



**AVIAN**  
KNOWLEDGE NETWORK

[pointblue.github.io/dod\\_workshop](https://pointblue.github.io/dod_workshop)



Photo: Laysan Albatross, PMRF Barking Sands, Kauai, HI Osterlund

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# DoD AND THE AKN: WHO, WHAT, WHERE, WHEN , WHY, AND HOW

*DoD Air Force Training*  
*December 12-13, 2023*  
Virtual

**Sam Veloz**  
**Dianne Miller**

**Elizabeth Neipert**  
**Zoe Duran**

**John Alexander**  
**Caitlyn Gillespie**





# WELCOME, INTRODUCTIONS, AND LOGISTICS





Who are **we**?

Who are **you**? (we'll call on you)

- Name, Installation, Position
- What type of avian data you collect?
- How would you like to use AKN?



# INTRODUCTIONS



# A FEW LOGISTICS...

- The Agenda with links (bookmark this): **[pointblue.github.io/dod\\_workshop](https://pointblue.github.io/dod_workshop)**
- Session: interactive & casual
- Office hours: 8 hours monthly, sign up here



- Parking lot items

<https://www.dodakn.org/office-hours-booking-page/>

DoD Participation in the Avian Knowledge Network (AKN): the Who, What, Where, When, Why, and How  
DoD AKN Air Force Training, December 12-13, 2023 (Virtual)

Resources: Agenda Tools Slides Exercises About Us Archive

### Agenda

All times Pacific Standard (PT)

**Tuesday, December 12**  
All times Pacific Standard (PT)

0900 (45 min) — Welcome, Introductions, and Logistics

Welcome to the DoD / AKN workshop on using the AKN technologies for managing and utilizing avian data in the AKN.

- Welcome and introductions
- Review the workshop agenda
- DoD memo
- Avian Data Lifecycle



# DoD MANDATE MEMO



Available on  
the [DoD AKN  
Portal](#)

<https://www.dodakn.org/resources/policy/>



OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE  
3400 DEFENSE PENTAGON  
WASHINGTON, DC 20301-3400

ENERGY, INSTALLATIONS,  
AND ENVIRONMENT

MEMORANDUM FOR DEPUTY ASSISTANT SECRETARY OF THE ARMY  
(ENVIRONMENT, SAFETY AND OCCUPATIONAL HEALTH)  
DEPUTY ASSISTANT SECRETARY OF THE NAVY  
(ENVIRONMENT AND MISSION READINESS)  
DEPUTY ASSISTANT SECRETARY OF THE AIR FORCE  
(ENVIRONMENT, SAFETY AND INFRASTRUCTURE)

SUBJECT: Department of Defense Avian Knowledge Network Program

The Department of Defense (DoD), like other federal agencies, has significant regulatory, management, and stewardship responsibilities related to migratory birds. These requirements are driven primarily by the Migratory Bird Treaty Act (MBTA), the "Military Readiness Rule" (50 CFR § 21.15, Authorization of take incidental to military readiness activities) and Executive Order (EO) 13186 "Responsibilities of Federal Agencies to Protect Migratory Birds." In accordance with EO 13186, DoD has also established a Memorandum of Understanding with the U.S. Fish and Wildlife Service outlining the management and stewardship activities DoD will implement for migratory bird conservation. All DoD natural resources conservation programs support DoD access to its land, air, and water resources for realistic military training and testing and to sustain the long-term ecological integrity of the resource base and the ecosystem services it provides, in accordance with the Sikes Act. Collecting data and information from ongoing surveys, inventories, and monitoring are essential to make informed management decisions, efficiently and effectively meet regulatory requirements (e.g., the MBTA, the Sikes Act), conduct environmental analyses, and support planning to adaptively manage migratory bird populations in the context of mission activities. As such, the DoD spends millions of dollars annually to collect these data.

However, even with the collection of large amounts of data, DoD faces significant challenges to fully utilize and optimize our avian data. These challenges include: (1) inefficient access to data for regulatory requirements, environmental analyses, and planning; (2) a lack of visibility on avian species population trends and management across the Military Services and broader landscapes; and (3) a lack of a centralized, secure data repository resulting in data loss during personnel turnover.

To address these challenges, DoD began partnering with other federal agencies (i.e., U.S. Fish and Wildlife Service, Bureau of Land Management, U.S. Forest Service) in the development of the Avian Knowledge Network (AKN) in 2016. The AKN is a national clearinghouse for avian data and decision support tool for assessing bird population health, status and trends, specific stressors, and conservation measures. The AKN connects partner datasets, includes metadata and data assumptions, contains powerful data analysis tools, and is a permanent archive of all data records.

This office fully endorses the use of AKN and requests that each DoD Component utilize AKN to the maximum extent practicable and provide staff the support needed to make AKN the best tool for DoD. A coordinated and comprehensive approach to implement DoD's participation in the AKN will directly support the military mission and improve the quality and effectiveness of bird conservation on DoD installations. For DoD to fully employ the power of AKN, user training and significant initial data management is required. This office, through the DoD Legacy Resource Management Program, is committed to providing baseline support and resources to help implement AKN. This support will provide training and education for personnel, and technical assistance related to system use and data management. The DoD AKN Director is Ms. Elizabeth Neipert, at [elizabeth.s.neipert@erdcdren.mil](mailto:elizabeth.s.neipert@erdcdren.mil) or 907-201-6244.

Additionally, a national Cooperative Agreement has been established to support AKN implementation. It provides a streamlined process for DoD Components and installations to contribute additional resources to meet their unique needs.

The point of contact for this office is Ms. Liz Galli-Noble, DoD Senior Natural Resources Program Manager and Legacy Resource Management Program Manager, [elizabeth.j.galli-noble.civ@mail.mil](mailto:elizabeth.j.galli-noble.civ@mail.mil) or 406-581-8148

KIDD, RICHARD GO Digitally signed by  
ODWIN IV.1163856  
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Reason: I am the author.  
Date: 2023.08.24 11:39:54 -0400

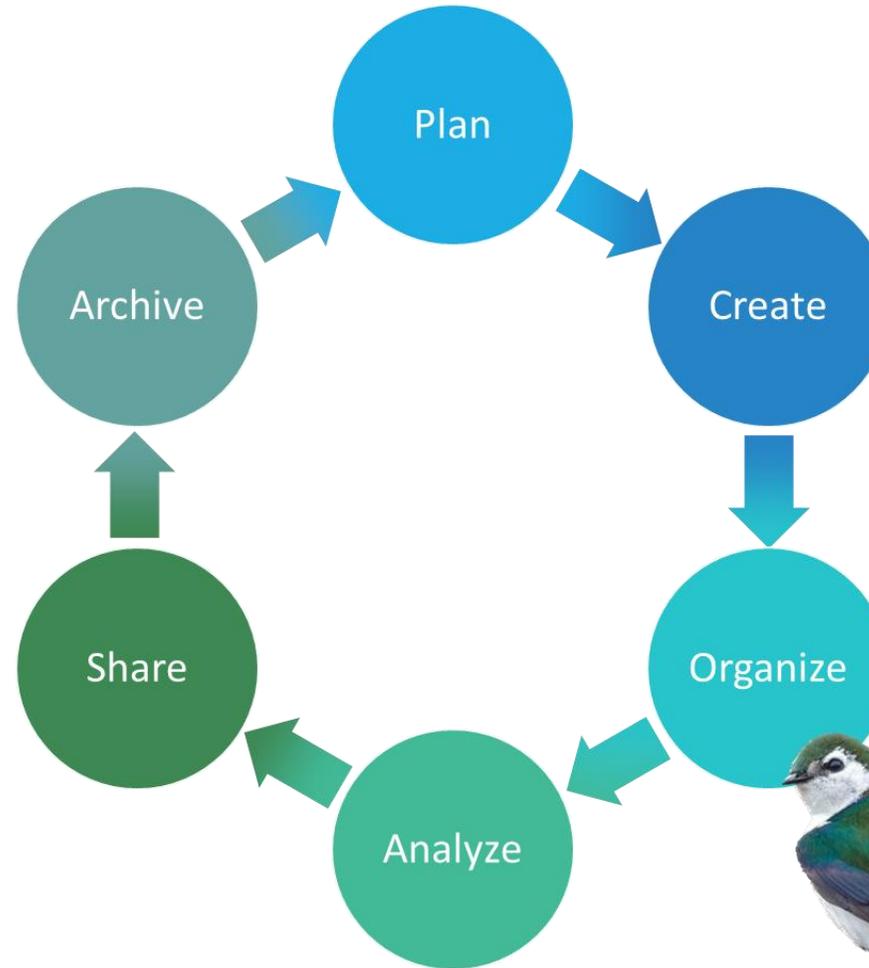
Richard G. Kidd IV  
Deputy Assistant Secretary of Defense  
(Environment and Energy Resilience)



# FULL AVIAN DATA LIFE CYCLE

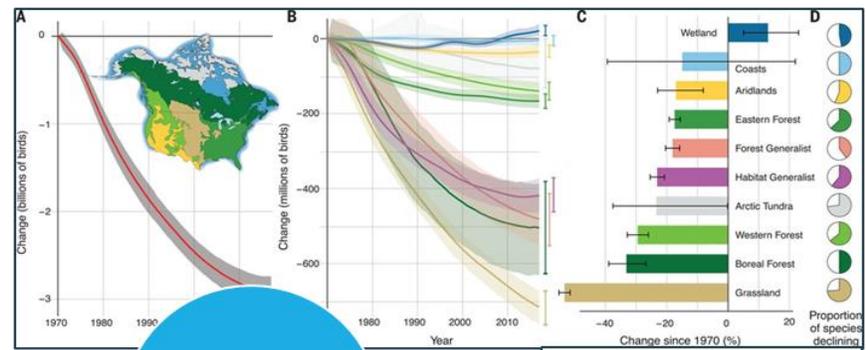


# FULL AVIAN DATA LIFE CYCLE

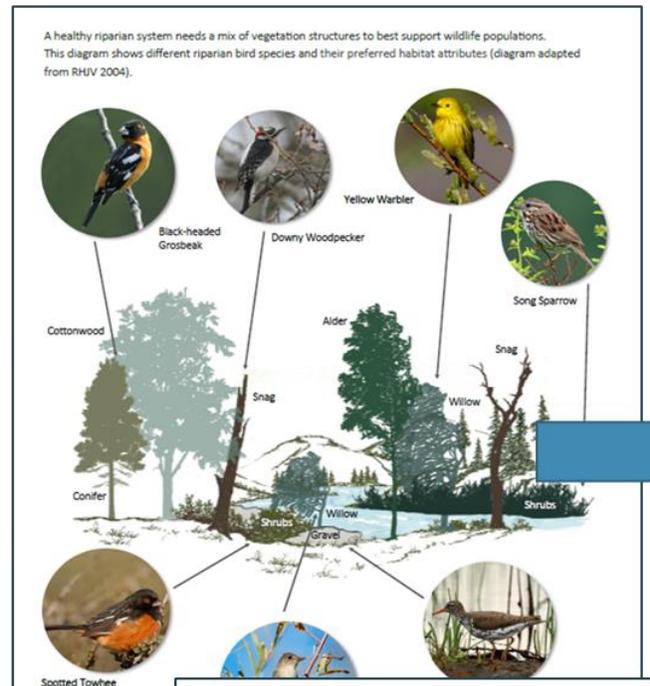




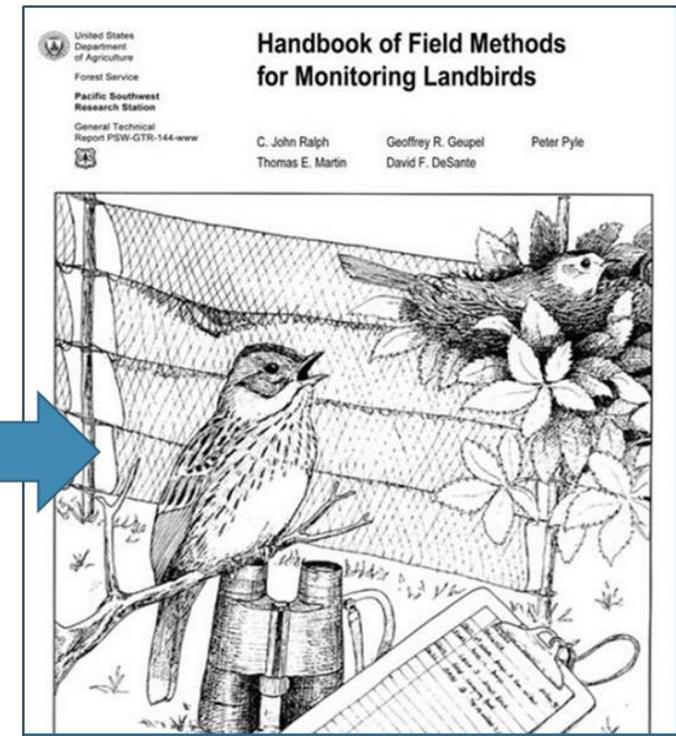
# FULL AVIAN DATA LIFE CYCLE



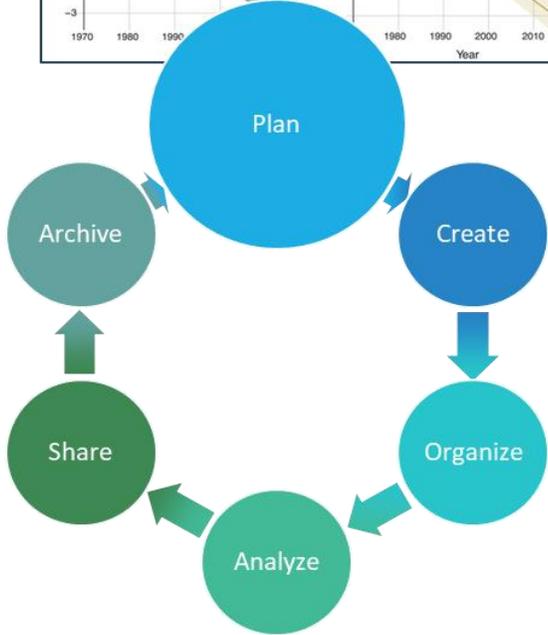
Objective: population trends



Objective: restoration & management



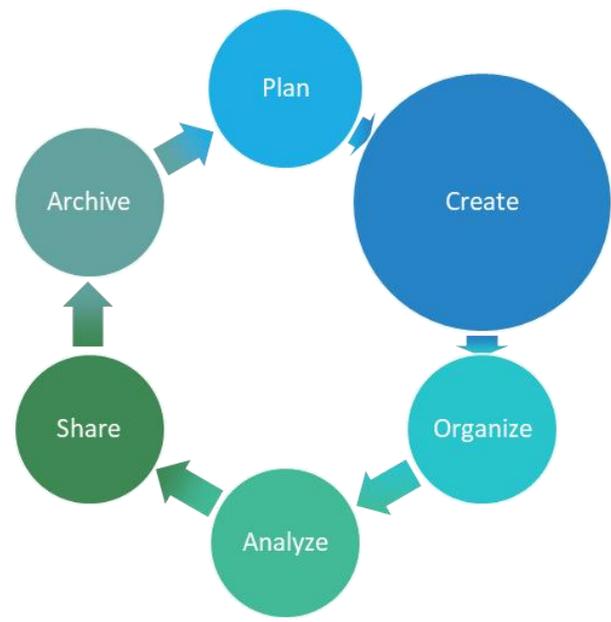
APPROPRIATE METHODOLOGIES



SURVEY OBJECTIVES



# FULL AVIAN DATA LIFE CYCLE



FIELD SAMPLING-OBSERVATIONS

Winter AM Point Count Datasheet

HMU HHD Point ID 13 Observer ESU  
 Date 1/31/23 Start Time 0603 UTM 0596424 5232965

STSA

Direction

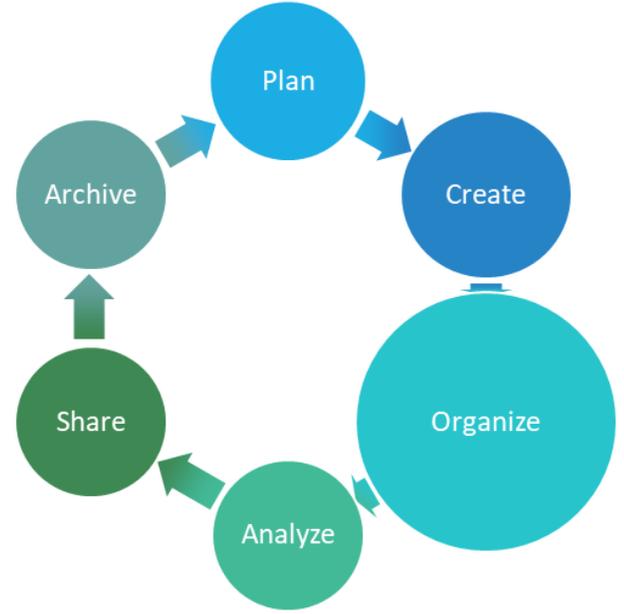
Species	Time	#	Distance	Comments
BCH	1	1	50	
STSA	2	1	100	
SOSP	3	1	90	
PAWK	3	1	65	
DESU	3	1	45	
BRCK	4	1	20	
GCKI	5	1	75	

Flyovers \_\_\_\_\_  
 Datasheet # \_\_\_\_\_

FIELD FORM-DATA



# FULL AVIAN DATA LIFE CYCLE



### Observations

Species observations with details, layout and titles dependent on protocol.

[Quick Tips >>](#)

- Separate observations on individual rows
- Scroll observations (not compatible with all browsers)

Observation Protocol: VCP100Sx  
 Total Birds Counted: 7

DATA ENTRY  
QA/QC

[Download CSV](#)

Point ⓘ	Time ⓘ	Species ⓘ	Time Bin ⓘ	Count ⓘ	Detection ⓘ	Distance ⓘ	AnimalSex ⓘ	Notes	
DI-10A	07:21	RWBL	1	1	S	52	Male		✕
DI-10A	07:21	RWBL	1	1	V	52	Male		✕
DI-10A	07:22	TUVU	2	1	V	FLO			✕
DI-10A	07:24	LASP	4	1	V	26			✕
DI-10A	07:24	LASP	4	1	V	94			✕
DI-10A	07:25	LASP	5	1	C	53			✕



# FULL AVIAN DATA LIFE CYCLE

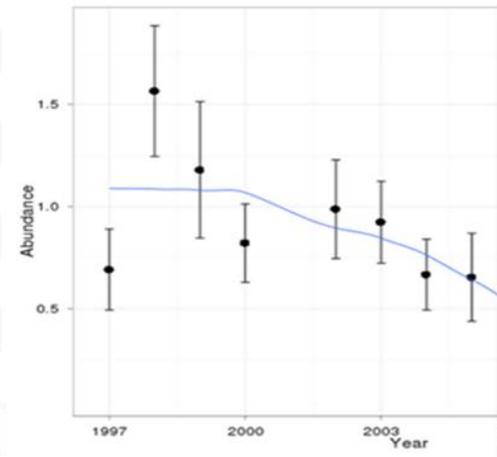
## ANALYSIS

Total Number of Observations of each Species by Year

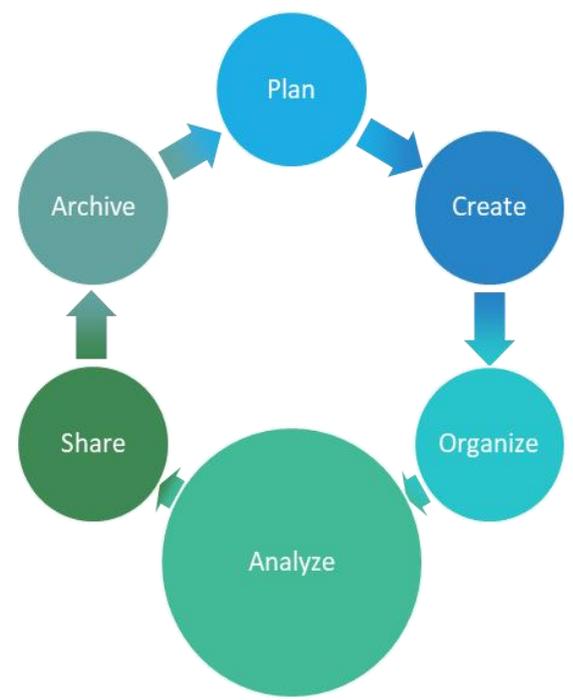
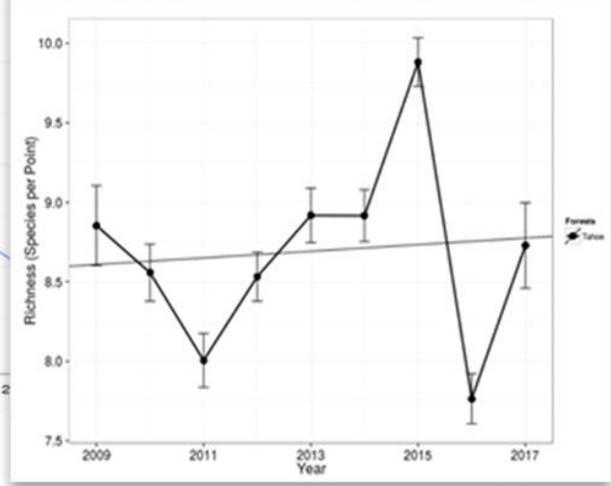
copy table to: [CSV](#) [HTML](#) [DOC](#) [PDF](#)

Common Name	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
American Crow	0	7	2	0	5	25	11	5	1	11	0
American Dipper	1	5	7	2	5	1	1	3	3	3	6
American Goldfinch	0	33	0	17	28	15	38	8	21	8	36
American Kestrel	0										
American Pipit	5										
American Redstart	0										
American Robin	44										
American Three-toed Woodpecker	2										
Audubon's Warbler	55										
Bald Eagle	0										
Band-tailed Pigeon	0										
Barn Swallow	0										
Barred Owl	1										

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

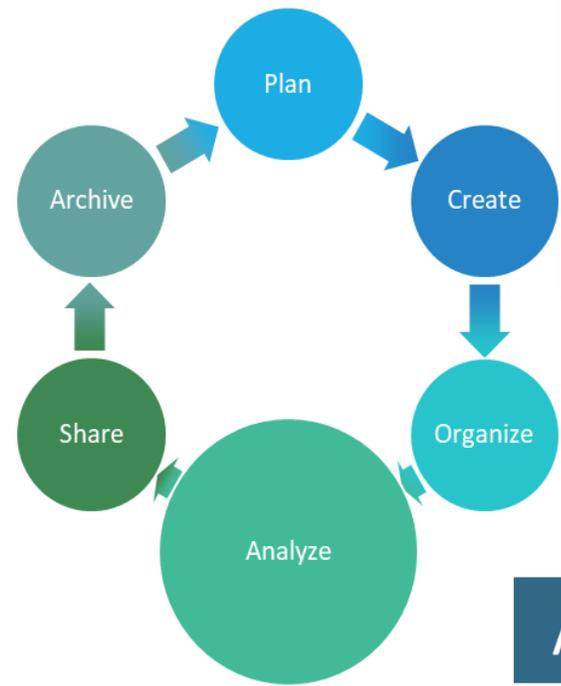


Simple linear trend estimate of Richness (Species per Point) by Year

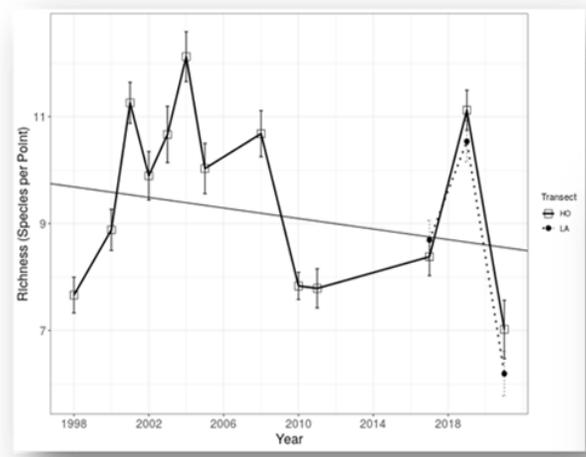




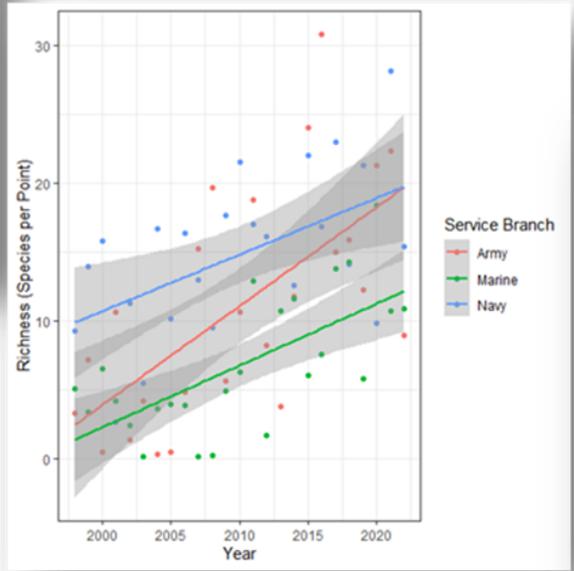
# FULL AVIAN DATA LIFE CYCLE



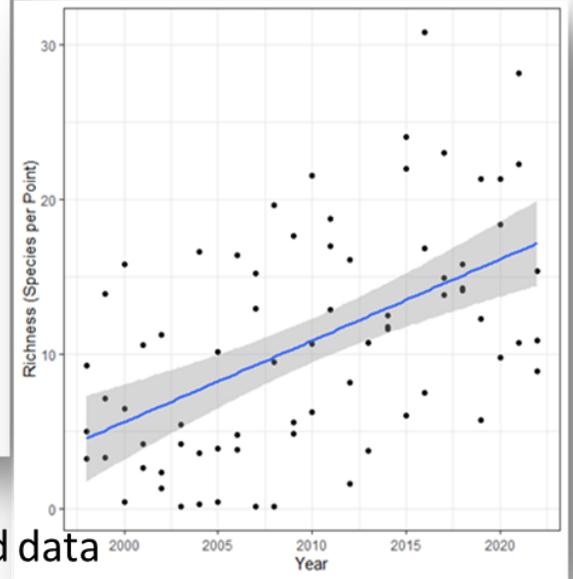
Vandenberg Space Force Base Project Riparian Richness



Service Branch Program Riparian Bird Richness



DoD Program Riparian Bird Richness

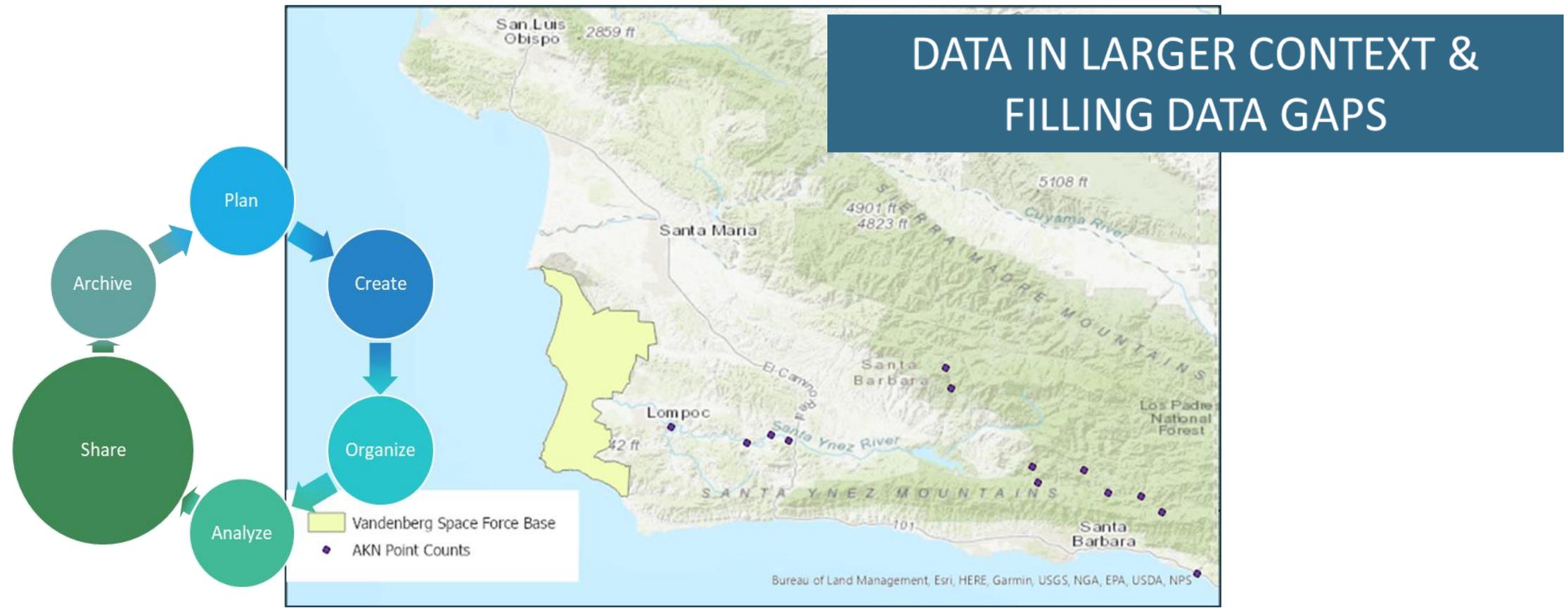


**ANALYSIS AT MULTIPLE SCALES**

\*Simulated data

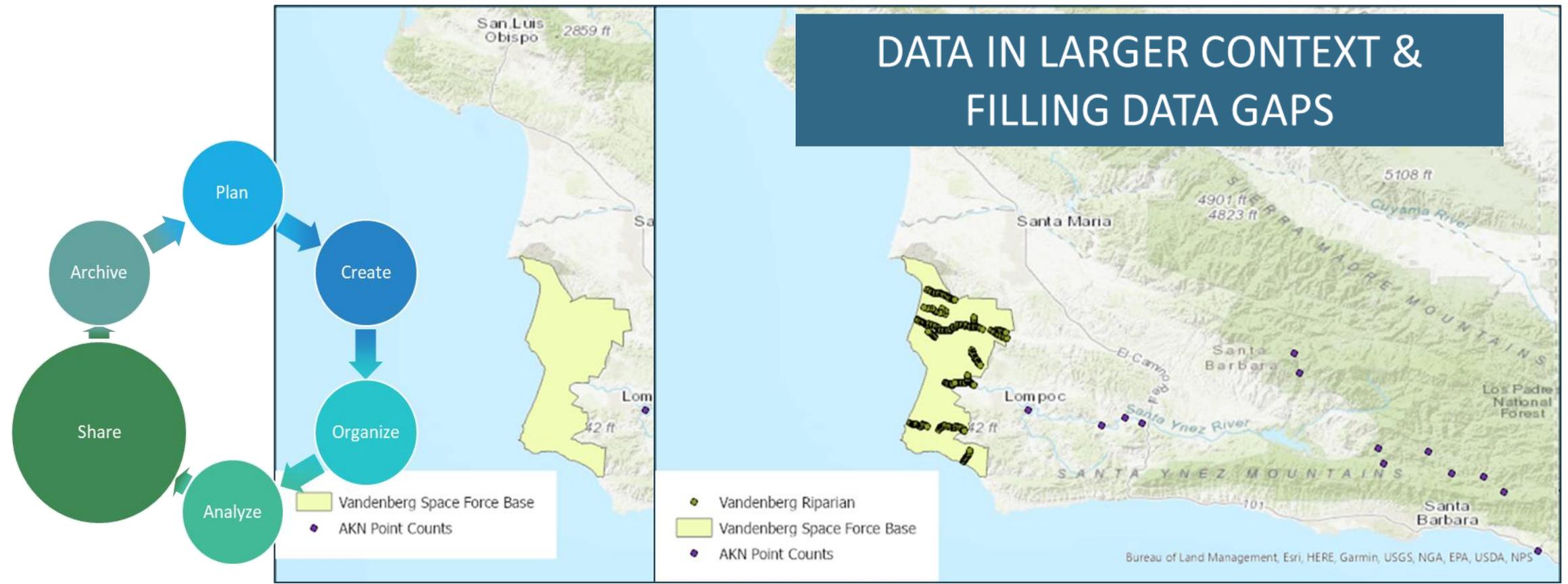


# FULL AVIAN DATA LIFE CYCLE



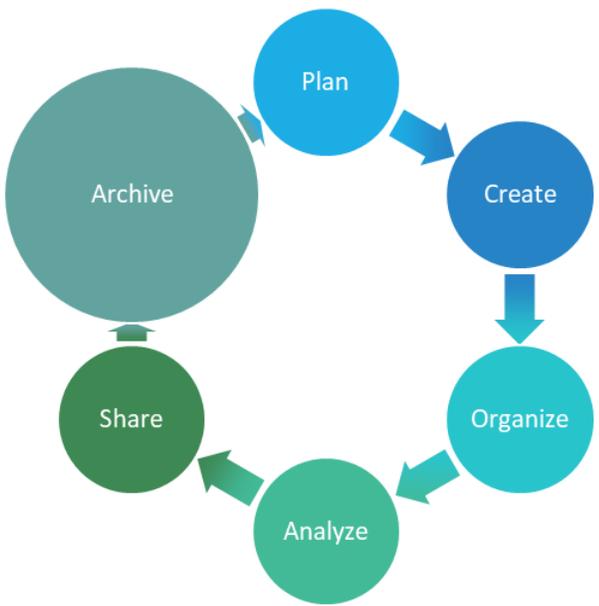


# FULL AVIAN DATA LIFE CYCLE





# FULL AVIAN DATA LIFE CYCLE



### Field Observations - Download

**FORT\_CARSON - [DOD\_ARMY] Fort Carson Point Counts** [open new project](#)

**Selecting Sampling Units:** Check all of the Sampling Units you want to select by clicking on each one. Open any part of the tree to get to more Sampling Units. To uncheck a Sampling Unit, click on it again. If you check or uncheck a Sampling Unit that contains other Sampling Units, the entire set of Sampling Units will be checked or unchecked. Click *Select All* to select and *Clear All* to unselect everything in the tree.

**1. Select sampling units from the tree below.**

[select all](#) [clear all](#)

- FORT\_CARSON - [DOD\_ARMY] Fort Carson Point Counts
  - Fort Carson Marshbird (FC\_MB)
  - Fort Carson Point Count (CARSON\_PC)
    - Bird Farm (Grassland) (GB\_BF)
    - TA 08 (Grassland) (GB\_TA08)
    - TA 10 (Grassland) (GB\_TA10)
    - TA 15 (Grassland) (GB\_TA15)
    - TA 24 (Grassland) (GB\_TA24)
    - TA 28 (PJ) (PJ\_TA28)

**2. Download observation data from selected Sampling Units into:**

**Filter by Date (or leave blank for all records):**  
 From  To

- Point Count Transect summary: [CSV \(Excel\) file](#) [HTML file](#)
- Point Count [CSV \(Excel\) file](#) [HTML file](#)

### Project Protocols

[open new project](#) **FORT\_CARSON - [DOD\_ARMY] Fort Carson Point Counts**

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

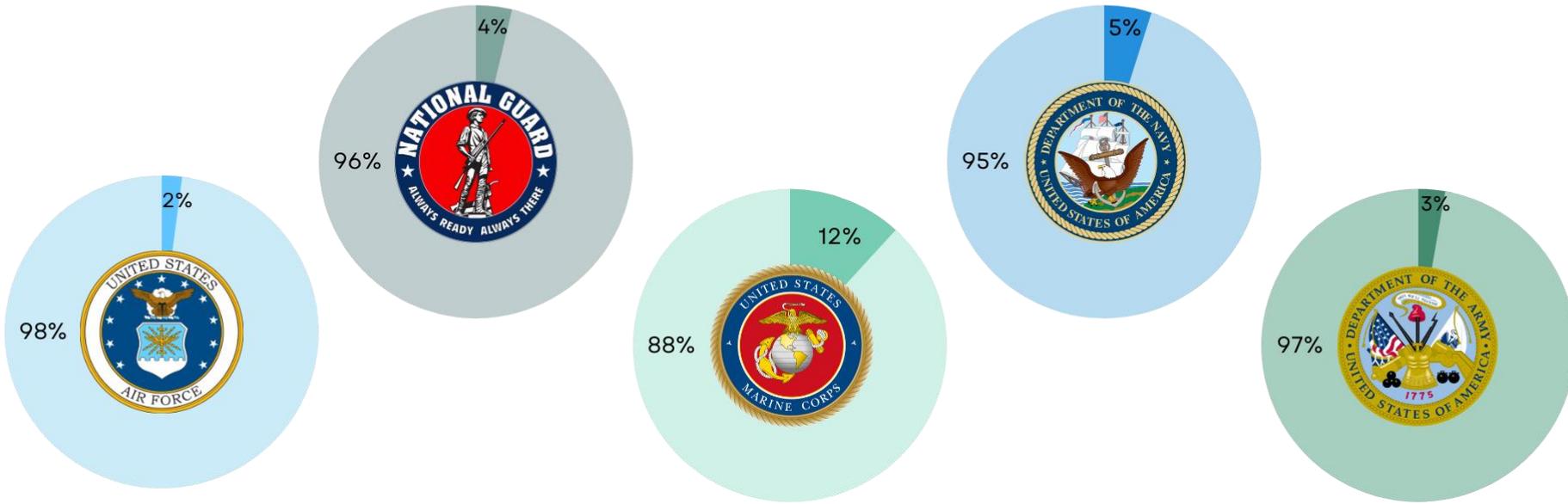
Protocol Id	Protocol Name	Protocol Type	
BI_S_V_BI	BLRA,SORA,VIRA,BLTA	SecretiveMarshBirdCount	✗
IMBCR_VRPC	Bird Conservancy of the Rockies IMBCR 6 min count	PointCount	✗
SiteConditions_FORT_CARSON	Site conditions temperature, wind, sky, noise	SiteConditions	✗
VRPC__10min_2TB	Variable radius point count with detection cues lasting 10 minutes with 2 timebin and sex	PointCount	✗

4 rows

PERMANENT STORAGE & ACCESS

# 341 installations that require **Integrated Natural Resources Management Plans**

## FY23 Q2 - NMFWA Update



Total Number of Installations: **146** Army, **82** Navy, **96** Air Force, **17** Marine Corps, **54** National Guard states/territories

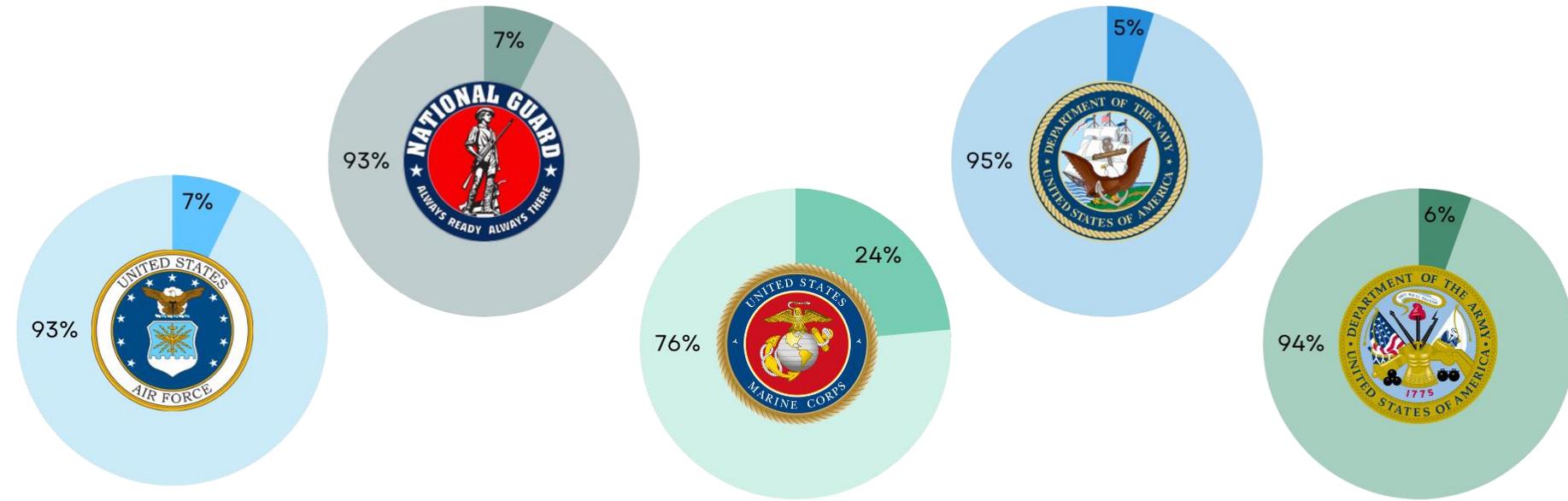
**Dark colors** - Installations with Contemporary Data

**Light colors** - Installations without Contemporary Data



# 341 installations that require Integrated Natural Resources Management Plans

## CURRENT TO-DATE (FY23 Q4)



Total Number of Installations: 146 Army, 82 Navy, 96 Air Force, 17 Marine Corps, 54 National Guard states/territories

**Dark colors** - Installations with Contemporary Data

**Light colors** - Installations without Contemporary Data



# CAN YOU LOG IN?

Biologists:

[data.pointblue.org/science/biologists](https://data.pointblue.org/science/biologists)

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*Problems logging in?*

Raise your hand or write in the  
chat for our help!



# LIMITATIONS AND CAVEATS

**Focus for this training:** Point Count data

*Office hours are where we can dig deeply into your installation's specific projects, data needs, and issues.*



Photo: Bluethroat, Nome, AK by C VanTassel



# AKN PROJECT DATA 101





# DoD AKN PORTAL

<https://www.dodakn.org/>

**Welcome to the DoD AKN Portal**

Provides a modern avian data management system approach to foster efficient, cost-effective and resilient conservation outcomes in support of the military mission.

[Manage data now](#)

[DoD AKN User Guide](#)

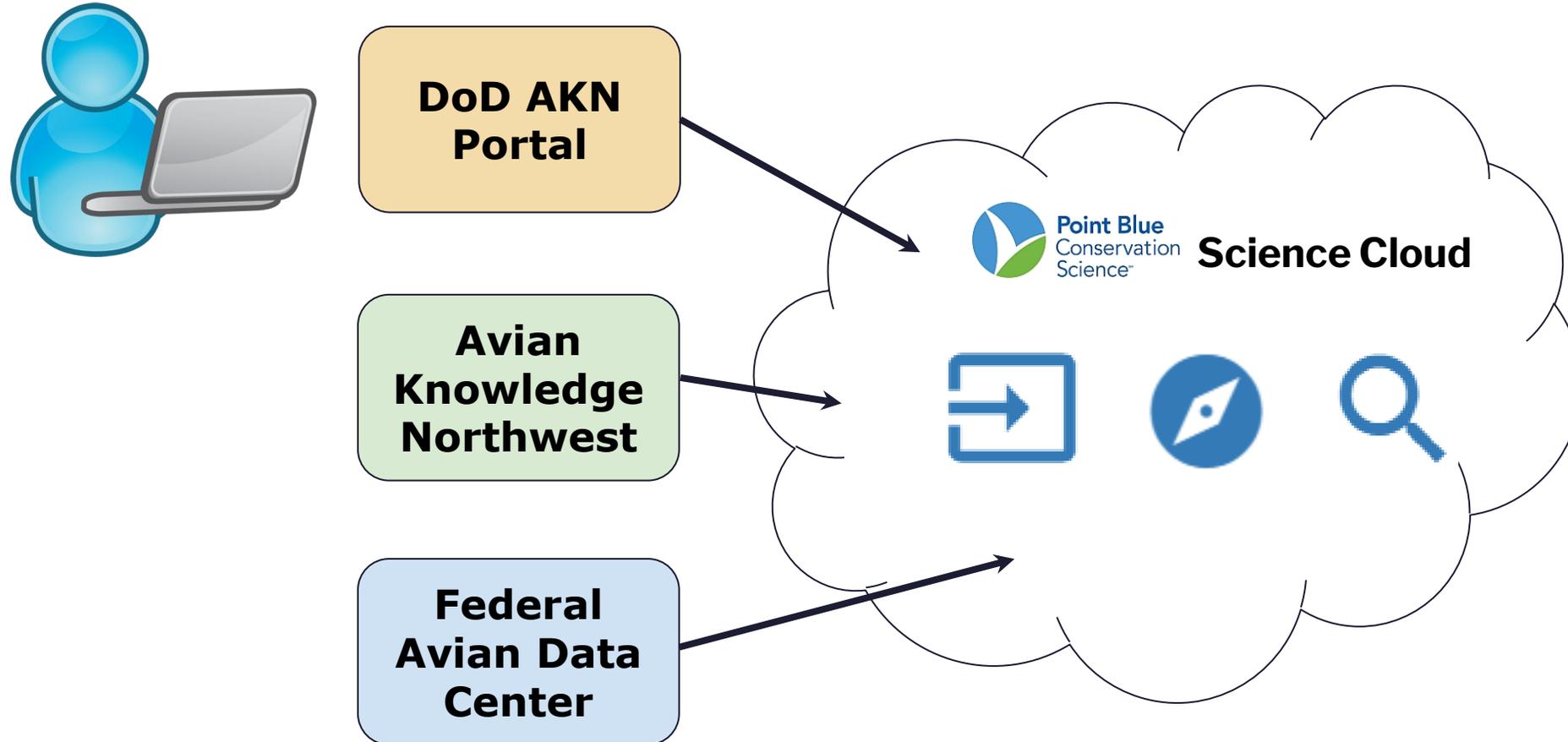
[Does AKN currently support my data type?](#)

[Get Training!](#)

 **AVIAN**  
KNOWLEDGE NETWORK

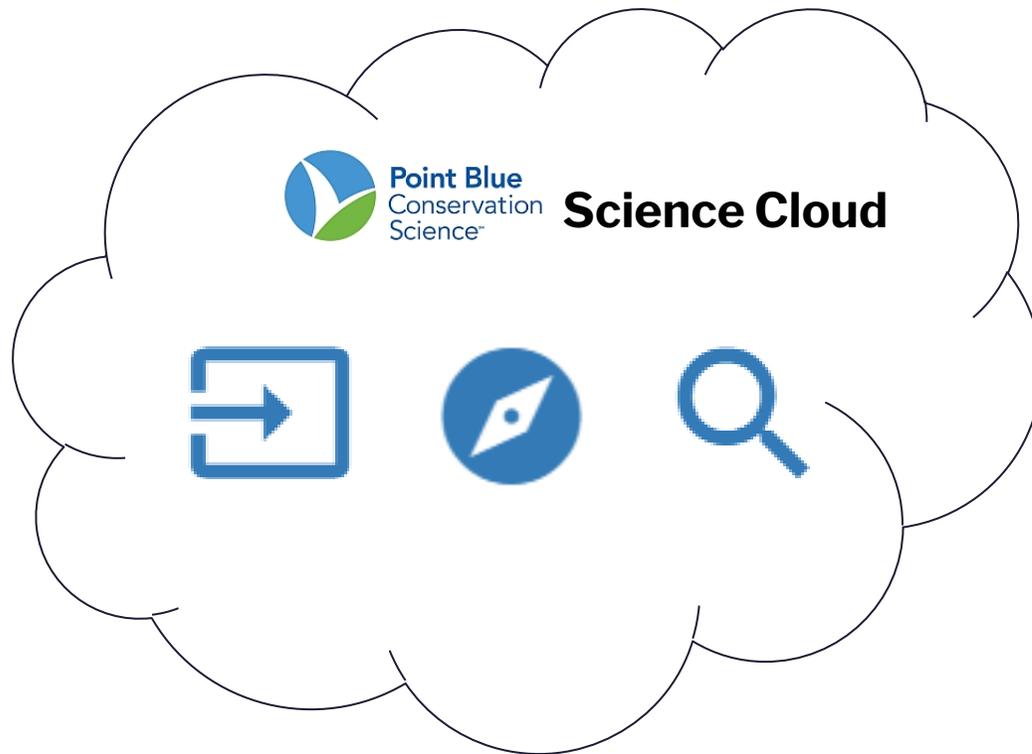


# AKN: COMMON CLOUD TECHNOLOGY





# FOCUS FOR THIS TRAINING



How do we represent protocol-based science?

How do you get data in?

How do you get your data & information out?

What conservation questions can you answer?



# MA ARMY NATIONAL GUARD



- Biologist leaving position one week after training
- Had 20+ years of data
- Working through data, realized inconsistencies in data entry
- Standardized protocol in system, showing required fields to be utilized in all future surveys
- Successfully uploaded 35,000 records prior to leaving DoD
- Data ready and available to successor



# AKN PROJECT DATA 101

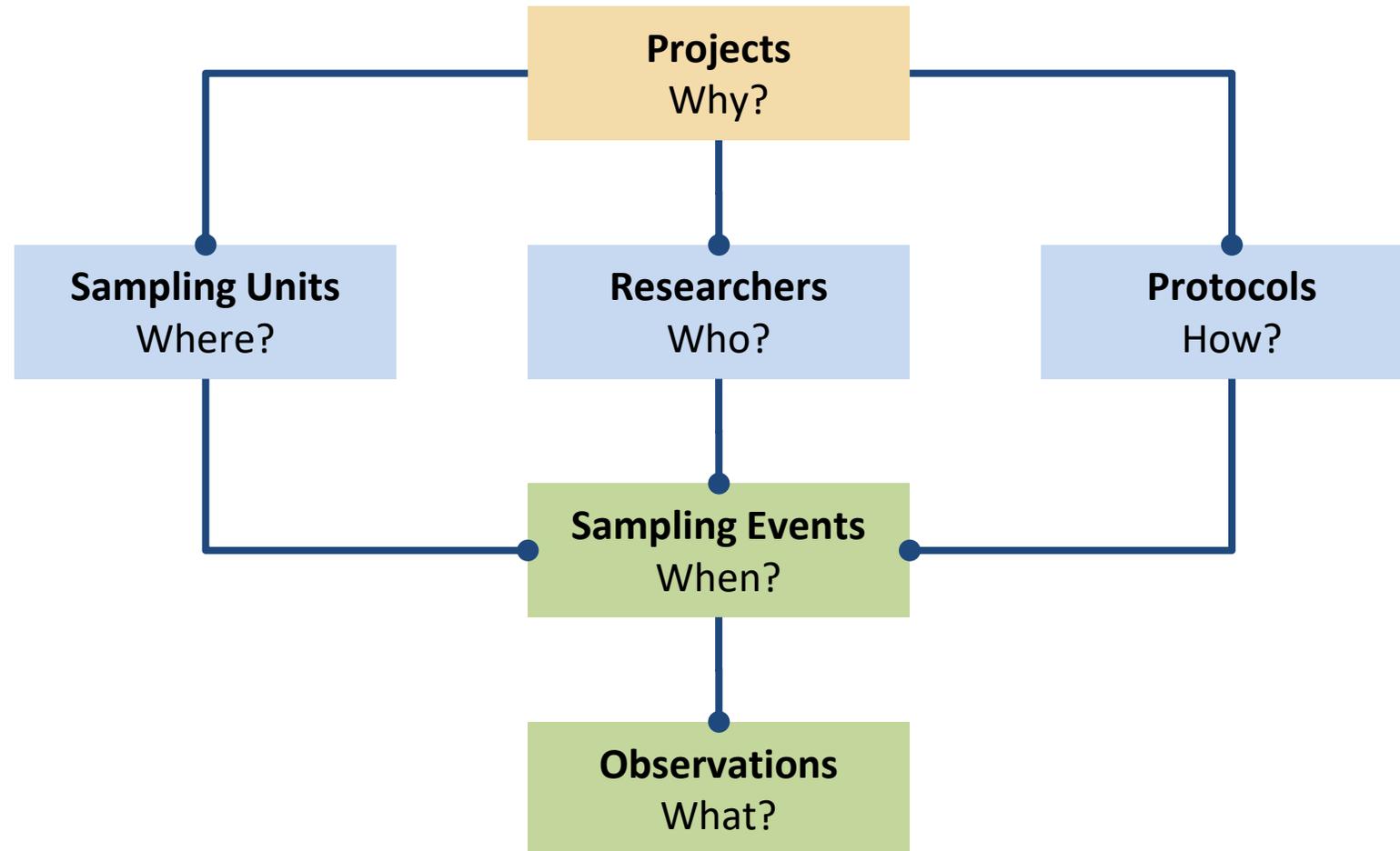
1. The parts of a Project Database

2. The workflow for creating and managing a Project



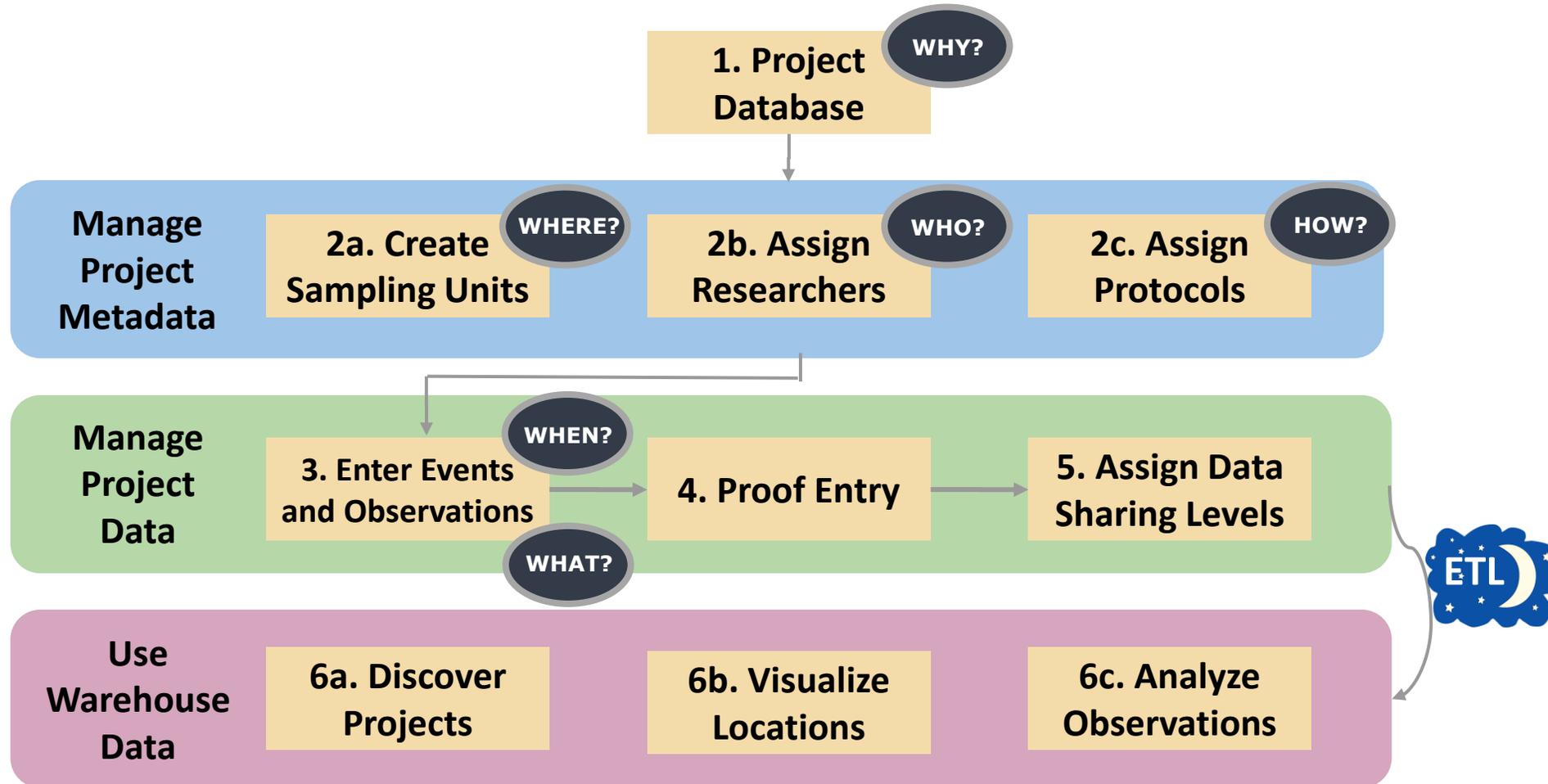


# THE PROJECT DATABASE



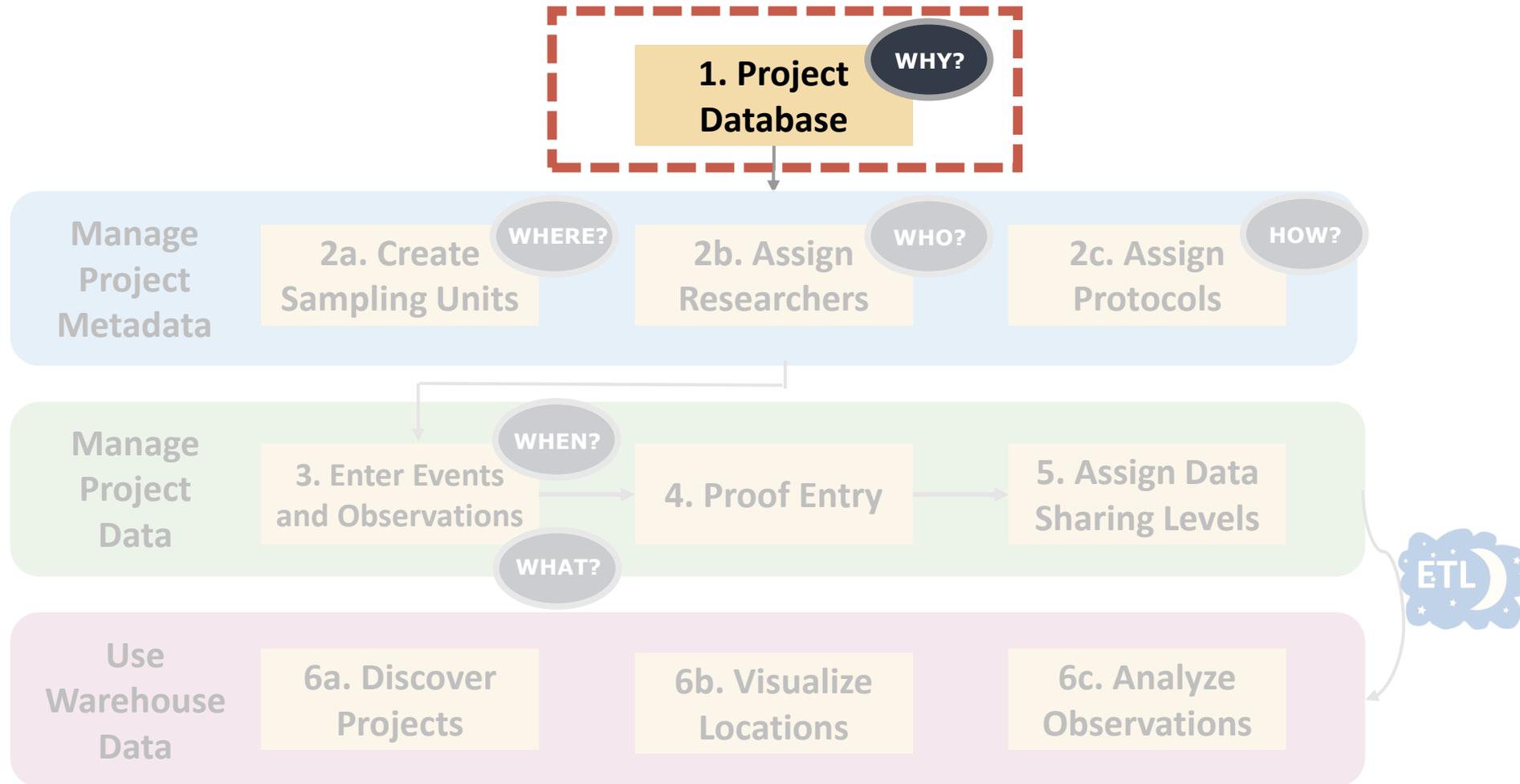


# WORKFLOW FOR MANAGING A PROJECT





# WORKFLOW FOR MANAGING A PROJECT



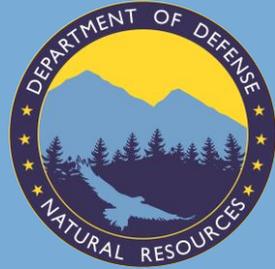


# PROJECT

Container for Event and Observation data

Many ways to organize

For DoD: Project = Installation\*



## DoD Program Structure



**Air Force Subprogram** 

Installation Project Databases

**Army Subprogram** 

Installation Project Databases

**Navy Subprogram** 

Installation Project Databases

**Marine Subprogram** 

Installation Project Databases

**National Guard Subprogram** 

Installation Project Databases\*

\*National Guard Projects = State Installation = Study Area



# DoD Program Structure



**Air Force Subprogram**



Installation Project Databases

**Army Subprogram**



Installation Project Databases

**Navy Subprogram**



Installation Project Databases

**Marine Subprogram**



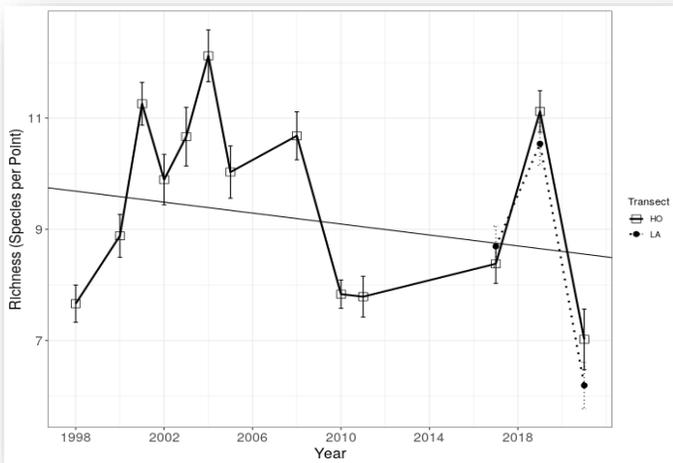
Installation Project Databases

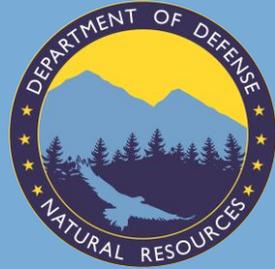
**National Guard Subprogram**



Installation Project Databases

### Vandenberg Space Force Base Project Riparian Richness





# DoD Program Structure



**Air Force Subprogram**



Installation Project Databases

**Army Subprogram**



Installation Project Databases

**Navy Subprogram**



Installation Project Databases

**Marine Subprogram**



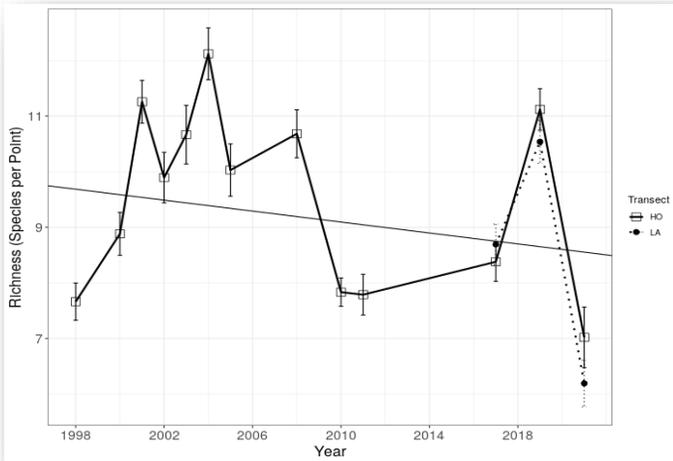
Installation Project Databases

**National Guard Subprogram**

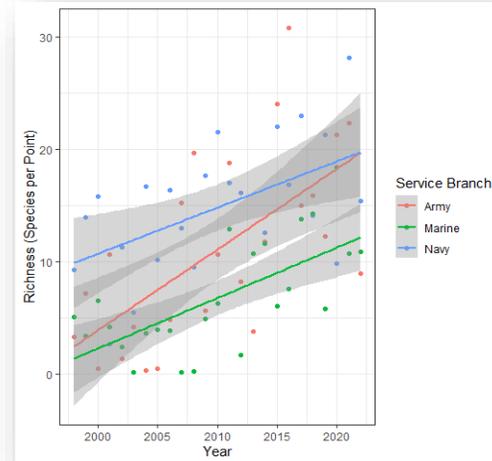


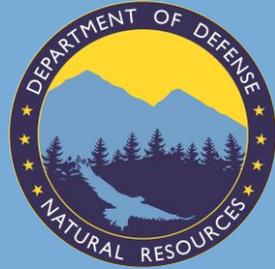
Installation Project Databases

### Vandenberg Space Force Base Project Riparian Richness



### Service Branch Program Riparian Bird Richness





# DoD Program Structure



**Air Force Subprogram**



Installation Project Databases

**Army Subprogram**



Installation Project Databases

**Navy Subprogram**



Installation Project Databases

**Marine Subprogram**



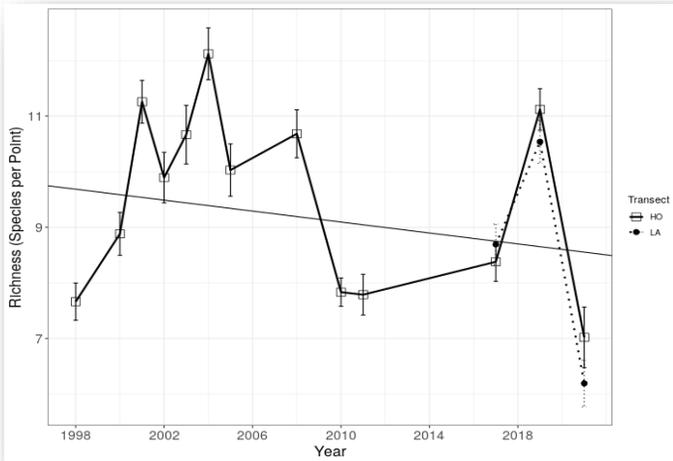
Installation Project Databases

**National Guard Subprogram**

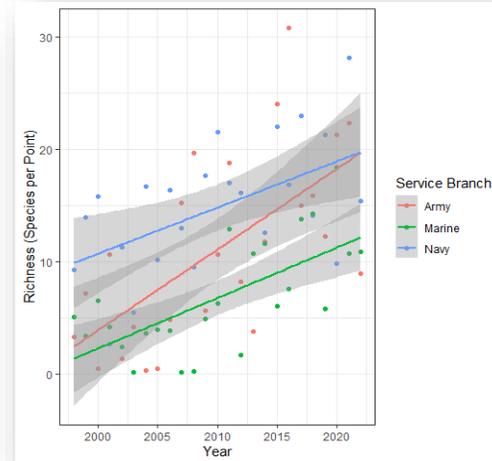


Installation Project Databases

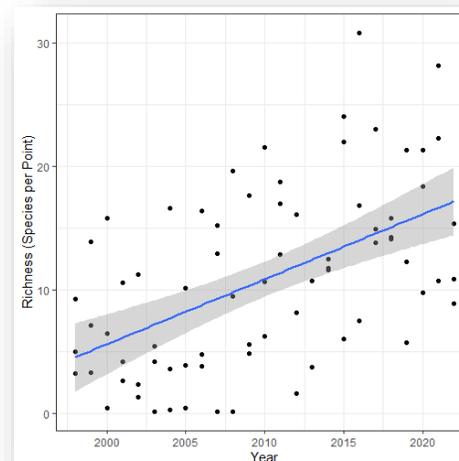
### Vandenberg Space Force Base Project Riparian Richness



### Service Branch Program Riparian Bird Richness



### DoD Program Riparian Bird Richness





## CASE STUDY:

# SCIENCE TO SUPPORT LANDSCAPE LEVEL CONSERVATION

## *NORTH PACIFIC LANDSCAPE CONSERVATION COOPERATIVE*

- Data integration for landscape-scale conservation analysis
- Understanding climate change effects on species and ecosystems
- Identify projected future biodiversity hotspots
- Provide interfaces to, geospatial and baseline data fundamental to understanding climate change effects

Click on an ecoregion in the map below to access more data and tools in that area.





# CASE STUDY:

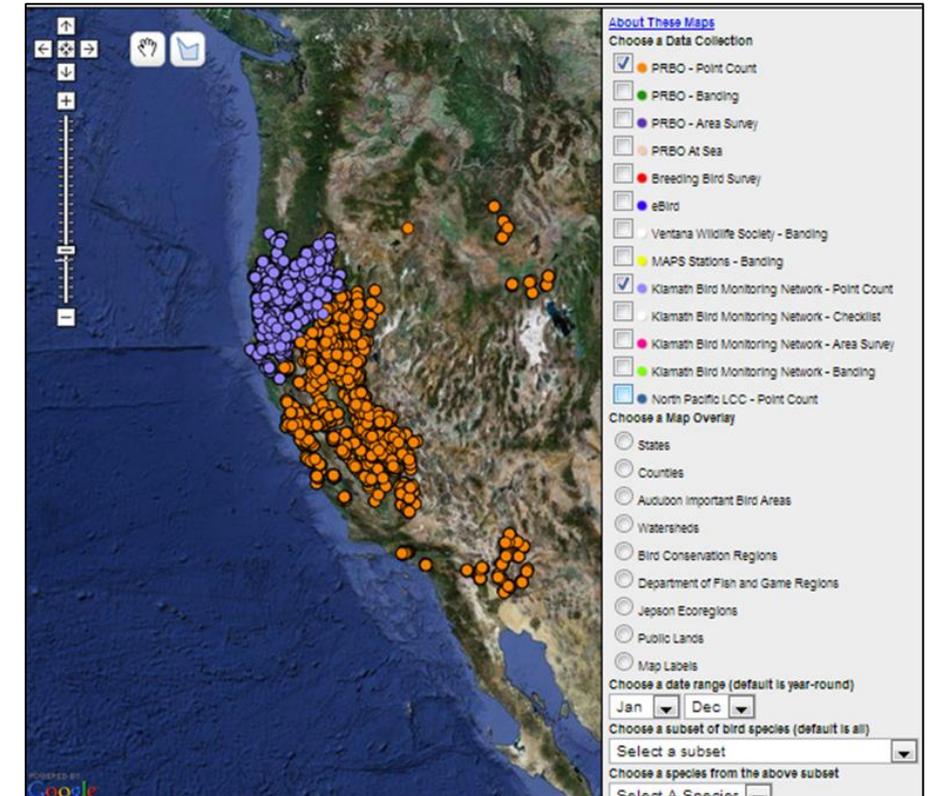
## SCIENCE TO SUPPORT LANDSCAPE LEVEL CONSERVATION

### *NORTH PACIFIC LANDSCAPE CONSERVATION COOPERATIVE*

17 Data contributors:

23 datasets

Over 900,000 new records

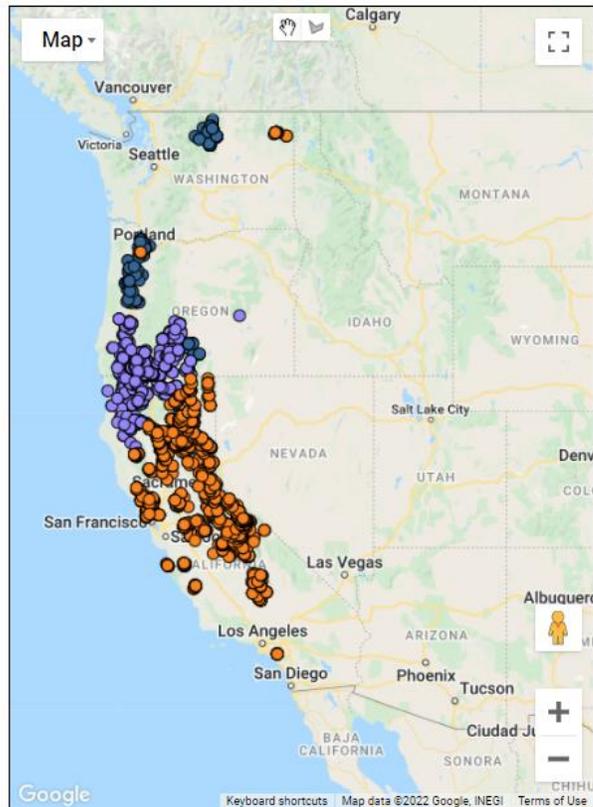




# CASE STUDY:

## UNDERSTANDING CLIMATE CHANGE EFFECTS ON SPECIES

### *NORTH PACIFIC LANDSCAPE CONSERVATION COOPERATIVE*





# CASE STUDY:

## UNDERSTANDING CLIMATE CHANGE EFFECTS ON SPECIES

### NORTH PACIFIC LANDSCAPE CONSERVATION COOPERATIVE

#### White-breasted Nuthatch

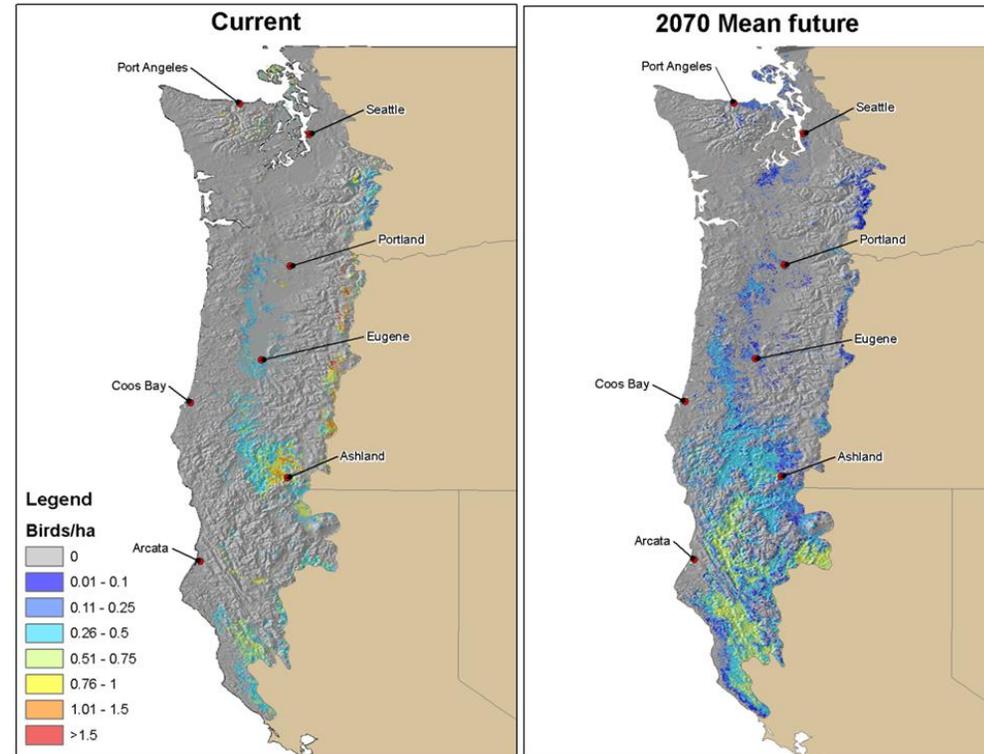
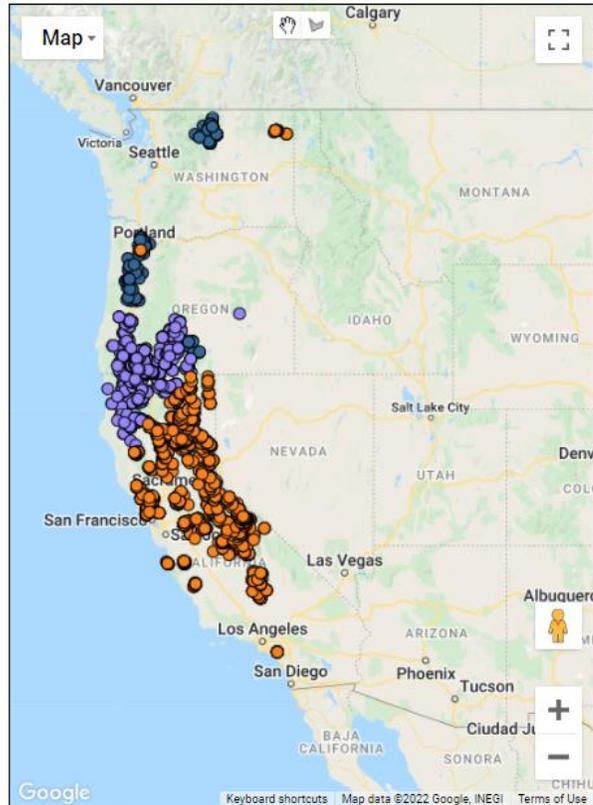


Photo (c) Peter LaTourrette



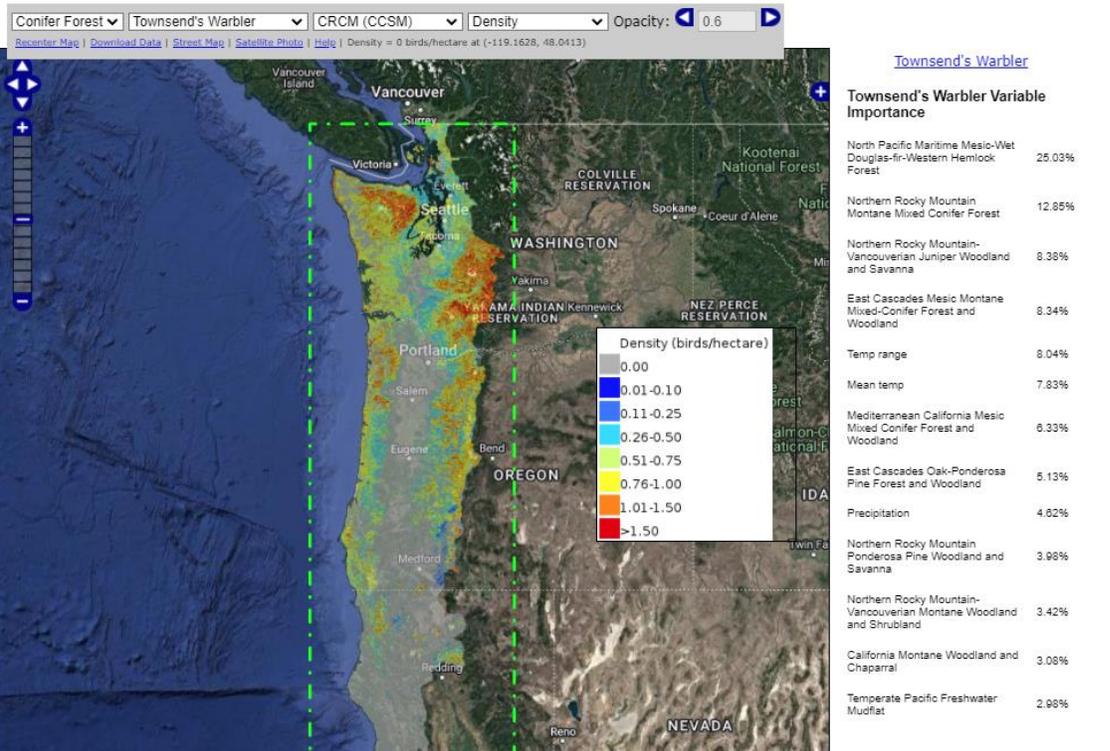
# INTERACTIVE WEB TOOLS

## Bird Distribution Map

Select one of the 26 species to view how its distribution and density will respond to climate change. We provide projections for current and future (2070) climate and environmental conditions.

You can choose to view:

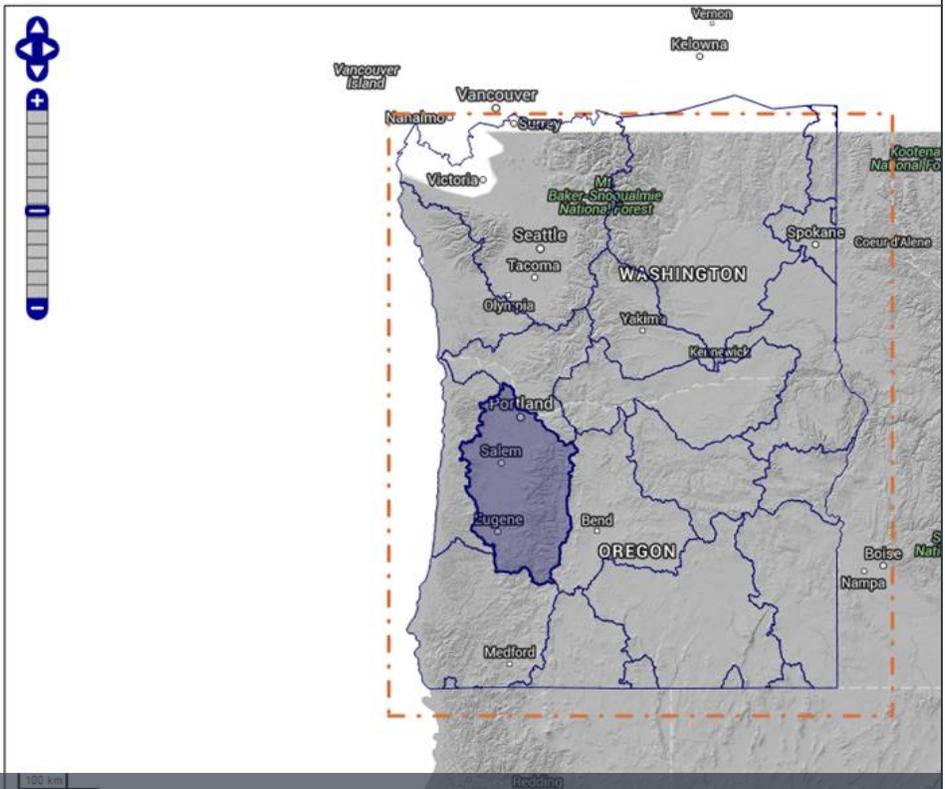
- Probability of occurrence
- Presence absence
- Density (birds/ha)



<https://data.pointblue.org/apps/nplcc/>

Recenter Map | Help | Habitat suitability = 0.097 at (-122.6845, 46.0087)

- Overlays
- Watersheds (HUC6)
  - Vegetation Model
  - Places and Roads
  - Satellite Imagery
- Download
- [Data](#)
  - [Watershed Report](#)



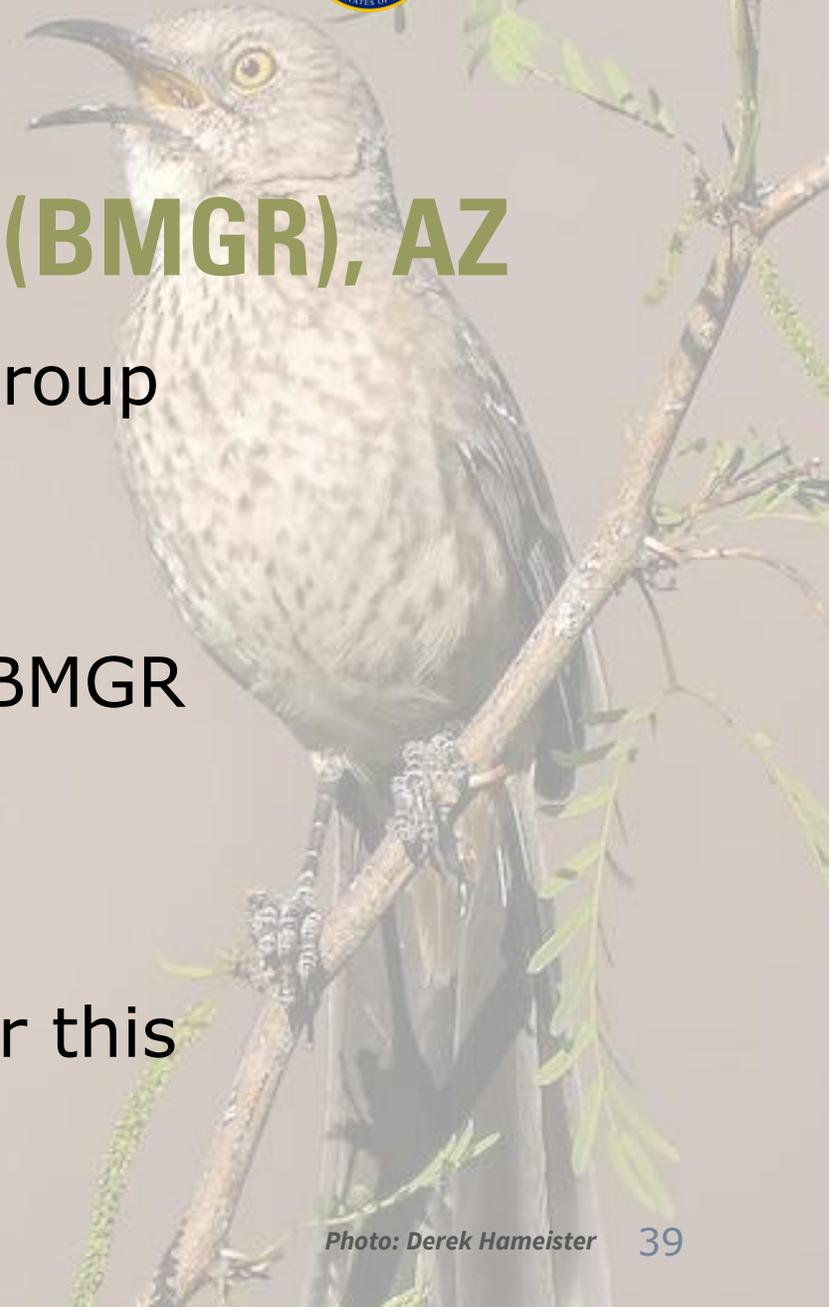
<https://data.pointblue.org/apps/nwsc/>



## CASE STUDY:

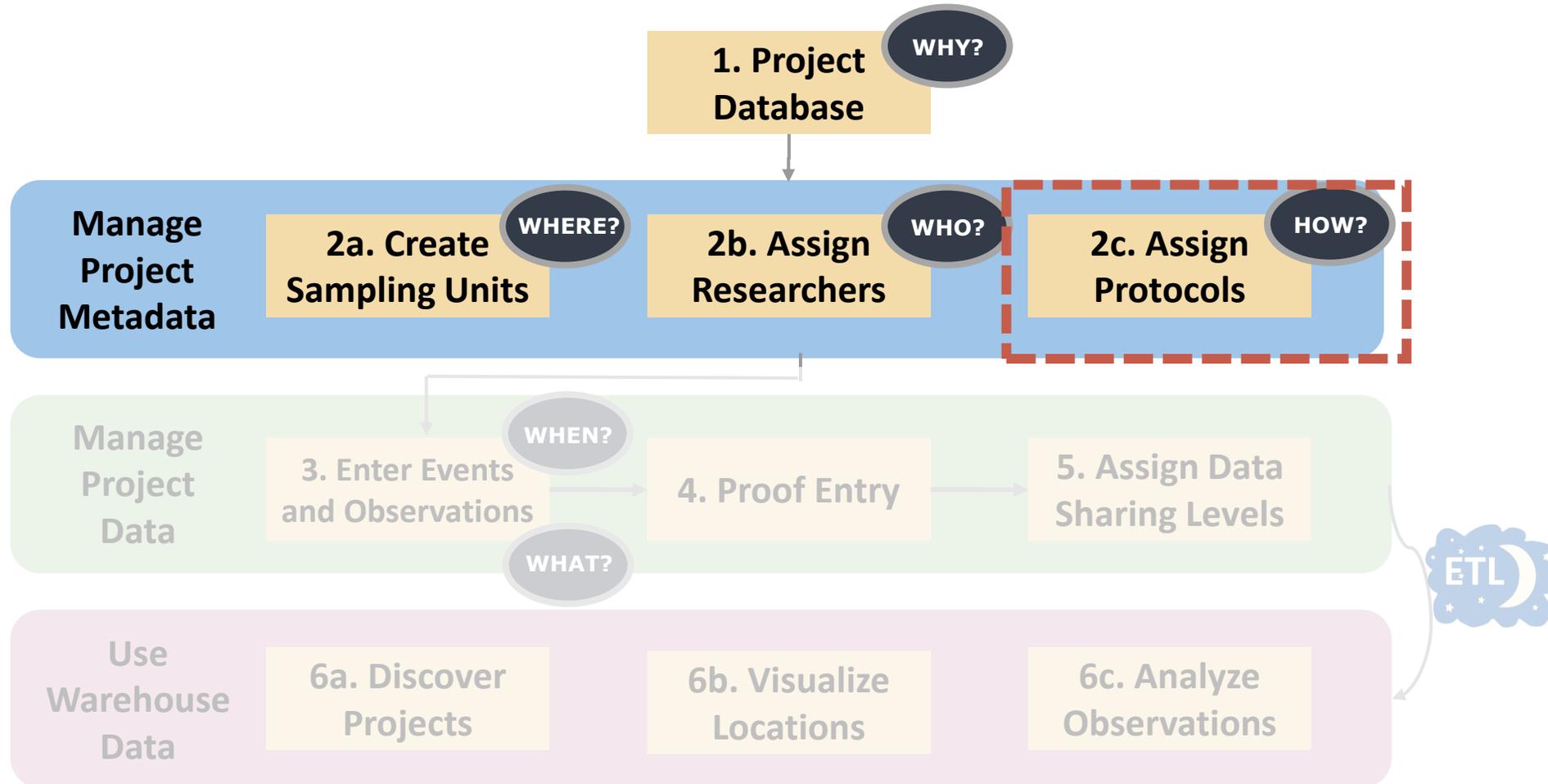
# BARRY M. GOLDWATER RANGE (BMGR), AZ

- Participating in Desert Thrasher Working Group
- Existing protocol in the AKN system
- Critical to add data to DoD-owned project
- Conducted surveys and entered data into BMGR project using desert thrasher data entry protocol available in AKN
- Shared data with thrasher initiative
- Data will show when querying DoD data for this species





# MANAGING A PROJECT: PROTOCOLS





# PROTOCOLS

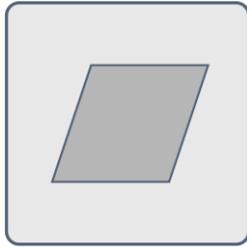
The *metadata* describing the methods and mechanics of **how** observations were collected

Should provide enough information for researcher 20 years from now to understand the methods you used

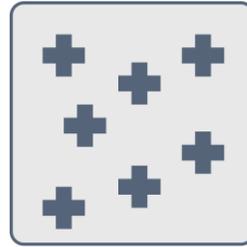
#	Point ⓘ	Time ⓘ	Species ⓘ	Time Bin ⓘ	Count ⓘ	Detection ⓘ	Distance ⓘ	Prev ⓘ	Breeding ⓘ
1	NH_1	09:00	RWBL	1	5	S	65	<input type="checkbox"/>	
2	NH_1	09:00	EUST	1	7	V	100	<input type="checkbox"/>	
3	NH_1	09:00	AMKE	1	1	V	150	<input type="checkbox"/>	
4	NH_1	09:00	AMKE	1	1	V	175	<input type="checkbox"/>	
5	NH_1	09:01	LASP	2	3	S	70	<input type="checkbox"/>	
6	NH_1	09:02	LASP	3	1	V	90	<input type="checkbox"/>	
7	NH_1	09:03	RTHA	4	1	V	FLO	<input type="checkbox"/>	
8	NH_1	09:04	HOLA	5	3	S	65	<input type="checkbox"/>	



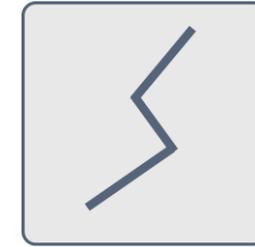
# PRIMARY PROTOCOL TYPES



Area Search



Point Count



Linear Transect



Secretive Marshbird



Site Conditions



# POINT COUNT PROTOCOLS

**Duration** of survey at each point

**Time** (binned)

**Distance** (binned or exact), maximum

**Detection** codes

Can include **breeding behavior**

Assumed **exhaustive** survey

Each animal **counted once**



# POINT COUNT PROTOCOL EXAMPLES

Compare how 3 field methodologies are represented:

[Knutson \(USFWS\) protocol](#)

[Point Blue protocol](#)

[KBO protocol](#)

# HOW TO ACHIEVE CONFLICTING CONSERVATION OBJECTIVES: *THE IMPORTANCE OF STANDARD PROTOCOLS*





# ASSESSING RAIL RESPONSE TO MANAGEMENT: THE CHALLENGE

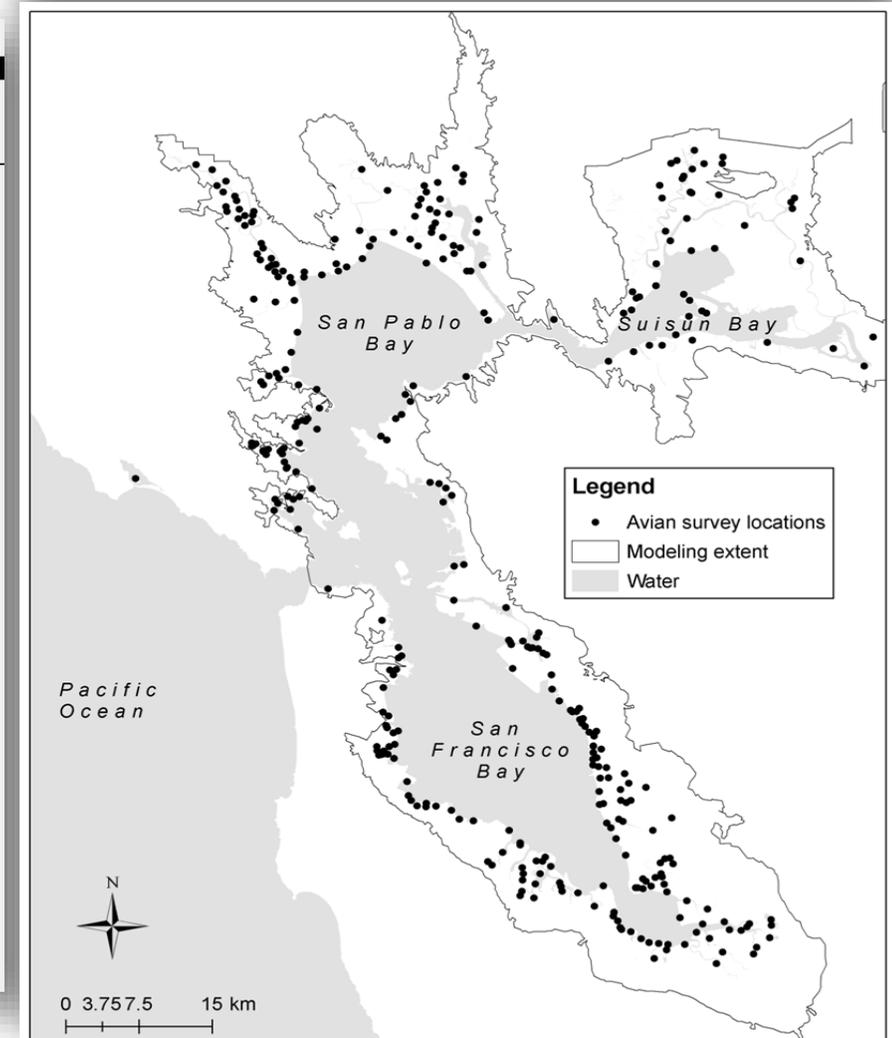
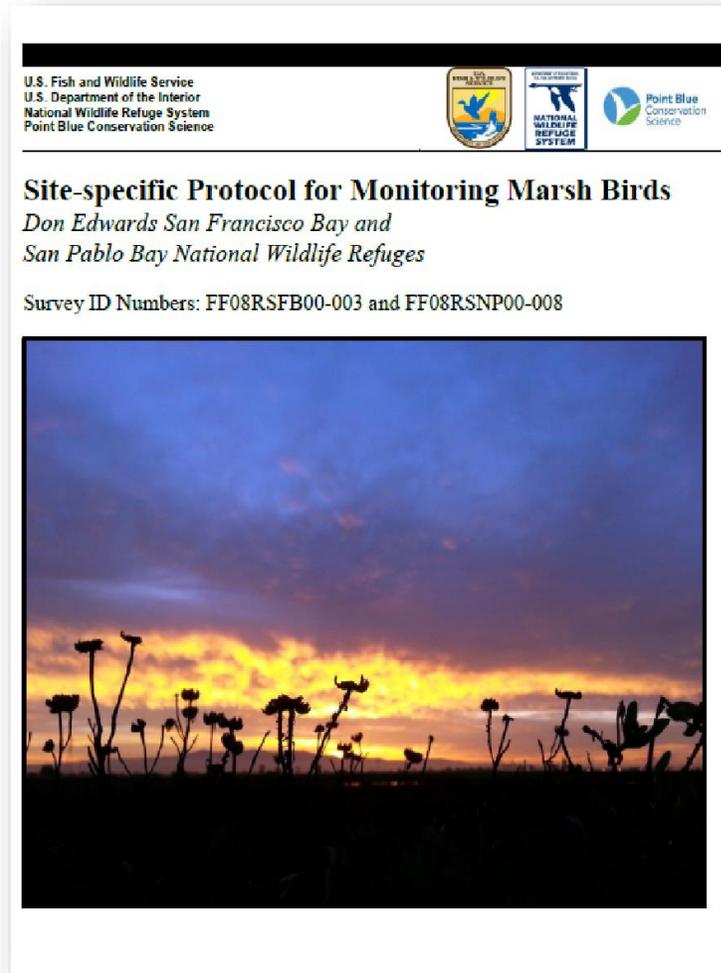


## Multi-partner Effort



# DEVELOPING A STANDARD PROTOCOL

- North American Marsh Bird Protocol-SF Bay
  - 10 min broadcast point count
- Long-term dataset since 2005
- **All partner data in the AKN**





# CHOOSING PROTOCOLS (DEMONSTRATION)

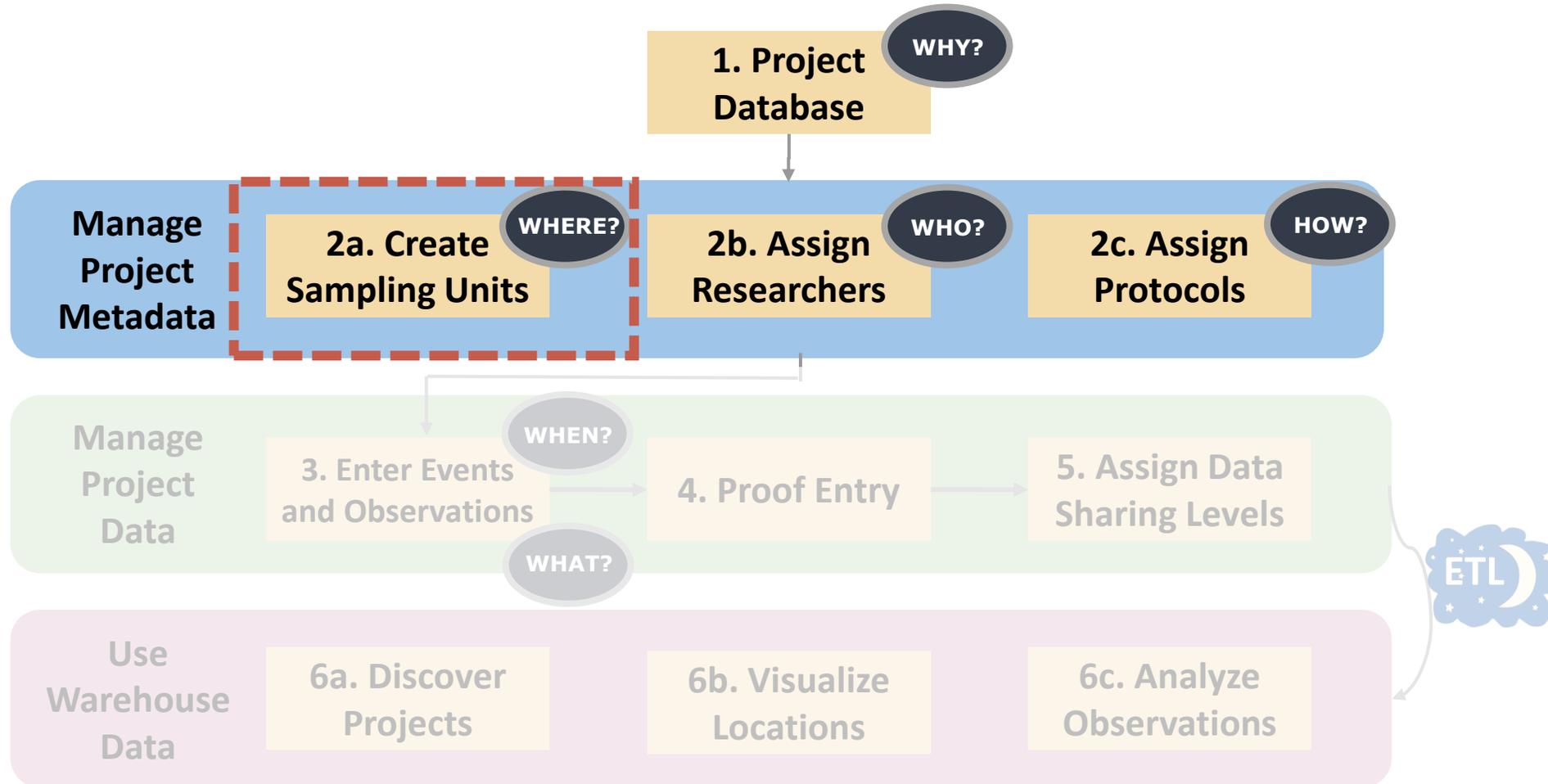
Goal: select Point Count and Site Conditions protocols that match data sheet

Tools:

- Our [data sheet](#)
- Protocol search [tool](#)
- [Project Leaders](#) for adding protocol to project



# MANAGING A PROJECT: SAMPLING UNITS





# SAMPLING UNITS

The locations where observations are collected

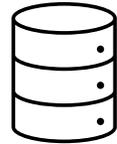
Organized into a tree (hierarchy)

Uniquely named with Project

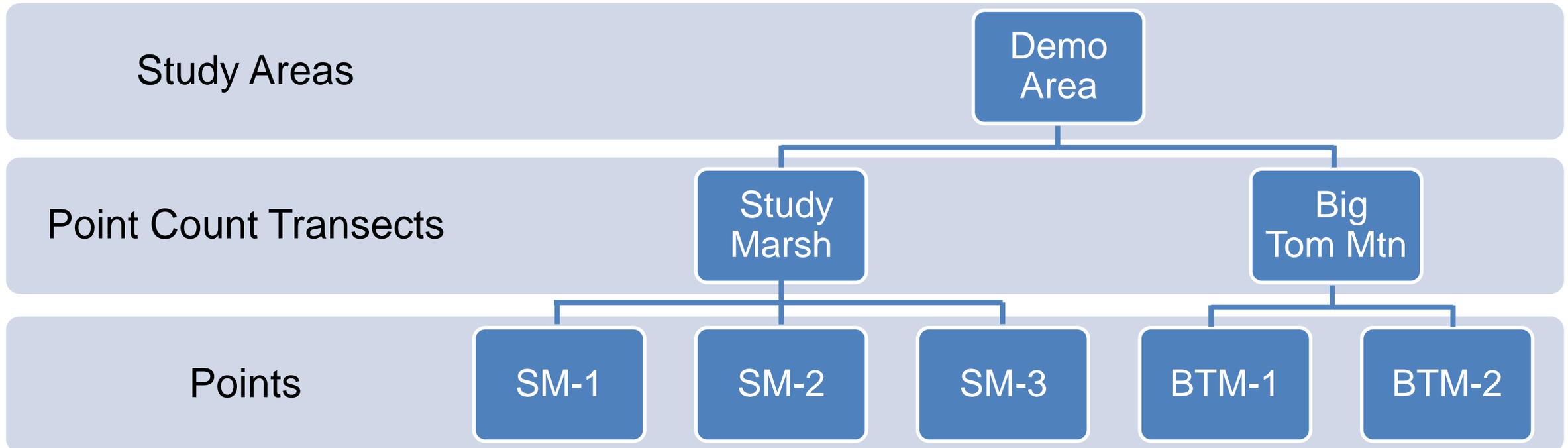
Can have Point/Line/Polygon



# SAMPLING UNIT TYPES FOR POINT COUNTS



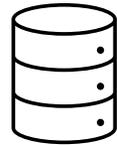
**Project:** DOD\_DEMO



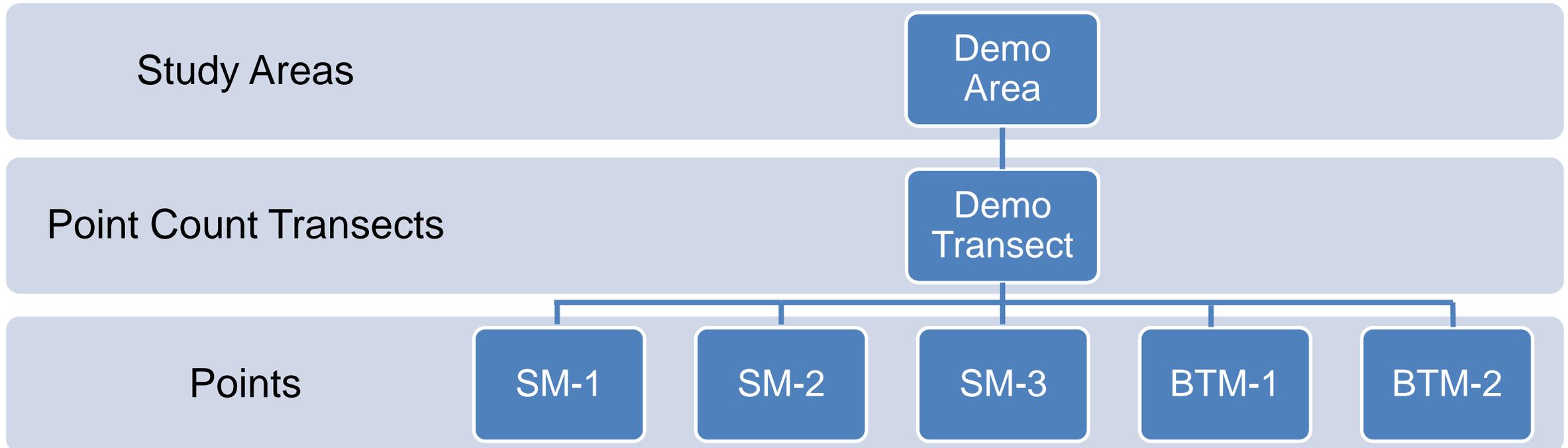
Replicates or independent points?  
 What questions are you asking?



# SAMPLING UNIT TYPES FOR POINT COUNTS



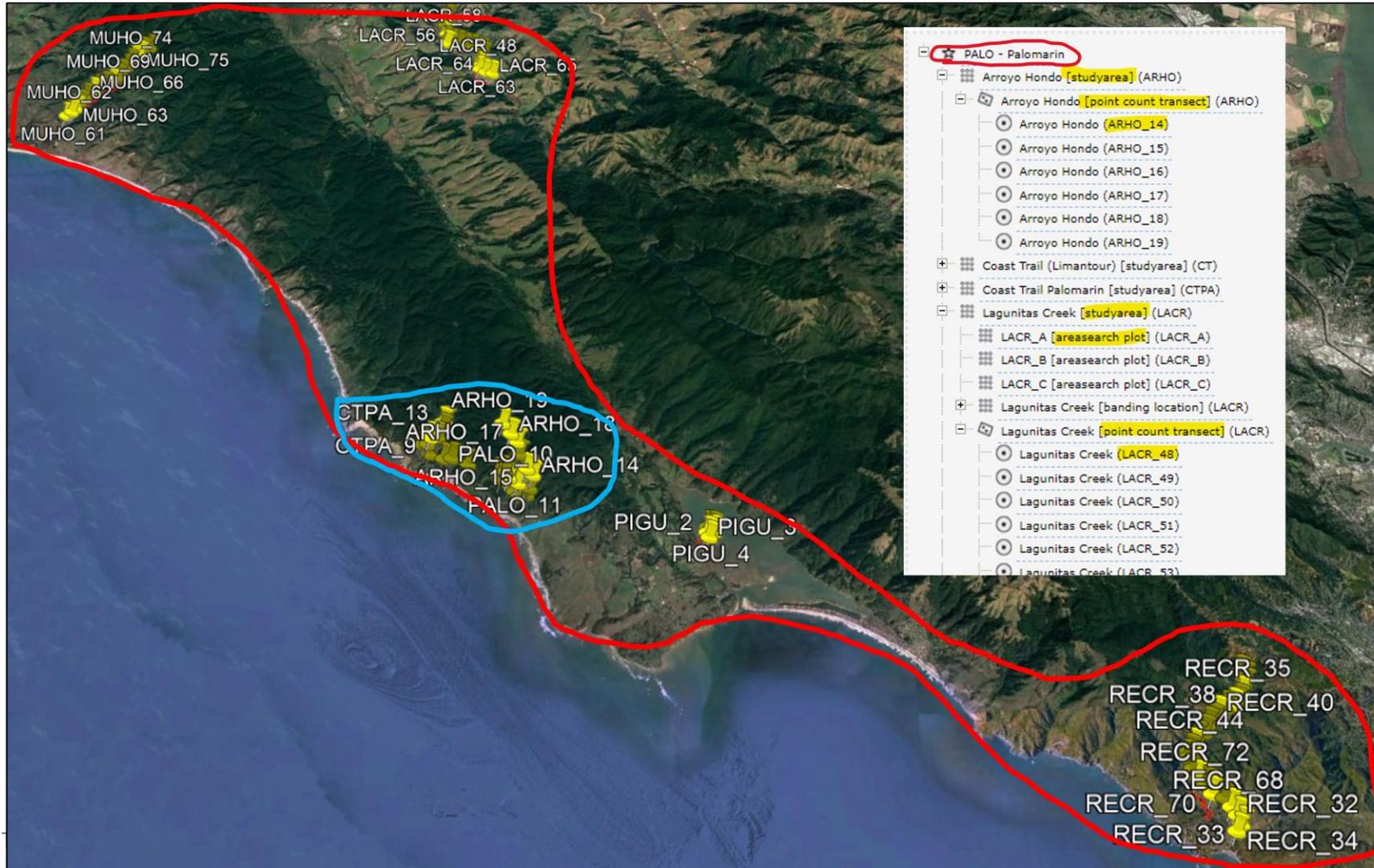
**Project:** DOD\_DEMO



Replicates or independent points?  
 What questions are you asking?



# SAMPLING UNIT TYPES FOR POINT COUNTS





# SAMPLING UNIT TYPES FOR POINT COUNTS





# BREAK (10 MINS)

---

## NEXT: SAMPLING UNITS





# MANAGING PROJECT METADATA

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## EXERCISE 1: CREATE SAMPLING UNITS



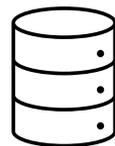


# CREATE SAMPLING UNITS

## EXERCISE 1

**Purpose:** Learn how to create a sampling unit hierarchy within a project to support a point count survey

**Goal:** Create a new point count transect with one point under your service branch's Study Area (e.g., Air Force) in the "DOD\_DEMO" Project



**Project:** DOD\_DEMO



# CREATE SAMPLING UNITS

## EXERCISE 1 *(THINKING AHEAD)*

- Consider how you might organize your data
  - Study Areas can be based on survey type rather than geography:
    - Ex- Study Area 1: multi-species point counts
    - Ex- Study Area 2: burrowing owl surveys
  - Only group points together in the same transect if they are part of the same survey (geographically grouped and collected on the same day)
  - Consider how you might name your study locations based on geographic features and numbers. (e.g., Emerald Hills 1, Alpha Maneuver Area 3)
  - Remember the hierarchy for point counts is  
**Study Area → Transect → Point(s)**
- We will be building on this exercise later! Think about how your naming strategy can scale as you add surveys and points.



# CREATE SAMPLING UNITS

## EXERCISE 1

**Reminder about Study Areas:** In the project DOD\_DEMO, your STUDY AREA is your service branch. The name is listed first, followed by the short name in parentheses.

### 1. Select sampling units from the tree below.

The screenshot shows a tree view for the project "DOD\_DEMO - DoD Demonstration Project". At the top are two buttons: "select all" and "clear all". Below the project name, there are six items, each with a checkbox and a grid icon:

- Air Force (AIRFORCE)
- Army (ARMY)
- Marine Corps (MARINES)
- National Guard (GUARD)
- Navy (NAVY)
- Other Service Branches (OTHER)

For example, this Study Area Name is Air Force, and the Study Area Short Name is AIRFORCE



# CREATE SAMPLING UNITS EXERCISE 1

[Exercise 1 instructions](#)



# EXAMPLE: FORT CAVAZOS (HOOD), TX

- Both the Adaptive and Integrative Management Team and Endangered Species Team utilizing system in one installation project
- Structured sampling units for differing survey types

### Project Protocols

open new project
FORT\_HOOD - [DOD\_ARMY] Fort Hood

add one
copy to

Protocol Id	Protocol Name	Protocol
FTHOOD_WEATHER_COWS	Weather with temp, wind, sky, and precipitation, and total number of cows	SiteConditions
FTHOOD_WEATHER_FALL_COWS	Weather with temp, wind, sky, and precipitation, and total number of cows for fall point counts	SiteConditions
VCP100Sx	Variable Circular Plot, exact distances to 100m, then >100 with AnimalSex, and bins over 100m for NOBO	PointCount
VCP_60m_4db	Variable distance point count 60 minutes with 4 distance bins <100, 100-250, 250, 500, >500	PointCount

4 rows

1. Select sampling units from the tree below.

select all
clear all

★ FORT\_HOOD - [DOD\_ARMY] Fort Hood

Grassland Point Counts 2016-2018 (GRASSLAND)

Monitoring of Owls and Nightjars (MOON)

Northern Bobwhite Point Counts (NOBO\_PC)



# LONG NAME VS SHORT NAME: WHAT'S THE DIFFERENCE?

- Every sampling unit has a **Short Name** and a **Long Name**
  - Short Names and Long Names can be the same
- **Short Name** + **Long Name** combinations must be unique within an AKN Project
  - e.g., transect names and point count names **CAN NOT BE THE SAME**
- **Short Names** will be seen throughout the tools and in your data download
  - It is the shorthand name for each sampling unit
- **Short Names** are limited to 12 characters
- **Long Names** can be longer and more descriptive, if useful



# LONG NAME VS SHORT NAME: WHAT'S THE DIFFERENCE?

**EXAMPLES** (any of these would be correct):

Point Count Transect Long Name	Point Count Transect Short Name
East Training Area	ETA
East Training Area 1	ETA-1
ETA	ETA
ETA-1	ETA-1



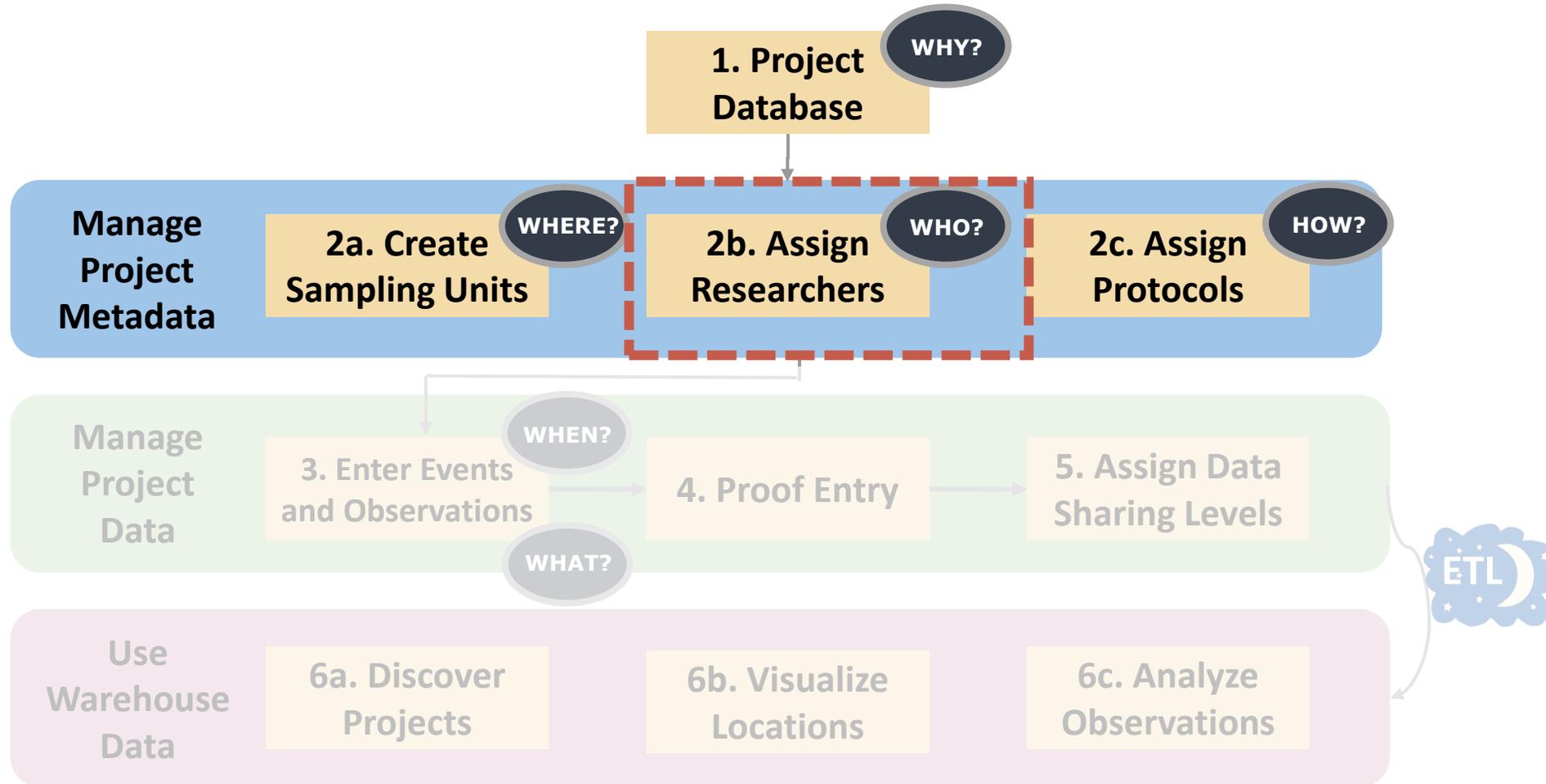
# DOWNLOAD SAMPLING UNITS DEMONSTRATION

Download sampling units:

- [Project Leaders](#) for download sampling unit locations to GPS, GIS and more



# MANAGING A PROJECT: RESEARCHERS





# RESEARCHERS

People identified in a Project for getting access and/or who made observations

Created by user registration (for active users) or manual entry (for historical data)



# RESEARCHER TYPES

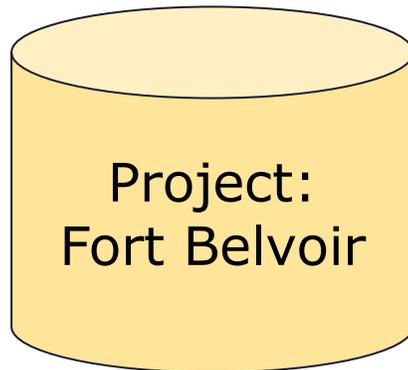
Project Leader: the data owner, has full control over data, metadata, and who gets Project access

Biologist: can enter and review data in the Project

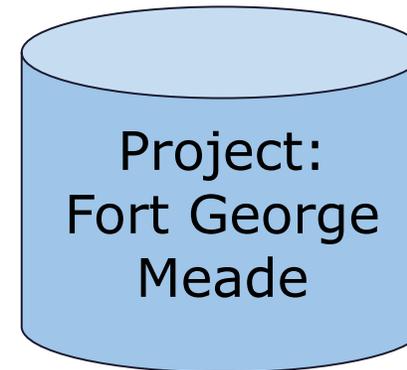


# RESEARCHERS & PROJECT ACCESS

## Access Project assigned by Project Leader



Jane: Project Leader  
Mike: Biologist  
**Pat**: Biologist



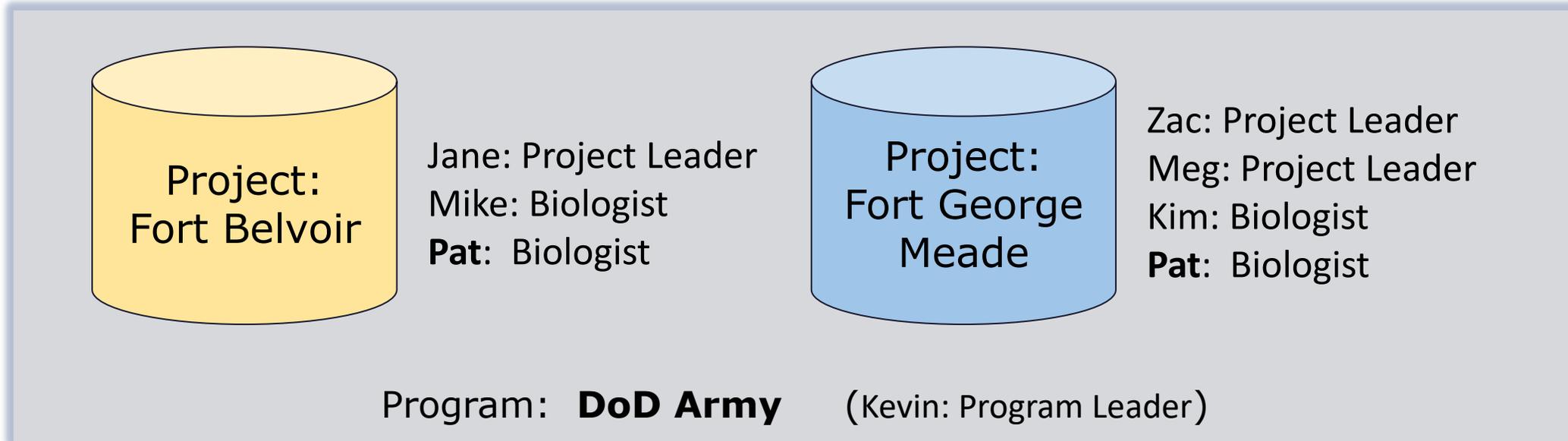
Zac: Project Leader  
Meg: Project Leader  
Kim: Biologist  
**Pat**: Biologist



# RESEARCHERS & PROJECT ACCESS

DoD will also have a Program Leader

(managed by Point Blue staff w/ guidance from DoD leadership)



2b. Assign  
Researchers

WHO?



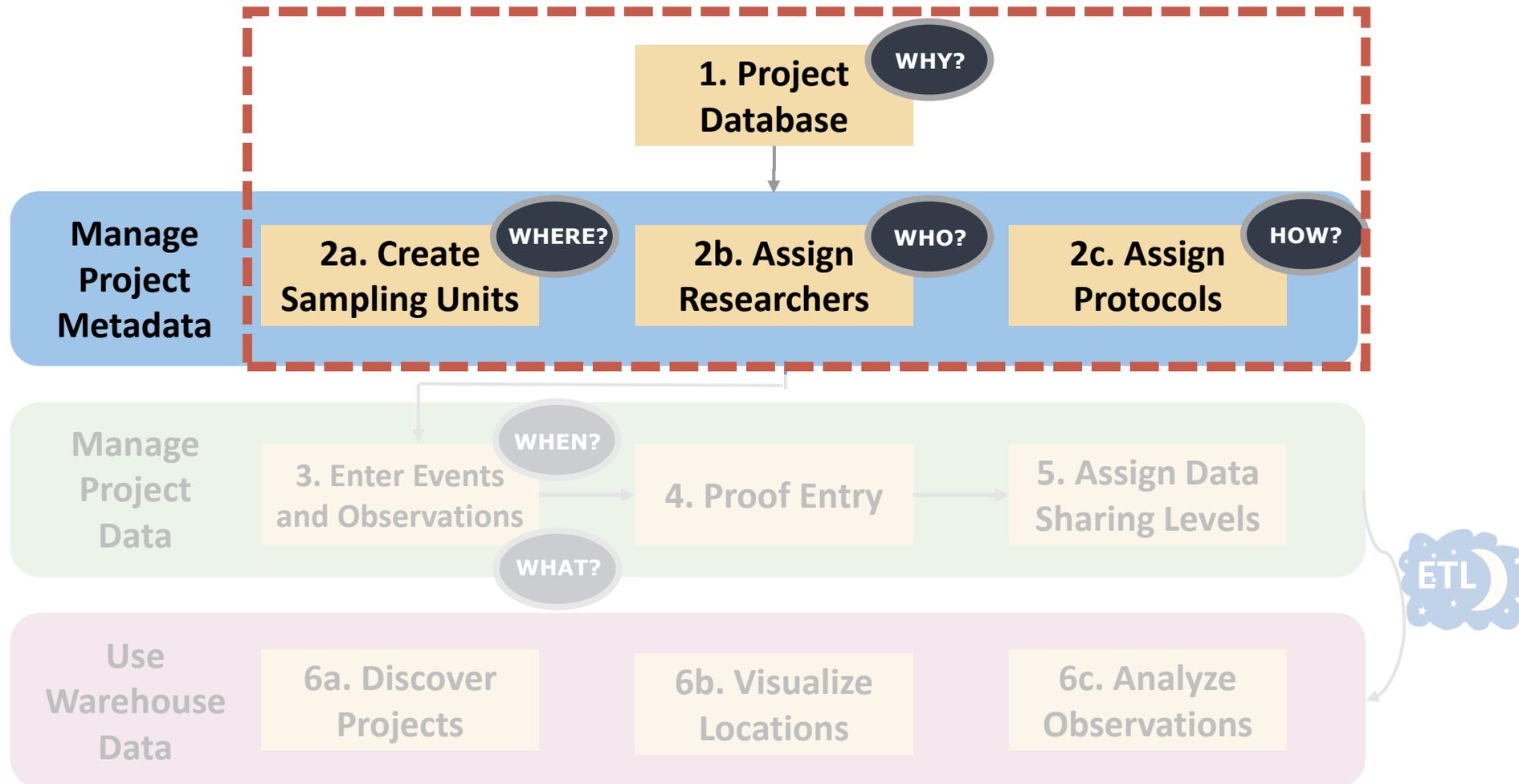
# ADDING RESEARCHERS DEMONSTRATION

Tools:

- [Biologists](#) for adding researchers to Project



# QUESTIONS ON MANAGING PROJECT METADATA?



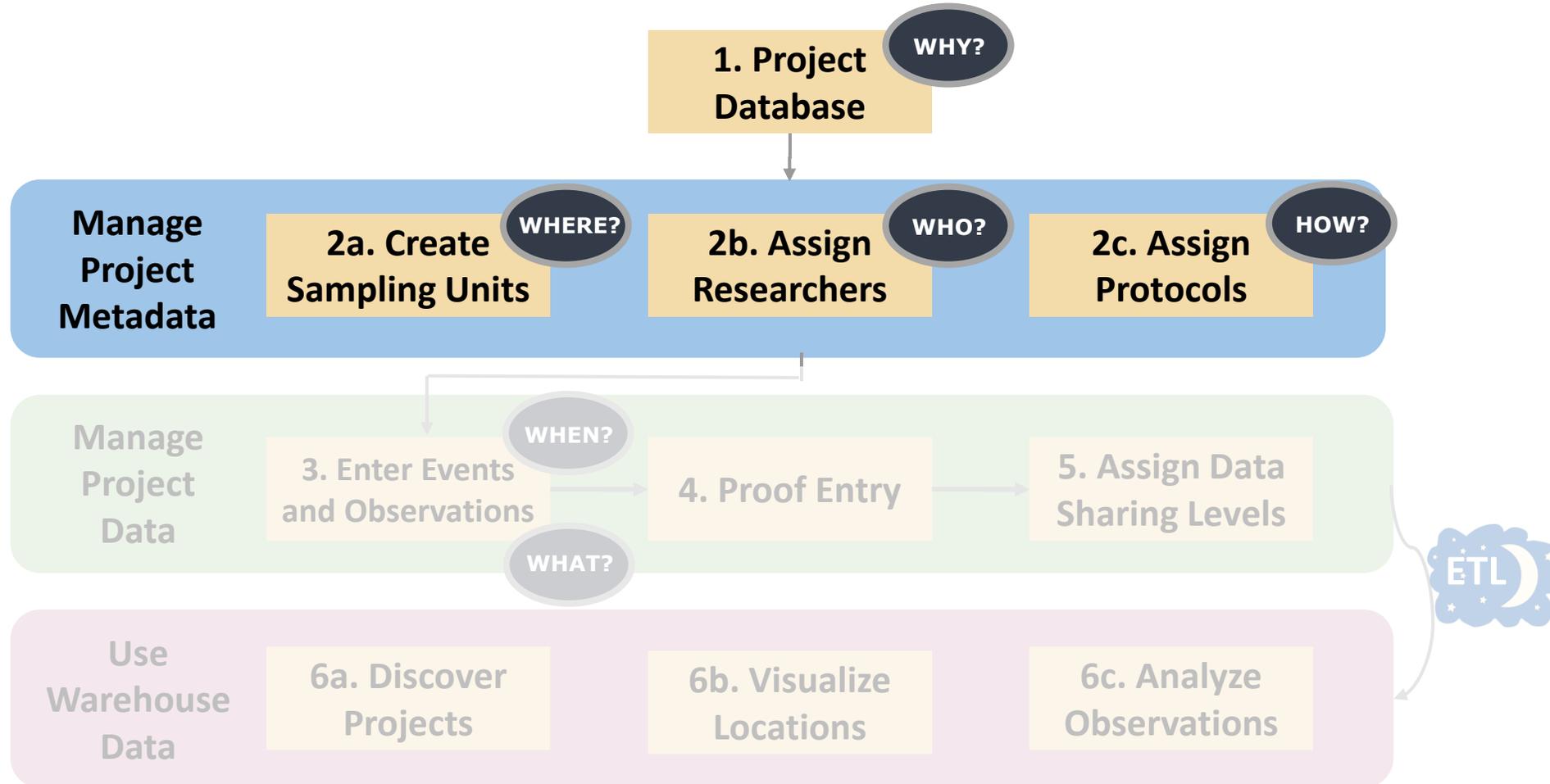


# MANAGING OBSERVATION DATA



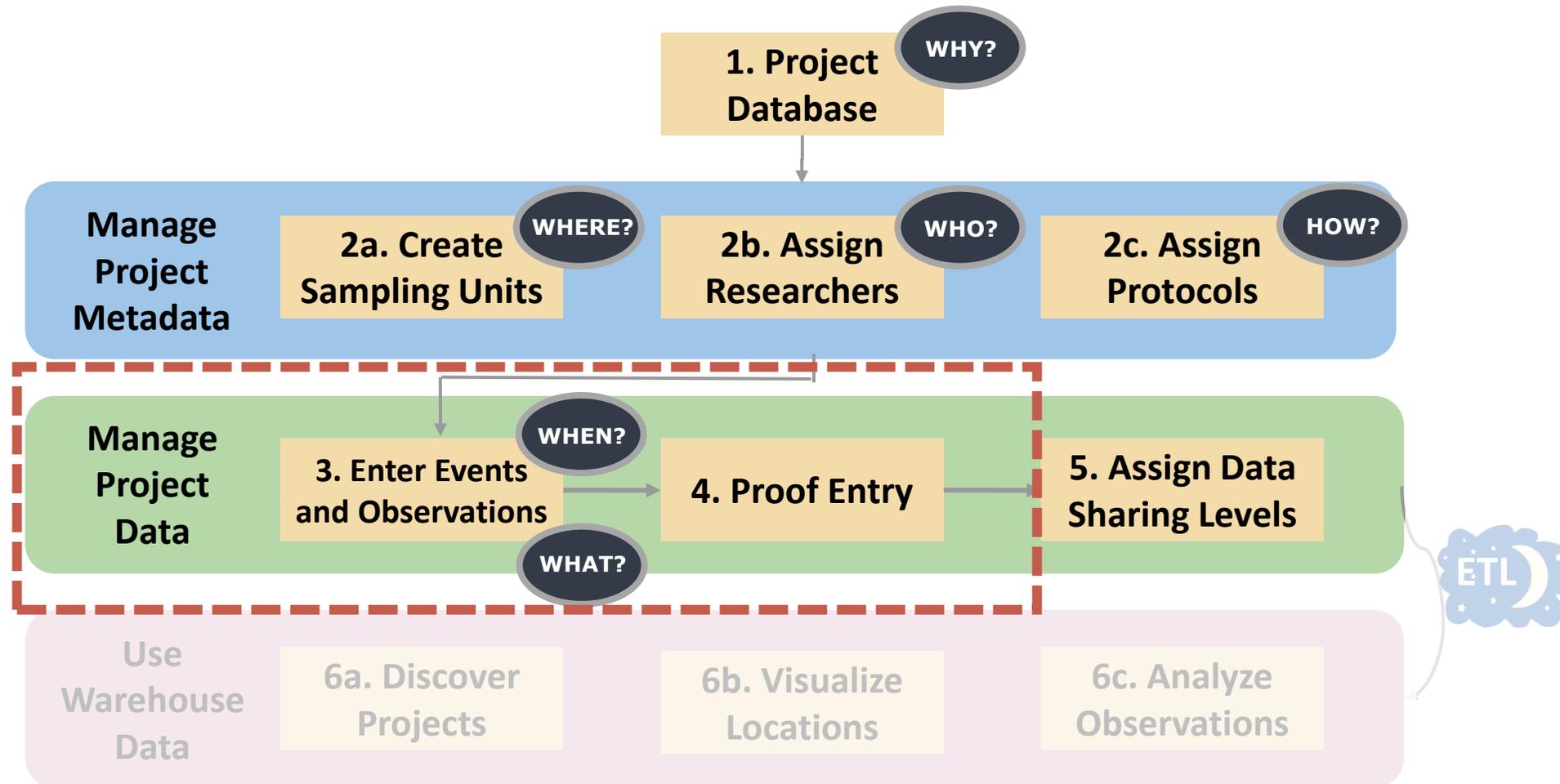


# WORKFLOW FOR MANAGING A PROJECT





# MANAGING A PROJECT: OBSERVATION DATA





# SAMPLING EVENTS AND OBSERVATIONS

**Event:** survey at a Sampling Unit using a Protocol by Researcher at a specific date and time

**Observation:** one or more individuals of a single species detected during an Event

3. Enter Events  
and Observations

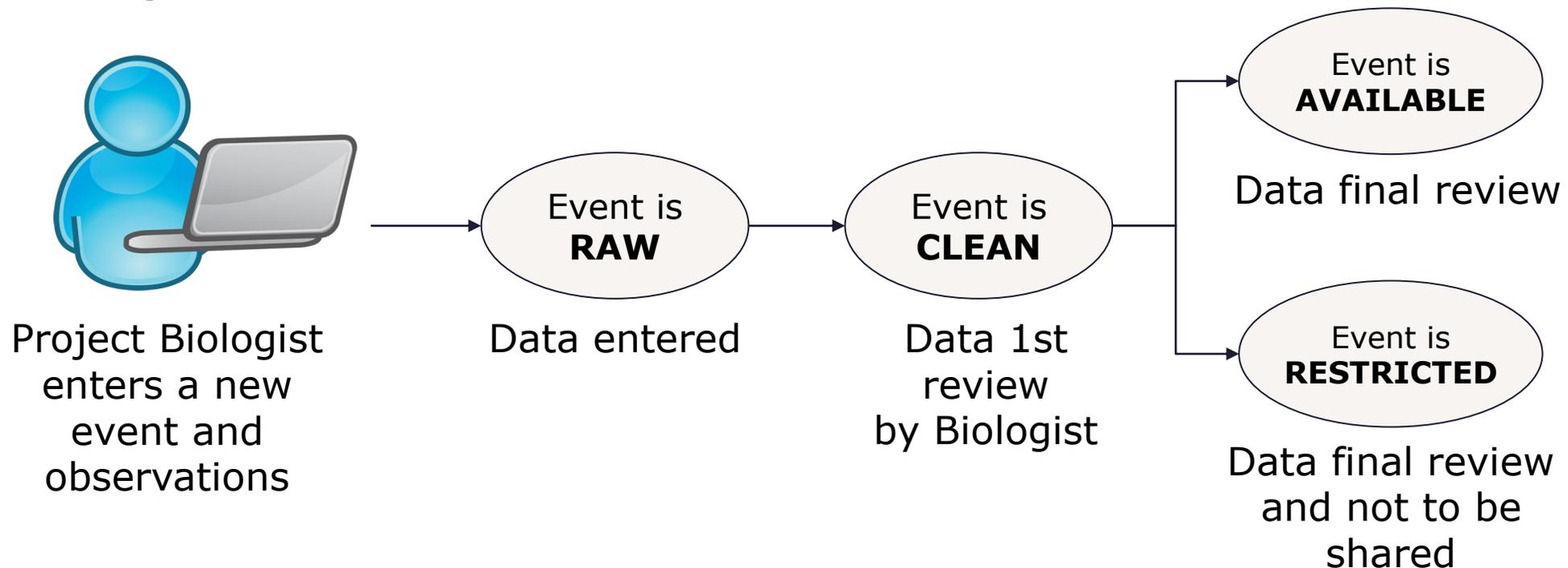
WHEN?

WHAT?



# REVIEW LEVELS FOR EACH EVENT

Steps to enter and review data in preparation for sharing





# MANAGING OBSERVATION DATA

---

## EXERCISE 2: ENTER & PROOF POINT COUNT EVENT



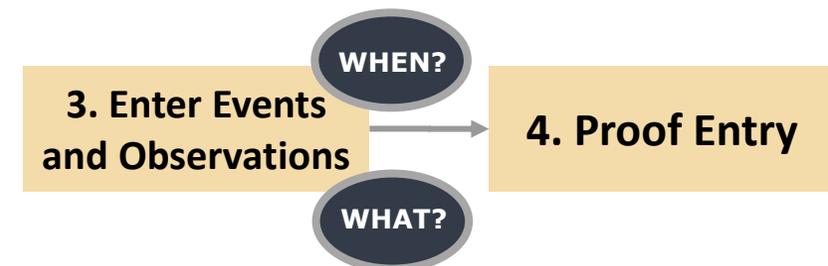


# ENTER & PROOF POINT COUNT EVENT

## EXERCISE 2

**Purpose:** Learn how to enter survey data and site conditions in Biologists and proof those data

**Goal:** Enter the sample data for the sampling unit you created in Exercise 1, save it, and proof those data

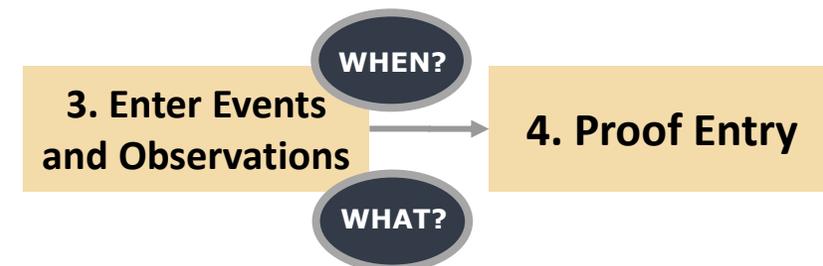




# ENTER & PROOF POINT COUNT EVENT

## EXERCISE 2 *(THINKING AHEAD)*

- Data marked Clean through proofing will load into the data warehouse, making it available to analysis tools
- As Project Leader, you will:
  - Grant users who collect data access to Biologists to enter and proof their own data
  - Add protocols to the project and manage sampling units



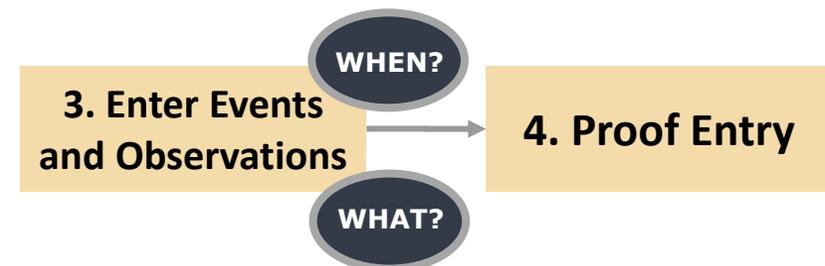


# ENTER & PROOF POINT COUNT EVENT

## EXERCISE 2

### Exercise 2 instructions

- It is okay not to follow data sheet exactly





# DOWNLOAD POINT COUNT OBSERVATION DATA FROM PROJECT DEMONSTRATION

## Tools:

- [Project Leaders](#) for download observations from our Project



# CASE STUDY:

## USFS REGION 8, MULTI-PARTNER

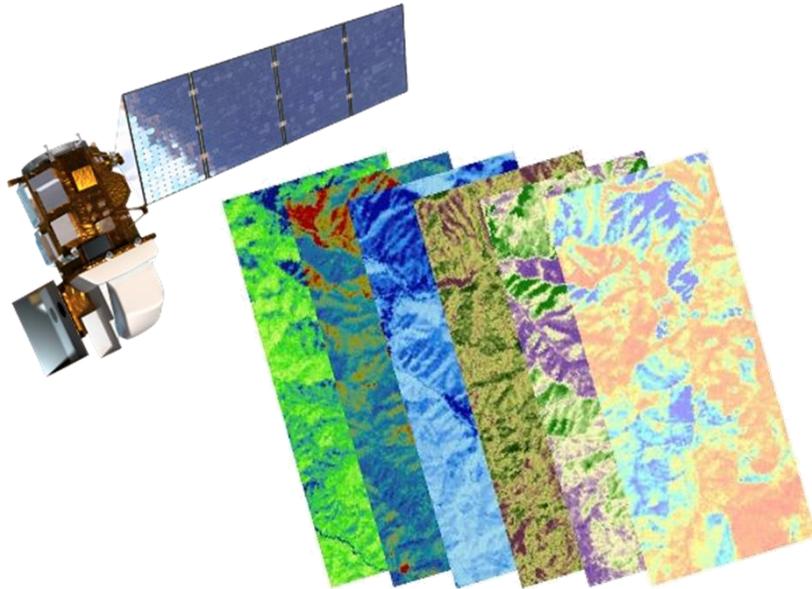


- 30-year dataset at-risk -- 13,664 sampling locations
- 1,121,654 point count observation records saved (!!)
- 364,574 site condition records archive
- Innovated -- XML scripts to capture all data field
- Data has been uploaded and a data entry system has been created



# CASE STUDY: SPECIES-CENTERED HABITAT MODELING

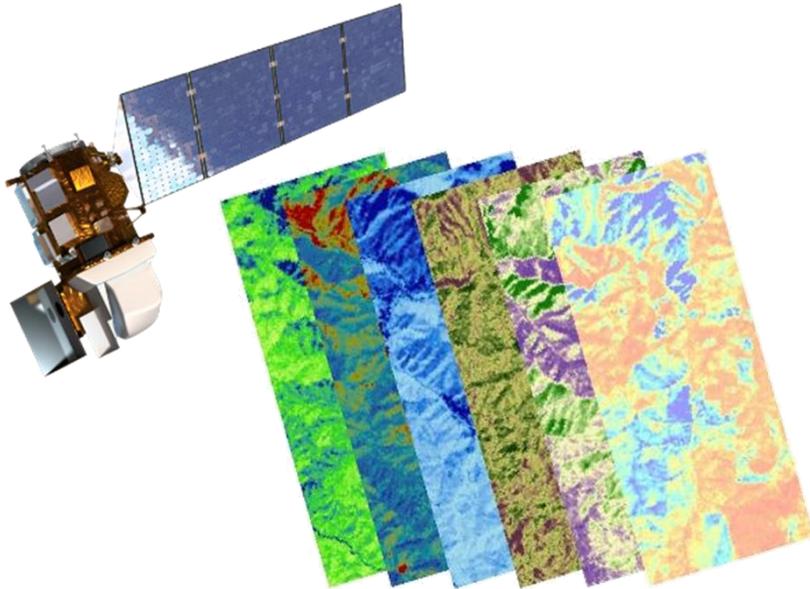
(Shirley et al 2013, Betts et al 2014, Halstead et al 2019)





# CASE STUDY: SPECIES-CENTERED HABITAT MODELING

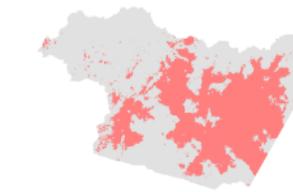
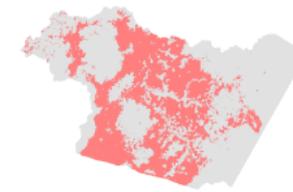
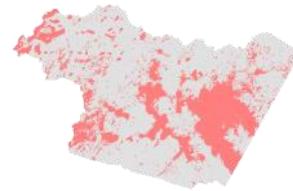
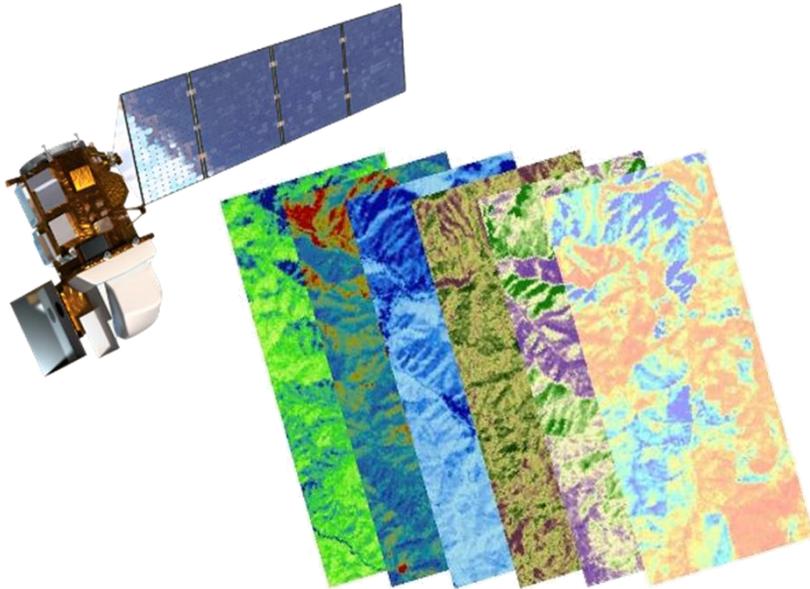
(Shirley et al 2013, Betts et al 2014, Halstead et al 2019)





# CASE STUDY: SPECIES-CENTERED HABITAT MODELING

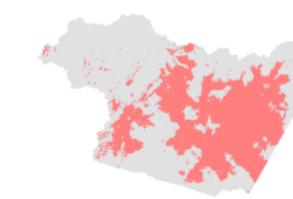
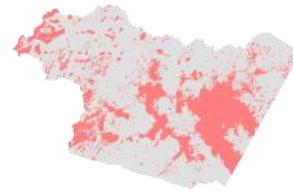
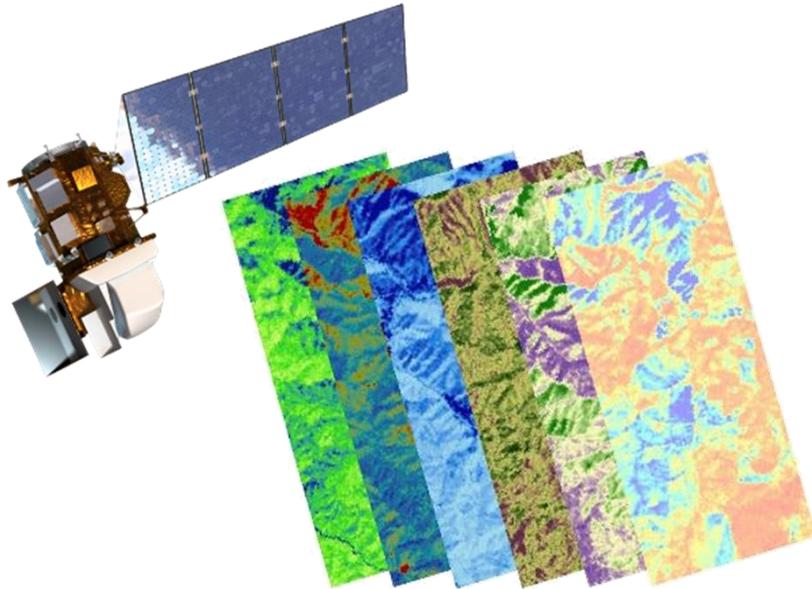
(Shirley et al 2013, Betts et al 2014, Halstead et al 2019)





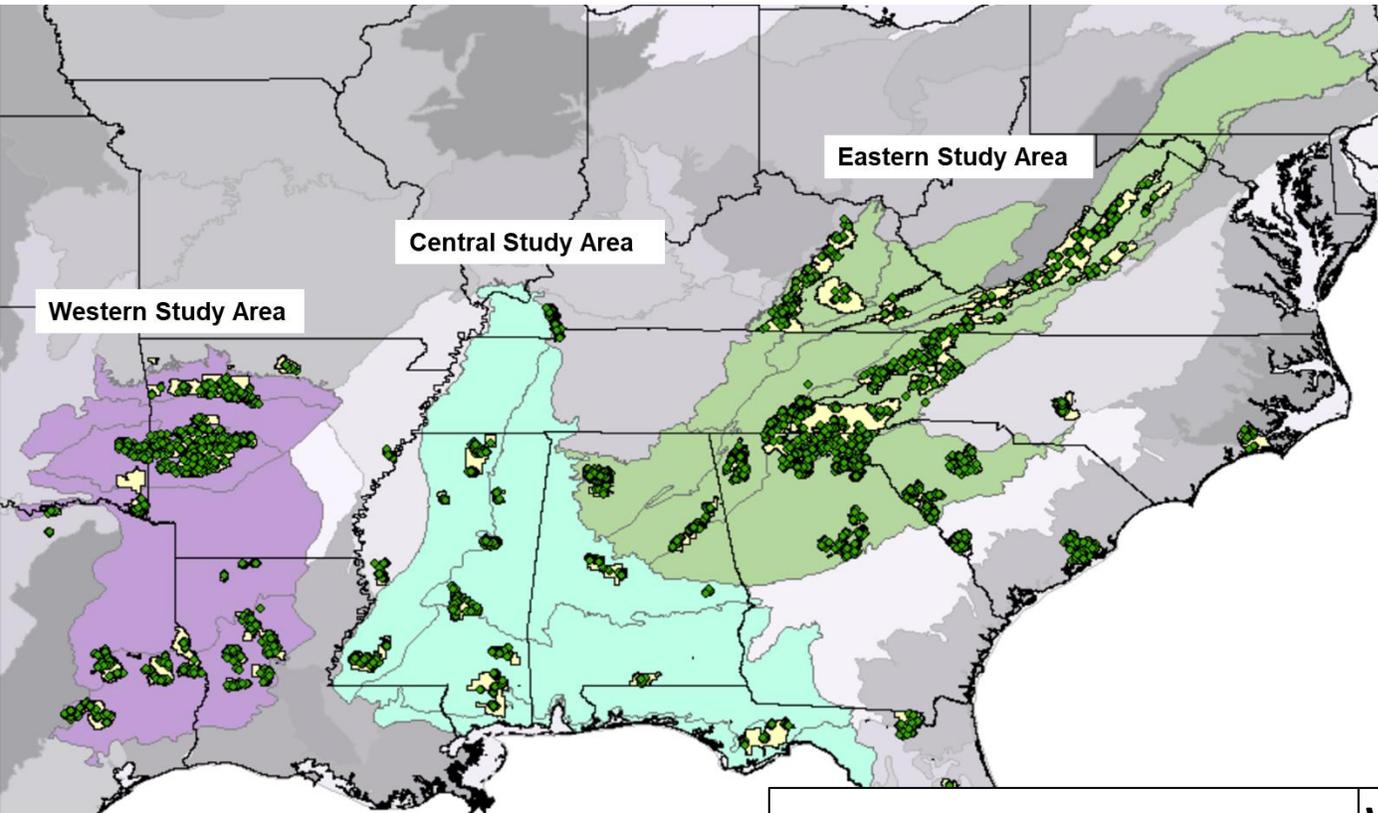
# CASE STUDY: SPECIES-CENTERED HABITAT MODELING

(Shirley et al 2013, Betts et al 2014, Halstead et al 2019)



## Compared to Land Cover Derived Models:

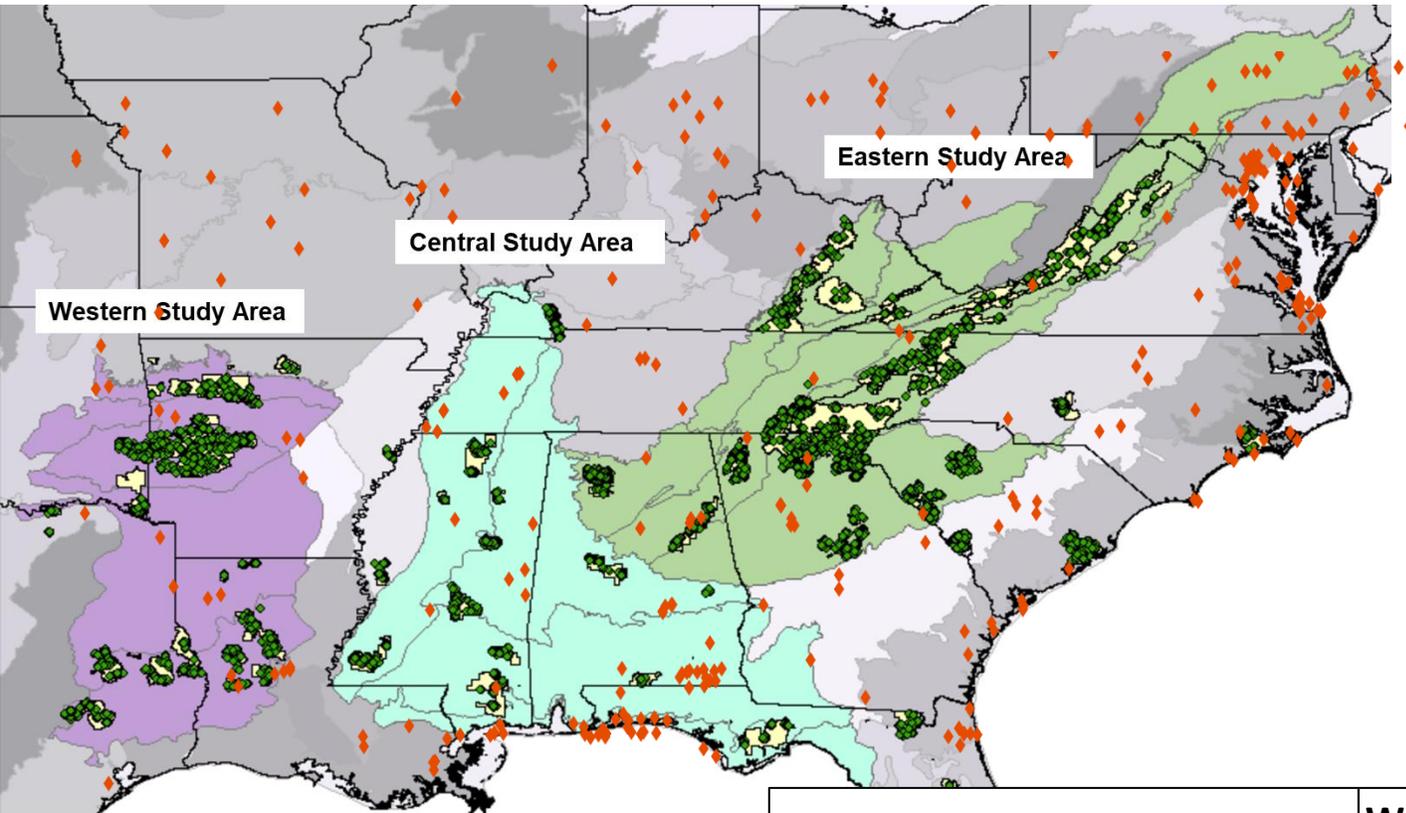
- High prediction ability
- Wider temporal range
- Avoid uncertainty:
  - misclassification of habitats
  - omission of fine-scale features
  - subtle changes in vegetation



# CASE STUDY: SPECIES-CENTERED HABITAT MODELING

(Shirley et al 2013, Betts et al 2014, Halstead et al 2019)

	Western Study Area	Central Study Area	Eastern Study Area
<b>Number of final survey points</b>	963	1068	3181
<b>Number of species modeled</b>	48	52	66
<b>Number of species <math>\geq</math> AUC 0.55</b>	35	36	51
<b>Mean AUC for final models</b>	0.628	0.630	0.628
<b>St. dev. AUC for final models</b>	0.054	0.073	0.067



**DoD Installation**

# CASE STUDY: SPECIES-CENTERED HABITAT MODELING

(Shirley et al 2013, Betts et al 2014, Halstead et al 2019)

	Western Study Area	Central Study Area	Eastern Study Area
Number of final survey points	963	1068	3181
Number of species modeled	48	52	66
Number of species $\geq$ AUC 0.55	35	36	51
Mean AUC for final models	0.628	0.630	0.628
St. dev. AUC for final models	0.054	0.073	0.067



# BREAK (10 MINS)

---

## NEXT: SAMPLING UNITS





# BULK UPLOADING METADATA & OBSERVATION DATA INTO A PROJECT





# BULK LOADING DATA

Loading spreadsheet data into the Project Database for loading Researchers, Sampling Units, and Observations

Observations: Uses definition file to describe how your spreadsheet maps into AKN



# BATCH PROCESSING

## Bulk Uploader v2 - Beta

Follow the steps below to load data in bulk into your project.

First, select the Project you want to bulk load into

FORT\_HOOD - (IDOD\_ARMY) Fort Hood

Next, select the Tool you want to use

Each tool independently does a task that helps you bulk load data into your project. Many of the tools process data in Batch, processing data in batches. Batch results can be found in the Batches tool.

[Add Researchers](#)

[Add Sampling Units](#)

[Add Observations](#)

[Add Protocol](#)

[Batches](#)

Results:

Batches for project FORT\_HOOD

The table is showing all batches for this project. Click on a row to get the batch result details when Status is success or error.

[Save as CSV](#) [Refresh list](#)

ID	Utility	Status	Status Detail	Submitted	Created	Duration	Actions
455	AddSamplingUnits	success	batch completed successfully	2021-08-10 20:07:48	2021-08-10 20:07:48	0:01	<a href="#">Refresh</a> <a href="#">Download</a>
454	AddSamplingUnits	error	batch completed with errors	2021-08-10 20:06:33	2021-08-10 20:06:33	0:00	<a href="#">Refresh</a> <a href="#">Download</a>
453	AddObservations	success	batch completed successfully	2021-08-09 19:25:10	2021-08-09 19:25:10	1:03	<a href="#">Refresh</a> <a href="#">Download</a>
452	AddObservations	error	batch completed with errors	2021-08-09 19:24:41	2021-08-09 19:24:41	0:04	<a href="#">Refresh</a> <a href="#">Download</a>
451	AddObservations	error	batch completed with errors	2021-08-09 19:23:19	2021-08-09 19:23:19	0:09	<a href="#">Refresh</a> <a href="#">Download</a>
450	AddObservations	error	batch completed with errors	2021-08-09 19:18:37	2021-08-09 19:18:37	0:04	<a href="#">Refresh</a> <a href="#">Download</a>
449	AddObservations	error	batch completed with errors	2021-08-09 19:03:35	2021-08-09 19:03:35	0:03	<a href="#">Refresh</a> <a href="#">Download</a>
448	AddObservations	error	batch completed with errors	2021-08-09 19:00:23	2021-08-09 19:00:23	0:00	<a href="#">Refresh</a> <a href="#">Download</a>

Results:

Errors:

Error line 744: Value not allowed for weatherwinddirectioncardinal: East Northeast  
 Error line 1055: The count field is required.

Add Observations Summary: CSV Rows Reviewed: 1054

Batch ID 451  
 AddObservations  
 plimptonc@gmail.com

Results:

Add Observations Summary: CSV Rows Reviewed: 1054, New PointCount Events created: 217, New PointCount Observations created: 1045, New PointCount SiteConditionEvents created: 217, New PointCount SiteConditionProperties created: 1207



# BULK UPLOADING PROJECT DATA

---

## EXERCISE 3: BULK UPLOADING SAMPLING UNITS





# BULK UPLOADING SAMPLING UNITS

## EXERCISE 3

**Purpose:** Build on exercise 1 using the Bulk Upload tool to create multiple sampling units at once for a given survey type

**Goal:** Bulk upload a new point onto your existing transect and add a new transect with three points



# BULK UPLOADING SAMPLING UNITS

## EXERCISE 3 *(THINKING AHEAD)*

- The Bulk Uploader tool is useful when you have many sampling units to add to your project.
- The Bulk Uploader tool can add sampling units to an existing hierarchy or create an entirely new hierarchy (*remember our discussion thinking about Study Areas!*)
- The Bulk Uploader tool can also add Researchers or Observation data to your project
  - Note: we will not be covering those use cases today but can assist in office hours



# BULK UPLOADING SAMPLING UNITS

## EXERCISE 3

### Exercise 3 instructions

- okay not to follow instructions exactly

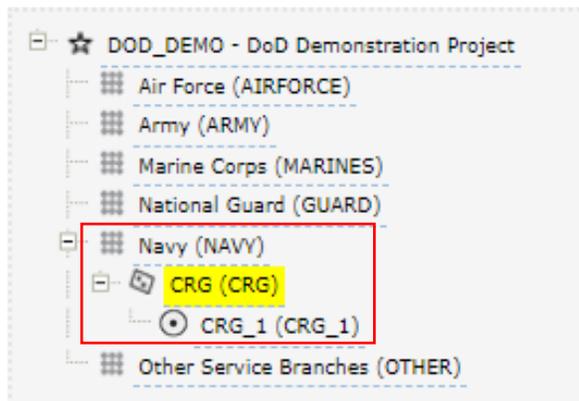


# BULK UPLOADING SAMPLING UNITS

## EXERCISE 3

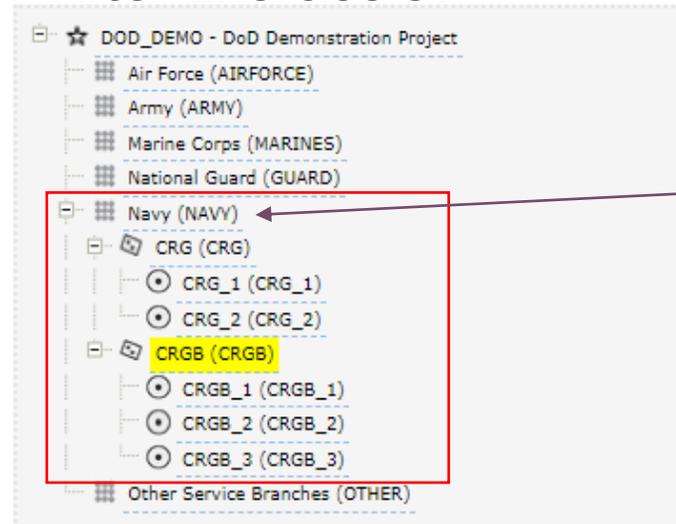
**Tip:** Go back to Project Leader (Sampling Units-> Create and Manage) and take a look at the sampling unit you already created in Exercise 1. In this exercise, we'll create a new point under the existing transect, plus add a new transect with new points.

After Exercise 1:



Study Area: Navy  
 Point Count Transect: CRG  
 Point Count Point: CRG\_1

After Exercise 3:



Make sure you are using the same Study Area (your service branch) for Exercise 3!

In this example, the Study Area Name is Navy and the Study Area Short Name is NAVY

2a. Create  
 Sampling Units

WHERE?



# LONG NAME VS SHORT NAME: WHAT'S THE DIFFERENCE?

- Every sampling unit has a **Short Name** and a **Long Name**
  - Short Names and Long Names can be the same
- **Short Name** + **Long Name** combinations must be unique within an AKN Project
  - e.g., transect names and point count names **CAN NOT BE THE SAME**
- **Short Names** will be seen throughout the tools and in your data download
  - It is the shorthand name for each sampling unit
- **Short Names** are limited to 12 characters
- **Long Names** can be longer and more descriptive, if useful



# LONG NAME VS SHORT NAME: WHAT'S THE DIFFERENCE?

**EXAMPLES** (any of these would be correct):

Point Count Transect Long Name	Point Count Transect Short Name
East Training Area	ETA
East Training Area 1	ETA-1
ETA	ETA
ETA-1	ETA-1



# EXAMPLE: FORT CARSON, CO

**FORT\_CARSON - [DOD\_ARMY] Fort Carson Point Counts**
open new project

Click on the Sampling Unit or Project you want to select (it will highlight yellow). Open any part of the tree to get to more detail. Hover on a tree node and the tooltip will tell you what type of feature it is.

★ FORT\_CARSON - [DOD\_ARMY] Fort Carson Point Counts

- [-] Fort Carson Marshbird (FC\_MB)
  - [-] Cottonwood Spring (MB\_COTTON)
  - [-] Frog Pond (MB\_FROG)
  - [-] Haymes Reservoir (MB\_HAYMES)
  - [-] Infantry Creek East (MB\_INFEAST)
  - [-] Infantry Creek West (MB\_INFWEST)
  - [-] K Ditch (MB\_KDITCH)
  - [-] Lytle Spring (MB\_LYTLT)
  - [-] Middle School Area (MB\_MIDSCHOOL)
  - [-] MSR 1 / Range 113 (MB\_RG113)
  - [-] North B Ditch (MB\_BDITCH)
  - [-] Northside Reservoir (MB\_NORTHSIDE)
  - [-] Range 04 (MB\_RG04)
  - [-] Range 08 (MB\_RG08)
  - [-] Training Area 05 / Rock Creek (MB\_TA05)
  - [-] Training Area 08 / AHA (MB\_TA08)
  - [-] Womack Reservoir (MB\_WOMACK)
- [-] Fort Carson Point Count (CARSON\_PC)
  - [-] Bird Farm (Grassland) (GB\_BF)
  - [-] TA 08 (Grassland) (GB\_TA08)
  - [-] TA 10 (Grassland) (GB\_TA10)
  - [-] TA 15 (Grassland) (GB\_TA15)
  - [-] TA 24 (Grassland) (GB\_TA24)
  - [-] TA 28 (PJ) (PJ\_TA28)
  - [-] TA 29 (PJ) (PJ\_TA29)
  - [-] TA 30 (Grassland) (GB\_TA30)
  - [-] TA 30 (PJ) (PJ\_TA30)
  - [-] TA 31 (Grassland) (GB\_TA31)

**Add Sampling Units under the highlighted feature with:**

online form
GPS-U file
Waypoint Plus file

KML file
SHP file

**Update Sampling Unit geometry under the highlighted feature using:**

GPS-U file
Waypoint Plus file
KML file

SHP file

**Manage the highlighted feature:**

edit
move in hierarchy
delete

[Give Us Your Feedback](#)

[Preferences](#)

**How Do I...**

- [... create a new Transect of points from a GPS-U file?](#)
- [... handle the message "Error on Add: Duplicate entry ..."?](#)
- [... update points in a transect using a GPS-U file??](#)

**Project Protocols**

open new project
**FORT\_CARSON - [DOD\_ARMY] Fort Carson Point Counts**

add one

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

Protocol Id ?	Protocol Name ?	Protocol Type ?	
ARSE_PJJA	Area search survey standard protocol from the PJJA Working Group	AreaSearch	✗
BL_S_V_BI	BLRA,SORA,VIRA,BLTA	SecretiveMarshBirdCount	✗
IMBCR_VRPC	Bird Conservancy of the Rockies IMBCR 6 min count	PointCount	✗
SiteConditions_FOR	Site conditions temperature, wind, sky, noise	SiteConditions	✗
SiteConditions_PJJA	Site Conditions PJJA protocol developed by the PJJA Working Group	SiteConditions	✗
SPCH_LOCATION	Species checklist with coordinates	AreaSearch	✗
VRPC__10min_2TB	Variable radius point count with detection cues lasting 10 minutes with 2 timebin and sex	PointCount	✗



# OFFICE HOURS

Discuss bulk loading and other issues regarding your observation data

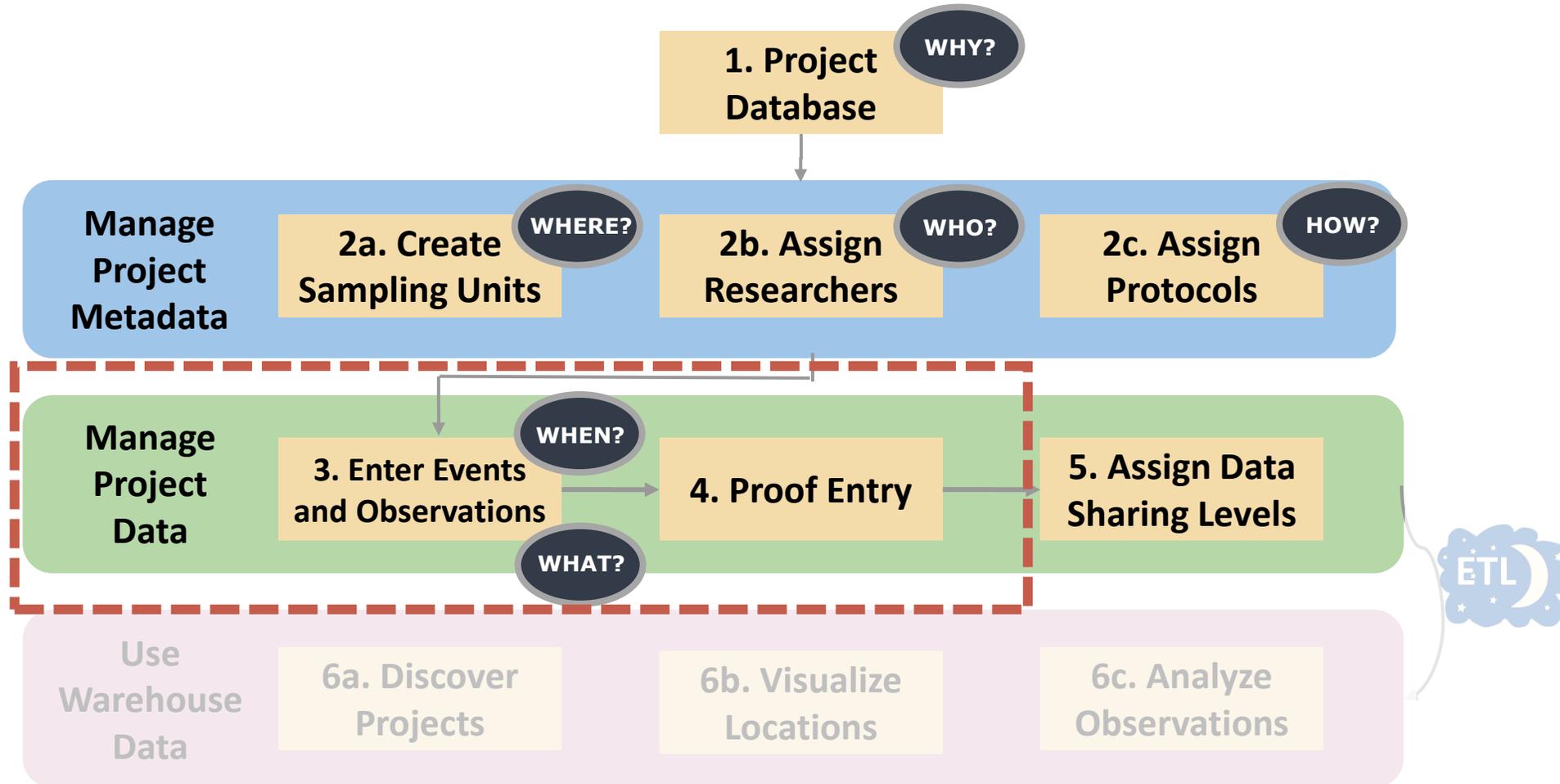
Sign up **HERE**:

<https://www.dodakn.org/office-hours-booking-page/>





# ANY QUESTIONS ON MANAGING PROJECT DATA?





# PLUS/DELTA

---

# DAY 1 WRAP-UP





# END OF DAY 1





**AVIAN**  
KNOWLEDGE NETWORK

[pointblue.github.io/dod\\_workshop](https://pointblue.github.io/dod_workshop)



Photo: Laysan Albatross, PMRF Barking Sands, Kauai, HI Osterlund

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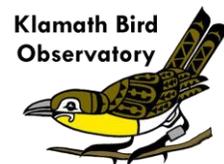
# DoD AND THE AKN: WHO, WHAT, WHERE, WHEN , WHY, AND HOW

*DoD Air Force Training*  
*December 12-13, 2023*  
Virtual

**Sam Veloz**  
**Dianne Miller**

**Elizabeth Neipert**  
**Zoe Duran**

**John Alexander**  
**Caitlyn Gillespie**



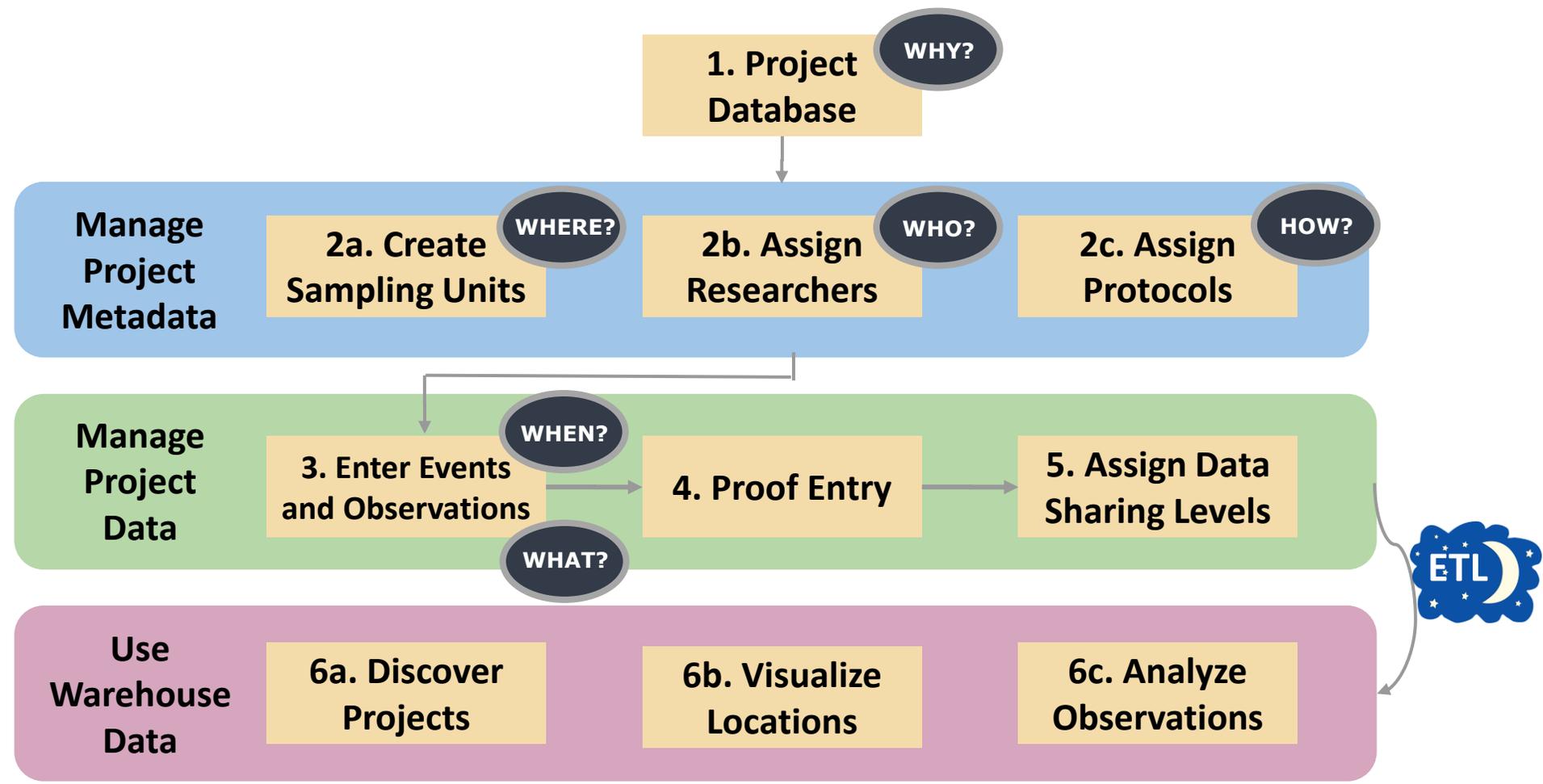


# AKN WAREHOUSE DATA 101



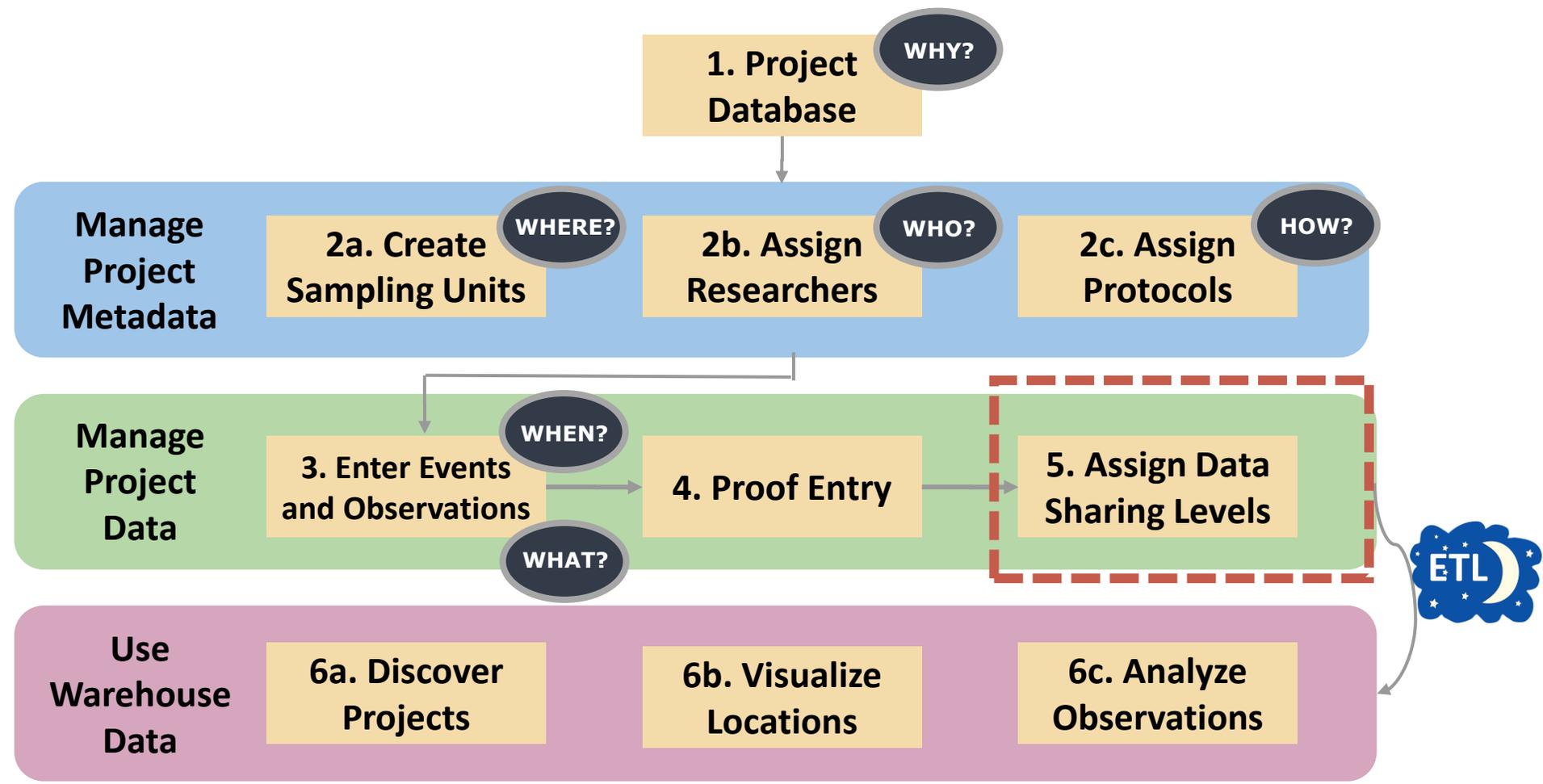


# WORKFLOW FOR MANAGING A PROJECT





# MANAGING A PROJECT: DATA SHARING LEVELS





# DATA SHARING LEVELS

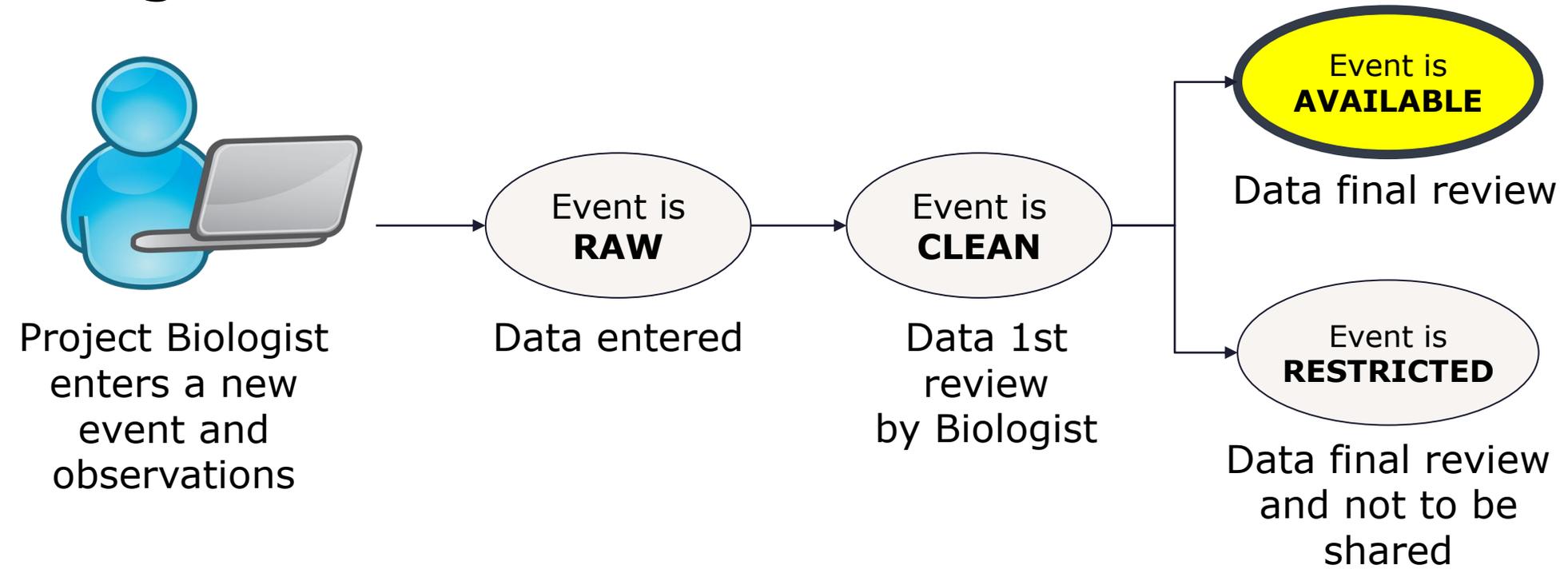
Defines how visible each observation is for querying, summarizing, visualizing, and analyzing.

Controlled by the Project Leader within each Project



# REVIEW LEVELS FOR EACH EVENT

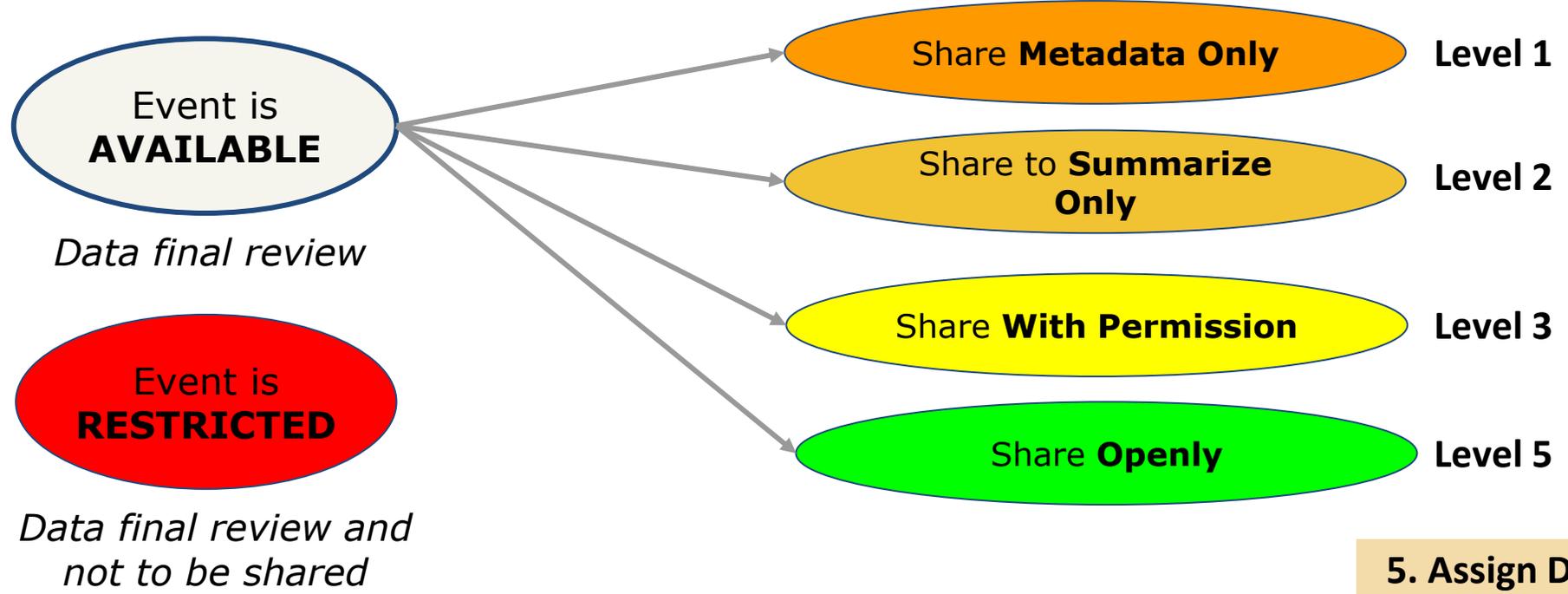
## Steps to enter and review data in preparation for sharing





# DATA SHARING LEVELS FOR EACH EVENT

Choices informs the Point Blue Science Cloud tools of your intentions.

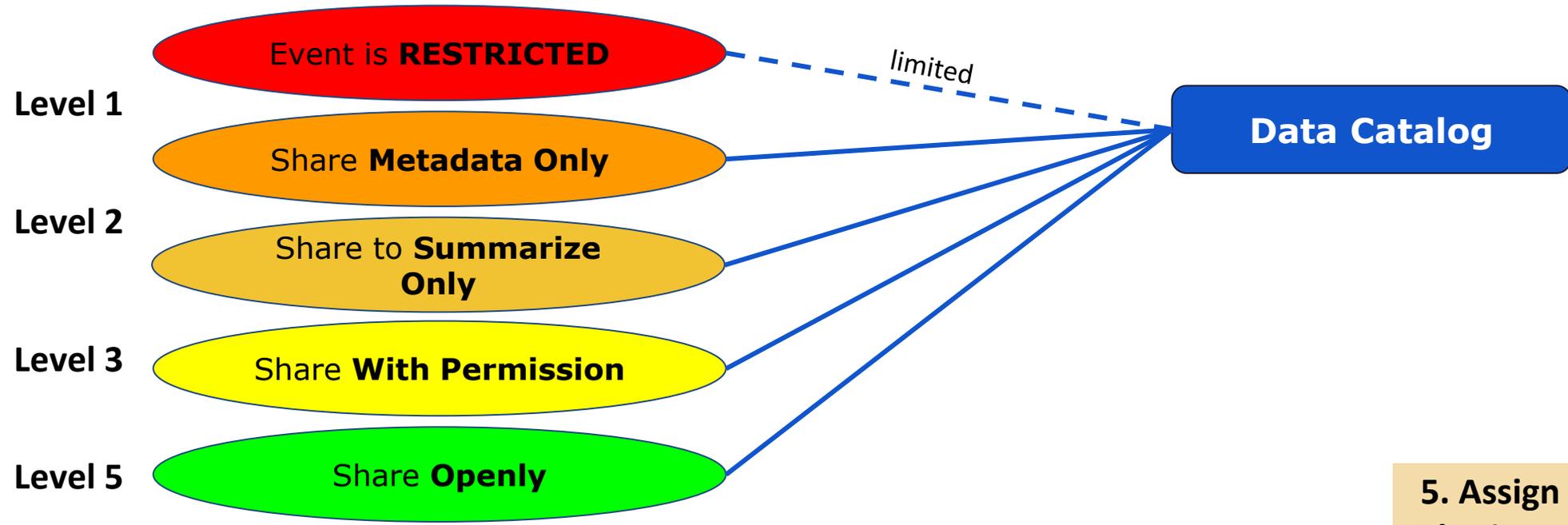


5. Assign Data Sharing Levels



# DATA SHARING AND TOOL ACCESS

Choices informs the Point Blue Science Cloud tools of your intentions.

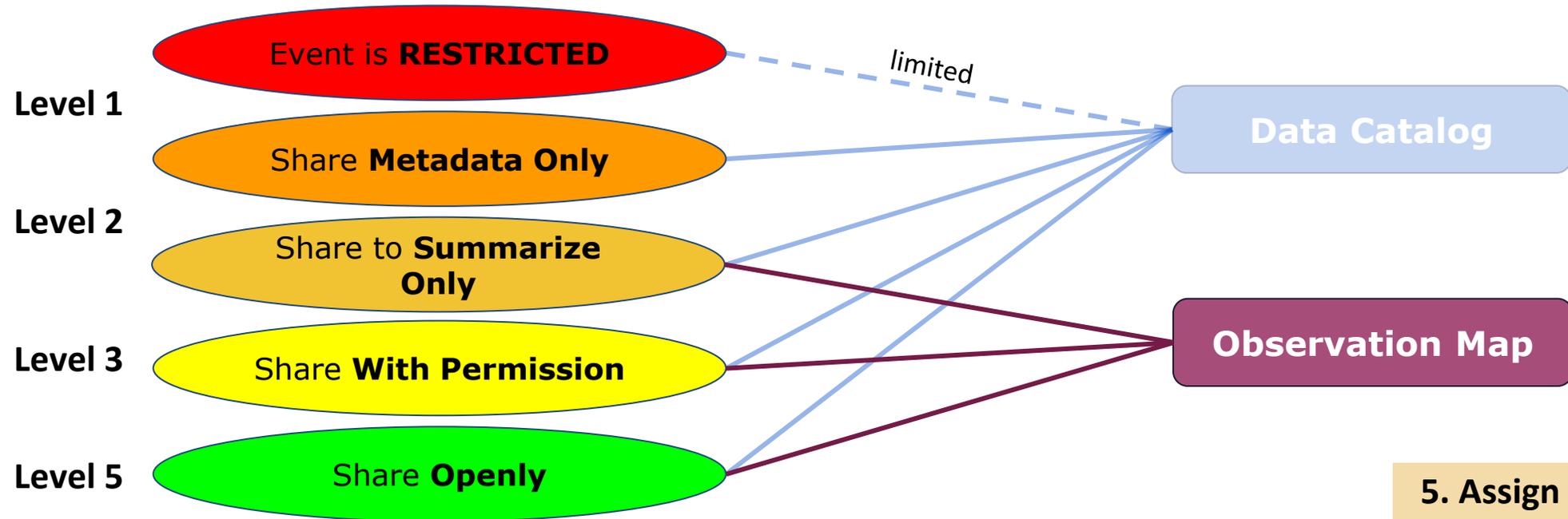


5. Assign Data  
Sharing Levels



# DATA SHARING AND TOOL ACCESS

Choices informs the Point Blue Science Cloud tools of your intentions.



5. Assign Data  
Sharing Levels



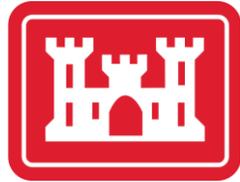
# DATA SHARING LEVEL MOTIVATION

- Organizational Policy
- Federal / State Law
- Research and Right of First Publication
- Threatened / Endangered Species
- Private Landowner Agreements
- Contribute to AKN Science
- Partnership / Collaboration Development



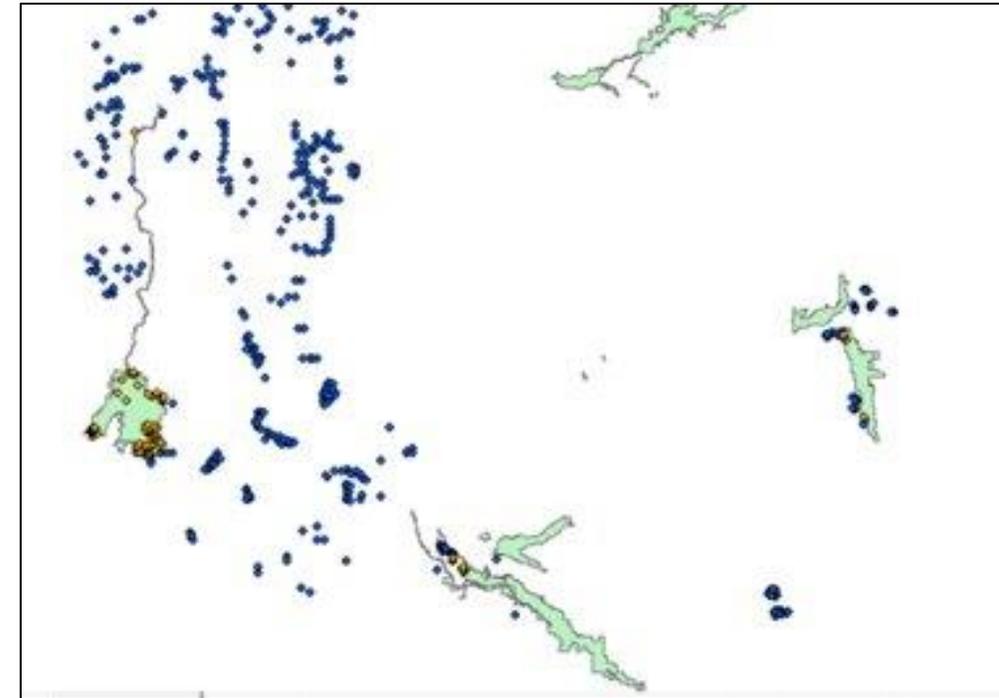
# SETTING DATA SHARING LEVELS DEMONSTRATION

[Biologist](#) for *Data Sharing Levels*



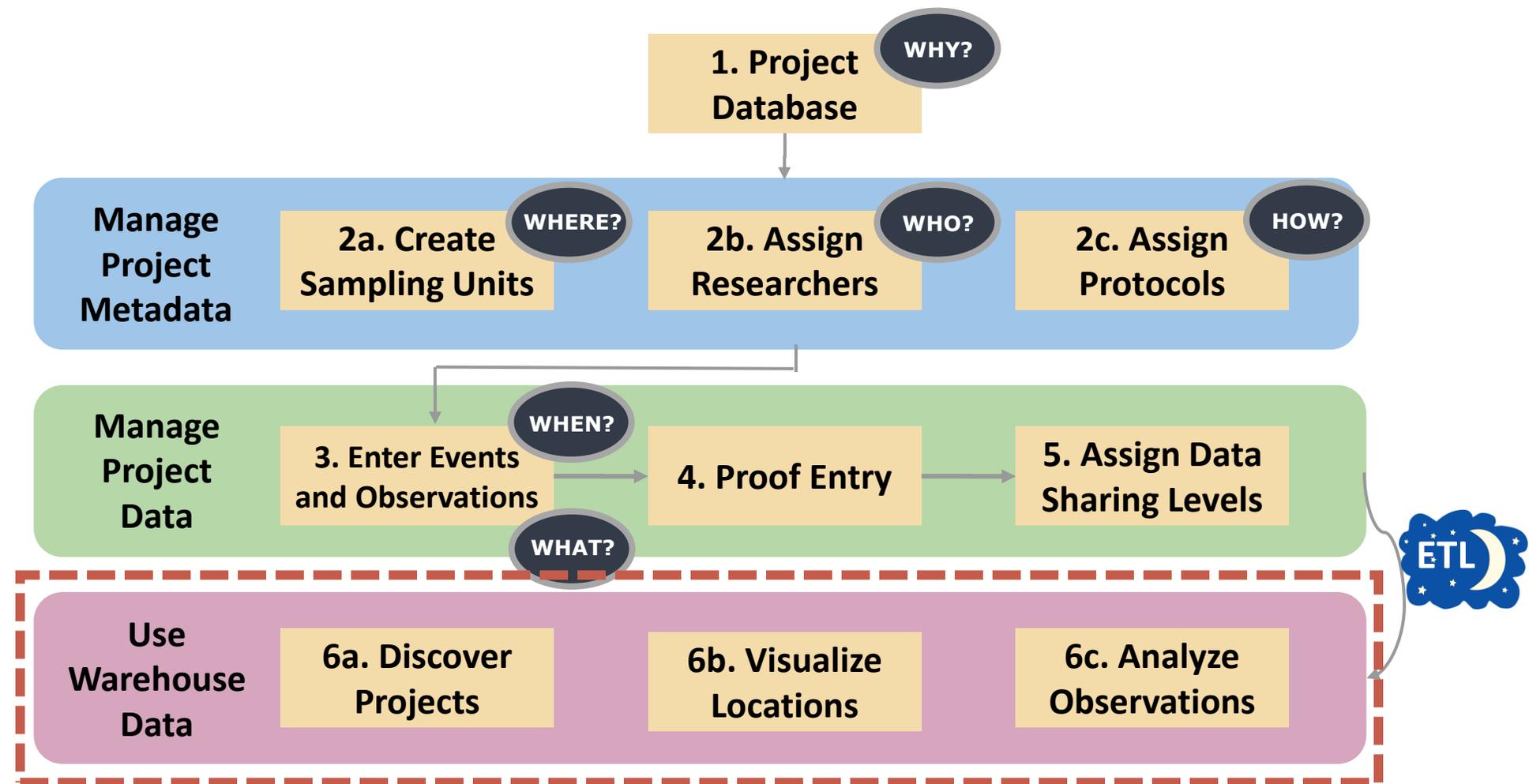
# EXAMPLE: USACE-WILLAMETTE VALLEY PROJECT, OR

- New biologist took DoD AKN training at NMFWA
- Worked with DoD AKN Team to ID data within boundary
- Data was both USACE and partner data
- Created USACE WVP within USACE enterprise
- Gained access to USACE-owned data
- Reaching out to partners about sharing data within boundary





# MANAGING A PROJECT: DATA WAREHOUSES





# DATA WAREHOUSES

Database with homogenized copy of observation data, organized by sampling method for cross-project query and analysis

Project data input today shows up automatically in the warehouse the day after you enter it





# PROJECT DATA VS. WAREHOUSE DATA

Study Area	Transect	Point	Protocol	Visit	Date	Start Time	End Time	Time Bin	Time Bin	Count	Spp	Common Name	Scientific Name	Detection	Distance B	Distance B	Point Note	Obs	Researcher	Data Status
LITTLERIVER	COMP_5	164	3_5_10m2	1	6/3/2019	8:01:00	8:11:00	3	0_3min	1	PIWA	Pine Warbler	Setophaga pinus	NR	G25	25 to 50	Light sprinkle, light rain	Arbour, David	AVAILABLE	Level 5
LITTLERIVER	COMP_5	164	3_5_10m2	1	6/3/2019	8:01:00	8:11:00	3	0_3min	1	GCFL	Great Crested Flycat	Myiarchus crinitu	NR	G50	50 to 100	Light sprinkle, light rain	Arbour, David	AVAILABLE	Level 5
LITTLERIVER	COMP_5	164	3_5_10m2	1	6/3/2019	8:01:00	8:11:00	3	0_3min	1	KEWA	Kentucky Warbler	Geothlypis formc	NR	G50	50 to 100	Light sprinkle, light rain	Arbour, David	AVAILABLE	Level 5
LITTLERIVER	COMP_5	164	3_5_10m2	1	6/3/2019	8:01:00	8:11:00	10	5_10min	1	BHCO	Brown-headed Cow	Molothrus ater	NR	G50	50 to 100	Light sprinkle, light rain	Arbour, David	AVAILABLE	Level 5

Project	Location	Protocol	Date	Time	HabitatPlot HabitatPlotId	HabitatPlot Composition Vine	HabitatPlot Composition Cane	HabitatPlot Composition Overstory	HabitatPlot Composition Midstory	HabitatPlot Composition Understory	Researcher
LITTLERIVERNWR	164	FWS_PC_HAB_LWRMISS	6/3/2019	8:01:00	164	3	1	3	3	4	Arbour, David

## Project Database Version

## Warehouse Version

GlobalUniqueIdentifier	ProjectCode	ProjectName	LocalityID	StudyArea	Transect	TransectName	Point	SamplingU	ParentSam	Sam
URN:catalog:PRBO:LITTLERIVERNWR.300600.PointCount.3_5_10m25_50_100MFlyByTm.329406.1	LITTLERIVERNWR	Little River NWR	LITTLERIVERNWR:COMP_5	Little River NWR	COMP_5	Compartment_5	164	300600	348115	Point
URN:catalog:PRBO:LITTLERIVERNWR.300600.PointCount.3_5_10m25_50_100MFlyByTm.329406.2	LITTLERIVERNWR	Little River NWR	LITTLERIVERNWR:COMP_5	Little River NWR	COMP_5	Compartment_5	164	300600	348115	Point
URN:catalog:PRBO:LITTLERIVERNWR.300600.PointCount.3_5_10m25_50_100MFlyByTm.329406.3	LITTLERIVERNWR	Little River NWR	LITTLERIVERNWR:COMP_5	Little River NWR	COMP_5	Compartment_5	164	300600	348115	Point
URN:catalog:PRBO:LITTLERIVERNWR.300600.PointCount.3_5_10m25_50_100MFlyByTm.329406.4	LITTLERIVERNWR	Little River NWR	LITTLERIVERNWR:COMP_5	Little River NWR	COMP_5	Compartment_5	164	300600	348115	Point

DecimalLat	DecimalLon	Visit	ProtocolCode	Observat	YearCollec	Month	DayC	JulianDa	JulianDayV	P Time	Collec	ScientificN	CommonN	SpeciesCor	Phylogent	DistanceFr	Flyc I	Detectic E	Observa	NoObsc	RecordPermissions
33.9699705	-94.70262	1	3_5_10m25_50_100MFlyByTm	6/3/2019	2019	6	3	154	75	8:01:00	DA	Setophaga Pine Warb	PIWA	1696	37.5	NR		1	0	AVAILABLE	LEVEL 5
33.9699705	-94.70262	1	3_5_10m25_50_100MFlyByTm	6/3/2019	2019	6	3	154	75	8:01:00	DA	Myiarchus Great Cres	GCFL	1254	75	NR		1	0	AVAILABLE	LEVEL 5
33.9699705	-94.70262	1	3_5_10m25_50_100MFlyByTm	6/3/2019	2019	6	3	154	75	8:01:00	DA	Geothlypis Kentucky	KEWA	1718	75	NR		1	0	AVAILABLE	LEVEL 5
33.9699705	-94.70262	1	3_5_10m25_50_100MFlyByTm	6/3/2019	2019	6	3	154	75	8:06:00	DA	Molothrus Brown-he	BHCO	2015	75	NR		1	0	AVAILABLE	LEVEL 5



# PROJECT DATA VS. WAREHOUSE DATA

## Point Count Data

**Same:** Species, Count, Protocol, Locations, Detection Cues, Observation Time, Data Sharing Levels

**Differences:** Binned Distance averaged, Comments missing, no Site Conditions, Observer Names to Initials, no Time Bin



# DATA SHARING GUIDELINES / POLICIES AND AGREEMENTS





# DATA OWNERSHIP AND CONTROL

Project Leaders / Organizations are the owner of data from a Project, regardless of where it is stored

Project Leaders can change Data Sharing Levels at any time, including making more restrictive





# PARTNERSHIPS AND CONTRACTORS

## Partner / Contractors

- DoD collects data for a Partnership
- Hiring independent contractors for survey work

## DoD

- Wants to ask questions across DoD
- Needs to manage and control all data on installations

**We want data collected on/near DoD installations in DoD Projects**



# CONTRACTORS & TRAINING

## MICHIGAN ARMY NATIONAL GUARD (MIARNG)



- Contracts Kalamazoo Nature Center (KNC) to complete bird surveys
- Wanted to train long-term staff to use AKN
- Attended training and entering data
- Additional benefit, KNC to enter other data, supplementing MIARNG data
- UPDATE: 200,000+ data records loaded at end of FY23!!





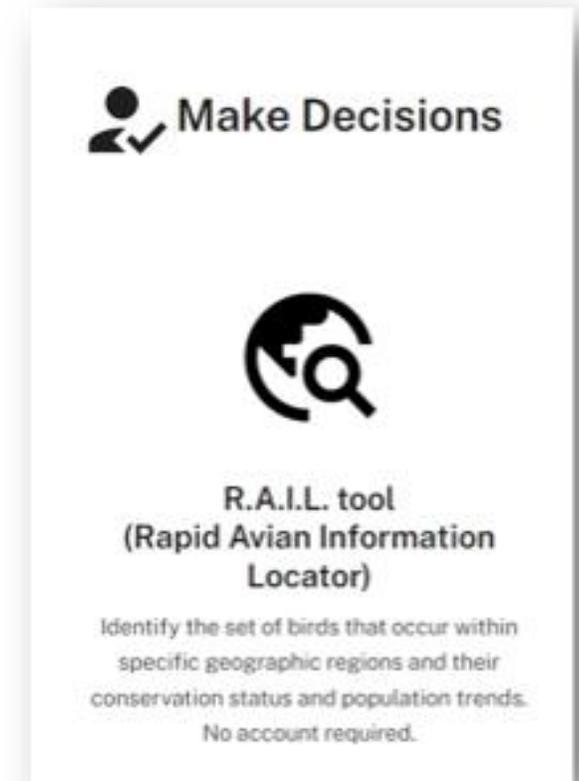
# DISCOVERING OBSERVATION DATA



# EXAMPLE: R.A.I.L. TOOL VANCE AIR FORCE BASE, OK

- Biologist was new to AF and did not have any bird data
- Wanted a list of birds on Vance for NEPA and INRMP updates
- RAIL tool available at no cost and without an account  
*Integrates data from AKN, Partners in Flight, US Fish and Wildlife, Breeding Bird Survey, eBird, All About Birds, and the Macaulay image library at Cornell*

<https://data.pointblue.org/apps/rail/>





# EXAMPLE: R.A.I.L. TOOL VANCE AIR FORCE BASE, OK

Rapid Avian Information Locator (RAIL)

Before using this tool, please read [About the RAIL tool](#)

Use all available species

Go to location  
Vance AFB

Topo  
Satellite

Rapid Avian Information Locator (RAIL)

Before using this tool, please read [About the RAIL tool](#)

Use all available species

Go to location  
Vance AFB

Topo  
Satellite



# EXAMPLE: R.A.I.L. TOOL

## VANCE AIR FORCE BASE, OK

Rapid Avian Information Locator (RAIL)

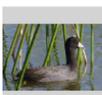
Before using this tool, please read [About the RAIL tool](#)

SELECT AREA GET RESULTS

Use all available species

Species Results FILTER RESULTS (Currently showing 172 of 172 results)

BCR(s): 19-CENTRAL\_MIXED\_GRASS\_PRAIRIE  
State(s): OK

Bird Species	Population Estimates	Conservation Status	Detail
 American Avocet <i>Recurvirostra americana</i>	Global: Not yet available Continental U.S.: Not yet available	<b>BCRBCC Breeding:</b> 9, 33	▼
 American Bittern <i>Botaurus lentiginosus</i>	Global: Not yet available Continental U.S.: Not yet available	<b>State Threatened:</b> MD <b>State Endangered:</b> MA, CT, NJ, PA, OH, IN	▼
 American Coot <i>Fulica americana</i>	Global: Not yet available Continental U.S.: Not yet available	<b>Common</b>	▼

 Barn Swallow <i>Hirundo rustica</i>	Global: 190,000,000 Continental U.S.: 40,000,000	<b>Common</b>	▼
 Bell's Vireo <i>Vireo bellii</i>	Global: 5,700,000 Continental U.S.: 4,600,000	<b>Common</b>	▼
 Belted Kingfisher <i>Megasceryle alcyon</i>	Global: 1,800,000 Continental U.S.: 830,000	<b>BCRBCC Breeding:</b> 13	▼
 Black-bellied Whistling-Duck <i>Dendrocygna autumnalis</i>	Global: Not yet available Continental U.S.: Not yet available	<b>Common</b>	▼
 Black-crowned Night-Heron <i>Nycticorax nycticorax</i>	Global: Not yet available Continental U.S.: Not yet available	<b>State Threatened:</b> ME, NJ, OH <b>State Endangered:</b> DE, PA, IN	▼
 Black-throated Green Warbler <i>Setophaga virens</i>	Global: 9,200,000 Continental U.S.: 2,900,000	<b>BCRBCC Breeding:</b> 27	▼



# EXAMPLE: R.A.I.L. TOOL VANCE AIR FORCE BASE, OK

**Filter Species Results**

Length Min (cm)	Length Max (cm)	Primary Breeding Habitat	
<b>Biology</b>			
Egg Length Min (cm)	Egg Length Max (cm)	Incubation Period Min (days)	Incubation Period Max (days)
Egg Width Min (cm)	Egg Width Max (cm)	Clutch Size Min (integer)	Clutch Size Max (integer)
Number of Broods Min (integer)	Number of Broods Max (integer)	Food Category	
Behavior Category		Nesting Category	
<b>Conservation Status</b>			
Continental Importance	Half Life	<input type="checkbox"/> Federally Threatened or Endangered	
State Threatened or Endangered	Bird of Conservation Concern	<input type="checkbox"/> Migratory Bird Treaty Act (MBTA) - Listed	

CLEAR ALL FILTERS      CANCEL      APPLY

**Rapid Avian Information Locator (RAIL)**

Before using this tool, please read [About the RAIL tool](#)

Type a species...

Selected species

- BAEA - Bald Eagle
- OSFL - Olive-sided Flycatcher
- HASP - Harris's Sparrow

**Bald Eagle**  
*Haliaeetus*  
*leucocephalus*

Global: 200,000  
Continental U.S.: Not yet available

**State Threatened:** MA, CT, NH, NY, TX  
**State Endangered:** NJ, VT, CA

**Alpha Code**  
Alpha Code<sup>1</sup>: Not yet available

**Physical Details**  
Weight<sup>2</sup>: 3000 - 6300 g  
Length<sup>2</sup>: 71 - 96 cm

**Habitat**  
Habitat Category<sup>2</sup>: Forests  
Primary Breeding Habitat<sup>4</sup>: Wetlands, Generalist

**Population Information**  
Global Population<sup>3</sup>: 200,000  
% Population Estimate USA<sup>3</sup>: Not yet available  
Lower 95% Bound USA<sup>3</sup>: Not yet available  
Upper 95% Bound USA<sup>3</sup>: Not yet available  
Continental Population Trend<sup>4</sup>: Significant large increase  
Regional Population Trend<sup>4</sup>: BCR19 - Significant large increase  
% BCR Population<sup>3</sup>: BCR 19 - 0.00%  
Lower 95% Bound BCR<sup>3</sup>: BCR 19 - null  
Upper 95% Bound BCR<sup>3</sup>: BCR 19 - null  
% State Population<sup>3</sup>: OK - 0.00%  
Lower 95% Bound State<sup>3</sup>: OK - null  
Upper 95% Bound State<sup>3</sup>: OK - null

**Biology**  
Food Category<sup>2</sup>: Fish  
Behavior Category<sup>2</sup>: Soaring (raptor)  
Nesting Category<sup>2</sup>: Tree  
Incubation Period<sup>2</sup>: 34 - 36 days  
Clutch Size<sup>2</sup>: 1 - 3 eggs  
Number of Broods<sup>2</sup>: 1  
Egg description<sup>2</sup>: Dull white, usually without markings.  
Egg length<sup>2</sup>: 5.8 - 8.4 cm

**Conservation Status**  
Continental Importance<sup>4</sup>: Not yet available  
Half Life<sup>4</sup>: Not yet available  
Federally Threatened<sup>6</sup>: No  
Federally Endangered<sup>6</sup>: No  
State Threatened<sup>7</sup>: MA, CT, NH, NY, TX  
State Endangered<sup>7</sup>: NJ, VT, CA  
Migratory Bird Treaty Act<sup>8</sup>: Listed  
Bird of Conservation Concern<sup>9</sup>: No



# EXERCISE 4: CREATE A SPECIES LIST WITH THE R.A.I.L. TOOL





# CREATE A SPECIES LIST WITH THE R.A.I.L. TOOL

## EXERCISE 4

**Purpose:** Get familiarized with the RAIL tool, which can help you find general information about the species in a particular area and their conservation status

**Goal:** Be comfortable navigating the RAIL tool to find information about species on your installation and understand the limitations of the tool

**Thinking Ahead:** Consider how RAIL might be helpful for your analyses and reporting

6c. Analyze  
Observations



# CREATE A SPECIES LIST WITH THE R.A.I.L. TOOL

## EXERCISE 4

### Exercise:

- Orientation of [R.A.I.L. Tool](#)
- [Exercise 4 instructions](#)





# DOWNLOAD POINT COUNT DATA FROM WAREHOUSE DEMONSTRATION



Tools:

- [Data Downloader](#)



# BREAK (10 MINS)

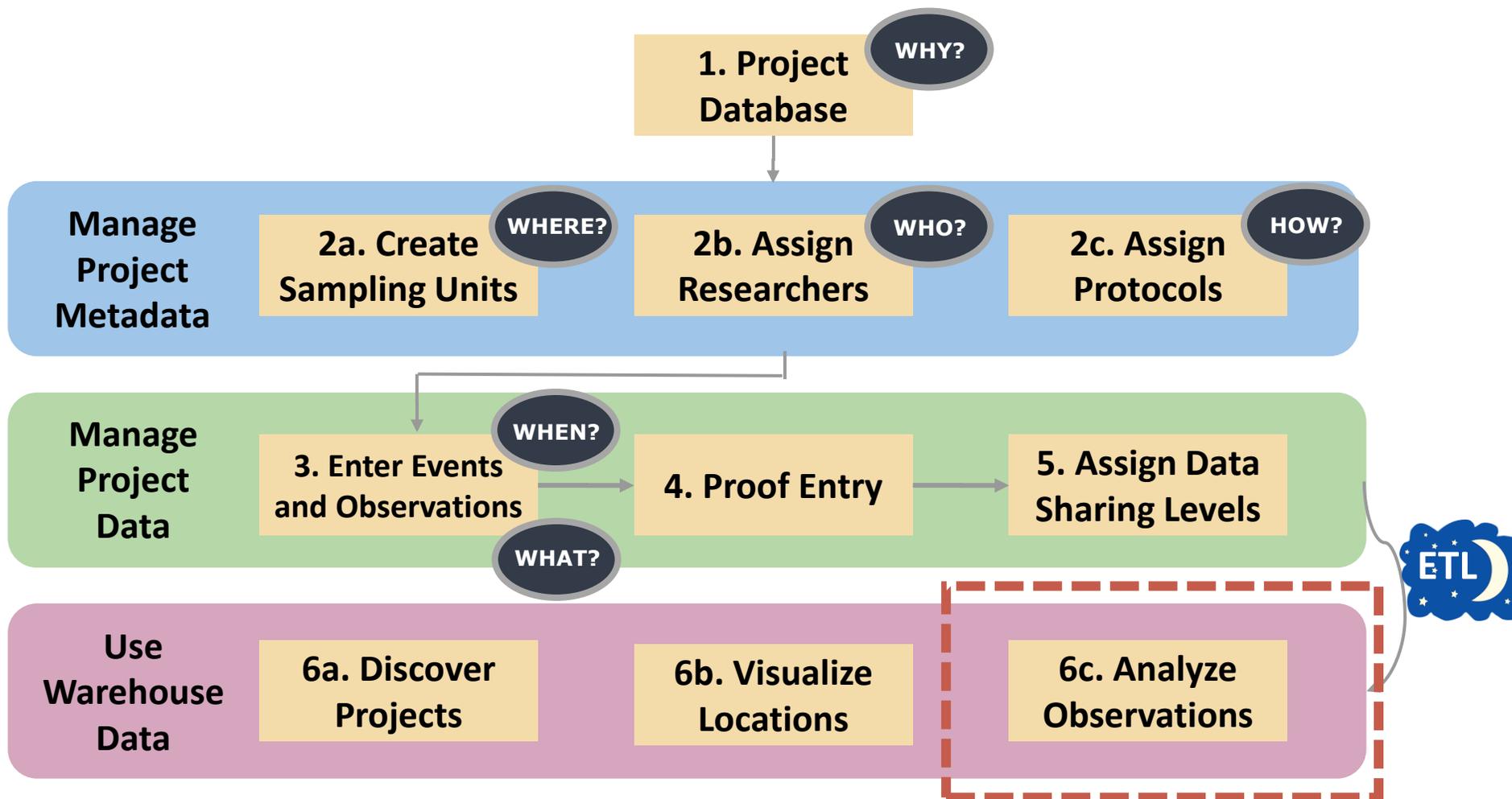
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## NEXT: LOOKING FOR TRENDS





# MANAGING A PROJECT: LOOKING FOR TRENDS



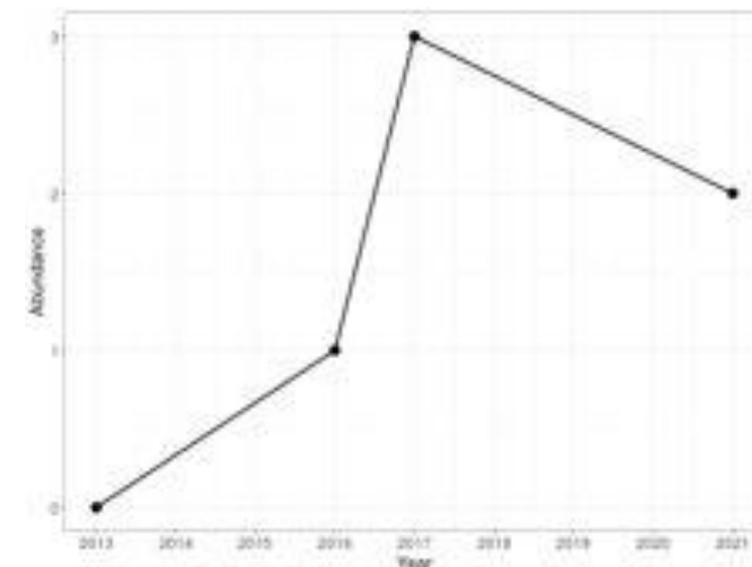


# USING THE ANALYST TOOL DEMONSTRATION

## Tools:

- <https://data.pointblue.org/apps/analyst/>

Common Name	2013	2014	2015	2016	2017	2021
Acadian Flycatcher	6	11	25	12	14	15
Alder Flycatcher	0	0	0	0	1	0
American Crow	41	28	42	29	24	113
American Goldfinch	14	1	5	6	3	16
American Redstart	0	1	0	1	1	2
American Robin	0	0	0	0	1	0
Barred Owl	0	0	0	0	0	1





# LOOKING FOR TRENDS

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## EXERCISE 5





# LOOKING FOR TRENDS

## EXERCISE 5

**Purpose:** Introduce you to more data exploration and discovery tools

**Goal 1:** Be comfortable searching the Data Catalog to find available datasets and project metadata

**Goal 2:** Understand how to use the Observations Map to find survey locations from different datasets for a particular species and examine species trends

**Thinking Ahead:** Consider how Data Catalog might be helpful for archiving information about your project, and how Observations Map may be helpful for your analyses and reporting



# LOOKING FOR TRENDS

## EXERCISE 5

- Exercise:
  - Orientation of [Data Catalog](#) and [Observation Map](#)
  - [Exercise 5 instructions](#)

Use  
Warehouse  
Data

6a. Discover  
Projects

6b. Visualize  
Locations

6c. Analyze  
Observations



# WHAT SHOULD YOU EXPECT THIS YEAR WITH AKN, DoD, AND AIR FORCE PARTICIPATION?





# LEGAL DRIVERS

- Migratory Bird Treaty Act (PL 65-186; 16 USC 703 *et seq.*)
- Sikes Act (PL 105-85, as amended through 2004 including PL 108-136; 16 USC 670 *et seq.*)
- Executive Order 13186 *Responsibilities of Federal Agencies to Protect Migratory Birds*
- National Environmental Policy Act, as amended. (PL. 91-190, 42 U.S.C. 4321-4347, as amended by Pub. L. 94-52)
- Endangered Species Act (16 U.S.C. 1531-1544, 87 Stat. 884), as amended – PL. 93-205
- DoD Instruction 4715.03, *Natural Resources Conservation Program*
  - Prioritize species
  - Facilitate and encourage collaboration with partners
  - Focus research and planning efforts
  - Increase information sharing



# DOD AKN STRATEGIC APPROACH

- DoD AKN Program Management Plan
- OSD and Military Services Support
- Status of DoD Data
- Data Initiatives
- DoD-Specific and AKN Tools
- Priority Tasks for FY24



# DoD AKN Program

## Task Categories



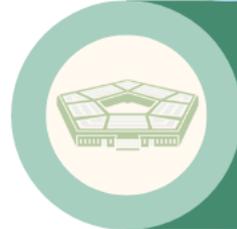
### Ongoing Base Support

Ex. project coordination, customer data support, back-end technical support



### Training

Ex. quarterly regional, service-specific, NMFWA, training videos



### DoD-Specific Requirements

Ex. user guides, DoD AKN Portal, data visualization and query tools



### Data Initiatives

Ex. new data type incorporation, integration with partner data, data standardization



### AKN Tools (Partner Initiatives)

Ex. new AKN roles, advanced analysis and query functionality, cohesive U.I., Program Enterprise



# OSD AND MILITARY SERVICES SUPPORT

## ▪ **Office of Secretary of Defense and Military Service Support**

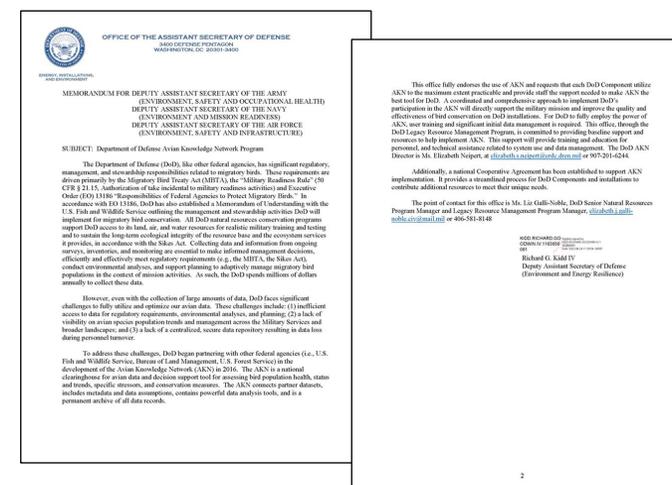
- Ryan Orndorff and Liz Galli-Noble-Office of Secretary of Defense
- Karla Meyer & Kirsten Christopherson-Air Force
- Brian Moyer & Steve Sekscienski-Army
- Jacque Rice-Marine Corps
- Jeff Gardner & Tom Mayes-Navy
- Alisa Dickson & Jay Rubinoff-National Guard

## ▪ **DoD Support Memo**

- Signed 24 June 2022
- Mandate use DoD-wide

## ▪ **DoD-wide Cooperative Agreement**

- Allows oversight of all AKN actions
- Cost-share actions
- Enable Military Services and installations to empower smaller amounts of \$\$
- Allows MIPR for funding our program partners





# MILITARY SERVICE ACTIONS – FY23

## Air Force

- ✓ One virtual and one in-person training
- ✓ USDA BASH data workflow
- ✓ GIS data workflow
- ✓ MSS Tool
- ✓ Implicit/explicit zero data
- ✓ Priority data uploads/support
- ✓ Methodology consulting for INRMP objectives



## Navy

- ✓ Data prioritization
- ✓ Project creation
- ✓ Data support and upload

## National Guard

- ✓ ARNG-specific training, held 23-25 May, hosted by ORARNG
- ✓ Data Discovery Survey
- ✓ Work with states for other tasks



## Marine Corps

- ✓ Funding for Program Enterprise
- ✓ Initial funding for:
  - Contractor Role
  - MSS Query Tool
- ✓ Data Discovery Survey
- ✓ MSS monitoring & data support
- ✓ Historical & contemporary data support
- ✓ Training at OCONUS site

## Army

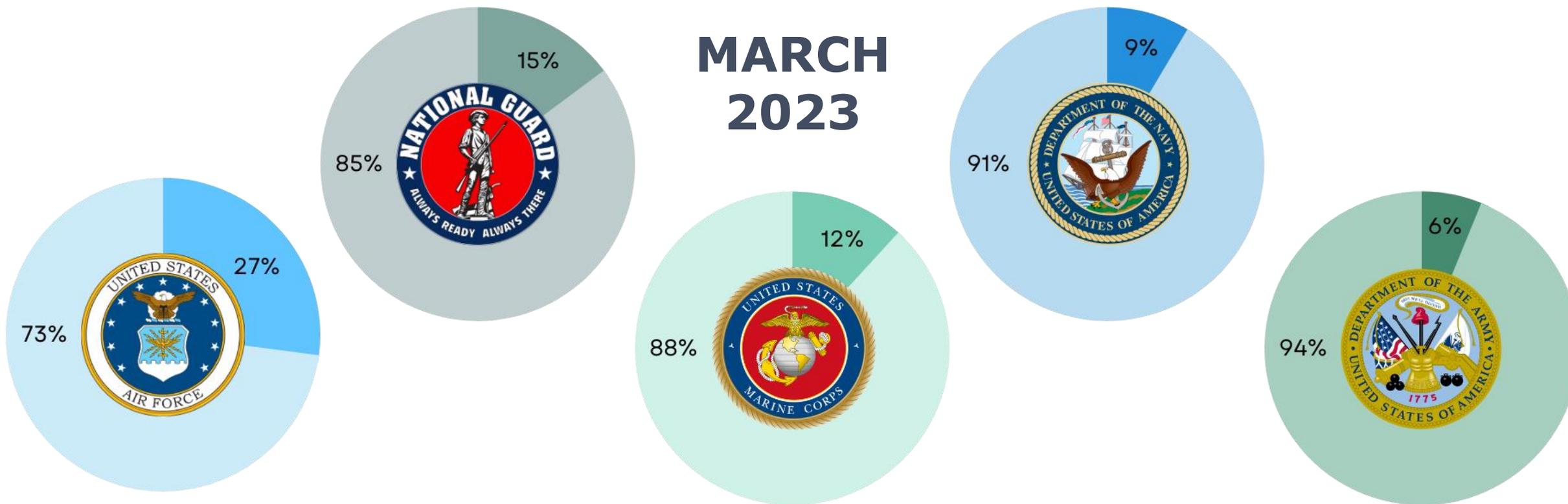
- ✓ Data Discovery and Training Survey – *in progress*
- ✓ Building a 5-year plan





# MILITARY SERVICE PROGRESS

## *Installations with Active Projects by Service Branch*



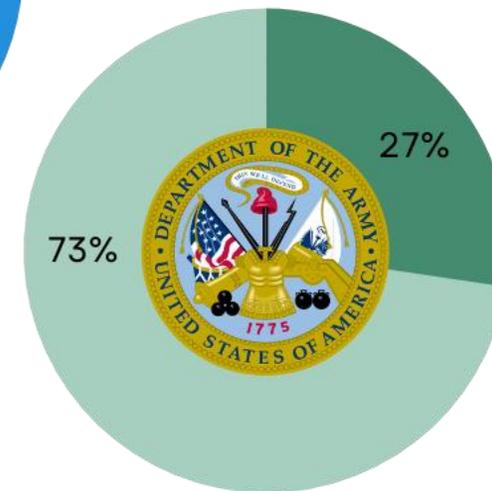
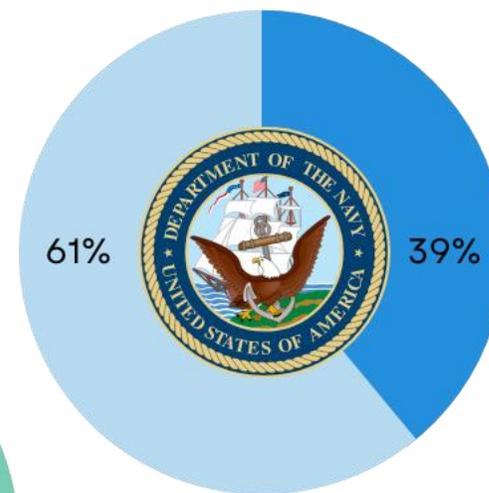
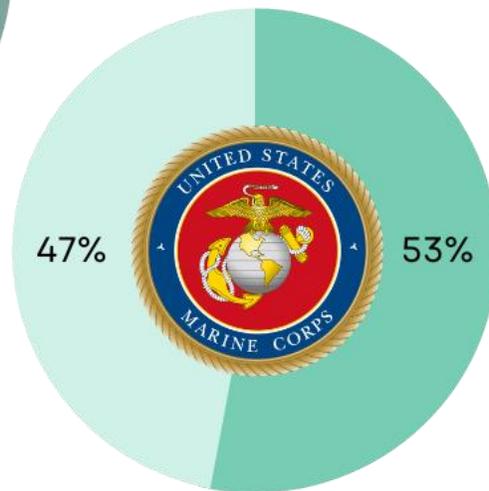
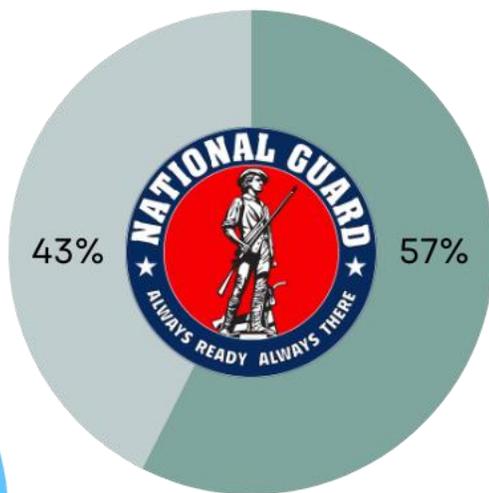
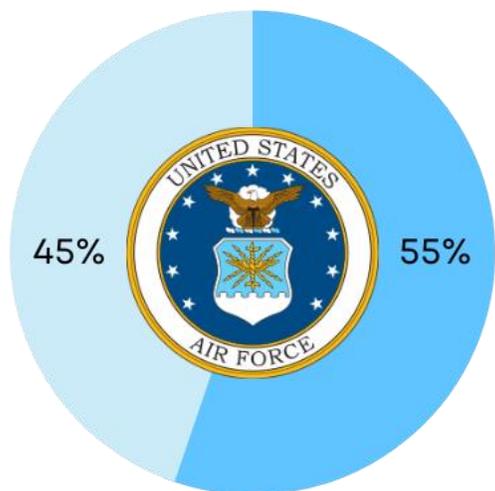
**341 installations** that require **Integrated Natural Resources Management Plans**



# MILITARY SERVICE PROGRESS

## *Installations with Active Projects by Service Branch*

END OF  
FY23

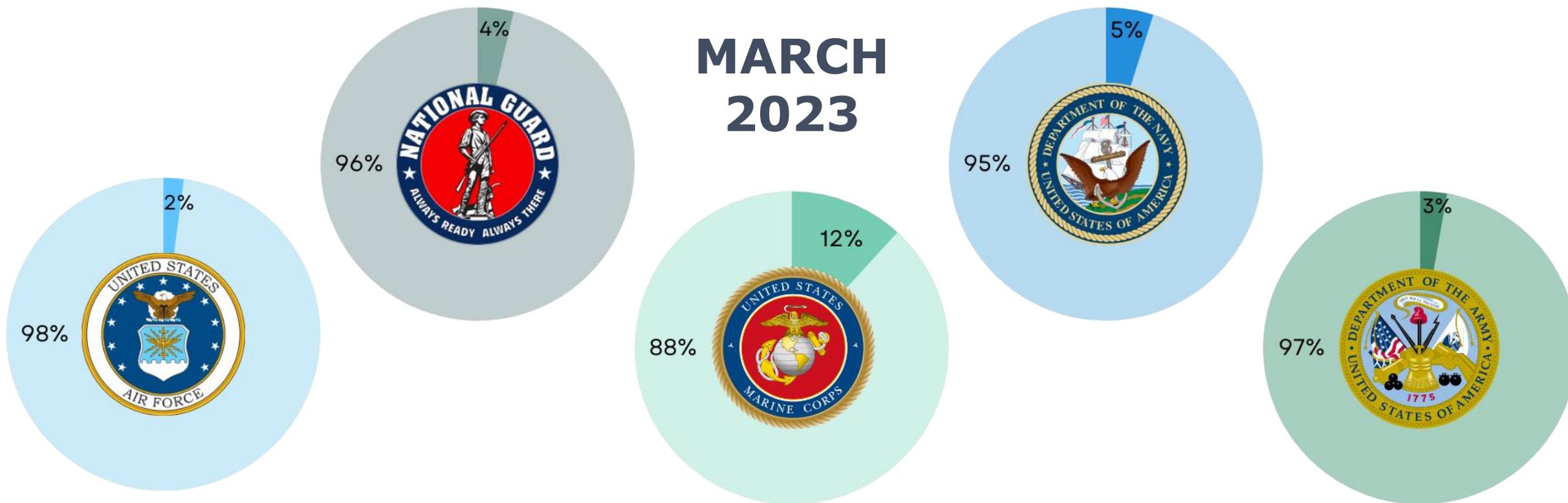


**341 installations** that require **Integrated Natural Resources Management Plans**



# MILITARY SERVICE PROGRESS

## *Installations with Contemporary Data by Service Branch*



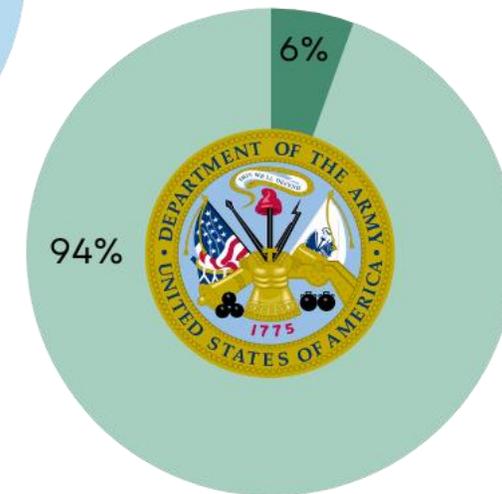
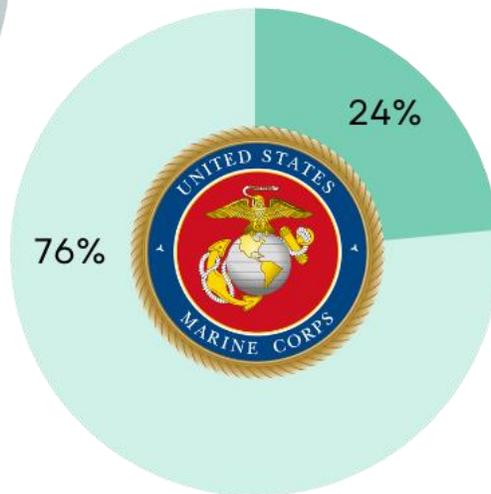
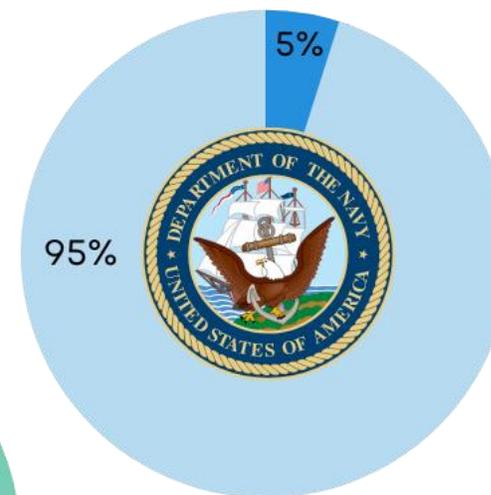
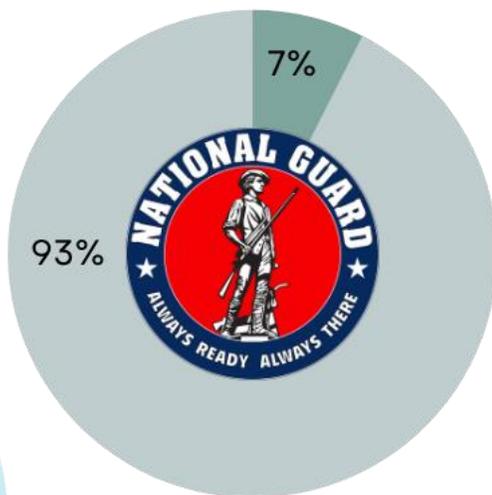
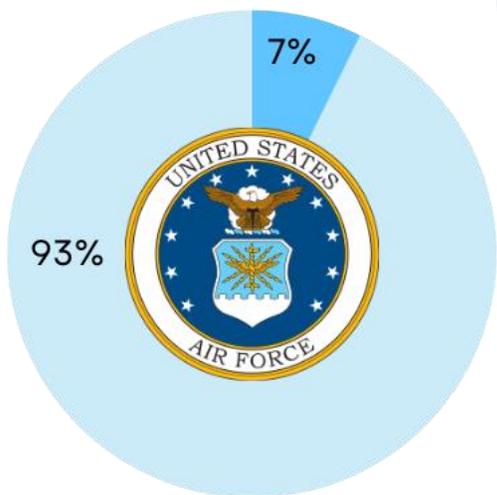
**341 installations** that require **Integrated Natural Resources Management Plans**



# MILITARY SERVICE PROGRESS

## *Installations with Contemporary Data by Service Branch*

END OF  
FY23



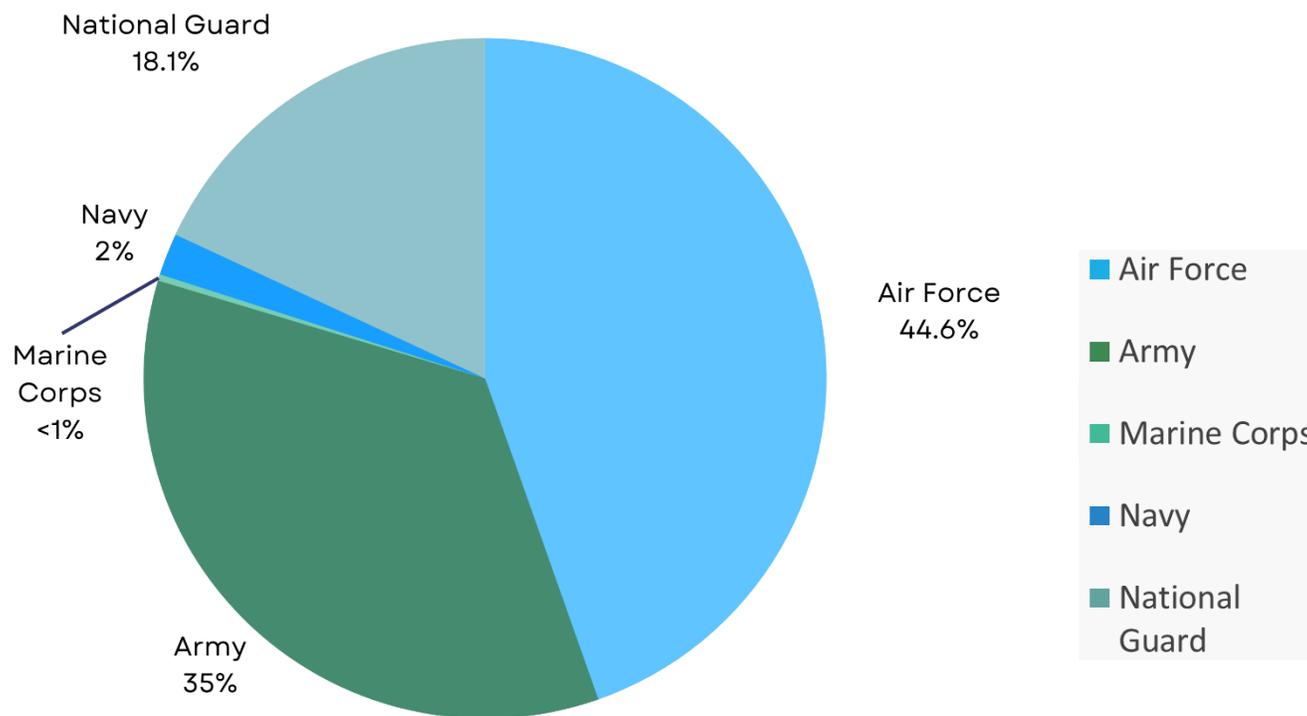
**341 installations** that require **Integrated Natural Resources Management Plans**



# MILITARY SERVICE PROGRESS

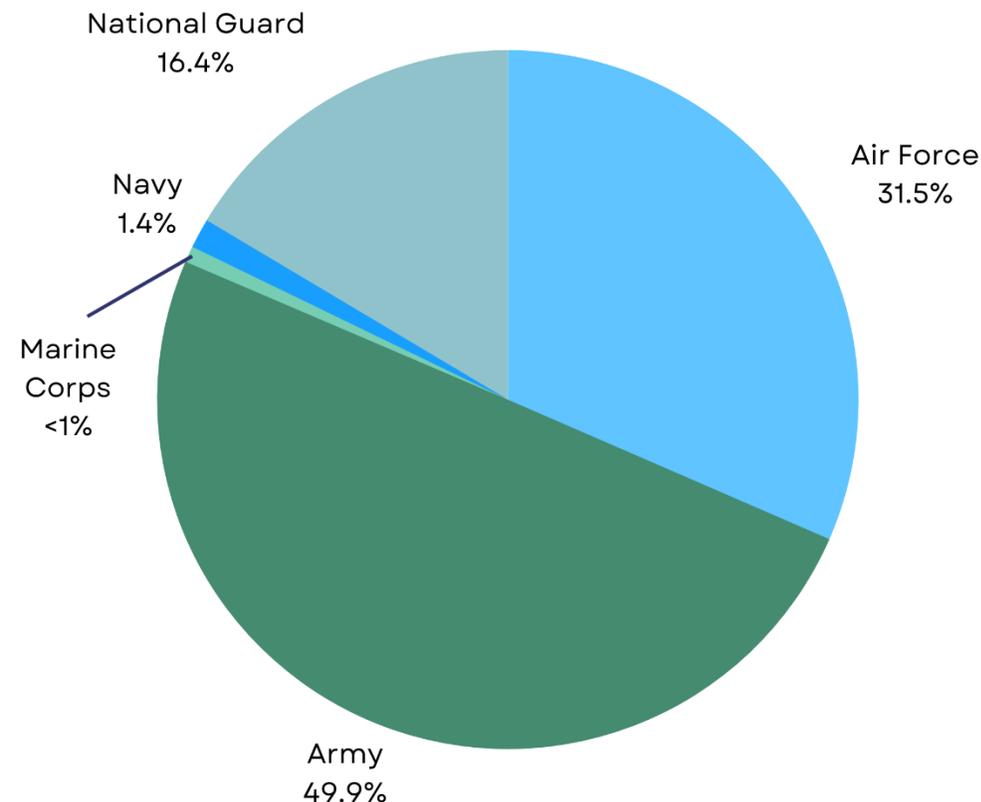
## *DoD Data Records in AKN by Military Service*

**March 2023**



Total Number of Data Records: **221,482**

**August 2023**



Total Number of Data Records To-Date: **323,462**



# DOD TOOLS

## Data Discovery Survey & Training Questionnaire

### DoD AKN Navy Survey

#### Welcome to the DoD Avian Knowledge Network (AKN) Navy Survey

The Department of the Navy seeks to continue facilitating a coordinated and comprehensive approach to implementation of the DoD's participation in the Avian Knowledge Network (AKN) that directly supports the DoD Bird Conservation Strategic Plan. Specifically, the Navy desires to improve the quality and effectiveness of bird conservation on their installations by using the data and tools within the AKN.

The Navy requests your participation in a short online survey to 1) gauge interest in virtual AKN training sessions and 2) determine what avian survey datasets exist that should be prioritized for upload into the AKN database.

Survey should take 5-10 mins to complete

1. Please give us the following information about yourself

Your name

Your Installation name

Your current position

Your work email address

2. Where have you heard about the Avian Knowledge Network (AKN) efforts across DoD and the Navy?

- DoD Partners In Flight (PIF)
- Legacy Program Fact Sheets
- NMFWA seminar or presentation
- Internal email
- From other DoD staff
- I haven't heard anything about AKN at DoD or Navy

6. We are planning to offer training classes to Navy staff on using the AKN web tools. Are you interested in any of the following training:

- How to load historical data into the system
- How to enter data interactively for future surveys
- How to see what data is available across the AKN
- How to use the AKN for data management, curation, and sharing
- How to use the AKN for rapid NEPA-type assessments at your installation using existing AKN data
- How to analyze trends of avian populations on your installation with your data

7. If you are interested in the virtual training in the next 12 months, select which times of year you would prefer to have a training.

- August/ September/ October 2022
- November / December 2022 / January 2023
- February/ March / April 2023
- May/ June / July 2023
- I'm not interested in or cannot attend a training in the next 12 months.

8. What region of the country would you prefer for an in-person training?

- Northeast
- Southeast
- Midwest
- Southwest
- West

10. In the future, select which avian surveys you plan to conduct at your installation.

- Point Count
- Area Search
- Transects
- Aerial Surveys
- Banding / [Monitoring Avian Productivity and Survivorship \(MAPS\)](#)
- Nest Surveys
- Colony Counts
- [Breeding Bird Survey \(BBS\)](#)
- [Christmas Bird Count \(CBC\)](#)
- Airfield / Bird Air Strike Hazard (BASH)
- Other (please specify)
- 
- My installation has no plans to conduct avian surveys in the foreseeable future.

11. Do you use a field methodology where data are collected about a single individual multiple times within a count? (e.g. record an individual detected in minute 1 and minute 3.)

- Yes
- No

12. Do you use a field methodology that documents only a limited set of species, as opposed to all species present?

- Yes
- No



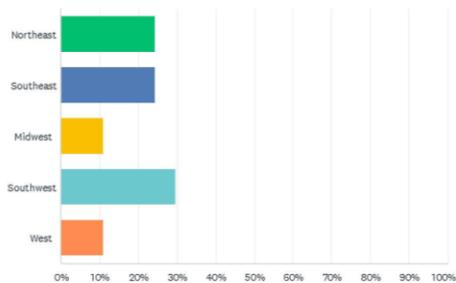
# DOD TOOLS

## Data Discovery Survey & Training Questionnaire

DoD AKN Navy Survey

Q8 What region of the country would you prefer for an in-person training?

Answered: 37 Skipped: 2

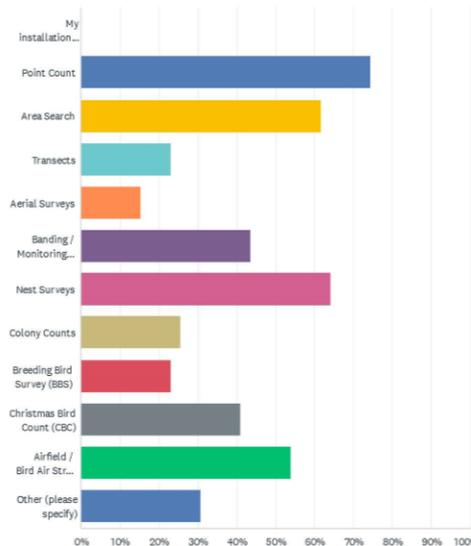


ANSWER CHOICES	RESPONSES	Count
Northeast	24.32%	9
Southeast	24.32%	9
Midwest	10.81%	4
Southwest	29.73%	11
West	10.81%	4
TOTAL		37

DoD AKN Navy Survey

Q9 Please select the avian survey type(s) your installation has conducted and has either current or historical data available.

Answered: 39 Skipped: 0

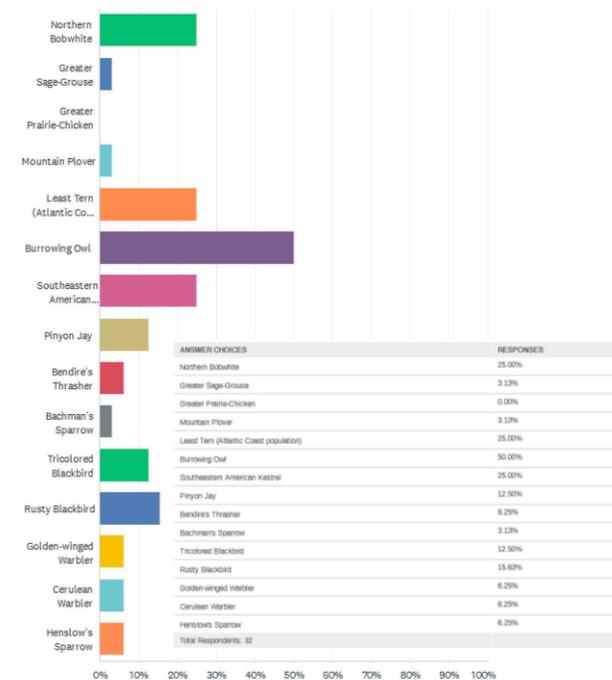


ANSWER CHOICES	RESPONSES	Count
My Installation does not have any past avian data surveys	0.00%	0
Point Count	74.36%	29
Area Search	61.54%	24
Transects	23.08%	9
Aerial Surveys	15.38%	6
Banding / Monitoring Avian Productivity and Survivorship (MAPS)	43.59%	17
Nest Surveys	64.10%	25
Colony Counts	25.64%	10
Breeding Bird Survey (BBS)	23.08%	9
Christmas Bird Count (CBC)	41.03%	16
Airfield / Bird Air Strike Hazard (BASH)	53.85%	21
Other (please specify)	30.77%	12
Total Respondents: 39		

DoD AKN Navy Survey

Q15 Which DoD Mission Sensitive Species occur on your installation?

Answered: 32 Skipped: 7



ANSWER CHOICES	RESPONSES	Count
Northern Bobwhite	25.00%	8
Greater Sage-Grouse	3.13%	1
Greater Prairie-Chicken	0.00%	0
Mountain Plover	3.13%	1
Least Tern (Atlantic Coast population)	25.00%	8
Burrowing Owl	50.00%	16
Southeastern American Kestrel	25.00%	8
Pinyon Jay	12.50%	4
Bendire's Thrasher	6.25%	2
Bachman's Sparrow	3.13%	1
Tricolored Blackbird	12.50%	4
Rusty Blackbird	15.63%	5
Cerulean Warbler	6.25%	2
Henslow's Sparrow	6.25%	2
Total Respondents: 32		



# DOD TOOLS

## *Standardized Sampling Methods*

- Survey DoD personnel to identify the most common bird monitoring questions
- Promote standardized data collection methods across DoD
- Provide appropriate protocol selection based on management or research needs

## SPECIES CHECKLIST

<https://www.dodakn.org/resources/dod-akn-standard-sampling-methods/#SPCH>





# DOD MISSION-SENSITIVE SPECIES



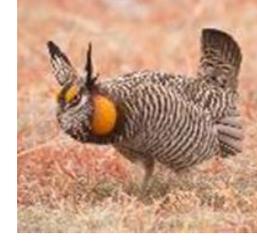
Northern Bobwhite



Greater Sage-grouse



Mountain Plover



Greater Prairie Chicken



Burrowing Owl



Least Tern (Atlantic Coast)



Cerulean Warbler



Golden-winged Warbler



Pinyon Jay



Southeastern American Kestrel



Henslow's Sparrow



Rusty Blackbird



Bendire's Thrasher



Tricolored Blackbird



Bachman's Sparrow



# DOD MISSION-SENSITIVE SPECIES

Species	# of Installations
Greater Sage-Grouse	6
Greater Prairie-Chicken	3
Northern Bobwhite	70
Southeastern American Kestrel	14
<del>Black Rail**</del>	<del>5</del>
Mountain Plover	16
Burrowing Owl	50
Least Tern (Atlantic Coast Pop)	18
Pinyon Jay	7
Bendire's Thrasher	4
Golden-winged Warbler	24
Cerulean Warbler	30
Bachman's Sparrow	24
Henslow's Sparrow	25
Tricolored Blackbird	15
Rusty Blackbird	30

## DOD AKN MSS 4-PRONGED APPROACH

- ✓ FOCUS GROUP
- ✓ AKN PROTOCOLS
- ✓ DATA
- ✓ MSS QUERY TOOL IN AKN



# DOD MISSION-SENSITIVE SPECIES





# DOD MISSION-SENSITIVE SPECIES

Pinyon Jay Survey  
Protocol for  
Landscape  
Applications (PIJA  
Working Group 2023)



Area Search survey  
based on 2.5km grids,  
available in AKN

DoD identified need for  
road-based point count  
protocol for rapid  
assessment at larger  
scales



Road-based point  
count protocol,  
available in AKN

**Both field  
methods  
posted on DoD  
AKN Portal**

[https://www.dodakn.org/resources/mss/#MSS\\_PIJA](https://www.dodakn.org/resources/mss/#MSS_PIJA)



# DOD MISSION-SENSITIVE SPECIES

Standardized Monitoring Strategies for Burrowing Owls on DoD Installations  
(Garcia et al 2008)

Guidelines and Recommendations for Burrowing Owl Surveys and Mitigation  
(California Burrowing Owl Consortium 1993)

Staff Report on Burrowing Owl Mitigation (California Department of Fish and Game 2012)

Comparison of Detection Probability Associated with Burrowing Owl Survey Methods  
(Conway and Simon, 2003)

## Focus Group SMEs:

Courtney Conway, *USGS ID Cooperative Fish and Wildlife  
Research Unit*

Sandra Menzel, *Talon Ecological Research Group*

David H. Johnson, *Global Owl Project*

Kevin Warner, *Idaho Army National Guard*

Colin Leingang, *JBLM Yakima Training Center*

Russ Lawrence, *Hill AFB and Utah Test and Training Range*



# DOD MISSION-SENSITIVE SPECIES



## Current NOBO Data in AKN and Protocols Used

MCB Quantico	NOBO_2min_UnltdDist
Fort Cavazos (formerly Hood)	VCP100Sx
Fort Riley	FortRiley_VR250m



# DOD MISSION-SENSITIVE SPECIES





# DoD DATA NEEDS

- BASH Data, specifically data collected by USDA-WS
- Banding data, including MAPS
- Nest data
- Sensor and machine-collected data
- Survey 123 cross-walk directly into AKN
- Foreign OCONUS data



# SCOPE OF WORK LANGUAGE

for Contracts, Cooperative Agreements and Interagency Agreements



**Issue:** possession of and access to data collected by contractors, external partners

**Solution:** enter into DoD-owned AKN projects

**Method:** develop language and guidelines for DoD contracts and agreements

**AVIAN**

describes where it sits on the earth. All point, polygon  
-Longitude (EPSG:4326) geographical coordinate  
combination of location, date and time,

Language

Partnership and access 2) selecting sampling methods  
out sampling locations, 4) formats for uploading  
as part of each of these steps; however, options  
operator without AKN training to provide the  
DoD Designee. Information provided must be fully  
step below.

to all data collected for the agreement. The  
to the AKN and approved by the appropriate  
Guidance: AKN Data Access, Entry, and Analysis  
Contractor/Cooperator following [DoD AKN](#)  
in an AKN Data Sharing Agreement [DoD

Contractor will choose the sampling methods

corresponding Sampling Protocol Definition,  
METHOD WITH CITATION) with associated field  
lected on field forms will conform to the  
Sampling Protocol Definition provided at [DoD

used and corresponding Sampling Protocol  
forms there is a corresponding Sampling

g methods with associated field forms and a

rch.php. Instructions for describing  
[Sampling Protocol Definitions](#) and instructions  
see: [Describing Field Methods and Sampling](#)

Contractor does not have a corresponding AKN

2

## DoD AKN Guidance:

1. Avian Knowledge Network Data Sharing Guidelines
2. Describing Sampling Protocol Definition for AKN Compatible Projects
3. Sampling Protocol Definition Template
4. Describing Field Methods and Sampling Design
5. Creating AKN Compatible Sampling Units
6. Sampling Unit Bulk Upload Templates
7. AKN Data Access, Entry, and Analysis
8. Preparing Data to Submit for Bulk Uploading for AKN Compatible Projects



# SCOPE OF WORK LANGUAGE

## for Contracts, Cooperative Agreements and Interagency Agreements



**AVIAN**  
KNOWLEDGE NETWORK

*Leveraging Partnerships, Data and Technology Information  
Revolutionize Avian Conservation and Management*

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**Statement of Work Language for Department of Defense  
Service Contracts, Grants, and Cooperative Agreements**  
DRAFT – February 2023

**Introduction**

To improve quality, access, and usability of avian survey, monitoring, and research data collected for Department of Defense (DoD), contractors and cooperators collecting such data use the Avian Knowledge Network (AKN) to enter, proof, and deliver their data. Here we provide guidance for developing statement of work language for contracts and agreements to specify such use of the AKN by contractors and/or cooperators. Specifications may vary based on whether the DoD is acquiring data from a contractor via a service contract or from a cooperator via a grant or cooperative agreement. The DoD and AKN are also developing new capacities, including a Program Enterprise System and additional user access specifications that will influence how the DoD specifies AKN use in contracts, grants, and cooperative agreements.

Following are details to be included in the "Statement of Work" section of a service contract, grant, or cooperative agreement. There are multiple options for data access, project set-up, and data entry for users with AKN training or for contractors/cooperators who do not have AKN training but will need to submit their project data in AKN compatible formats.

Terms used in Statement of Work (SOW) language

**AKN Project**—Fundamental unit of organization for observation data within the AKN. Projects contain information about how (Protocols), who (Researchers and Users), where (Sampling Units), when (Sampling Events), and what (Sampling Event Observations) data are collected. For DoD, each installation has its own project.

**Sampling Protocol Definition**—Defines how the data were collected and how they are stored.

**Contractor/Cooperator**—Party within the agreement that is primarily responsible for data collection and data entry.

**DoD Designee**—Primary DoD point of contact for contract terms. Can also specify an DoD AKN staff member if AKN staff will be working with the Contractor/Cooperator.

**Field Methods**—Protocol for data collection in the field used by the Contractor/Cooperator.

**User Roles**—The AKN allows for multiple levels of access to enter, manage, and share data. AKN users are assigned a User Role associated with each AKN Project they have permission to access. Current User Roles include:

- Biologist**—An AKN user assigned as a Biologist in an AKN Project can enter and proof data. Biologists can also review, edit, or correct previously entered data in any dataset housed within the AKN Project.
- Project Leader**—In addition to all Biologist User Role capacities, AKN users assigned as a Project Leader in an AKN Project can assign Sampling Protocol Definitions to an AKN Project, manage the Sampling Units (areas, points, transects, etc), manage data, get full exports of the AKN Project data from the system, and manage the User Roles (Biologist or Project Leader) of other AKN users on the AKN Project. Project Leaders can also set the desired data sharing levels for data, which determines how the data will appear in the various tools in AKN.

**Sampling Unit**—Field location where research or a survey is conducted and samples (observations) are collected. Sampling units are arranged hierarchically within AKN Projects (e.g., point count points nested within a transect).



**AVIAN**  
KNOWLEDGE NETWORK

Sampling Units contain a location name and geometry that describes where it sits on the earth. All point, polygon and other geographic data are described in WGS-84 Latitude-Longitude (EPSG:4326) geographical coordinate system.

**Sampling Event**— Represents the survey itself with a unique combination of location, date and time, person/people, and the protocol employed.

**Statement of Work Language**

The statement of work should specify standards for 1) data ownership and access 2) selecting sampling methods and AKN Sampling Protocol Definition(s), 3) providing details about sampling locations, 4) formats for uploading data. A user with AKN training may engage with the AKN directly as part of each of these steps; however, options are provided below for each step that allow for a Contractor/Cooperator without AKN training to provide the information in a format that is easily uploaded into the AKN by a DoD Designee. Information provided must be fully described per the AKN Guidance documents referenced in each step below.

**DATA OWNERSHIP: DoD must have permanent access to all data collected for the agreement.**

- SOW LANGUAGE: DoD owns and will have permanent access to all data collected for the agreement. The observation data (not summarized data) must be entered into the AKN and approved by the appropriate Project Leader at the appropriate sharing level (see DoD AKN Guidance: AKN Data Access, Entry, and Analysis for sharing level definitions). Data may be shared with the Contractor/Cooperator following [DoD AKN Guidance: AKN Data Sharing Guidelines](#) with specifics outlined in an AKN Data Sharing Agreement [DoD Designee PROVIDES ATTACHMENT].

**DATA COLLECTION: Specify whether DoD or the Contractor/Cooperator will choose the sampling methods (CHECK ONE):**

DoD Designee will specify the sampling methods to be used and corresponding Sampling Protocol Definition.

- SOW LANGUAGE: Contractor/Cooperator will use [FIELD METHOD WITH CITATION] with associated field forms [DoD Designee PROVIDES ATTACHMENT]. The data collected on field forms will conform to the metadata specified by the methodology and associated Sampling Protocol Definition provided at [DoD Designee provides AKN link].

Contractor/Cooperator will specify the sampling methods to be used and corresponding Sampling Protocol Definition. (Only use this option if the Contractor/Cooperator knows there is a corresponding Sampling Protocol Definition in the AKN).

- SOW LANGUAGE: Contractor/Cooperator will provide sampling methods with associated field forms and a link to the associated Sampling Protocol Definition here <https://data.pomtlblue.org/science/biologists/ohs/protocolssearch.php>. Instructions for describing metadata are provided in [DoD AKN Guidance: Describing Sampling Protocol Definitions](#) and instructions for providing sampling methods is provided in [DoD AKN Guidance: Describing Field Methods and Sampling Design](#).

Contractor/Cooperator will specify sampling methods to be used that does not have a corresponding AKN Sampling Protocol Definition.

2

### DoD AKN Guidance:

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3. Sampling Protocol Definition Template
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6. Sampling Unit Bulk Upload Templates
7. AKN Data Access, Entry, and Analysis
8. Preparing Data to Submit for Bulk Uploading for AKN Compatible Projects



# DOD AKN USER GUIDE

Detailed Step-by-step Instructions for DoD Use;  
Supplements Training



Getting  
Started

Managing  
Project

Getting  
Data In

Getting  
Data Out

Exploring  
Data

DoD  
Glossary





# AKN TOOLS

## *New System User Roles*

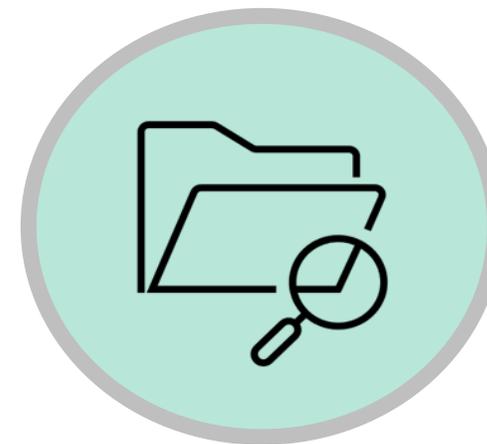
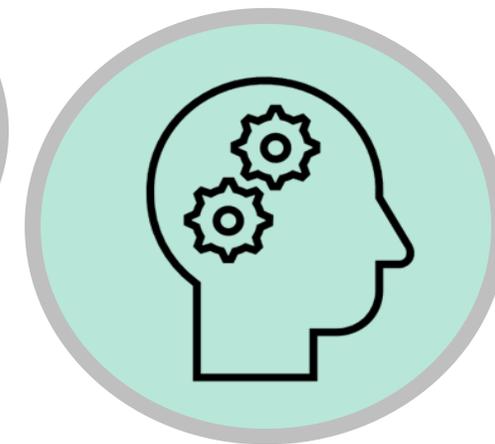
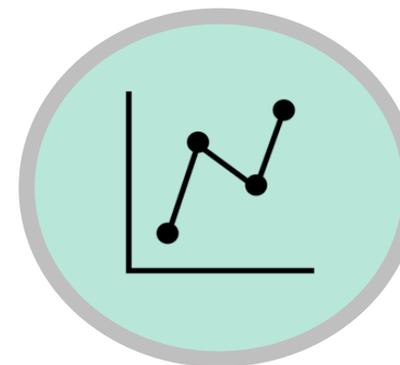
**Need:** Roles in the system that meet requirements for data entry and/or analysis for portions of AKN projects

**Solution:** Creation of two new user roles that meet identified needs

**Plan:** Create two new roles

- I. **Contractor Role** - support a contractor requiring access (data entry, data download, data analysis) to a portion of Project
- II. **Analyst Role** - allow full access to a Project or Program for data download and analysis, w/o ability to manage metadata or user access.

**Status:** Needs and roles identified, Will begin upon completion of the Enterprise Support for Programs





# FY24 PRIORITY TASKS

## Base Support

- Program Coordination
- Installation Consulting (Office Hours)
- Back-end Technical Support
- Customer Data Support
- Reporting: Annual, Qtrly & Factsheets
- Annual Support Costs (Science Cloud)

## Training

- Regional Training (4x/year)
- Service-specific Trainings
- Manager Training Modules
- Expanded Methodology Training
- Training Videos

## AKN Tools (Partner Initiatives)

- Enterprise Support for Programs
- Creation of Contractor Role
- Creation of Analyst Role
- New Analyst v3 in Shiny

## Data Initiatives

- MSS Protocols & Data
- Banding Data in Science Cloud
- BASH Data in Science Cloud
- Machine/sensor-collected Data
- Decision-support Tools & Publications

## DoD-Specific Tools

- DoD User Guide
- Progress Dashboard
- Standardizing DoD Bird Monitoring
- Mission-sensitive Species Tools
- Climate Resilience Tool

## Military Services & Installation Support

- Historical/Contemporary Data Support
- Custom Data Outputs
- Direct Data Initiatives
- Case Study Development



# DOD MISSION BENEFITS

- Secure database to input/upload, curate, and manage DoD field data
- Empowers historical data
- Assess status of birds on/near installations
- Monitor trends at multiple scales
- Data sharing and integration with partners
- Advanced data analysis and visualization tools
- Access to data that contributes to more technically and scientifically sound INRMPs, NEPA environmental reviews, and ESA Section 7 Consultation
- Contributes directly to proactive conservation, monitoring and management of priority bird species



**Enabling the Mission, Defending the Resources**



# NEXT STEPS FOR YOU





# SIGN-UP FOR DoD AKN UPDATES

Programs Performance Stakeholders References

DEPARTMENT OF DEFENSE  
LEGACY PROJECTS

## DoD Legacy Resource Management Program

Menu

Contact the POC for DoD Legacy Resource Management Program

Privacy Advisory: The use of information provided is subject to the DENIX Privacy Policy. You may opt out of providing contact information in this form. If you do so, we will not be able to provide a response.

**\*Required**  
\*Your Name:

\*Email Address:

Phone Number:

\*Subject:

\*Message:

I'm not a robot

Search DoD Legacy Resource M

**Legacy Listserv**  
Click here to sign up for the Legacy Listserv

**News**

- Natural Selections Newsletter Winter 2021-2022 (1.37 MB)
- 2021 DoD Climate Action plan (12.11 MB)
- Fantastic Flights: Technology Tells the Tale of Avian Travels (Legacy #16-764)

**Online Tools**

- Conserving Biodiversity on Military Lands: A Guide for Natural Resource Managers 3rd Edition
- Biodiversity Outreach Tools
- Climate Adaptation for DoD Natural Resource Managers, 2019 (Legacy Project #16-790)

1. Enter name
2. Enter email address
3. Enter "add to listserv"
4. Say please in message
5. Confirm you're not a robot

Programs Performance Stakeholders References

DEPARTMENT OF DEFENSE

## DoD Partners in Flight (DoD PIF)

Menu

Contact the POC for DoD Partners in Flight (DoD PIF)

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**\*Required**  
\*Your Name:

\*Email Address:

Phone Number:

\*Subject:

\*Message:

I'm not a robot

**DoD Plans**  
Strategic Plan

**Important Bird Areas**  
Important Bird Areas  
Military Lands as Important Bird Areas

**Resources and Information**  
About Resources  
Articles  
Presentations  
Fact Sheets  
Birds of North America Online  
Species of Concern  
Bird Conservation Map  
Species Profiles

**Archives**  
Kirtland's Warbler  
About KW Archives  
Articles  
Books and Book Chapters  
Cooperative Agreements  
Correspondence  
Interviews  
Maps  
Miscellaneous Information  
Photos  
Plans  
Policy  
Press Releases  
Profiles  
Radio and Film  
Outreach  
KW Reports  
KW Scientific Papers  
Sighting and Banding Records  
Theses and Dissertations

Contact POC

Find Your DoD PIF Contact



# ONGOING SUPPORT

- ***Monthly Virtual Office Hours***

- Monthly "Office Hours"
- Calendar and signups [here](#)



- ***Other Opportunities***

- Training videos on AKN YouTube Channel  
([https://www.youtube.com/channel/UCi9in\\_tC9uTZa9Bo3HgnY1Q/featured](https://www.youtube.com/channel/UCi9in_tC9uTZa9Bo3HgnY1Q/featured))
- Funded data initiatives from Military Services

**Questions, thoughts, suggestions in the future?  
Contact our team!**

**DoDAKN@erdc.dren.mil**



# **END-TO-END PROCESS TO REGISTER A NEW USER**

## **DEMONSTRATION**



# WHAT UPDATES, INITIATIVES, TOOLS DO YOU WANT TO SEE?





# OPEN FORUM





# PLUS/DELTA

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# FINAL DAY WRAP-UP





**AVIAN**  
KNOWLEDGE NETWORK

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# DoD AND THE AKN: WHO, WHAT, WHERE, WHEN , WHY, AND HOW

*DoD Air Force Training*  
*December 12-13, 2023*  
Virtual

Sam Veloz  
Dianne Miller

Elizabeth Neipert  
Zoe Duran

John Alexander  
Caitlyn Gillespie



**Thank you for participating!**

**Contact the DoD AKN Team:  
[DoDAKN@erdc.dren.mil](mailto:DoDAKN@erdc.dren.mil)**