

DoD and the AKN: Who, What, Where, When , Why, and How

DoD Regional Training, January 24-26, 2023

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pointblue.github.io/dod_workshop



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DoD Regional Training, January 24-26, 2023



Welcome, Introductions, and Logistics



Introductions

Who are we?

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

Name, Installation, Position

What type of avian data you collect?

How would you like to use AKN?

A few logistics

The Agenda with links (bookmark this)
pointblue.github.io/dod_workshop

- Session: interactive & casual
- Office hours: 8 hours monthly sign up here

<https://outlook.office365.com/owa/calendar/DoDAKNOfficeHours@pointblue.onmicrosoft.com/bookings/>

- Parking lot items



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.

DoD Mandate Memo



AVIAN
KNOWLEDGE NETWORK

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 Deputy signed by
ODWIN IV 1163856
081

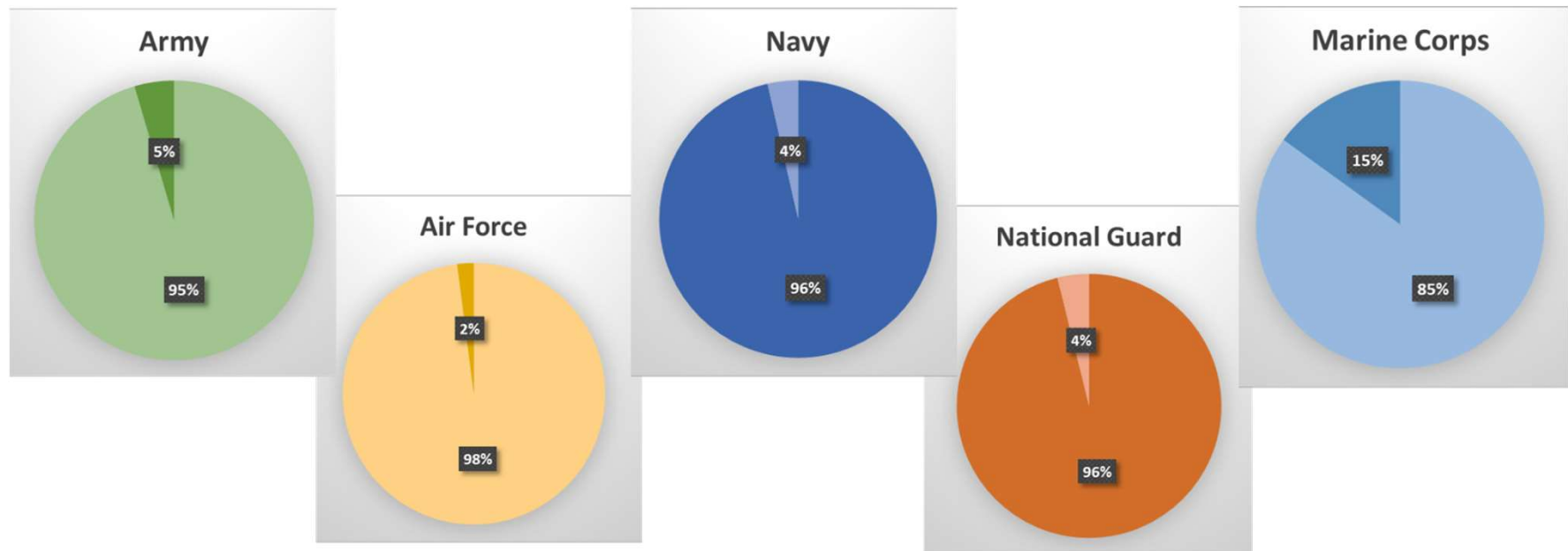
Richard G. Kidd IV
Deputy Assistant Secretary of Defense
(Environment and Energy Resilience)



Military Service Progress

341 installations that require Integrated Natural Resources Management Plans

146 Army, 82 Navy, 96 Air Force, 17 Marine Corps installations plus 54 National Guard states/territories



Can you log in?

Biologists:

data.pointblue.org/science/biologists

Problems logging in?

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

Limitations and caveats

Focus today: Point Count data

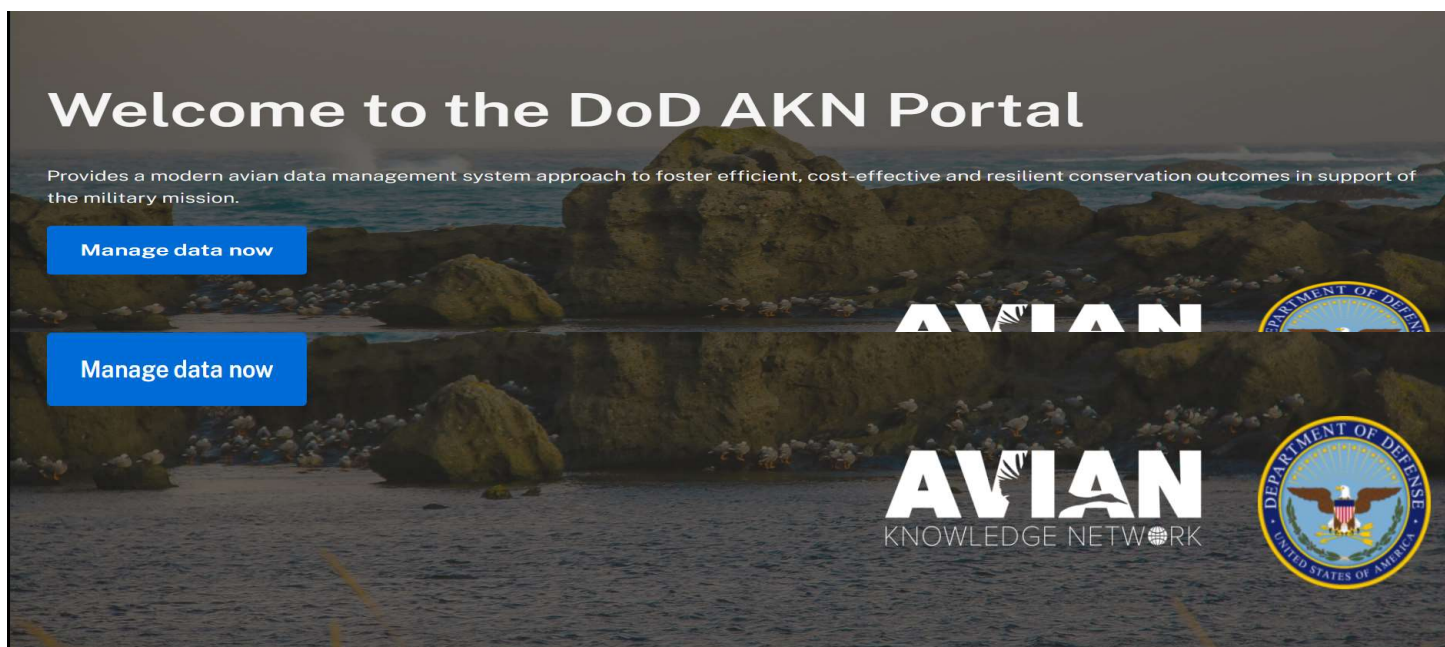
Office hours are where we can dig deeply into your installation's specific issues.

AKN Project Data 101

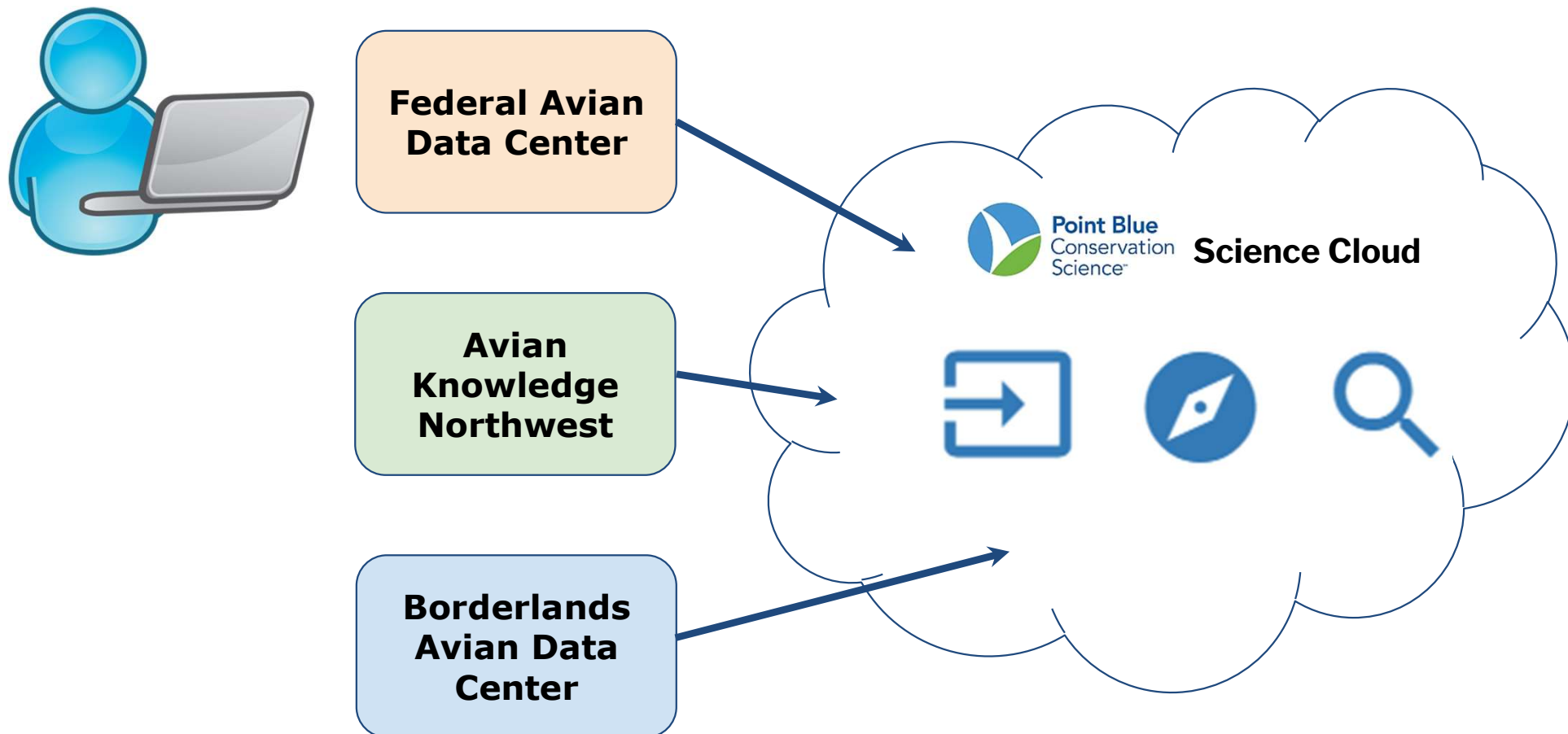


DoD AKN Portal

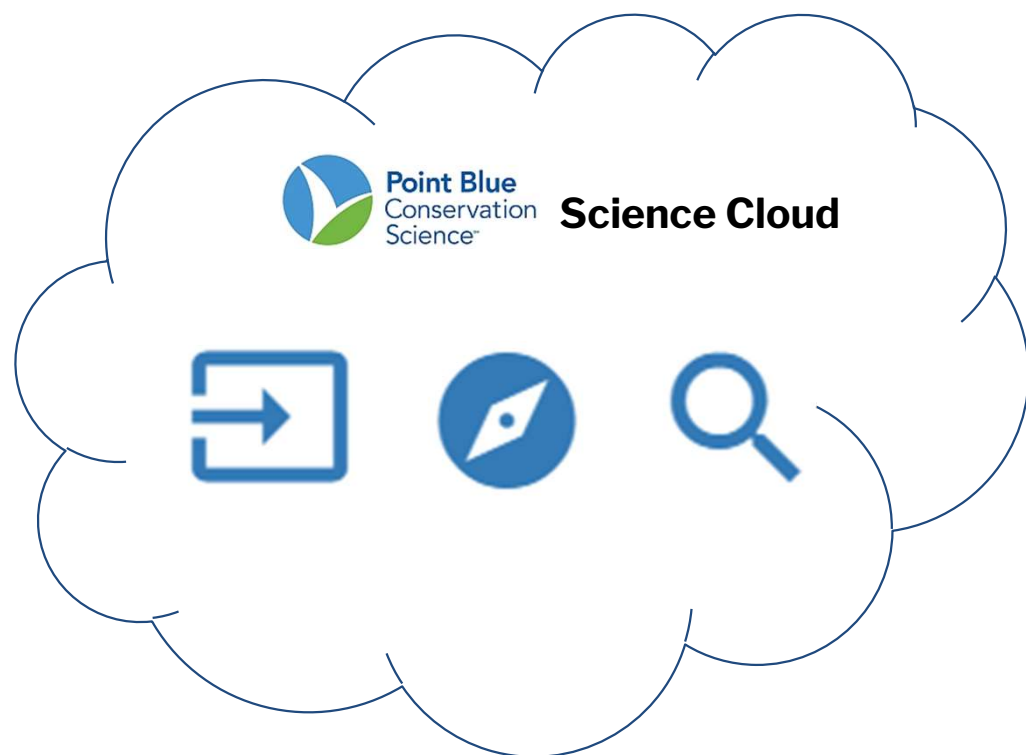
<https://www.dodakn.org/>



AKN: common cloud technology



Focus for this training



How do we represent protocol-based science?

How do you get data in?

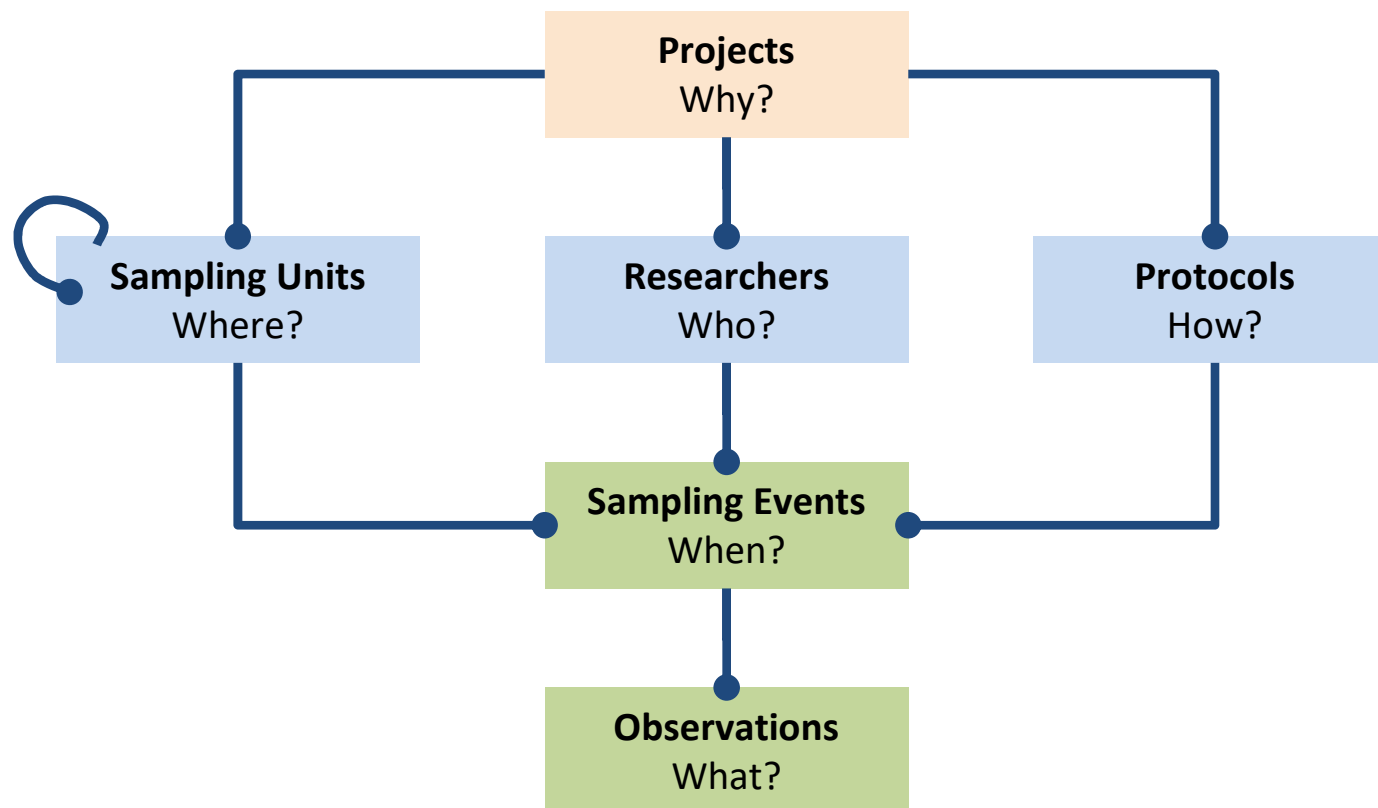
How do you get your data & information out?

What conservation questions can you answer?

AKN Project Data 101

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

The Project Database



Project

Container for Event and Observation data

Many ways to organize

For DoD: Project = Installation

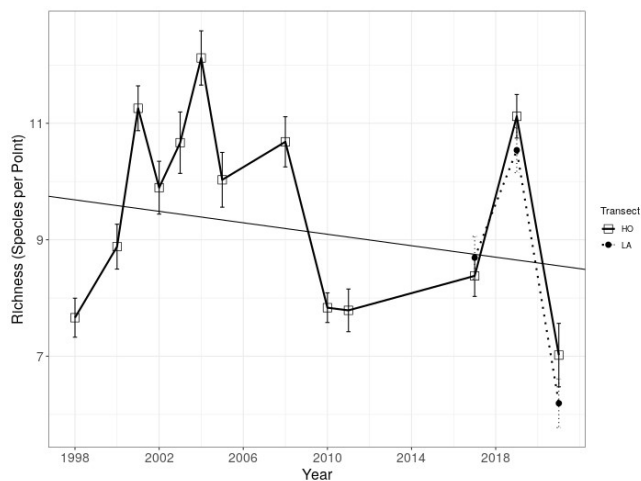
Projects
Why?



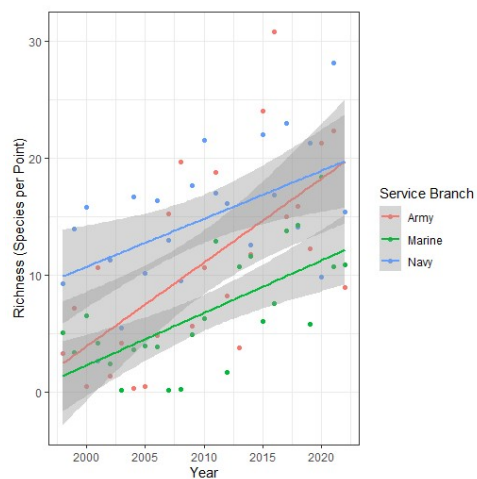
DoD Program Structure



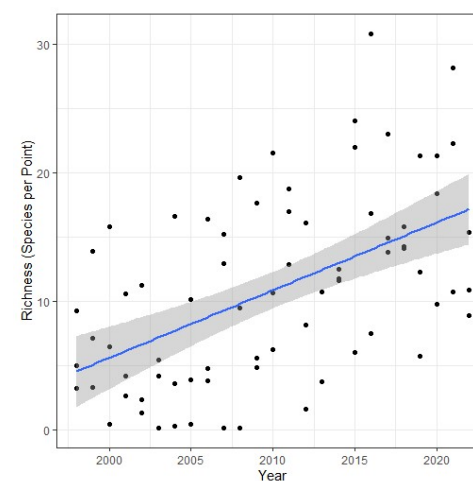
Vandenberg Space Force Base
Project Riparian Richness



Service Branch Program Riparian
Bird Richness



DoD Program Riparian Bird
Richness



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

Protocols
How?

Primary Protocol Types



Area Search



Point Count



Linear Transect



Secretive Marshbird



Site Conditions

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**

Protocols
How?

Point Count Protocol Examples

Compare how 3 field methodologies represented

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

[Point Blue protocol](#)

[KBO protocol](#)

Protocols
How?

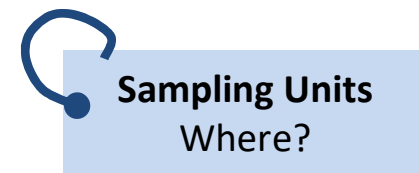
Sampling Units

The locations where observations are collected

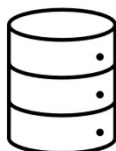
Organized into a tree (hierarchy)

Uniquely named with Project

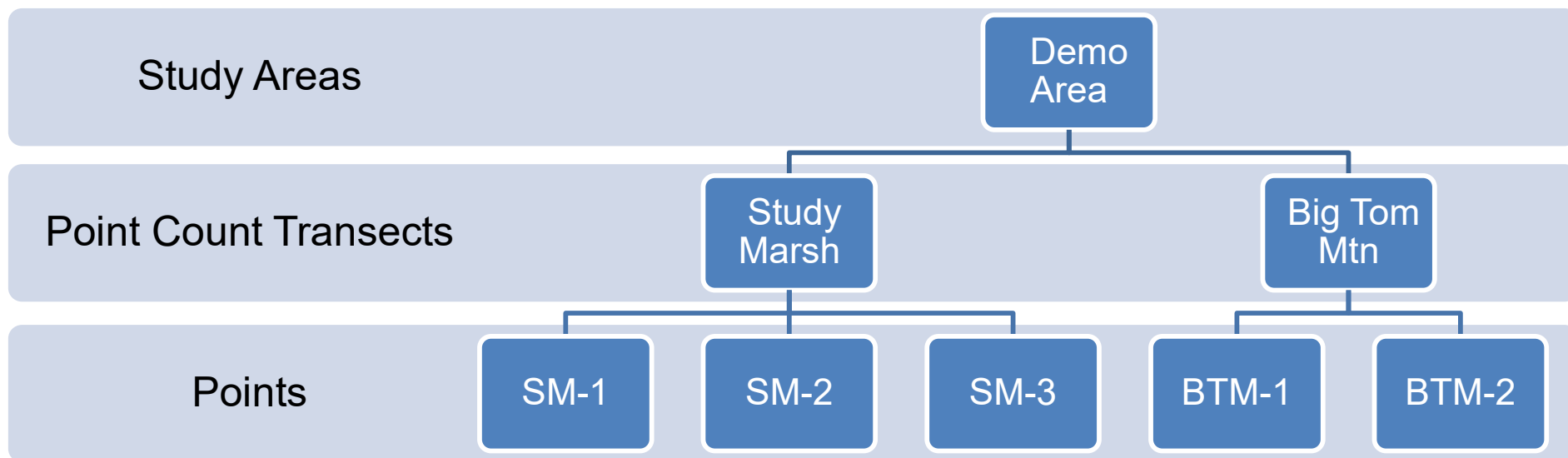
Can have Point/Line/Polygon



Sampling Unit Types for Point Counts



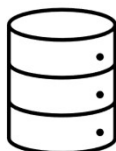
Project: DOD_DEMO



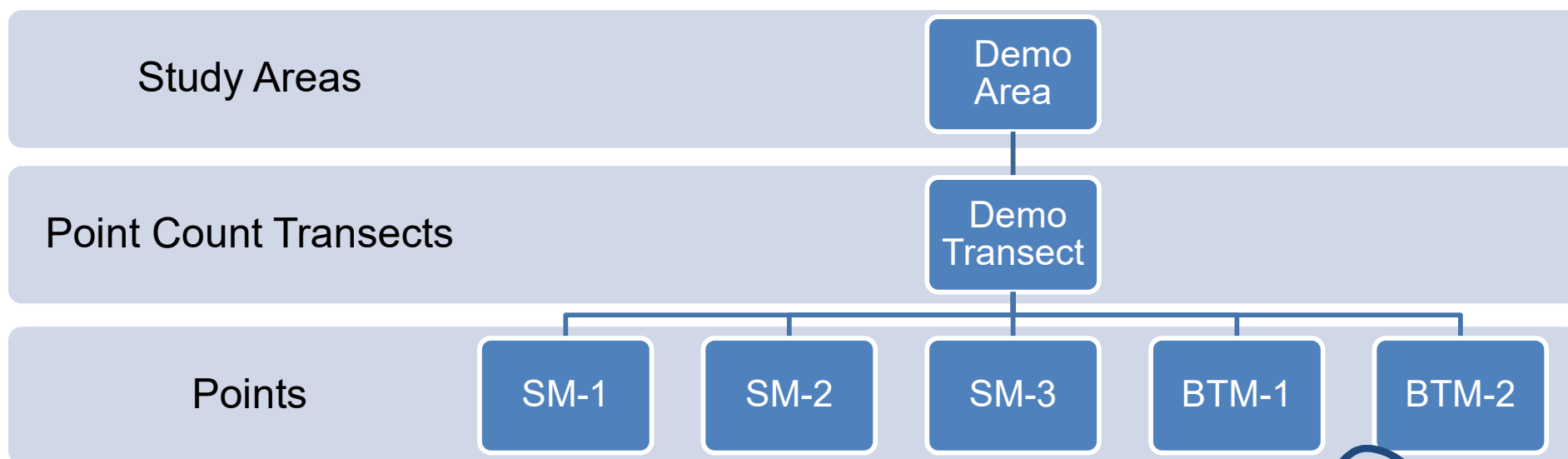
Replicates or independent points?
What questions are you asking?

Sampling Units
Where?

Sampling Unit Types for Point Counts



Project: DOD_DEMO



Replicates or independent points?
What questions are you asking?

Sampling Units
Where?

Researchers

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

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

Researchers
Who?

Researcher Types

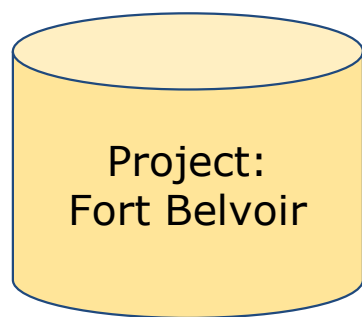
Project Leader: the data owner, has full control over data, metadata, and who gets Project access

Biologist: can enter and review data in the Project

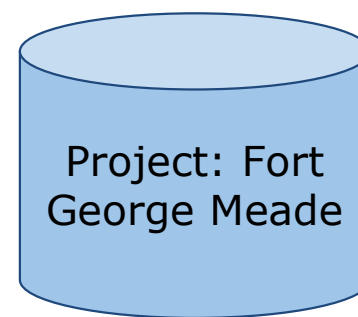
Researchers
Who?

Researchers & Project Access

Access Project assigned by Project Leader



Jane: Project Leader
Mike: Biologist
Pat: Biologist

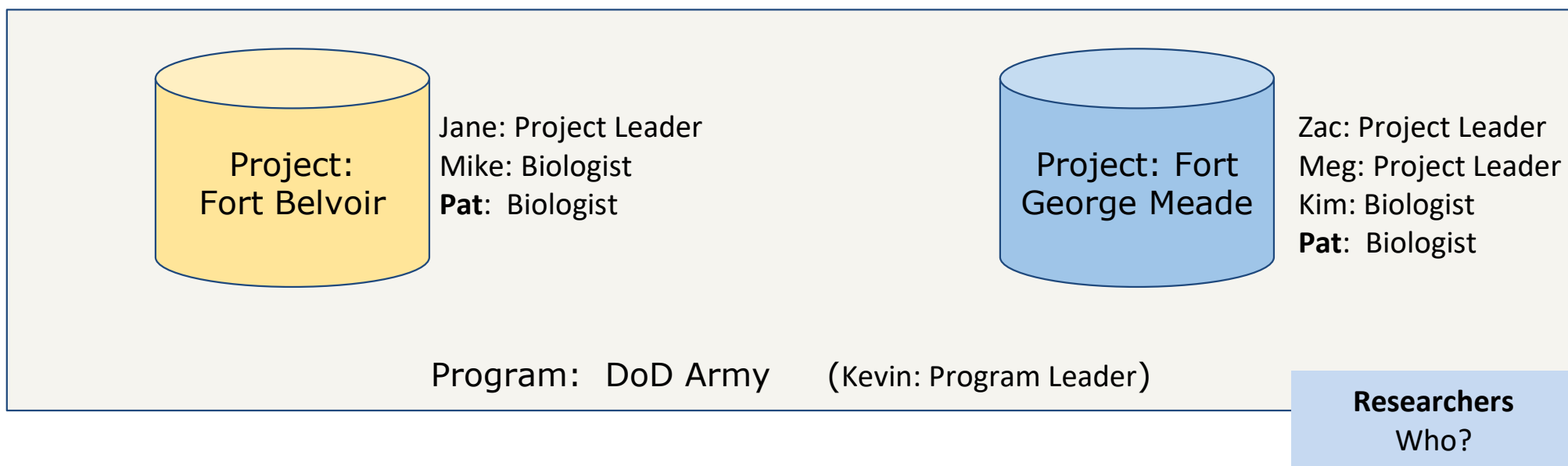


Zac: Project Leader
Meg: Project Leader
Kim: Biologist
Pat: Biologist

Researchers
Who?

Researchers & Project Access

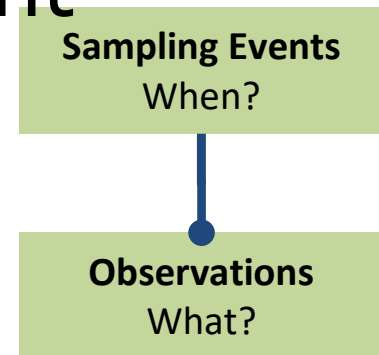
DoD will also have a Program Leader (managed by Point Blue staff w/ guidance from DoD leadership)



Sampling Events and Observations

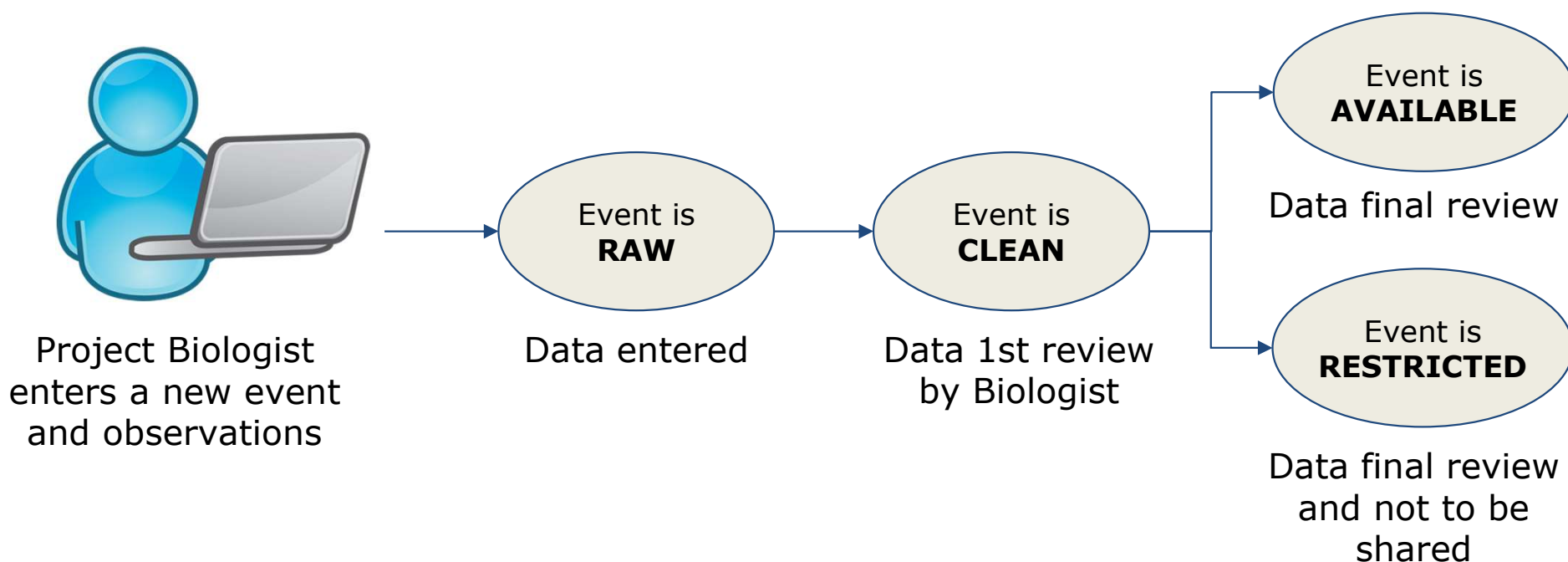
Event: survey at a Sampling Unit using a Protocol by Researcher at a specific date and time

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

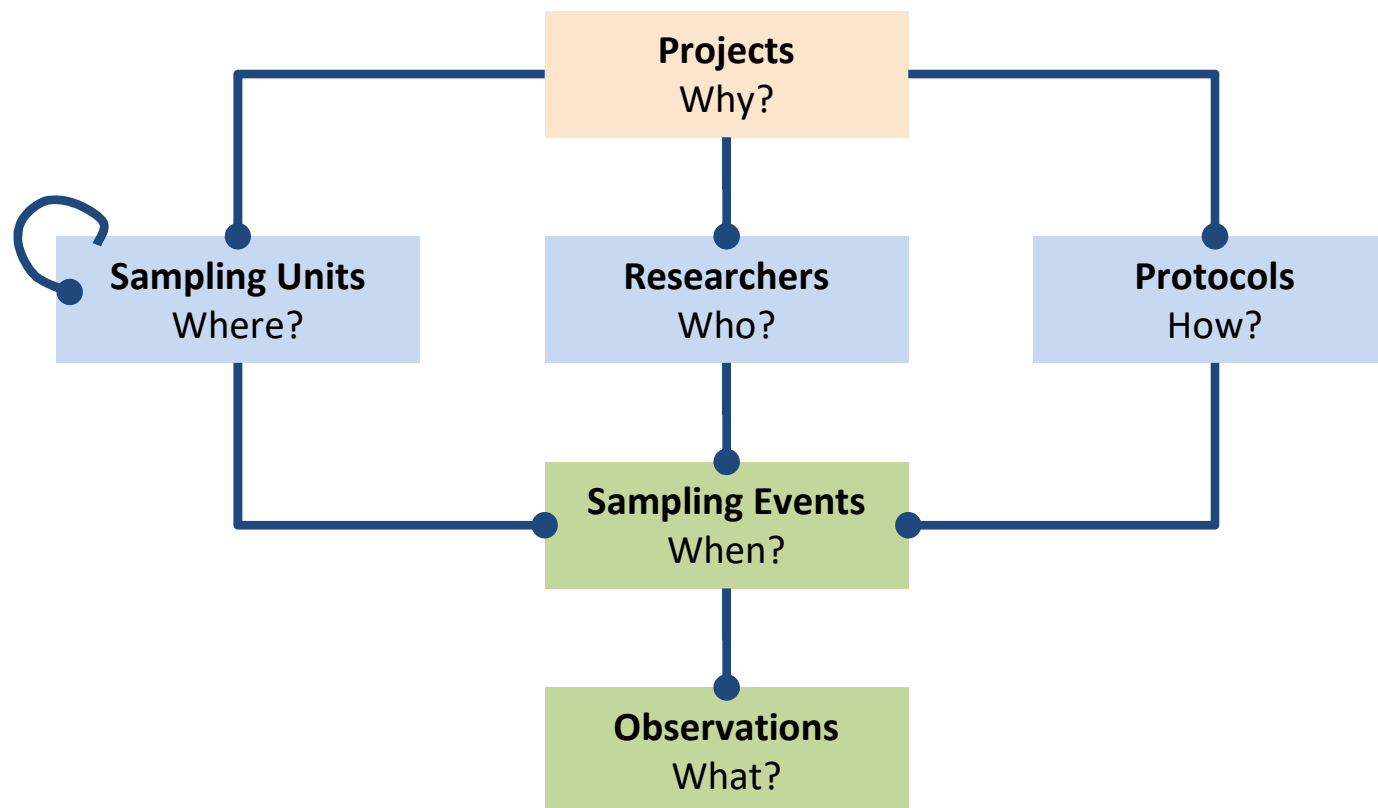


Review Levels for each Event

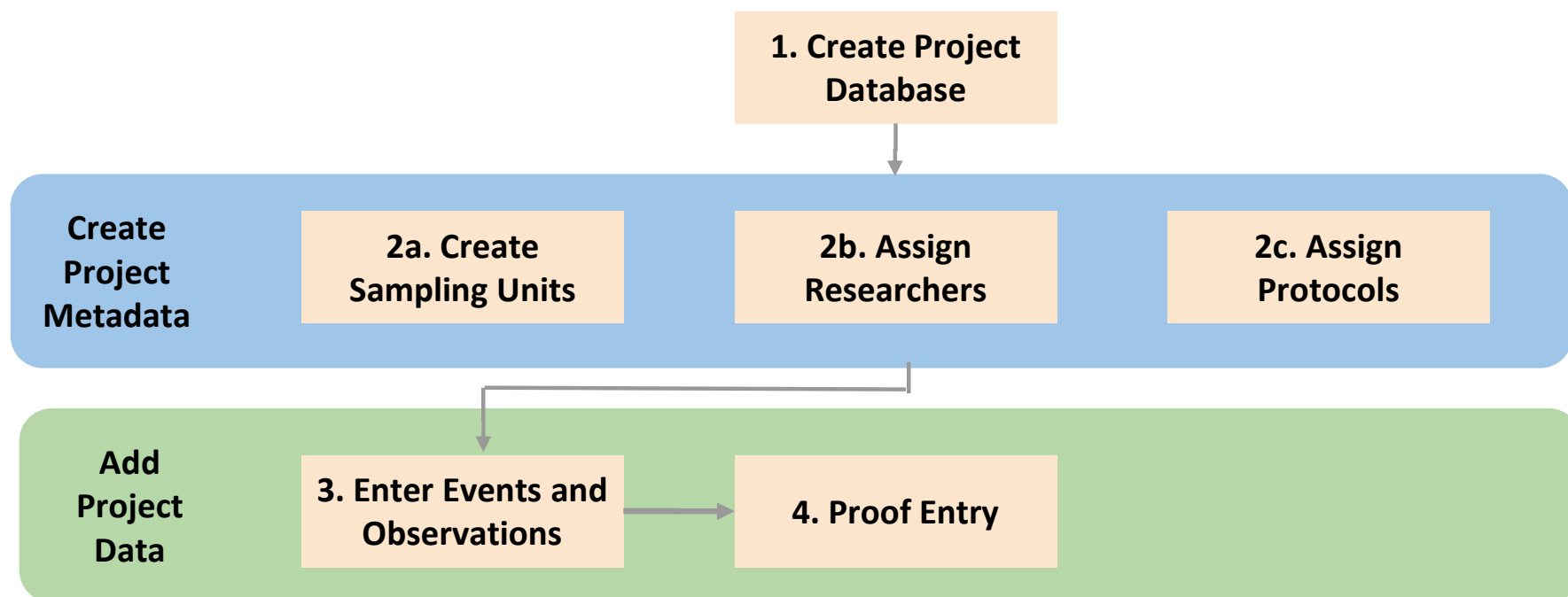
Steps to enter and review data in preparation for sharing



Questions on Project Database?



Workflow for Creating a Project



Creating Project Metadata

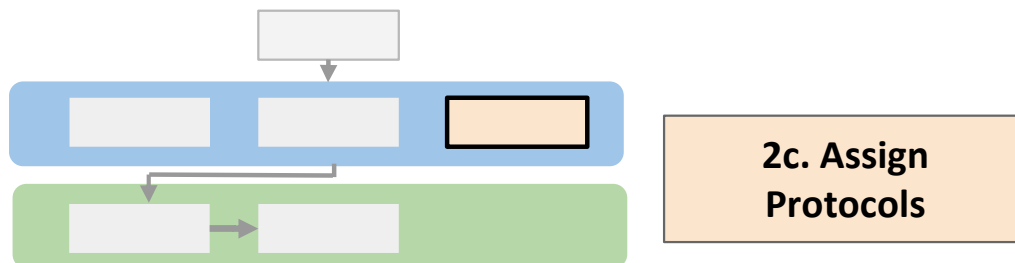


Choosing Protocols (demonstration)

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

Tools:

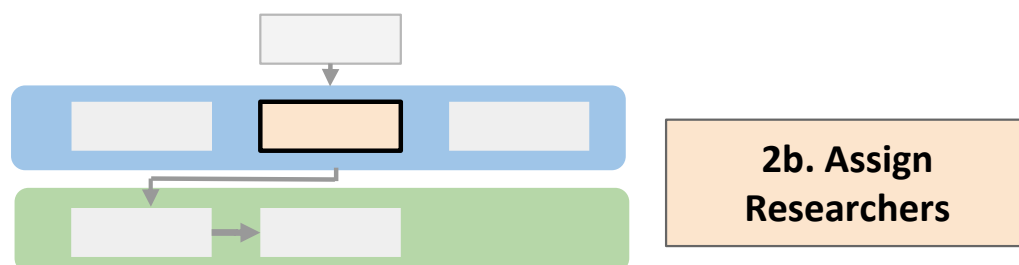
- [Our data sheet](#)
- [Protocol search tool](#)
- [Biologists](#) for adding protocol to project



Adding Researchers (demonstration)

Tools:

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



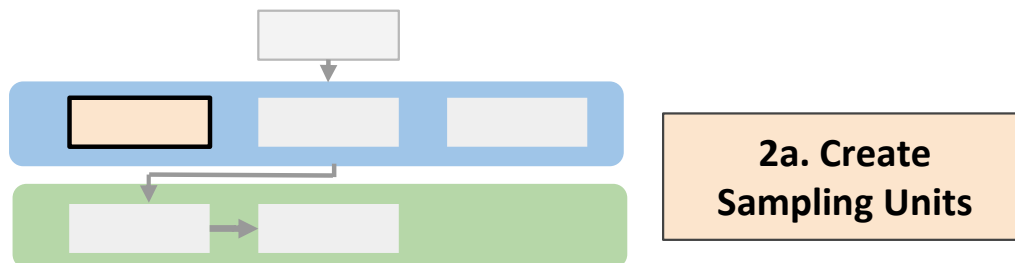
Create Sampling Units (Exercise 1 and demonstration)

Exercise:

- [Exercise 1 instructions](#)

Downloading the sampling units:

- [Biologists](#) for download locations to GPS, GIS and more



Break (15 mins)

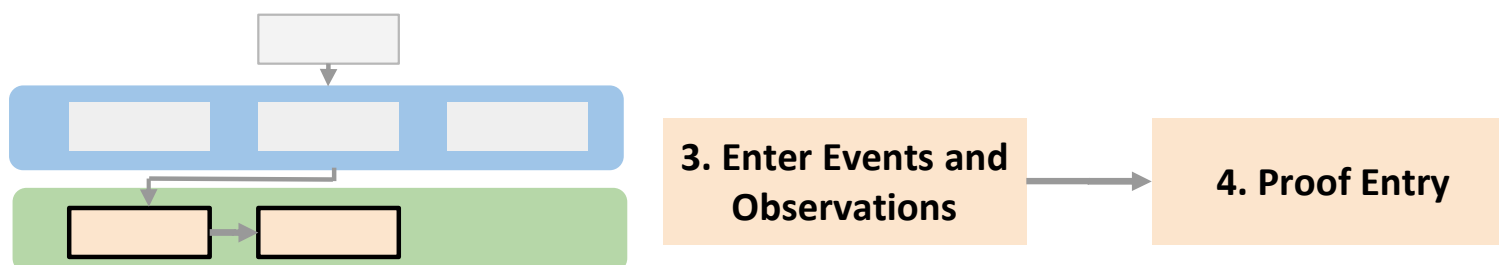
Entering observation data to a Project



Enter & proof point count event (Exercise 2)

Exercise:

- [Exercise 2 instructions](#)
- okay not to follow data sheet exactly



Download Point Count Data from Project (demonstration)

Tools:

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

Bulk loading metadata & observation data into a Project



Bulk Loading Data

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

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

Batch Processing

Bulk Uploader V2 - Beta

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

 First, select the Project you want to bulk load into

FORT_HOOD - [DOD_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 batches. Batch results can be found in the Batches tool.

[Add Researchers](#)

[Add Sampling Units](#)

[Add Observations](#)

[Add Protocol](#)

[Batches](#)

Results:

Batches for project FORT_HOOD

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

[Save as CSV](#)

[Refresh list](#)

ID	Utility	Status	Status Detail
455	AddSamplingUnits	success	batch completed successfully
454	AddSamplingUnits	error	batch completed with errors
453	AddObservations	success	batch completed successfully
452	AddObservations	error	batch completed with errors
451	AddObservations	error	batch completed with errors
450	AddObservations	error	batch completed with errors
449	AddObservations	error	batch completed with errors
448	AddObservations	error	batch completed with errors

Results:

Errors:

Error line 744: Value not allowed for weather:winddirectioncardinal: 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:

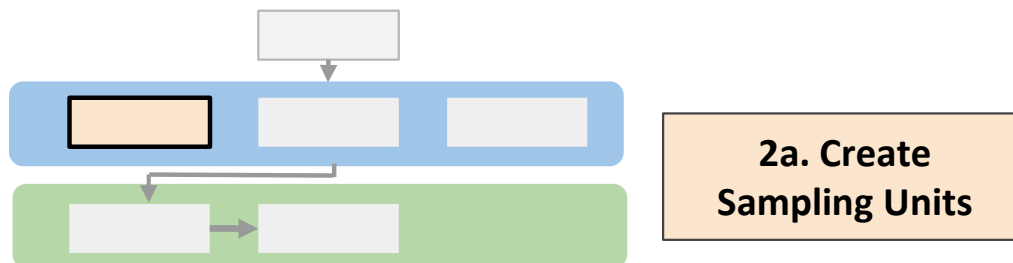
Add Observations Summary: CSV Rows Reviewed: 1054, New PointCount Events created: 217, New PointCount Observations created: 1045, New PointCount SiteConditionEvents created: 217, New PointCount SiteConditionProperties created: 1207

2021-08-09 19:23:19	0:09		
2021-08-09 19:18:37	0:04		
2021-08-09 19:03:35	0:03		
2021-08-09 19:00:23	0:00		

Bulk load sampling units (Exercise 3)

Exercise:

- [Exercise 3 instructions](#)
- okay not to follow instructions exactly



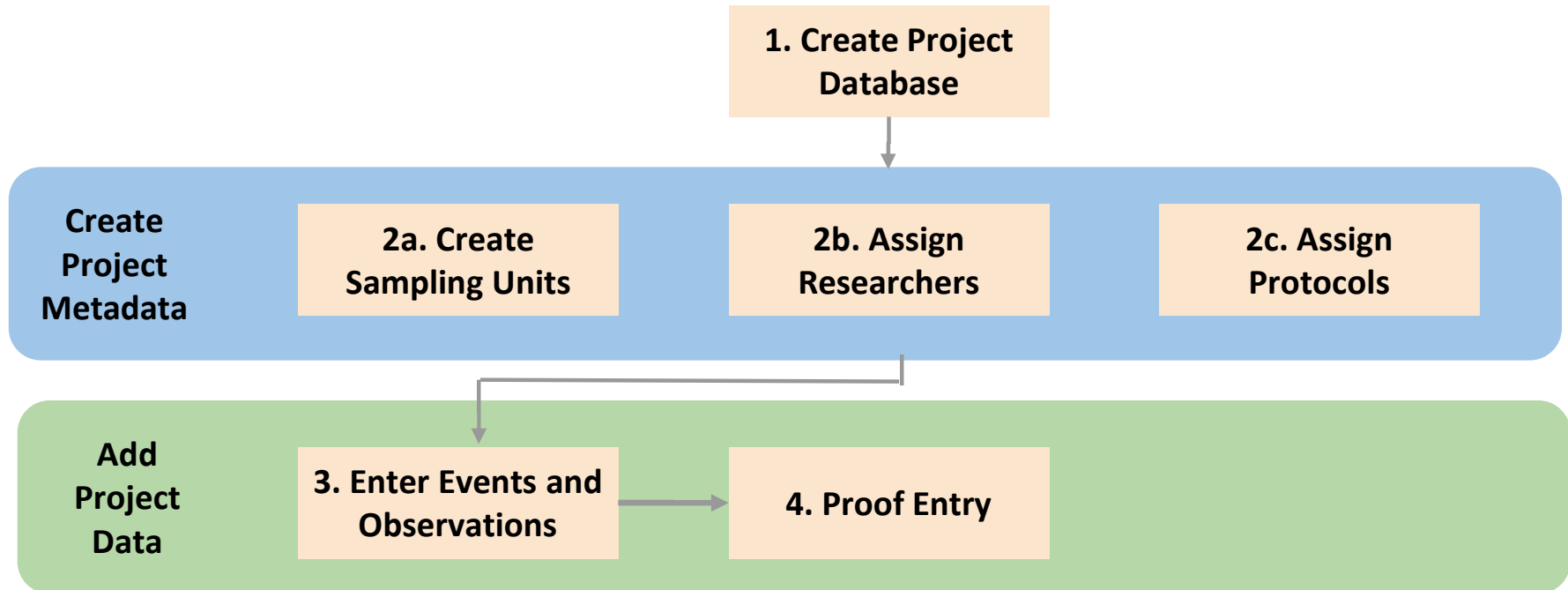
Office Hours

Discuss bulk loading and other issues regarding **your** observation data

Sign up here:

<https://outlook.office365.com/owa/calendar/DoDAKNOfficeHours@pointblue.onmicrosoft.com/bookings/>

Any questions on Creating a Project?



WSMR Staff Presentations



Introduce Field Exercise and Logistics for Tomorrow



Pluses and Deltas

Wrap-up



End of Day 1



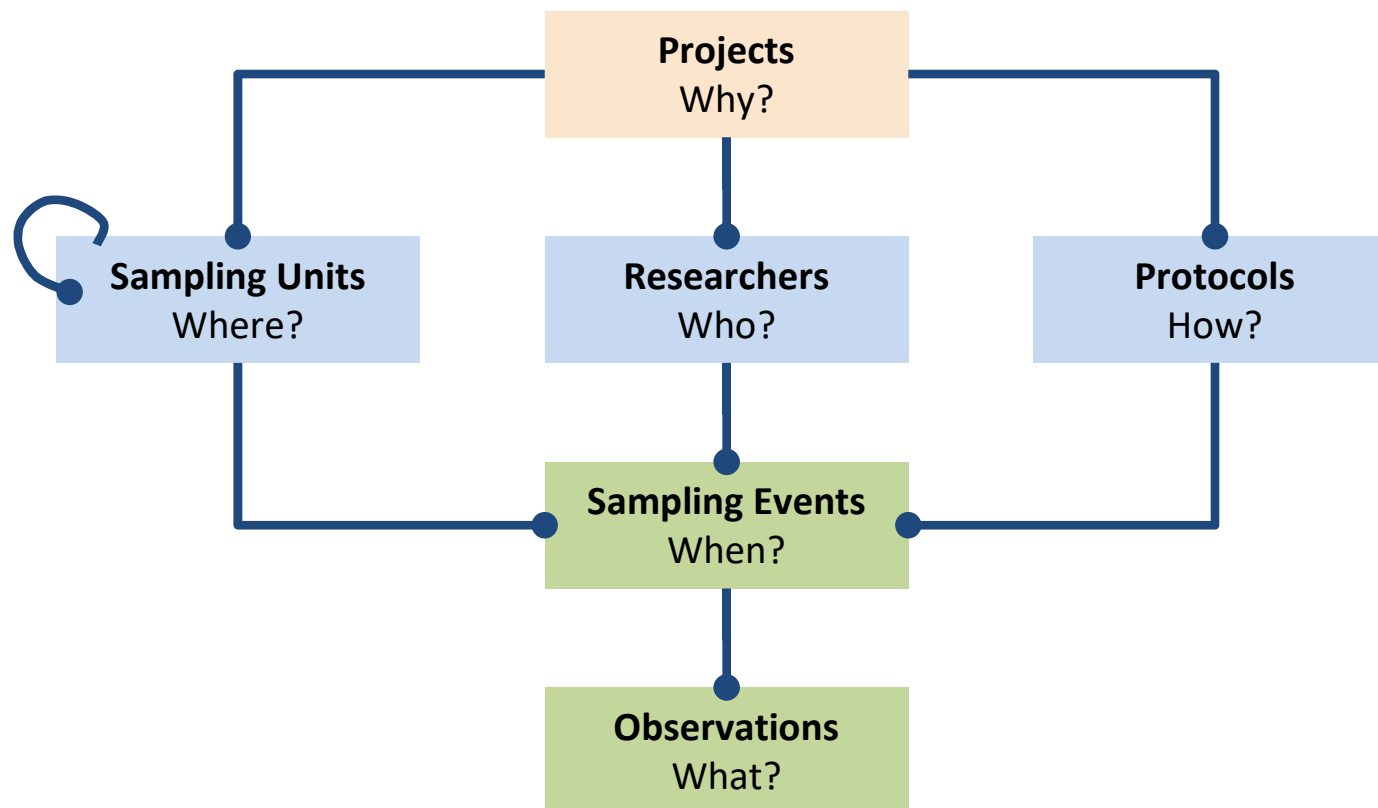
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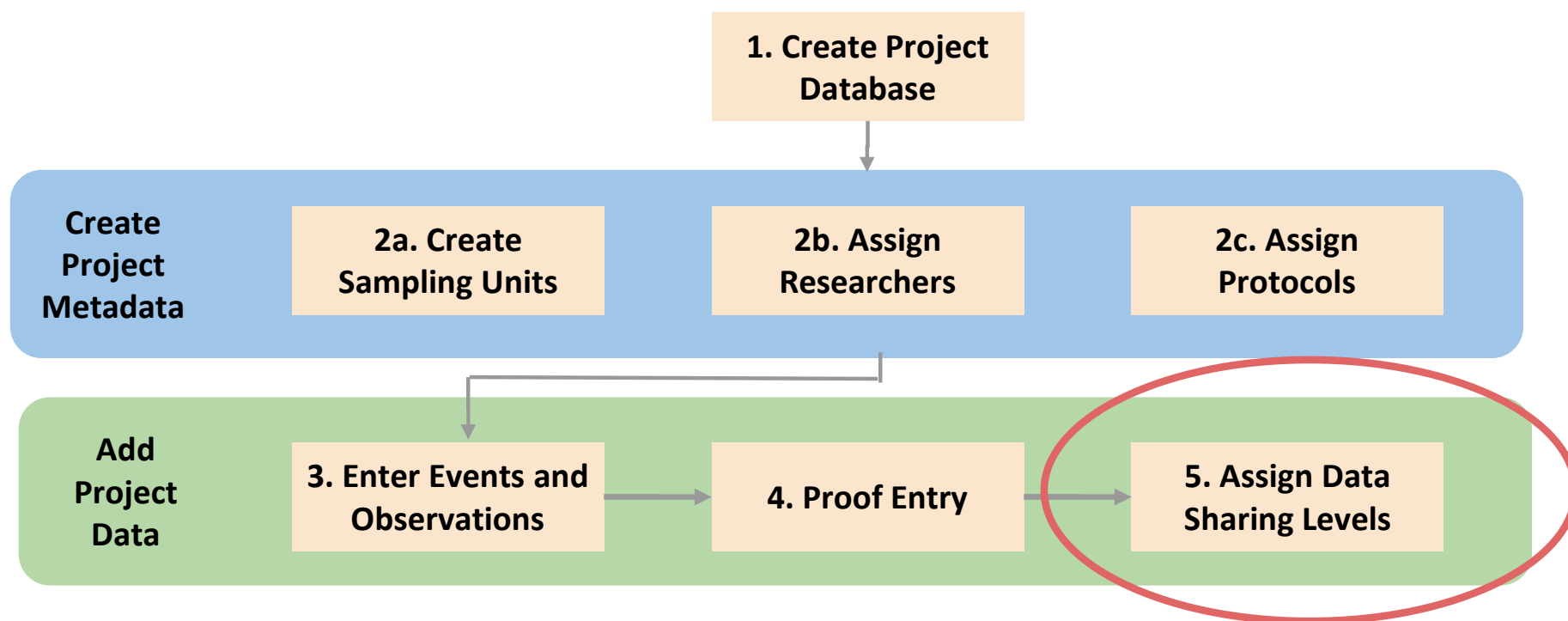
AKN Warehouse Data 101



The Project Database



Workflow for Creating a Project



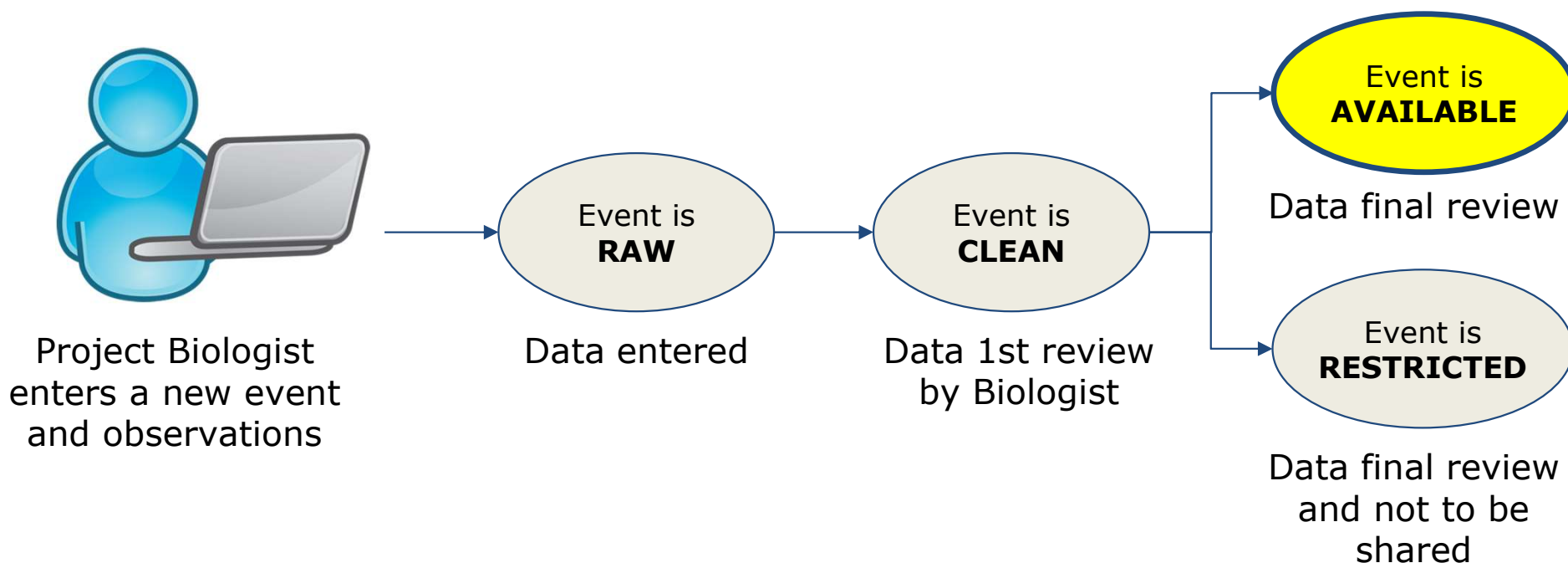
Data Sharing Levels

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

Controlled by the Project Leader within each project

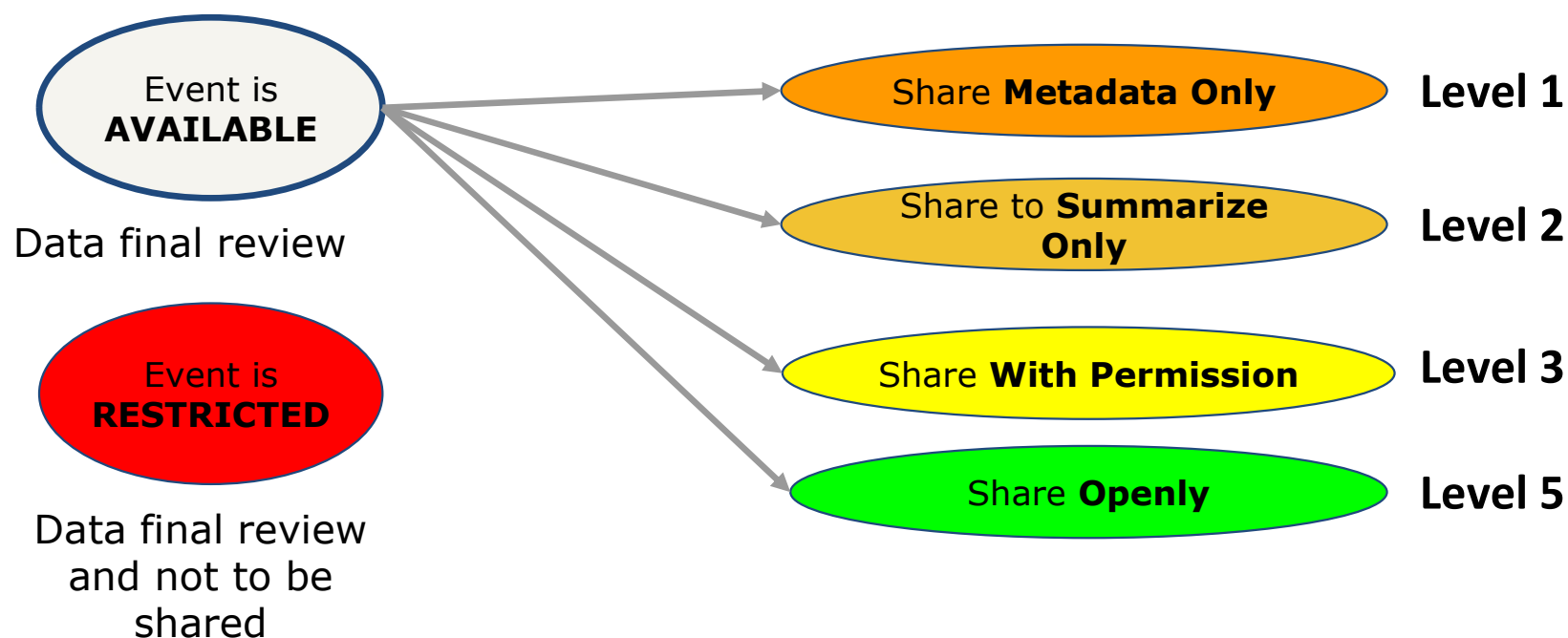
Review Levels for each Event

Steps to enter and review data in preparation for sharing



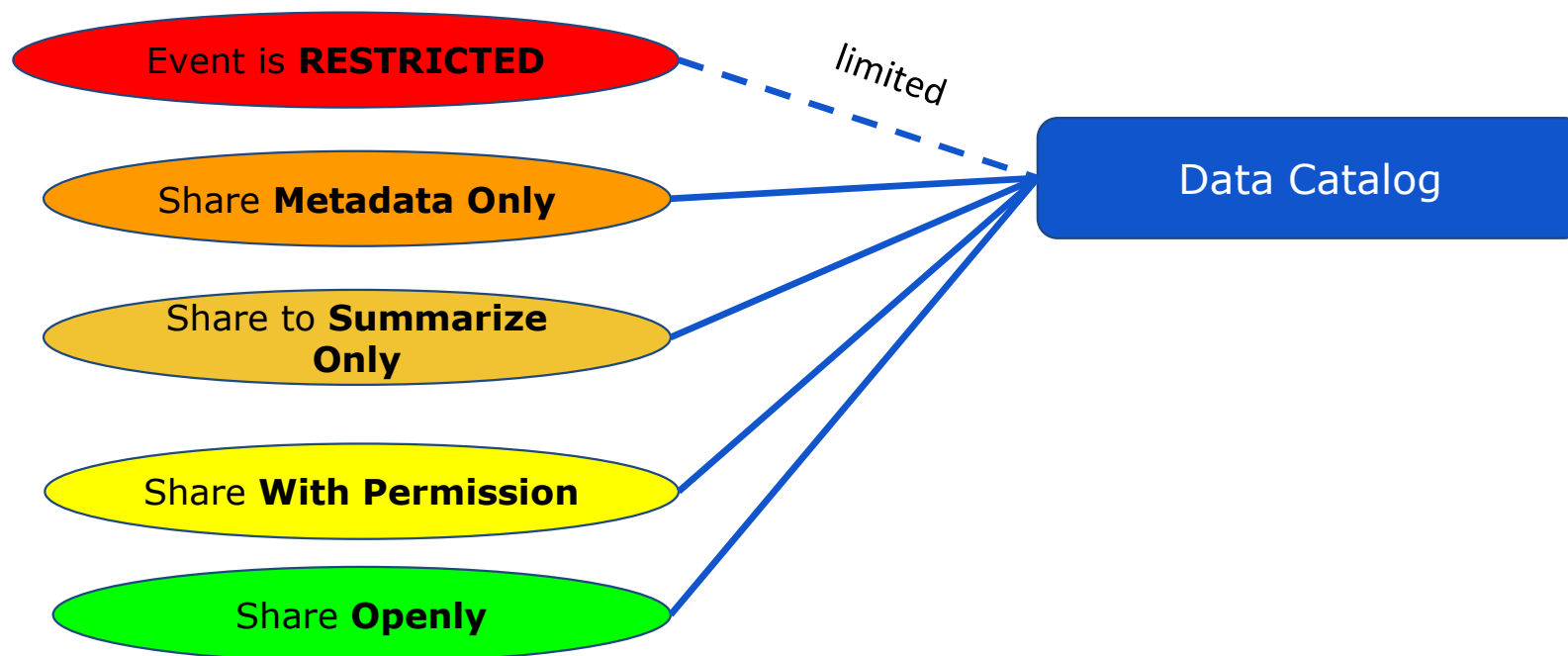
Data Sharing Levels for each Event

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



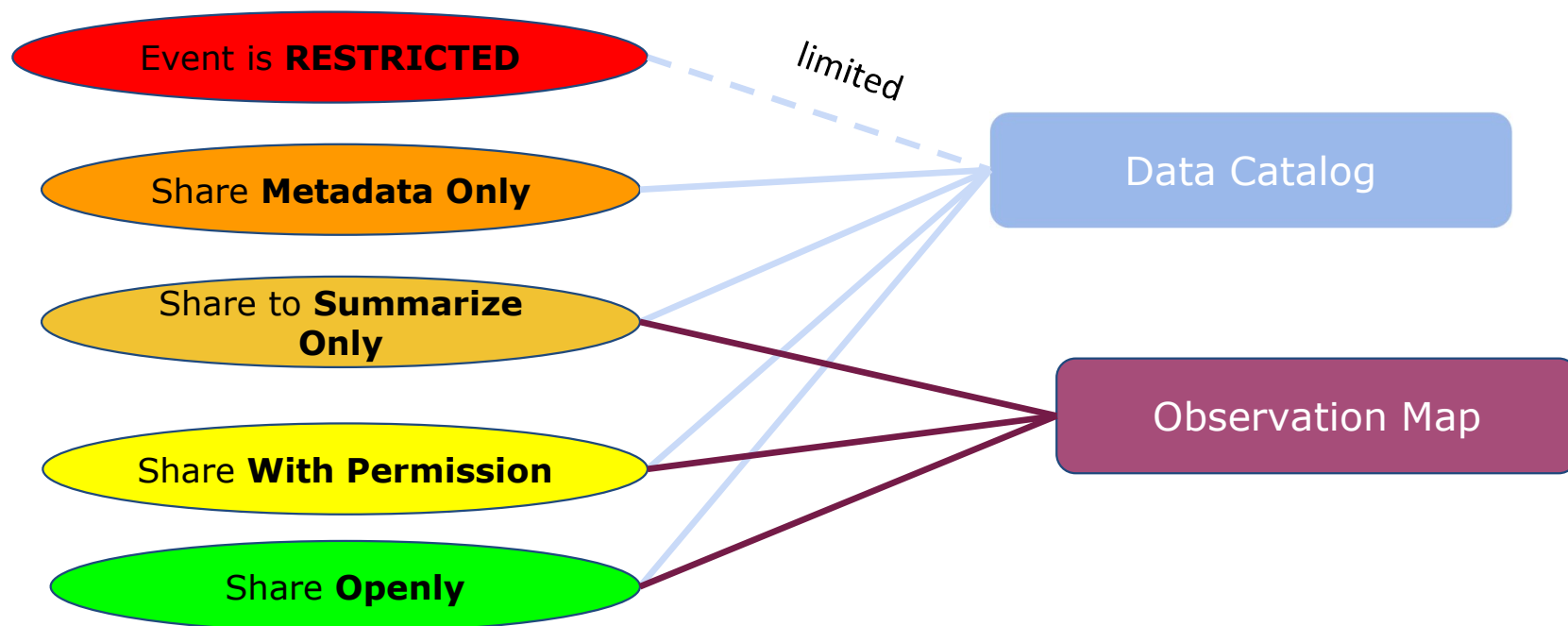
Data Sharing and Tool Access

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



Data Sharing and Tool Access

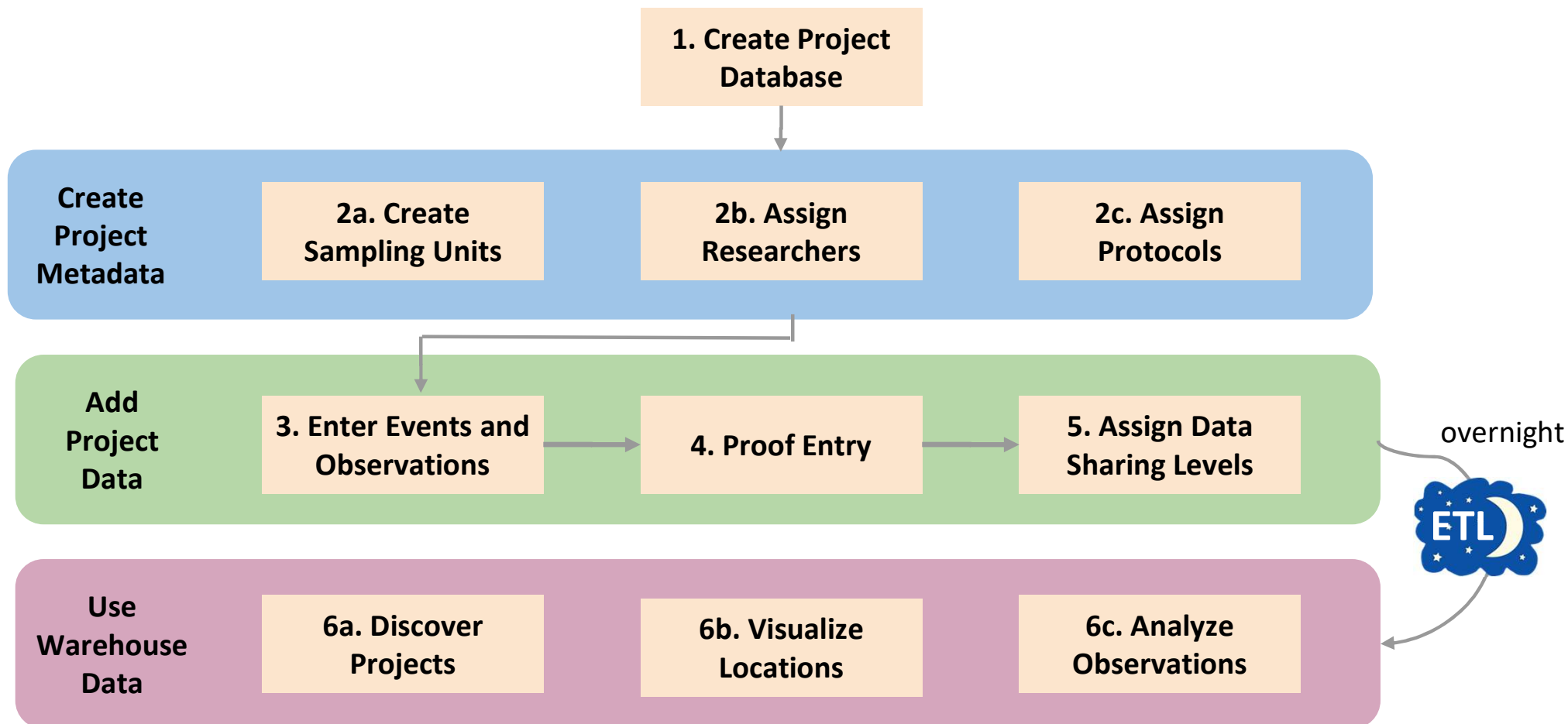
Choices informs the Point Blue Science Cloud tools of your intentions.



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

Workflow for Creating a Project



Data Warehouses

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

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

Project Data vs Warehouse Data

Study Area	Transect	Point	Protocol	Visit	Date	Start Time	End Time	Time Bin	Time Bin	Count	Spp	Common Name	Scientific Name	Detection	Distance B	Distance B	Point Note	Obs	Researcher	Data Status
LITTLERIVER	COMP_5	164	3_5_10m2	1	6/3/2019	8:01:00	8:11:00	3	0_3min	1	PIWA	Pine Warbler	Setophaga pinus	NR	G25	25 to 50	Light sprinkle, light rain		Arbour, David	AVAILABLE Level 5
LITTLERIVER	COMP_5	164	3_5_10m2	1	6/3/2019	8:01:00	8:11:00	3	0_3min	1	GCFL	Great Crested Flycat	Myiarchus crinitu	NR	G50	50 to 100	Light sprinkle, light rain		Arbour, David	AVAILABLE Level 5
LITTLERIVER	COMP_5	164	3_5_10m2	1	6/3/2019	8:01:00	8:11:00	3	0_3min	1	KEWA	Kentucky Warbler	Geothlypis formc	NR	G50	50 to 100	Light sprinkle, light rain		Arbour, David	AVAILABLE Level 5
LITTLERIVER	COMP_5	164	3_5_10m2	1	6/3/2019	8:01:00	8:11:00	10	5_10min	1	BHCO	Brown-headed Cow	Molothrus ater	NR	G50	50 to 100	Light sprinkle, light rain		Arbour, David	AVAILABLE Level 5
Project	Location	Protocol		Date	Time	HabitatPlot	HabitatPlot	HabitatPlot	HabitatPlot	HabitatPlot	HabitatPlot	HabitatPlot	HabitatPlot	Researcher						
						Composition	Composition	Composition	Composition	Composition	Composition	Composition	Composition							
LITTLERIVER	NWR	164	FWS_PC_HAB_LWR	MISS	6/3/2019	8:01:00	164	3	1	3	3	3	4	Arbour, David						

Project Database Version
Warehouse Version

GlobalUniqueIdentifier	ProjectCode	ProjectName	LocalityID	StudyArea	Transect	TransectName	Point	SamplingU	ParentSam	Sam																
URN:catalog:PRBO:LITTLERIVERNWR.300600.PointCount.3_5_10m25_50_100MFLyByTm.329406.1	LITTLERIVERNWR	Little River NWR	LITTLERIVERNWR:COMP_5	Little River NWR	COMP_5	Compartment_5	164	300600	348115	Point																
URN:catalog:PRBO:LITTLERIVERNWR.300600.PointCount.3_5_10m25_50_100MFLyByTm.329406.2	LITTLERIVERNWR	Little River NWR	LITTLERIVERNWR:COMP_5	Little River NWR	COMP_5	Compartment_5	164	300600	348115	Point																
URN:catalog:PRBO:LITTLERIVERNWR.300600.PointCount.3_5_10m25_50_100MFLyByTm.329406.3	LITTLERIVERNWR	Little River NWR	LITTLERIVERNWR:COMP_5	Little River NWR	COMP_5	Compartment_5	164	300600	348115	Point																
URN:catalog:PRBO:LITTLERIVERNWR.300600.PointCount.3_5_10m25_50_100MFLyByTm.329406.4	LITTLERIVERNWR	Little River NWR	LITTLERIVERNWR:COMP_5	Little River NWR	COMP_5	Compartment_5	164	300600	348115	Point																
DecimalLatitude	DecimalLongitude	Visit	ProtocolCode	Observation	Year	Collection	Month	Day	JulianDay	JulianDay	P	Time	Collection	ScientificName	CommonName	SpeciesCode	Phylogenetic	DistanceFrom	Flycatcher	I	Detection	Effort	Observation	NoObserved	Record	Permissions
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-headed	BHCO	2015	75	NR		1	0	AVAILABLE	LEVEL 5					

Project Data vs Warehouse Data

Point Count Data

Study Area	Transect	Point	Protocol	Visit	Date	Start Time	End Time	Time Bin	Count	Spp	Common Name	Scientific Name	Detection	Distance B	Distance B	Point Note	Obs	Researcher	Data Status
LITTLETIVER COMP_5	164	3_5_10m2	1	6/3/2019	8:01:00	8:11:00	3_5_10min	1	PIWA	Pine Warbler	Setophaga pinus	NR	G25	25 to 50	Light sprinkle, light rain	Arbour, David	AVAILABLE Level 5		
LITTLETIVER COMP_5	164	3_5_10m2	1	6/3/2019	8:01:00	8:11:00	3_5_10min	1	GCFL	Great Crested Flycat	Myiarchus crinitus	NR	G50	50 to 100	Light sprinkle, light rain	Arbour, David	AVAILABLE Level 5		
LITTLETIVER COMP_5	164	3_5_10m2	1	6/3/2019	8:01:00	8:11:00	3_5_10min	1	KEWA	Kentucky Warbler	Geothlypis formica	NR	G50	50 to 100	Light sprinkle, light rain	Arbour, David	AVAILABLE Level 5		
LITTLETIVER COMP_5	164	3_5_10m2	1	6/3/2019	8:01:00	8:11:00	3_5_10min	1	BHCO	Brown-headed Cow	Molothrus ater	NR	G50	50 to 100	Light sprinkle, light rain	Arbour, David	AVAILABLE Level 5		

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

Sharing Levels

LocalID	LocalName	ProjectCode	ProjectName	LocalityID	StudyArea	Transect	TransectName	Point	SamplingU	ParentSam	Sam
URN:catalog:PRBO:LITTLETIVERNWR.300600.PointCount.3_5_10m25_50_100MFLyByTm.329406.1	LITTLETIVERNWR	Little River NWR	LITTLETIVERNWR:COMP_5	Little River NWR	COMP_5	Compartment_5	164	300600	348115	Point	
URN:catalog:PRBO:LITTLETIVERNWR.300600.PointCount.3_5_10m25_50_100MFLyByTm.329406.2	LITTLETIVERNWR	Little River NWR	LITTLETIVERNWR:COMP_5	Little River NWR	COMP_5	Compartment_5	164	300600	348115	Point	
URN:catalog:PRBO:LITTLETIVERNWR.300600.PointCount.3_5_10m25_50_100MFLyByTm.329406.3	LITTLETIVERNWR	Little River NWR	LITTLETIVERNWR:COMP_5	Little River NWR	COMP_5	Compartment_5	164	300600	348115	Point	
URN:catalog:PRBO:LITTLETIVERNWR.300600.PointCount.3_5_10m25_50_100MFLyByTm.329406.4	LITTLETIVERNWR	Little River NWR	LITTLETIVERNWR:COMP_5	Little River NWR	COMP_5	Compartment_5	164	300600	348115	Point	

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

Differences:

Lat	Long	Visit	Date	Time Bin	Count	Spp	Common Name	Scientific Name	Detection	Distance B	Distance B	Point Note	Obs	RecordPermissions			
33.9699705	-94.70262	1	6/3/2019	8:01:00	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	6/3/2019	8:01:00	6	3	154	75	8:01:00	DA	Myiarchus Great Crest	GCFL	1274	75	NR	1	0 AVAILABLE LEVEL 5
33.9699705	-94.70262	1	6/3/2019	8:01:00	6	3	154	75	8:01:00	DA	Geothlypis Kentucky Warb	KEWA	1278	75	NR	1	0 AVAILABLE LEVEL 5
33.9699705	-94.70262	1	6/3/2019	8:01:00	6	3	154	75	8:01:00	DA	Molothrus Brown-headed Cow	BHCO	1275	75	NR	1	0 AVAILABLE LEVEL 5

Data Sharing Guidelines/Policies and Agreements

Data Ownership and Control

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

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

Partnerships and Contractors

Partner / Contractors

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

DoD

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

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

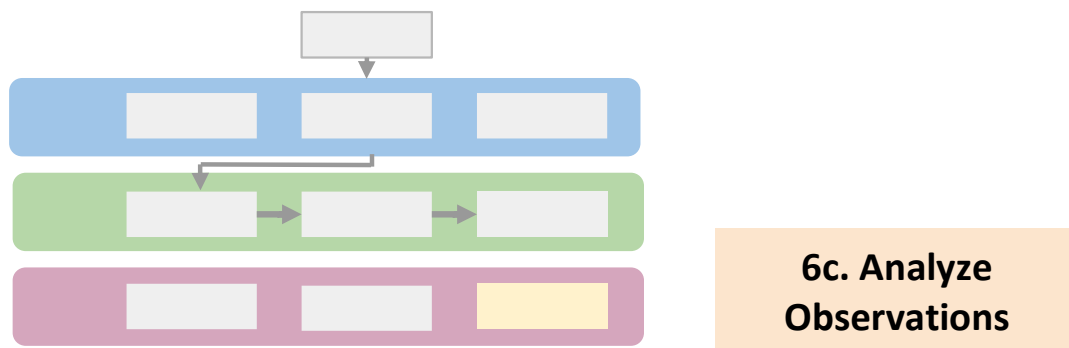
Discovering observation data



Create Species List with RAIL Tool (Exercise 4)

Exercise:

- Orientation of [RAIL Tool](#)
- [Exercise 4 instructions](#)



Download Point Count Data from Warehouse (demonstration)

Tools:

- [Data Downloader](#)

Break (15 mins)

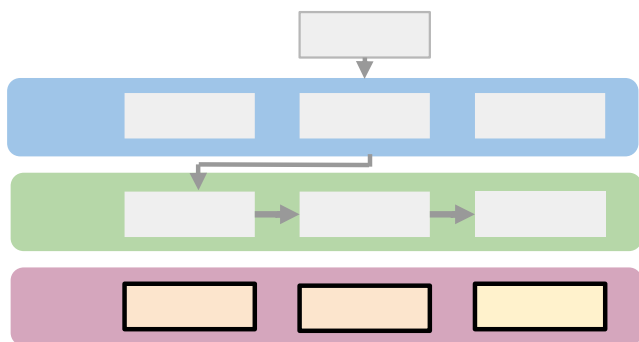
Looking for trends



Looking for Trends (Exercise 5)

Exercise:

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



6a. Discover
Projects

6b. Visualize
Locations

6c. Analyze
Observations

How have organizations fully leveraged the AKN?



How to achieve
conflicting conservation
objectives?



Challenge with assessing Rail response to management

Multi-partner Effort

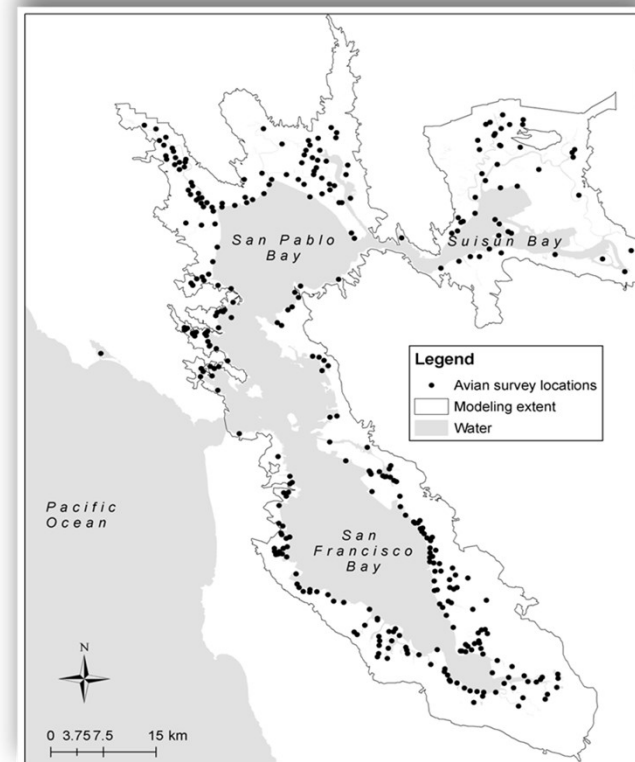


SAN FRANCISCO ESTUARY
INVASIVE SPARTINA PROJECT



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



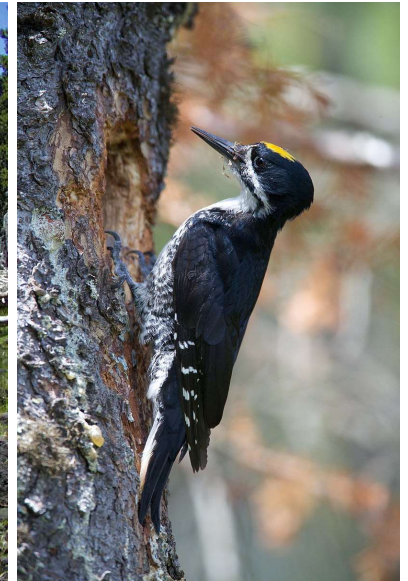
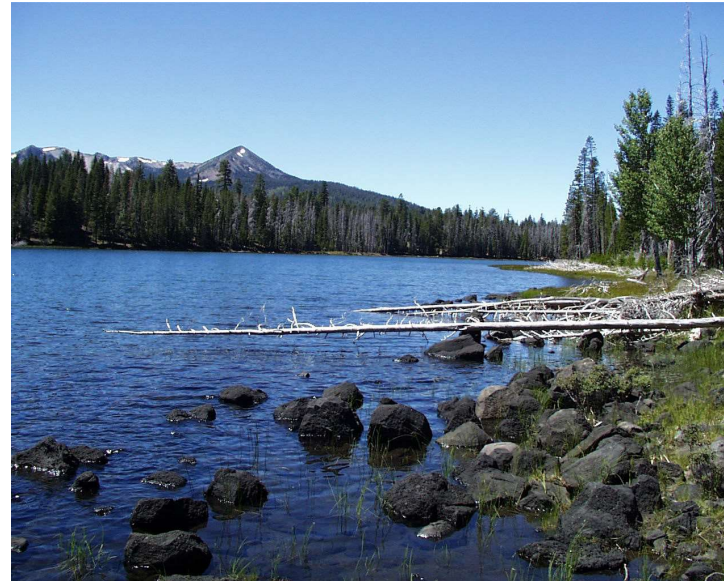
Making
Forest
Management
More
Efficient



**Region 5 Post-Disturbance Hazardous Tree
Management Project**

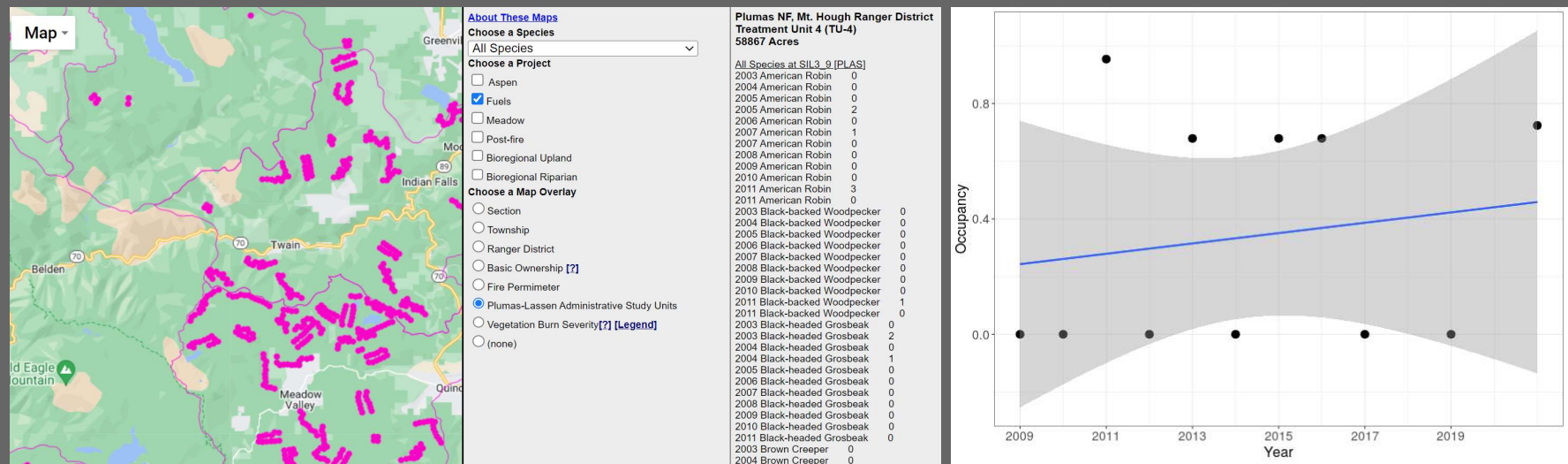
Management Indicator Species Report

Prepared by: Angela Gatto, Wildlife Biologist
For: Lassen and Plumas National Forests
Date: March 2022

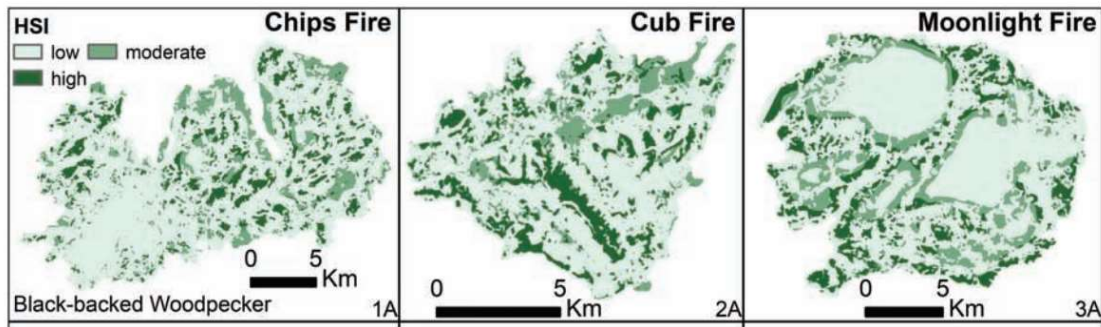


<https://data.pointblue.org/apps/snamin/>

AKN Tools guide forest management



AKN tools focus future studies



Campos et al. 2020. Predictive habitat suitability models for nesting woodpeckers following wildfire in the Sierra Nevada and Southern Cascades of California

Science to support landscape level conservation

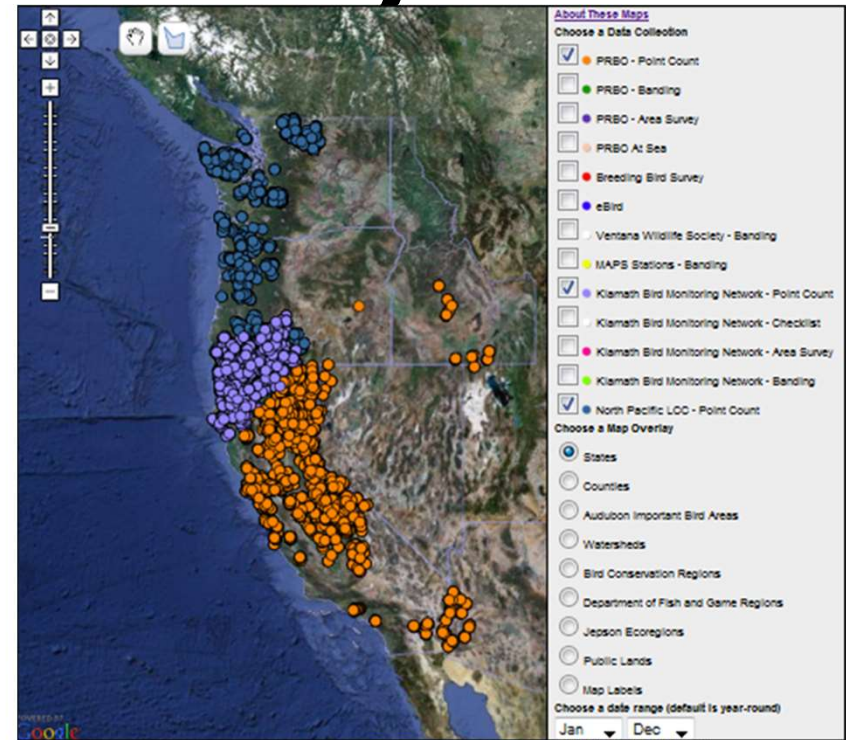
- Data integration for landscape-scale conservation analysis.
- Understanding climate change effects on species and ecosystems.
- Identify projected future biodiversity hotspots
- Provide interfaces to, geospatial and baseline data fundamental to understanding climate change effects



Data integration for landscape level conservation analysis



17 Data
contributors:
23 datasets
Over 900,000
new records



Understanding climate change effects on species

White-breasted Nuthatch

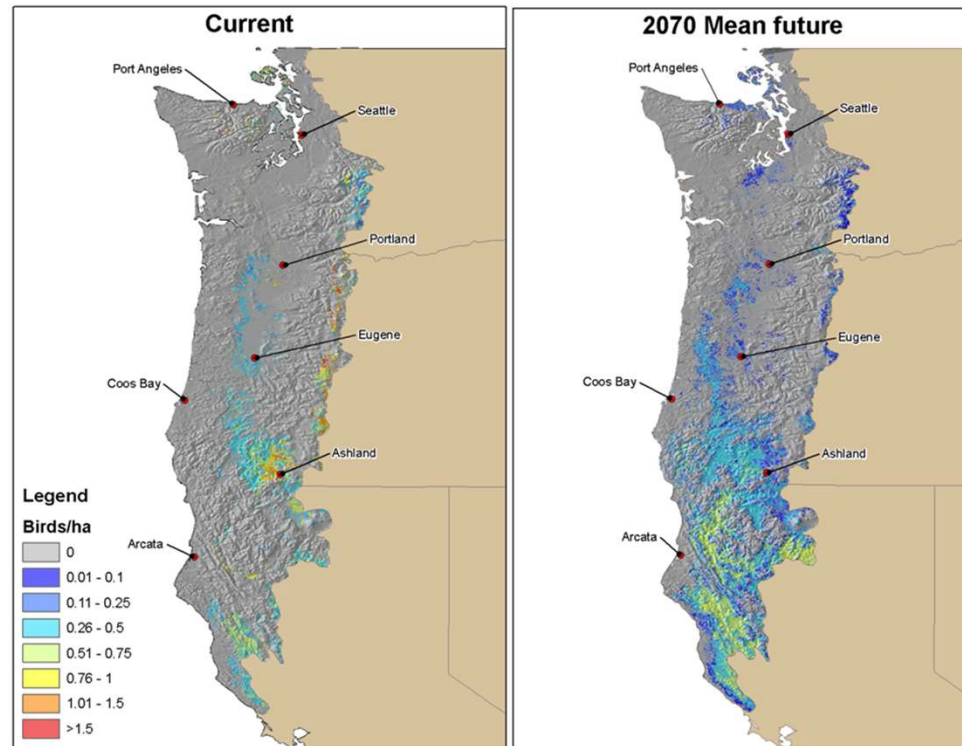
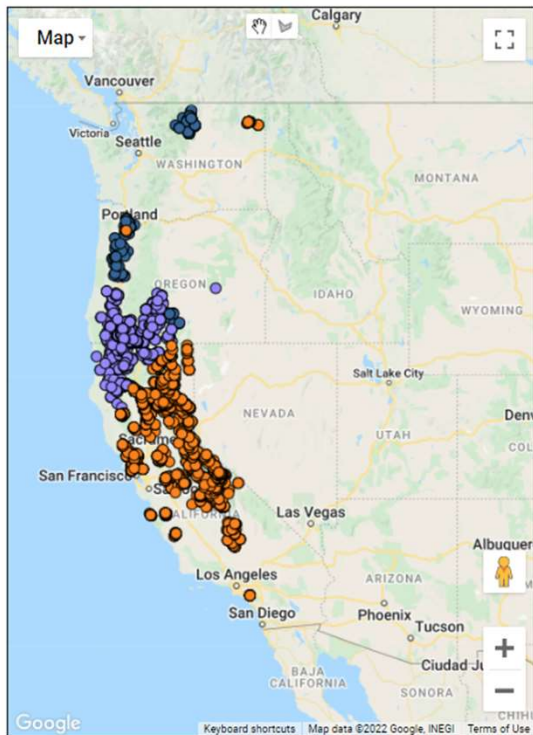


Photo (c)
Peter LaTourrette

Interactive web tools

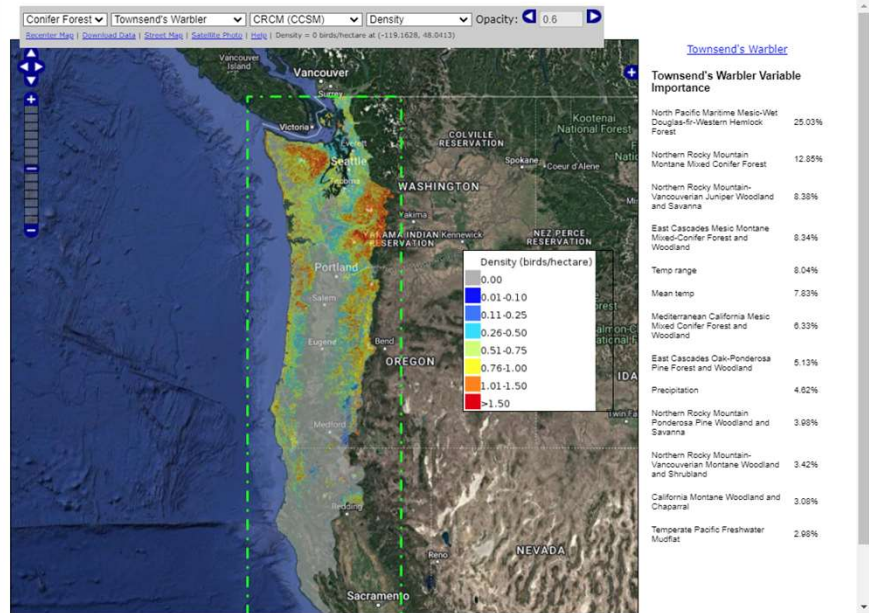
<https://data.pointblue.org/apps/nplcc/>

Bird Distribution Map

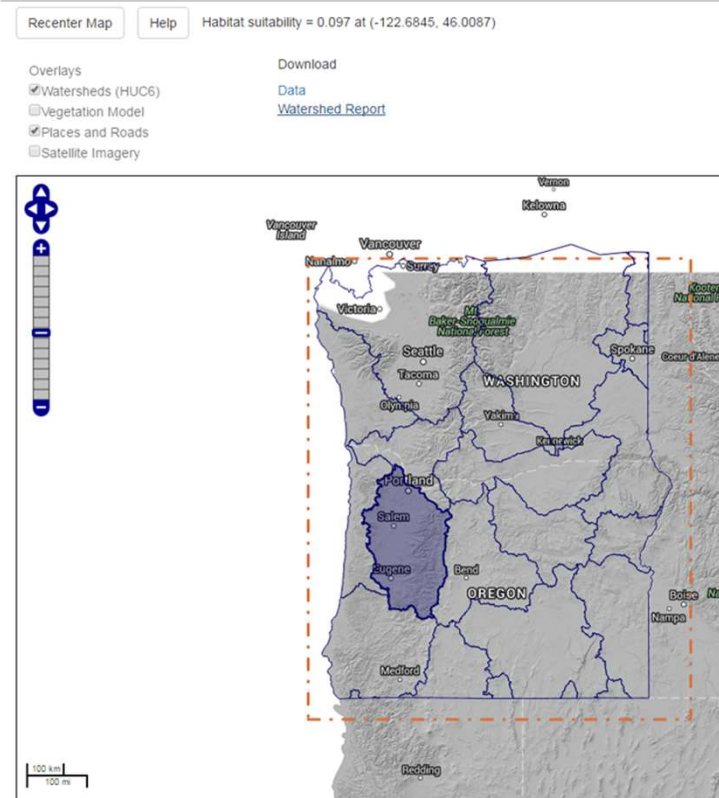
Select one of the 26 species to view how its distribution and density will respond to climate change. We provide projections for current and future (2070) climate and environmental conditions.

You can choose to view:

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



<http://data.pointblue.org/apps/nwcsc/>



What should you expect this year with AKN, DoD, and Air Force participation?





Legal Drivers

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



DoD AKN Strategic Approach



- DoD AKN Program Management Plan
- OSD and Military Services Support
- Cooperative Agreement
- Updates on Air Force-specific Work
- Planned Updates, Tools, Data Initiatives
- Case Studies
- On-going Support



DoD AKN Program Management Plan



- Outlines plan/strategy for DoD and AKN
- Background and work-to-date
- Data problems and solutions
- Outline goals and objectives for program
- 5-year needs for new tools and tasks; includes rough budgets
- Approach and work plan for each task
- Agencies and organizations involved and responsibilities



DoD AKN Program Management Plan



5-Year Needs/Initiatives

▪ **Training**

- Instructor-led training courses (in-person and virtual)
- Create video trainings for common actions (continuing)
- Monthly “Office Hours”

▪ **DoD-Specific Tools**

- DoD AKN portal page
- DoD user guide
- DoD data standards
- Scope of work language for contractors

▪ **Data Initiatives**

- Mission-Sensitive Species data
- MAPS and banding data (cost-share)
- BASH data

▪ **AKN Tools (partner initiatives)**

- Program query tool
- “Contractor” role
- “Analyst” role

▪ **On-going Support**

- DoD Program Management
- Historical data updates
- Technical support
- Annual maintenance



OSD and Military Services Support **AVIAN** KNOWLEDGE NETWORK

- ***Office of Secretary of Defense and Military Service Support***

- Ryan Orndorff and Liz Galli-Noble-Office of Secretary of Defense
- Karla Meyer, Kirsten Christopherson, Rebecca Meyer-Air Force
- Brian Moyer and Steve Sekscienski-Army
- Jacque Rice-Marine Corps
- Tammy Conkle and Jeff Gardner-Navy
- Jay Rubinoff-National Guard

- ***DoD Support Memo***

- Signed 24 June 2022; disseminated via AFCEC
- Mandate use DoD-wide

- ***DoD-wide Cooperative Agreement***

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



Military Service-Specific Actions



Air Force

- Funded two virtual trainings, Nov 30 – Dec 1, 2022 and February 7 & 8, 2023
- Funded initial training videos-COMplete; available on AKN YouTube Channel
- Funded five MSS Initiatives, BUOW first
- Funded data discovery survey, data prioritization, assistance with set number of data sets

Navy

- Funded data discovery survey and data prioritization
- Funded SOW language for contractors

Army

- Initial steps for data discovery survey for informed decisions

Marine Corps

- Commitment to fund improved tools and training
- Developing solid 5-year investment plan for trainings, data support, and tool development

National Guard

- Need to work with States
- ARNG Environmental Advisory Council's Conservation Committee approved Guard-specific training for FY23 hosted by ORARNG



Avian Knowledge Network
2 subscribers

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Thumbnail Description	Duration	Views & Time Ago
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AKN Point Blue Science Cloud - Sampling Units	7:23	4 views • 4 weeks ago
AKN Point Blue Science Cloud - Overview	11:10	13 views • 4 weeks ago

https://www.youtube.com/channel/UCi9in_tC9uTZa9Bo3HgnY1Q/featured

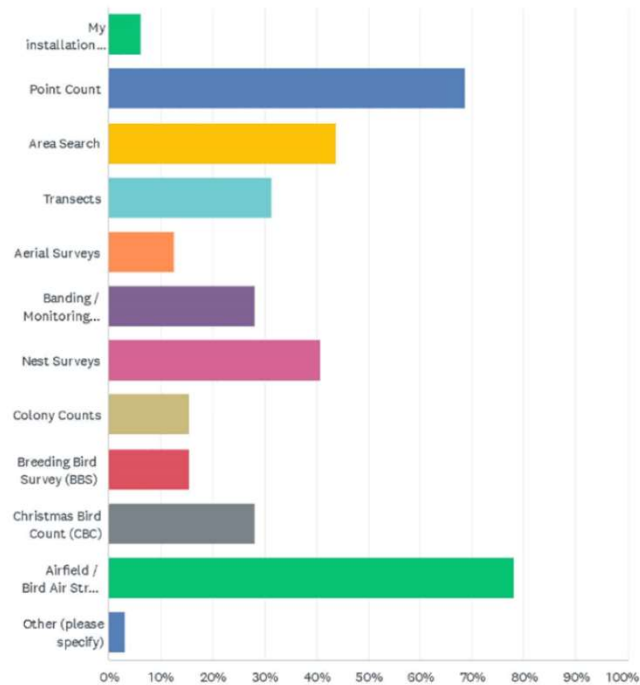


Data Discovery Survey & Training Questionnaire



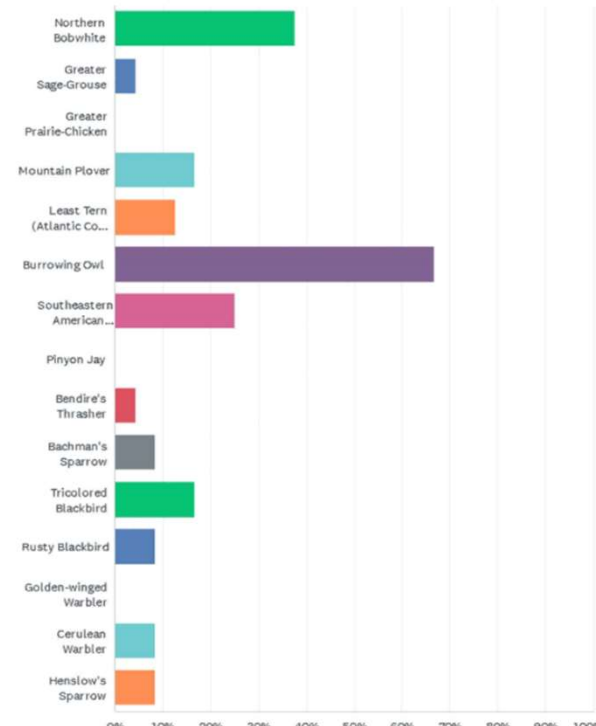
Q11 Please select the avian survey type(s) your installation has conducted and has either current or historical data available.

Answered: 32 Skipped: 1



Q17 Which DoD Mission Sensitive Species occur on your installation?

Answered: 24 Skipped: 9





DoD Mission-Sensitive Species (MSS)

AVIAN
KNOWLEDGE NETWORK



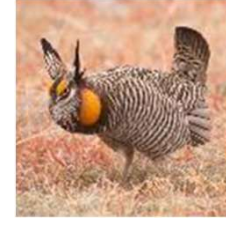
Northern Bobwhite



Greater Sage-grouse



Mountain Plover



Greater Prairie Chicken



Burrowing Owl



Least Tern (Atlantic Coast)



Cerulean Warbler



Golden-winged Warbler



Pinyon Jay



Southeastern American Kestrel



Henslow's Sparrow



Rusty Blackbird



Bendire's Thrasher



Tricolored Blackbird



Bachman's Sparrow



DoD MSS



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



DoD MSS Initiative



DATA

- Locate historical and contemporary data
- Identify and prioritize datasets and projects for AKN integration

FIELD METHODS

- Identify SMEs for each species and categorize acceptable and appropriate survey methodologies
- Work with DoD PIF Research and Monitoring Working Group

DATA ENTRY PROTOCOL

- Upload data protocols into AKN, ready for use by any user

MSS QUERY TOOL IN AKN

- Add MSS as a guild in tools, such as Analyst and Data Downloader



DoD MSS Initiative: *BUOW*



Data Survey

- Survey installations with BUOW
- Historical and contemporary data discovery and prioritization

DoD Focus Group of SMEs

- Identify SMEs for BUOW
- Clarify objectives
- Field method review
- Standard monitoring methods (acceptable and appropriate)

AKN Data Protocols

- Bulk upload
- Data entry user interface

Science Delivery

- Custom queries and analyses
- Decision support tools



- ✓ Standardized Monitoring Strategies for Burrowing Owls on DoD Installations (Garcia et al 2008)
- ✓ Burrowing Owl Survey Protocol and Mitigation Guidelines (California Burrowing Owl Consortium 1993)



DoD MSS Initiative: *PIJA*



Data Survey

- Survey installations with PIJA
- Historical and contemporary data discovery and prioritization

DoD Focus Group of SMEs

- Identify SMEs for PIJA
- Clarify objectives
- Field method review
- Standard monitoring methods (acceptable and appropriate)

AKN Data Protocols

- Bulk upload
- Data entry user interface

Science Delivery

- Custom queries and analyses
- Decision support tools



- ✓ Data Standards and Survey Protocol for Pinyon Jays Version 1.0 (Pinyon Jay Working Group 2021)
- ✓ Guidance for Locating Pinyon Jay Nests and Confirming Breeding (Pinyon Jay Working Group 2021)



DoD Data Needs

- BASH Data, specifically data collected by USDA-WS
- Banding data including MAPS
- Nest data
- Sensor and machine-collected data
- Survey 1,2,3 cross-walk directly into AKN
- Foreign OCONUS data



DoD-Specific Tools

Contract Language

- Possession of data collected by contractors is an issue identified by NMFWA Bird Conservation Working Group since its inception in 2014
- AKN offers a mechanism and structure
- Develop guidelines and language for DoD personnel to integrate into contracts
 - Option to upload directly into system (current limitations)
 - Option to deliver data in format acceptable for immediate upload into system



AKN-wide Tools

Enterprise Support for Programs

Need: Data curation, management, and analysis at multiple scales (installation, Military Service, and DoD-wide)

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

Plan: Add ability to create/manage Programs appropriately based on rights, especially for query and download of project data, user access management, protocol assignment, data sharing level.

Status: Completed the program enterprise warehouse feature preliminary research phase and are moving on to the prototype phase, where we will attempt our first successful build of a program warehouse. Expecting to roll out in next 18 months.



AKN-wide Tools

Updated User Roles

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

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

Plan: Creation of Contractor Role - Create a new role to support contractor who gets access (data entry, data download, data analysis) for the portion of a Project for which they are providing services.

Creation of Analyst Role - Create a new role to allow full access to a Project or Program for data download and analysis, but not ability to manage metadata or user access.

Status: Needs and roles identified and prioritized. Awaiting completion of the Enterprise Support for Programs.



DoD Use and Case Studies





Barry M. Goldwater Range (BMGR), AZ

AVIAN
KNOWLEDGE NETWORK

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





Fort Hood, TX

- Modified existing protocol to meet data entry needs for three survey types
- Structured sampling units across installation
- Bulk uploaded over 3,000 rows of data: now direct entering survey data

1. Select sampling units from the tree below.

Project Protocols

open new project

FORT_HOOD - [DOD_ARMY] Fort Hood

add one

copy tab

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

4 rows

select all

clear all

- ☐ ☒ FORT_HOOD - [DOD_ARMY] Fort Hood
- ☐ ☒ Grassland Point Counts 2016-2018 (GRASSLAND)
- ☐ ☒ Monitoring of Owls and Nightjars (MOON)
- ☐ ☒ Northern Bobwhite Point Counts (NOBO_PC)



MA Army National Guard

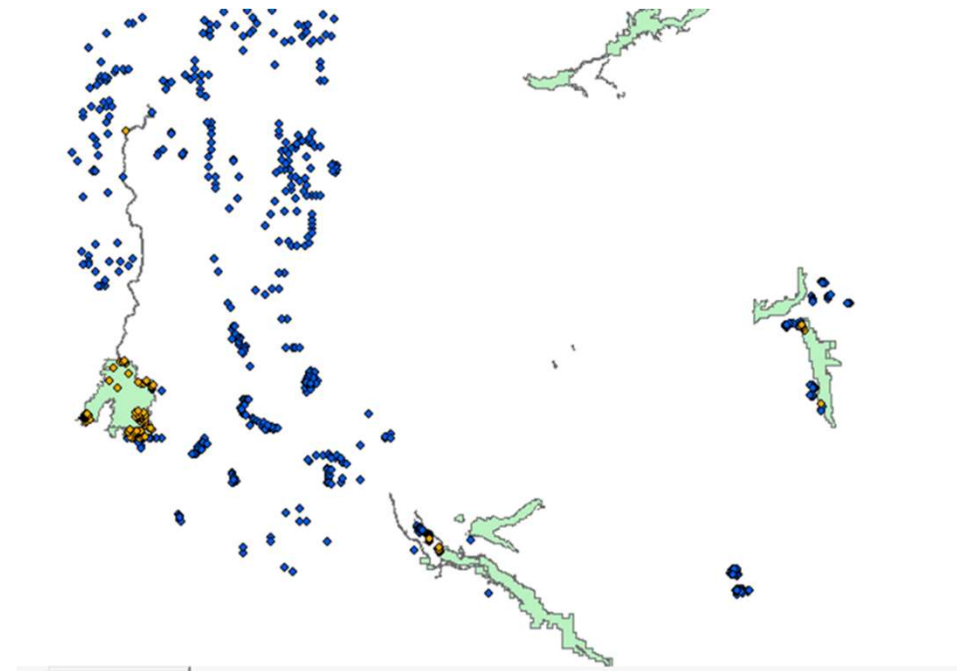
- Biologist leaving position one week after training
- Had 20+ years of data
- Working through data, realized inconsistencies in data entry
- Standardized protocol in system, showing required fields to be utilized in all future surveys
- Successfully uploaded 35,000 records prior to leaving DoD
- Data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



USACE-Willamette Valley Project, OR



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





Vance AFB, 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**

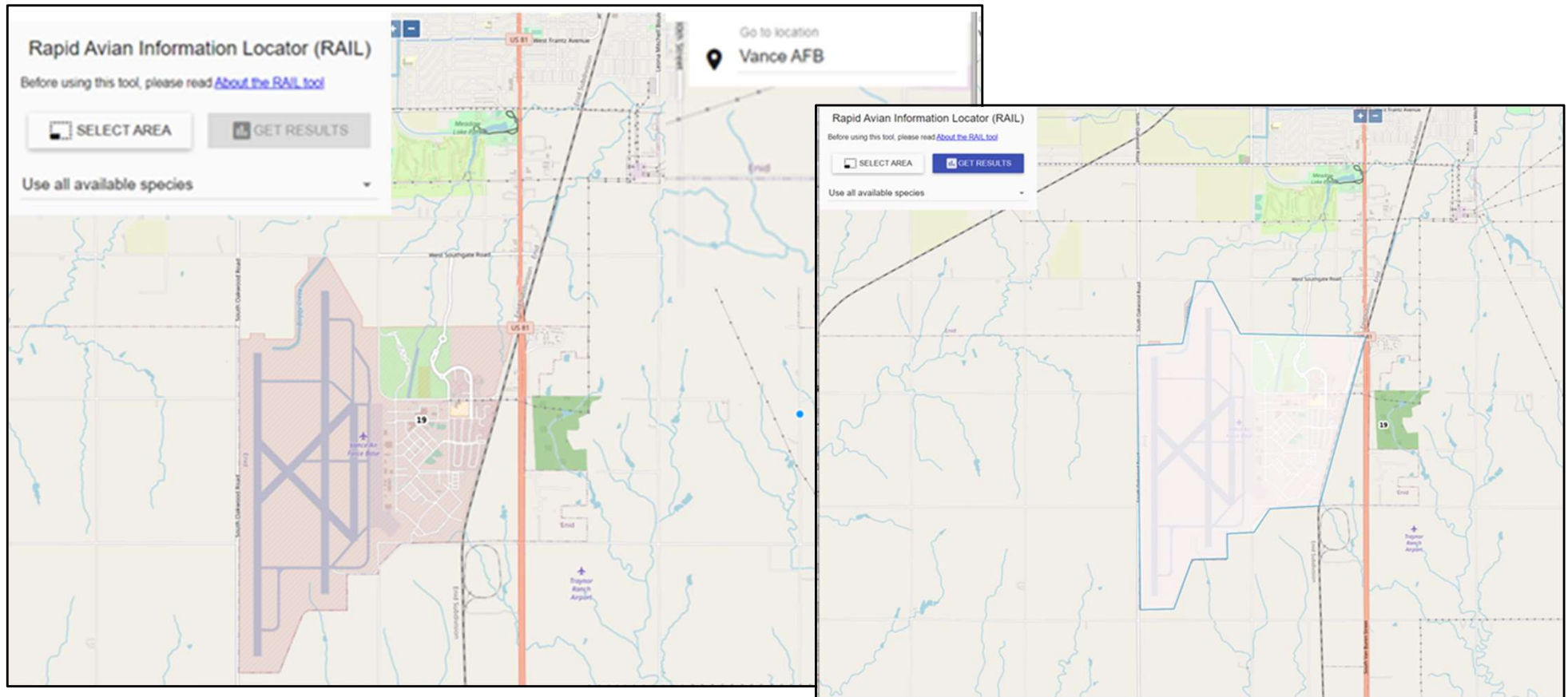


**R.A.I.L. tool
(Rapid Avian Information
Locator)**

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

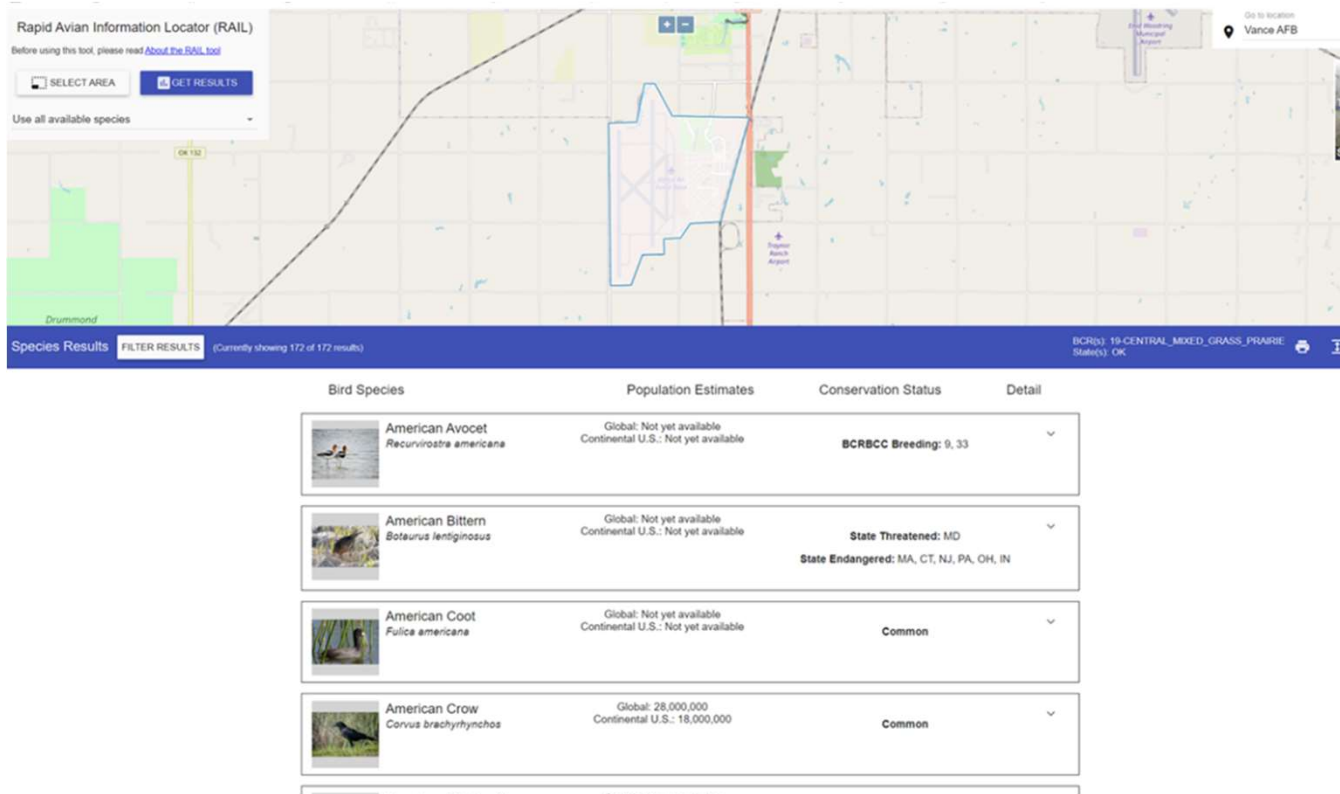


Vance AFB, R.A.I.L.





Vance AFB, R.A.I.L.



	American Redstart <i>Setophaga ruticilla</i>	Global: 42,000,000 Continental U.S.: 3,500,000	Common
	American Robin <i>Turdus migratorius</i>	Global: 120,000,000 Continental U.S.: 200,000,000	Common
	American Tree Sparrow <i>Spizella arborea</i>	Global: 26,000,000 Continental U.S.: 7,000,000	Common
	American White Pelican <i>Pelecanus erythrorhynchos</i>	Global: Not yet available Continental U.S.: Not yet available	BCRBCC Breeding: 1
	American Wigeon <i>Marula americana</i>	Global: Not yet available Continental U.S.: Not yet available	Common
	Bald Eagle <i>Haliaeetus leucocephalus</i>	Global: 100,000 Continental U.S.: Not yet available	State Threatened: MA, CT, NH, NY, IN State Endangered: NJ, VT, CA
	Baltimore Oriole <i>Icterus galbula</i>	Global: 10,000,000 Continental U.S.: 1,000,000	Common
	Bank Swallow <i>Hirundo lunifrons</i>	Global: 25,000,000 Continental U.S.: 5,000,000	State Threatened: CA
	Barn Owl <i>Bubo asio</i>	Global: 4,000,000 Continental U.S.: 1,000,000	State Threatened: DE State Endangered: VT, RI, IA, V
	Barn Swallow <i>Hirundo lunifrons</i>	Global: 100,000,000 Continental U.S.: 40,000,000	Common
	Bell's Vireo <i>Vireo bellii</i>	Global: 5,000,000 Continental U.S.: 1,000,000	Common
	Belted Kingfisher <i>Megascops asio</i>	Global: 1,000,000 Continental U.S.: 300,000	BCRBCC Breeding: 1
	Black-bellied Whistling Duck <i>Dendrocygna autumnalis</i>	Global: Not yet available Continental U.S.: Not yet available	Common



Vance AFB, R.A.I.L.

Filter Species Results

Weight Min (g)	Weight Max (g)	Habitat Category
Length Min (cm)	Length Max (cm)	Primary Breeding Habitat
Biology		
Egg Length Min (cm)	Egg Length Max (cm)	Incubation Period
Egg Width Min (cm)	Egg Width Max (cm)	Clutch Size
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
State Threatened or Endangered	Bird of Conservation Concern	☐ Migratory Bird Treaty Act (MRTA) - Listed

CLEAR ALL FILTERS

Rapid Avian Information Locator (RAIL)

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

SELECT AREA

GET RESULTS

Type a species...

Selected species

HASP - Harris's Sparrow

OSFL - Olive-sided Flycatcher

BAEA - Bald Eagle

Alpha Code

Alpha Code¹: Not yet available

Habitat

Habitat Category²: Forests

Primary Breeding Habitat⁴: Wetlands, Generalist

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

Egg width²: 4.7 - 6.3 cm

Incubation time-frame - Start²: Not yet available

Incubation time-frame - Stop²: Not yet available

Bald Eagle

Haliaeetus leucocephalus

Alpha Code¹: Not yet available

Habitat

Habitat Category²: Forests

Primary Breeding Habitat⁴: Wetlands, Generalist

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

Egg width²: 4.7 - 6.3 cm

Incubation time-frame - Start²: Not yet available

Incubation time-frame - Stop²: Not yet available

Global: 200,000

Continental U.S.: Not yet available

State Threatened: MA, CT, NH, NY, TX

State Endangered: NJ, VT, CA

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

Conservation Status

Continental Importance⁴: Not yet available

Half Life⁴: Not yet available

Federally Threatened²: No

Federally Endangered²: No

State Threatened²: MA, CT, NH, NY, TX

State Endangered²: NJ, VT, CA

Migratory Bird Treaty Act⁸: Listed

Bird of Conservation Concern⁹: No

Bird of Conservation Concern Entire Range⁹: Not yet available

BCRs where BCC Breeding⁹: Not yet available

BCRs where BCC Non-breeding⁹: Not yet available

[More information on BCR's](#)

Phenology Graph

Presence Abundance Effort

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec



DoD Mission Benefits



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



Enabling the Mission, Defending the Resources



Sign-up for DoD AKN Updates



Programs Performance Stakeholders References

DoD Legacy Resource Management Program

<https://www.denix.osd.mil/legacy/home/index.html>

Contact the POC for DoD Legacy Resource Management Program

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

***Required**

*Your Name:

*Email Address:

Phone Number:

*Subject:

*Message:

☐ I'm not a robot

Search DoD Legacy Resource M

Legacy Listserv

[Click here to sign up for the Legacy Listserv](#)

News

Natural Selections Newsletter Winter 2021-2022 (3.37 MB)

2021 DoD Climate Action plan (112.11 MB)

Fantastic Flights: Technology Tells the Tale of Avian Travels (Legacy #16-764)

Online Tools

Conserving Biodiversity on Military Lands: A Guide for Natural Resource Managers 3rd Edition

Biodiversity Outreach Tools

Climate Adaptation for DoD Natural Resource Managers, 2019 (Legacy Project #16-790)

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

Programs Performance Stakeholders References 1

DoD Partners in Flight (DoD PIF)

<https://www.denix.osd.mil/dodpif/about/contact-dod-pif/index.html#>

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

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***Required**

*Your Name:

*Email Address:

Phone Number:

*Subject:

*Message:

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Find Your DoD PIF Contact

DoD Partners in Flight (DoD PIF) Navigation:

- DoD Plans
- Strategic Plan
- Important Bird Areas
- Important Bird Areas
- Military Lands as Important Bird Areas
- About Resources
- Fact Sheets
- Birds of North America Online
- Species of Concern
- Bird Conservation Map
- Species Profiles
- Archives
- Kirtland's Warbler
- About KW Archives
- Articles
- Books and Book Chapters
- Cooperative Agreements
- Correspondence
- Interviews
- Maps
- Miscellaneous Information
- Photos
- Plans
- Policy
- Press Releases
- Profiles
- Radio and Film
- Outreach
- KW Reports
- KW Scientific Papers
- Sighting and Banding Records
- Theses and Dissertations
- Contact POC

Spotlight Articles

DoD PIF Photo Library

DoD PIF Photo Library



On-going Support



- ***Monthly Virtual Office Hours***

- Monthly "Office Hours"
- Calendar and signups [here](#)
- At NMFWA, Mar 20-24, 2023, St. Louis (in-person)

- ***Other Opportunities***

- Training videos on AKN YouTube Channel
(https://www.youtube.com/channel/UCi9in_tC9uTZa9Bo3HgnY1Q/featured)
- Funded data initiatives from Military Services
- Email me, elizabeth.s.neipert@erdc.dren.mil



What Updates, Initiatives, Tools Do You Want to See?

Open Forum

Pluses and Deltas

Wrap-up



DoD and the AKN: Who, What, Where, When , Why, and How

DoD Regional Training, January 24-26, 2023

Sam Veloz, Dianne Miller, Michael Fitzgibbon Point Blue Conservation Science
John Alexander, Caitlyn Gillespie, Ellie Armstrong Klamath Bird Observatory
Elizabeth Neipert, US Army ERDC

**Thank you for participating &
thank you to our hosts, White Sands Missile Range**

