts](#)

 [Friends - Invite](#)

 [Settings](#)

EVENTS

 E



[Integrating Bird Monitoring and Conservation Efforts Across Bird Conservation Region 12](#)

February 5, 2014 from 10am to 12pm  
Central Standard Time

# Brief history of the AKN

What is the ~~problem~~ opportunity?



# Brief history of the AKN

## AKN Origins

- Asilomar **PIF** (2002) session about **organizing avian data resources**
- Meeting at CLO with museum experts (**Darwin Core**) (2005)
- NSF grant (2006) to create and implement exchange format (**create network – AKN 1.0**)
- Point Blue roles:
  - help create exchange format
  - **invent the “node”**  
(what are the big pieces needed)



# Brief history of the AKN

NSF grant products



- Bird Monitoring Data Exchange format (BMDE)

<http://www.birdscanada.org/birdmon/default/resources.jsp>

- Data nodes

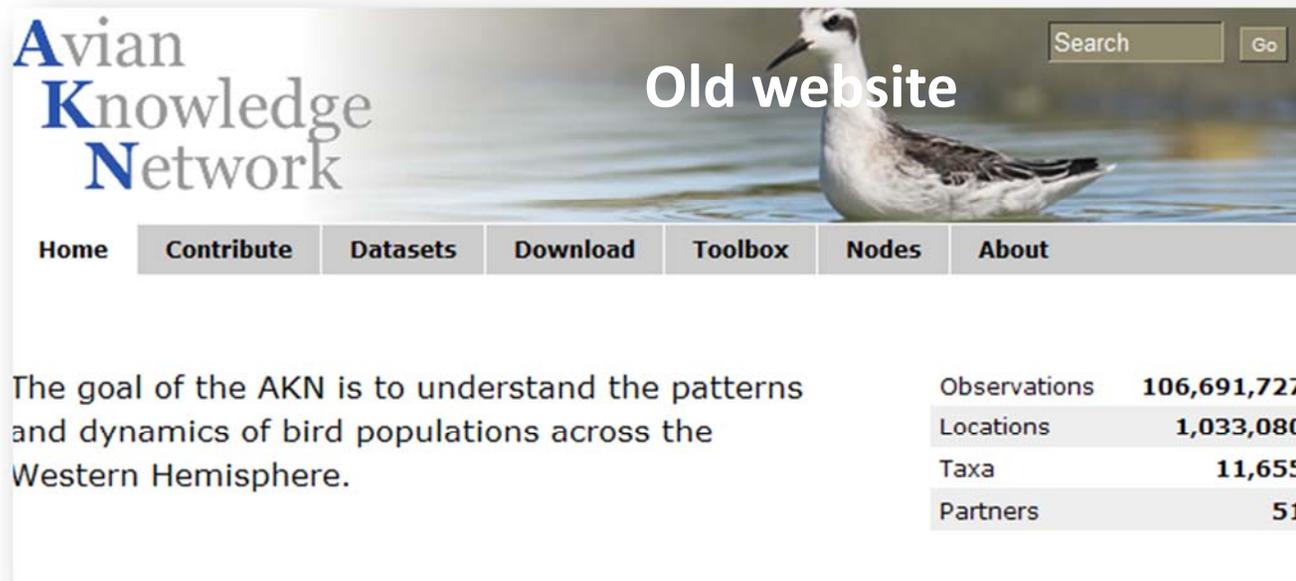
CADC, eBird, NatureCounts, RMADC, MWADC, AKNW, LaMNA, WHIN, PFSS, EADC

- Data centralization

These outcomes initiated cultural shifts

# Brief history of the AKN

AKN 1.0 was not enough



- Not fully encouraging data sharing
  - Not helping our mission and vision directly
- ...But we did get something that is proving to be the right answer

# AKN v2

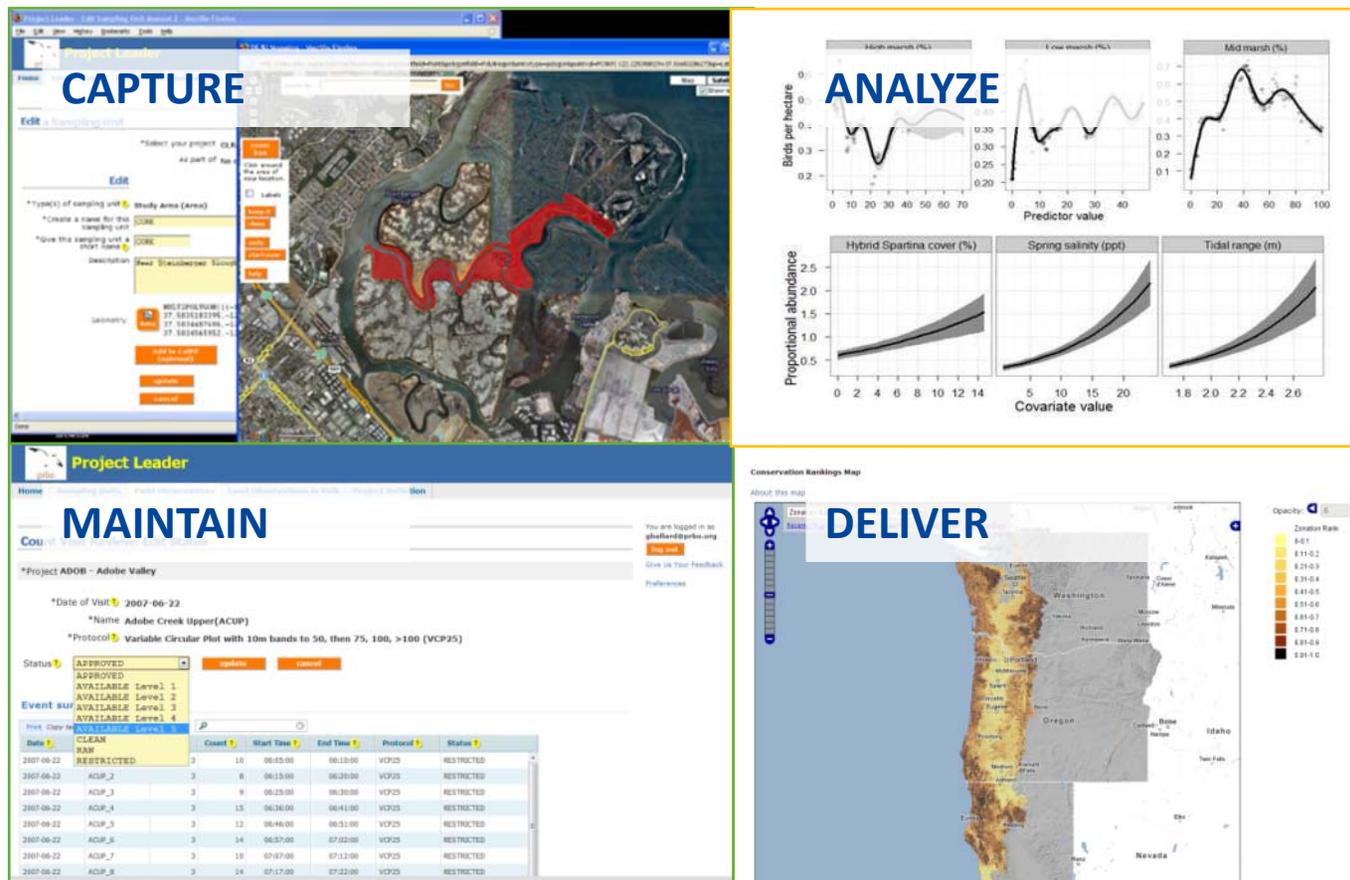
## AKN nodes as Decision Support Systems

- Systems to: capture, preserve, analyze and publish data
- More: bringing together data + knowledge about problems + expertise understanding the data
- Sharing knowledge and data across institutions and boundaries

...How?

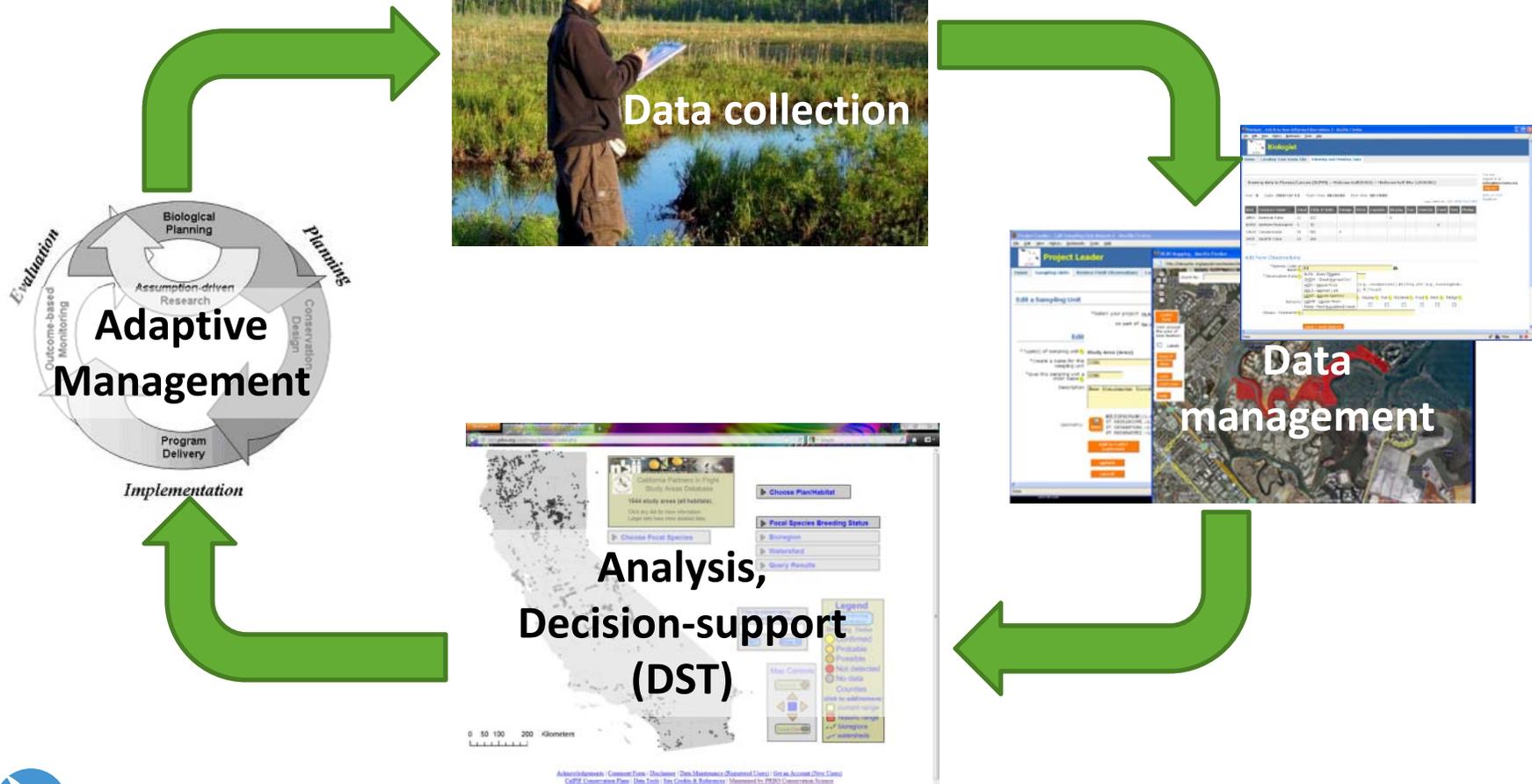
# What is an AKN node?

Data life cycle



# What is an AKN node?

Data-intensive science



# Data Entry/Management

- New data entry application
- Knutson et al. (2008) Point Count + hundreds others
- Over 600 different projects managed nationwide

The screenshot shows a web browser window with the URL `data.prbo.org/science/biologists/#pc/ADOB/eventproof/12131/Adobe Creek Upper (ACUP)/VCP25/2009-06-15/PointCount/2`. The page title is "Biologists" and the breadcrumb navigation shows "Project: ADOB (Biologist) Type: Point Count Location: Adobe Creek Upper (ACUP) Protocols: VCP25".

### Sampling Visit

Detailed information about a specific set of observations at a transect. [Learn more.](#)

- Overview**: General information about this visit.
- Points Surveyed**: Summary of visit by point.
- Observations**: Details of observations recorded during visit.
- Species List**: Summary of species recorded, each compared to eBird by county and month.
- Visits in Same Year**: Selectable list of visits at same location in the same year.

---

#### Overview

**Project:** ADOB  
**Transect:** Adobe Creek Upper (ACUP)  
**Date:** 2009-06-15  
**Observation Protocol:** VCP25  
**Visit:** 2  
**Status:** CLEAN

---

#### Points Surveyed

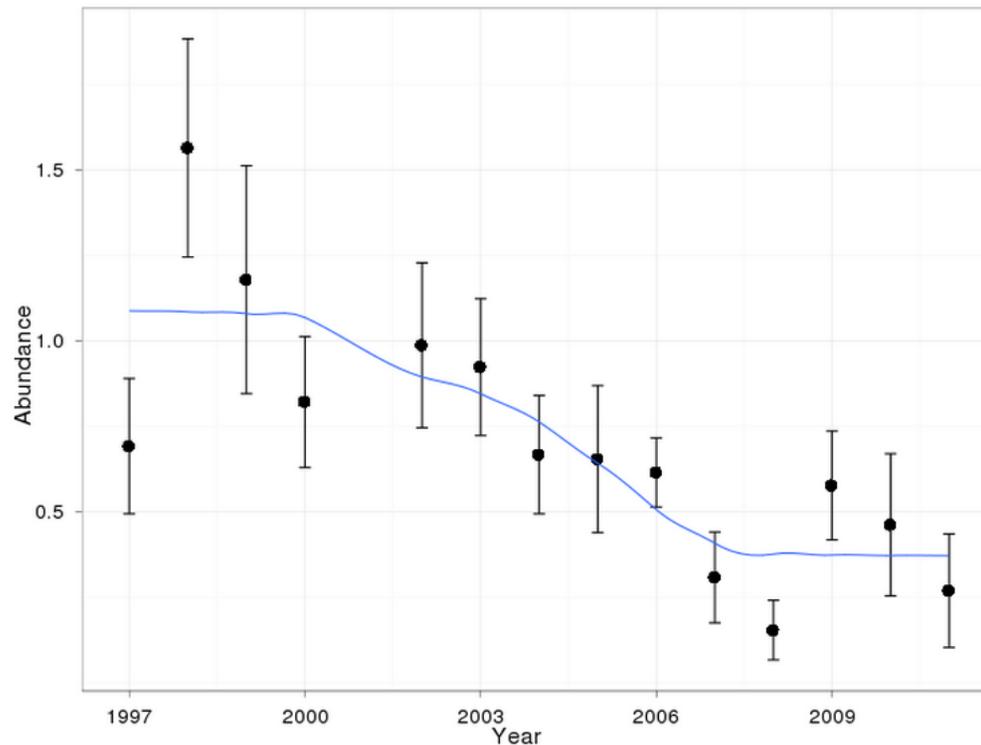
**Total Points Surveyed:** 12  
**Total Birds Counted:** 167

Point	Start	End	Count at Point	Notes
ACUP_1	06:07:00	06:12:00	40	
ACUP_2	06:17:00	06:22:00	27	
ACUP_3	06:27:00	06:32:00	11	
ACUP_4	06:38:00	06:43:00	10	
ACUP_5	06:48:00	06:53:00	14	
ACUP_6	07:01:00	07:06:00	9	
ACUP_7	07:12:00	07:17:00	10	
ACUP_8	07:23:00	07:28:00	7	
ACUP_9	07:40:00	07:45:00	4	
ACUP_10	07:54:00	07:59:00	11	
ACUP_11	08:04:00	08:09:00	10	
ACUP_12	08:13:00	08:18:00	14	

# AKN Node Tools

## Data visualization & analysis

Trend in Abundance over YearCollected. Generalized additive trend estimate of Abundance by Year with locally weighed (loess) smoother. Estimate for Species = Song Sparrow Using Locally Weighed (loess) Smoother



Bring your data to the node and you can do stuff like this on-line with a few clicks...

**Notes:**

Data source: Point-level Estimates of Abundance (Birds per Point) from Point Count Data Summarized by ScientificName and Transect.

# AKN Node Tools

## Map-based data visualization

Map-based access to MW x

data.prbo.org/partners/mwadc/index.php?page=137

Close window

### Map-Based Access to Avian Data Summaries for the Midwest

**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**

1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | All Years

**Your Polygon in All Years**

**Collections: 'bbs-mw'**

**Months: 1 - 12**

(Yellow-shafted Flicker) Northern Flicker (765)  
Acadian Flycatcher (56)  
American Bittern (1)  
American Crow (6469)  
American Goldfinch (2671)  
American Kestrel (281)  
American Redstart (6)  
American Robin (16804)  
American White Pelican (5)  
Baltimore Oriole (1870)  
Bank Swallow (1895)  
Barn Owl (1)  
Barn Swallow (7966)  
Barred Owl (76)  
Bell's Vireo (169)  
Belted Kingfisher (84)  
Bewick's Wren (2)  
Black-and-white Warbler (4)  
Black-billed Cuckoo (59)  
Black-capped Chickadee (642)  
Black-throated Green Warbler (1)  
Black Tern (8)  
Blue-gray Gnatcatcher (286)  
Blue-winged Teal (2)  
Blue-winged Warbler (32)  
Blue Grosbeak (170)  
Blue Jay (2761)  
Bobolink (1218)  
Brown-headed Cowbird (5783)  
Brown Thrasher (1997)  
Canada Goose (1733)

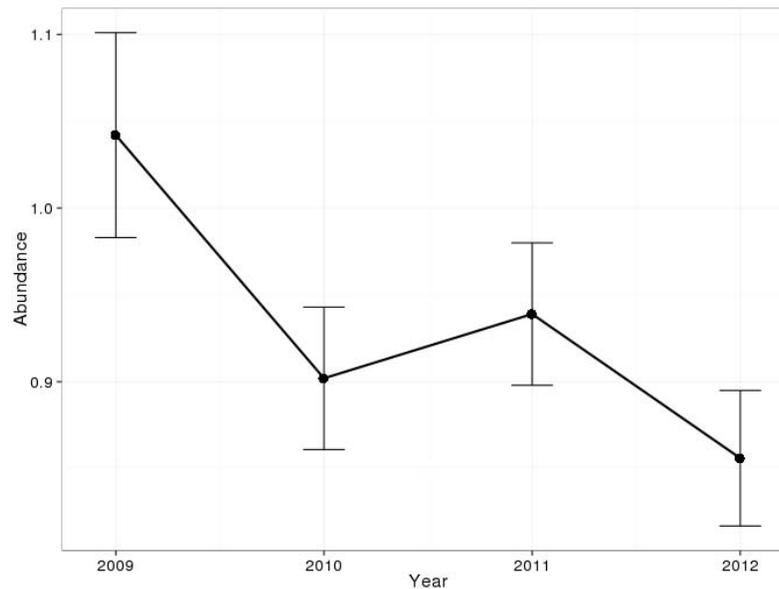
Supported in part by the [US Fish & Wildlife Service](#)

# AKN Node tools

## Report cards



Point-level Estimates of Abundance (Individuals Detected Within 100m) by Selected Locations and Year



**Notes:**

Bars around estimates are +/- 1 Standard Deviation. Total number of observations: 2463 - Total number of sampling events: 5406

Simple linear trend estimate of Abundance by year for Indicator species.

[copy table to: CSV HTML DOC PDF](#)

Parameter	Value	SE_value	Confidence_Interval
YearCollected	-0.052	0	(-0.053,-0.051)

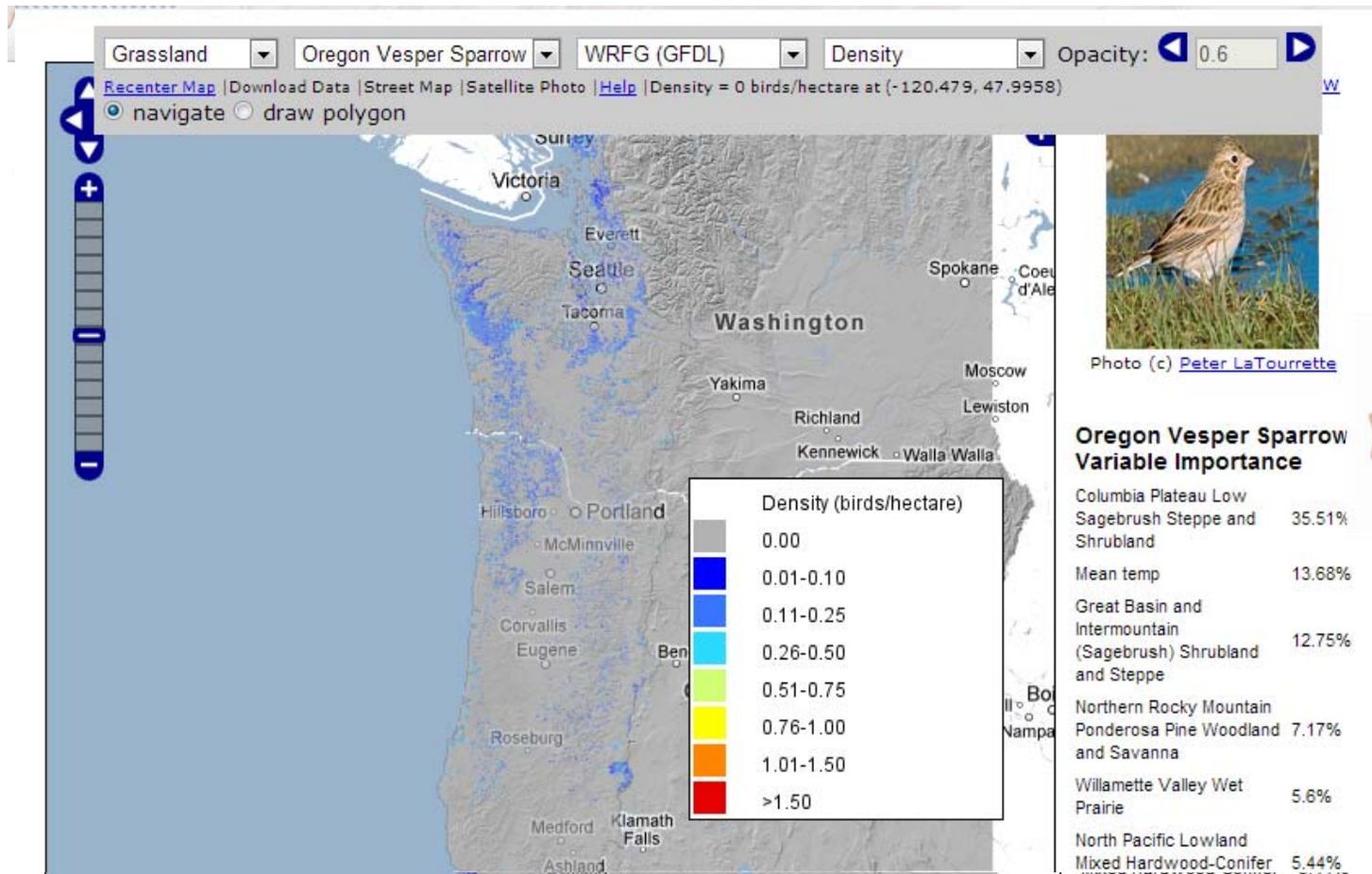
1 row

**Notes:**

Data source: Point-level Estimates of Abundance (Individuals Detected Within 100m) by Selected Locations and Year. Regression estimated combining all categories of Selected Locations.

# AKN Node tools

## Climate change impacts



# How the AKN Helps:

- a. AKN node hosts data and provides tools for conservation partnership  
Examples: SJV, [MCBMP](#), SE PIF, IMBCR, DOD-CA
  
- b. Develop tools specific to helping the partnership – hosted by AKN node;  
Examples: ISBAdb, [SNAMIN](#), NPLCC tool
  
- c. Develop a partnership around a conservation theme;  
create an AKN thematic node  
Examples: [PFSS](#), LaMNA, WHIN
  
- d. What a node is NOT: an on-line database

# How the AKN Helps:

## Support partnerships - example

Criteria for an AKN partnership:

- Key conservation problem  
(e.g., the MCBMP has: grassland bird conservation partnership)
- Key questions  
(e.g. What is the best management action [easements, restoration, do-nothing] to increase populations of prairie chicken?)
- Key players to bring expertise to solve problems
- Key datasets to bring relevant information
- Key managers to use the tools developed



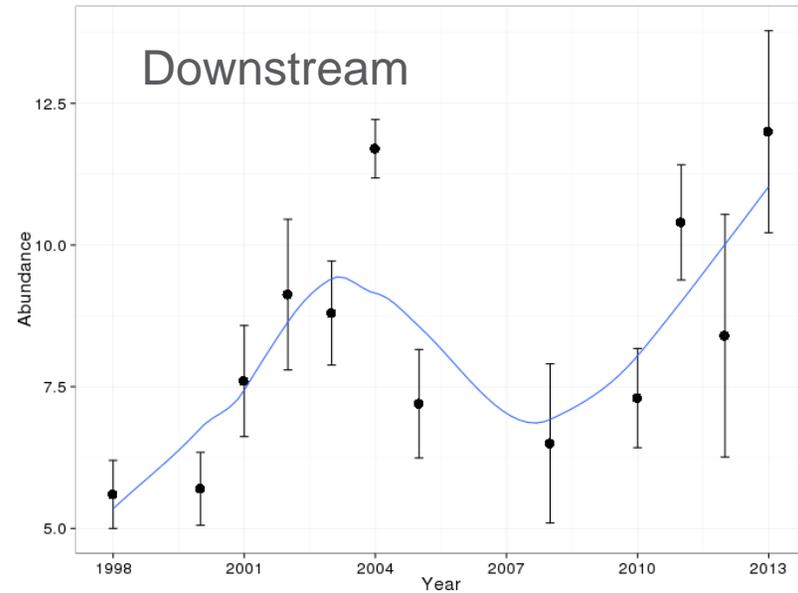
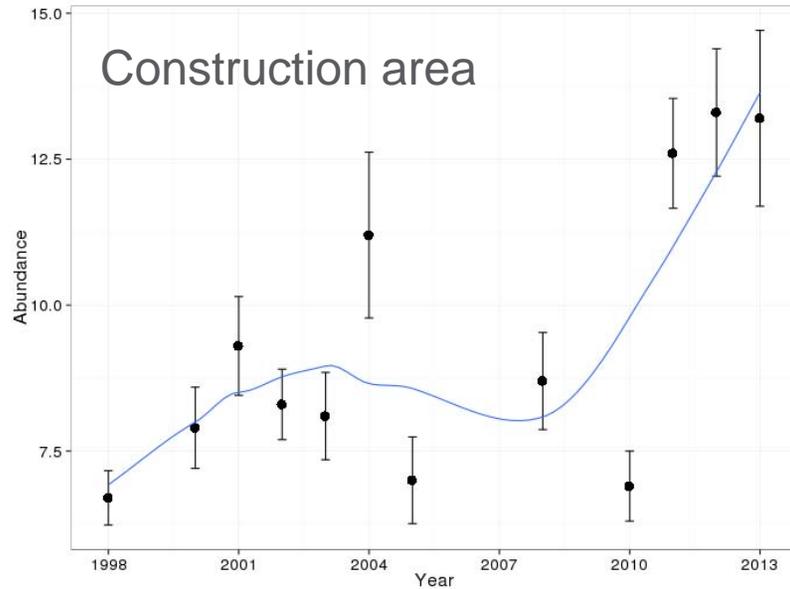
# Example collaboration with DOD

“(The AKN) gives us as a user **a centralized place to hold important data** that might otherwise be lost or misplaced (during personnel transitions for example). It also allows **continuity** (...) between years even if we use a different contractor to collect the data. Also contractors **automatically have data from previous years** without having to get copies from us from the last contractor. The (AKN) gives us an **easy way to look at, review, and analyze data** saving us valuable resources. A civilian biologist could analyze or **put a report together much faster and cheaper**. It even helps reduce costs on contracts when the contractor uses your database as it cuts out time needed for analysis...”

Lauren Wilson - Biological Scientist, GS-12, AFCEC/CZOW  
Travis AFB Installation Support Team

Environmental Center of Excellence (ECOE), West Region Air Force Civil Engineer Center (AFCEC)

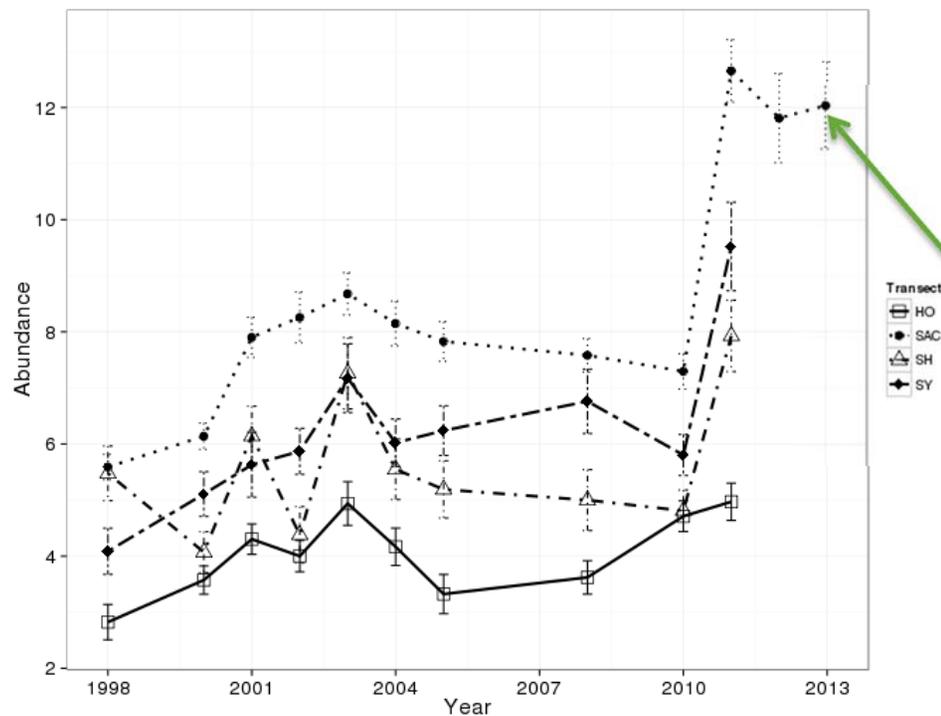
# DOD and Bird Conservation



Density of PIF focal species. Note restoration work effects picking up after 2010.

# DOD and Bird Conservation

“Hopefully the (AKN) also allows this data to be used to answer bigger landscape questions... “ (Also from L. Wilson)



How are the PIF focal species doing in the larger landscape of Vandenberg?

Area actively restored and managed

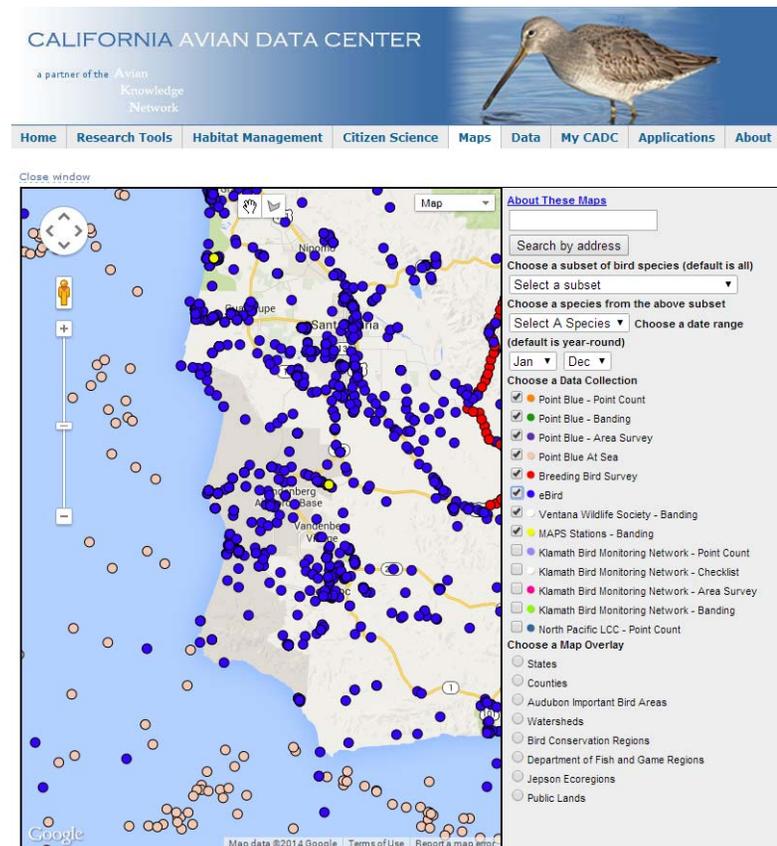
# Beyond DOD

- AKN helps integrate DOD data with other surrounding datasets to understand problems at multiple scales

DOD must report to the USFWS about impact of activities and developments on migratory birds

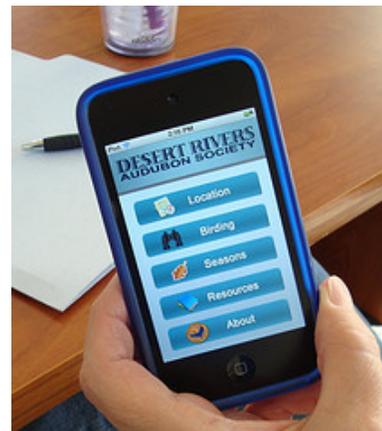
- AKN is partnering with the USFWS to develop a National AKN Node

DOD may profit from the analytical contributions of hundreds of researchers and professionals using the AKN



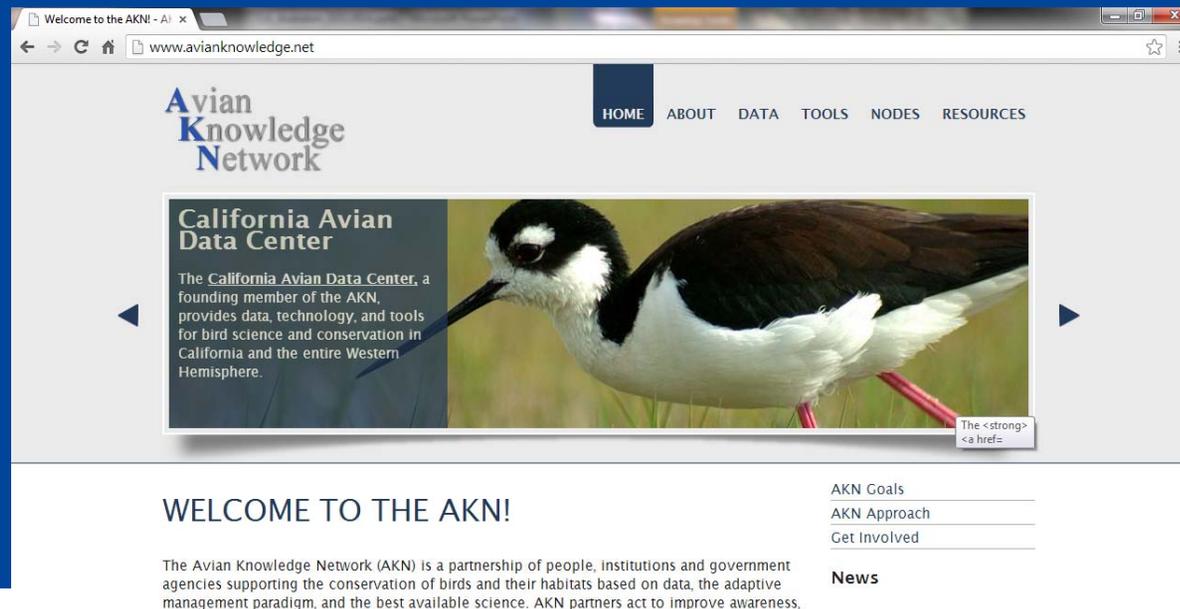
# DOD Engaging Citizen Scientists?

- People are motivated by a sense of purpose
- Should engage them in research/conservation questions
- Many types of CS appropriate questions:
- Opportunities for citizen scientists to test models



# Thank you!

<http://www.avianknowledge.net>



The screenshot shows a web browser window displaying the homepage of the Avian Knowledge Network (AKN). The browser's address bar shows the URL [www.avianknowledge.net](http://www.avianknowledge.net). The website features a navigation menu with links for HOME, ABOUT, DATA, TOOLS, NODES, and RESOURCES. The main content area includes the AKN logo and a featured section for the California Avian Data Center, which includes a photograph of a Black-necked Stilt and descriptive text. Below this, there is a 'WELCOME TO THE AKN!' section with a paragraph about the network's mission. To the right, there are links for 'AKN Goals', 'AKN Approach', and 'Get Involved', followed by a 'News' section.

Welcome to the AKN! - AI x

www.avianknowledge.net

Avian Knowledge Network

HOME ABOUT DATA TOOLS NODES RESOURCES

California Avian Data Center

The California Avian Data Center, a founding member of the AKN, provides data, technology, and tools for bird science and conservation in California and the entire Western Hemisphere.

WELCOME TO THE AKN!

The Avian Knowledge Network (AKN) is a partnership of people, institutions and government agencies supporting the conservation of birds and their habitats based on data, the adaptive management paradigm, and the best available science. AKN partners act to improve awareness,

AKN Goals  
AKN Approach  
Get Involved

News