



AVIAN
KNOWLEDGE NETWORK

DoW AND THE AKN: WHO, WHAT, WHERE, WHEN, WHY, AND HOW

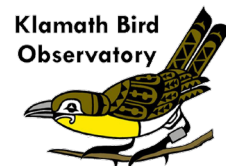
DoW AKN Quarterly Regional Training
11-13 August 2026

COBSCOOK INSTITUTE (HOST: NAVAL SUPPORT
ACTIVITY CUTLER), TOWNSHIP OF TRESCOTT, ME

Sam Veloz
Dianne Miller

Elizabeth Neipert
Zoe Duran
Jocelynn Marriott

Caitlyn Gillespie
Nora Honkomp
John Alexander



Atlantic Puffin, Machias Island,
Maine; Credit: Paul Block



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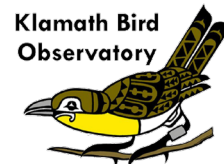
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[dodakn.org/
training-class-website](https://dodakn.org/training-class-website)

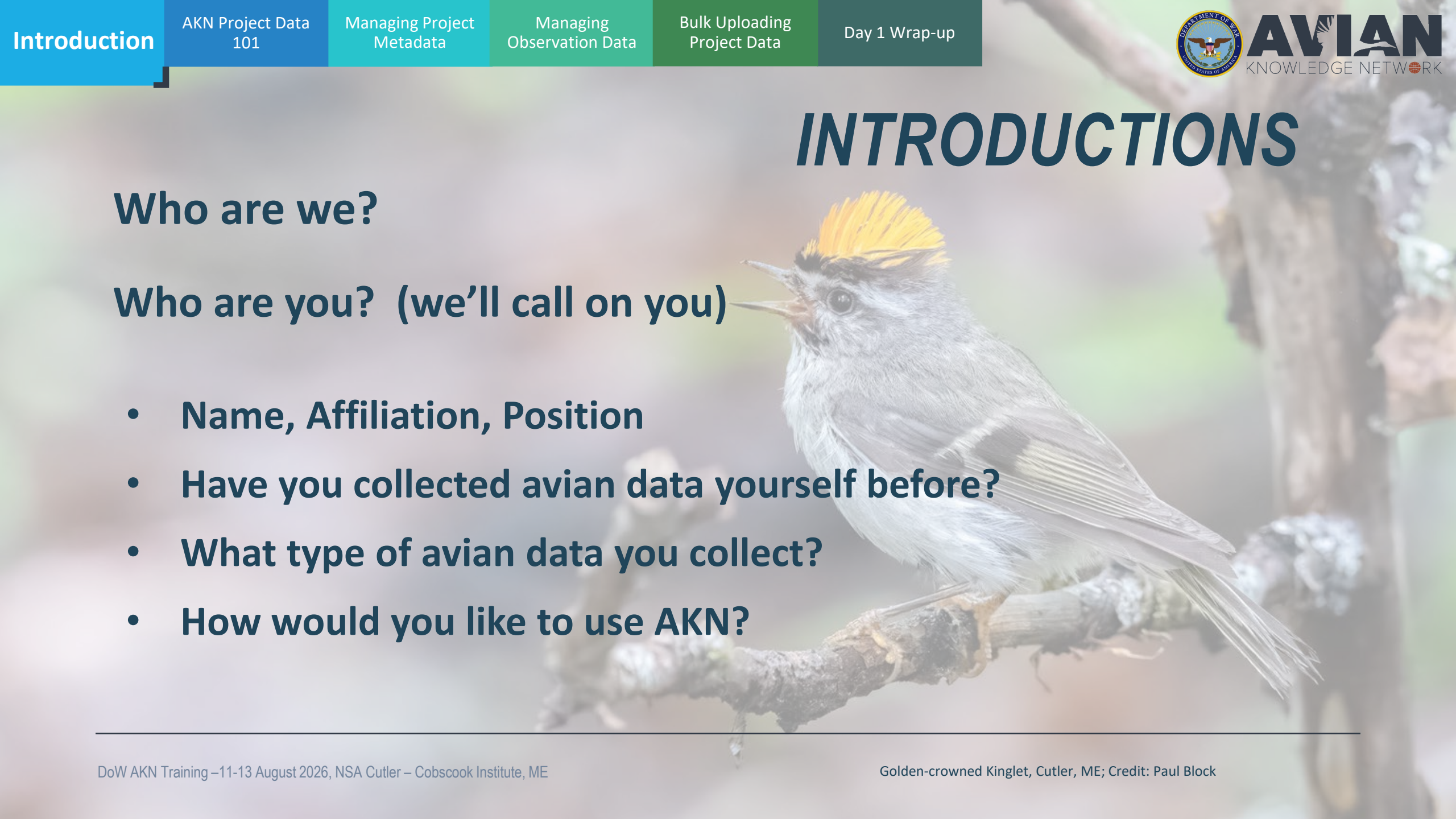


Atlantic Puffin, Machias Island,
Maine; Credit: Paul Block



WELCOME, INTRODUCTIONS, AND LOGISTICS





INTRODUCTIONS

Who are we?

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

- **Name, Affiliation, Position**
- **Have you collected avian data yourself before?**
- **What type of avian data you collect?**
- **How would you like to use AKN?**

MEET THE TEAM



A FEW LOGISTICS...

- The Agenda with links (bookmark this):
dodakn.org/training-class-website
- Session: interactive & casual
- Office hours: 16 hours monthly, sign up here



dodakn.org/office-hours-booking-page

DoD AKN Portal

Department of Defense's one-stop-shop for all things Avian Knowledge Network

Manage Data

Resources

Training

Office Hours

Reporting

About Us

 **AVIAN**
KNOWLEDGE NETWORK

Avian Knowledge Network (AKN): the Who, What, Where, When, Why, and How

DoW AKN Regional Training, Camp Ripley, MN July 14 – 16, 2026

Agenda

Exercises

Slides

Resources

Archive (coming soon)

Agenda

Tuesday, July 14

All times Central Daylight Time (CDT)

0800 (65 min) — Welcome, Introductions, and the Avian Data Lifecycle

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

- Welcome and introductions
- Review the workshop agenda
- Logistics and facilities
- What to do if you encounter technical problems
- The Avian Data Lifecycle

0905 (40 min) — AKN Project Data 101: project database, programs, protocols, and sampling units

We will cover how the AKN represents observational data and how to find the best way to organize and curate your data in a project database.

- How the AKN organizes data
- What is a Program?

- Parking lot items

DoW AKN PORTAL

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](#)

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

[DoD AKN User Guide](#)

[Get Training!](#)



PLUS – DELTA METHOD

- Feedback from workshop to continue to improve

+ PLUS

What went well and should be continued or repeated

Δ DELTA

What could be changed or improved for future iterations



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

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@erdc.dren.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 or 406-581-8148

KIDD RICHARD GO Digitally signed by
ODWIN.IV.1163856
081
DN: c=US, o=Department of Defense, ou=Office of the Assistant Secretary of Defense, email=Richard.G.Kidd@defense.gov, cn=Richard G. Kidd IV

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

DoW MANDATE MEMO





DoW & AKN

WHY?

DOW DATA ISSUES

- (1) Inconsistent formats and inefficient access to data for regulatory requirements, environmental analyses, planning and research
- (2) Lack of visibility on avian species population trends and management across the Military Services and broader landscapes, resulting in difficulty applying decision-making
- (3) Lack of a centralized, secure data repository resulting in dispersed datasets and data loss during personnel turnover

• Army
• Air Force
• Marine Corps
• DLA

HAWAII

PUERTO RICO

WAKE IS.

GUAM



**DoW
&
AKN**

**WHAT
?**

AKN DATA SOLUTIONS

- (1) Allowing efficient access to data for regulatory requirements, environmental analyses, planning and research
- (2) Creating visibility on avian species population trends and management across jurisdictions and broader landscapes and
- (3) Offering secure, centralized data repository and archive

• Army
• Air Force
• Marine Corps

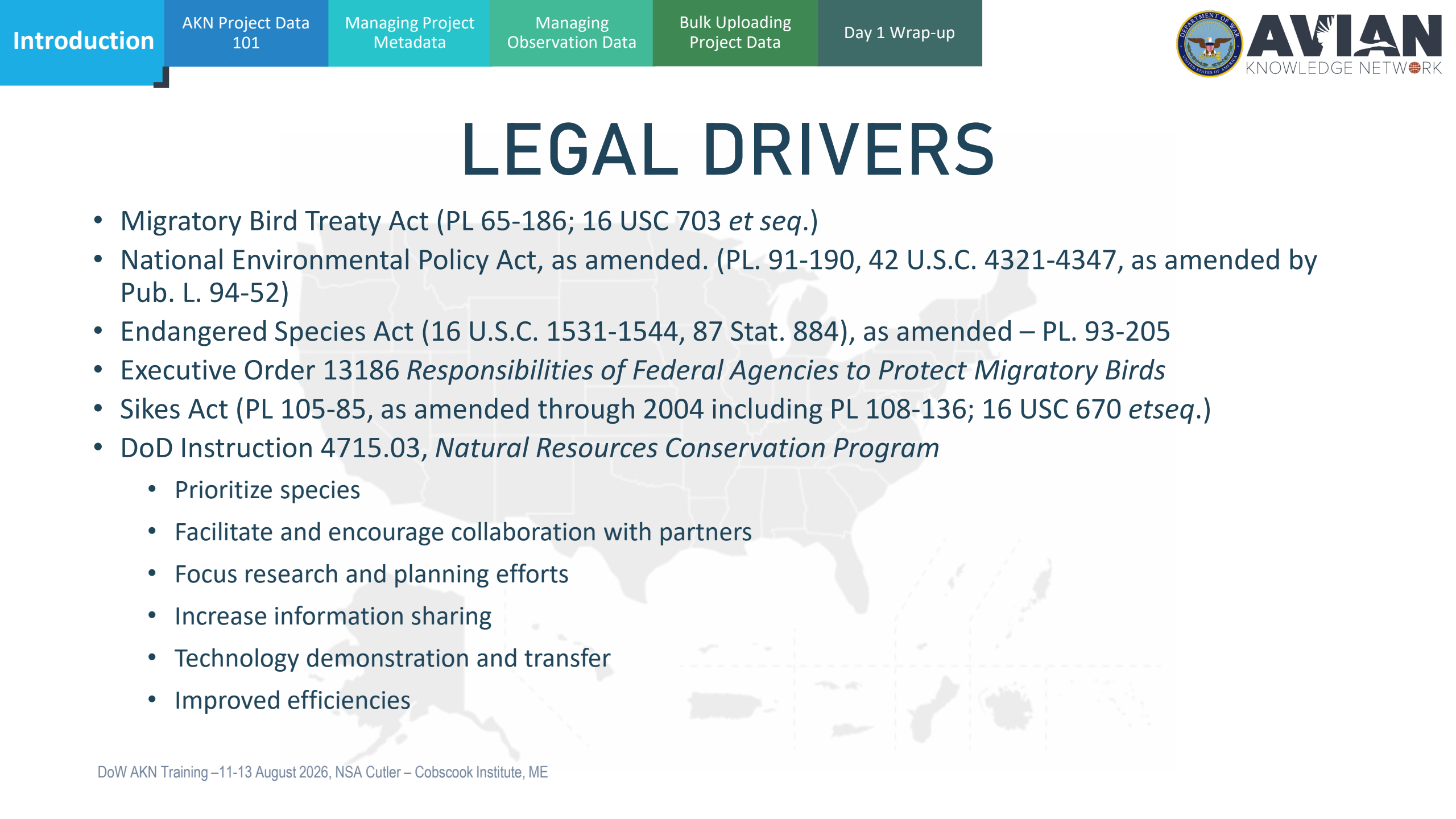
• Navy
• DLA

HAWAII

PUERTO RICO

WAKE IS.

GUAM



LEGAL DRIVERS

- Migratory Bird Treaty Act (PL 65-186; 16 USC 703 *et seq.*)
- 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
- Executive Order 13186 *Responsibilities of Federal Agencies to Protect Migratory Birds*
- Sikes Act (PL 105-85, as amended through 2004 including PL 108-136; 16 USC 670 *et seq.*)
- DoD Instruction 4715.03, *Natural Resources Conservation Program*
 - Prioritize species
 - Facilitate and encourage collaboration with partners
 - Focus research and planning efforts
 - Increase information sharing
 - Technology demonstration and transfer
 - Improved efficiencies



Driving Avian Data Questions

1. What species have confirmed occurrence on my installation?
2. What species have the potential to occur on my installation?
3. What species may occur/persist on my installation in the future?
4. How are species “doing” (population metrics) on my installation? (AKA “is my INRMP effective?”)
How are species doing across the military? (AKA “Is the DoW conservation program effective?”)
5. What factors are driving population trends on my installation? Are there conservation measures/actions within my INRMP that are working more than others to reach identified conservation objectives?
6. What is the relative conservation responsibility of avian species on military installations?

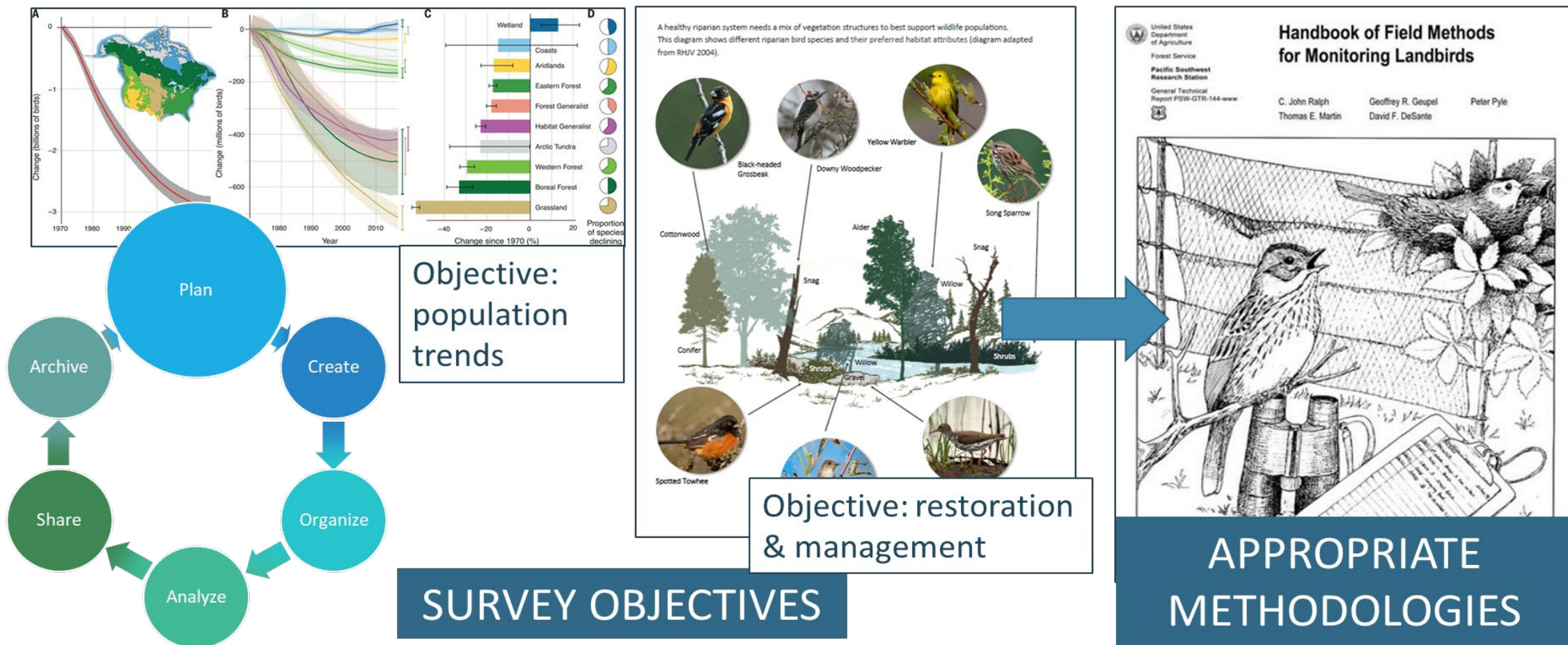
FULL AVIAN DATA LIFE CYCLE



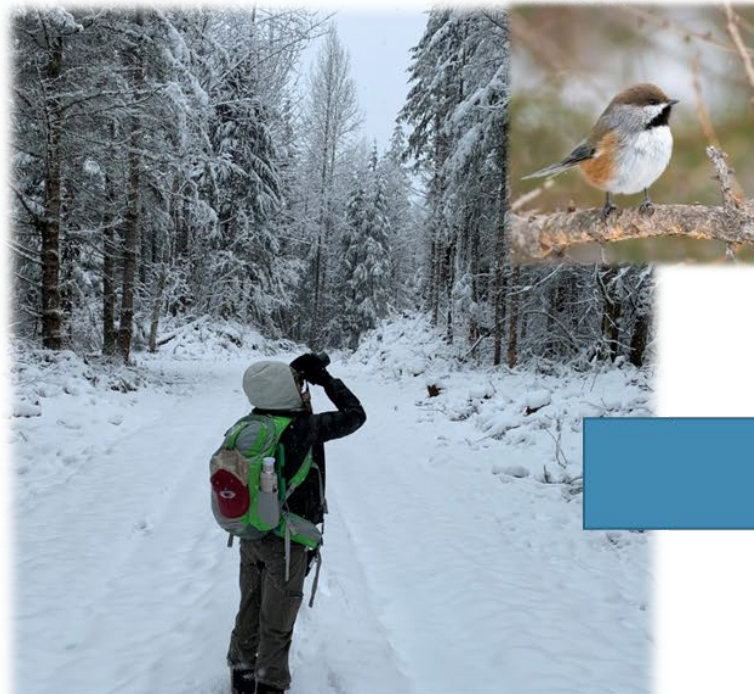
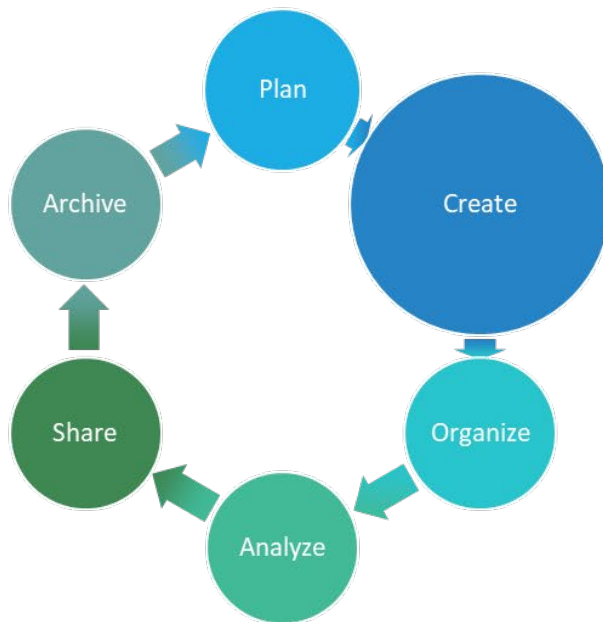
FULL AVIAN DATA LIFE CYCLE



FULL AVIAN DATA LIFE CYCLE



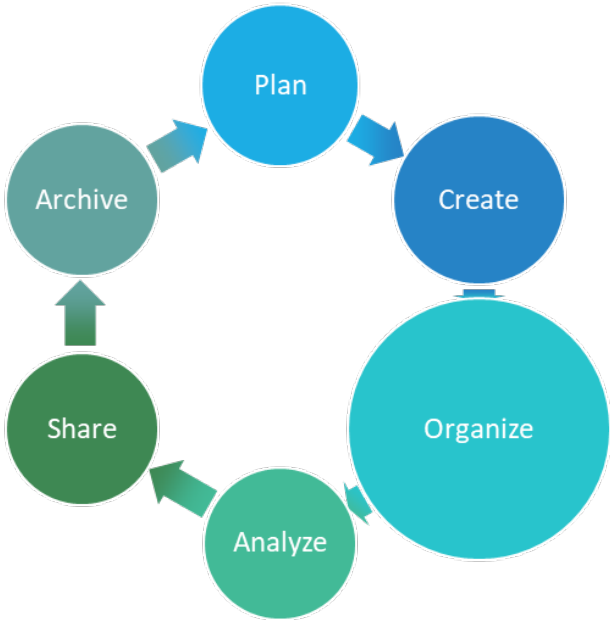
FULL AVIAN DATA LIFE CYCLE



FIELD SAMPLING-OBSERVATIONS

[illegible]

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

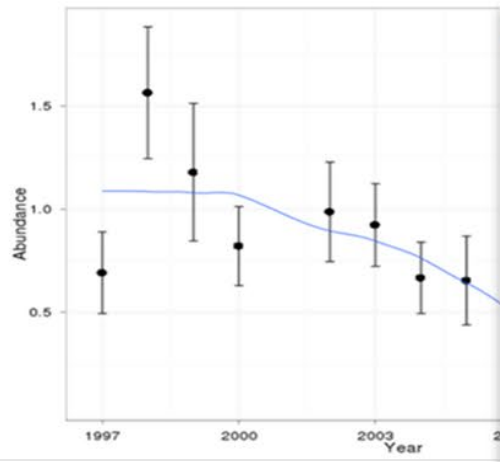
ANALYSIS

Total Number of Observations of each Species by Year

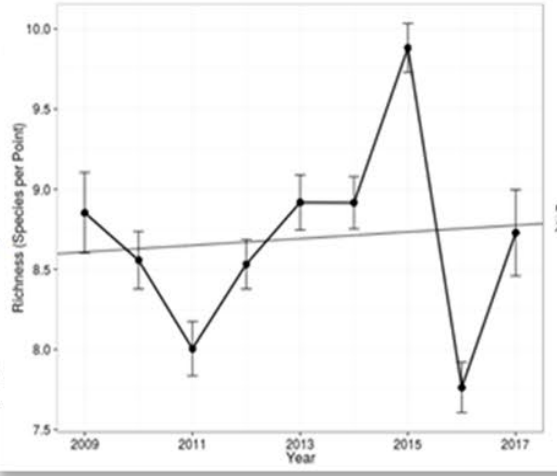
copy table to: [CSV](#) [HTML](#) [DOC](#) [PDF](#)

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										

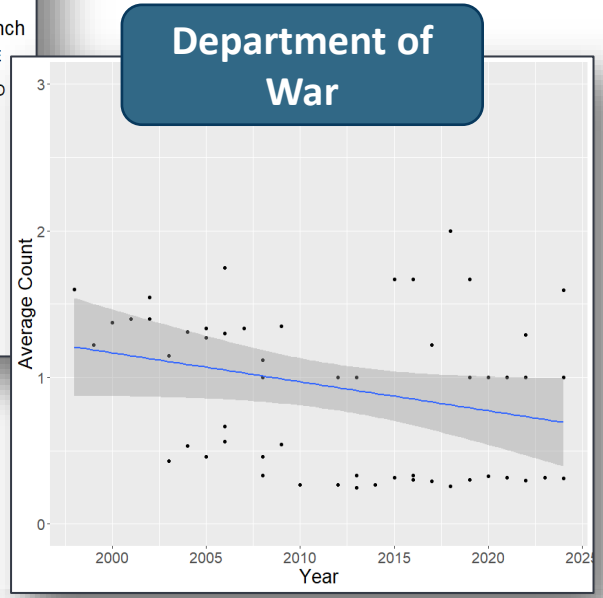
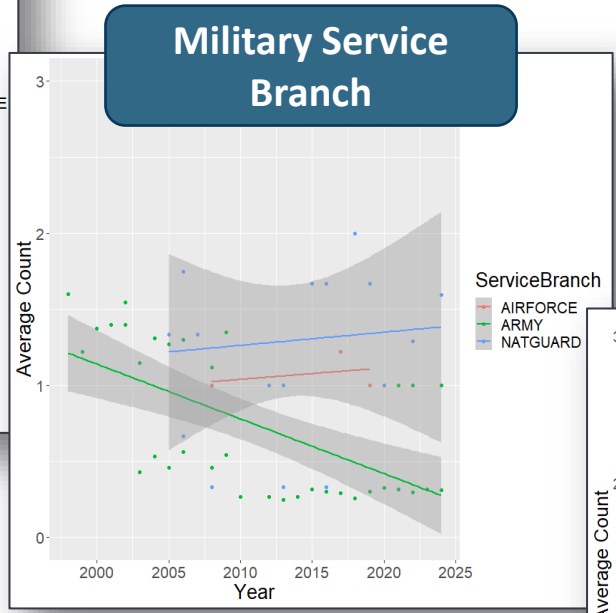
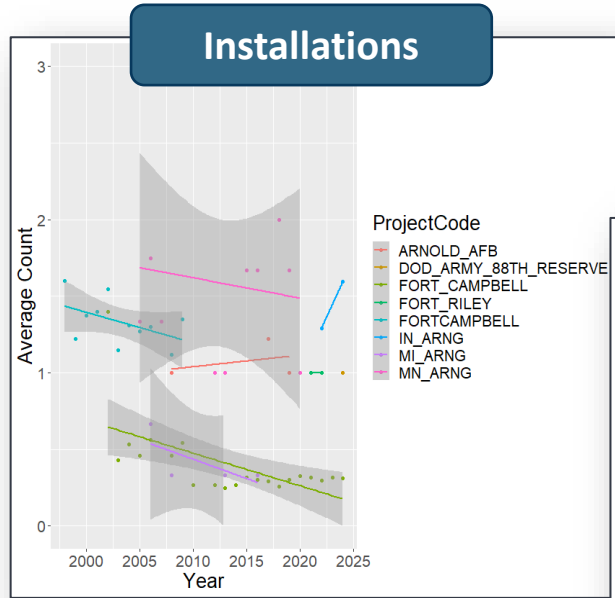
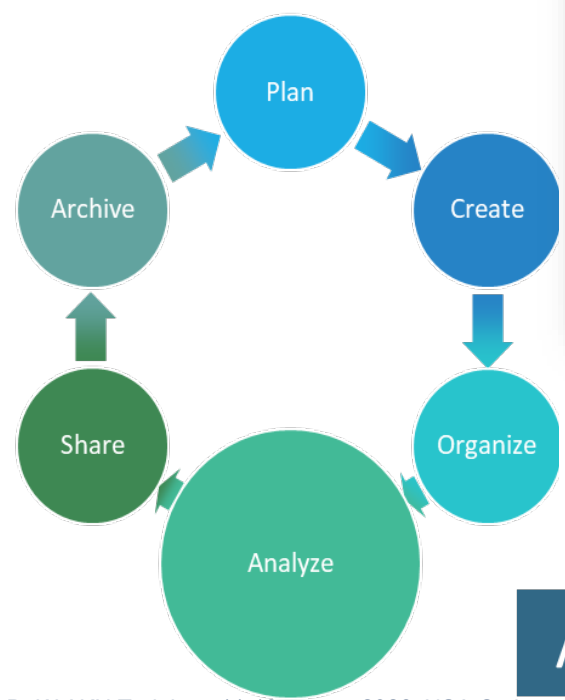
Trend in Abundance over YearCollected. Generalized additive trend estimate of Abundance by Year with locally weighed (loess) smoother. Estimate for Species = Song Sparrow Using Locally Weighed (loess) Smoother



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

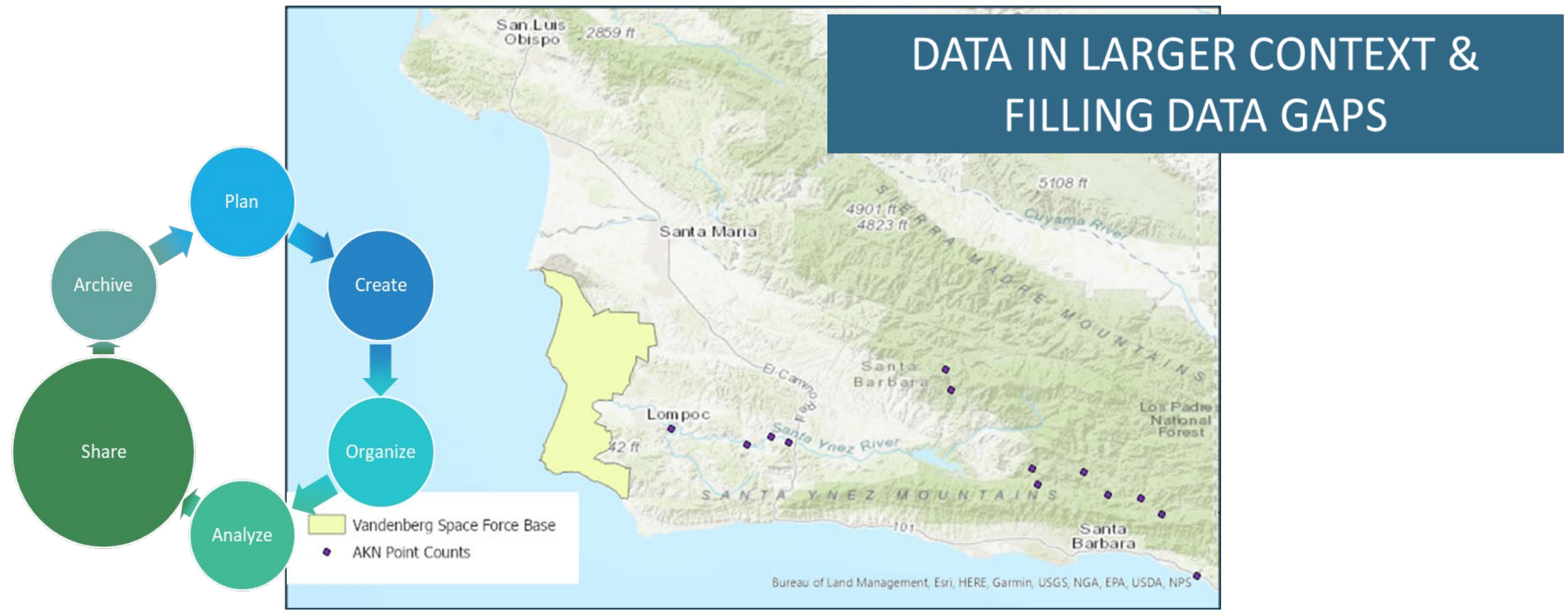


FULL AVIAN DATA LIFE CYCLE

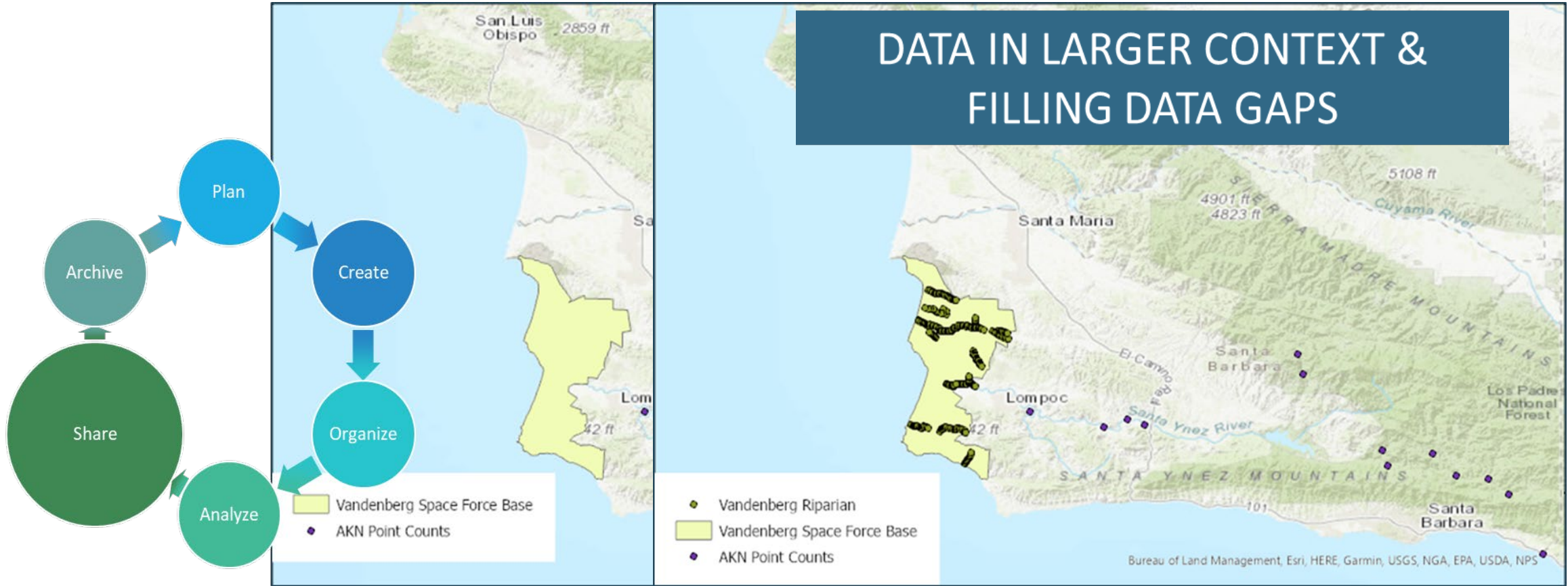


ANALYSIS AT MULTIPLE SCALES

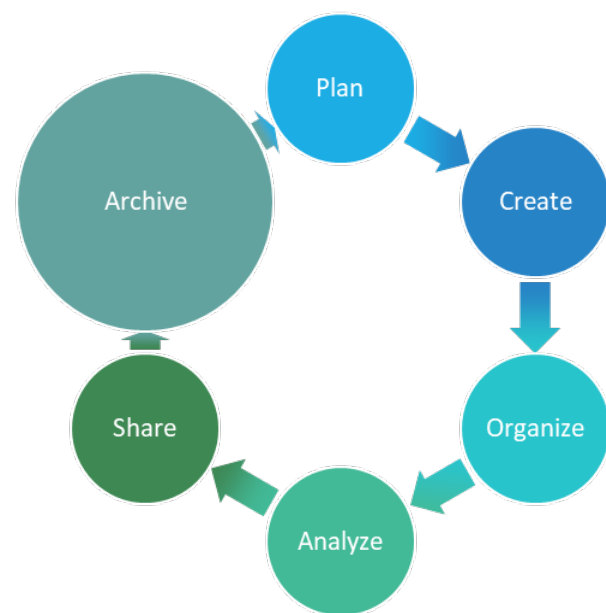
FULL AVIAN DATA LIFE CYCLE



FULL AVIAN DATA LIFE CYCLE



FULL AVIAN DATA LIFE CYCLE



Project Downloader

This tool allows you to download your observation data, sampling unit configurations, or both on a per-sampling unit, per-project basis. All projects that you have access to, including any in your program, will be available for selection. Once you click the download button, a zip file containing one CSV per selection will download from your browser.

Project

Select one or more projects or sampling units for data download.

Filter

All available projects and programs

Select all projects

▼ ☒ ★ FORT_CARSON - [DOD_ARMY] Fort Carson

▼ ☒ # Fort Carson (FC)

▼ ☒ # FC IMBCR Surveys (FC_IMBCR)

▶ ☒ # CO-BCR18-DO (CO-BCR18-DO)

▶ ☒ # CO-BCR18-FC (CO-BCR18-FC)

▶ ☒ # CO-BCR18-FF (CO-BCR18-FF)

▶ ☒ # CO-DOD16-FC (CO-DOD16-FC)

▶ ☒ # CO-DOD16-FF (CO-DOD16-FF)

▶ ☒ # Fort Carson Marshbird (FC_MB)

▶ ☒ # Fort Carson Point Count (CARSON_PC)

▼ ☒ # Pinon Canyon Maneuver Site (PCMS)

▼ ☒ # PCMS IMBCR Surveys (PCMS_IMBCR)

▶ ☒ # CO-BCR18-PF (CO-BCR18-PF)

▶ ☒ # CO-BCR18-PM (CO-BCR18-PM)

Observation data

If you would like to download observation data, select the type(s) of survey data to be included in the download.

Survey types

NOTE: If the survey data type is not available for any number of projects you've selected, those projects will not be included in the resulting download.

☐ Point count observations

☐ Area search observations

View & Export Protocols

Viewing protocols within FORT_CARSON

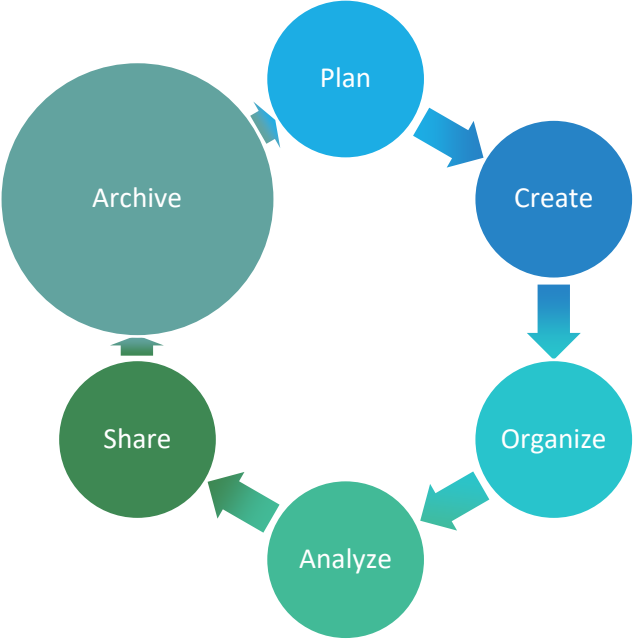
Search

Filter by type All available types

Name	Description	Type
▶ ARSE_PIJA	Area search survey standard protocol from the PIJA Working Group	AreaSearch
▶ BLS_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

PERMANENT STORAGE & ACCESS

FULL AVIAN DATA LIFE CYCLE





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Search

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Zscaler, Inc.

Zscaler Internet Access - Government (Secure Web Gateway - vTIC) - High

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FR2227062482

13 Authorizations13 Reuses

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Point Blue Conservation Science

Point Blue Science Cloud

FedRAMP Certified

Class B (Low) Certification

FR2127765215

1 Authorizations0 Reuses

Point Blue Conservation Science

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CASE STUDY: KLAMATH BIRD OBSERVATORY

AKN for Streamlined Data Management

- Bird monitoring since mid 90's
- Data entered directly into AKN since 2016
- Streamlined data management process
- Save time and money every field season



CASE STUDY:

KLAMATH BIRD OBSERVATORY

Pre-Season:

- Download survey locations from AKN to GPS units



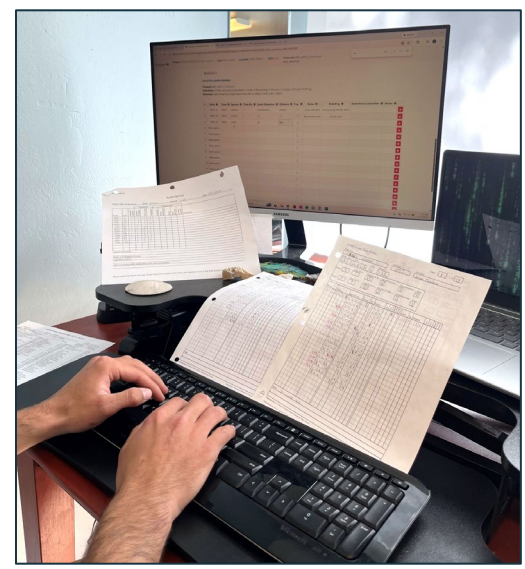
During Season:

- Collect data on paper forms in field
- Enter data directly into AKN



Post-Season:

- Download data to share with partners and analyze



Introduction

AKN Project Data101

Managing Project Metadata

Managing Observation Data

Bulk Uploading Project Data

Day 1 Wrap-up



AVIAN
KNOWLEDGE NETWORK



CASE STUDY:

KLAMATH BIRD OBSERVATORY

DecimalLatitude	DecimalLongitude	ObservationDate	Time	Collector	CommonName	SpeciesCode	Distance	DetectionCue
42.92888	-122.27877	6/17/2025	9:12:00	AH	Yellow-rumped Warbler	YRWA	20	S
42.92888	-122.27877	6/17/2025	9:15:00	AH	Pileated Woodpecker	PIWO	79	C
42.92888	-122.27877	6/17/2025	9:16:00	AH	Lazuli Bunting	LAZB	76	S
42.92888	-122.27877	6/17/2025	9:12:00	AH	Yellow-rumped Warbler	YRWA	58	S
42.92888	-122.27877	6/17/2025	9:12:00	AH	Nashville Warbler	NAWA	49	S
42.92888	-122.27877	6/17/2025	9:12:00	AH	Lazuli Bunting	LAZB	46	S
42.92888	-122.27877	6/17/2025	9:13:00	AH	Common Raven	CORA	63	V
42.92888	-122.27877	6/17/2025	9:13:00	AH	Golden-crowned Kinglet	GCKI	34	S



Cue	Description
C	Call
S	Song
V	Visual

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CASE STUDY: KLAMATH BIRD OBSERVATORY

Advantages and Efficiencies

- No updating, managing old Access databases or spreadsheets
- Efficient QA/QC process
- Quick data access for new staff members
- No reformatting needed to compile datasets for analyses/data sharing

CAN YOU LOG IN?

Biologist Application:

data.pointblue.org/science/biologists

Problems logging in?

Best to find a buddy or have one of us help!



LIMITATIONS AND CAVEATS

Focus for this training: Point Count data

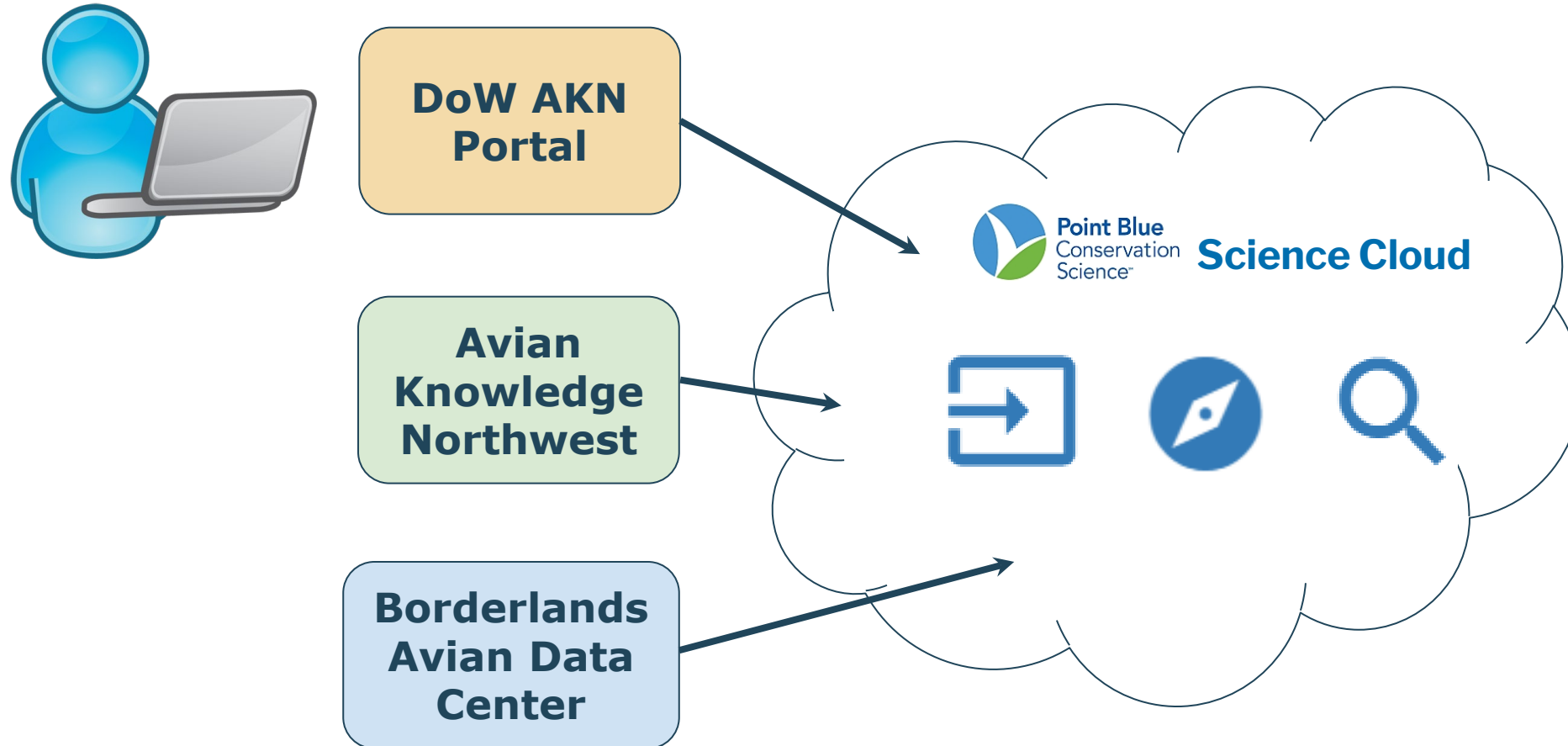
Office Hours are where we can dig deep into your installation's specific Projects, surveys, data management/analysis needs, and any system issues.



AKN PROJECT DATA 101



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?



CASE STUDY: 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 DoW
- Data ready and available to successor



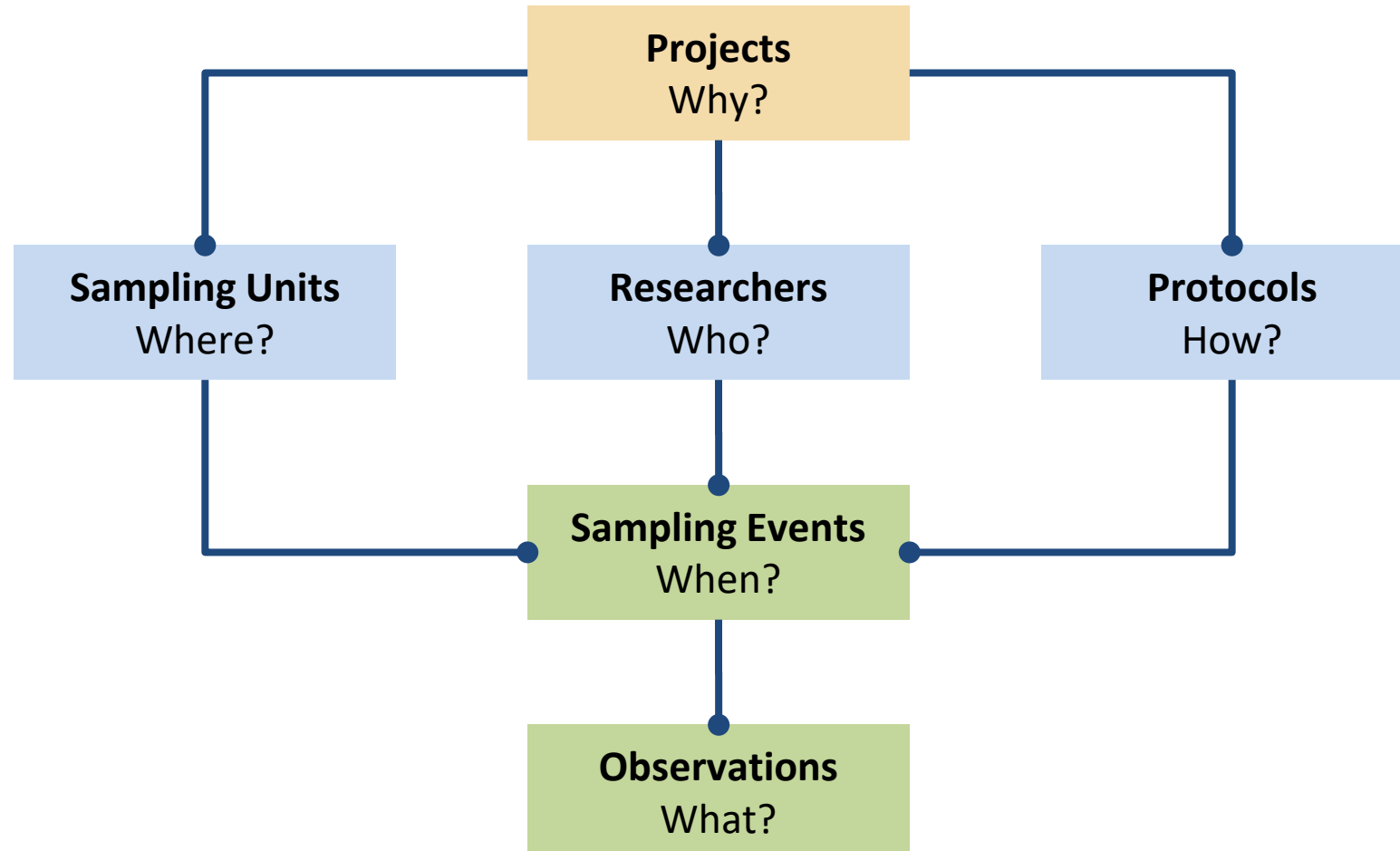
AKN PROJECT DATA 101

1. The parts of a Project Database
2. The workflow for creating and managing a Project



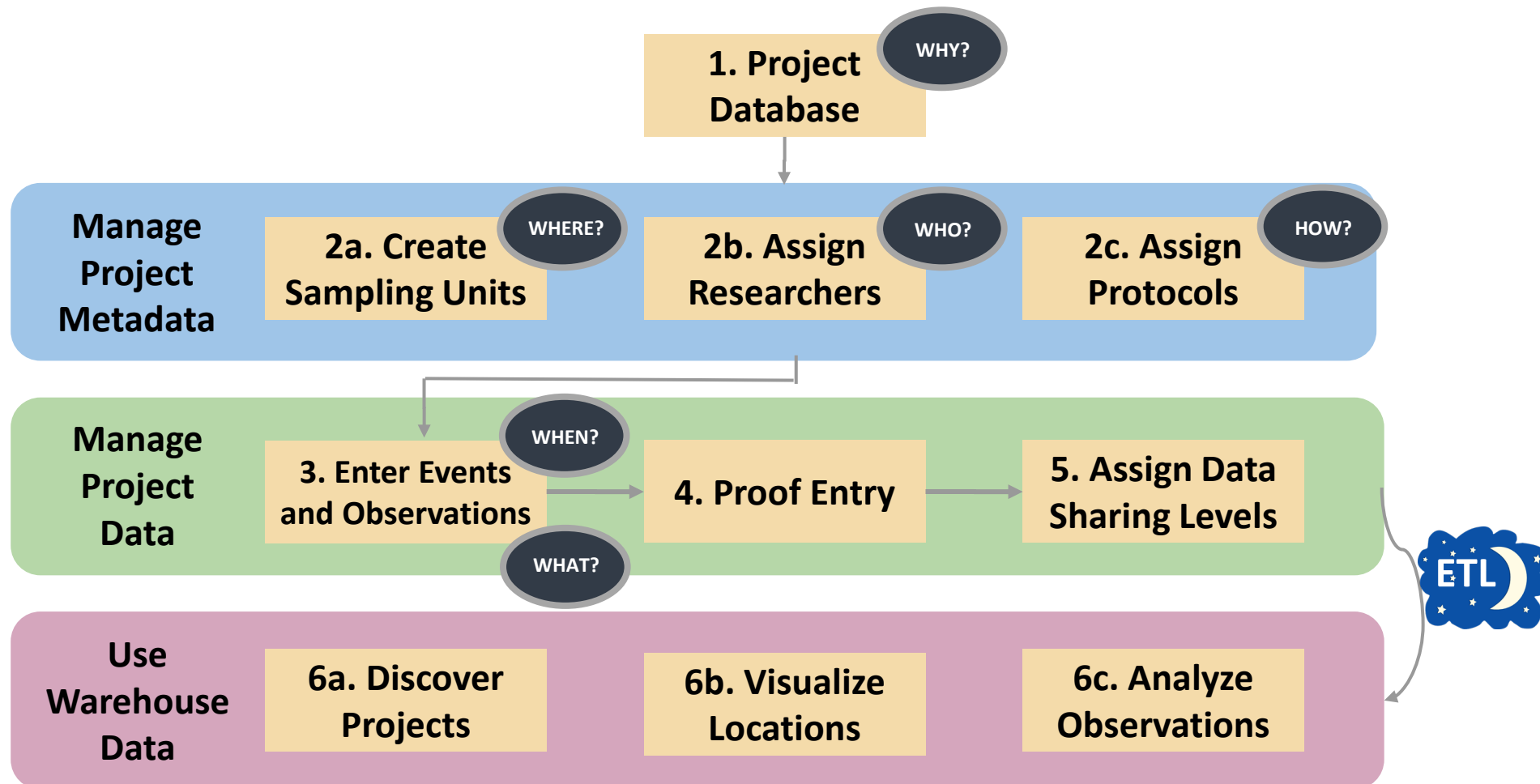


THE PROJECT DATABASE



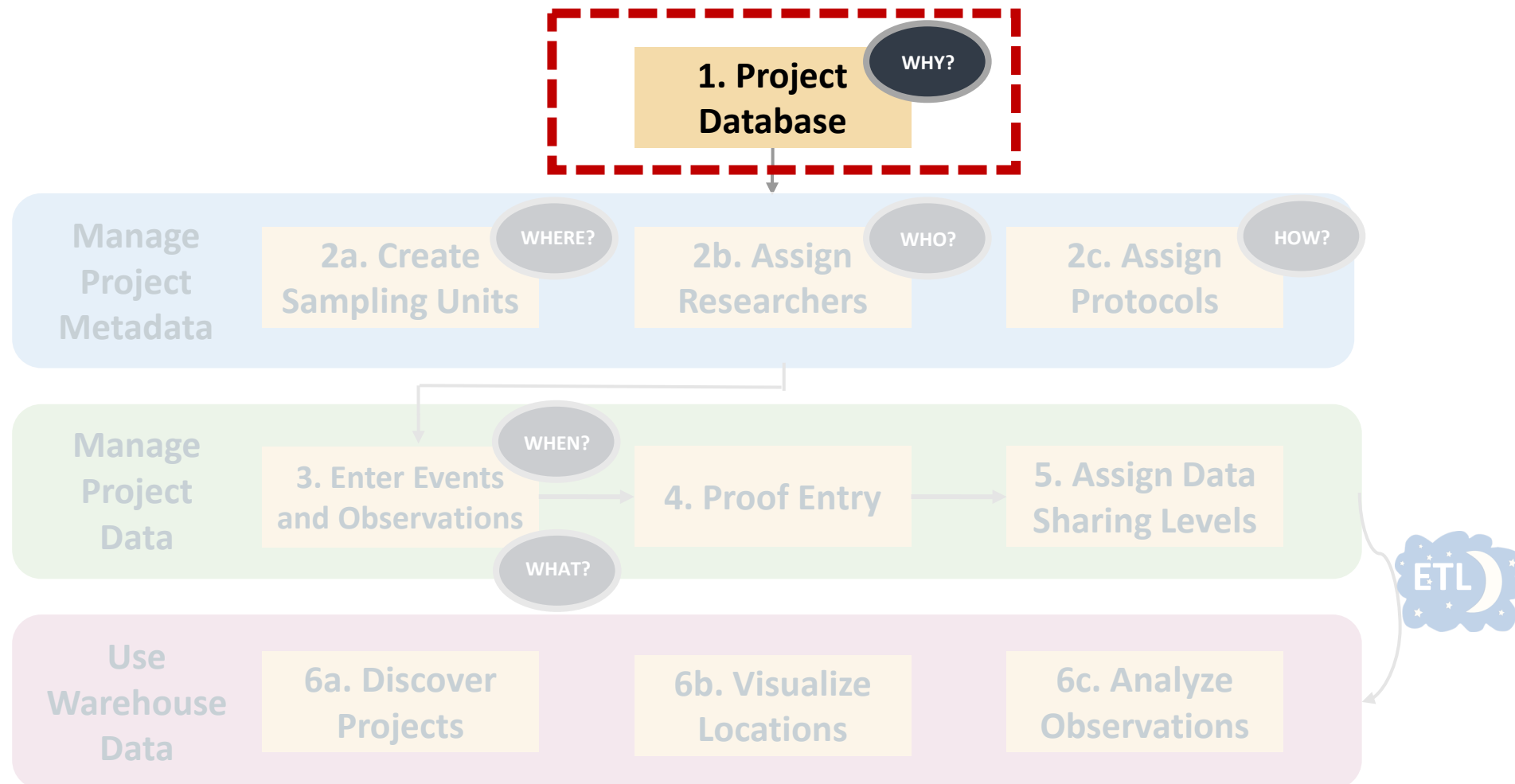


WORKFLOW FOR MANAGING A PROJECT





WORKFLOW FOR MANAGING A PROJECT





PROJECT

Container for Event and Observation data

Many ways to organize

For DoW: Project = Installation



Eastern Towhee, MCRC,
Clinton, PA; Credit: Paul Block

**1. Project
Database**

WHY?



DoW 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



DoW Program Structure



Air Force Subprogram



Installation Project
Databases

Army Subprogram



Installation Project
Databases

Navy Subprogram



Installation Project
Databases

Marine Subprogram



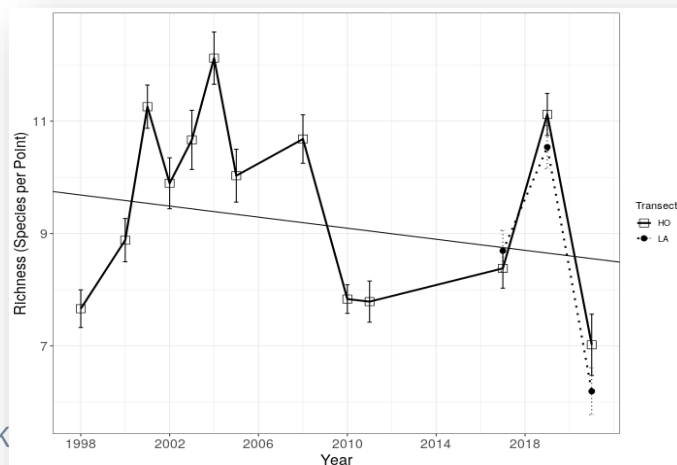
Installation Project
Databases

National Guard Subprogram



Installation Project
Databases

Vandenberg Space Force Base Project Riparian Richness





DoW Program Structure



Air Force Subprogram



Installation Project
Databases

Army Subprogram



Installation Project
Databases

Navy Subprogram



Installation Project
Databases

Marine Subprogram



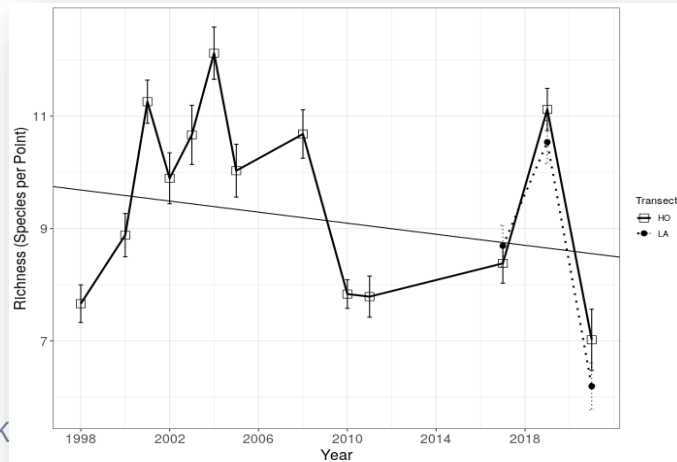
Installation Project
Databases

National Guard Subprogram

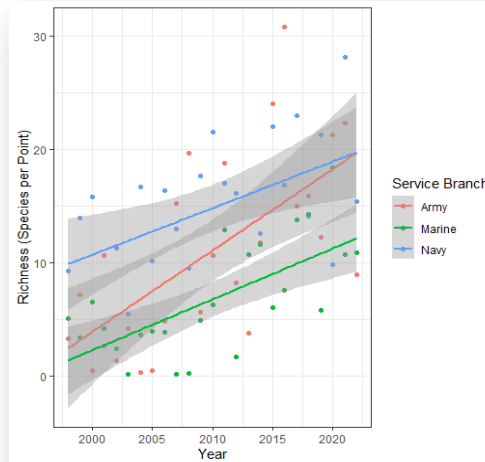


Installation Project
Databases

Vandenberg Space Force Base Project Riparian Richness



Service Branch Program Riparian Bird Richness





DoW Program Structure



Air Force Subprogram



Installation Project
Databases

Army Subprogram



Installation Project
Databases

Navy Subprogram



Installation Project
Databases

Marine Subprogram



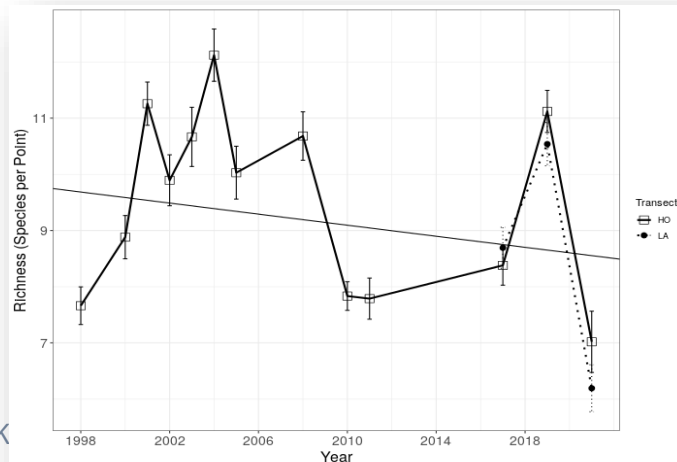
Installation Project
Databases

National Guard Subprogram

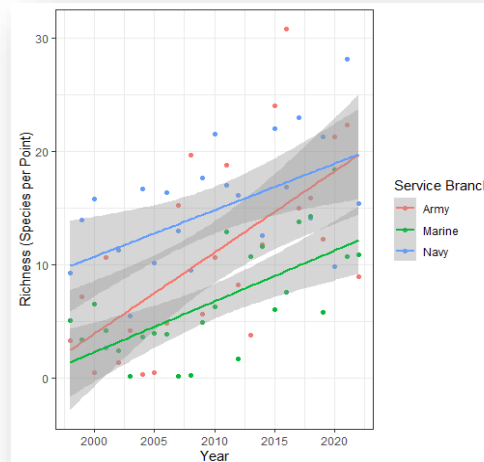


Installation Project
Databases

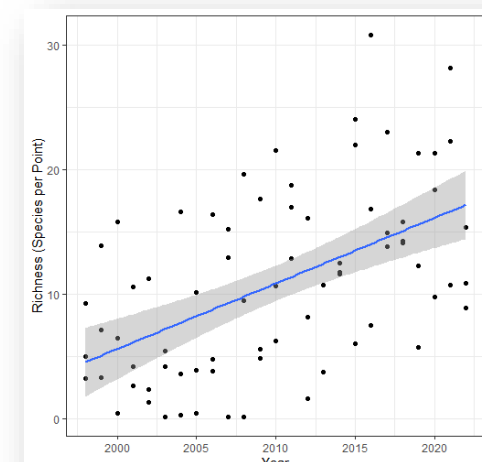
Vandenberg Space Force Base Project Riparian Richness



Service Branch Program Riparian Bird Richness



DoW Program Riparian Bird Richness



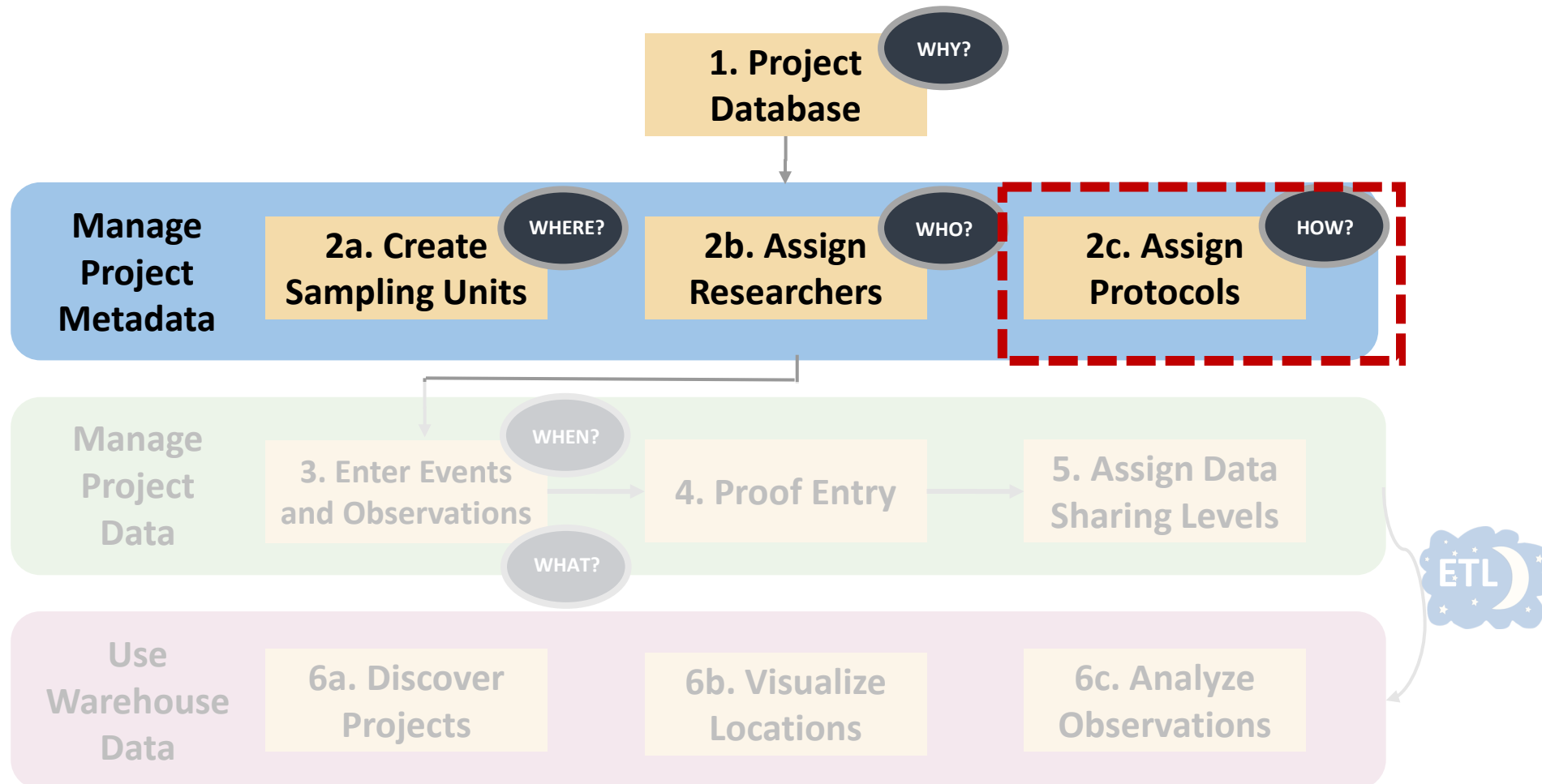


CASE STUDY: BARRY M. GOLDWATER RANGE (BMGR), AZ

- Participating in Desert Thrasher Working Group
- Existing protocol in the AKN system
- Critical to add data to DoW-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 DoW data for this species



MANAGING A PROJECT: PROTOCOLS



PROTOCOLS

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

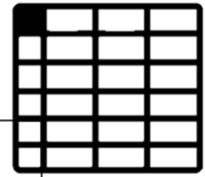
Should provide enough information for researcher 20 years from now to understand the methods you used



FIELD METHODS

vs.

AKN PROTOCOLS



A Survey Protocol for Pinyon Jay Road-based Point Count Surveys

Version 1, March 2023

The road-based survey is a useful method of surveying for Pinyon Jays under certain circumstances and can be used in conjunction with or as an alternative to the Pinyon Jay Working Group (PJWG) pedestrian-based area search survey protocol (Boone et al. 2023; <https://partnersinflight.org/resources/pinyon-jay-working-group/>). Table 1 compares the two protocols.

The PJWG protocol consists of pedestrian surveys of 2.5 x 2.5 km blocks. That method is useful for discrete survey areas known or suspected to have Pinyon Jays, surveys with adequate personnel and funding to complete the time-intensive pedestrian surveys, and areas where foot traffic is allowed.

In some situations, however, road-based surveys may be more appropriate than pedestrian surveys. For example, pedestrian surveys or multiple visits may not be feasible in areas where no information on Pinyon Jay presence exists; in extremely large, previously un-surveyed areas; when financial and personnel resources are limited; or where foot traffic is prohibited, such as some areas on DoD installations.

The key elements of the road-based protocol are:

- 1) Use of 5 x 5 km blocks as the primary survey units. For analysis consistent with 2.5 km surveys, 5 km blocks can be sub-divided into 2.5 km blocks ("plots" in the PJWG protocol).

The 5 km blocks (25 km²) are recommended because of the greater geographical coverage possible with road-based surveys. This block size is based on radio telemetry studies of Pinyon Jay flocks and approximates known breeding season home ranges. [Examples include: 43.05 km² (including two colonies of 16.67 km² and 26.38 km²) (Johnson et al. 2014); 25.51 km² (Johnson et al. 2014); 26.99 km² (Novak 2019).] It is designed to reduce the possibility that a) a single flock moving over its home range will be counted two or more times, and b) more than one flock will be counted as a single flock (resulting in undercounts in a survey block that is too large). Either double-counting or under-counting is undesirable for a species of conservation concern, where accurate population estimates, trends, and occupancy are necessary for conservation and management. Road-based sampling can cover a block rapidly, before a flock can move into a neighboring block, potentially reducing both types of errors.
- 2) Delineation of survey routes along selected roads within the blocks (Figure 1). Blocks must include enough accessible road length to allow at least three point-count stops. If blocks will be subdivided into 2.5 km blocks for analysis, it is desirable to include at least three point-count stops in each 2.5 km block analyzed. However, this may not be possible

Sampling Protocol Definition

Protocol: PIJA_6min

Description	Road-side Point Count PIJA protocol
URL	No URL
Duration	6 minutes
Protocol type	PointCount
Other characteristics	Binned distance protocol

Detection Cues

Summary: A (Aural), NA (Not recorded on datasheet), V (Visual), VA (Both Visual and Aural)

Cue	Description
A	Aural
NA	Not recorded on datasheet
V	Visual
VA	Both Visual and Aural

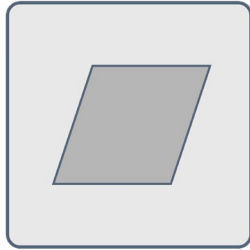
Distance Bins

HOW?

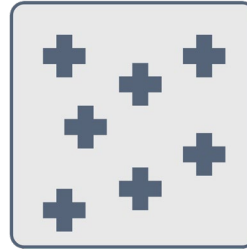
**2c. Assign
Protocols**



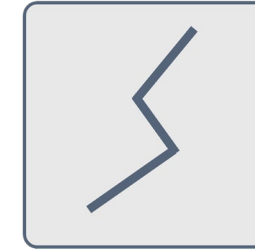
PRIMARY PROTOCOL TYPES



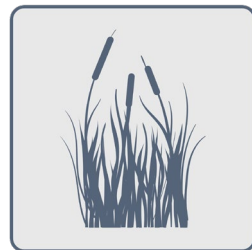
Area Search



Point Count



Linear Transect



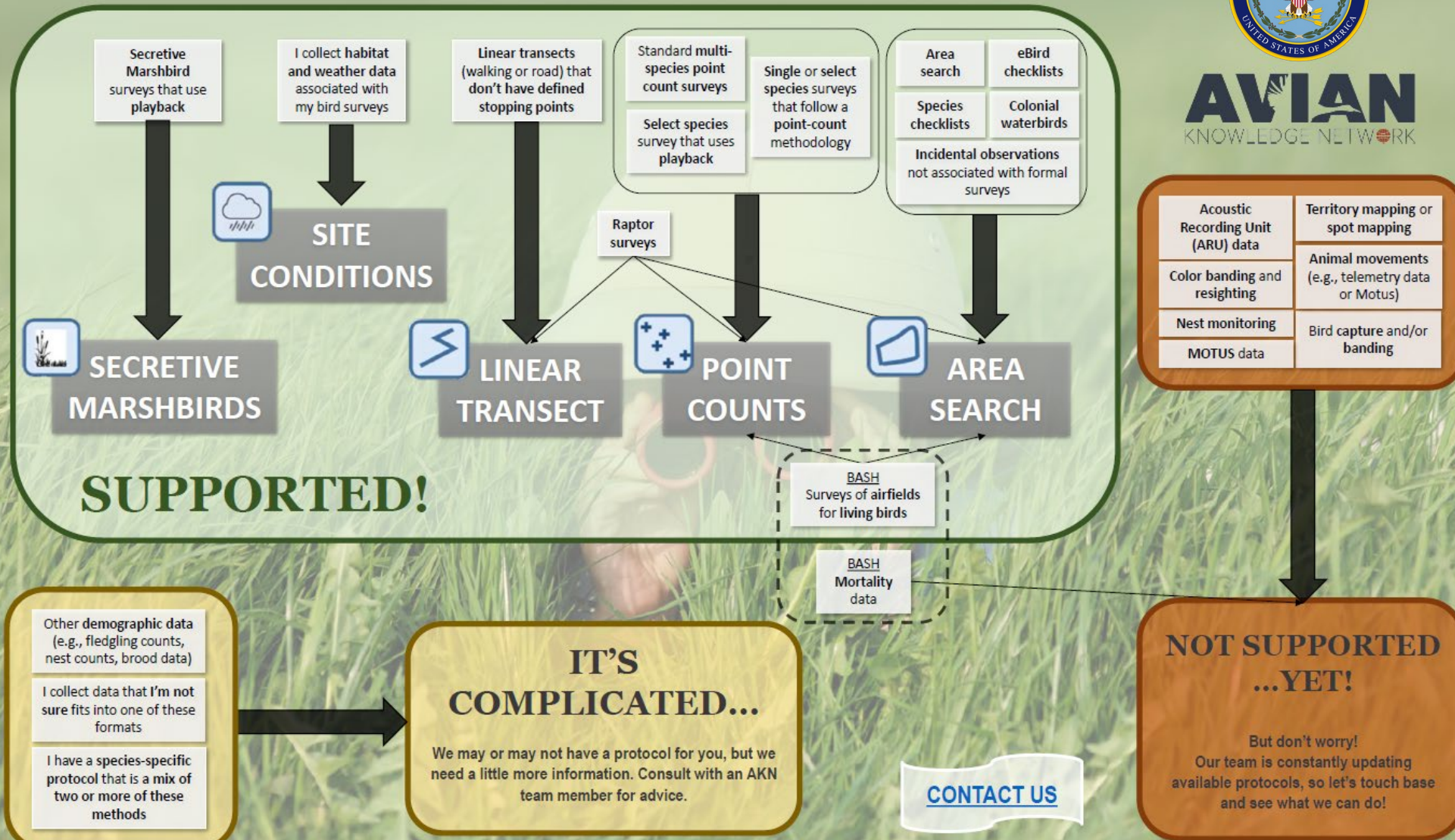
Secretive Marshbird



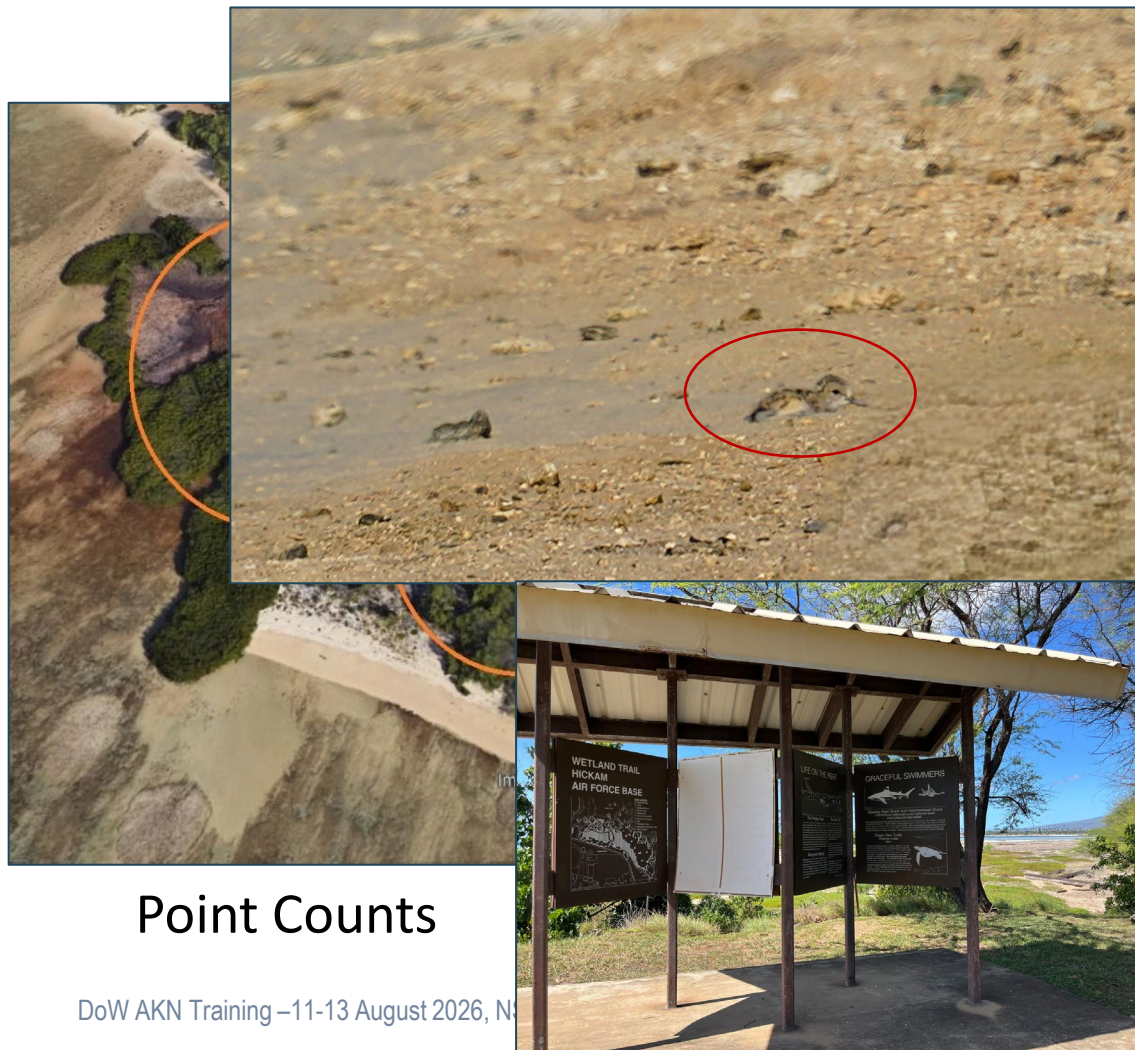
Site Conditions



Is your data-type currently supported in AKN??



PROTOCOL TYPES DISCUSSION



Point Counts

DoW AKN Training –11-13 August 2026, N



2c. Assign
Protocols

HOW?



POINT COUNT PROTOCOLS

Duration of survey at each point

Time (binned)

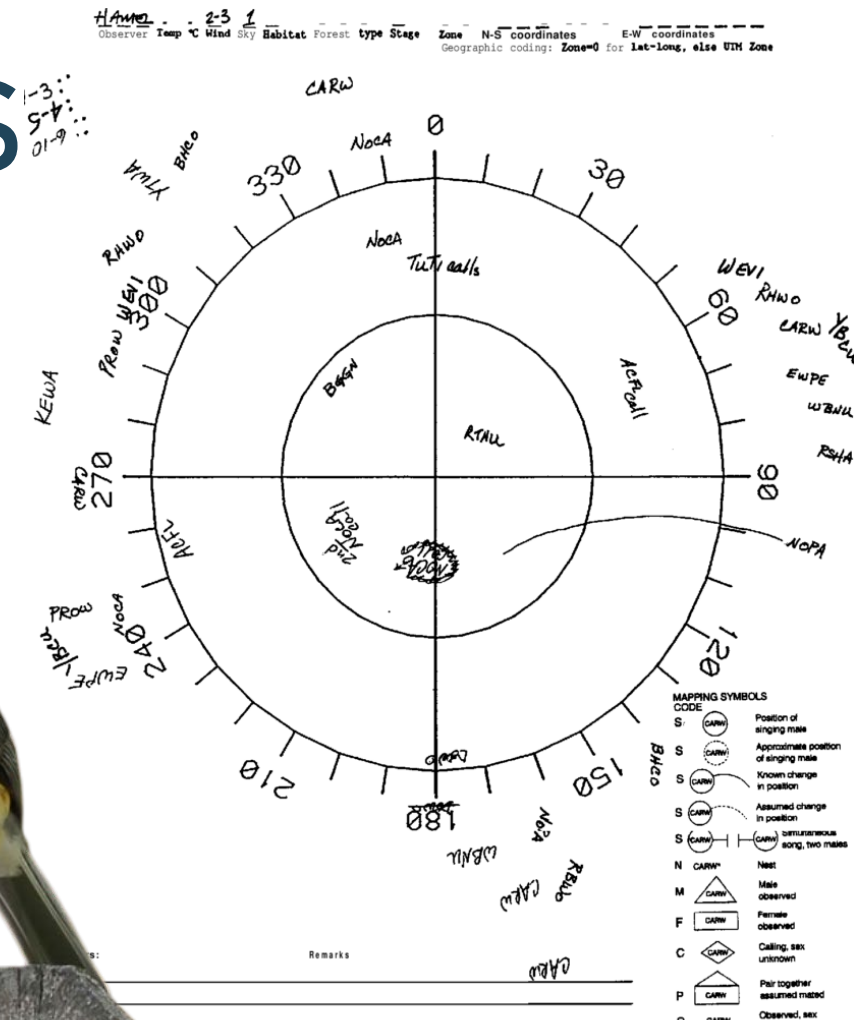
Distance (binned or exact), maximum

Detection codes

Can include **breeding behavior**

Assumed **exhaustive** survey

Each animal **counted once**



POINT COUNT PROTOCOL EXAMPLES

Compare how 3 field methodologies are represented:



Bird Conservancy of the Rockies IMBCR protocol



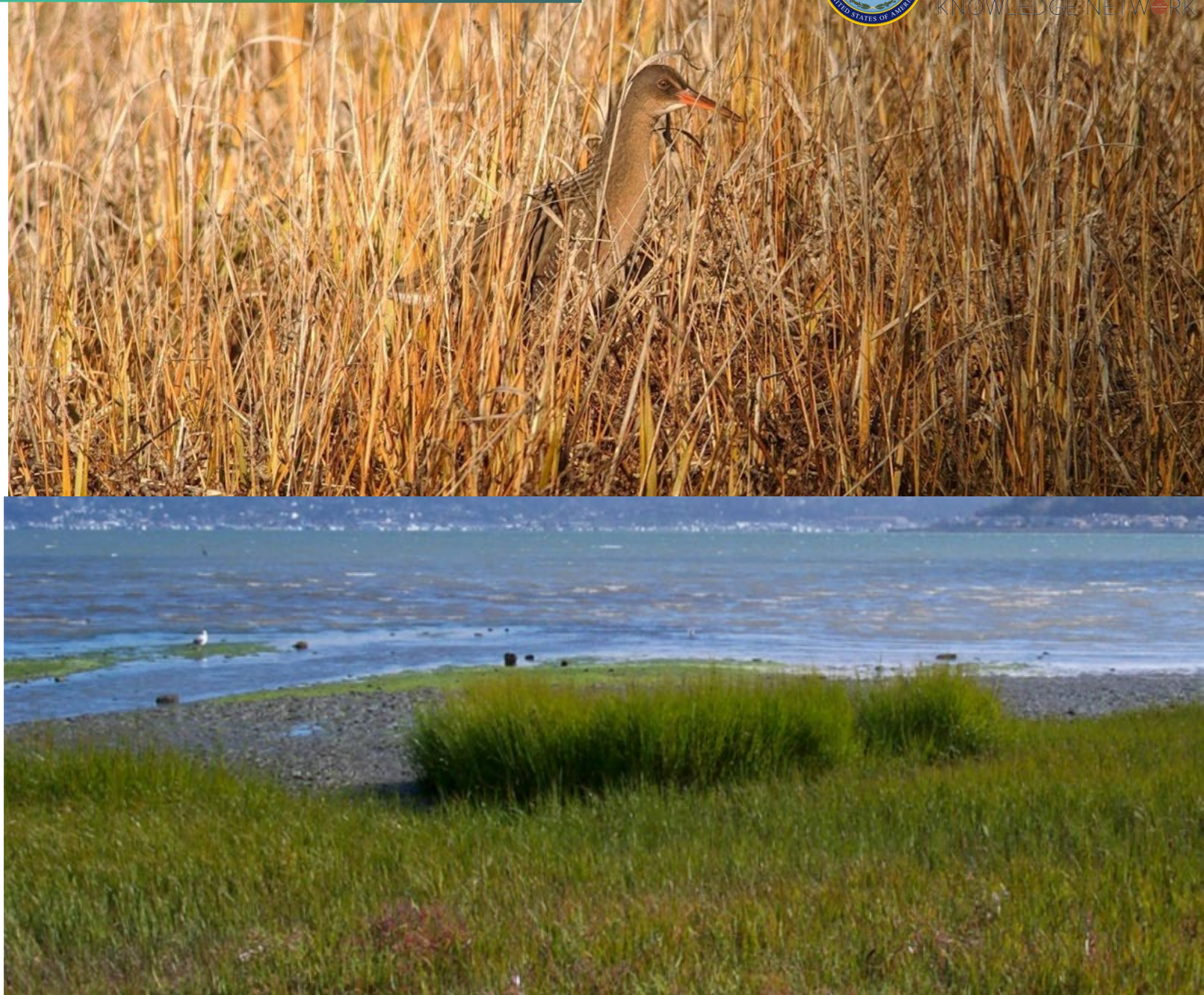
Point Blue protocol



KBO protocol



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



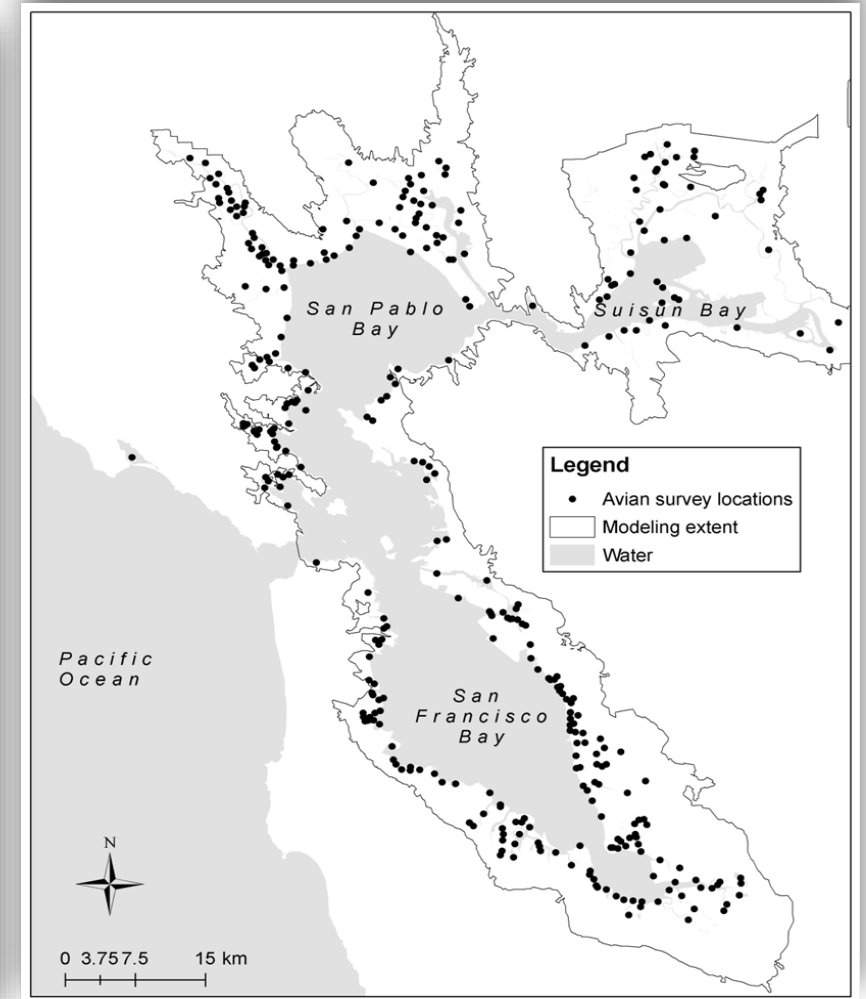
ASSESSING RAIL RESPONSE TO MANAGEMENT: THE CHALLENGE



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



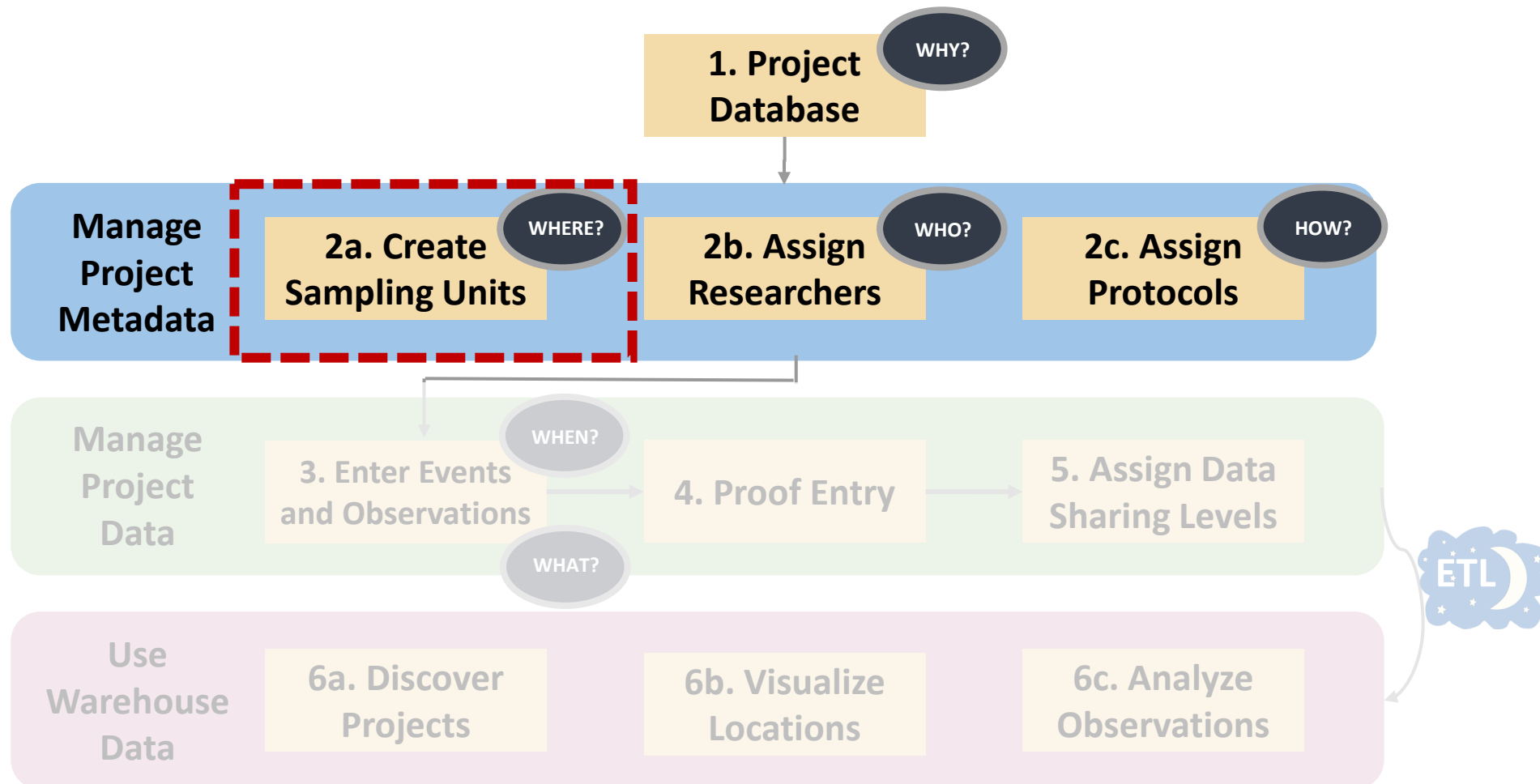
BREAK

NEXT: CREATING SAMPLING UNITS & ADDING RESEARCHERS





MANAGING A PROJECT: SAMPLING UNITS





SAMPLING UNITS

The locations where observations are collected

Organized into a tree (hierarchy)

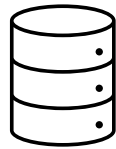
Uniquely named with Project

Can have Point/Line/Polygon

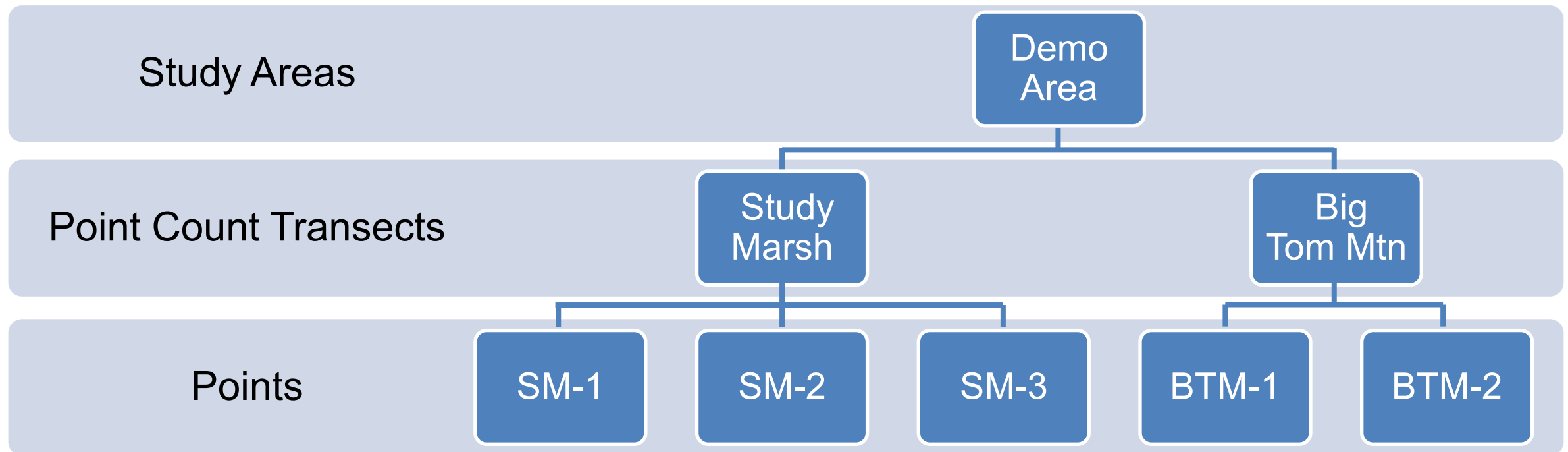


Yellow-bellied Sapsucker, Williamsburg,
VA; Credit: Paul Block

SAMPLING UNIT TYPES FOR POINT COUNTS



Project: DOD_DEMO



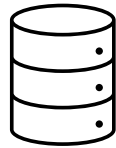
Replicates or independent points?
What questions are you asking?

**2a. Create
Sampling Units**

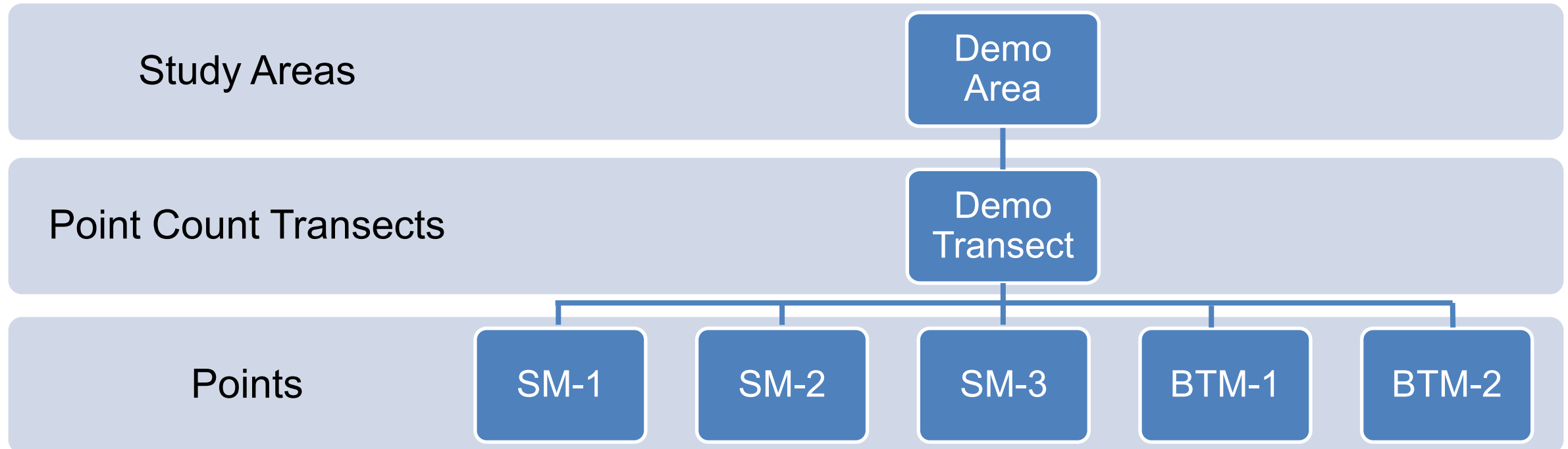
WHERE?



SAMPLING UNIT TYPES FOR POINT COUNTS



Project: DOD_DEMO

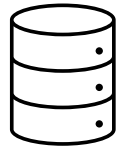


Replicates or independent points?
What questions are you asking?

2a. Create
Sampling Units

WHERE?

SAMPLING UNIT TYPES FOR POINT COUNTS



Project: DOD_DEMO

Study Areas

Demo
Area

Point Count Transects

T-SM-1

T-SM-2

T-SM-3

T-BTM-1

T-BTM-2

Points

SM-1

SM-2

SM-3

BTM-1

BTM-2

Example- Single-point Transects (independent points)

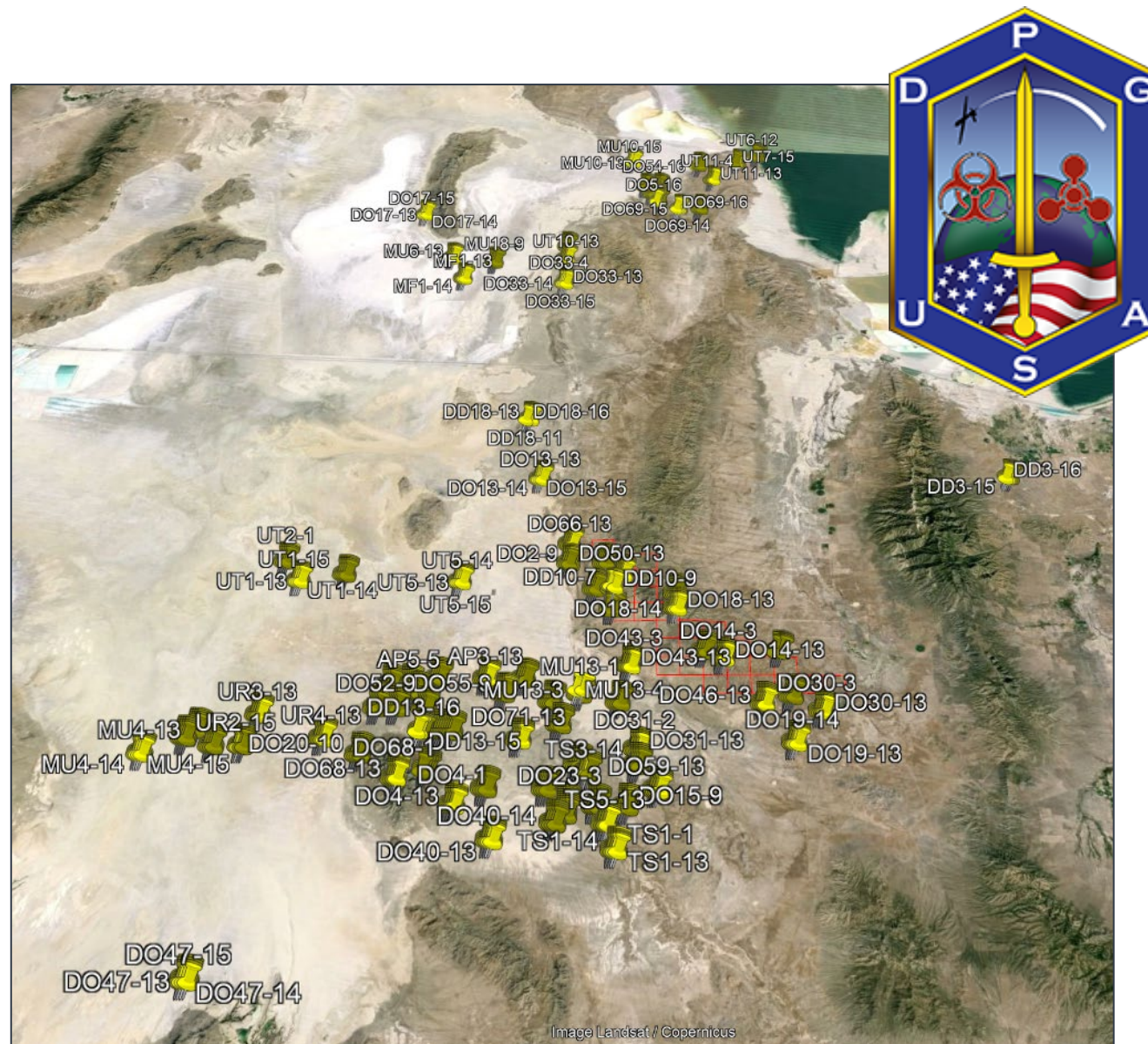


★ DUGWAY PROVING GROUND - [DOD_ARMY] Dugway Proving Ground

○ IMBCR (IMBCR)

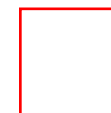
- ▶ ○ IMBCR All Other DoD Lands (UT-BCRg-DD)
- ▶ ○ IMBCR APG (UT-BCRg-AP)
- ▶ ○ IMBCR DoD Lands Pre Restratification (UT-BCRg-DO)
- ▶ ○ IMBCR Mud Flat Pre Restratification (UT-BCRg-MF)
- ▶ ○ IMBCR Mudflats (UT-BCRg-MU)
- ▶ ○ IMBCR Target S (UT-BCRg-TS)
- ▶ ○ IMBCR UTG (UT-BCRg-UR)
- ▶ ○ IMBCR UTTR (UT-BCRg-UT)

▶ ○ PIJA Landscape Survey (PIJA)





= Point Count Point



= Area Search

○ ★ DUGWAY_PROVING_GROUND - [DOD_ARMY] Dugway Proving Ground

▼ ○ ■ IMBCR (IMBCR)

▼ ○ ■ IMBCR All Other DoD Lands (UT-BCRg-DD)

- ▶ ○ ■ UT-BCRg-DD1 (DD1)
- ▶ ○ ■ UT-BCRg-DD10 (DD10)
- ▶ ○ ■ UT-BCRg-DD13 (DD13)
- ▶ ○ ■ UT-BCRg-DD18 (DD18)
- ▶ ○ ■ UT-BCRg-DD22 (DD22)
- ▶ ○ ■ UT-BCRg-DD3 (DD3)
- ▶ ○ ■ UT-BCRg-DD30 (DD30)
- ▶ ○ ■ UT-BCRg-DD4 (DD4)
- ▶ ○ ■ UT-BCRg-DD5 (DD5)
- ▼ ○ ■ UT-BCRg-DD6 (DD6)

- ● DD6-1 (DD6-1)
- ● DD6-10 (DD6-10)
- ● DD6-11 (DD6-11)
- ● DD6-12 (DD6-12)
- ● DD6-13 (DD6-13)
- ● DD6-14 (DD6-14)
- ● DD6-15 (DD6-15)
- ● DD6-16 (DD6-16)
- ● DD6-2 (DD6-2)
- ● DD6-3 (DD6-3)
- ● DD6-4 (DD6-4)
- ● DD6-5 (DD6-5)
- ● DD6-6 (DD6-6)
- ● DD6-7 (DD6-7)
- ● DD6-8 (DD6-8)
- ● DD6-9 (DD6-9)

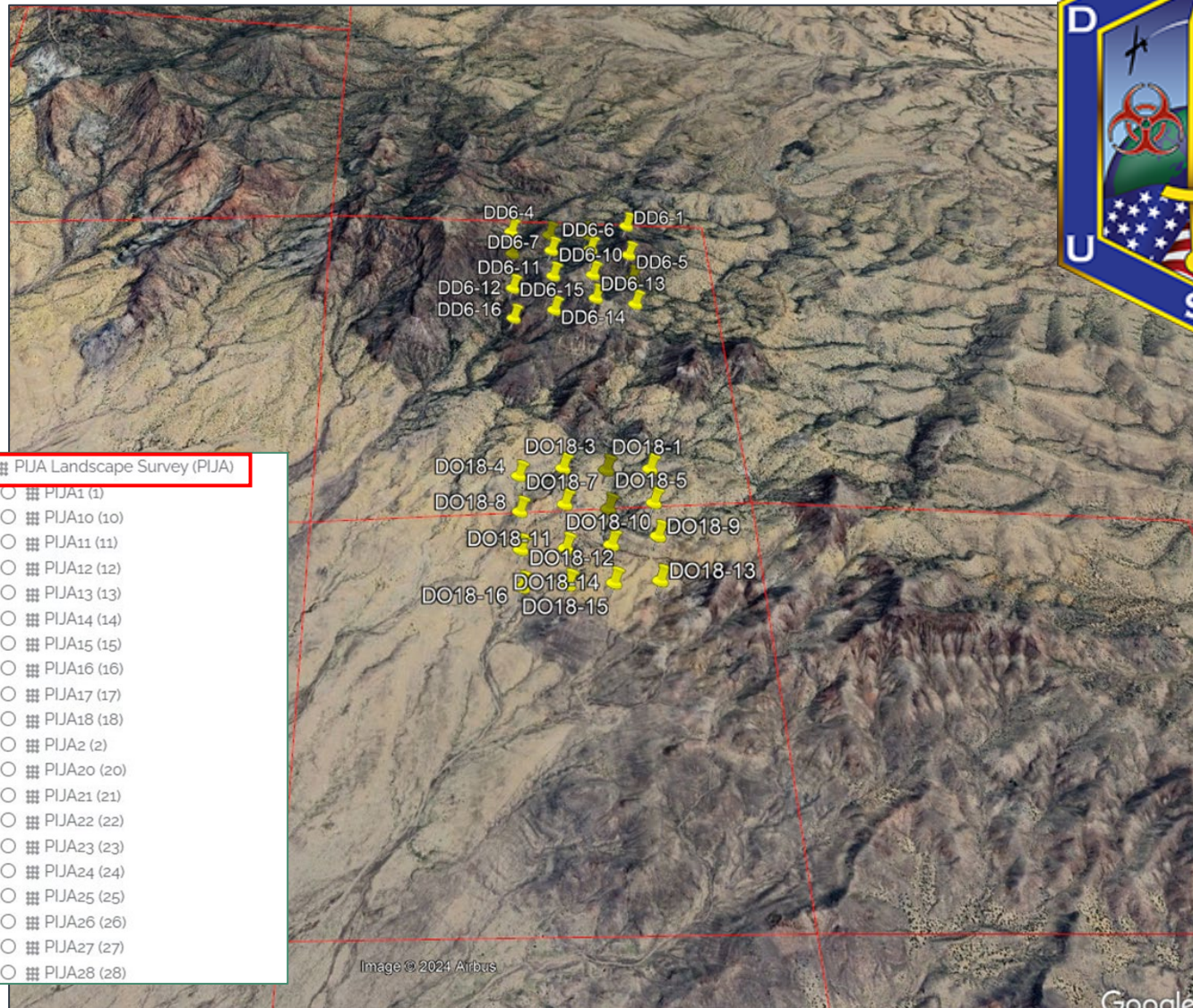
▶ ○ ■ UT-BCRg-DD9 (DD9)

- ▶ ○ ■ IMBCR APG (UT-BCRg-AP)
- ▶ ○ ■ IMBCR DoD Lands Pre Restratification (UT-BCRg-DO)
- ▶ ○ ■ IMBCR Mud Flat Pre Restratification (UT-BCRg-MF)
- ▶ ○ ■ IMBCR Mudflats (UT-BCRg-MU)
- ▶ ○ ■ IMBCR Target S (UT-BCRg-TS)
- ▶ ○ ■ IMBCR UTG (UT-BCRg-UR)
- ▶ ○ ■ IMBCR UTR (UT-BCRg-UT)

▶ ○ ■ PIJA Landscape Survey (PIJA)

▼ ○ ■ PIJA Landscape Survey (PIJA)

- ■ PIJA1 (1)
- ■ PIJA10 (10)
- ■ PIJA11 (11)
- ■ PIJA12 (12)
- ■ PIJA13 (13)
- ■ PIJA14 (14)
- ■ PIJA15 (15)
- ■ PIJA16 (16)
- ■ PIJA17 (17)
- ■ PIJA18 (18)
- ■ PIJA2 (2)
- ■ PIJA20 (20)
- ■ PIJA21 (21)
- ■ PIJA22 (22)
- ■ PIJA23 (23)
- ■ PIJA24 (24)
- ■ PIJA25 (25)
- ■ PIJA26 (26)
- ■ PIJA27 (27)
- ■ PIJA28 (28)





EXAMPLE: FORT 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



View & Export Protocols

Viewing protocols within FORT_CAVAZOS

Search

Filter by type All available types

Name	Description	Type
▶ 5_TB_8DC_exact_ext	Exact distance point count lasting 5 minutes split into 1-minute time bins with detection cues, sex, and cluster codes	PointCount
▶ BCVI_Habitat_Weather	Habitat and Weather for BCVI Surveys	SiteConditions
▶ BCVI_VRPC	Variable-radius point count lasting 3 minutes adapted for BCVI surveys	PointCount
▶ 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

- ▼ ☒ ★ FORT_CAVAZOS - [DOD_ARMY] Fort Cavazos
- ▶ ☐ # Black-capped Vireo Distance Sampling (BCVI_DS)
 - ▶ ☐ # Fort Hood Cowbird Traps (FHCT)
 - ▶ ☐ # Grassland Breeding Bird Survey (GBBS)
 - ▶ ☐ # Grassland Point Counts 2016-2018 (GRASSLAND)
 - ▶ ☐ # Monitoring of Owls and Nightjars (MOON)
 - ▶ ☐ # Northern Bobwhite Point Counts (NOBO_PC)



MANAGING PROJECT METADATA

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., Army) in the "DOD_DEMO" Project



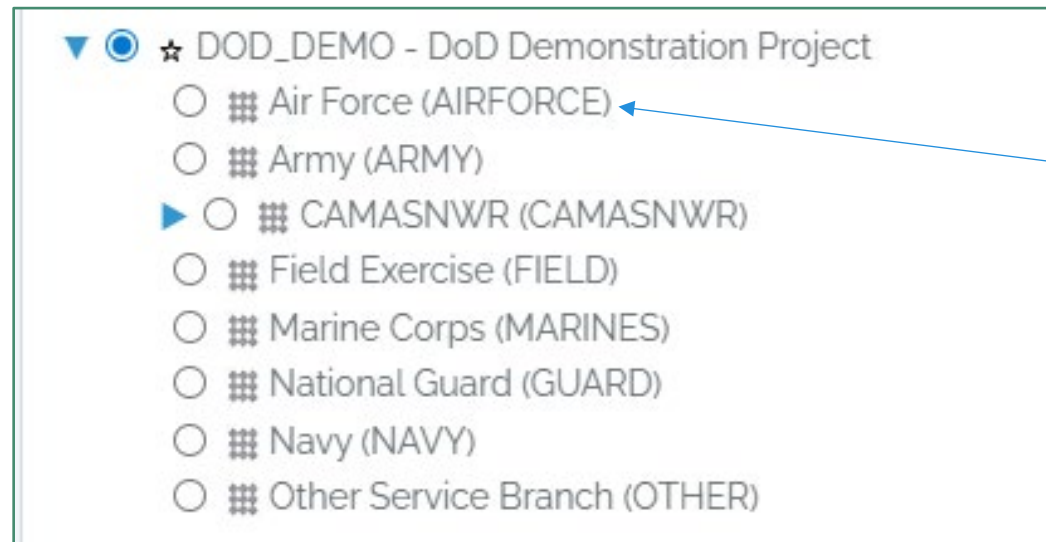
Project: DOD_DEMO



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.



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



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.



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

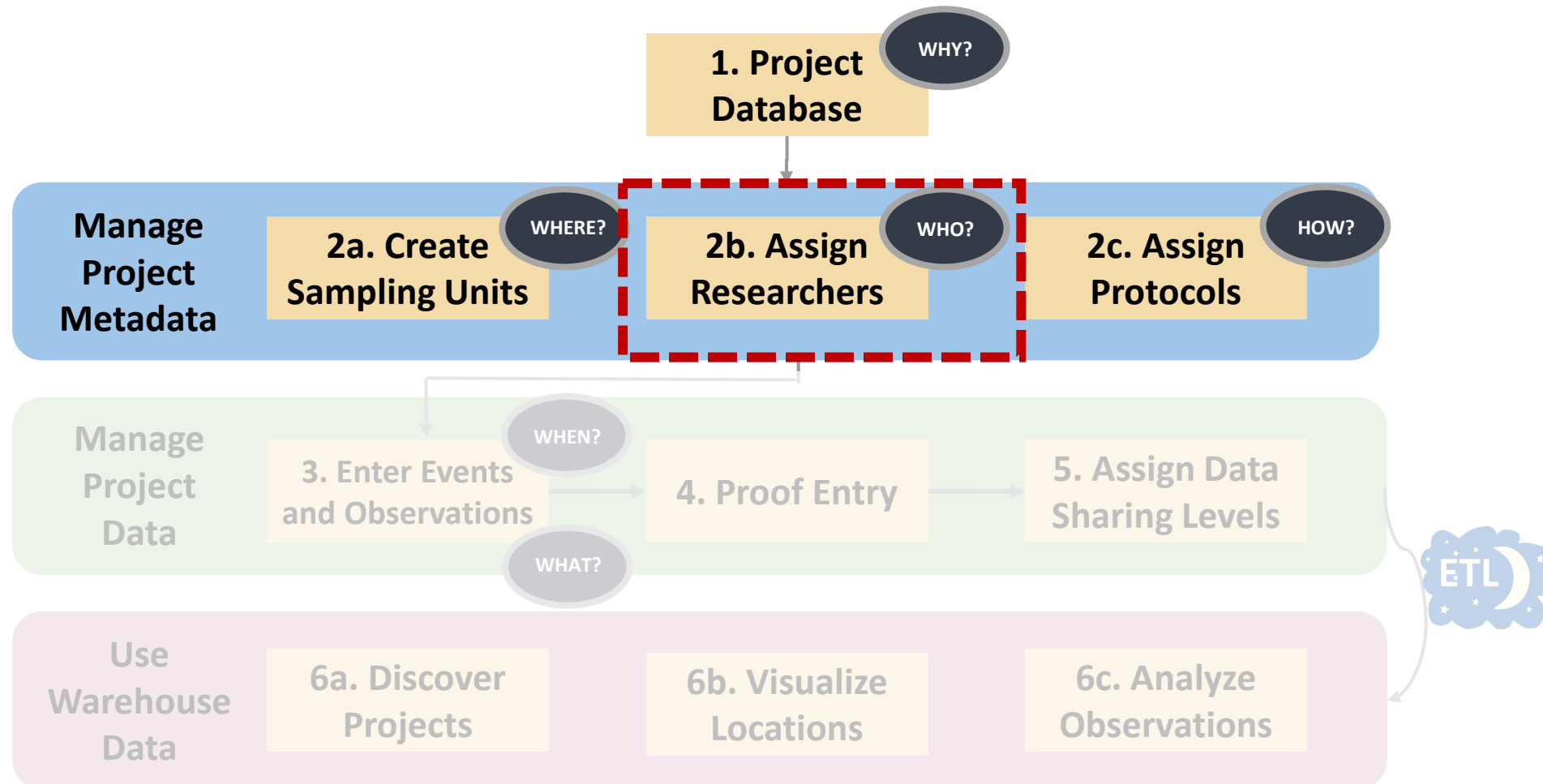


DOWNLOAD SAMPLING UNITS DEMONSTRATION

Download sampling units:

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

MANAGING A PROJECT: RESEARCHERS





RESEARCHERS

Individuals that receive Project access **and/or** who have made observations in the Project

Created via User registration (active Users)
or manual entry (during bulk data upload or in
Researcher Manager tool)



AKN ROLES FOR RESEARCHERS

User: can enter, review, and download Project data

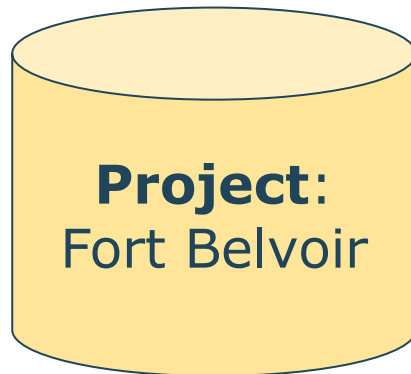
Project Leader: has all the capabilities that User has, **plus** full control over data, metadata, and who gets Project access

Unregistered Researcher: has made field observations; no Project access or AKN account (e.g., historical data)

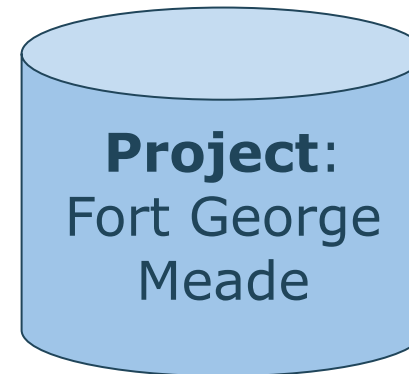


RESEARCHERS & PROJECT ACCESS

Project access assigned by Project Leader



Jane: Project Leader
Mike: User
Pat: User

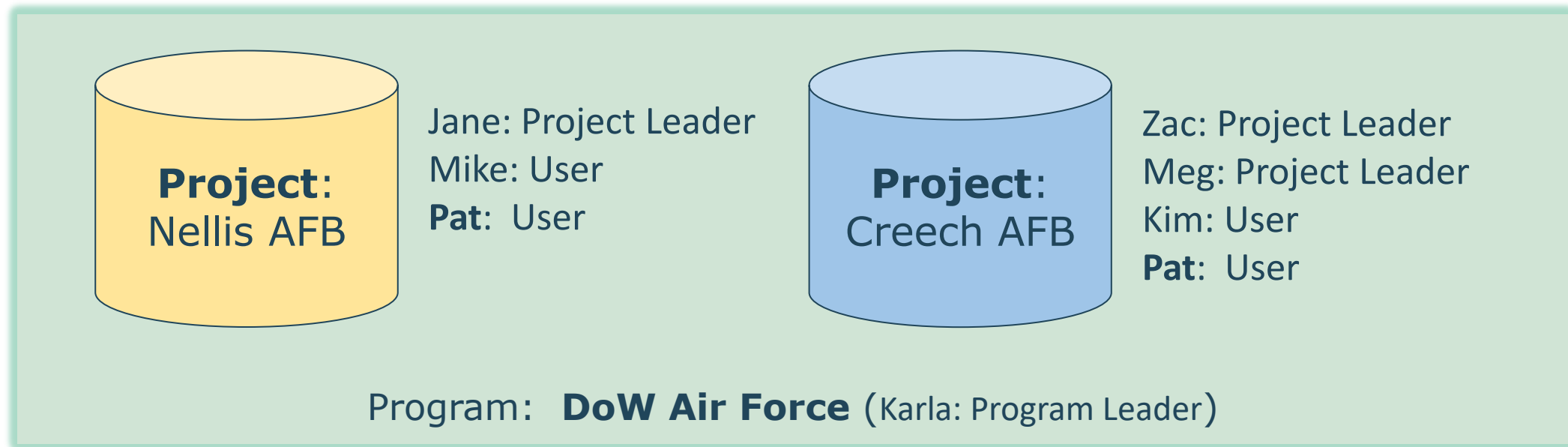


Zac: Project Leader
Meg: Project Leader
Kim: User
Pat: User



RESEARCHERS & PROJECT ACCESS

DoW also has a Program Leader (Program = group of many Projects)
(managed by Point Blue staff w/ guidance from DoD leadership)



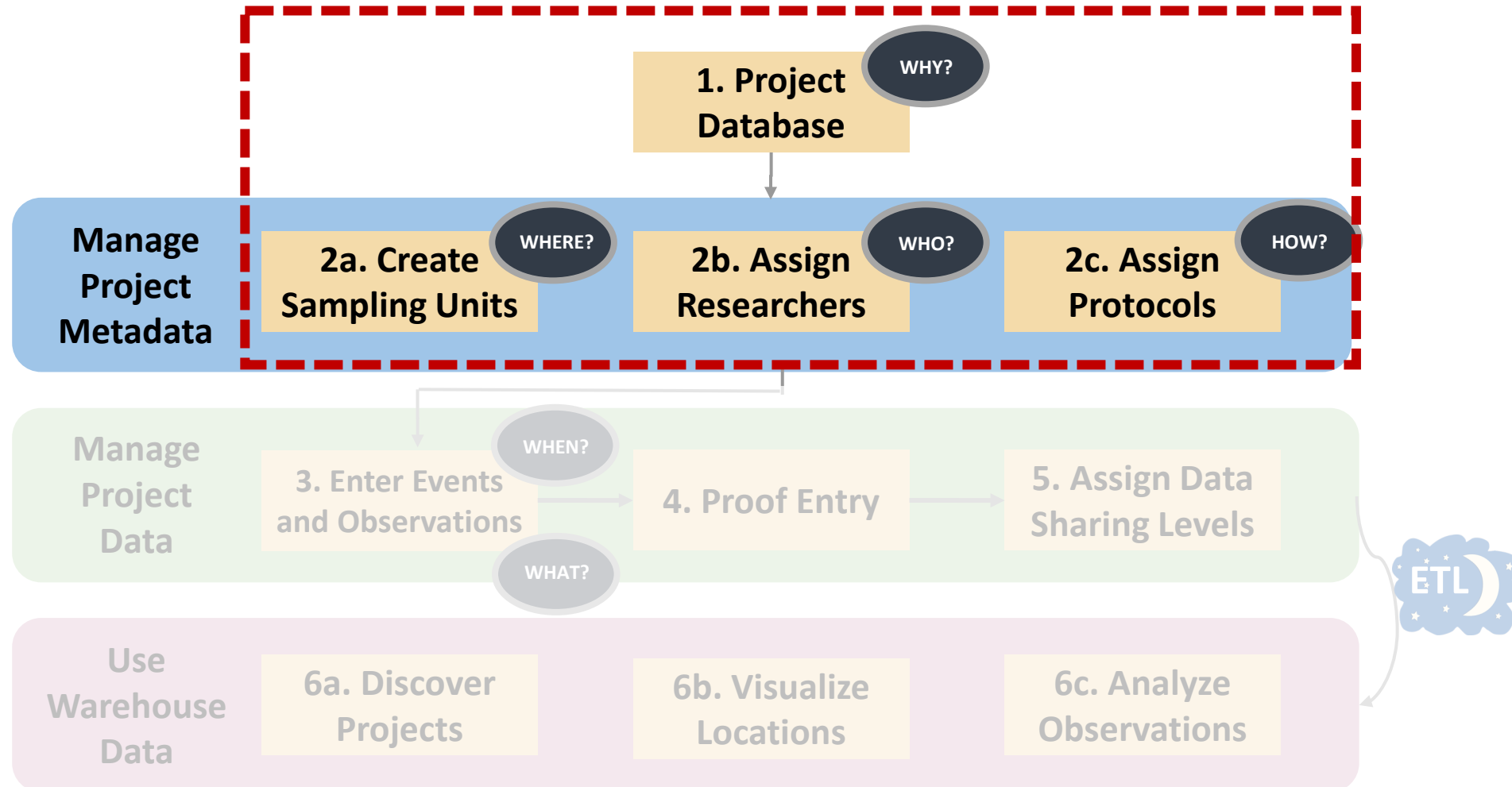


ADDING RESEARCHERS DEMONSTRATION

Tools:

- [Project Leader](#) for adding Researchers to Project

QUESTIONS ON MANAGING PROJECT METADATA?

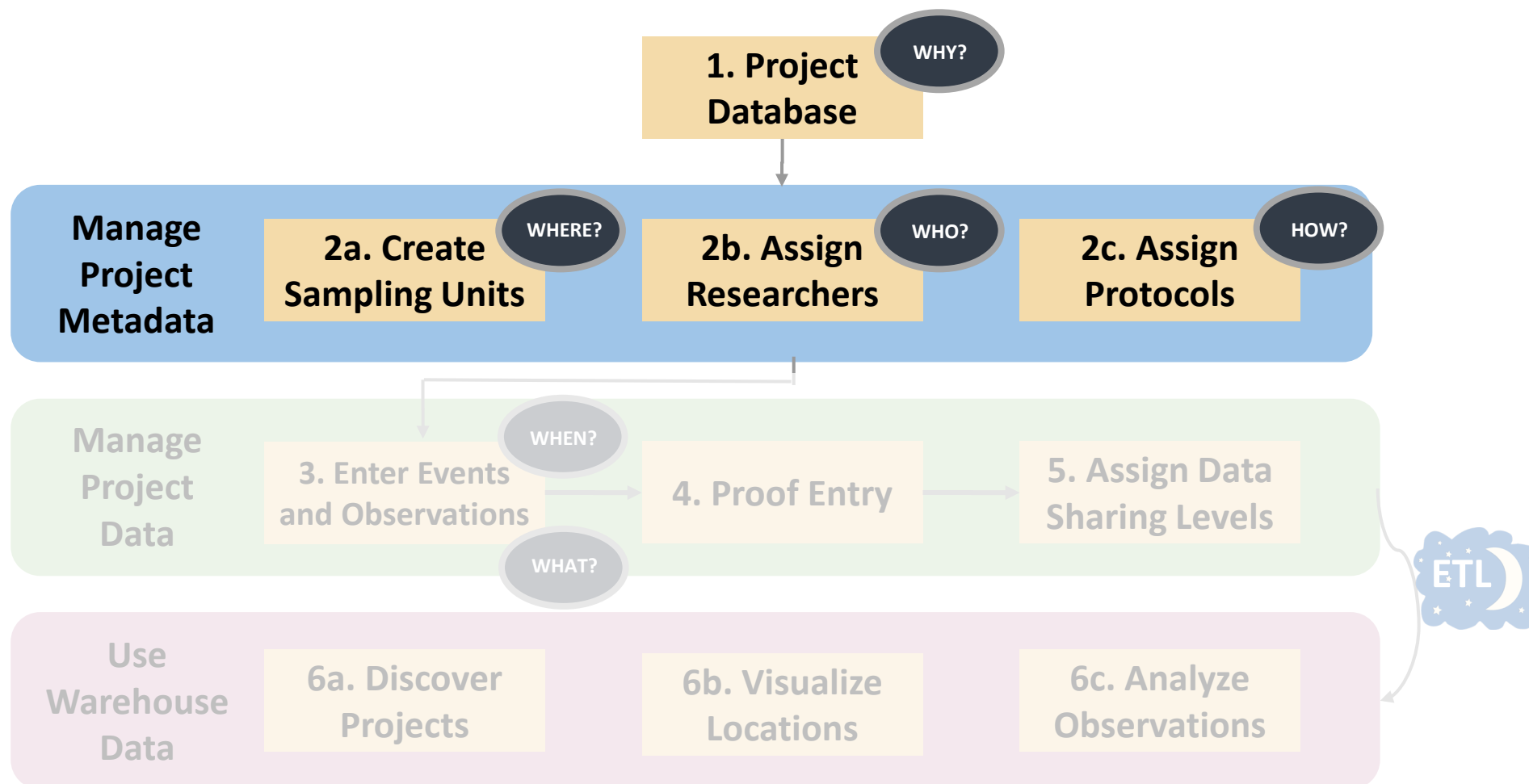




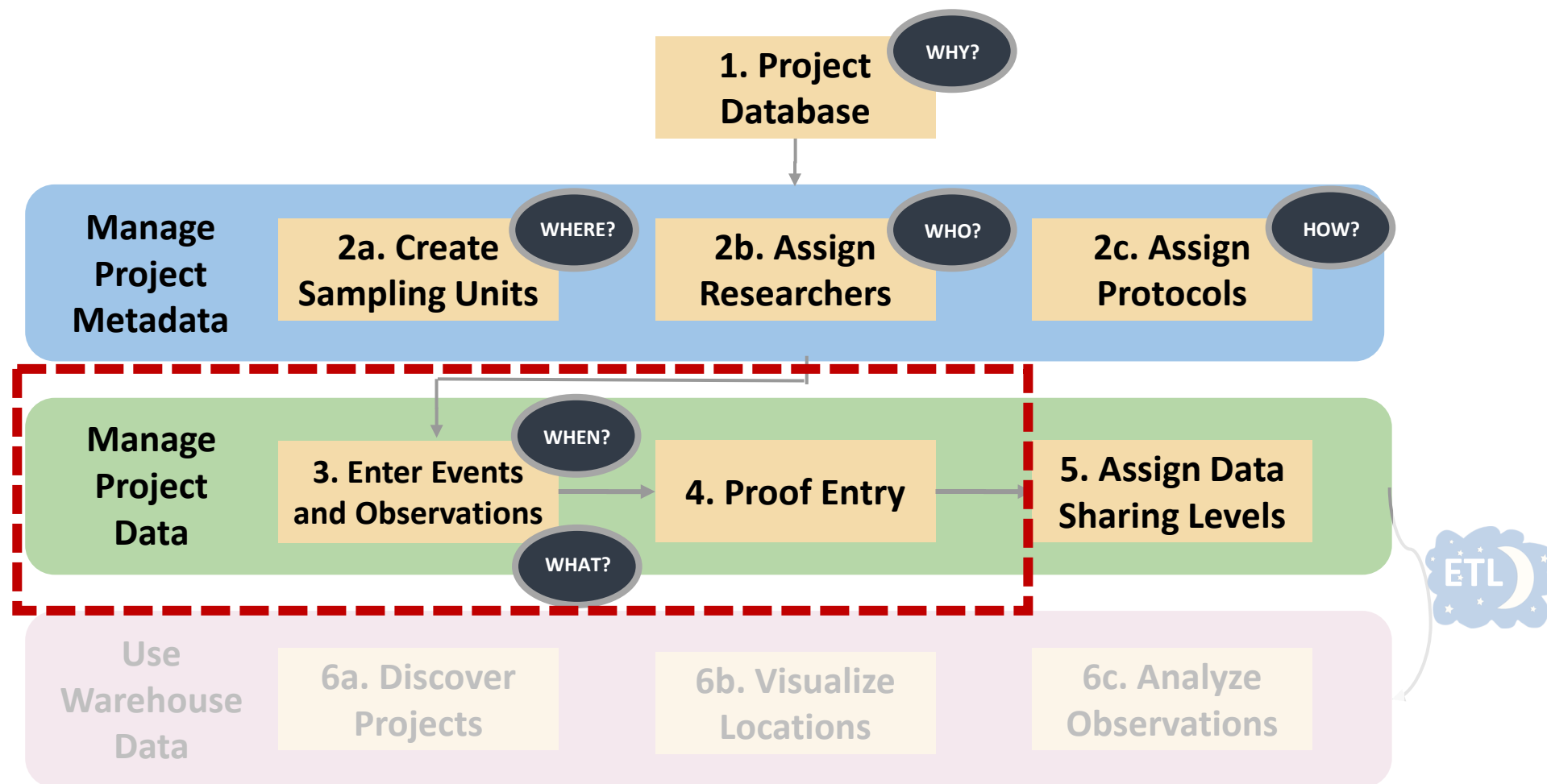
MANAGING OBSERVATION DATA



WORKFLOW FOR MANAGING A PROJECT



MANAGING A PROJECT: OBSERVATION DATA





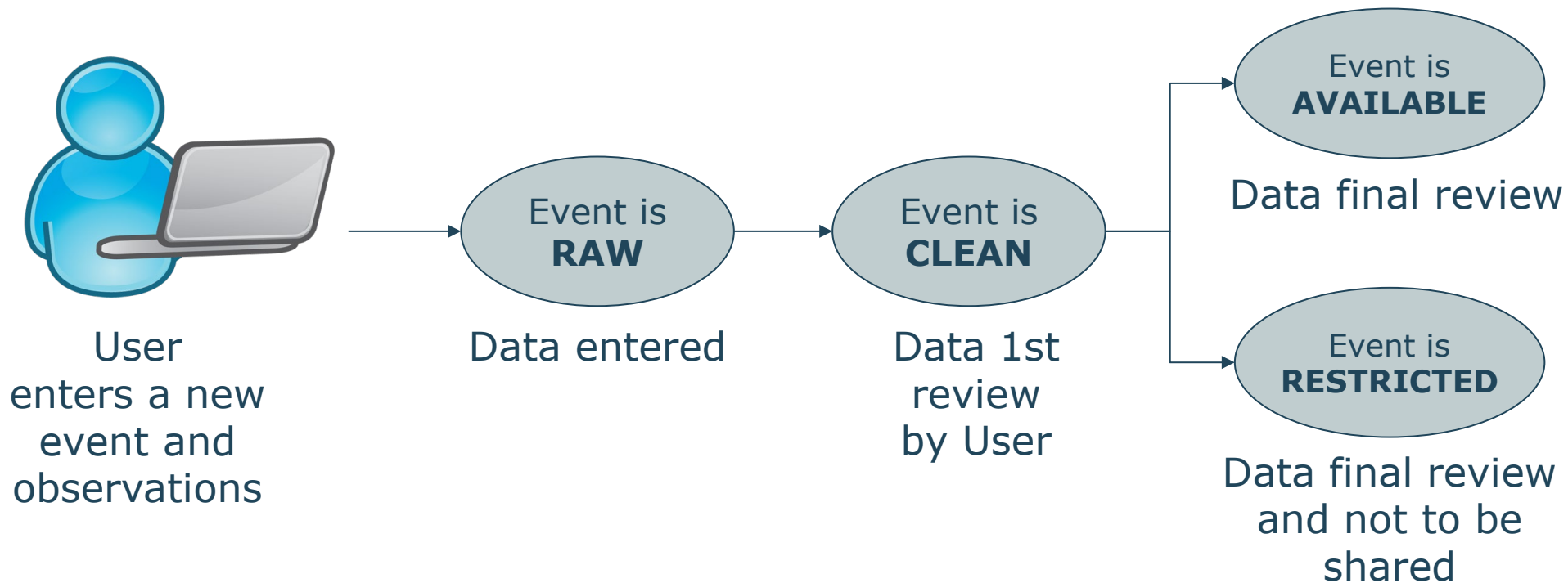
SAMPLING EVENTS AND OBSERVATIONS

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

REVIEW LEVELS FOR EACH EVENT

Steps to enter and review data in preparation for sharing



MANAGING OBSERVATION DATA THROUGH BIOLOGIST

- Data entry using Biologist Application
 - Best for direct entry into the system

[illegible]

Datasheet

Biologists 

 New Point Count Visit

What did you see during your visit?

 General

Enter the following information about your visit.

 [Quick Tips >>](#)

Enter date of event

Visit 

1 

Data Sharing 

RAW 

Observer 

Duran, Zoe 



Biologists Application

Web-based Form



MANAGING OBSERVATION DATA

EXERCISE 2: ENTER & PROOF POINT COUNT EVENT



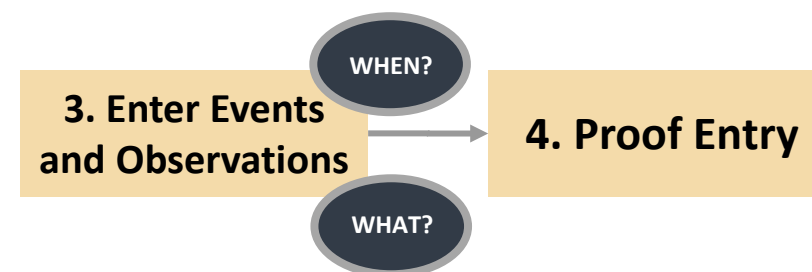


ENTER & PROOF POINT COUNT EVENT

EXERCISE 2

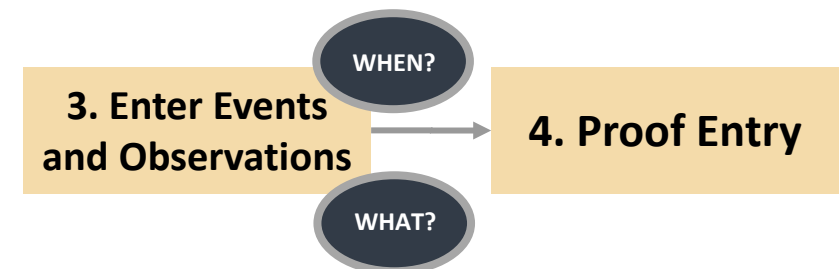
Purpose: Learn how to enter survey data and site conditions in Biologist application and proof those data

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

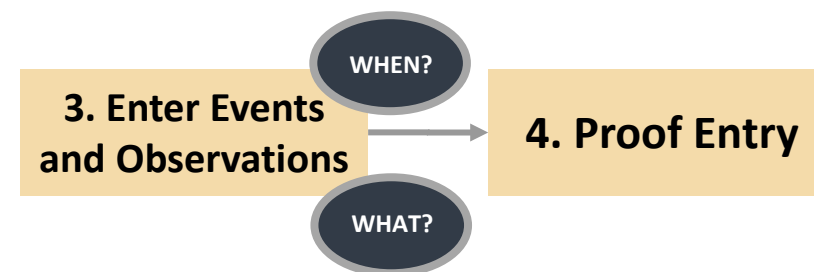
Exercise 2 instructions



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 the Biologist application to enter and proof their own data
 - Add protocols to the project and manage sampling units





DOWNLOAD POINT COUNT OBSERVATION DATA FROM PROJECT DEMONSTRATION

Tools:

- [Project Leaders](#) application to download observations from a Project

EDITING DATA DEMONSTRATION

Tools:

- [Biologist](#) application to edit observations from a Project



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 (e.g., historic datasets)

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 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	Time	Actions
455	AddSamplingUnits	success	batch completed successfully	2021-08-10 20:07:48	0:01	⚡ 📄
454	AddSamplingUnits	error	batch completed with errors	2021-08-10 20:06:33	0:00	⚡ 📄
453	AddObservations	success	batch completed successfully	2021-08-09 19:25:10	1:03	⚡ 📄
452	AddObservations	error	batch completed with errors	2021-08-09 19:24:41	0:04	⚡ 📄
451	AddObservations	error	batch completed with errors	2021-08-09 19:23:19	0:09	⚡ 📄
450	AddObservations	error	batch completed with errors	2021-08-09 19:18:37	0:04	⚡ 📄
449	AddObservations	error	batch completed with errors	2021-08-09 19:03:35	0:03	⚡ 📄
448	AddObservations	error	batch completed with errors	2021-08-09 19:00:23	0:00	⚡ 📄

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

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:

- ▼ ○ ★ DOD_DEMO - DoD Demonstration Project
 - # Air Force (AIRFORCE)
 - # Army (ARMY)
 - ▶ ○ # CAMASNWR (CAMASNWR)
 - # Field Exercise (FIELD)
 - # Marine Corps (MARINES)
 - # National Guard (GUARD)
 - ▼ ○ # Navy (NAVY)
 - ▼ ● # CRG (CRG)
 - ● CRG1 (CRG1)
 - # Other Service Branch (OTHER)

Study Area: Navy
Point Count Transect: CRG
Point Count Point: CRG1

After Exercise 3:

- # Air Force (AIRFORCE)
- # Army (ARMY)
- ▶ ○ # CAMASNWR (CAMASNWR)
- # Field Exercise (FIELD)
- # Marine Corps (MARINES)
- # National Guard (GUARD)
- ▼ ○ # Navy (NAVY)
 - ▼ ○ # CRG (CRG)
 - ● CRG1 (CRG1)
 - ● CRG2 (CRG2)
 - ▼ ○ # CRGB (CRGB)
 - ● CRGB1 (CRGB1)
 - ● CRGB2 (CRGB2)
 - ● CRGB3 (CRGB3)
- # Other Service Branch (OTHER)

Make sure you are using the same Study Area (your service branch or affiliation) 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?

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

BULK UPLOADING SAMPLING UNITS

EXERCISE 3

Exercise 3 instructions



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



EXAMPLE: FORT CARSON, CO

Project

Select a project or sampling unit within which you would like to add or edit a sampling unit.

Filter

All available projects and programs

- ▼ ☒ ★ FORT_CARSON - [DOD_ARMY] Fort Carson
 - ▼ ☐ # Fort Carson (FC)
 - ▶ ☐ # FC IMBCR Surveys (FC_IMBCR)
 - ▼ ☐ # 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_LYTLE)
 - ▶ ☐ # Middle School Area (MB_MIDSCHOOL)
 - ▶ ☐ # MSR 1 / Range 113 (MB_RG113)
 - ▶ ☐ # North B Ditch (MB_BDITCH)
 - ▶ ☐ # Northside Reservoir (MB_NORTHSIDE)
 - ▶ ☐ # Range 04 (MB_RGo4)
 - ▶ ☐ # Range 08 (MB_RGo8)
 - ▶ ☐ # Training Area 05 / Rock Creek (MB_TA05)
 - ▶ ☐ # Training Area 08 / AHA (MB_TA08)
 - ▶ ☐ # Womack Reservoir (MB_WOMACK)
 - ▶ ☐ # Fort Carson Point Count (CARSON_PC)
 - ▼ ☐ # Pinon Canyon Maneuver Site (PCMS)
 - ▼ ☐ # PCMS IMBCR Surveys (PCMS_IMBCR)
 - ▶ ☐ # CO-BCR18-PF (CO-BCR18-PF)
 - ▶ ☐ # CO-BCR18-PM (CO-BCR18-PM)

View & Export

Add

Remove

View & Export Protocols

Viewing protocols within FORT_CARSON

Search

Filter by type

All available types

Name	Description	Type
▶ ARSE_PIJA	Area search survey standard protocol from the PIJA Working Group	AreaSearch
▶ BL_S_V_Bl	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
▶ SiteConditions_PIJA	Site Conditions PIJA protocol developed by the PIJA Working Group	SiteConditions
▶ SPCH_LOCATION	Species checklist with coordinates	AreaSearch
▶ VRPC	Model to predict bird point counts with data from area test sites with a variable bird count	PointCount

OFFICE HOURS

Discuss bulk loading and other issues regarding your observation data

In-person Office Hours this week:

- ~13:00 – 15:00 Wednesday
- ~13:30 - 15:30 Thurs

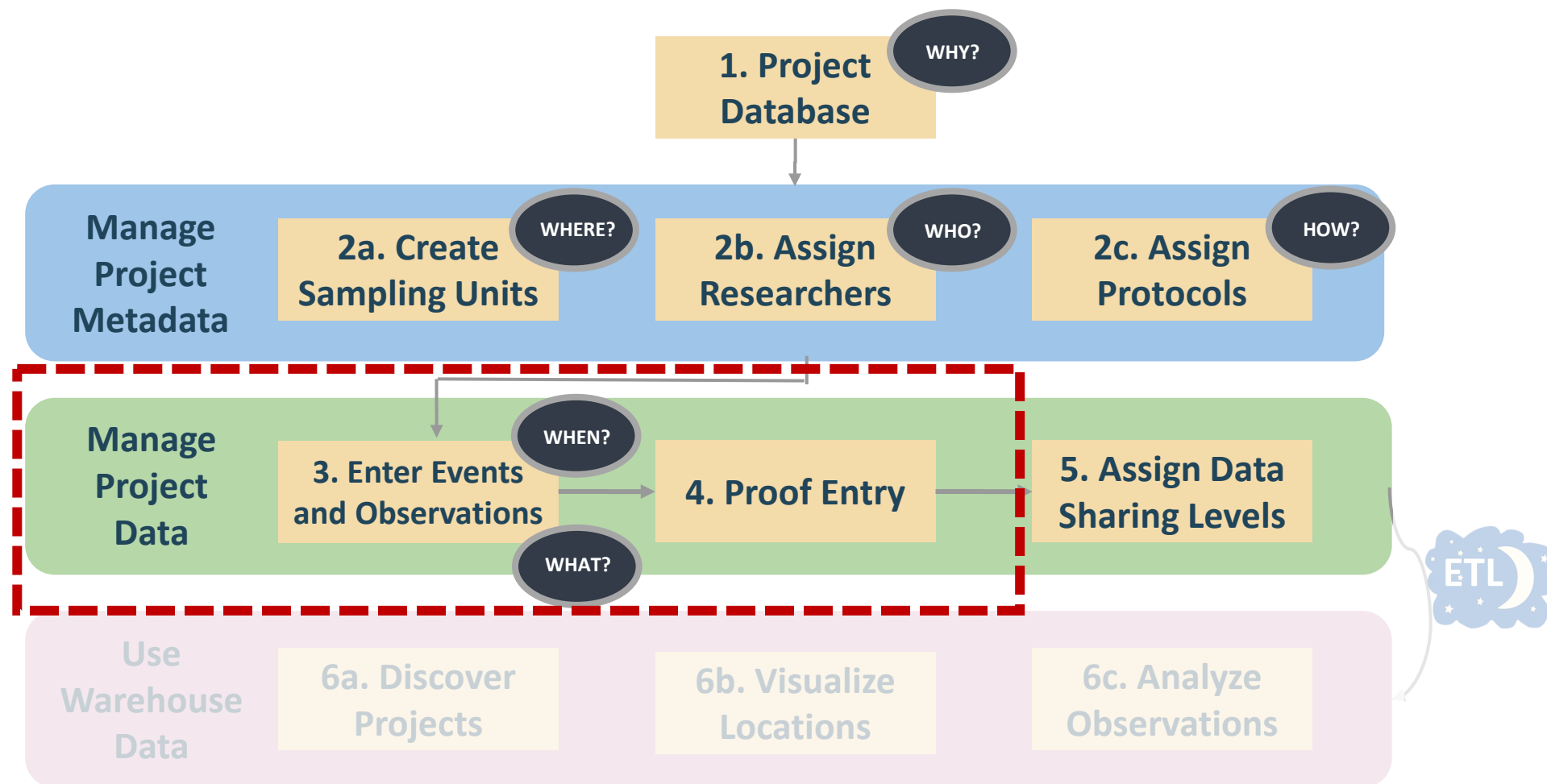
Virtual Office Hours sign up is on the DoW AKN Portal:
dodakn.org/office-hours-booking-page

- Next online appointment dates: August 18 & 20





ANY QUESTIONS ON MANAGING PROJECT DATA?





LUNCH

MEET AT 13:00 FOR LOCAL PRESENTATIONS





NSA CUTLER PRESENTATIONS





FIELD EXERCISE INTRODUCTION & LOGISTICS FOR TOMORROW



FIELD EXERCISE: POINT COUNT PROTOCOL

- 5-minute surveys
- Unlimited-radius point count w/ distance sampling
- Observations recorded per 1-minute intervals





Camp Ripley AKN Transect Training

- AKN Transect Start Point
- ♥ Eligible AKN Transect Site
- Camp Ripley Boundary
- Restricted Area
- Range
- Secondary all weather, hard surface road
- Light duty, all weather, hard or improved surface road
- - - Fair or dry weather, unimproved surface road
- ... Trails

0 250 500 1,000 Meters



FIELD SITES

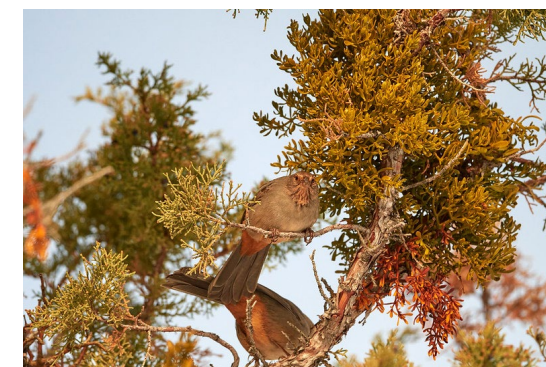
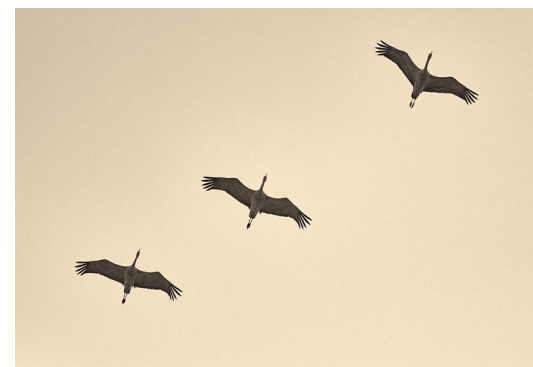
MAP



FIELD EXERCISE: POINT COUNT PROTOCOL

- Collect data **every minute**
- Use **4-letter bird codes**
- Record **# of individuals** in same location
- **Distance** to nearest meter (*try practicing your distance estimations with a range finder!*)
- **Detection Type (DT):**
 - S=Song; C=Call; D=Drum; V=Visual; W=Wing; F=Flyover
- **Prev** (Previously Detected Individuals)
 - Use “P” if individual was detected at a previous **point**
- **Breed** (Breeding Status)
 - Use “S” to indicate if bird sang during count but was detected initially another way

Point #	Start Time	Minute	Species Code	Count	DT	Distance	Prev	Breed	Po
01	7:45	1	GRSP		S	32			
			MODO		S	18			
			WEME		S	84			
			WEKI		V	22			
		2	HOLA		C	31		S	
			CORA		C	102			
		3	GRSP		S	52			
			RNEP		C	205			
			AMRO		V	30			
		4	RTHA		V	72			
			BARS	2	V	24			
			S NONE						





FIELD EXERCISE: AREA SEARCH PROTOCOL

- **20 minutes**
- Use **4-letter bird codes**
- Record **# of individuals** in same location
- **Detection Type (DT):**
 - S=Song; C=Call; D=Drum; V=Visual; W=Wing; F=Flyover
- **On/Off Area Detections**
 - Focus on on-area detections
- **Breed** (Breeding Status)
 - Use highest breeding status observed

Area Search Data Form

Page of

Study Area: Site Code: Site Name: Month: Day: Year:

Obs. Initials: Start Time (24 hr): End Time (24 hr): Duration (minutes):

Species Code		Species Name Abr.		On Area Detection Type and Count				Off Area Detection Type and Count			
				Loc	BS	Loc	BS	Loc	BS	Loc	BS
SOSP	Song Sparrow	1V		2C		1S		1S			
AMRO	Am. Robin	2V		1V		1		1S		1C	
BCCH	Black-cap. Chth.	3C		5	2V			3C			
YEWA	Yellow Warbler	1S		1V		1		1S			

DATASHEET VS. BIOLOGIST DATA ENTRY FORM

Datasheet

[illegible]

- Datasheet: fields are arranged for **efficiency in the field**
- Biologist Application Form: all fields are entered but may not appear in exactly the same order as datasheet – this is ok!

Biologists 



Biologists Application

 New Point Count Visit

What did you see during your visit?

 General

Enter the following information about your visit.

 [Quick Tips >>](#)

Enter date of event

Visit 

1

▼

Data Sharing 

RAW

▼

Observer 

Duran, Zoe

▼

Web-based Form

FIELD EXERCISE: SPECIES CHECKLIST

- Keep a record of **all the species you observe** while you're out (including points and anything in between points)
- Instructions for creating an **area search plot** Sampling Unit in DOD_DEMO are in the Field Exercise

Species Checklist

Site _____	Observer _____
Date _____	Add'l Observers (#) _____
Start time _____	Initials: _____
End Time _____	

Species	Coordinates (Optional)*

Species	Coordinates (Optional)*

Notes:

*Coordinates can be written in any format, but must be converted to WGS84 (Latitude/Longitude) to enter into the AKN.



FIELD EXERCISE: IN THE AKN

What you'll do:

- Learn how to **download a sampling unit** shapefile from your project
- Learn how to **create sampling units** by uploading shapefiles
 - You'll re-upload the shapefile you just downloaded while renaming the points so that you have your own unique sampling units for your point count data
- **Enter data**
- Thursday: Explore your own data using the **Analyst Tool** (Exercise 5)





DAY 1 WRAP-UP

PLUS/DELTA





PLUS – DELTA METHOD

- Feedback from workshop to continue to improve

+ PLUS

What went well and should be continued or repeated

Δ DELTA

What could be changed or improved for future iterations.



OFFICE HOURS





AVIAN
KNOWLEDGE NETWORK

DoW AND THE AKN: WHO, WHAT, WHERE, WHEN, WHY, AND HOW

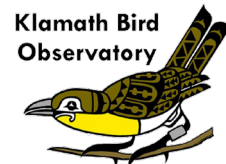
DoW AKN Quarterly Regional Training
11-13 August 2026

COBSCOOK INSTITUTE (HOST: NAVAL SUPPORT
ACTIVITY CUTLER), TOWNSHIP OF TRESCOTT, ME

Sam Veloz
Dianne Miller

Elizabeth Neipert
Zoe Duran
Jocelynn Marriott

John Alexander
Caitlyn Gillespie
Nora Honkomp
Ellie Armstrong



[dodakn.org/
training-class-website](https://dodakn.org/training-class-website)



Atlantic Puffin, Machias Island,
Maine; Credit: Paul Block

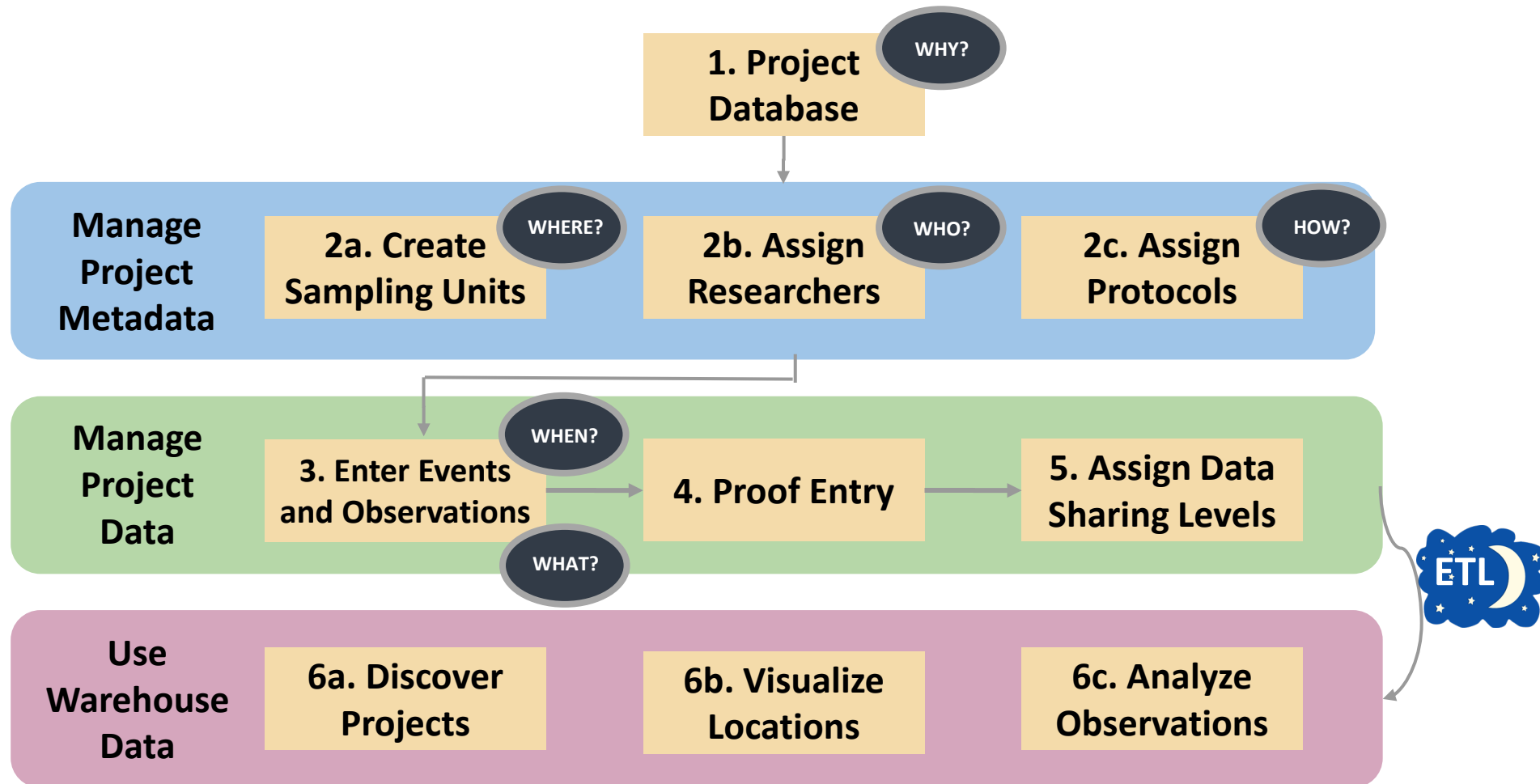


AKN DATA SHARING LEVELS



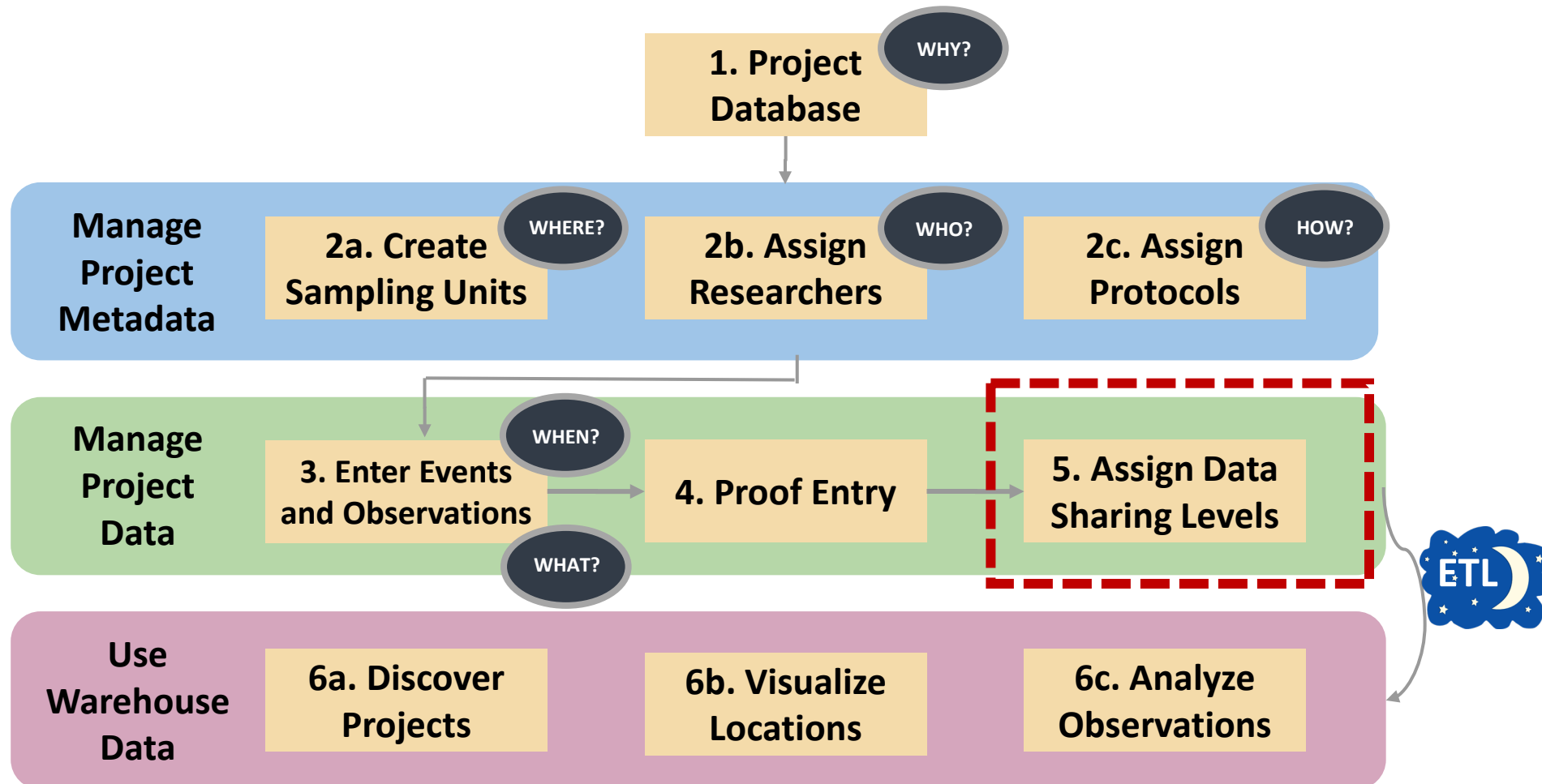


WORKFLOW FOR MANAGING A PROJECT





MANAGING A PROJECT: DATA SHARING LEVELS



DATA SHARING LEVELS

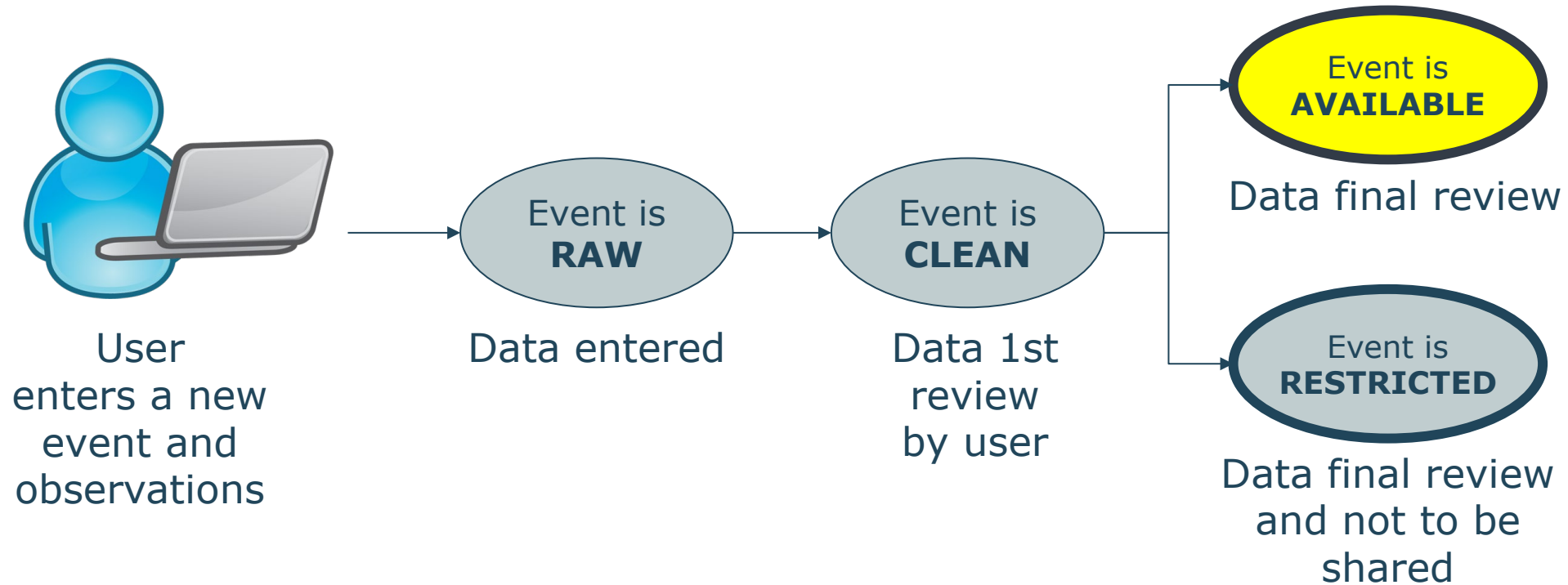
Defines how visible each observation is for querying, summarizing, visualizing, and analyzing.

Controlled by the Project Leader within each Project

**5. Assign Data
Sharing Levels**

REVIEW LEVELS FOR EACH EVENT

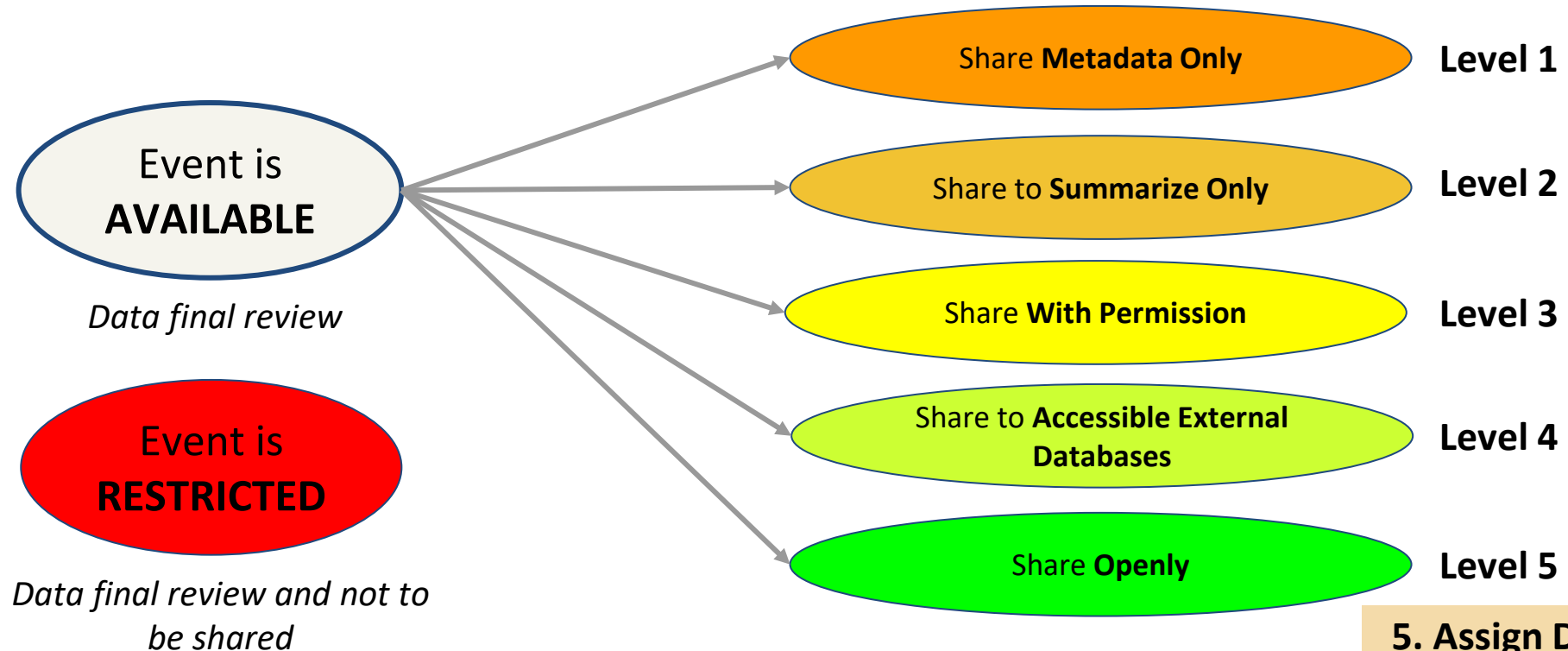
Steps to enter and review data in preparation for sharing



**5. Assign Data
Sharing Levels**

DATA SHARING LEVELS FOR EACH EVENT

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

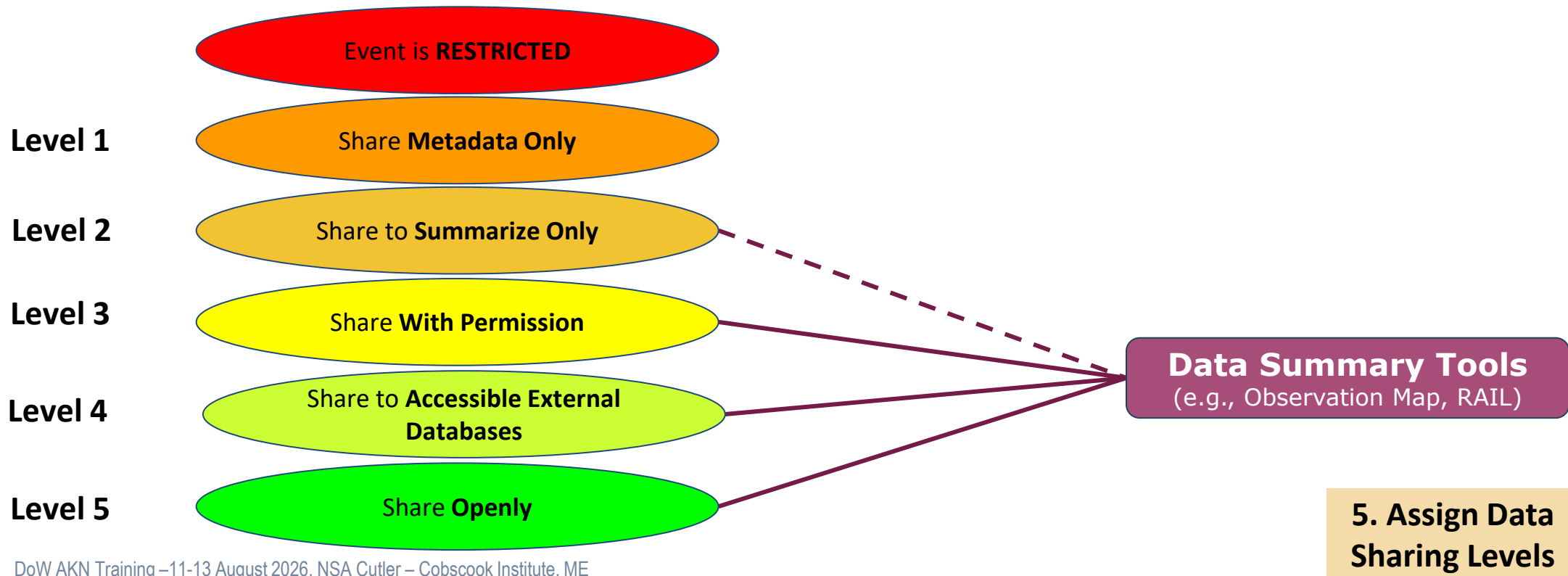


**5. Assign Data
Sharing Levels**



DATA SHARING AND TOOL ACCESS

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



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

**5. Assign Data
Sharing Levels**



DATA OWNERSHIP, SHARING, AND CONTRACTORS



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

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

DoW

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

We want data collected on/near DoW installations in DoW 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

>>Same story with AZGFD!

Project

Select one or more projects or sampling units for data download.

Filter

All available projects and programs

Select all projects

- ☒ MIARNG - [DOD_NATGUARD] Michigan Army National Guard
 - ☒ Camp Grayling (CGJMTG)
 - ☒ Golden-winged warbler (GWWA)
 - ☒ Grassland birds (GB)
 - ☒ Pine barrens birds (PB)
 - ☒ Raptors (RA)
 - ☒ Red-headed woodpecker (RHWG)
 - ☒ Secretive Marsh Bird (SMB)
 - ☒ Fort Custer (FCTC)
 - ☒ 1-1-1 (1-1-1)
 - ☒ 1-10-10 (1-10-10)
 - ☒ 1-2-2a (1-2-2a)
 - ☒ 1-2-2b (1-2-2b)
 - ☒ 1-6-6 (1-6-6)

Observation data

If you would like to download observation data, select the type(s) of survey data to be included in the download.

Survey types

NOTE: If the survey data type is not available for any number of projects you've selected, those projects will not be included in the resulting download.

- ☐ Point count observations
- ☐ Area search observations
- ☐ Secretive marshbird observations
- ☐ Vegetation observations
- ☐ Site condition observations
- ☐ Linear transect observations
- ☐ Soil survey observations
- ☐ WFL territory summaries
- ☐ Banding observations

Date filter

Select a date filter to limit observation data downloaded to those created within the specified range.

Start date Stop date

Sampling units

If you would like to download sampling units, select which file type(s) to include in the download.

- ☐ CSV
- ☐ KML
- ☐ Shapefile
- ☐ GPSU
- ☐ Waypoint
- ☐ Sampling unit hierarchy for entire project as text file

SETTING DATA SHARING LEVELS DEMONSTRATION

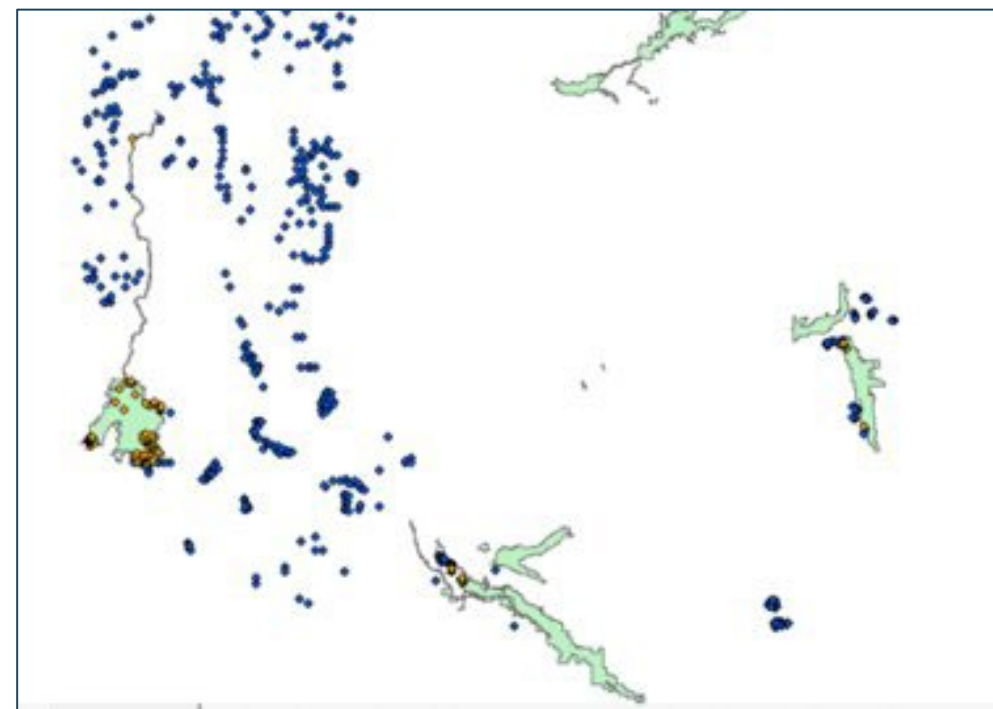
Tools:

- [Project Leaders](#) to set/edit sharing levels



EXAMPLE: USACE-WILLAMETTE VALLEY PROJECT, OR

- New biologist took DoW AKN training at NMFWA
- Worked with DoW 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



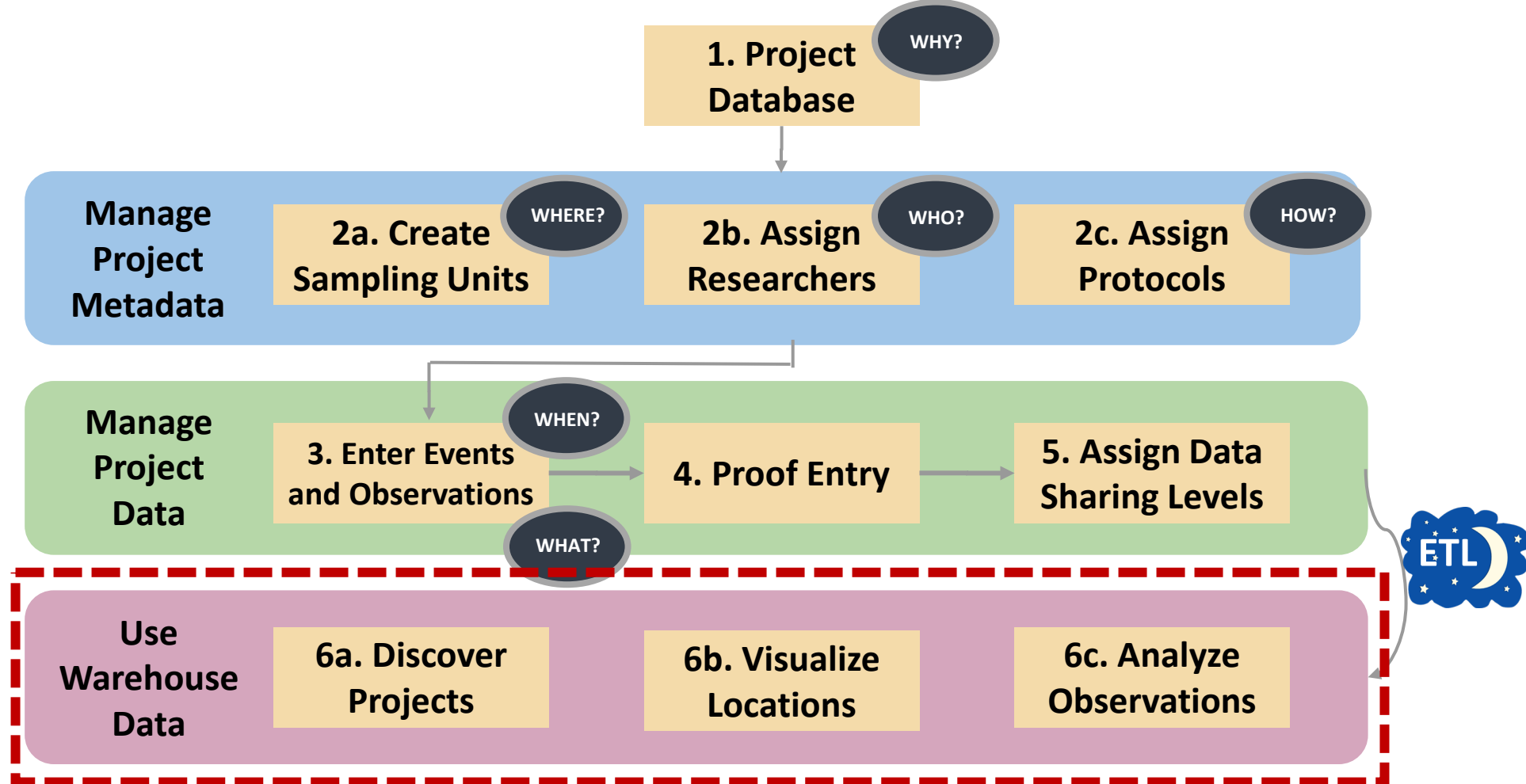


AKN WAREHOUSE DATA 101





MANAGING A PROJECT: DATA WAREHOUSES





DATA WAREHOUSES

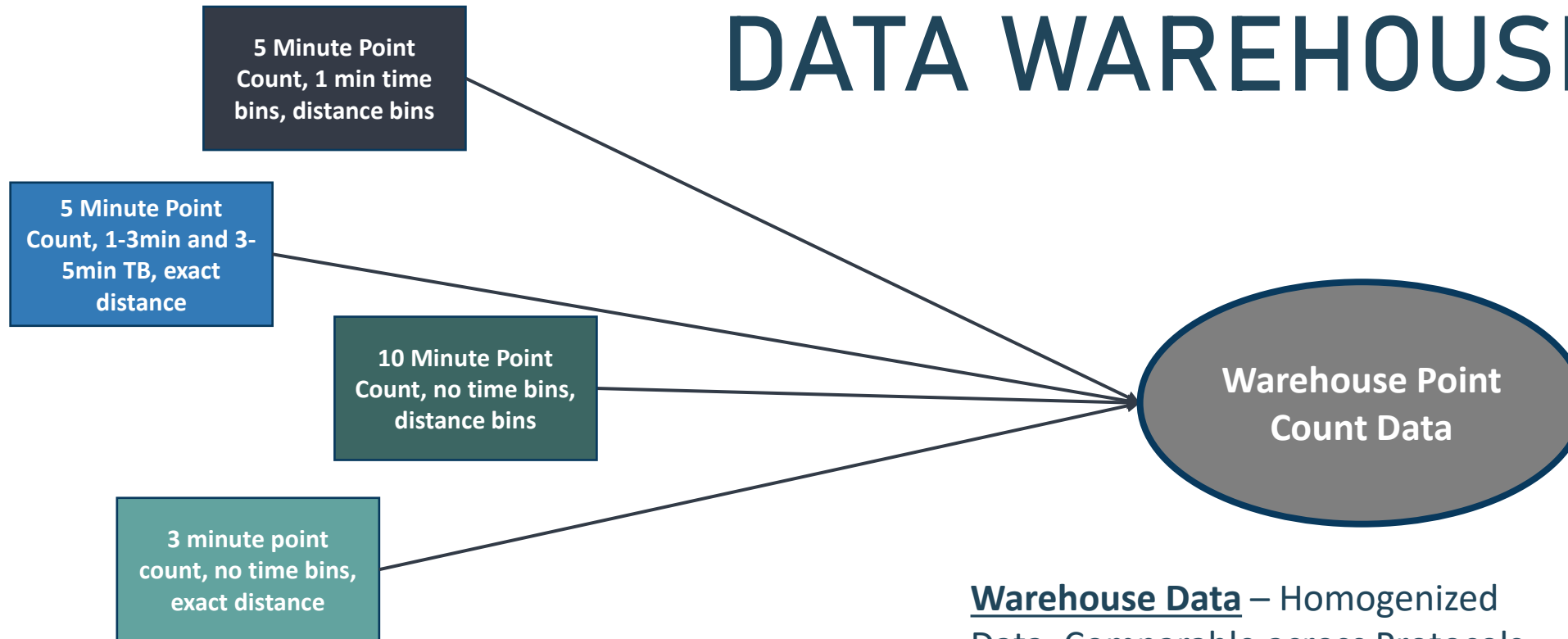
Database with homogenized copy of observation data, organized by sampling method for cross-project query and analysis

Enables data from **different Protocols** under the same data type (e.g., Point Count) to be aggregated





DATA WAREHOUSES



Raw Data – Differs by Protocol Fields

Stored in its full fidelity in your AKN Project Database



Raw Data Download

Warehouse Data – Homogenized Data, Comparable across Protocols

Stored in the Warehouse database

*Only **data you have access to** or that are shared at Level 5*



Public Data Download



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 crinitus	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 formica	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 Cowbird	Molothrus ater	NR	G50	50 to 100	Light sprinkle, light rain		Arbour, David	AVAILABLE Level 5

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



Raw Data Download

Project Database Version

Warehouse Version

GlobalUniqueIdentifier	ProjectCode	ProjectName	LocalityID	StudyArea	Transect	TransectName	Point
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	
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	
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
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



Public Data Download

DecimalLatitude	DecimalLongitude	Visit	ProtocolCode	ObservationYear	CollectionMonth	DayC	JulianDay	JulianDayV	P Time	Collection	ScientificName	CommonName	SpeciesCode	Phylogenetic	DistanceFrom	Flycatcher	Detection	Observation	NoObserved	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-hea	BHCO	2015	75	NR		1	0	AVAILABLE LEVEL 5



PROJECT DATA VS. WAREHOUSE DATA

Point Count Data

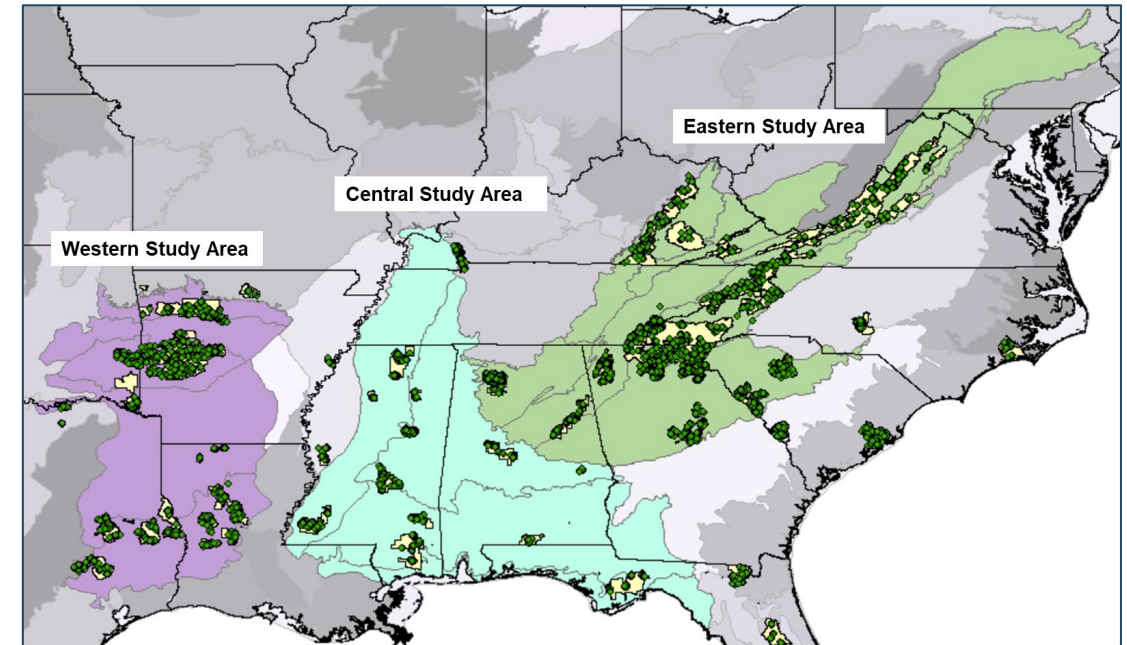
Same: Species, Count, Protocol, Locations, Detection Cues, Observation Time, Data Sharing Levels

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



CASE STUDY: USFS REGION 8

- **30-year** USFS database with bird monitoring data across 34 national forests and 13 states was being **decommissioned**
- FS regional biologist wanted to save data and make sure current FS biologists could access it
- **1,121,654** point count observation records(**13,664** sampling locations) uploaded to AKN!
- **100+** FS biologists in Region 8 now have access to their data and continue to contribute new data every year
- Data used to create species distribution models, now being applied in multiple AKN decision support tools



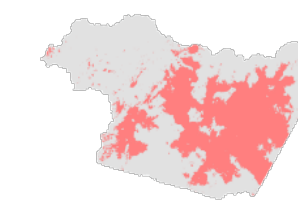
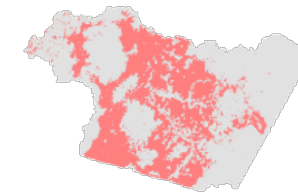
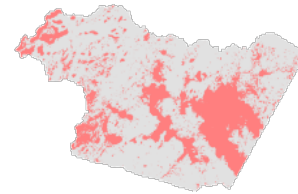
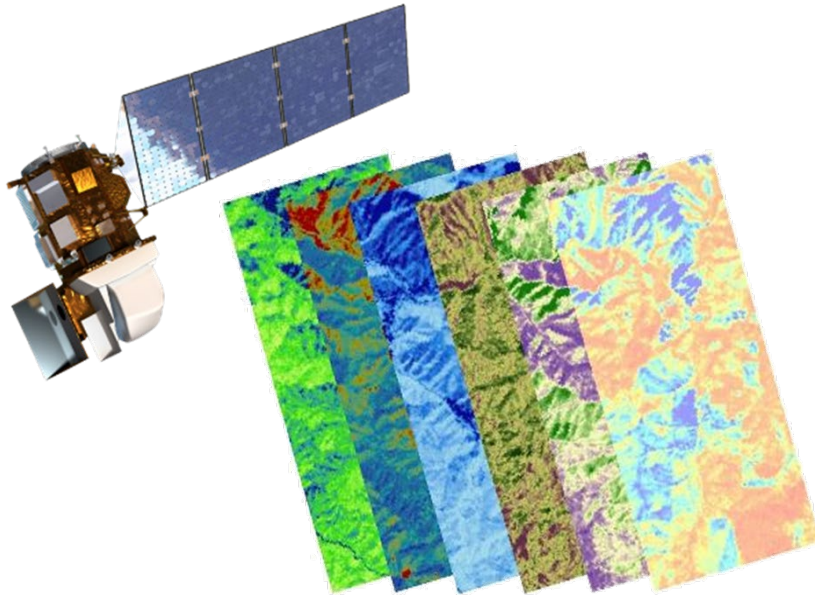
Point Blue
Conservation
Science™





CASE STUDY: SPECIES-CENTERED HABITAT MODELING

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

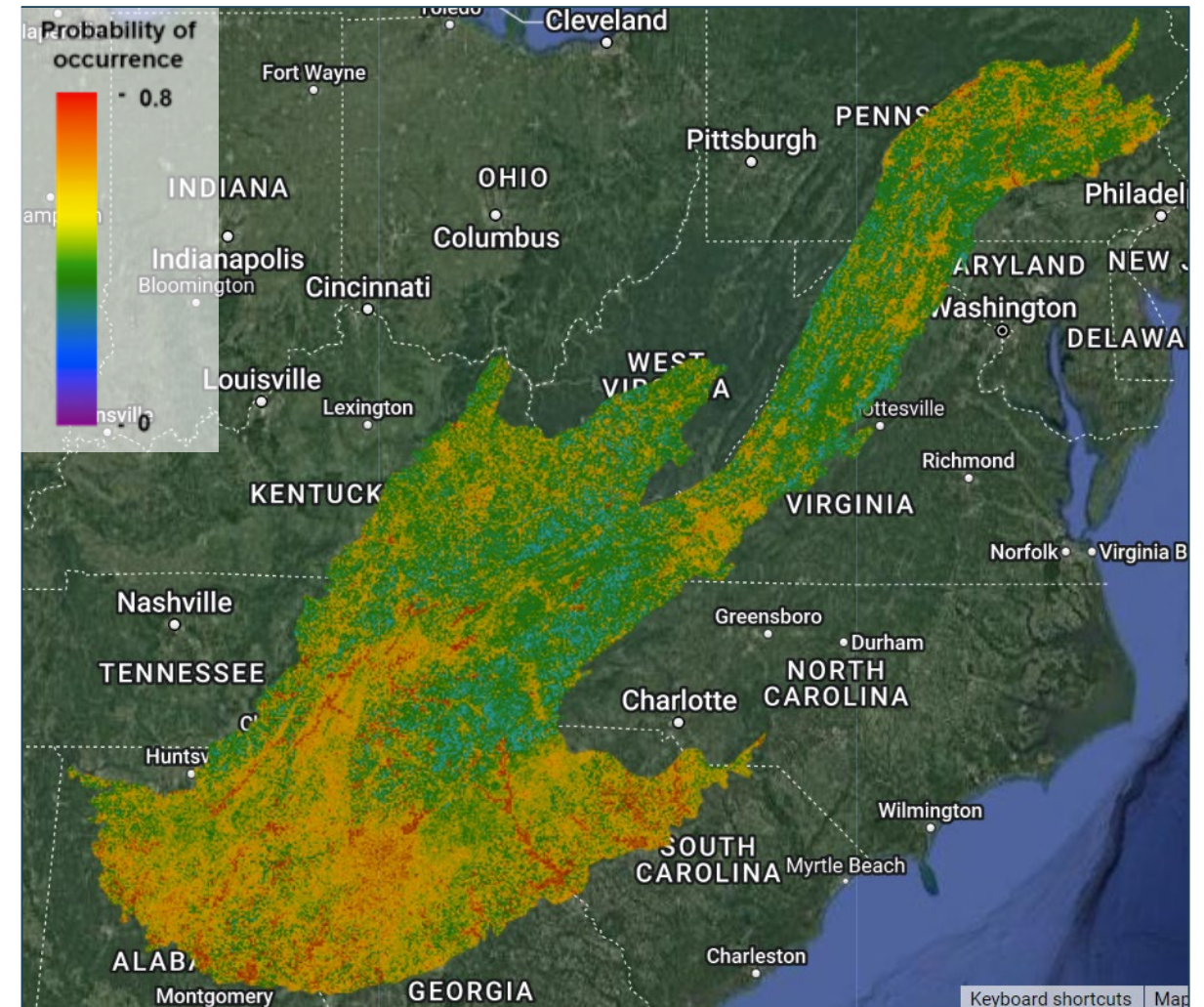


Compared to Land Cover Derived Models:

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



CASE STUDY: PINE WARBLER HABITAT DISTRIBUTION -- 2019

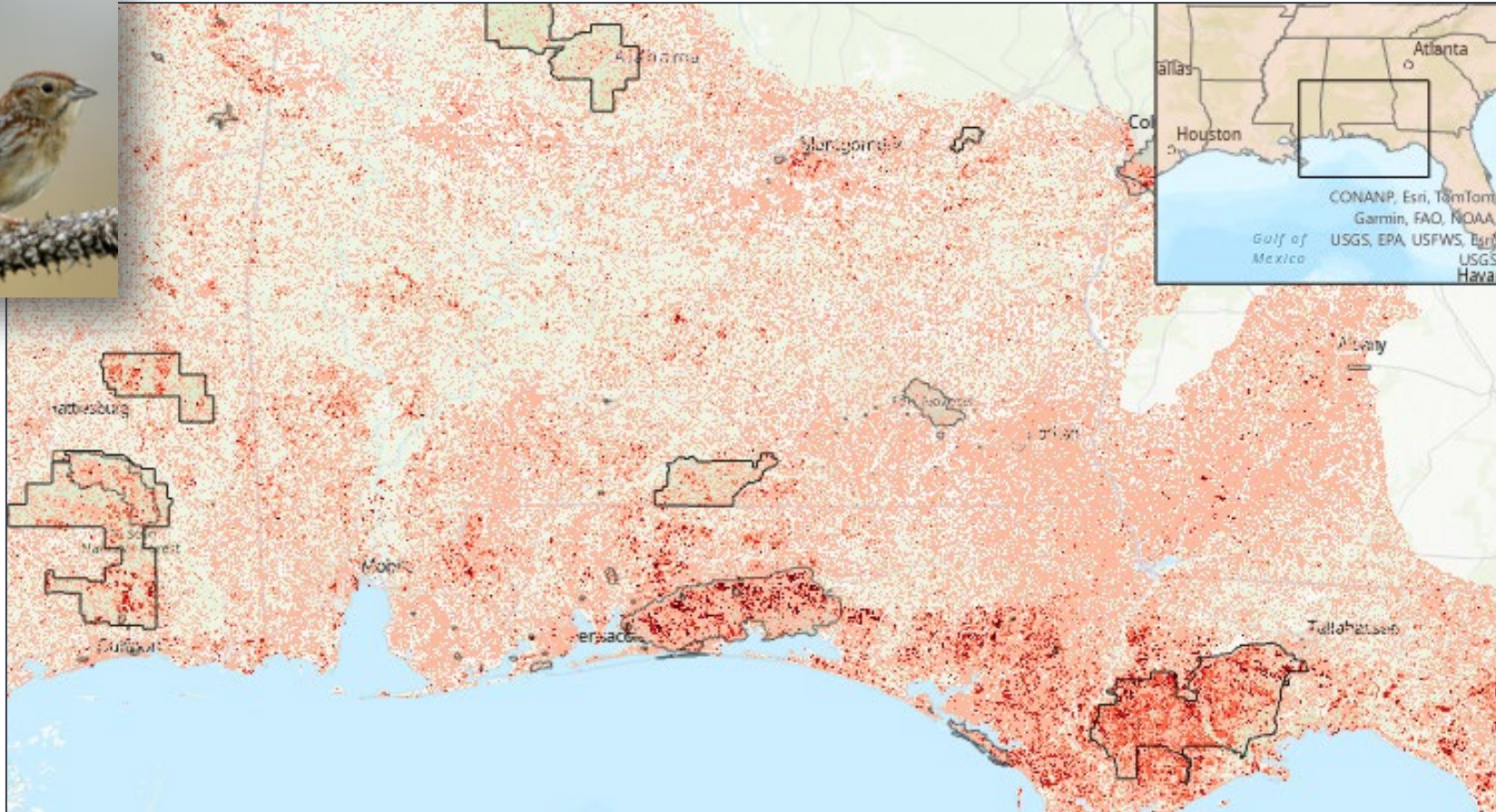




CASE STUDY: MAPPING HABITAT FOR PRIORITY SPECIES



Bachman's
sparrow



USFS
+
DoW



DOWNLOAD POINT COUNT DATA FROM WAREHOUSE DEMONSTRATION



Tools:

- [**Data Downloader**](#)



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/>

 **Make Decisions**

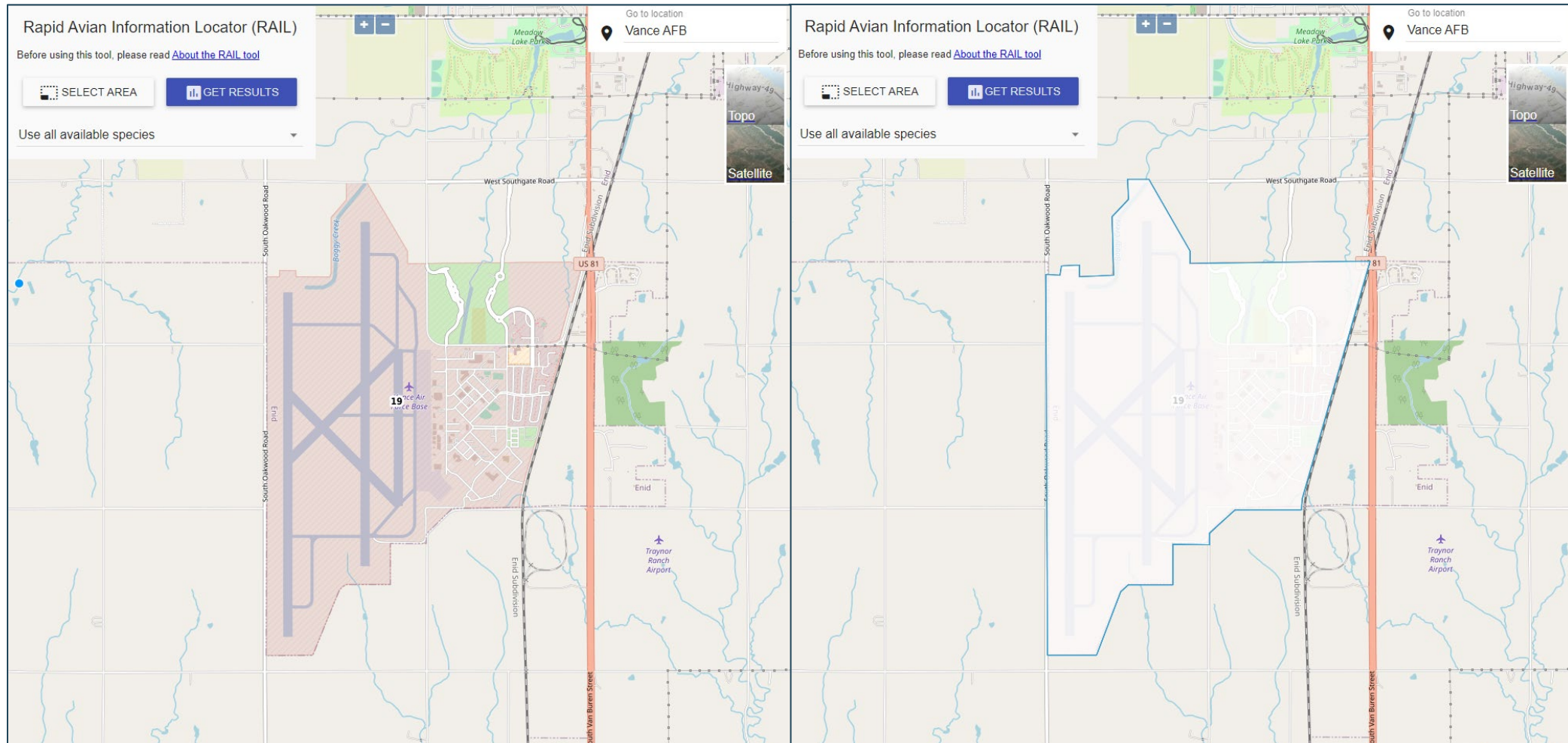


R.A.I.L. tool
(Rapid Avian Information
Locator)

Identify the set of birds that occur within specific geographic regions and their conservation status and population trends. No account required.

EXAMPLE: R.A.I.L. TOOL

VANCE AIR FORCE BASE, OK



EXAMPLE: R.A.I.L. TOOL

VANCE AIR FORCE BASE, OK

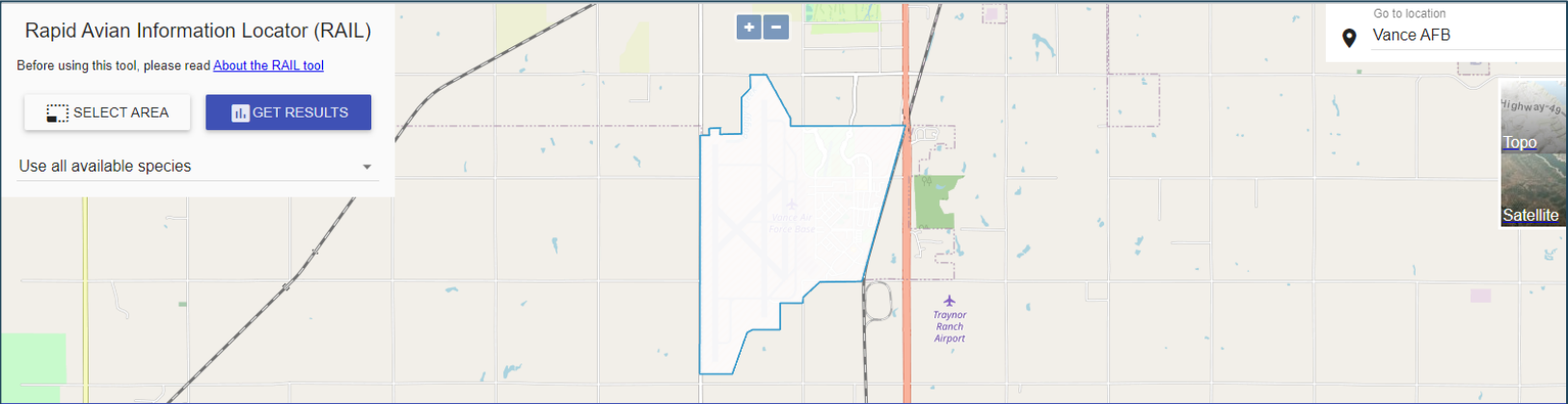
Rapid Avian Information Locator (RAIL)

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

SELECT AREA

GET RESULTS

Use all available species

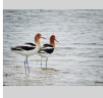
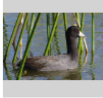


Species Results

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	BCRBCC Breeding: 9, 33	
 American Bittern <i>Botaurus lentiginosus</i>	Global: Not yet available Continental U.S.: Not yet available	State Threatened: MD State Endangered: MA, CT, NJ, PA, OH, IN	
 American Coot <i>Fulica americana</i>	Global: Not yet available Continental U.S.: Not yet available	Common	



Barn Swallow
Hirundo rustica

Global: 190,000,000
Continental U.S.: 40,000,000

Common



Bell's Vireo
Vireo bellii

Global: 5,700,000
Continental U.S.: 4,600,000

Common



Belted Kingfisher
Megasceryle alcyon

Global: 1,800,000
Continental U.S.: 830,000

BCRBCC Breeding: 13



Black-bellied Whistling-Duck
Dendrocygna autumnalis

Global: Not yet available
Continental U.S.: Not yet available

Common



Black-crowned Night-Heron
Nycticorax nycticorax

Global: Not yet available
Continental U.S.: Not yet available

State Threatened: ME, NJ, OH
State Endangered: DE, PA, IN



Black-throated Green Warbler
Setophaga virens

Global: 9,200,000
Continental U.S.: 2,900,000

BCRBCC Breeding: 27



EXAMPLE: R.A.I.L. TOOL

VANCE AIR FORCE BASE, OK

Filter Species Results

Length Min (cm)	Length Max (cm)	Primary Breeding Habitat	
Biology			
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	
Conservation Status			
Continental Importance	Half Life	☐ Federally Threatened or Endangered	
Bird of Conservation Concern (BCC)		☐ Migratory Bird Treaty Act (MBTA) - Listed	
		☐ DoD Mission Sensitive Species	

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 Code¹: Not yet available

Habitat
Habitat Category²: Forests
Primary Breeding Habitat⁴: Wetlands, Generalist

Physical Details
Weight²: 3000 - 6300 g
Length²: 71 - 96 cm

Population Information
Global Population³: 200,000
% Population Estimate USA³: Not yet available
Lower 95% Bound USA³: Not yet available
Upper 95% Bound USA³: Not yet available
Continental Population Trend⁴: Significant large increase
Regional Population Trend⁴: BCR19 - Significant large increase
% BCR Population³: BCR 19 - 0.00%
Lower 95% Bound BCR³: BCR 19 - null
Upper 95% Bound BCR³: BCR 19 - null
% State Population³: OK - 0.00%
Lower 95% Bound State³: OK - null
Upper 95% Bound State³: OK - null

Biology
Food Category²: Fish
Behavior Category²: Soaring (raptor)
Nesting Category²: Tree
Incubation Period²: 34 - 36 days
Clutch Size²: 1 - 3 eggs
Number of Broods²: 1
Egg description²: Dull white, usually without markings.
Egg length²: 5.8 - 8.4 cm

Conservation Status
Continental Importance⁴: Not yet available
Half Life⁴: Not yet available
Federally Threatened⁶: No
Federally Endangered⁶: No
State Threatened⁷: MA, CT, NH, NY, TX
State Endangered⁷: NJ, VT, CA
Migratory Bird Treaty Act⁸: Listed
Bird of Conservation Concern⁹: No

NAVIGATING THE R.A.I.L. TOOL DEMONSTRATION

Tools:

- [RAIL Tool](#)



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:

- [Exercise 4 instructions](#)



CASE STUDY: MIGRATORY SHOREBIRD PROJECT

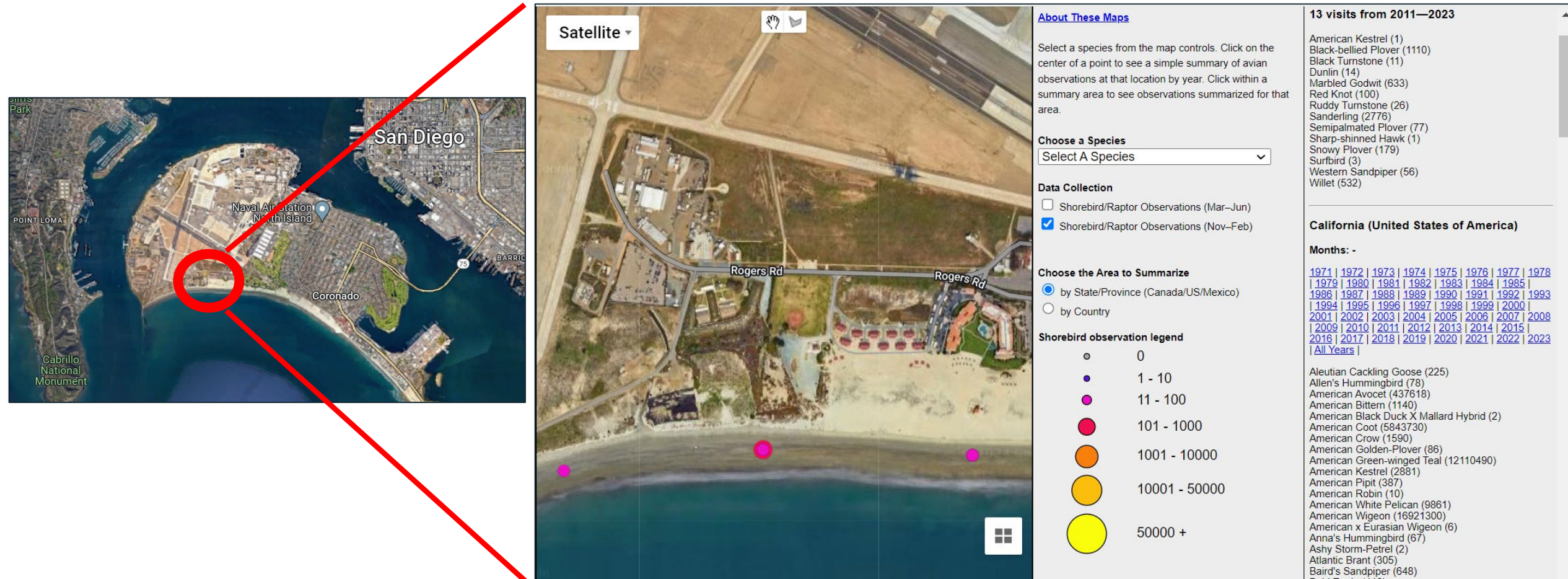
- Largest coordinated effort to monitor wintering shorebirds across all **13 countries** of the Pacific Coast of the Americas
- Project goals
 - Wintering Shorebird **abundance and distribution**
 - Factors **influencing** shorebird populations
 - Provide **science-based management** guidance from site to fly-way level



Western Sandpiper, Dam Neck Annex, VA; Credit: Paul Block

CASE STUDY:

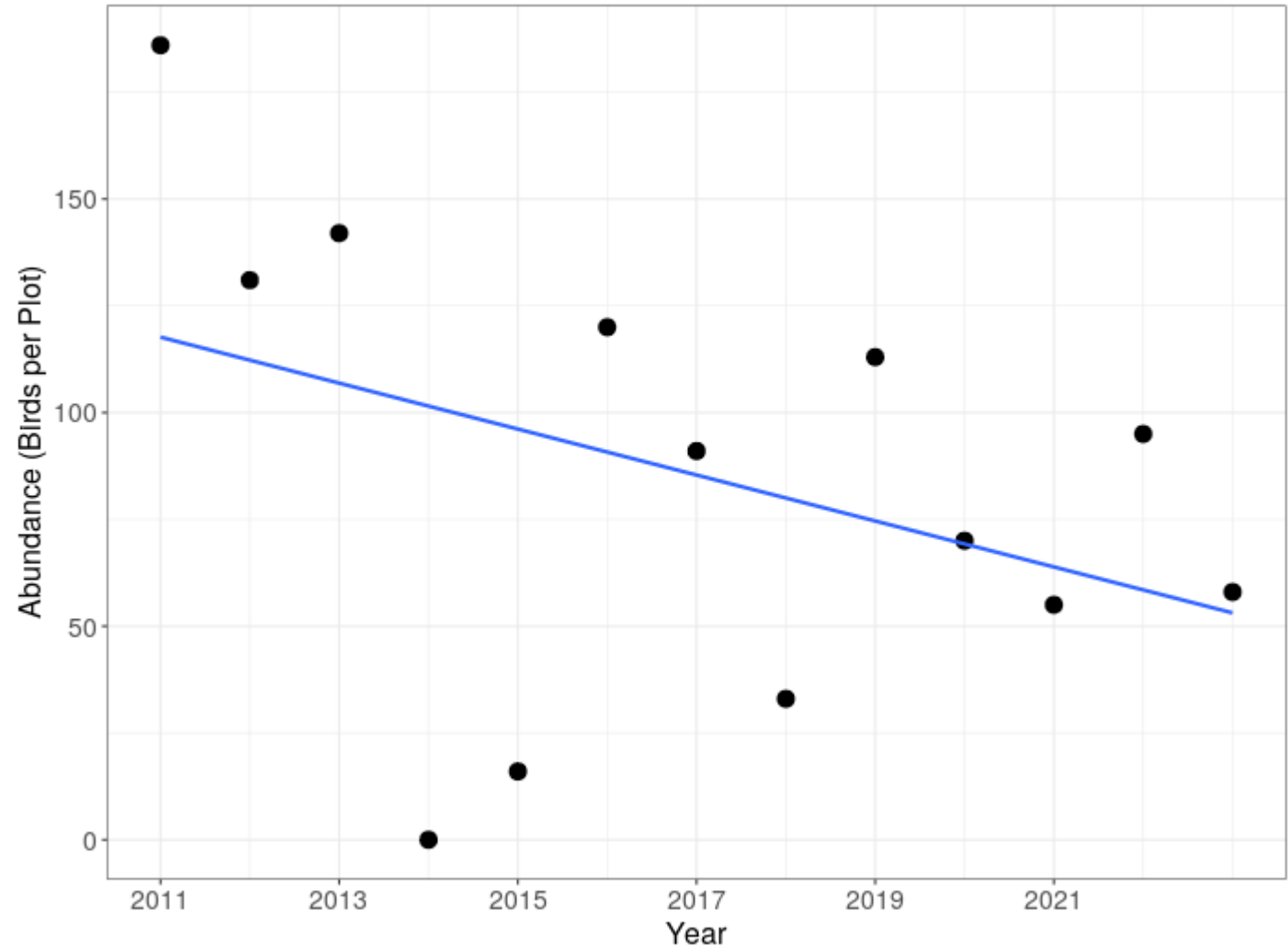
MIGRATORY SHOREBIRD PROJECT



CASE STUDY: MIGRATORY SHOREBIRD PROJECT

North Island Coronado Beach

Black-bellied plover abundance

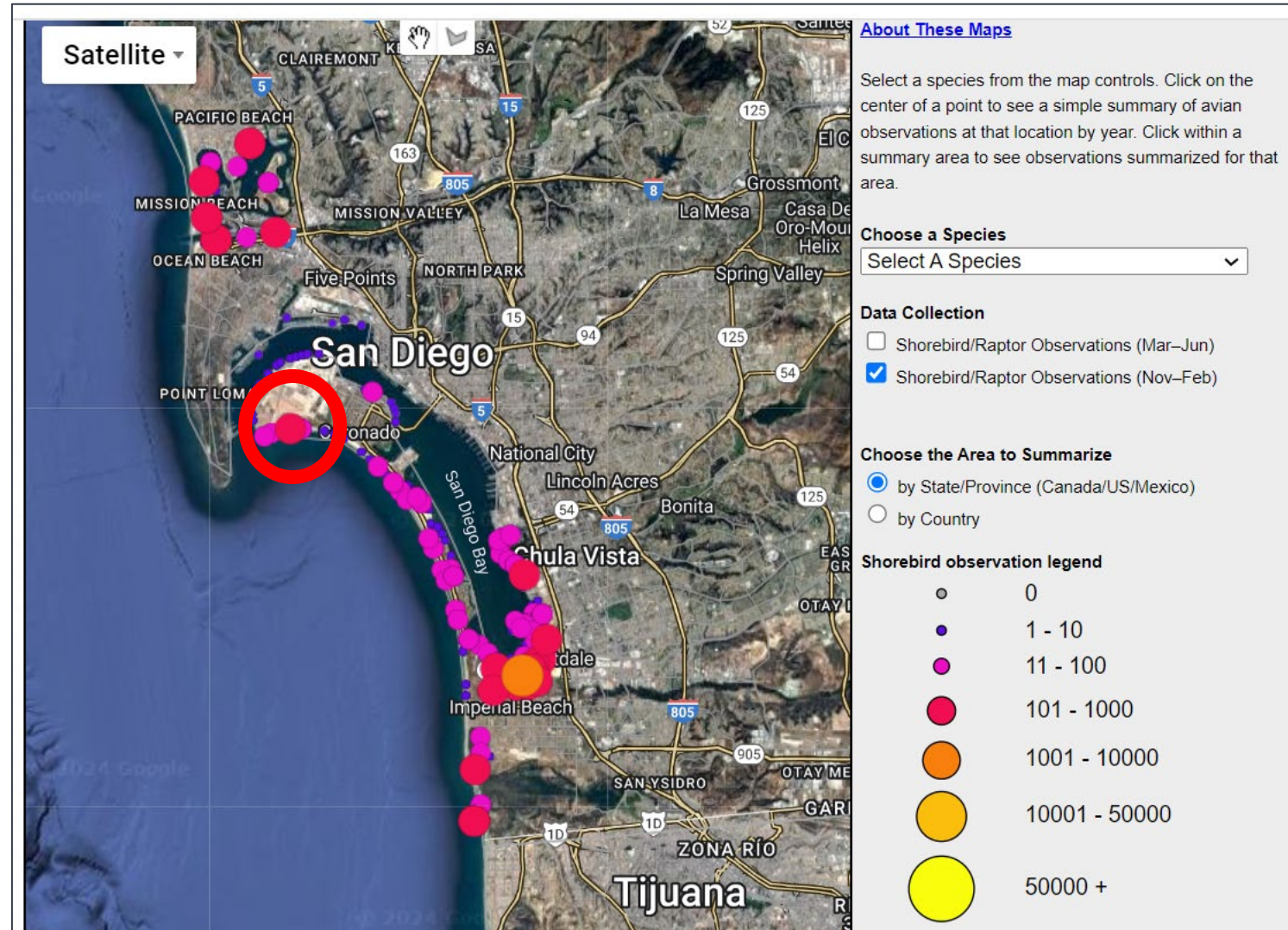




CASE STUDY:

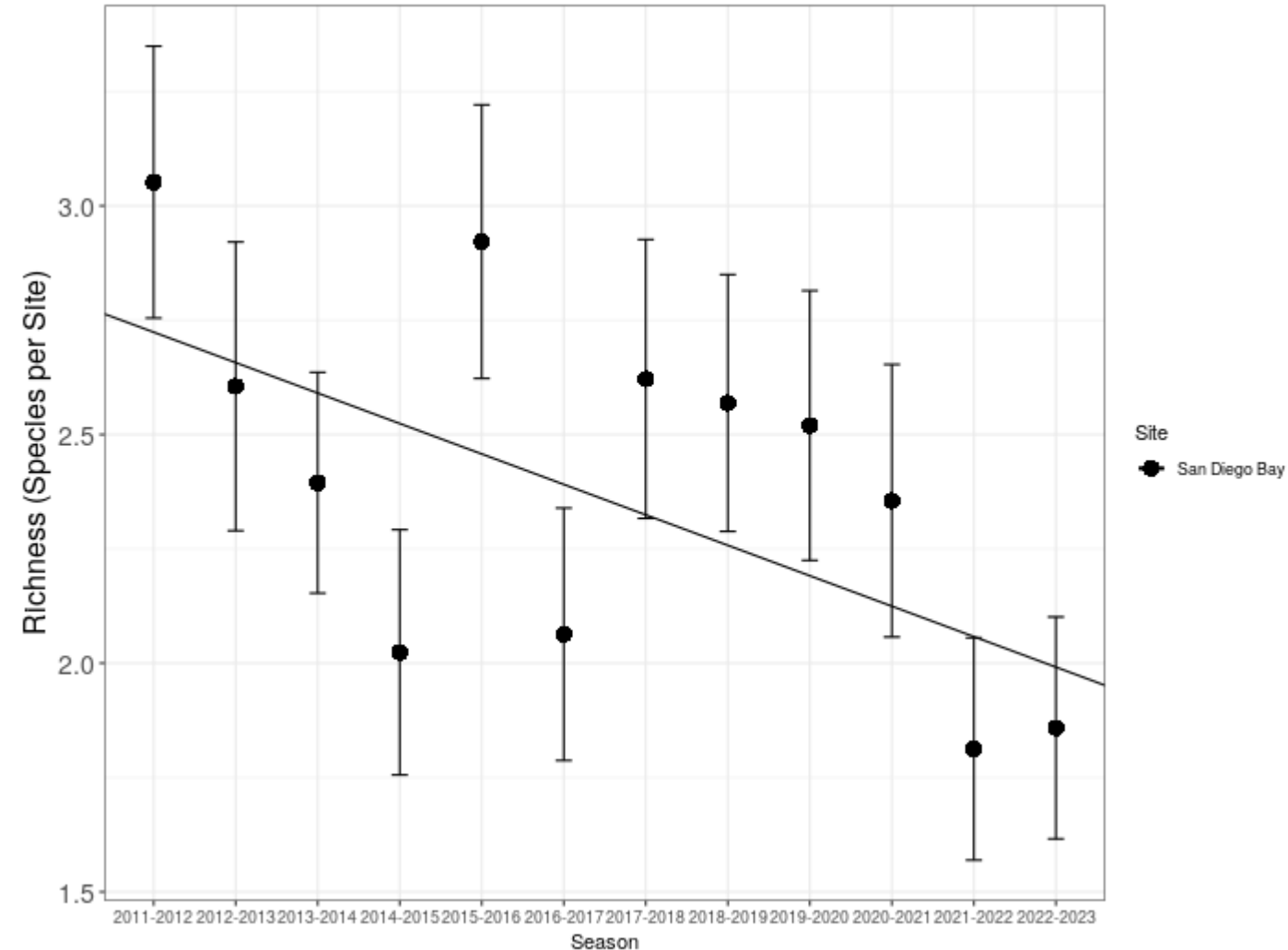
MIGRATORY SHOREBIRD PROJECT

- Data collected between November and December every year since 2011
- <https://migratoryshorebirdproject.org>

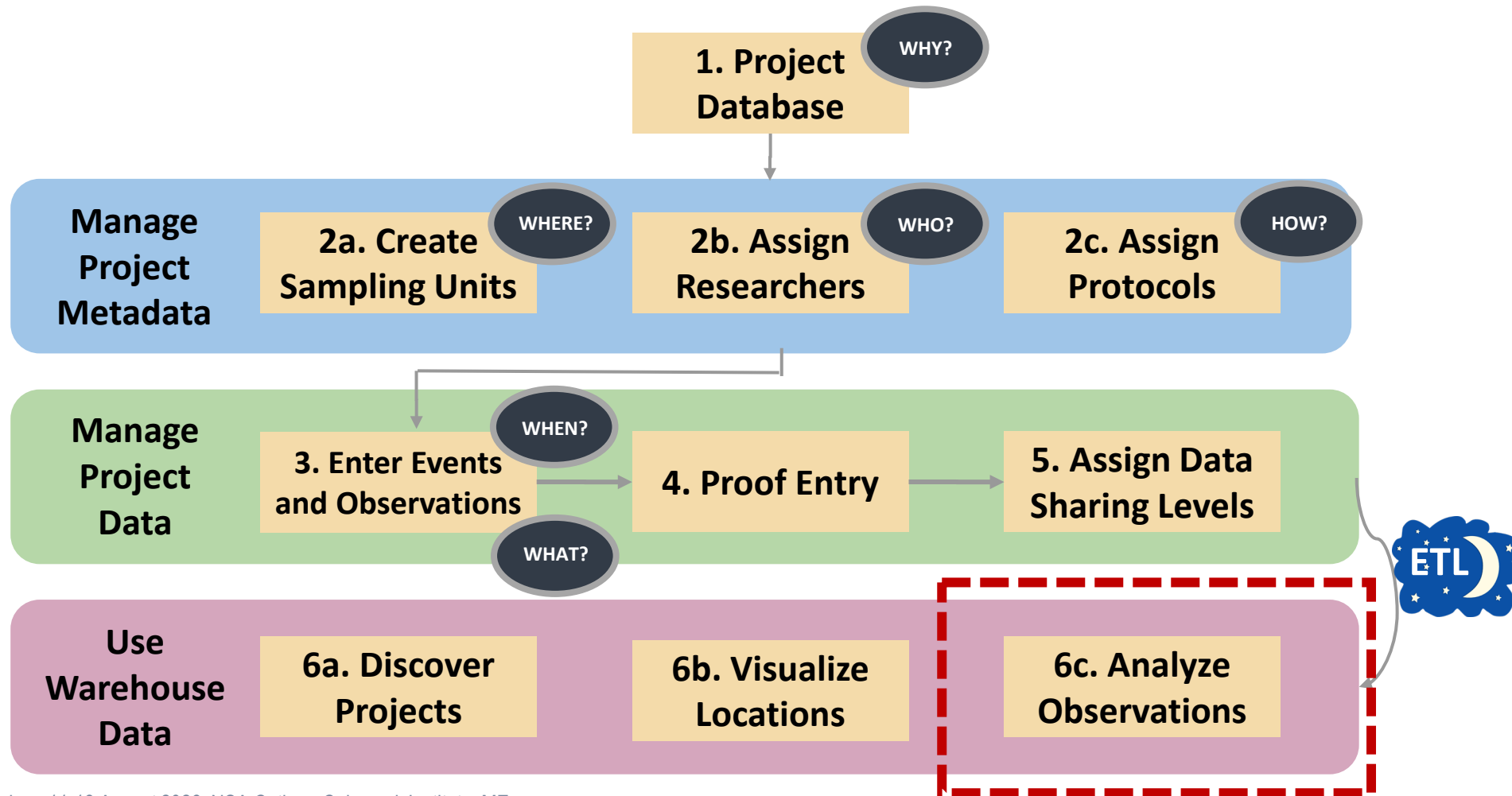


CASE STUDY: MIGRATORY SHOREBIRD PROJECT

San Diego Bay: Wintering
shorebird species richness



MANAGING A PROJECT: LOOKING FOR TRENDS



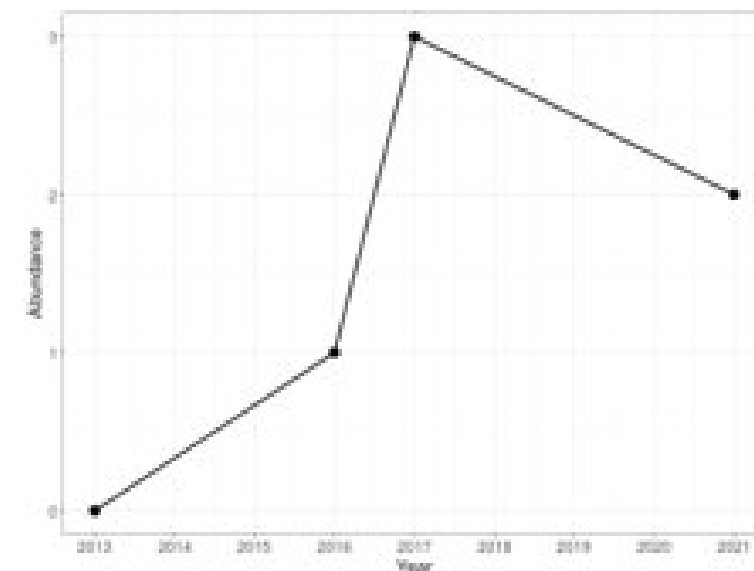


USING THE ANALYST TOOL DEMONSTRATION

Tools:

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

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

EXERCISE 5



LOOKING FOR TRENDS

EXERCISE 5

Purpose: Introduce you to more data exploration and discovery tools

Goal 1: Understand how to use the Observations Map to find survey locations from different datasets for a particular species and examine species trends

Goal 2: Use the Analyst Application to create a species list, check effort summaries, and examine trends.

Thinking Ahead: Consider how Observations Map may be helpful for your analyses and reporting; consider how the Analyst Application can assist in your data visualization and annual reporting needs.

LOOKING FOR TRENDS

EXERCISE 5

- Exercise:
 - Orientation of Observation Map
 - Exercise 5 instructions

Use
Warehouse
Data

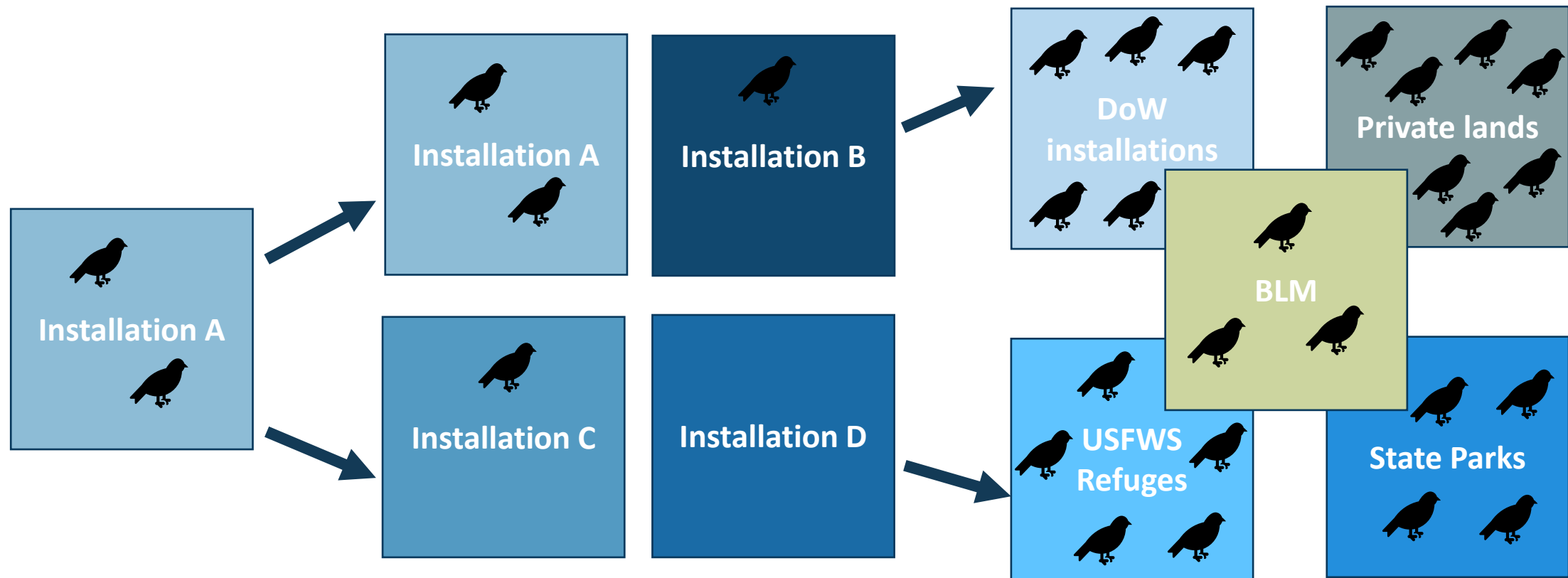
6a. Discover
Projects

6b. Visualize
Locations

6c. Analyze
Observations

CASE STUDY:

ASSESSING RELATIVE CONSERVATION RESPONSIBILITY



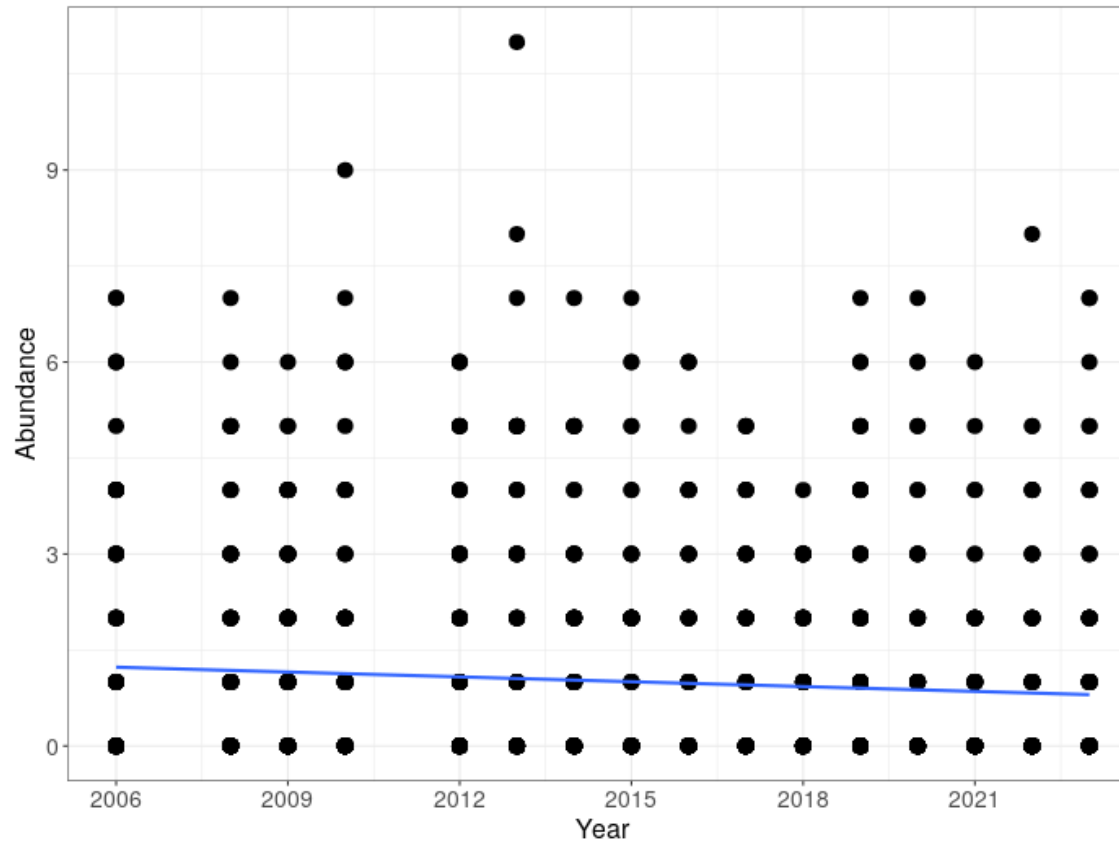
CASE STUDY:

ASSESSING RELATIVE CONSERVATION RESPONSIBILITY

NORTHERN BOBWHITE

AKN Analyst
output

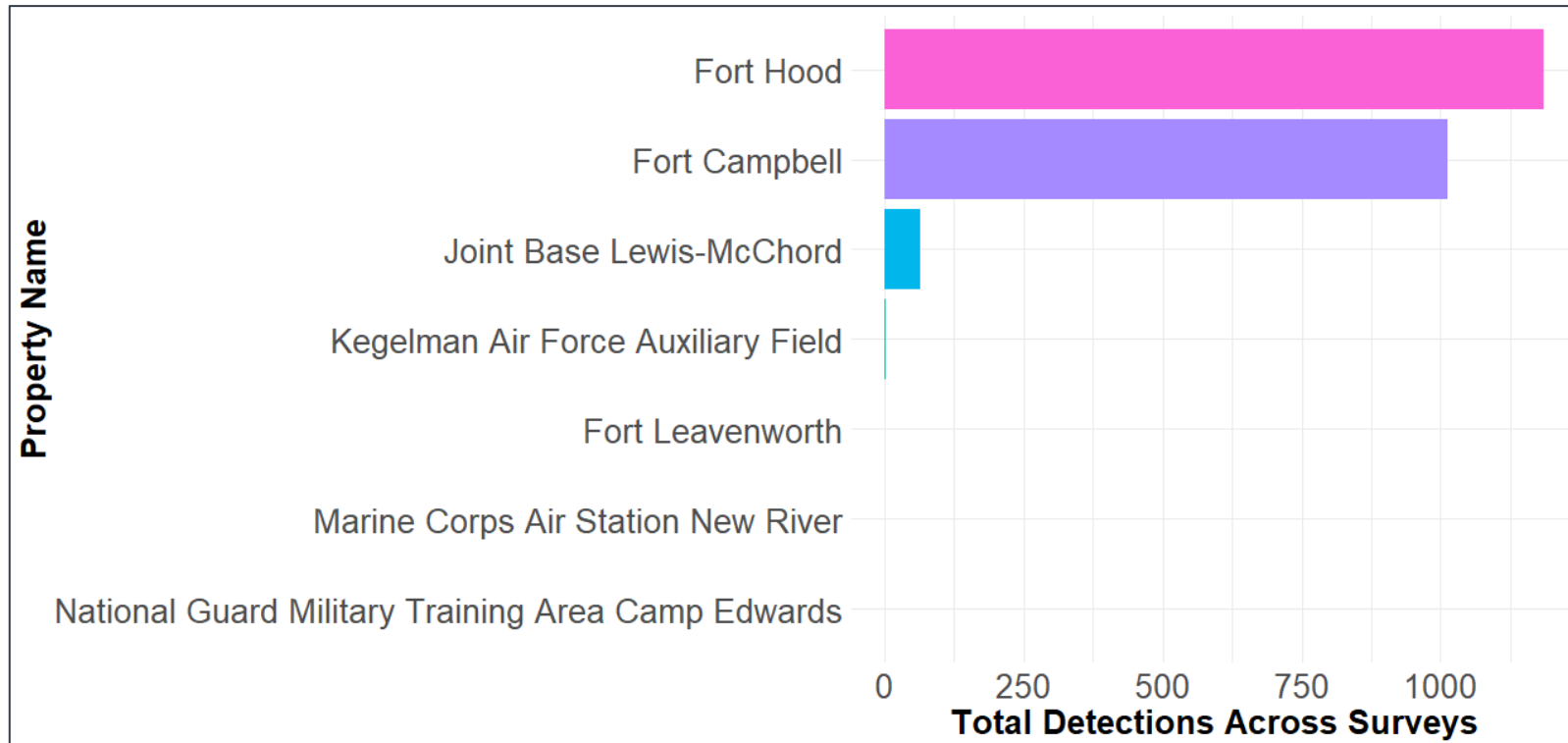
Fort Campbell



CASE STUDY:

ASSESSING RELATIVE CONSERVATION RESPONSIBILITY NORTHERN BOBWHITE

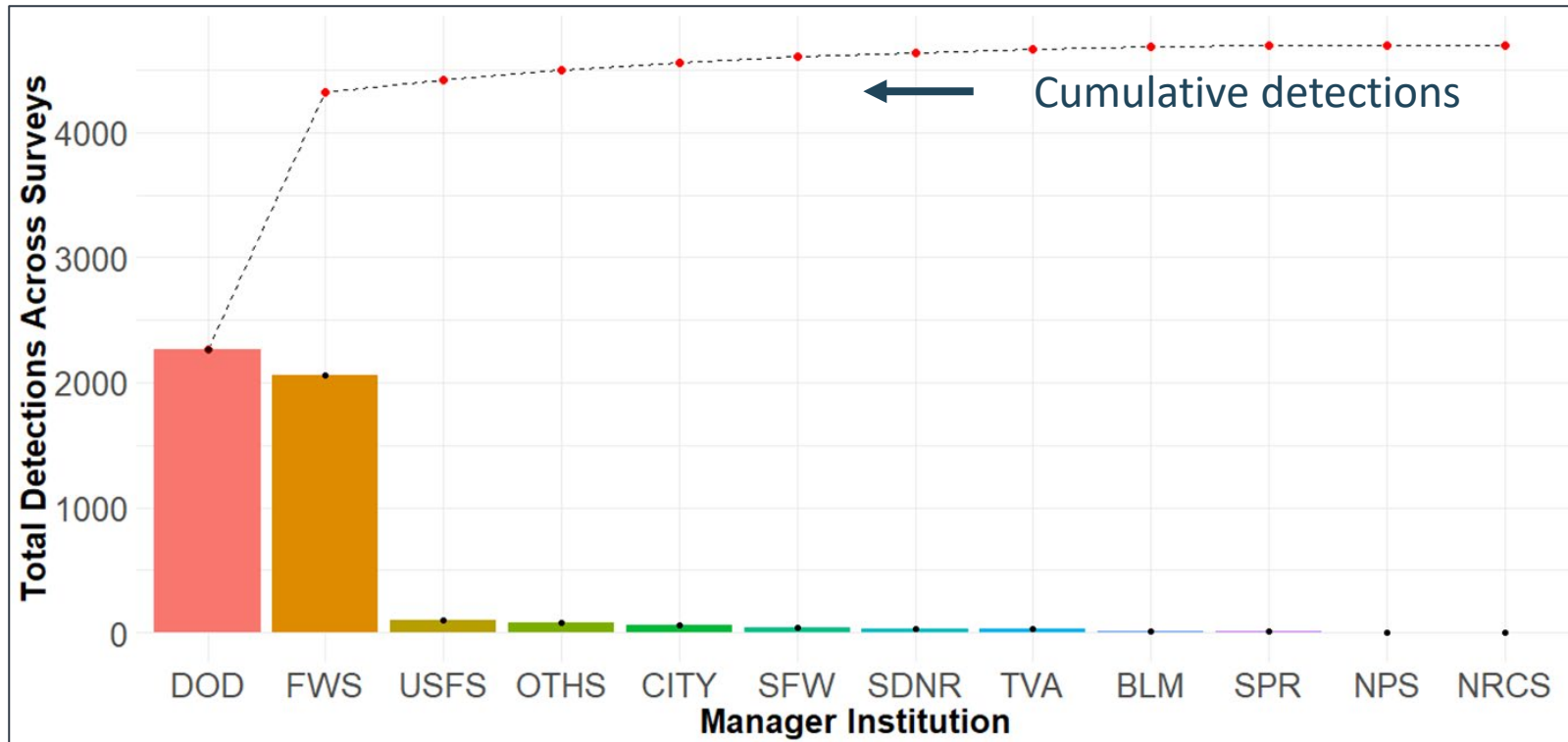
Which DoW installations have the most detections?



CASE STUDY:

ASSESSING RELATIVE CONSERVATION RESPONSIBILITY NORTHERN BOBWHITE

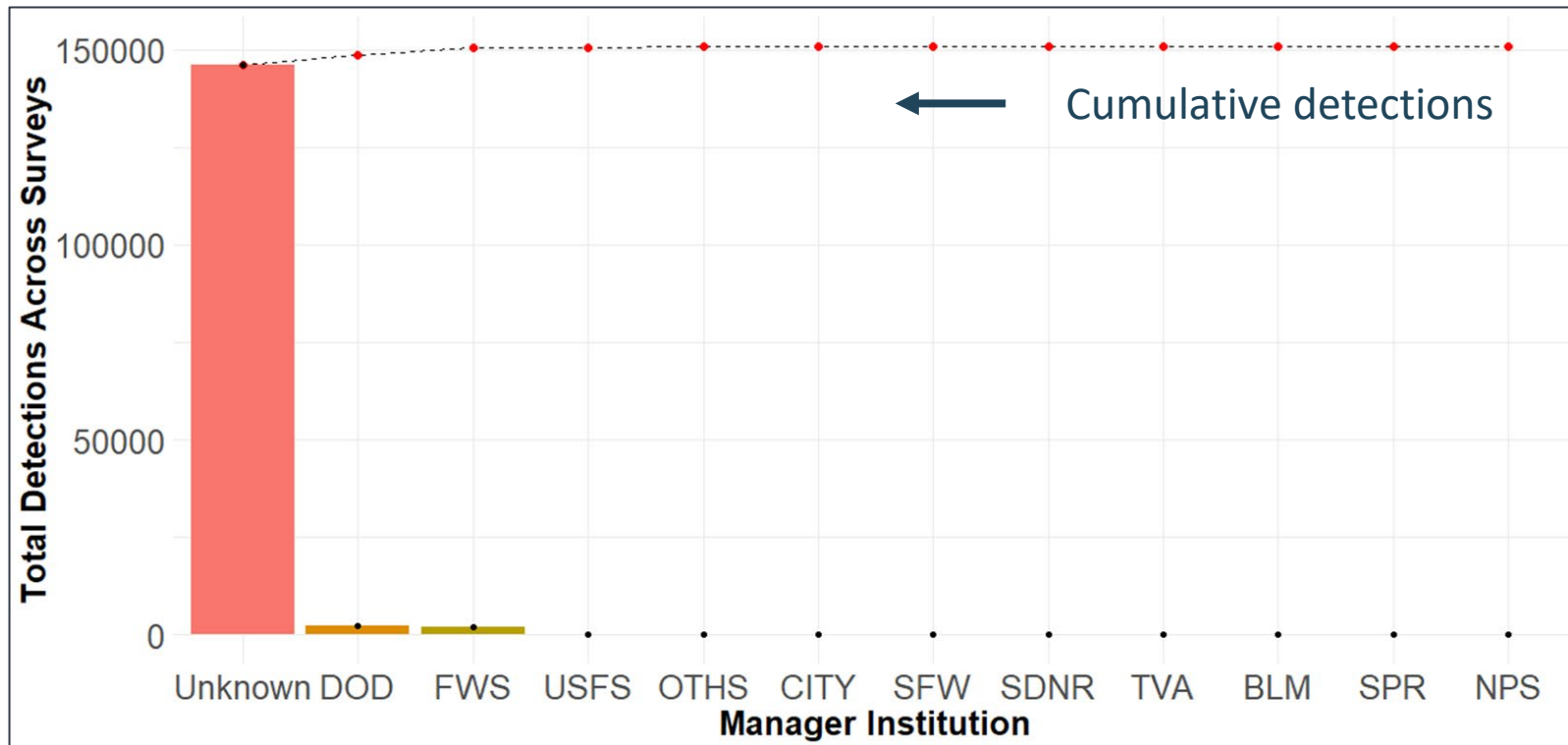
Across protected areas?



CASE STUDY:

ASSESSING RELATIVE CONSERVATION RESPONSIBILITY NORTHERN BOBWHITE

Across jurisdictions?

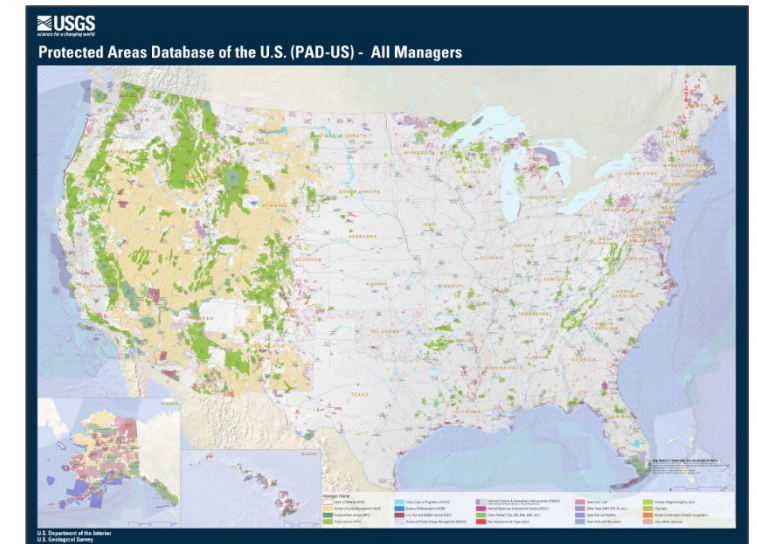
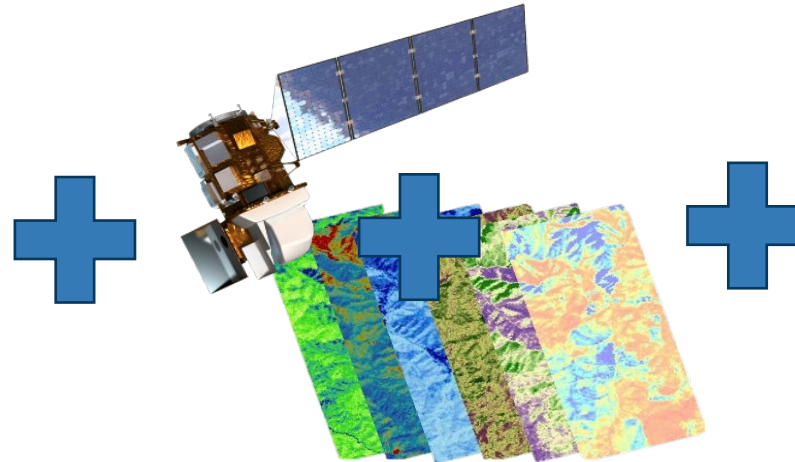
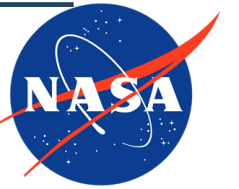


CASE STUDY:

ASSESSING RELATIVE CONSERVATION RESPONSIBILITY

Avian Distributions Across Land Ownerships (ADALO) Tool Expansion

- Use **AKN data** in conjunction with **NASA remote sensing products** to model avian distribution and abundance across the U.S.
- Incorporate **DoW AKN data** for Mission-Sensitive Species



Proposal through NASA Research Opportunities in Space and Earth Science (ROSES) –

ACCEPTED!

CASE STUDY:

AVIAN DISTRIBUTIONS ACROSS LANDOWNERSHIPS (ADALO) PHASE 2

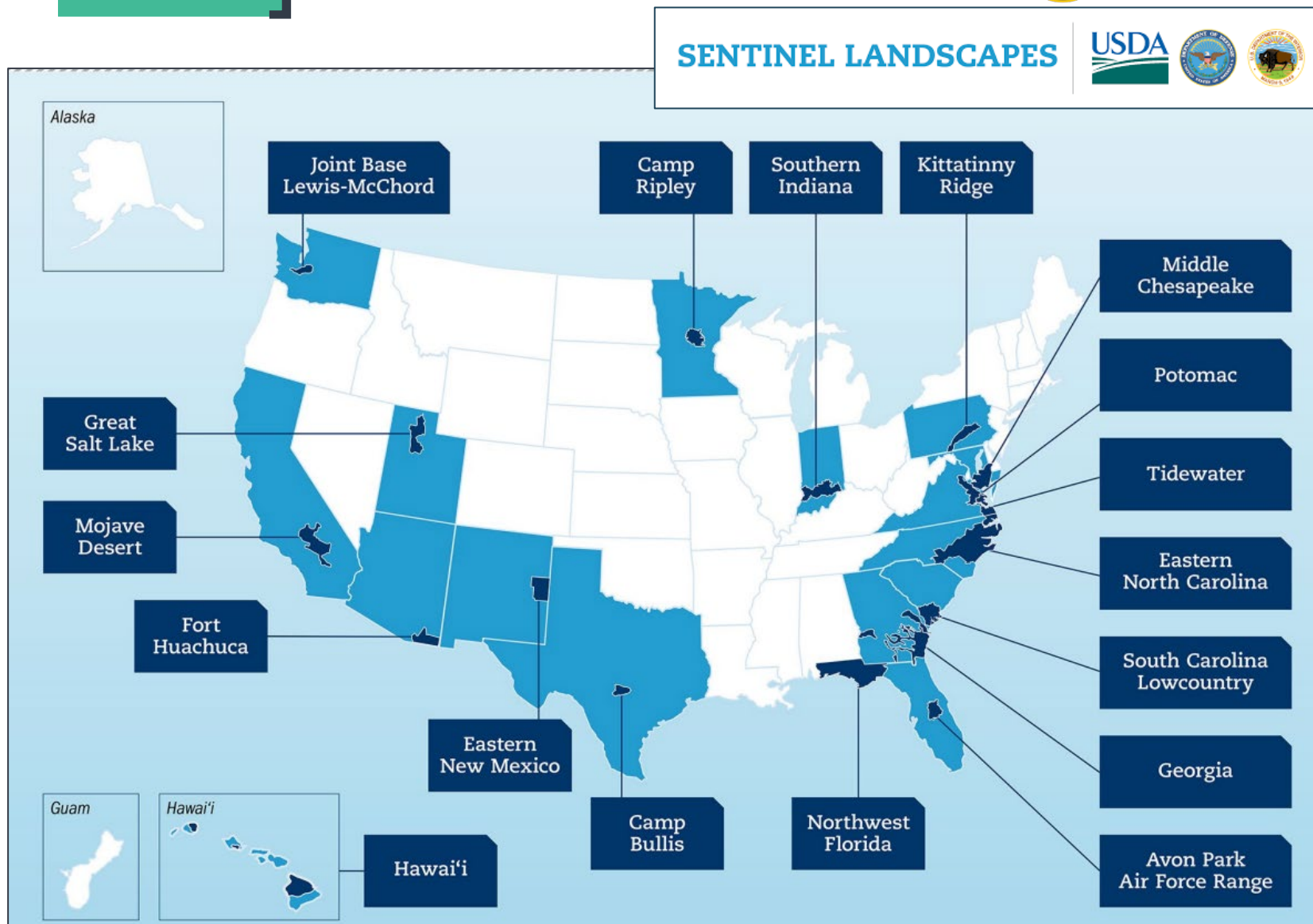
- Create species distribution models for Mission-Sensitive Species across the US
- Data from **192 AKN point count projects**
- **Over 50 different protocols**
- Warehouse delivers all of this data in **one spreadsheet** ready for our modeling process
- Models will be updated annually with new observation data and satellite remote sensing data





CASE STUDY:

APPLICATION- SENTINEL LANDSCAPES





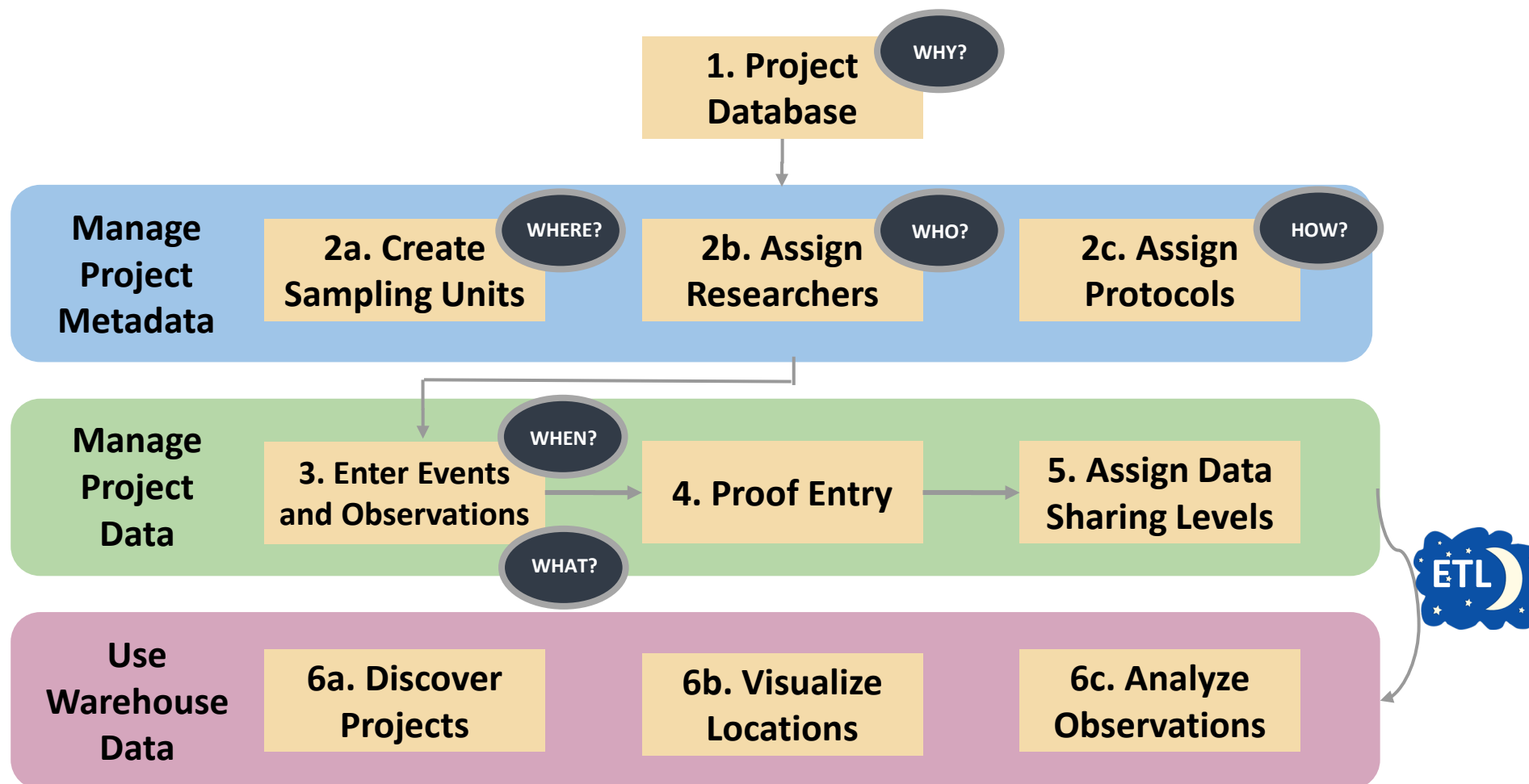
BREAK

NEXT: DOW AKN PROGRAM





WORKFLOW FOR MANAGING A PROJECT



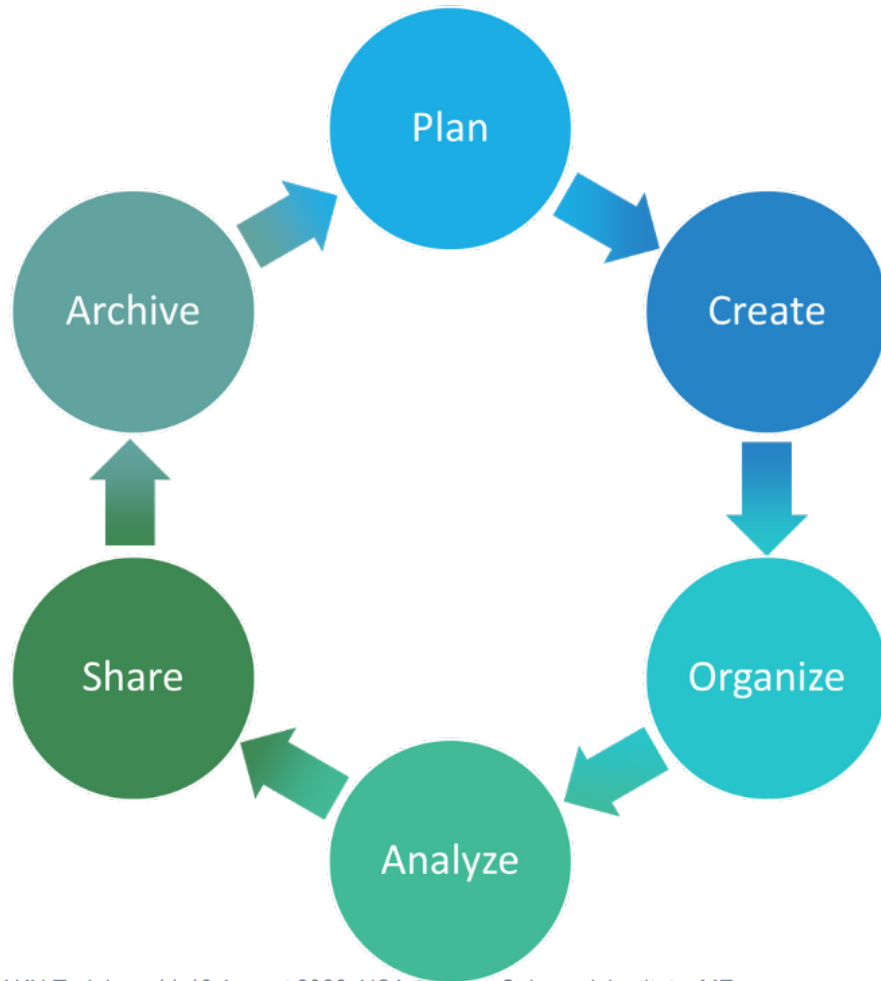


Consolidated Data Outputs

(within Project, across Projects)

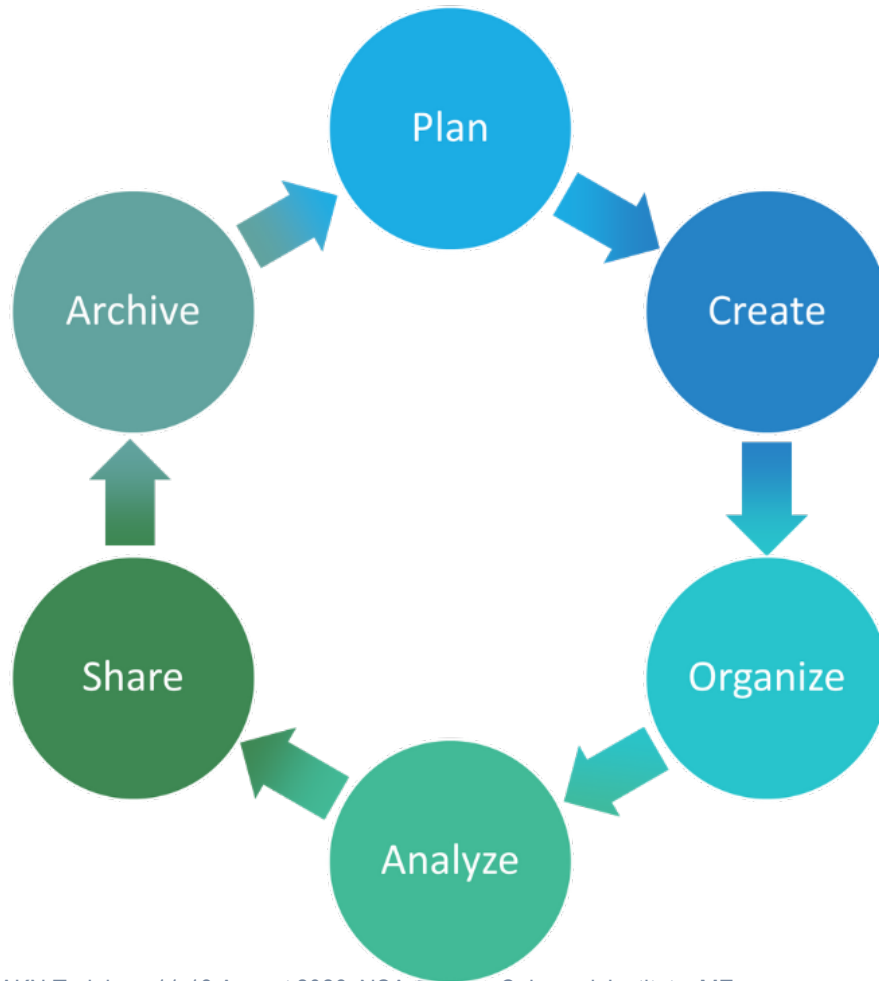


AKN & THE AVIAN DATA LIFE CYCLE



**FULL
AVIAN
DATA
LIFE
CYCLE**

AKN & THE AVIAN DATA LIFE CYCLE



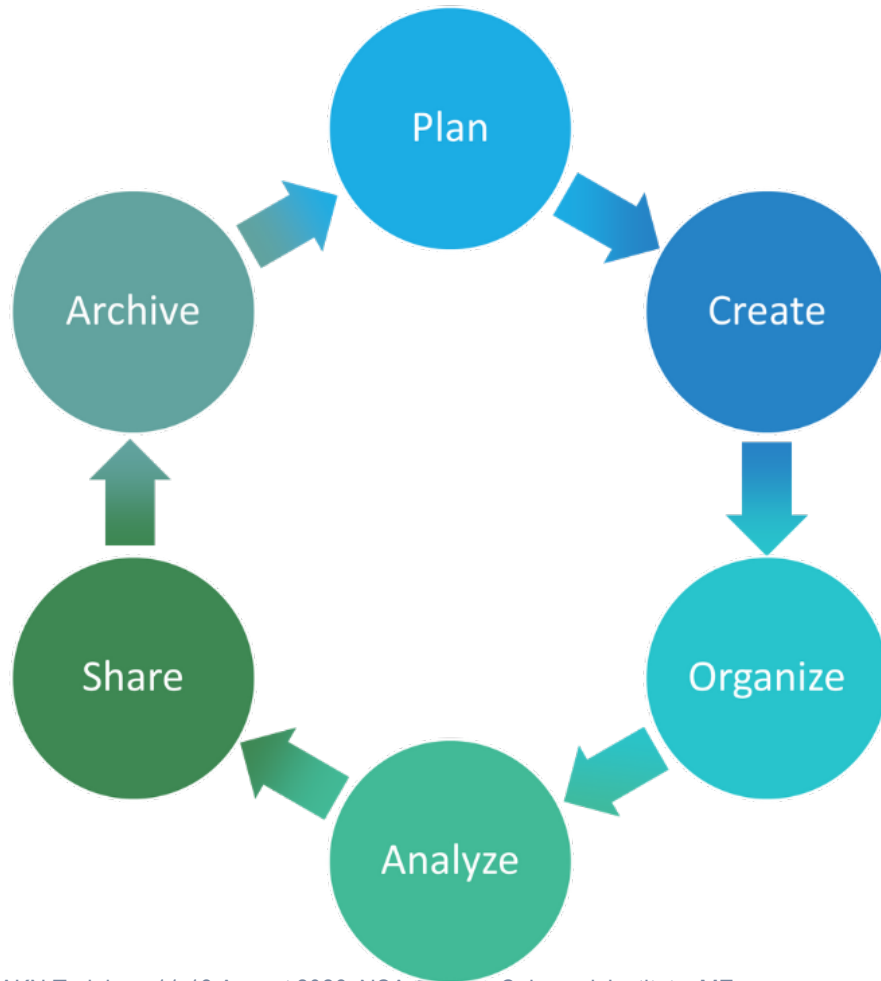
Plan

- Methodological alignment with partners
- What is your question?
- Office Hours



Protocol Search tool

AKN & THE AVIAN DATA LIFE CYCLE



Create & Organize

- Align AKN Protocols with field methodologies
- Standardized data input & QA/QC via Biologist, Bulk Uploader

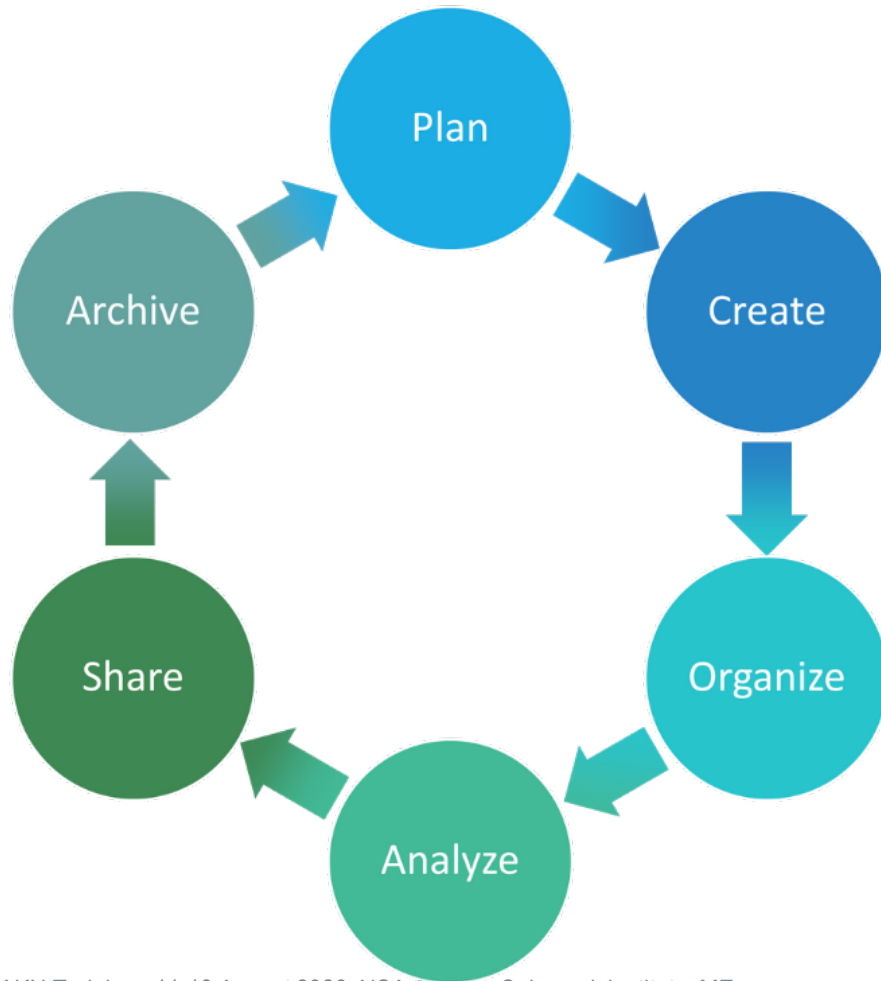


Biologists Application



Bulk Uploader Application

AKN & THE AVIAN DATA LIFE CYCLE



Analyze

- Coarse analyses via Analyst tool
- Raw Data Downloader to download clean, raw data for external analyses
- Public Data Downloader to download homogenized



Analyst Application



Raw Data Download



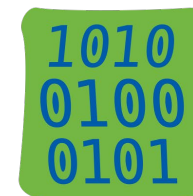
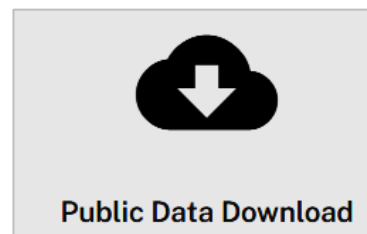
Public Data Download

AKN & THE AVIAN DATA LIFE CYCLE



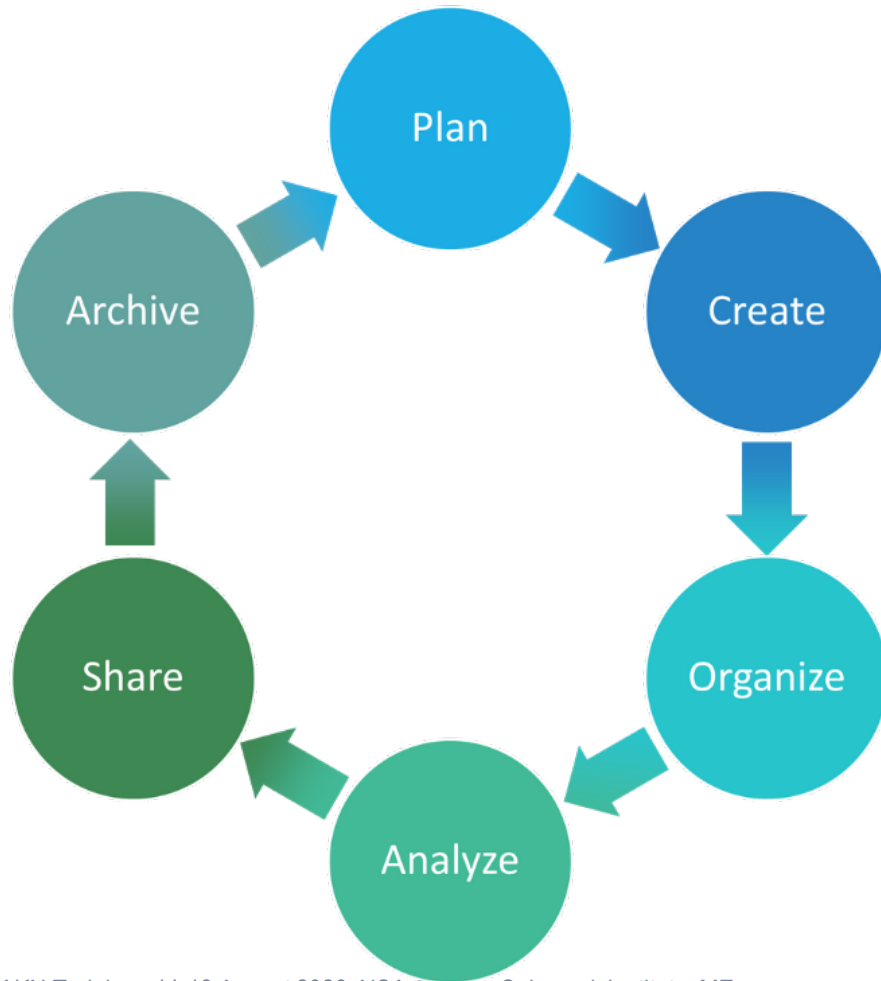
Share

- Data sharing levels
- Sharing homogenized data via warehouse export
- Program Enterprise capacities



Sharing Levels

AKN & THE AVIAN DATA LIFE CYCLE



Archive

- Staff turnover
- Full description of essential metadata
- Historic and contemporary data
- You own and control in perpetuity





CLASS PICTURE!!





**WHAT SHOULD YOU EXPECT THIS YEAR
WITH AKN AND DOW PARTICIPATION?**





DoW MANDATE MEMO



ENERGY, INSTALLATIONS,
AND ENVIRONMENT

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

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@erdc.dren.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 or 406-581-8148

KIDD, RICHARD GO
ODWIN, IV, 1163856
081
Digitally signed by
KIDD, RICHARD GOODWIN, IV
DN: cn=KIDD, RICHARD GOODWIN, IV, o=DoD
Date: 2022.08.24 11:39:54 -0400

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

DoW AKN STRATEGIC APPROACH

- DoW AKN Program Management Plan
- Status of DoW Data
- Data Initiatives
- DoW-Specific and AKN-wide Tools
- Priority Tasks for FY26



DoW AKN Program

Task Categories



Training

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



DoW-Specific Resources

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



Data Initiatives

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



AKN Tools

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



Ongoing Base Support

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

DOW MISSION BENEFITS

- Secure database to input/upload, curate, and manage DoW 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

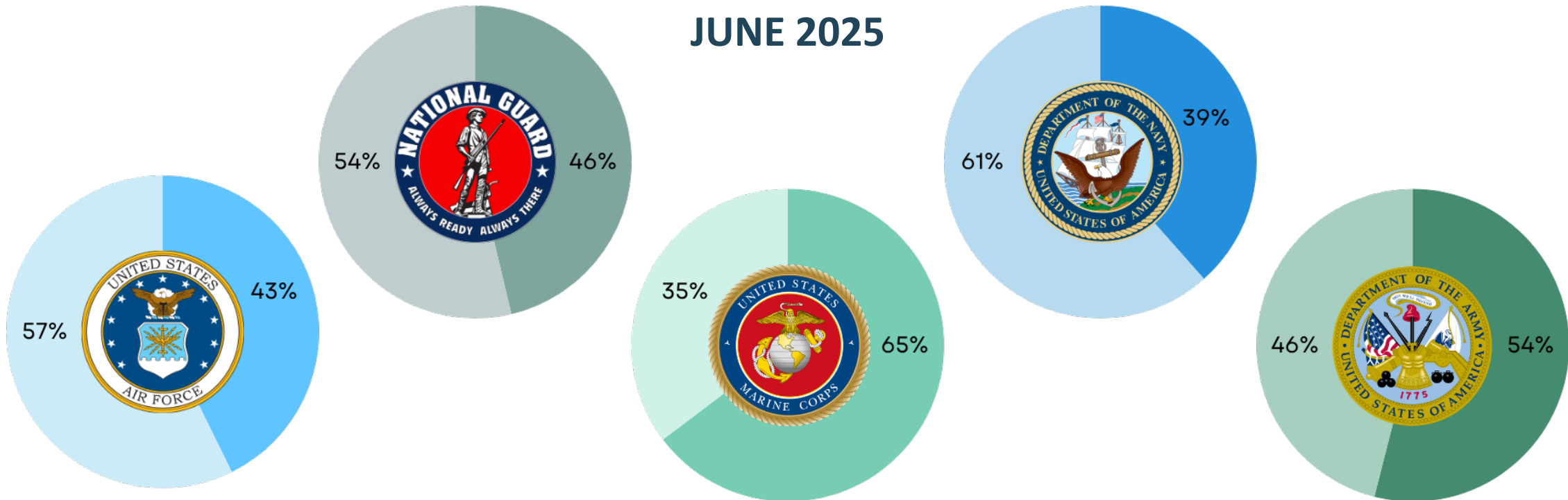


Enabling the Mission, Defending the Resources

MILITARY SERVICE PROGRESS

Installations with Active Projects by Service Branch

JUNE 2025



Total Number of Installations: **63** Army, **78** Navy, **96** Air Force, **17** Marine Corps, **54** National Guard states/territories

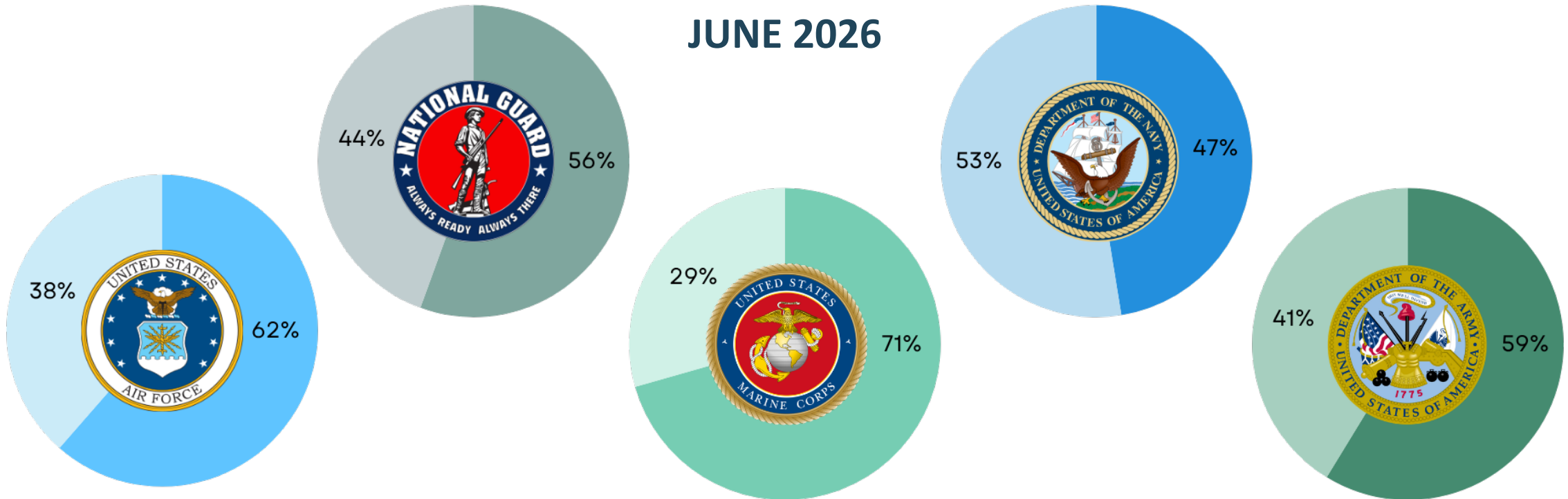
Dark colors - Installations with
Active Projects

Light colors - Installations
without Active Projects

MILITARY SERVICE PROGRESS

Installations with Active Projects by Service Branch

JUNE 2026



Total Number of Installations: **63** Army, **78** Navy, **96** Air Force, **17** Marine Corps, **54** National Guard states/territories

Dark colors - Installations with
Active Projects

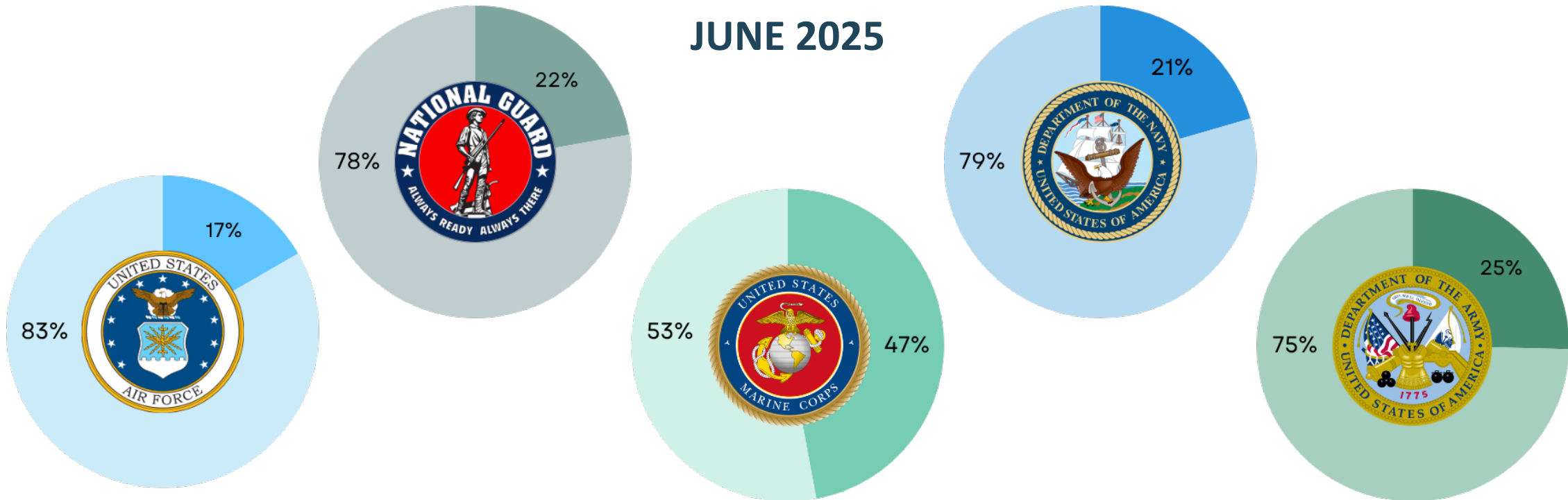
Light colors - Installations
without Active Projects



MILITARY SERVICE PROGRESS

Installations with Contemporary Data by Service Branch

JUNE 2025



Total Number of Installations: **63** Army, **78** Navy, **96** Air Force, **17** Marine Corps, **54** National Guard states/territories

Dark colors - Installations with
Active Projects

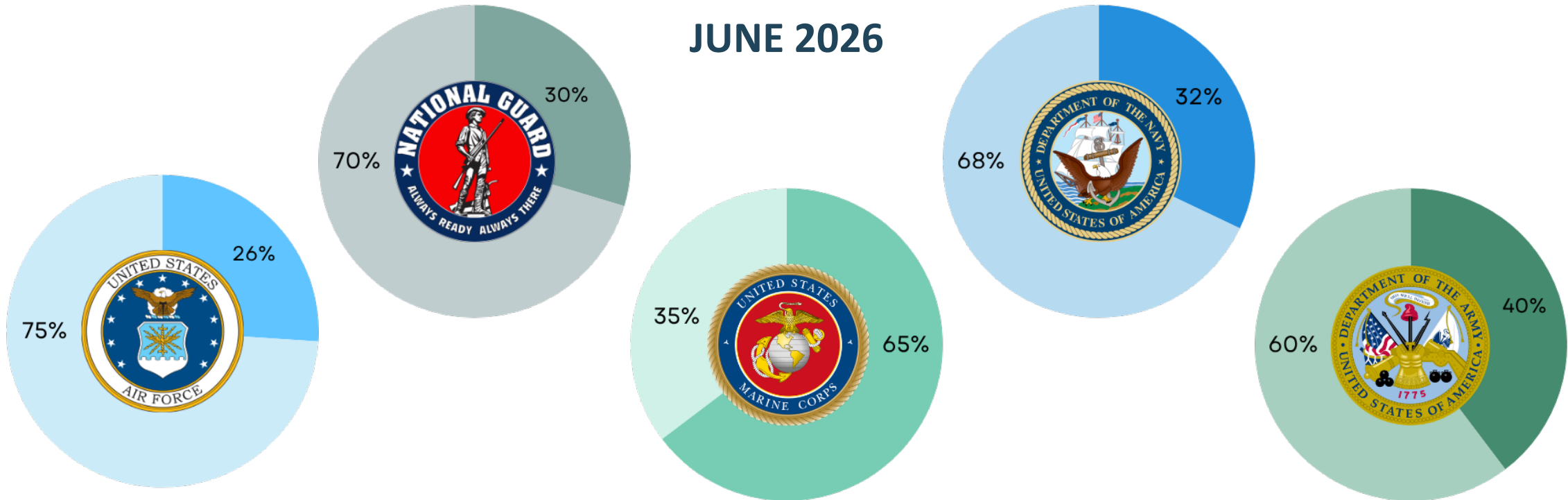
Light colors - Installations
without Active Projects



MILITARY SERVICE PROGRESS

Installations with Contemporary Data by Service Branch

JUNE 2026



Total Number of Installations: **63** Army, **78** Navy, **96** Air Force, **17** Marine Corps, **54** National Guard states/territories

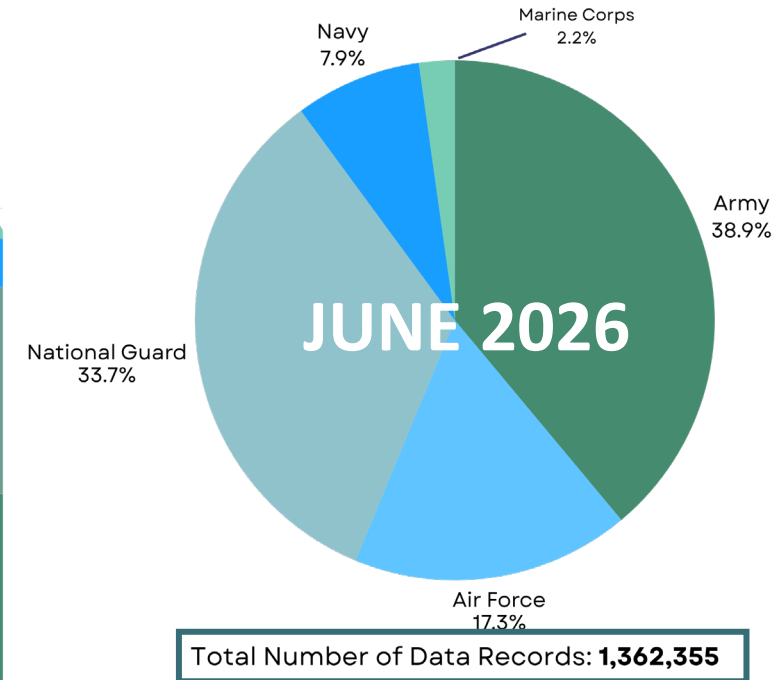
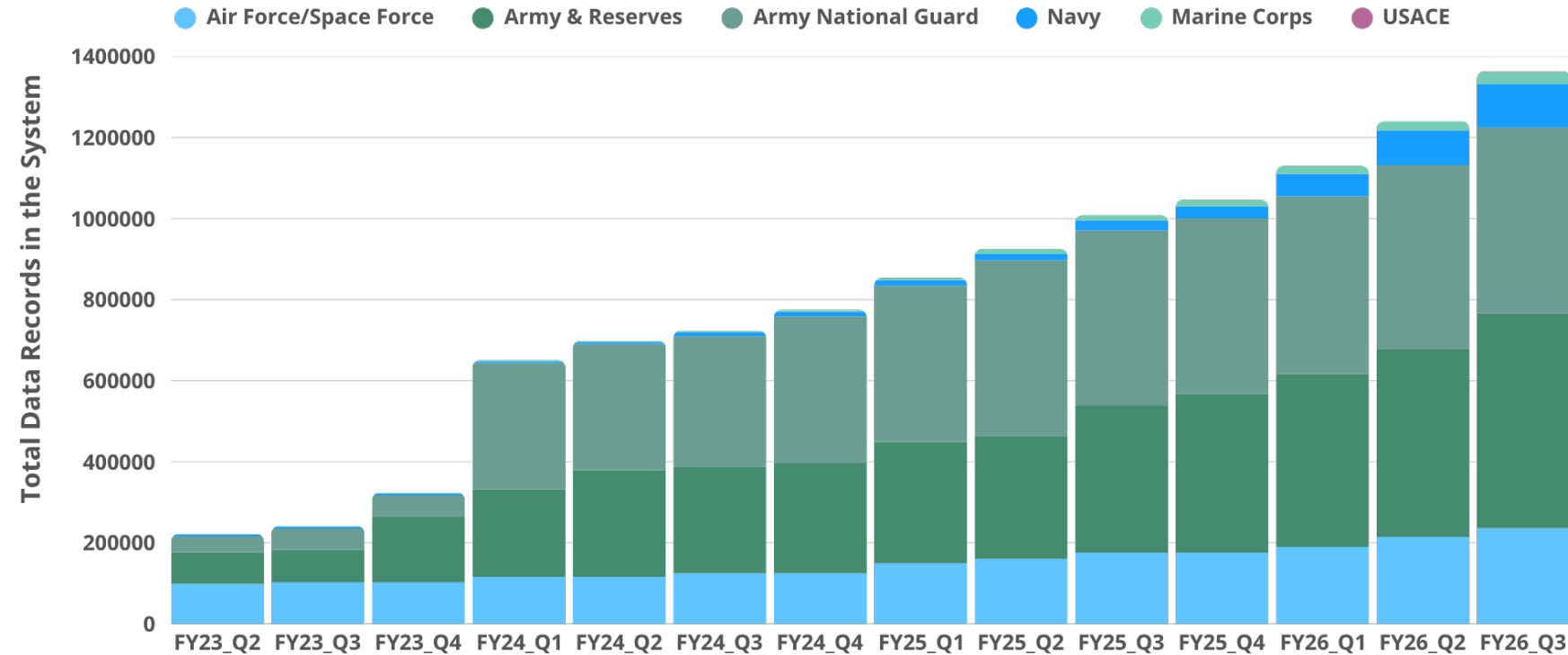
Dark colors - Installations with
Active Projects

Light colors - Installations
without Active Projects



MILITARY SERVICE PROGRESS

DoW Data Records in AKN by Military Service





MILITARY SERVICE PROGRESS

DoW Data Records in AKN by Military Service

Check out the latest DoW
AKN Program Progress on
our new Progress Dashboard

Total Data Records in the System

600000
400000
200000
0



FY24_Q1

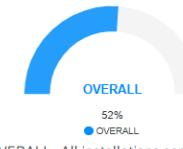
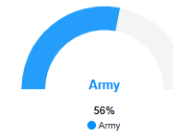
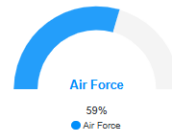
DoW AKN Training –11-13 August 2026, NSA Cutler – Cobscook Institute, ME

DoD AKN Progress Dashboard

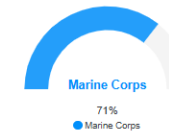
Which Military Service is leading in the data count?
Who across the DoD is already trained to use the AKN?

Check below to keep up-to-date on the DoD AKN Program's progress!

Installations with Active AKN Projects



OVERALL – All installations across DoD



Last updated 1 January 2026

Navy 1.6%
Marine Corps <1%

<https://www.dodakn.org/dod-akn-progress-dashboard/>

DOW TOOLS

Standardized Sampling Methods

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





AKN RESOURCES

Standardized Sampling Methods

SPECIES CHECKLIST



Species checklists are a simple way to record both incidental and comprehensive observations of bird species observed on your installation that don't fit a traditionally structured survey (e.g., point counts, line transects, etc.).

CHRISTMAS BIRD COUNT



The Christmas Bird Count (CBC) is a citizen science project that involves counting birds in the Western Hemisphere. Click here to learn how to incorporate CBC data collected on your installation into your AKN Project here.

EBIRD CHECKLISTS



eBird is a powerful community science tool run by Cornell Lab of Ornithology that collects observational data from birders. Click here to learn how to incorporate eBird checklist data collected on your installation in your AKN Project.

POINT COUNT METHODS



Click here to learn about Point Count methodologies including their assumptions, typical use cases, and examples of commonly used methodologies and their AKN Protocols.

AREA SEARCH METHODS



Click here to learn about Area Search methodologies including their assumptions, typical use cases, and examples of commonly used methodologies and their AKN Protocols.

DOW MISSION-SENSITIVE SPECIES (CONUS)



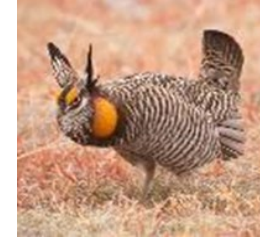
Northern Bobwhite



Greater Sage-grouse



Mountain Plover



Greater Prairie Chicken



Burrowing Owl



Least Tern (Atlantic Coast)



Cerulean Warbler



Golden-winged
Warbler



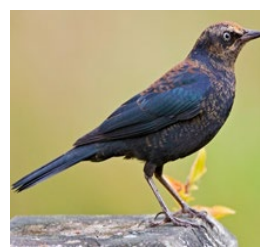
Pinyon Jay



Southeastern American
Kestrel



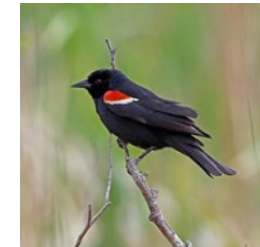
Henslow's Sparrow



Rusty Blackbird



Bendire's Thrasher



Tricolored Blackbird



Bachman's Sparrow

DOW MSS - FILTERS

Portal Announcement



Results matching your selections from Point Blue				
Year	Projects	Locations Surveyed	Number of Birds	Number of Species
2022	1	7	25	1

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AutoSum

Sort & Filter

Find & Select

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Adobe PDF

Sensitivity

Add-ins

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Download

Count

2025-03-01

23:10:48

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GlobalUniquelfidentifier

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL		
1	GlobalUn...	ProjectName	LocalityID	StudyAr...	Transce...	Point	Samplir...	ParentS...	Samplir...	Decima...	Decima...	Vi...	ProtocolCode	ObservationDate	YearCol...	MonthC...	DayCol...	JulianDi...	JulianDi...	Proje...	Time	Collect...	Scientif...	Comm...	Species	Physio...	Taxonid...	Distance	Flyov...	In...	H...	Del...	B...	Ob...	NoObs...	Record...			
2	URN:catat...	ARNOLD...	ARNOLD_AFB...	Integrated	IM_24	IM_24	24	668976	668931	Point	Cour	35.40818	-86.0504	1_3_5_10m25_50_100M+Fly	5/24/2022	2022	5	24	144	65	JL	Setophaga	Cerulean	V CERVR	1705	434	12.5	NR	1							0	CLEAN		
3	URN:catat...	ARNOLD...	ARNOLD_AFB...	Integrated	IM_24	IM_24	24	668976	668931	Point	Cour	35.40818	-86.0504	1_3_5_10m25_50_100M+Fly	5/24/2022	2022	5	24	144	65	JL	Setophaga	Cerulean	V CERVR	1705	434	37.5	NR	1							0	CLEAN		
4	URN:catat...	ARNOLD...	ARNOLD_AFB...	Integrated	IM_25	IM_25	25	668977	668932	Point	Cour	35.38237	-86.0897	1_3_5_10m25_50_100M+Fly	6/12/2008	2008	6	12	164	85	JL	Centronyx	Henslow's	HESHP	1907	894	12.5	NR	1							0	CLEAN		
5	URN:catat...	ARNOLD...	ARNOLD_AFB...	Integrated	IM_26	IM_26	26	668978	668933	Point	Cour	35.38739	-86.0906	1_3_5_10m25_50_100M+Fly	5/18/2017	2017	5	18	138	59	JL	Centronyx	Henslow's	HESHP	1907	894	12.5	NR	2							0	CLEAN		
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7	URN:catat...	ARNOLD...	ARNOLD_AFB...	Integrated	IM_28	IM_28	28	668979	668934	Point	Cour	35.38783	-86.0862	1_3_5_10m25_50_100M+Fly	6/18/2008	2008	6	18	170	91	JL	Colinus	vir	Northern	ENOBO	120	1181	37.5	NR	1							0	CLEAN	
8	URN:catat...	ARNOLD...	ARNOLD_AFB...	Integrated	IM_28	IM_28	28	668979	668934	Point	Cour	35.38783	-86.0862	1_3_5_10m25_50_100M+Fly	6/18/2008	2008	6	18	170	91	JL	Colinus	vir	Northern	ENOBO	120	1181	550	NR	1							0	CLEAN	
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11	URN:catat...	ARNOLD...	ARNOLD_AFB...	Integrated	IM_28	IM_28	28	668979	668934	Point	Cour	35.38783	-86.0862	1_3_5_10m25_50_100M+Fly	5/19/2017	2017	5	19	139	60	JL	Centronyx	Henslow's	HESHP	1907	894	37.5	NR	1								0	CLEAN	
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31	URN:catat...	AZ_ARNG	[[[DOD, NATGUARD]] Arizona Arm	AZ_ARNG:LOWERB	Florence L	LOWERB	1	668293	675873	Point	Cour	33.14636	-111.348	2_6_1TB_20B	4/27/2023	2023	4	27	117	38	6:33:00	EC	Toxostom	Bendire's	TBETH	1697	195	550	NR	1							0	CLEAN	
32	URN:catat...	BEALE...	BEALE_AFB-SPC2	Beale Poin	SPC2	Summer P	SP2	658070	671796	Point	Cour	39.12958	-121.382	1_0_2_4m25_50_100M+	5/13/2024	2024	5	13	134	55	8:11:00	EC	Agelaius	tr	Tricolored	TBRL	1994	1811	550	B	63						0	CLEAN	
33	URN:catat...	BEALE...	BEALE_AFB-SPC2	Beale Poin	SPC2	Summer P	SP2	658070	671796	Point	Cour	39.12958	-121.382	2_3_5m50M+Fly	6/2/2021	2021	6	2	153	74	8:31:00	EC	Agelaius	tr	Tricolored	TBRL	1994	1811	500	Flyover	NR	50					0	CLEAN	
34	URN:catat...	BEALE...	BEALE_AFB-SPC3	Beale Poin	SPC3	Summer P	SP3	658071	671797	Point	Cour	39.13327	-121.378	1_0_2_4m25_50_100M+	6/10/2024	2024	6	10	162	83	8:11:00	EC	Agelaius	tr	Tricolored	TBRL	1994	1811	12.5	V	80						0	CLEAN	
35	URN:catat...	BEALE...	BEALE_AFB-SPC3	Beale Poin	SPC3	Summer P	SP3	658071	671797	Point	Cour	39.13327	-121.378	1_3_5m50M+Fly	5/2/2022	2022	5	2	122	43	7:01:00	EC	Agelaius	tr	Tricolored	TBRL	1994	1811	525	NR	2							0	CLEAN
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37	URN:catat...	BEALE...	BEALE_AFB-SPC4	Beale Poin	SPC4	Summer P	SP4	658072	671798	Point	Cour	39.13715	-121.376	1_0_2_4m25_50_100M+	6/10/2024	2024	6	10	162	83	8:22:00	EC	Agelaius	tr	Tricolored	TBRL	1994	1811	550	V	100							0	CLEAN
38	URN:catat...	BEALE...	BEALE_AFB-SPC4	Beale Poin	SPC4	Summer P	SP4	658072	671798	Point	Cour	39.13715	-121.376	2_0_2_4m25_50_100M+	6/10/2024	2024	6	10	162	83	8:22:																		

- Homogenized data
- 59 installations
- Survey details

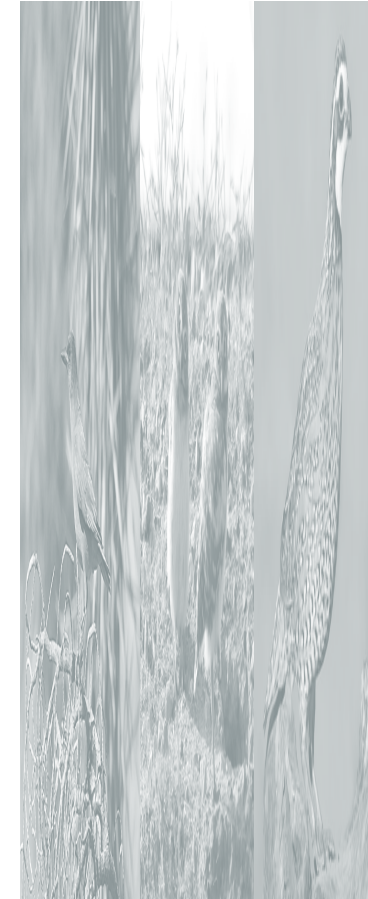
DOW MISSION-SENSITIVE SPECIES (CONUS)

Species	# of Installations
Greater Sage-Grouse	6
Greater Prairie-Chicken	3
Northern Bobwhite	70
Southeastern American Kestrel	14
Black Rail**	5
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

DOW AKN MSS 4-PRONGED APPROACH

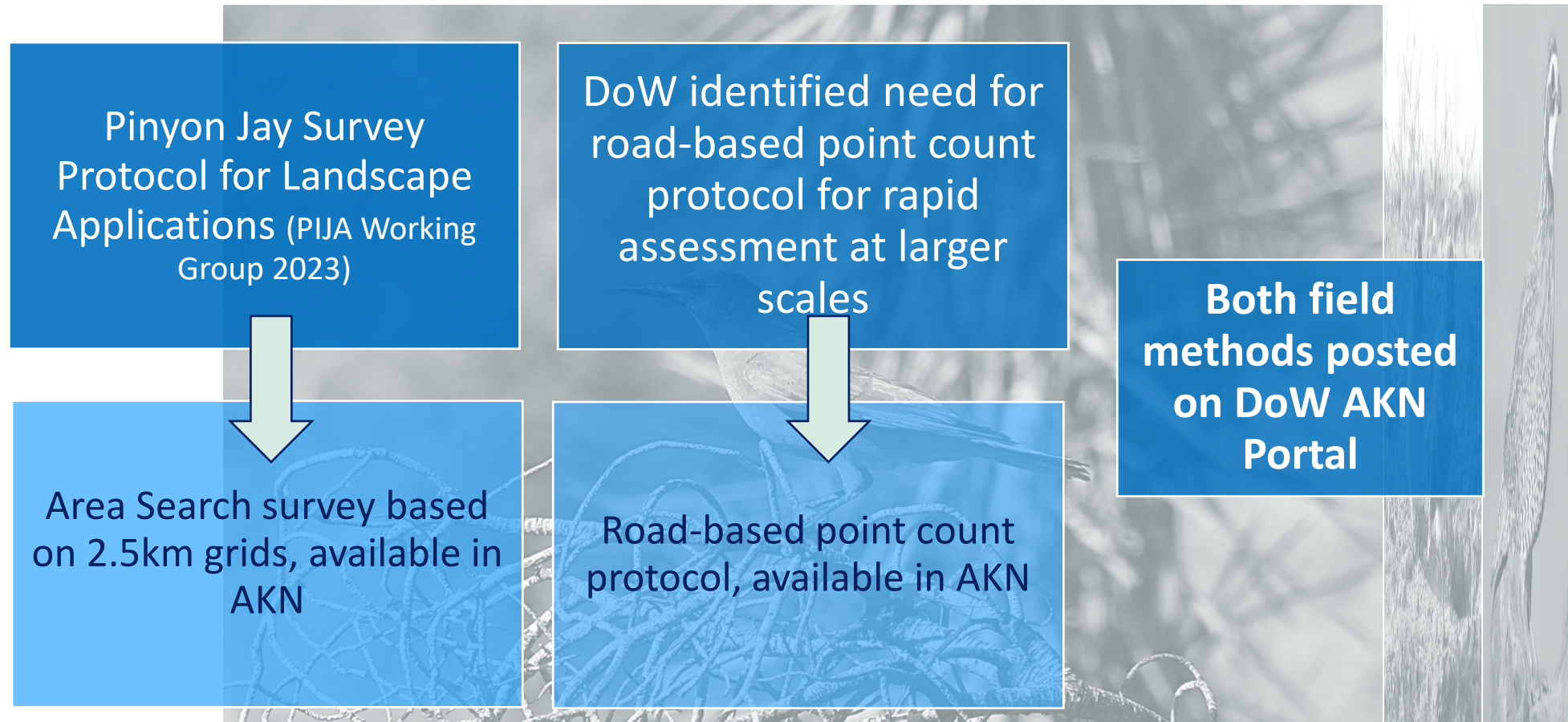
- ✓ FOCUS GROUP
- ✓ AKN PROTOCOLS
- ✓ DATA
- ~~✓ MSS QUERY TOOL IN AKN~~

DOW MISSION-SENSITIVE SPECIES





DOW MISSION-SENSITIVE SPECIES



https://www.dodakn.org/resources/mss/#MSS_PIIA



DOW 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*

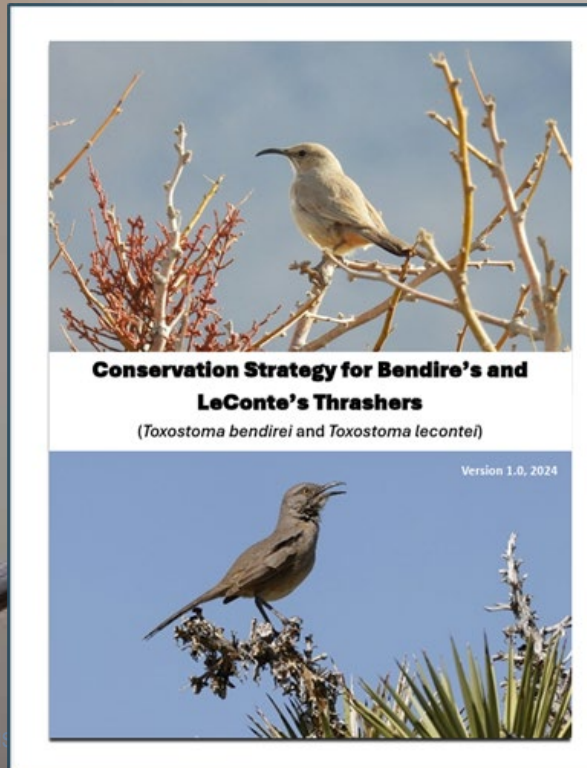
Kevin Warner, *Idaho Army National Guard*

Colin Leingang, *JBLM Yakima Training Center*

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

DoW MISSION-SENSITIVE SPECIES - UPCOMING.

PIF Desert Thrasher Working
Group monitoring methods on
DoW AKN Portal

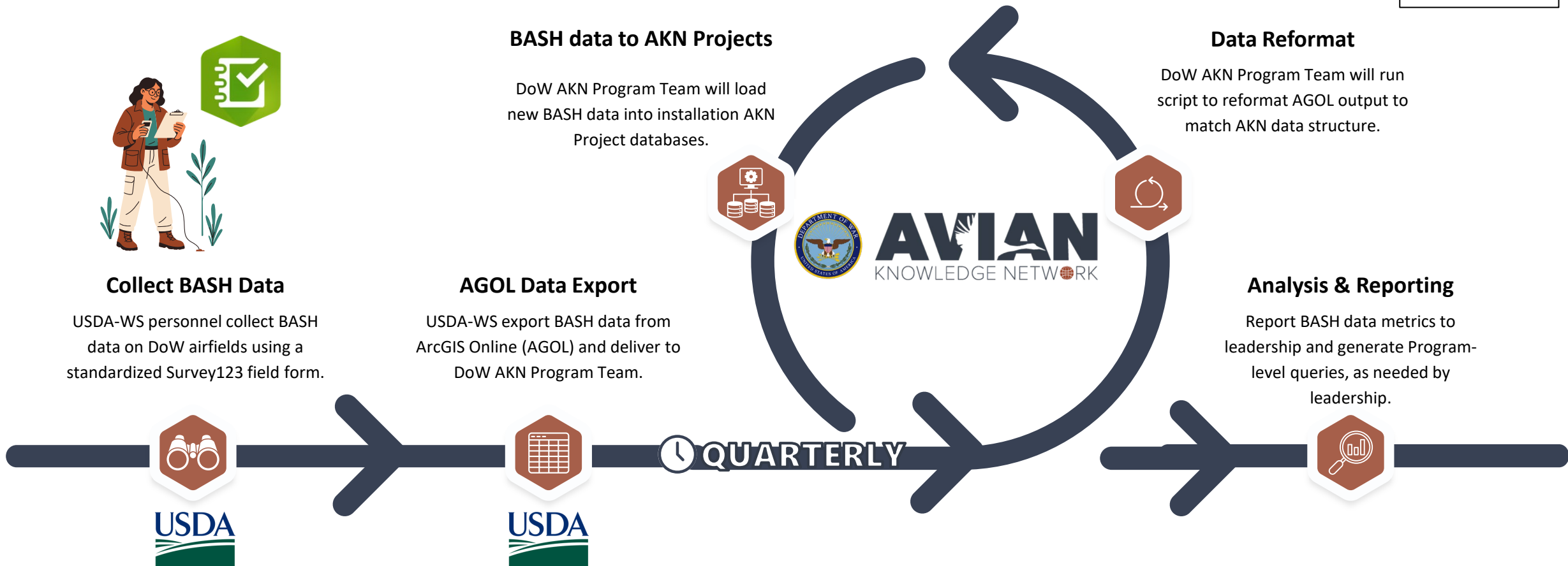


LeConte's Thrasher,
Bendire's Thrasher
(MSS), Loggerhead
Shrike

- Upload data now to make any upcoming data calls easier!



USDA-WS BASH Data to AKN - Workflow





USDA-WS BASH Data to AKN

- Working with USDA-WS to ingest BASH data into installations' AKN Projects

Navy

- 19 installations (35 airfields)
- >75,000 records
- 2019-2023

Complete

(data in AKN Project)

AKN_Project	Data Records
NAS_CORPUS_CHRISTI	6871
NAS_JACKSONVILLE	2210
NAS_JRB_NOLA	882
NAS_KINGSVILLE	1516
NAS_PENSACOLA	4994
NAS_WHITING_FIELD	5879
NS_GUANTANAMO_BAY	397
NS_MAYPORT	5321
NAS_FALLON	3336
NAS_OCEANA	5997
NAS_WHIDBEY_IS	11893
NS_NORFOLK	6757

In Progress

AKN_Project	Data Records
NAWS_CHINA_LAKE	857
NB_VENTURA_COUNTY	616
NAS_JRB_FW	2465
NAS_LEMOORE	1417
NAS_MERIDIAN	2146
NAS_NORTH_ISLAND	9812
NAS_PATUXENT_RIVER	1998

ntler – Cobscook Institute, ME

Air Force

- 42 installations
- Nearly 170,000 data records
- 2019-2025

In Progress

Installation	Data Records	Installation	Data Records
ALTUS AFB	16292	LUKE AFB	5537
ARNOLD AFB	1424	MACDILL AFB	5747
BARKSDALE AFB	32	MAXWELL AFB	3861
BEALE AFB	2664	MC CONNELL AFB	5470
BUCKLEY SPACE FORCE BASE	3006	JOINT BASE MC GUIRE DIX LAKEHURST	10546
CANNON AFB	8043	MINOT AFB	1110
CITY OF COLORADO SPRINGS MUNI	23	MOODY AFB	1243
COLUMBUS AFB	4640	NELLIS AFB	1890
DANIEL K INOUYE INTL	11561	OFFUTT AFB	3094
DAVIS MONTHAN AFB	792	PATRICK SPACE FORCE BASE	3473
EDWARDS AFB	7565	RANDOLPH AFB	3577
EGLIN AFB/DESTIN-FT WALTON BEACH	3274	ROBINS AFB	40
ELLSWORTH AFB	902	SCOTT AFB/MIDAMERICA ST LOUIS	613
GRAND FORKS AFB	418	SHEPPARD AFB/WICHITA FALLS MUNI	2
HILL AFB	2685	TINKER AFB	1802
HURLBURT FLD	978	TRAVIS AFB	10692
JOINT BASE ANDREWS	931	TYNDALL AFB	2678
KEESLER AFB	488	VANCE AFB	3594
LANGLEY AFB	14745	VANDENBERG SPACE FORCE BASE	8627
LAURENCE G HANSCOM FLD	1285	WHITEMAN AFB	5458
LITTLE ROCK AFB	966	WRIGHT-PATTERSON AFB	806

DoW DATA NEEDS

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



Dataset Archive Questionnaire

Material Checklist: Before you start, please prepare the following items to provide with the submission of this questionnaire.

- Finalized data file
- Written field methodology
- Survey locations (in tabular or spatial format)
- A filled in “DoD-AKN-Sampling-Protocol-Definition-Template” file describing the metadata of any data tables provided.

If you do not wish to provide the finalized data, please specify this below when asked, and provide any of the other materials above that you are able to share. If you choose to provide a portion of the data as a sample, please indicate that the full dataset has NOT been provided when asked.

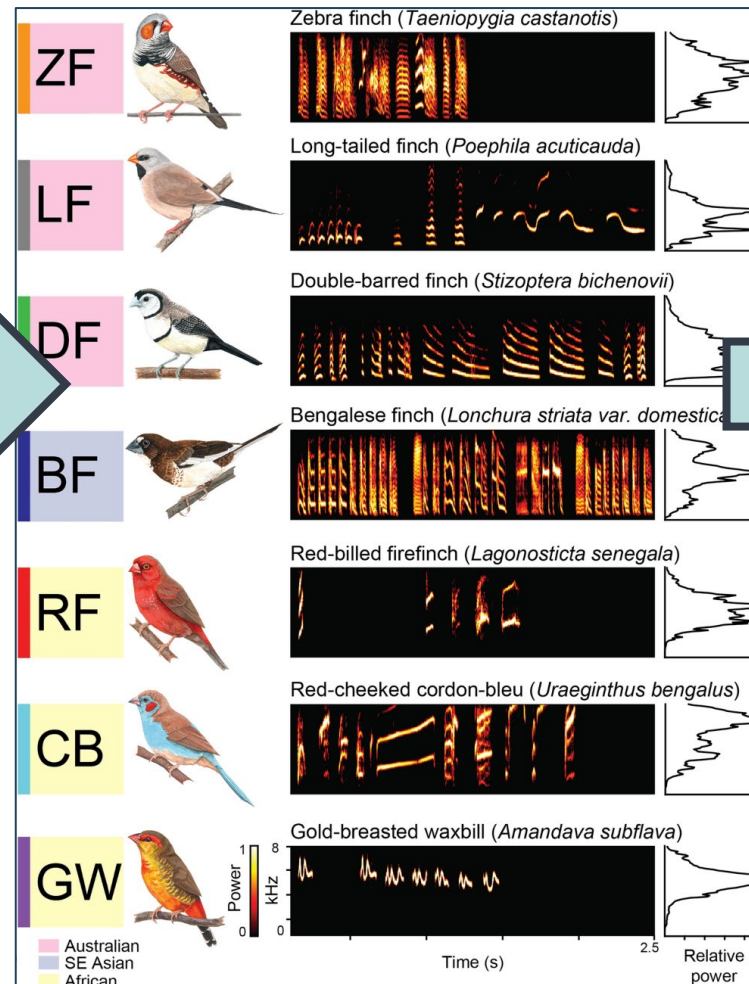
Instructions: Type your answer to each prompt in the empty space on the right side of the table. This form is meant for a single dataset/survey effort. If you have multiple datasets to archive, please fill out an additional form for each.

Your Name	
Primary Point of Contact e.g. who should be contacted related to questions about the data or to request data sharing?	
(Optional) Names of additional POCs for data	

NEW DATA TYPES: ARU DATA



Machine-collected raw audio data



SA Cutler – Cobscook Institute, ME

Species ID via machine-learning

[illegible]

Bulk Uploader Application

AVIAN
KNOWLEDGE NETWORK

123	44	7:51:00	Agelaius tr	Tricolored TRBL
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Tabularized observation data

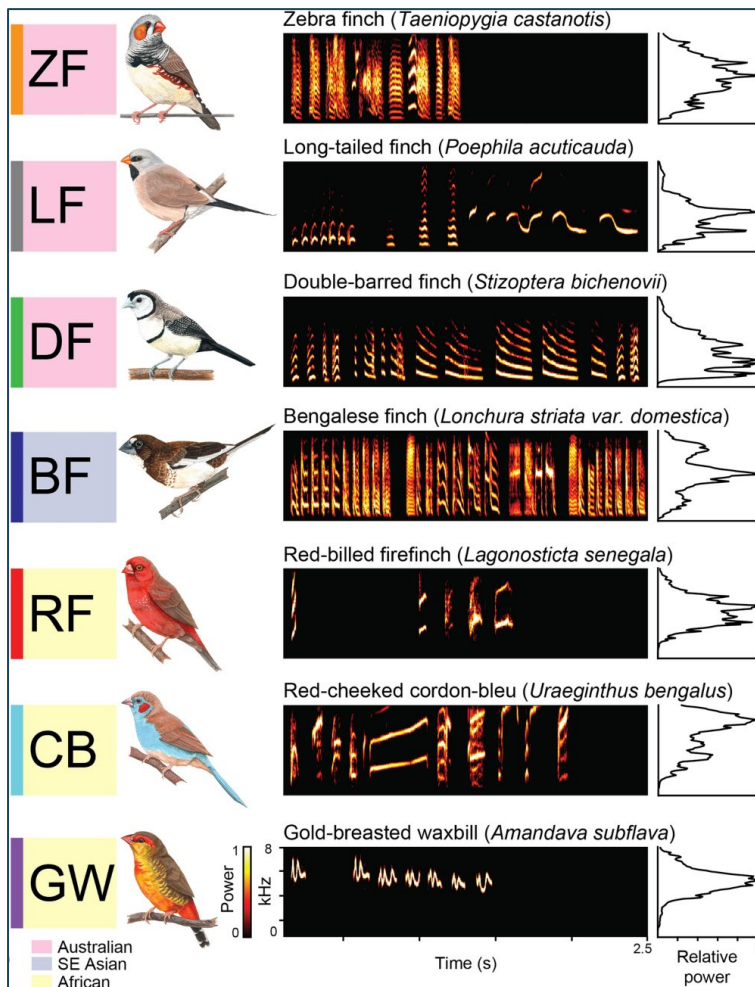
NEW DATA TYPES: ARU DATA

Metadata Considerations

- Hardware - sensor make, model
- Microphone type
- Sensor settings
 - Gain (Microphone Sensitivity)
 - Sample Rate (kHz)
 - Pre-filtering
- Study design
 - Recording schedule
 - Sampling Units

**Machine-
collected raw
audio data**

NEW DATA TYPES: ARU DATA



Metadata Considerations

- Post-processing method – manual vs. machine-learning software
- Software name
- Confidence score threshold
- Degree of overlap
- Sensitivity

Species ID via machine-learning

DoW AKN Training –11-13 August 2026, NSA Cutler – Cobscook Institute, ME

NEW DATA TYPES: ARU DATA

[illegible]

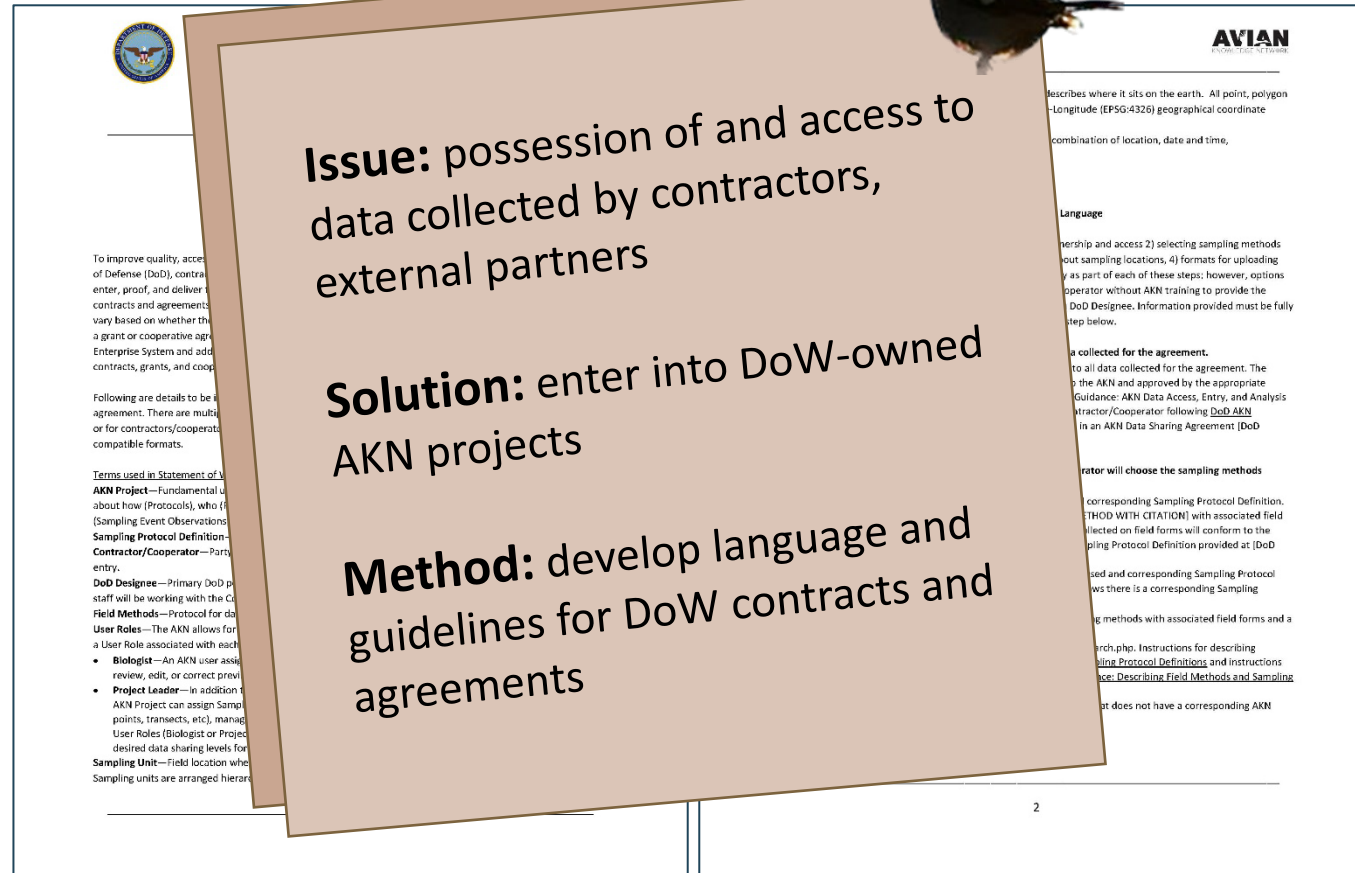
Bulk Uploader Application

AVIAN
KNOWLEDGE NETWORK

Tabularized observation 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 DoW-owned AKN projects

Method: develop language and guidelines for DoW contracts and agreements

DoW 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*

**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 cooperator 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.gointlblue.org/science/biologists/pho/protocolsearch.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](#).

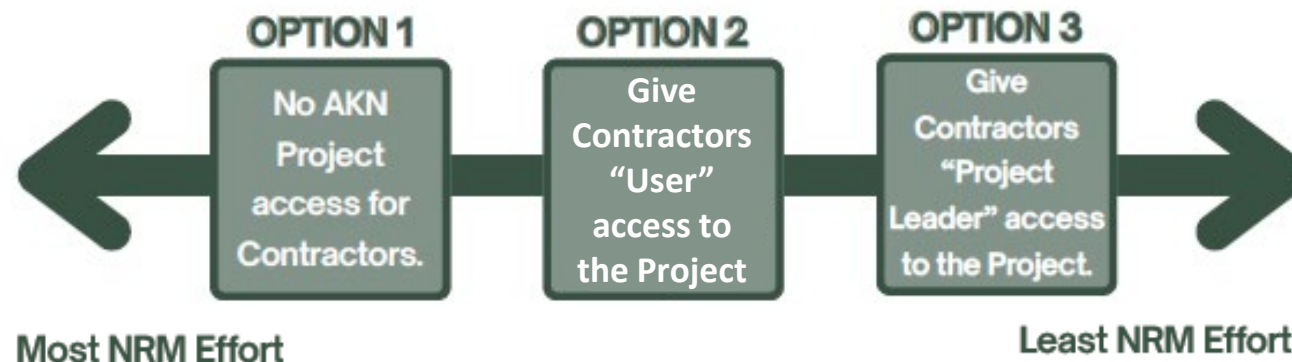
☐ Contractor/Cooperator will specify sampling methods to be used that does not have a corresponding AKN Sampling Protocol Definition.

2

DoW 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

GUIDANCE TO HELP PROJECT MANAGERS DETERMINE ROLES FOR THEIR CONTRACTORS

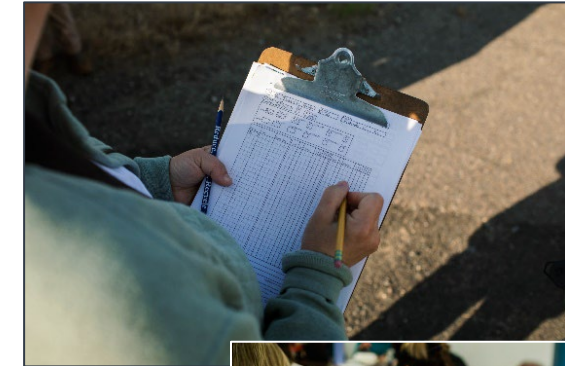


AKN Guidance:

- Guidance for NRMs working with **contractors**
- Describes all available **AKN Role choices**
- Assist NRMs in deciding **what level of AKN Project access** to grant contractors
 - Takes into account NRM effort/involvement, contractor access, etc.

DOW AKN USER GUIDE

**Detailed Step-by-step Instructions for AKN Use;
Supplements Training**



**Getting
Started**

**Managing
Project**

**Getting
Data In**

**Getting
Data Out**

**Exploring
Data**

**DoW
Glossary**

<https://www.dodakn.org/resources/dod-akn-user-guide/>



Standard AKN Language for INRMPs

THE MANDATE

The 2022 OSD Memo requires all military installations to manage avian data within the AKN. Current INRMPs vary widely across the Services, creating data loss and compliance gaps.

THE SOLUTION

We provide plug-and-play modular language blocks that installation staff can insert into any existing INRMP template to describe avian data management via the AKN, BASH data workflows, and contractor guidance.



Standard AKN Language for INRMPs

🎯 1. Policy Mandate

Focuses on citing the 2022 OSD memorandum and establishing the overarching requirement for all installations to manage their data within the AKN.

🗄️ 2. Data Workflow

Identifies the installation's specific AKN Project where data are managed and identifies any data not managed within the AKN.

✈️ 3. BASH Integration

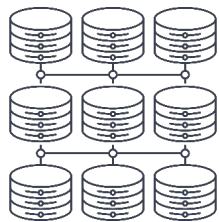
Describes BASH data workflow for both installation-collected BASH survey data (AKN) and BASH data collected via USDA-WS.

📄 4. Contracting Requirements

Provides plug-and-play SOW language that describes data ownership requirements, data formatting and AKN data entry processes; avoid the "PDF" trap.

📄 5. GOP/GOTs

Provides standardized language blocks for five-year project planning and funding justification; ensures installations secure necessary financial and personnel resources to meet the AKN requirement.



AKN TOOLS

Enterprise Support for Programs

Need: Data curation, management, and analysis at multiple scales (e.g., field office, regional office, entire agency)

Solution: AKN-wide structure allowing multiple Project grouping via Programs.

Plan: Build new technology, to create/manage Programs, especially for query and download of project data

Status: In prototype phase

- I. Beta test of Program download tool
- II. Prototype of Program warehouse

Project Management Portal 

Project Downloader

This tool allows you to download your observation data, sampling unit configurations, or both on a per-sampling unit, per-project basis. All projects that you have access to, including any in your program, will be available for selection. Once you click the download button, a zip file containing one CSV per selection will download from your browser.

Project

Select one or more projects or sampling units for data download.

Filter

 ✕ Clear Program Q

☐ Select all projects

- ☐ ★ ABERDEEN_PROVING_GROUND - (DOD_ARMY) Aberdeen Proving Ground
- ☒ ★ ALTUS_AFB - (DOD_AIRFORCE) Altus AFB
- ☒ ★ ARNOLD_AFB - (DOD_AIRFORCE) Arnold AFB
- ☒ ★ AZ_ARNG - (DOD_NATGUARD) Arizona Army National Guard
- ☒ ★ BARKSDALE_AFB - Barksdale Air Force Base
- ☐ ★ BARRY_GOLDWATER_RANGE_EAST - (DOD_AIRFORCE) Barry M. Goldwater Range East
- ☒ ★ BARRY_GOLDWATER_RANGE_WEST - (DOD_MARINE) Barry M. Goldwater Range West

You must select at least one sampling unit or project

Observation data

If you would like to download observation data, select the type(s) of survey data to be included in the download.

Survey types
NOTE: If the survey data type is not available for any number of projects you've selected, those projects will not be included in the resulting download.

- ☐ Point count observations
- ☐ Area search observations
- ☐ Secretive marshbird observations
- ☐ Vegetation observations
- ☐ Site condition observations
- ☐ Linear transect observations
- ☐ Soil survey observations
- ☐ WIFL territory summaries
- ☐ Banding observations

Date filter
Select a date filter to limit observation data downloaded to those created within the specified range.

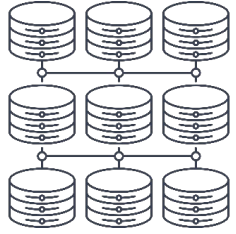
Start date Stop date

Sampling units

If you would like to download sampling units, select which file type(s) to include in the download.

- ☐ CSV
- ☐ KML
- ☐ Shapefile
- ☐ GPSU
- ☐ Waypoint

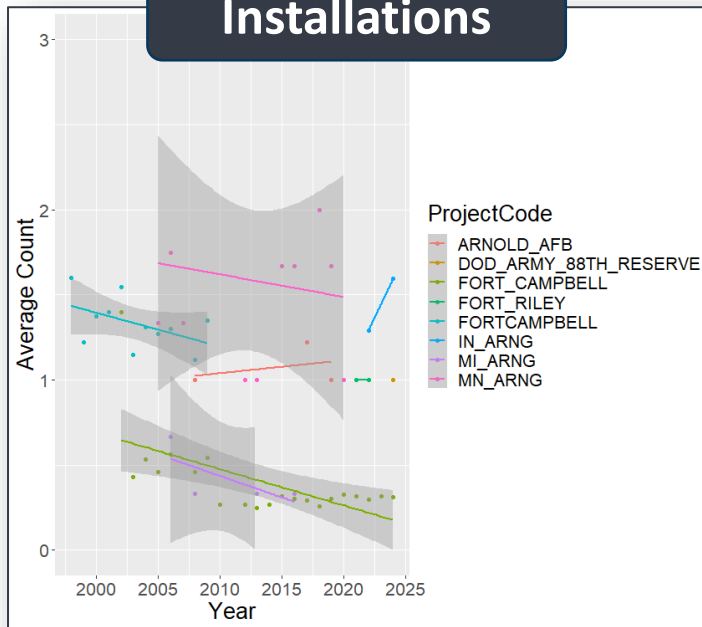
You must select at least one of either the observation data or sampling unit file types



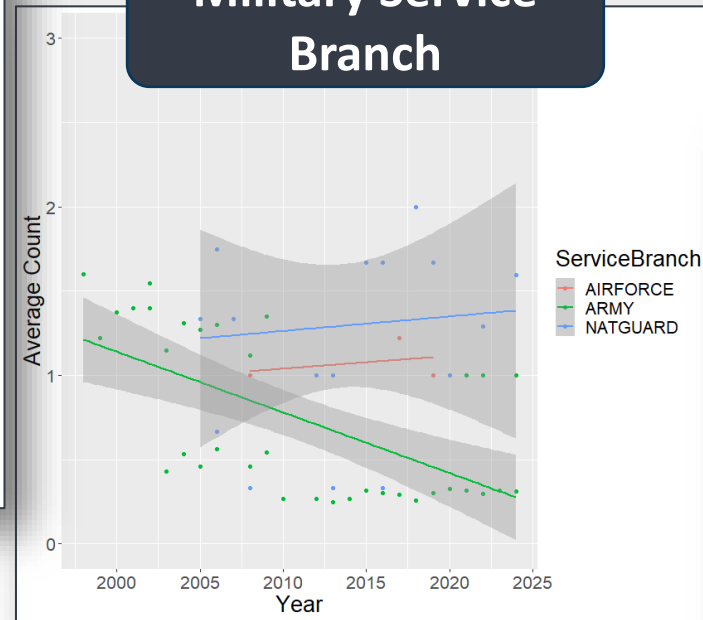
AKN TOOLS

Henslow's Sparrow Trends Across Enterprise Scales

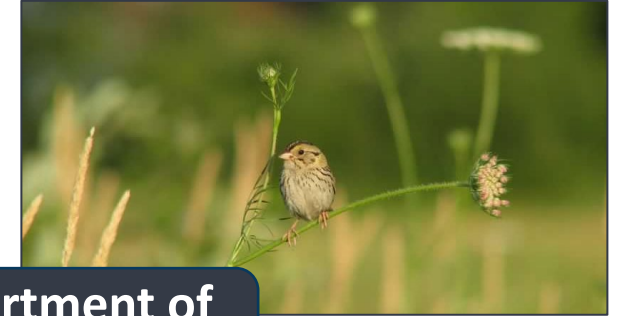
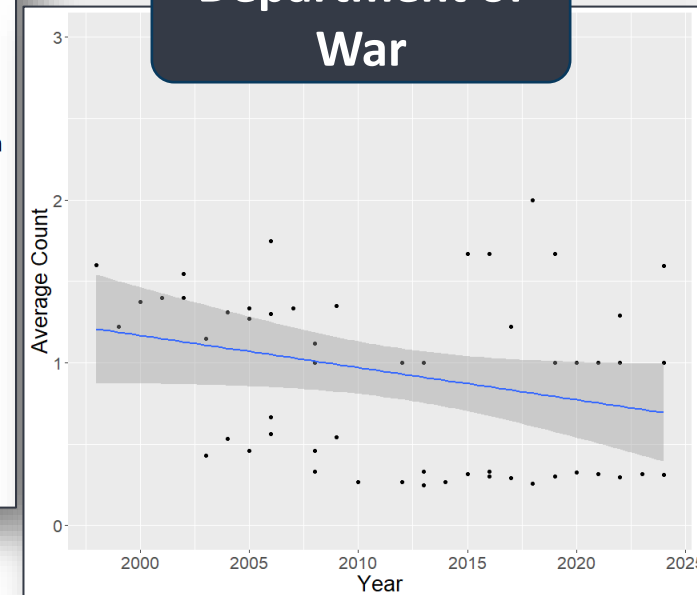
Installations



Military Service Branch



Department of War





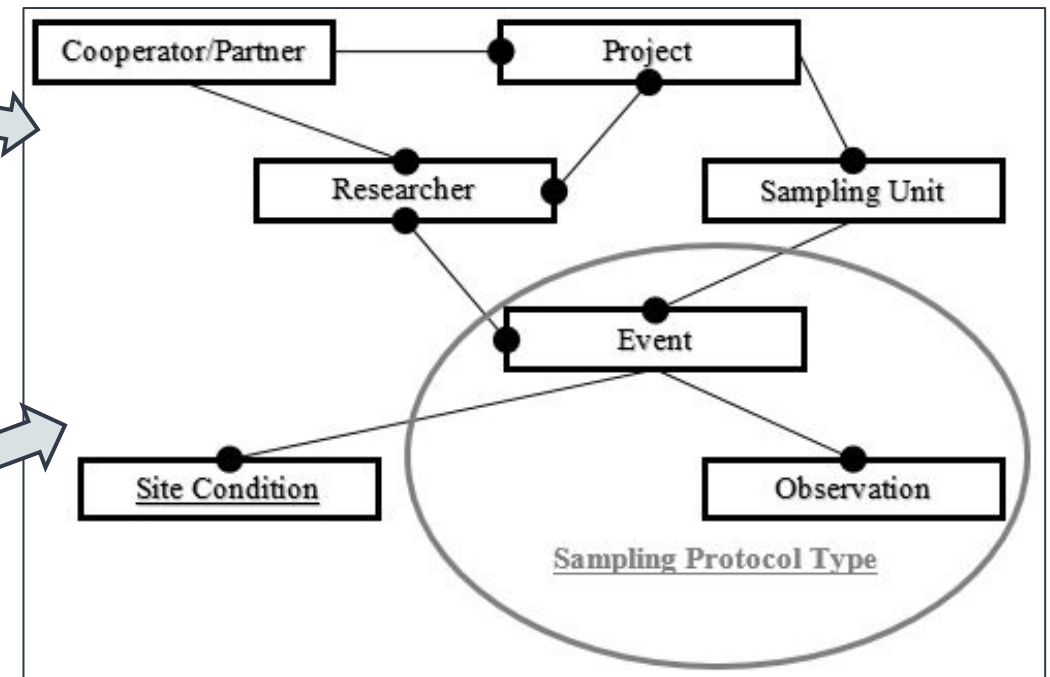
CASE STUDY: PROGRAM ENTERPRISE – COLONIAL WATERBIRDS

- CWB data collected across **several states and provinces**
- Survey **methods vary** (e.g., some count pairs, some nests), stored in many **different formats**
- **Lack of visibility** on species data and numbers state-wide, range-wide



Great Egret (rookery); Fort Stewart; Photo credit: Paul Block

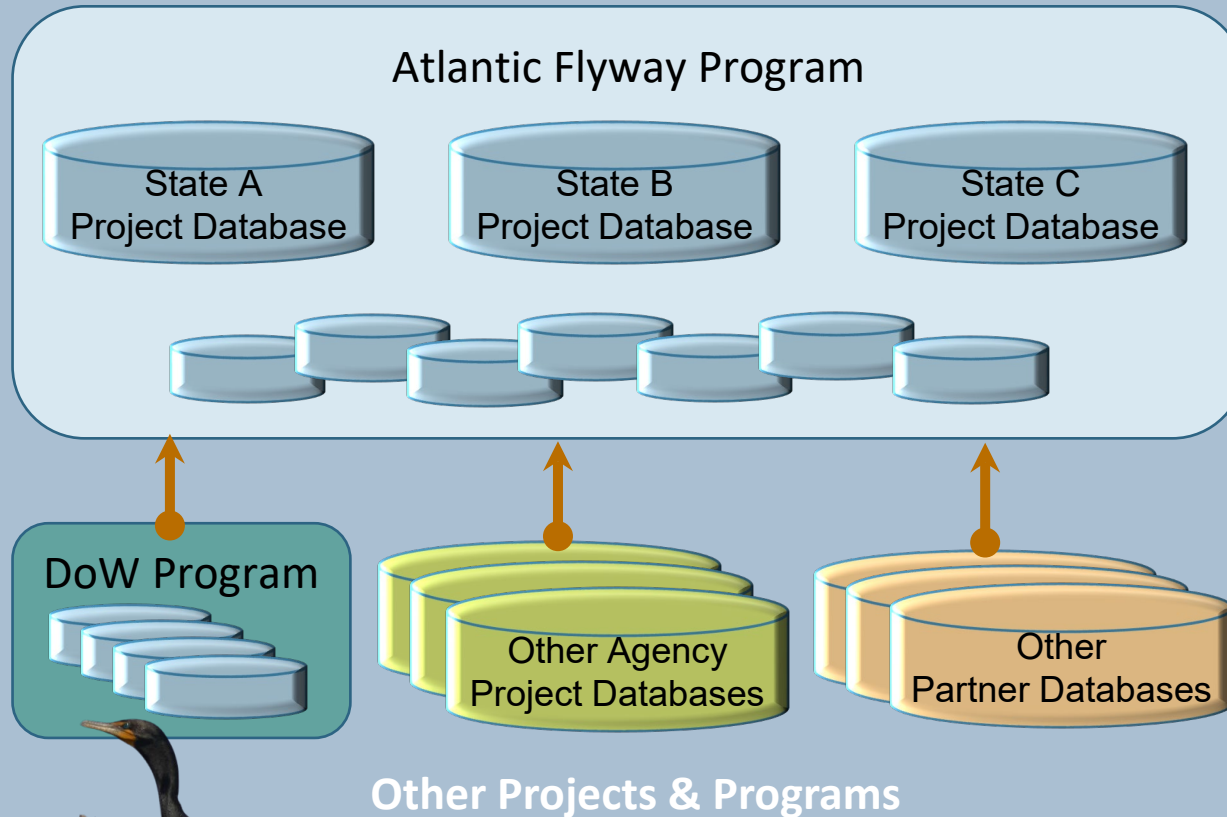
CASE STUDY:

[illegible]

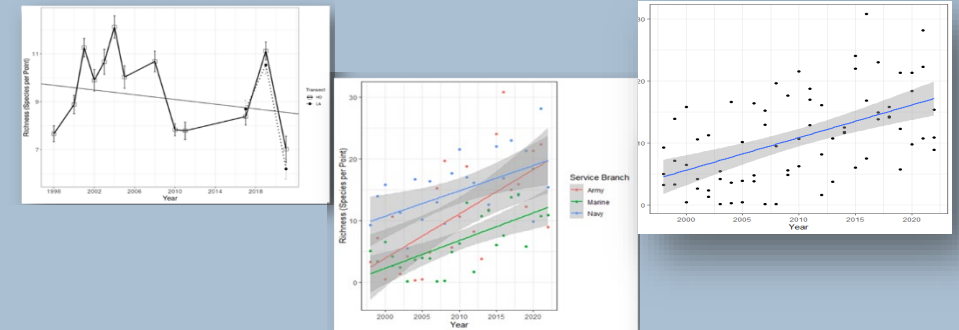
Sampling Protocol Definition(s)

 CWB_ATLANTIC_FLYWAY CWB ATLANTIC FLYWAY CONDITION

Colonial Waterbird Program Structure



**Program-based multi-scaled
data access, analysis, download & outputs**



Flexibility with data analysis

Sharing controlled at the Project database (or observation) level, can choose to share or not

Scaled conservation actions targeted where most needed

AKN TOOLS

More Flexible AKN Roles

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

Solution: Creation of a new AKN role and new role feature that meet identified needs

Plan: Create a new role and a new role feature:

- I. Analyst Role** - allow full access to a Project or Program for data download and analysis, w/o ability to manage metadata or roles/access.
- II. Collaborator Role Feature** – permissions added to an AKN role that supports a contractor or collaborator requiring access (data entry, data download, data analysis) to a portion of Project, w/o ability to manage metadata or roles/access

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





Driving Avian Data Questions

1. What species have confirmed occurrence on my installation?
2. What species have the potential to occur on my installation?
3. What species may occur/persist on my installation in the future?
4. How are species “doing” (population metrics) on my installation? (AKA “is my INRMP effective?”)
How are species doing across the military? (AKA “Is the DoW conservation program effective?”)
5. What factors are driving population trends on my installation? Are there conservation measures/actions within my INRMP that are working more than others to reach identified conservation objectives?
6. What is the relative conservation responsibility of avian species on military installations?



FY27 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 (Army)
- Manager Training Modules
- Expanded Methodology Training
- Training Videos

AKN Tools (Partner Initiatives)

- Database-to-database API
- Creation of Collaborator Role Feature
- Creation of Analyst Role
- New Analyst Tool

Data Initiatives

- MSS Protocols & Data
- ARU-collected Data Model
- BASH Data in Science Cloud
- Banding Data in Science Cloud
- Decision-support Tools & Publications

DoW-Specific Tools

- Conservation Responsibility
- Management Program Update
- Standardizing DoW Bird Monitoring
- Mission-sensitive Species Tools
- Operations Sustainment Tool

Military Services & Installation Support

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



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





NEXT STEPS FOR YOU





SIGN UP FOR DOW AKN UPDATES

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](#)[Does AKN currently support my data type?](#)[DoD AKN User Guide](#)[Get Training!](#)**AVIAN**
KNOWLEDGE NETWORK[Sign Up to Receive DoD AKN Program Updates](#)

Join the DoD AKN Program Contact List

Name *

First

Last

Affiliation (Military Service or Company Name) *

Installation (if applicable)

Email *

Comment or Message

[Submit](#)

Bluethroat, Nome, AK, C. VanTassel

<https://www.dodakn.org/resources/join-the-dod-akn-program-contact-list/>

SIGN UP FOR AKN UPDATES



SIGN UP FOR UPDATES | CONTACT

AVIAN
KNOWLEDGE NETWORK

ABOUT ▾ TOOLS ▾ PORTALS ▾ HELP ▾ Q

Avian Knowledge Network

Leveraging Partnerships, Data and Technology to Revolutionize Avian Conservation and Management



A NATIONAL PARTNERSHIP

Who We Are

The Avian Knowledge Network (AKN) is a partnership currently composed of federal and state agencies and non-governmental organizations who have shared priorities regarding informatics needs for biodiversity conservation and management. The AKN is a powerful and secure cloud computing system that government agencies, NGOs and others are using to enter, manage, analyze and share their avian observation data.

MORE ABOUT AKN



MANAGE & EXPLORE DATA

AKN offers tools for collecting, entering, uploading, managing, accessing and summarizing bird monitoring data.

EXPLORE TOOLS

SIGN UP FOR UPDATES | CONTACT

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ABOUT ▾ TOOLS ▾ PORTALS ▾ HELP ▾ Q



KEEP CONNECTED

AKN Newsletter / Updates

Subscribe to keep informed about updates and new features in the Avian Knowledge Network.

Archive

Coming soon!

Subscribe

* INDICATES REQUIRED FIELD

Email Address *

First Name *

Last Name *

Associated Organization *

SUBSCRIBE

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.dodakn.org/get-training/>

Training Course Site

Select the link below to access the Training Course Site which gives you access to the current and archived course agendas and materials including training slides and course exercises.

Current: https://pointblue.github.io/dod_workshop/

Archive: https://pointblue.github.io/dod_workshop/archive.html

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

DoDAKN@erdc.dren.mil



Office Hours: Project Set Up in the AKN

New Project Questionnaire

Name:

Installation:

Email Address:

- 1) Please provide a short summary of the scope of your project. What are the objectives/questions for your project?
- 2) What survey type do you conduct? (e.g., Point Count, Area Search, Line Transect, etc.)
- 3) **Sampling Units:** How are your surveys organized? How do you select your sampling locations? Briefly describe your study design.
 - a. If point counts, are they grouped into transects, or are all points independent?
Y or N
- 4) **Observation Protocol:** Describe your field methods. Do you have a written protocol or data dictionary? Y or N
 - a. Species
 - b. Length of survey
 - c. Time Bins
 - d. Distance—exact or binned?
 - e. Detection cues—do you record this? Y or N
 - If so, what detection cues do you use (e.g., call, song, visual, wing, etc.)?
 - If so, all types or just first detected?

END-TO-END PROCESS TO REGISTER A NEW USER DEMONSTRATION



Institute, ME

Red-cockaded Woodpecker, Camp Lejeune; Photo Credit: Kevin Rose

STEP 1: NEW USER REQUESTS AN ACCOUNT

Point Blue New User Registration

New User Registration

First Name *

Last Name *

Email Address *

to sign-in and register.

Password *

Re-enter Password *

Your Organization *

Street Address

City

State

Country

Point Blue New User Registration

Thank you for registering!

We will be sending you an email momentarily asking you to confirm this registration

- Make sure that you can receive email from datasolutions@pointblue.org so that the message isn't blocked as spam.
- You should receive a confirmation email within a few minutes. If not, you should re-register, as your email address may have been typed incorrectly.
- If you do not receive your confirmation email after the second registration attempt, please send an email to support@pointbluehelp.zendesk.com with details of your registration.
- Use the link in that email to confirm your registration. Upon confirmation, an email will be sent to a project leader or system administrator approving your access to the system and any projects you've requested.



STEP 2: VERIFY ACCOUNT

 **datasolutions@pointblue.org**
13-03-202

Subject: Please confirm your registration with DOD_DEMO

Confirm Your Registration with DOD_DEMO

DOD_DEMO User Name: [DoDTest@akn.org](#)

Thank you for registering your account with DOD_DEMO

Before you are able to use your new account, you must click the link below to validate your e-mail address and complete your registration:

https://data.pointblue.org/apps/public/deju.php?p=NewuserConfirm&tt=__tmpr65f1ee1b28d6d&hs=YjQ0WnowTmNMVGZ3adc&deju_nextPage=nu-confirm

If you have any problems or questions, please contact us at [support@pointblue.org](#)

Point Blue Science Cloud

Email confirmation

Please use the button below to complete your email confirmation.

[Confirm my email](#)

Point Blue Science Cloud

Email successfully confirmed

Thank you for successfully confirming your email address.

An email was sent to the project leader(s) of your requested project for approval.

Once your project access has been approved you will receive an email with information about how to log into the system.



STEP 3: PROJECT LEADER APPROVAL

File Message Help Acrobat

Search the menus and more

Share to Teams All Apps Mark Unread Find Zoom Save Attachments

OAKN new user request to join DOD_DEMO

 datasolutions@pointblue.org
To: crg; Dianne Miller

Wed 3/13/2024 11:35 AM

If there are problems with how this message is displayed, click here to view it in a web browser.
Click here to download pictures. To help protect your privacy, Outlook prevented automatic download of some pictures in this message.

Start your reply all with: [You should have access now.](#) [I accept!](#) [Permission granted!](#) [Feedback](#)

WARNING, this message has originated from an external source.

AKN new user request to join DOD_DEMO

The following person is requesting access:

Name: TestUser, DoD Email: DoDTest@akn.org Project: DOD_DEMO

To approve or deny this request, click on this link: https://data.pointblue.org/apps/projectleaders/index.php?page=appr-new-p&deju_rid=27045&deju_hs=YjQ0WnowTmNMVGZ3dw%3D%3D&deju_registration_host=cadc&deju_pr=DOD_DEMO

All the best, Your Avian Data Center



STEP 3: PROJECT LEADER APPROVAL

THIS IS WHERE YOU COME IN

Researcher Manager

Approve Project Access Request

The following researcher is a new user and has requested access to DOD_DEMO.

First Name	Last Name	Email	Projects
test	user	DoDTest@akn.org	

[Add as User](#)[Add as Project Leader](#)[Deny Access](#)

Researcher Manager

Approve Project Access Request

The following researcher is a new user and has requested access to DOD_DEMO.

First Name	Last Name	Email	Projects
test	user	DoDTest@akn.org	

Status*

☒ Active☐ Inactive☒ Is project leader☐ Receives registration requests[Close](#)[Add to Project](#)



USER VIEW – BIOLOGISTS APP

Welcome to AKN Biologists

AKN Biologists is an application for entering and reviewing field observations in support of the Avian Knowledge Network, hosted by [Point Blue Data Solutions](#)

Projects

What project do you want to work in?

[Quick Tips >>](#)

DOD_DEMO - DoD Demonstration Project

Project Observation Types

For project: DOD_DEMO

What type of observations would you like to work on?

[Quick Tips >>](#)

- [Area Search Surveys](#)
- [Point Count Surveys](#)
- [Site Conditions](#)

[Feedback](#) | [User:](#) dodtest@akn.org | [Logout](#)

Powered by [Point Blue Data Solutions](#)



INACTIVE ACCOUNT

Biologists 

Project: DOD_DEMO

Error: PRBODB.InvalidProjectAccessRights (403 error) ✕

Welcome to AKN Biologists

AKN Biologists is an application for entering and reviewing field observations in support of the Avian Knowledge Network, hosted by [Point Blue Data Solutions](#)



Projects

What project do you want to work in?

 [Quick Tips >>](#)

Loading available project operations...



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PLUSES AND DELTAS

WORKSHOP WRAP-UP



PLUS – DELTA METHOD

Feedback from workshop to continue to improve

+ PLUS

What went well and should be continued or repeated

Δ DELTA

What could be changed or improved for future iterations.



OPEN FORUM



OFFICE HOURS

Discuss bulk loading and other issues regarding your observation data

In-person Office Hours:

- Today ~13:30-15:30

Virtual Office Hours sign up is on the DoW AKN Portal:
dodakn.org/office-hours-booking-page

- Next online appointment dates: August 18 & 20





THANK YOU!!



Klamath Bird
Observatory





LUNCH

13:15 - OFFICE HOURS

