State/Federal Studies

John Moriarty, U.S. Coast Guard

Jason Sierman, ODOE

Dave Pereksta, BOEM

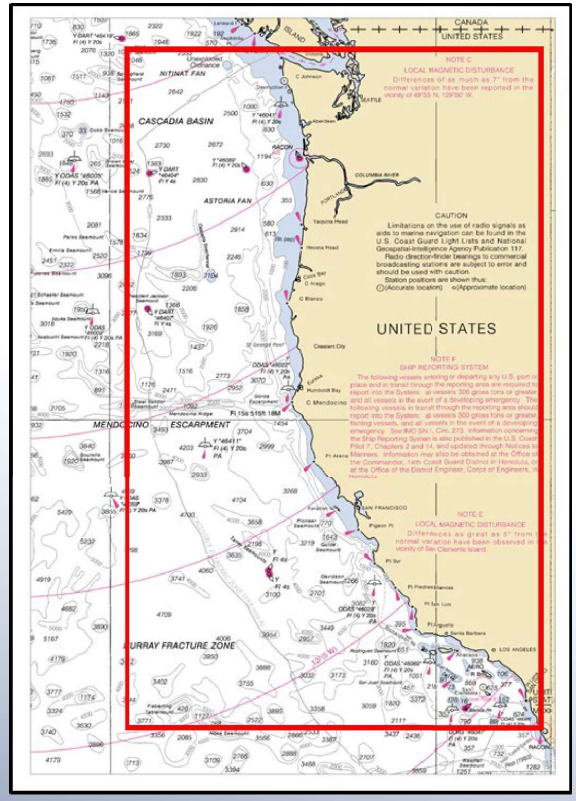
Dave Ball, BOEM

PACIFIC COAST PORT ACCESS ROUTE STUDY (PAC-PARS)

U.S. Coast Guard
Eleventh District

What is the Pacific Coast Port Access Route Study?

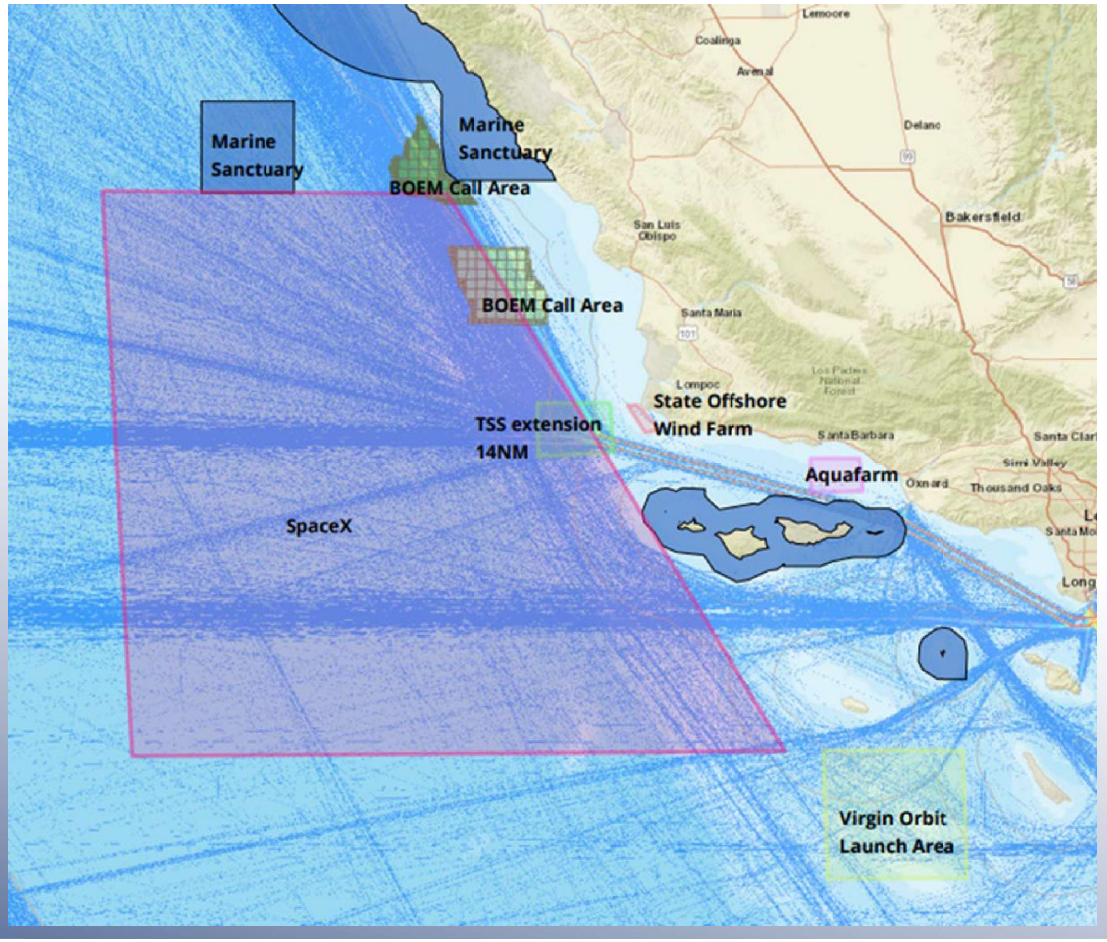
- Port and Waterways Safety Act (PWSA)
  - P.L. 95-474; 33 U.S.C. 1223
- Requirements:
  - Required before establishing new or adjusting existing FAIRWAYS and/or TRAFFIC SEPARATION SCHEMES.
  - Coordinate with stakeholders for safe routes.
- Coast Guard Responsibility
  - Federal Regulations manage routes with:
    - Fairways
    - Traffic Separation Schemes
    - Channels
    - Aids to Navigation
  - Navigation Safety Risk Assessment



U.S. Coast Guard
Eleventh District

What is prompting the PAC-PARS study?

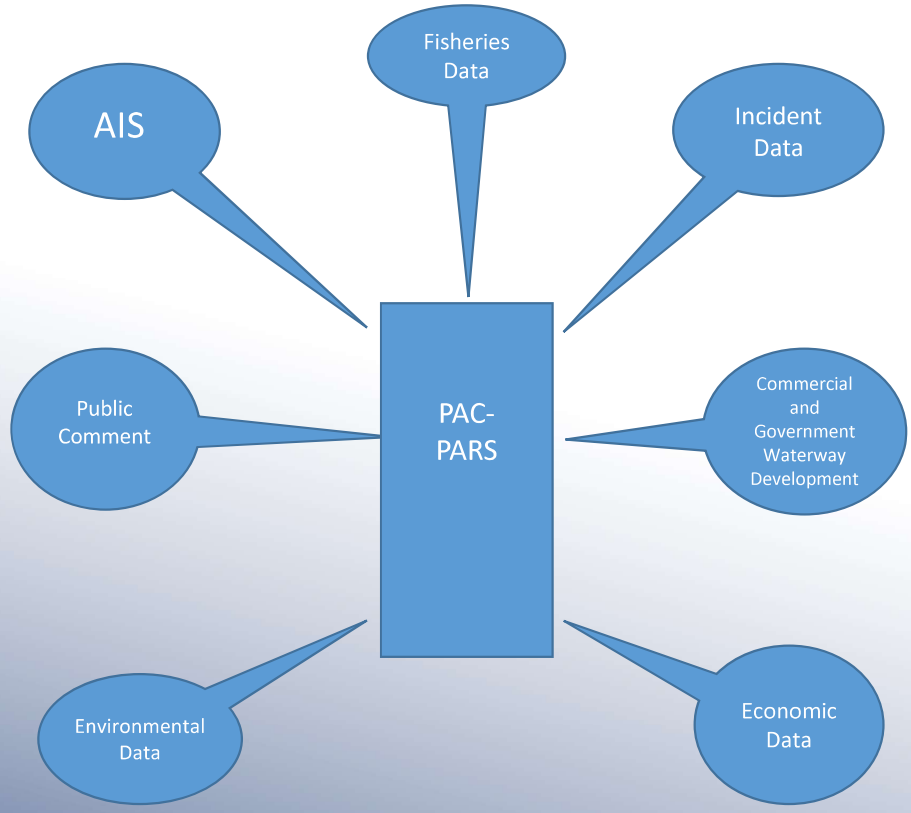
- NOAA proposed Area to be Avoided expansion around Channel Island.
- BOEM Call Areas
- Proposed Chumash Heritage National Marine Sanctuary
- New development of offshore infrastructure like:
  - Offshore Renewable Energy Platforms
  - Aquafarms
  - Commercial & Government Space Activities
  - Increased shipping
  - Military Exercises
  - Military Tests



U.S. Coast Guard
Eleventh District

Phase 1 – Data Gathering

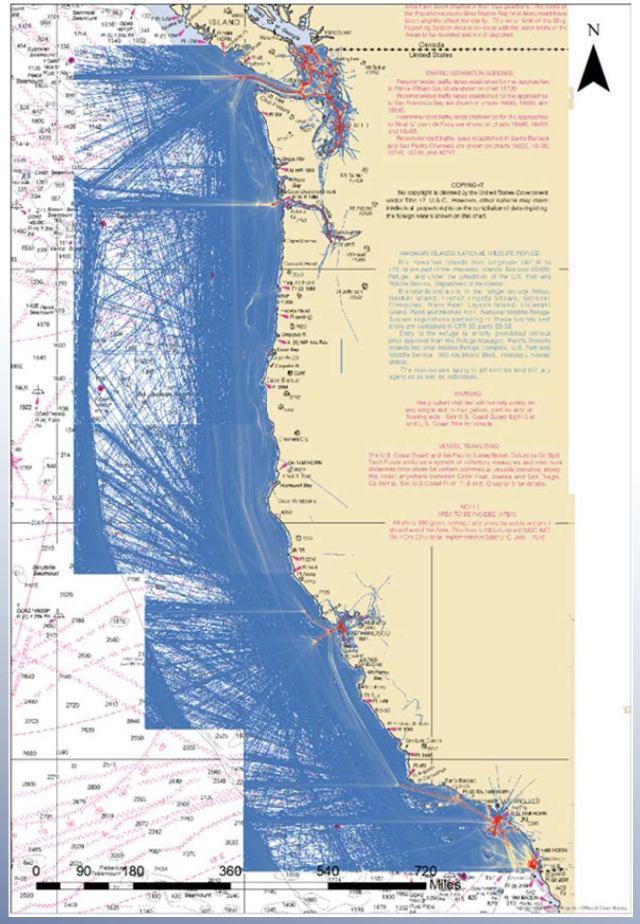
- Determine Shipping Routes Based on AIS
  - Data will be used to produce density plots by vessel type.
- Stakeholder & Public Outreach
  - Local, regional, national, and international port stakeholders are encouraged to comment.
  - Open communications with towing vessel industry and fisheries through public forums and federal register comments.
- Gather Marine Transportation System Data
  - Dive into the economic benefits of coastal industries.
- Planning Guidelines & Recommendations
  - Previous studies were reviewed for past comments and recommendations.



U.S. Coast Guard
Eleventh District

Phase 2 – Applying Suitability Criteria

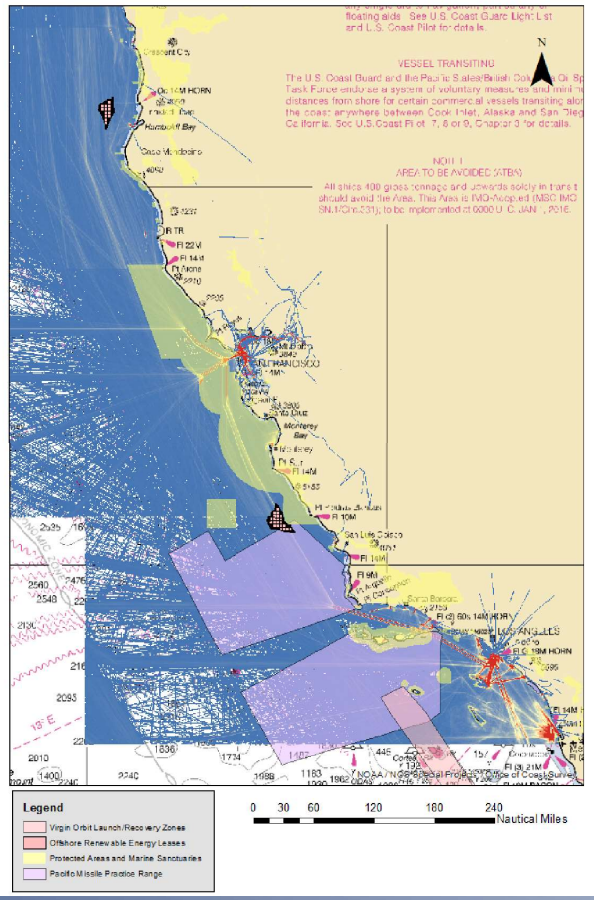
- Analyze the AIS data to determine existing shipping routes.
- The Red-Yellow-Green methodology:
  - To determine where there are high, medium, or low conflict areas of the study area.
  - Apply risk criteria to the area, and again to any proposed changes.
  - Assess if mitigating measures can be implemented to decrease risk.

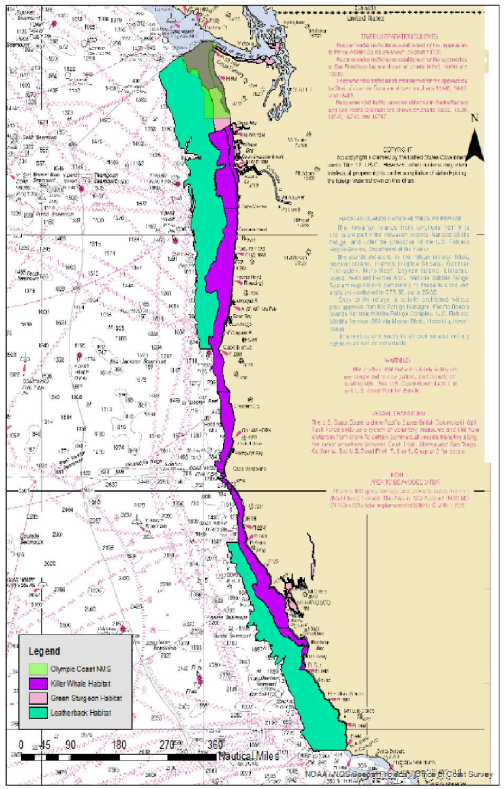


U.S. Coast Guard
Eleventh District

Phase 3 – Modeling & Analysis

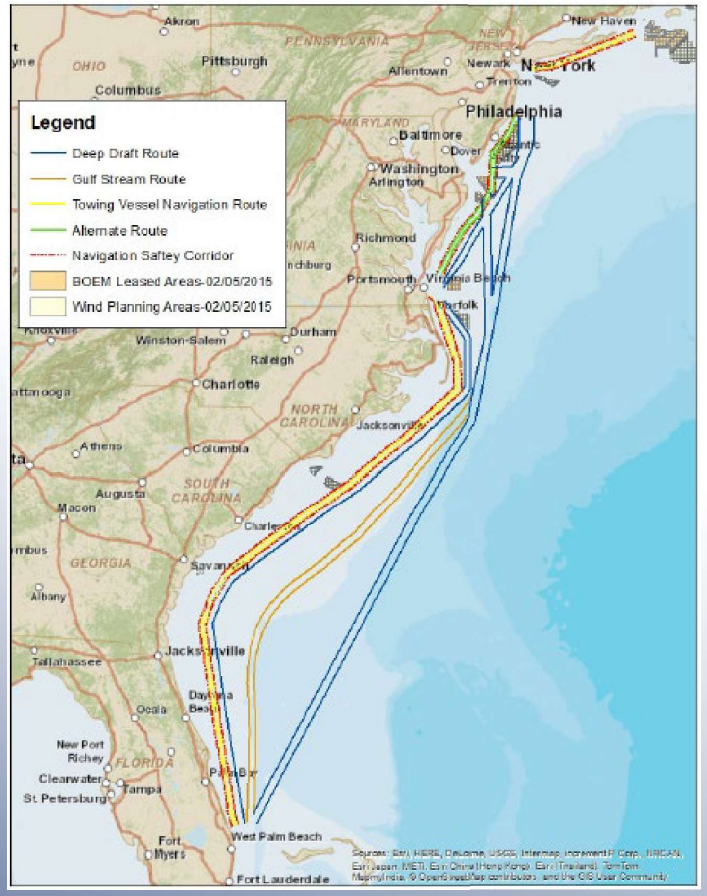
- Develop a GIS model to show all current and future developments and traffic data.
- Evaluate options if new routing measures are necessary.
- Identify navigation safety corridors from recommended routes and traffic data.
  - Develop recommendations from the model.





Phase 4 – Implementing Study Results

- Any recommendations or proposed mitigating measures will be published in the final study.
- The image to the right are the recommended routes determined by the Atlantic Coast PARS.



Questions?

- Flyers for info and access will be distributed.
- A shared mailbox was created for the study:
  - PACPARS@USCG.MIL
- Docket “USCG-2021-0345”

Oregon's Renewable Energy Siting Assessment (ORESA)

Jason Sierman
Sr. Energy Policy Analyst

October 21, 2021

OREGON DEPARTMENT OF ENERGY

ORESA Topics

- **Background**
- **Goals & Objectives**
- **Project Timeline & Its 5 Components**
- **Snapshots of the 5 Components**
- **Ways to Stay Informed**

ORESA: Background

- $1.1 million grant through U.S. Department of Defense - Office of Local Defense Community Cooperation (DOD-OLDCC).

- Grant team consists of:
  - **Oregon Department of Energy**
  - **Oregon Department of Land Conservation & Development**
  - **Oregon State University's Institute for Natural Resources**

- Project also incorporated expertise and input from:
  - **state, local, and tribal governments;**
  - **industry and technical advisors;** and
  - **cross-sectoral stakeholder and community engagement**.

ORESA: Goals and Objectives

DOD Goals

Support **military compatibility** by **raising awareness** about the importance of **early coordination** with the military and other local, state, and regional governmental agencies.

Project Goals

Create **relevant educational tools** to help **minimize conflict and support development opportunities** by informing stakeholders, agencies, local governments, and policy makers about:

- renewable energy development,
- military training and operational areas,
- economic/community benefits,
- land use considerations, such as - natural, cultural, and environmental resources,
- and other regulatory requirements.

Project Objectives

Baseline data, information, and perspectives to create **a transparent, consistent collection of trusted, accurate information** in Oregon, without recommendations or endorsements, and note where information may be imprecise or uncertain.
Project Closes March 2022.

ORESA: 5 Components

1. Renewable Energy Market & Industry Assessment *(ODOE / E3)*

- Model future opportunity for renewables
- Perspectives of challenges and opportunities RE development community
- **COMPLETED**

2. Military Needs & Interests Assessment *(ODOE / DLCD / ESS)*

- Assess interaction of current and future military activity and RE development
- **COMPLETED**

3. Natural Resources, Environment, & Development: Opportunities & Constraints Assessment *(DLCD / CBI)*

- Gather information on natural, cultural, & env. resources
- Identify opportunities and constraints for RE development
- **COMPLETED**

4. Siting Procedures Review *(ODOE / DLCD)*

- Review and analysis of siting regulations, permitting, and project review processes
- **FINAL REPORT DRAFTING**

5. Mapping & Reporting Tool *(INR)*

- Develop interactive mapping and reporting tool
- Engage with stakeholders to inform and test functionality and reporting features
- **Status: Convening Focus Groups Meetings; Beta process in winter**

=

Project Deliverables

ORESA Report & ORESA Mapping & Reporting Tool

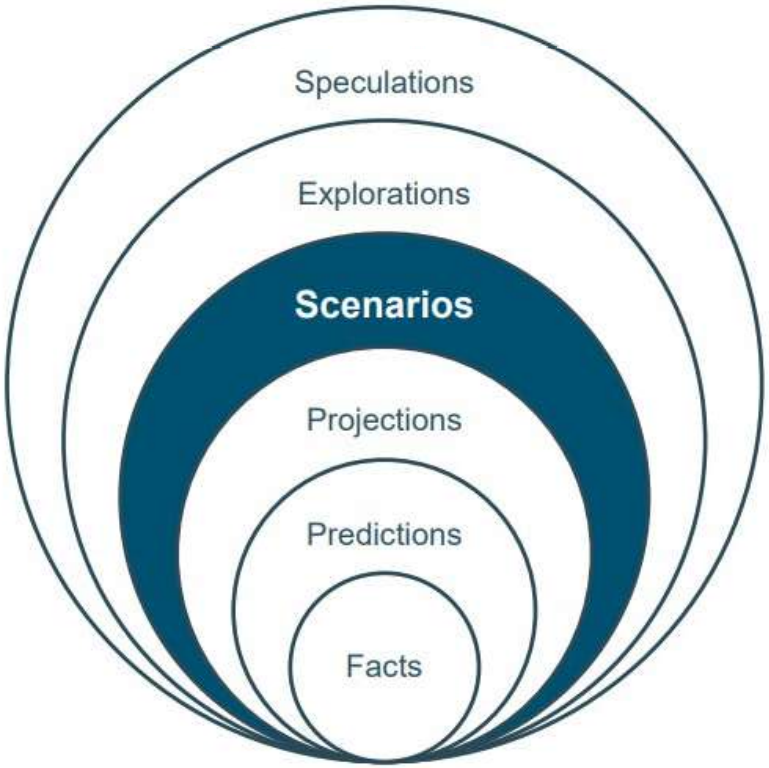
Spring 2022

1

Renewable Energy Market & Industry Assessment

+ This study uses scenario analysis to identify and analyze plausible outcomes for renewable development within the state of Oregon over the next fifteen years

+ Goal of scenario analysis is not to predict an outcome—but to highlight key drivers of and differences between scenarios to inform future decision making

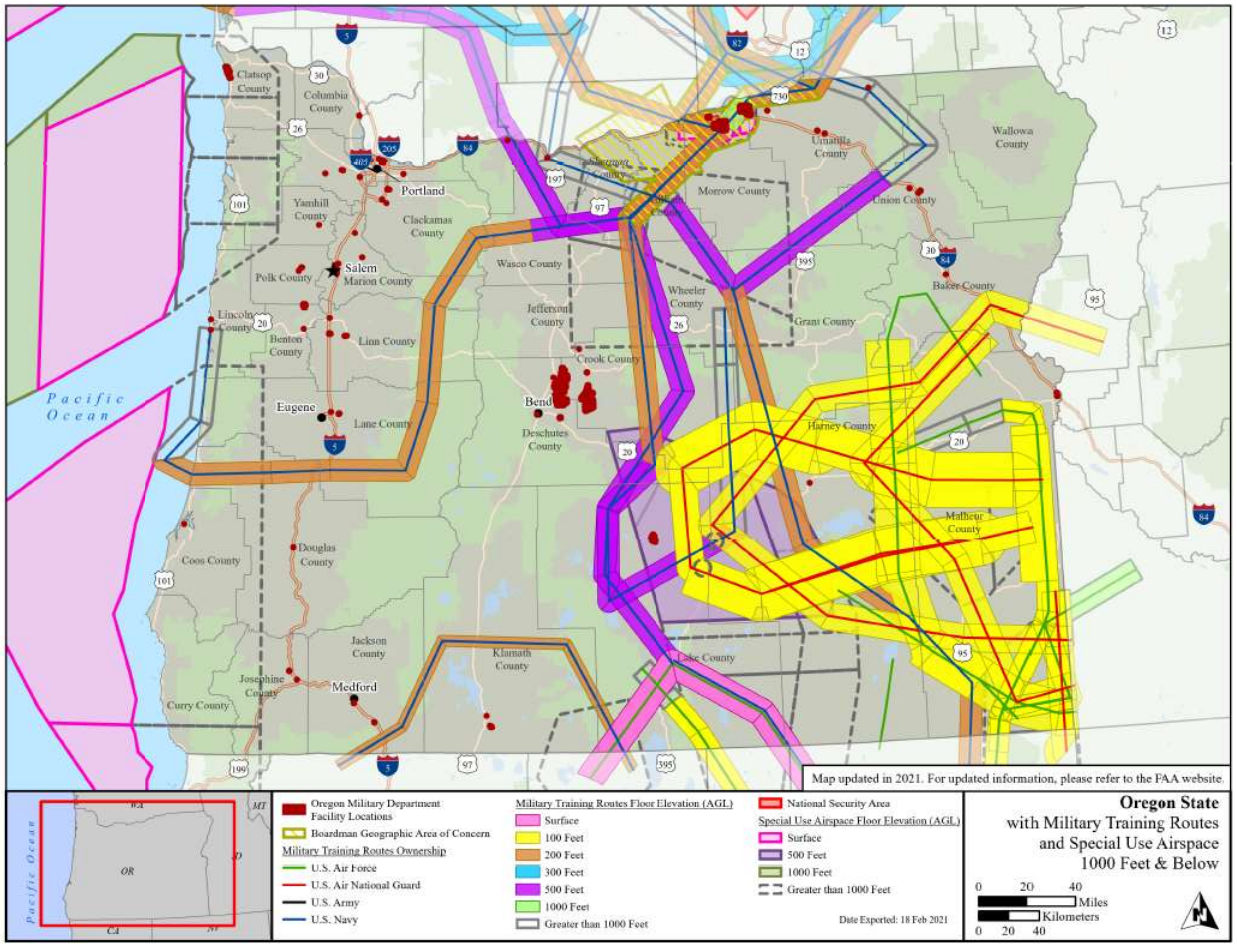


STATUS

- E3 webinar recordings available on ORESA website
- Final report completed, ORESA synthesizing findings

2

Military Needs & Interests Assessment



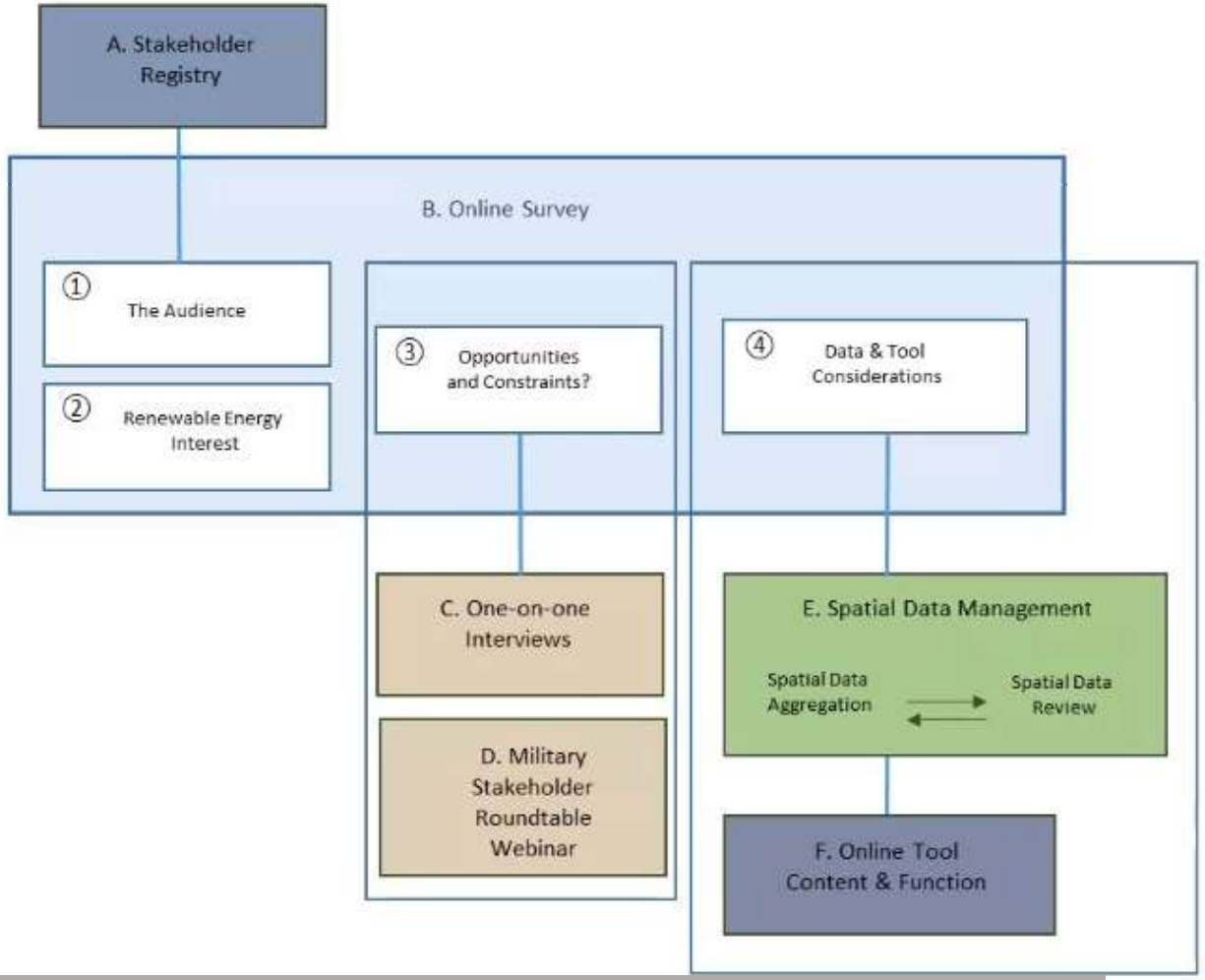
STATUS

- ESS research and feedback from Military entities complete
- Final report completed, ORESA synthesizing findings

3

Natural Resources, Environment, and Development:

Opportunities & Constraints

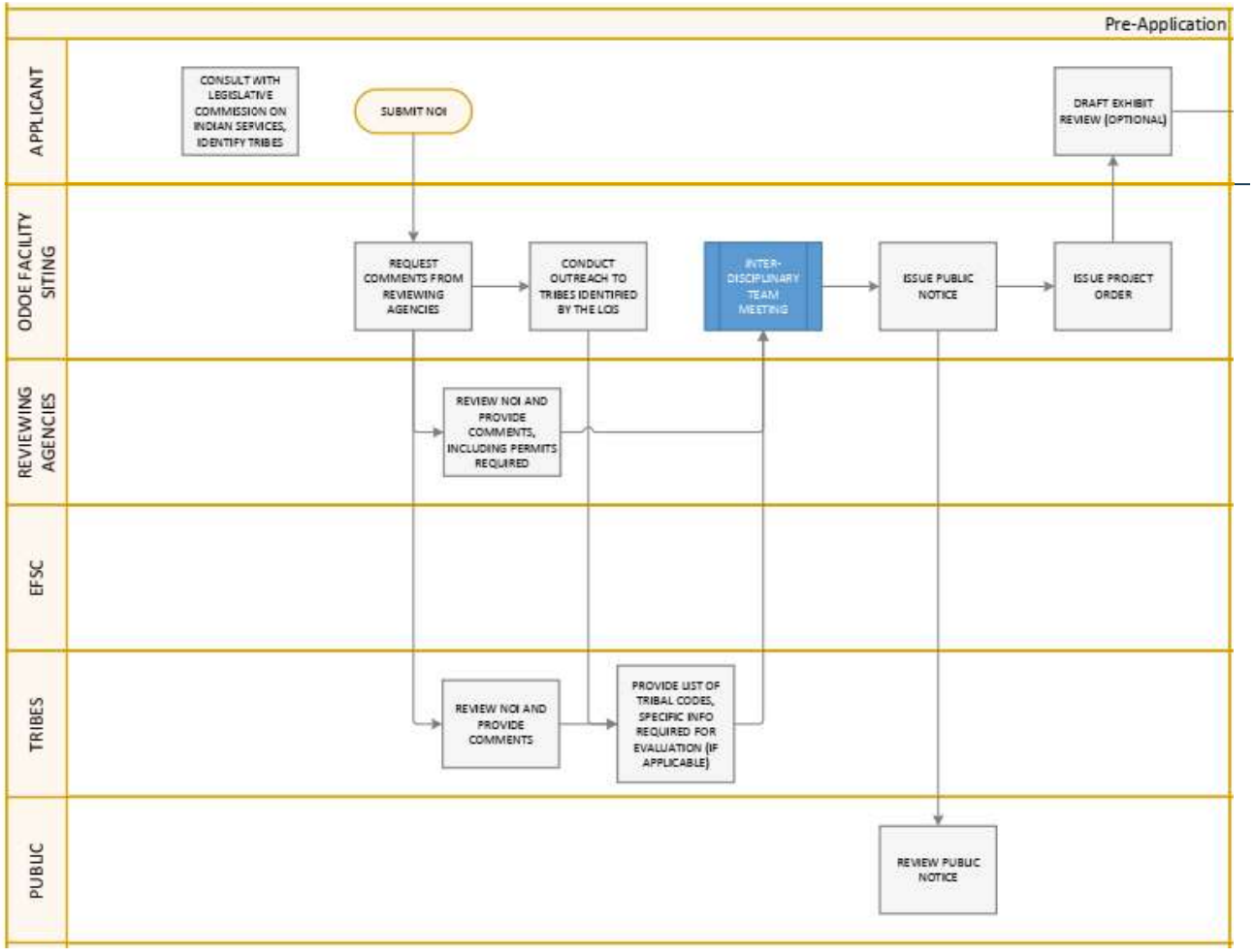


STATUS

- CBI hosted webinar series and recordings available online
- Final report completed, ORESA synthesizing findings

4

Siting Procedures Review



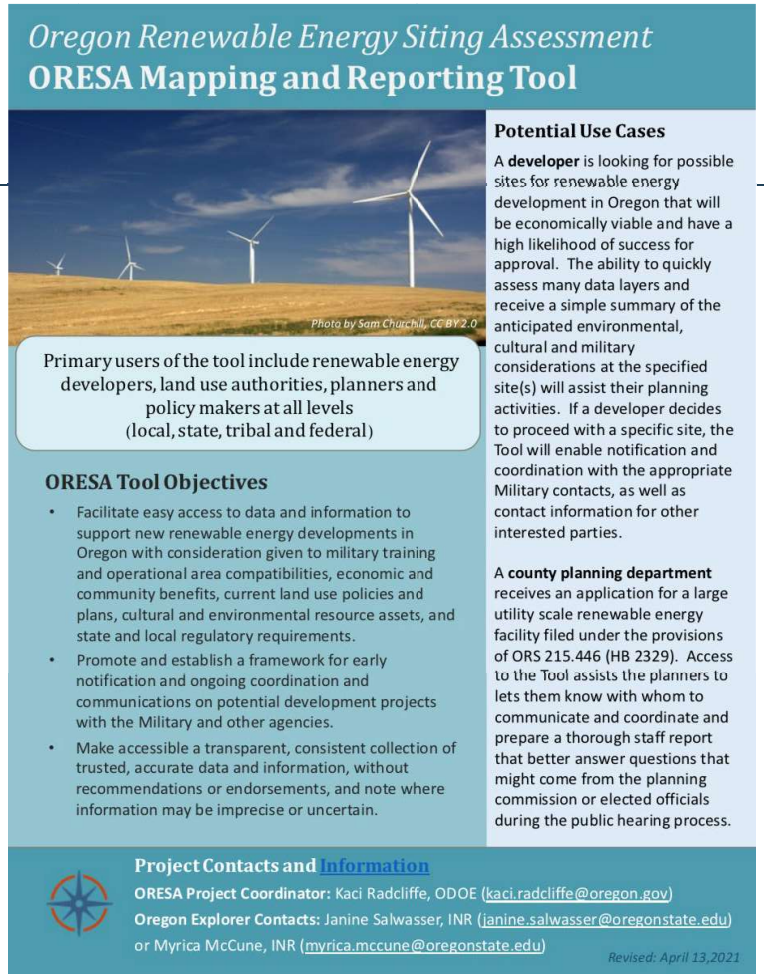
STATUS

- Research and external feedback received for accuracy check
- Final report in final edits and prep for publication

5

Mapping and Reporting Tool

[2-pager Summary of mapping and reporting tool]



Oregon Renewable Energy Siting Assessment
ORESA Mapping and Reporting Tool

Photo by Sam Churchill, CC BY 2.0

Primary users of the tool include renewable energy developers, land use authorities, planners and policy makers at all levels (local, state, tribal and federal)

ORESA Tool Objectives

- Facilitate easy access to data and information to support new renewable energy developments in Oregon with consideration given to military training and operational area compatibilities, economic and community benefits, current land use policies and plans, cultural and environmental resource assets, and state and local regulatory requirements.
- Promote and establish a framework for early notification and ongoing coordination and communications on potential development projects with the Military and other agencies.
- Make accessible a transparent, consistent collection of trusted, accurate data and information, without recommendations or endorsements, and note where information may be imprecise or uncertain.

Potential Use Cases

A **developer** is looking for possible sites for renewable energy development in Oregon that will be economically viable and have a high likelihood of success for approval. The ability to quickly assess many data layers and receive a simple summary of the anticipated environmental, cultural and military considerations at the specified site(s) will assist their planning activities. If a developer decides to proceed with a specific site, the Tool will enable notification and coordination with the appropriate Military contacts, as well as contact information for other interested parties.

A **county planning department** receives an application for a large utility scale renewable energy facility filed under the provisions of ORS 215.446 (HB 2329). Access to the Tool assists the planners to lets them know with whom to communicate and coordinate and prepare a thorough staff report that better answer questions that might come from the planning commission or elected officials during the public hearing process.

Project Contacts and Information

ORESA Project Coordinator: Kaci Radcliffe, ODOE (kaci.radcliffe@oregon.gov)
Oregon Explorer Contacts: Janine Salwasser, INR (janine.salwasser@oregonstate.edu) or Myrica McCune, INR (myrica.mccune@oregonstate.edu)

Revised: April 13,2021

This map with military data layers is displayed for illustrative purposes only

The tool will be housed on the Oregon Explorer, and maintained by the Institute for Natural Resources (INR) and the Oregon State University Libraries & Press

ORESA Mapping & Reporting Tool Functionality

Users will be involved in the development of the ORESA tool. Anticipated functionality includes, but is not limited to:

- Ability to filter and query data layers, measure areas and distances, view metadata, download data, add external map services, upload local data, and create maps
- Identification of restricted areas as well as sites with additional considerations and trade-offs
- Inclusion of military contact information for notification and coordination in applicable locations
- Creation of a Renewable Energy Site Report for an area of interest with additional context and maps in pdf format

Tool Timeline

- **Fall 2019 Project Begins**
  - *Scoping, Cross Assessment Coordination, Stakeholder Engagement & Data Gathering*
- **Spring 2021 Data Collection Complete**
  - *Tool Development & User Group Meetings*
- **Summer 2021 Beta Tool Ready for Testing**
  - *Beta Testing with Users & Tool Improvements*
- **Winter 2021 Tool Launch on the Oregon Explorer**

www.oregonexplorer.info

Oregon Renewable Energy Siting Assessment (ORESA) Project Partners

Oregon Department of Energy · Oregon Department of Land Conservation & Development · Oregon State University Libraries and Press · Institute for Natural Resources · NAS Whidbey Island

Funded by a grant from the Department of Defense Office of Economic Adjustment (OEA)

STATUS

- INR coordinated data transfer across the three assessments and procedures report
- Convening focus and user groups to inform tool development and beta testing

Staying Informed on ORESA

Learn more about the ORESA project & external engagement:
https://www.oregon.gov/energy/energy-oregon/Pages/ORESA.aspx

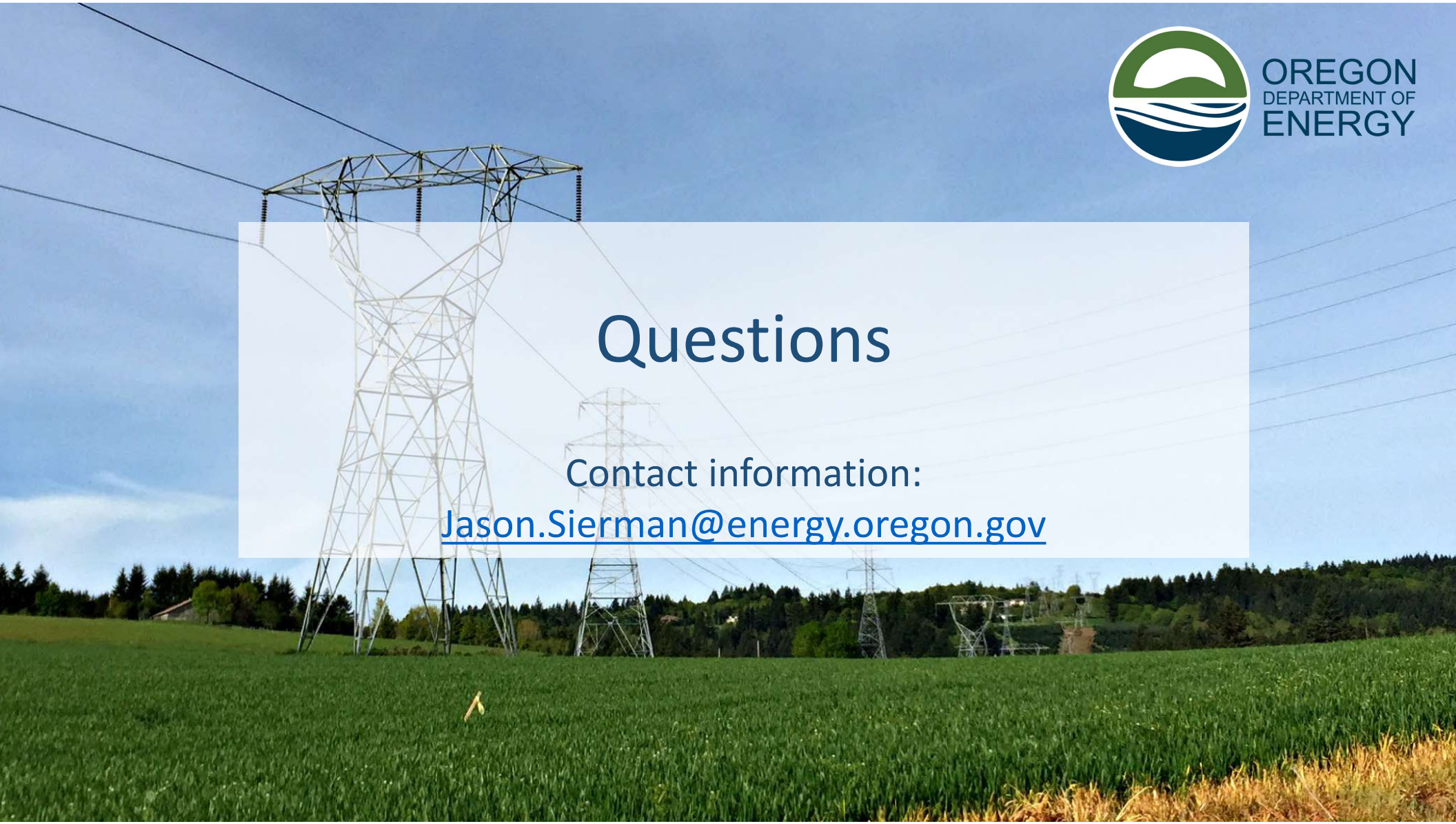
Sign up for email updates on the ORESA project:
http://web.energy.oregon.gov/cn/a6n53/subscribe

OREGON DEPARTMENT OF ENERGY

INSTITUTE FOR NATURAL RESOURCES

NAS WHIDBEY ISLAND

OREGON Department of Land Conservation & Development



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Questions

Contact information:

Jason.Sierman@energy.oregon.gov

BOEM Pacific Avian Study Strategy

Dave Pereksta, Avian Biologist
BOEM Pacific Office


© David Pereksta

Bird Baseline – Shore, Nearshore, and Pelagic

Species Diversity on the OCS

- **Nearshore and shoreline species**
  - Sea ducks, loons, grebes, shorebirds, gulls, terns
- **Pelagic species primarily in deep offshore waters**
  - 50+ species including tubenoses, jaegers, alcids
  - Pelagic shorebirds, terns, gulls

Special Status Species

- **4 ESA listed species in Oregon**
- **66 species with some level of special status on the Pacific OCS and coast**
  - Several very rare species endemic to the Pacific OCS

Interactions…Birds Have It Tough

Hazards

- Birds at risk from anthropogenic sources

Annual Bird Deaths in the U.S. and Canada

- Cats: 2.6-3.8 billion
  - 33 island bird extinctions worldwide!
- Windows: 624 million
- Automobiles: 214 million
- Power lines: 175 million
- Pesticides and toxics: 67-90 million
- Fossil fuel powerplants: 14 million
- Communication towers: 7 million
- Persecution: 4 million
- Oil and waste water: 1.4-2 million
- Land-based wind turbines: 100,000-440,000 (4.2 birds/MW/year)

Offshore Wind Energy Effects - Birds

Collision Hazard

- Rotors and support towers

Avoidance

- Displacement from feeding grounds
- Movement barriers
  - Migration and feeding

Attraction

- Prey base and habitat alteration/completion
- Light attraction/disorientation
- Perching – including falcons

Effects from one project could be minimal, but cumulative impacts from multiple projects could be substantial

Ecological Information for Renewable Energy

- Seasonal distribution, abundance, density
- Migration routes and patterns
- Attraction and avoidance behavior
- Displacement effects
- Prey base changes
- Nocturnal activity and movement
- Effects of noise, vibration, lights, structures
- Collision risk

Difficult information to collect due to weather, remoteness, vessel availability, etc.

Multi-tiered Approach and Goals

Broad-scale Assessments

- Facilitate planning at landscape level
- Government supported

Site-specific Assessments

- Project-level planning and assessment
- Project proponent supported
- BOEM guidelines based on statistical analysis

Goals

- Identify baseline conditions
- Detect changes associated with anthropogenic effects
- Evaluate the effects of past policies and management activities
- Design and implement projects that will minimize adverse effects to marine resources to the maximum extent possible

Strategic Approach to Renewable Energy Research

Synthesize Existing Data

- Identify existing information and data gaps
- Predictive modeling

Collect New Data

- At sea surveys and colony catalogs
- Telemetry studies
- Technology advancement

Assess Risk

- Impacting factors
- Assess interactions, risk, vulnerability

Monitor

- Track change over time resulting from project construction and operation

Data Synthesis and Predictive Modeling

Objective

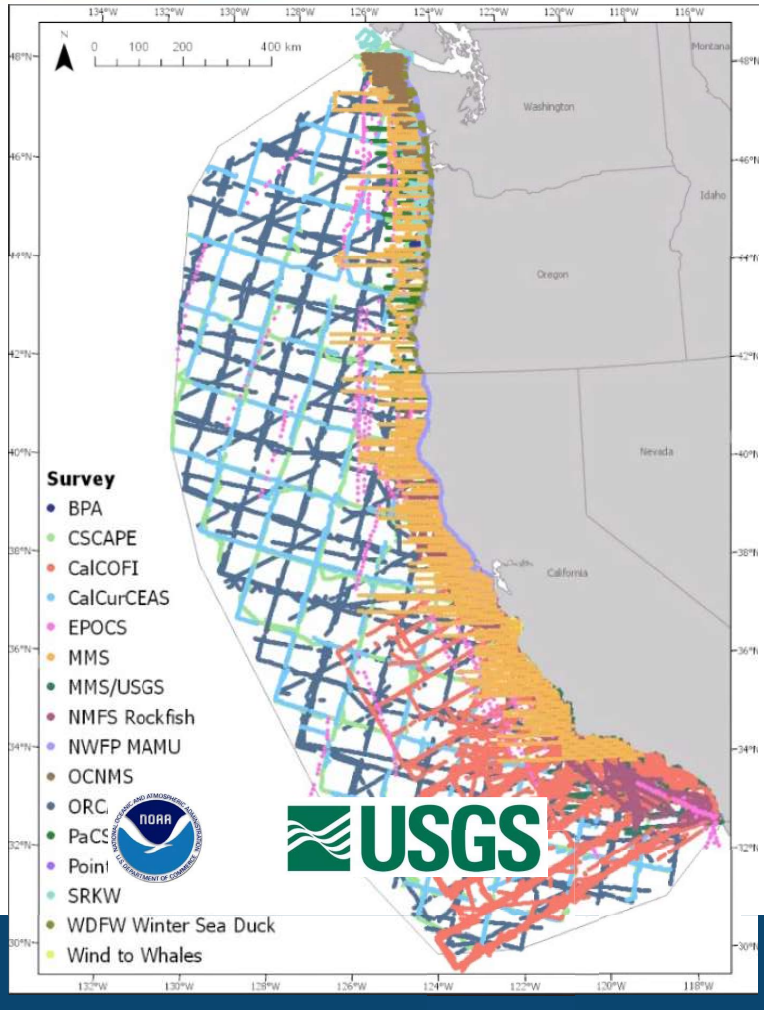
Improved species-specific distributions and density estimates of seabirds that can be extended to non-surveyed areas to provide critical information for renewable energy siting

Data Synthesis

- 21 at-sea survey datasets
- 1980-2017
  - Aerial and boat-based transects

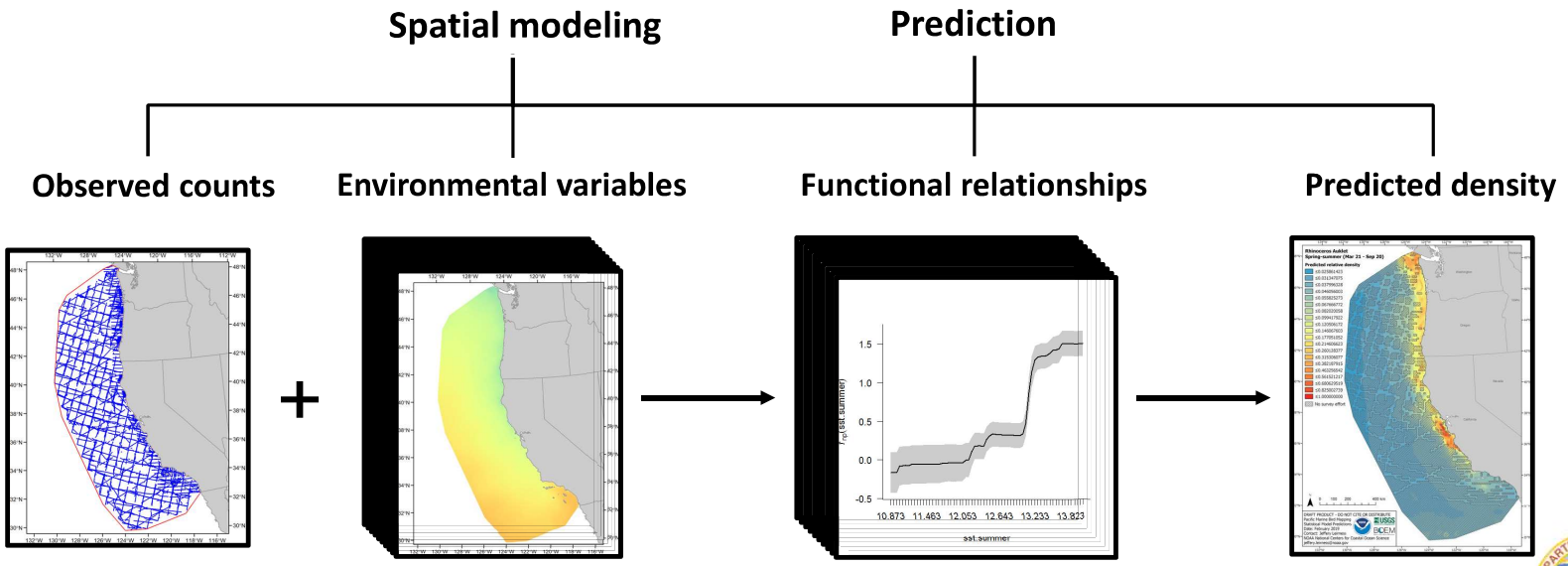
Habitat-based Spatial Models

- 33 species
- 13 taxonomic groups
  - 135 species/groups-season combinations
- 2 km resolution
- Related to environmental variables



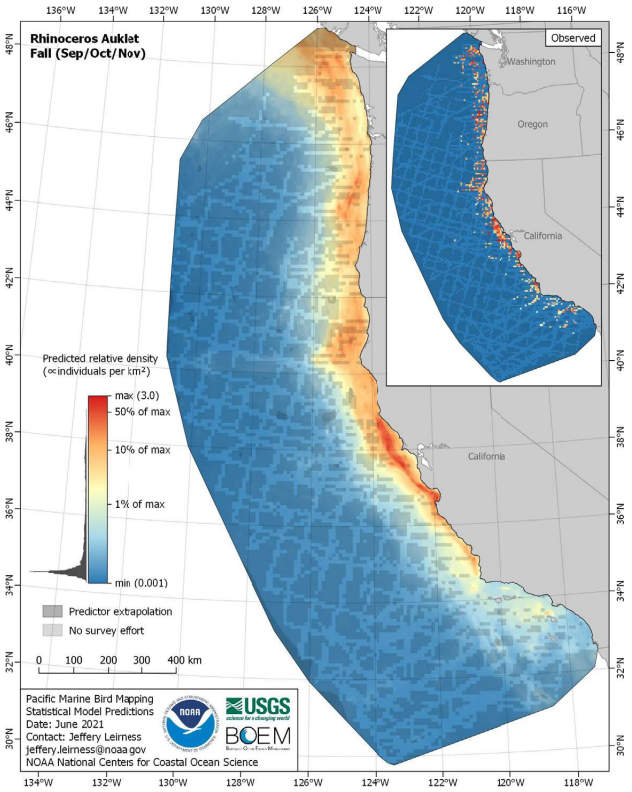
Spatial Predictive Modeling

- Survey coverage variable with gaps
- Comprehensive environmental datasets available
- Relate species counts to environmental variables
- Predict relative density across entire region

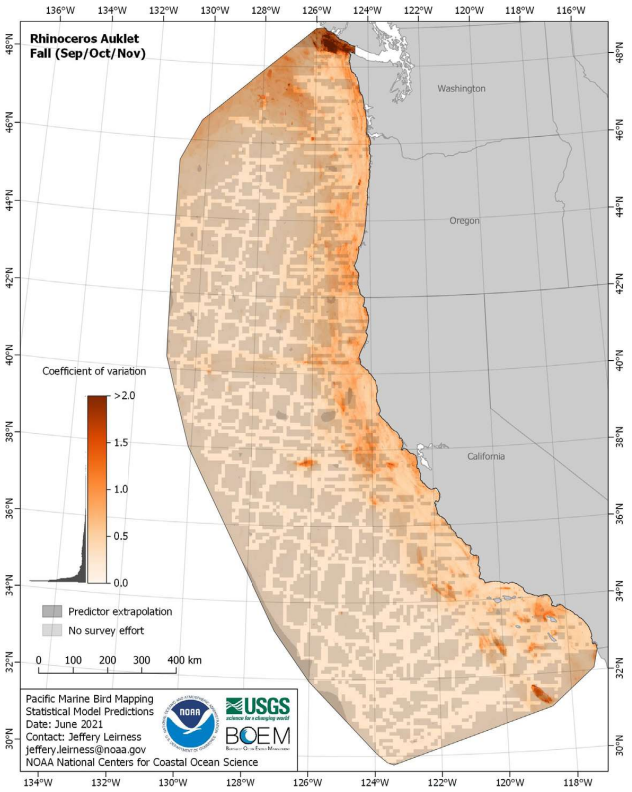


Data Synthesis and Predictive Modeling - Products

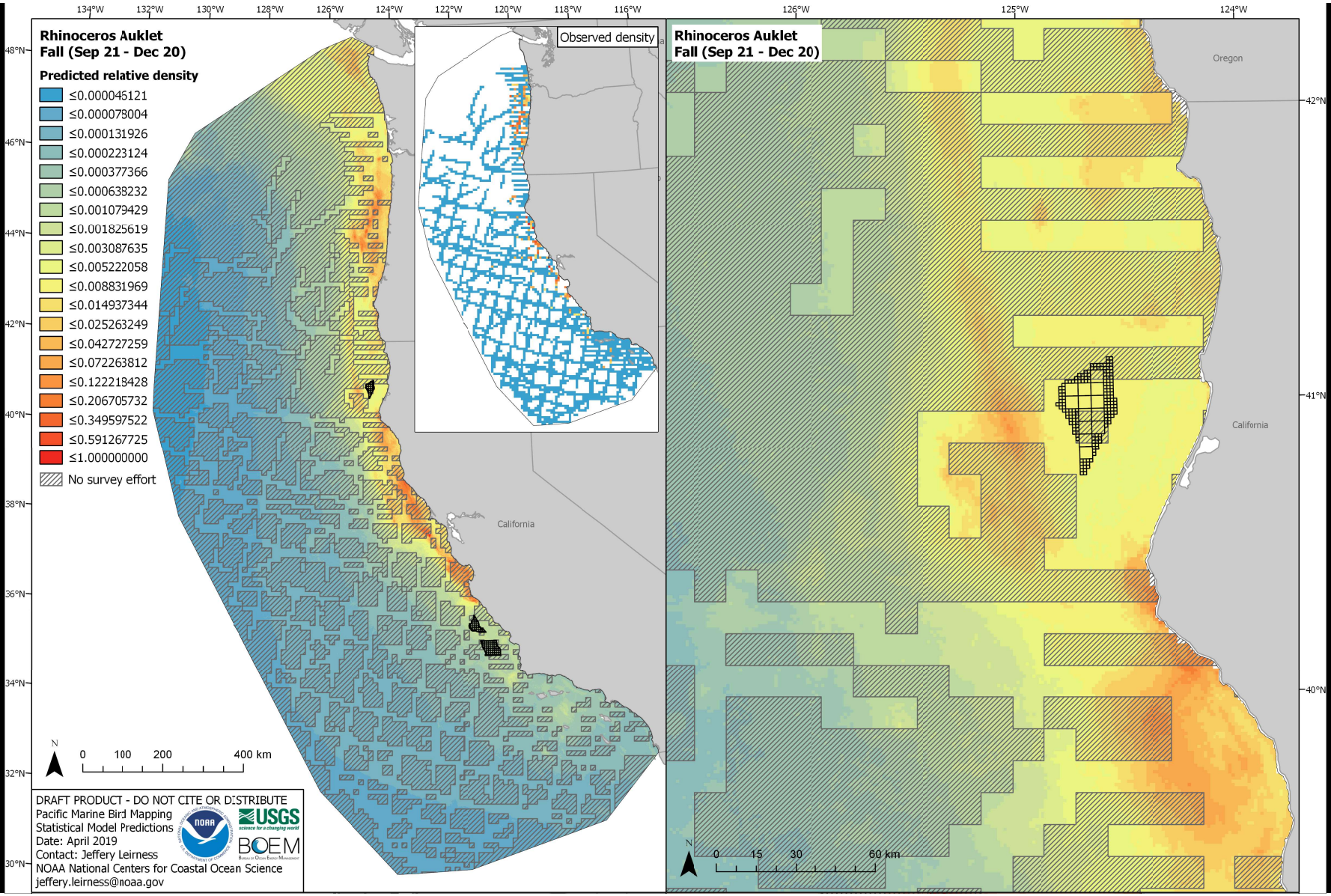
Relative Density



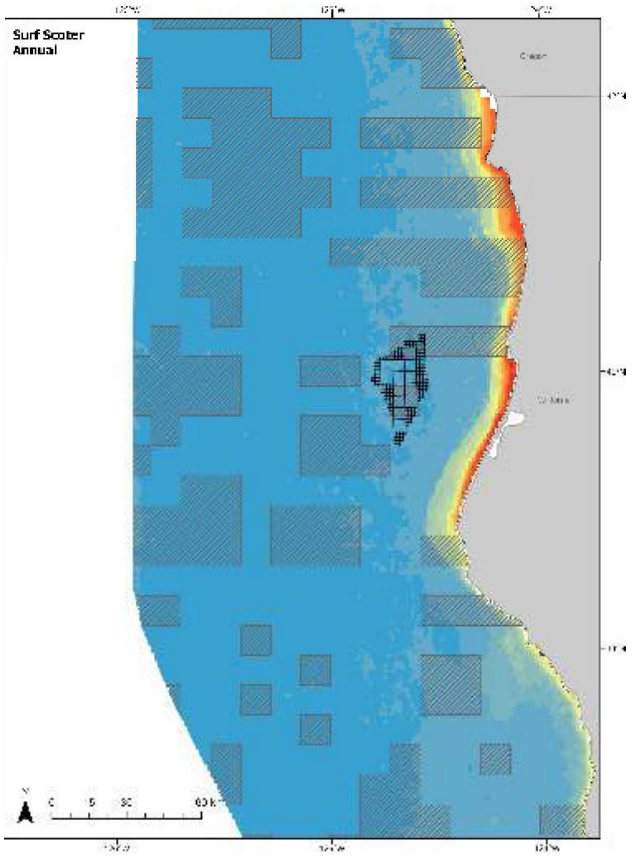
Coefficient of Variation

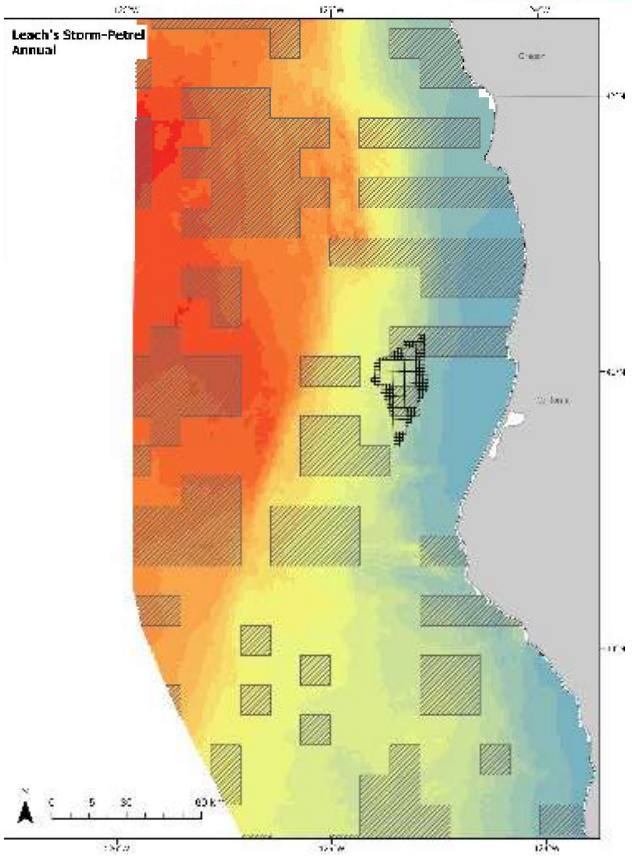


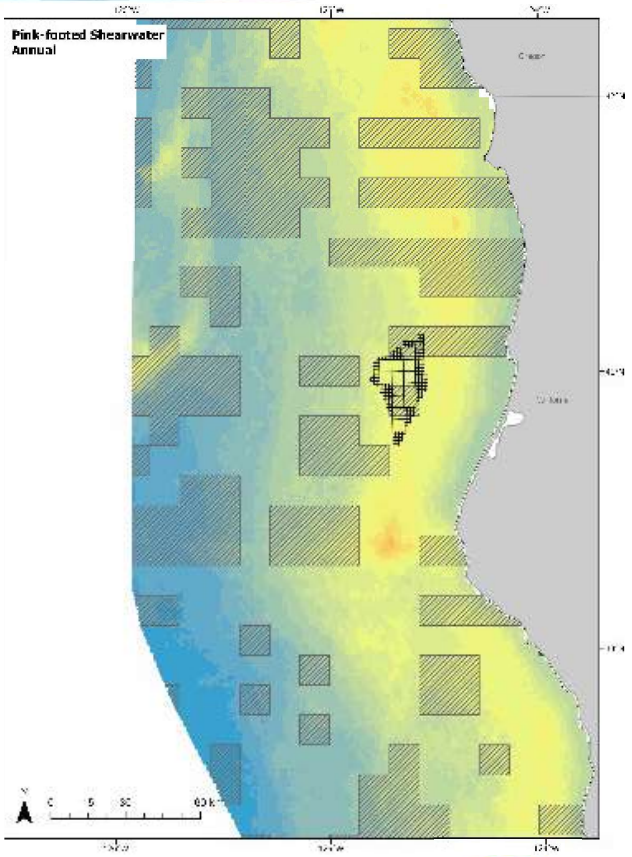
www.boem.gov/BOEM_2021-014


Rhinoceros Auklet
Fall (Sep 21 - Dec 20)
Predicted relative density
≤0.000045121
≤0.000078004
≤0.000131926
≤0.000223124
≤0.000377366
≤0.000638232
≤0.001079429
≤0.001825619
≤0.003087635
≤0.005222058
≤0.008831969
≤0.014937344
≤0.025263249
≤0.042727259
≤0.072263812
≤0.122218428
≤0.206705732
≤0.349597522
≤0.591267725
≤1.000000000
No survey effort
Observed density
California
0 100 200 400 km
DRAFT PRODUCT - DO NOT CITE OR DISTRIBUTE
Pacific Marine Bird Mapping
Statistical Model Predictions
Date: April 2019
Contact: Jeffery Leirness
NOAA National Centers for Coastal Ocean Science
jeffery.leirness@noaa.gov
Rhinoceros Auklet
Fall (Sep 21 - Dec 20)
Oregon
California
0 15 30 60 km

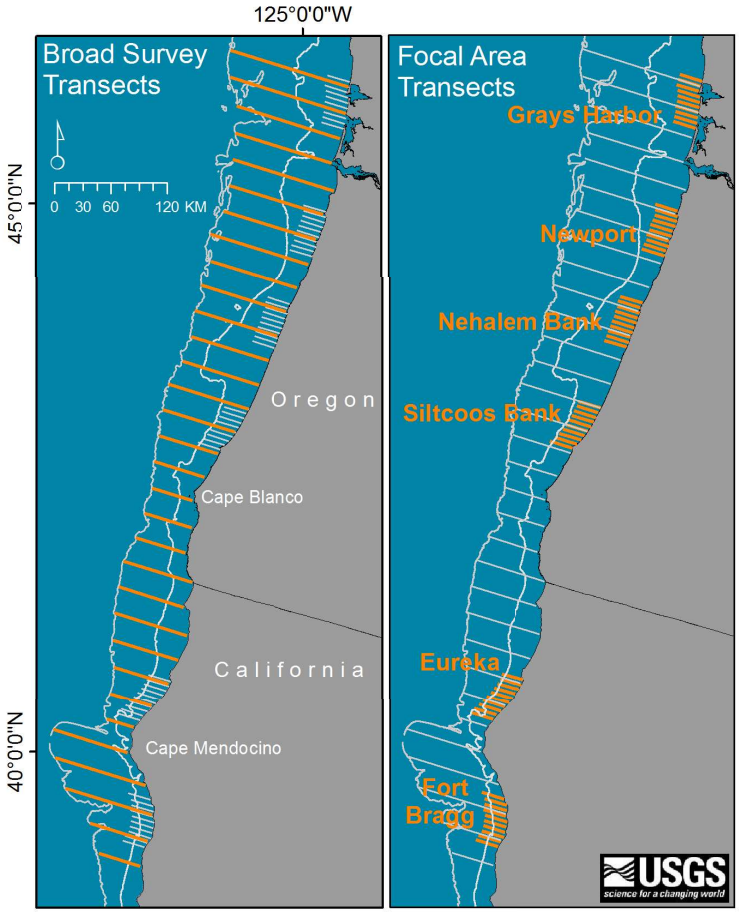
Data Synthesis and Predictive Modeling - Products







Marine Wildlife Surveys

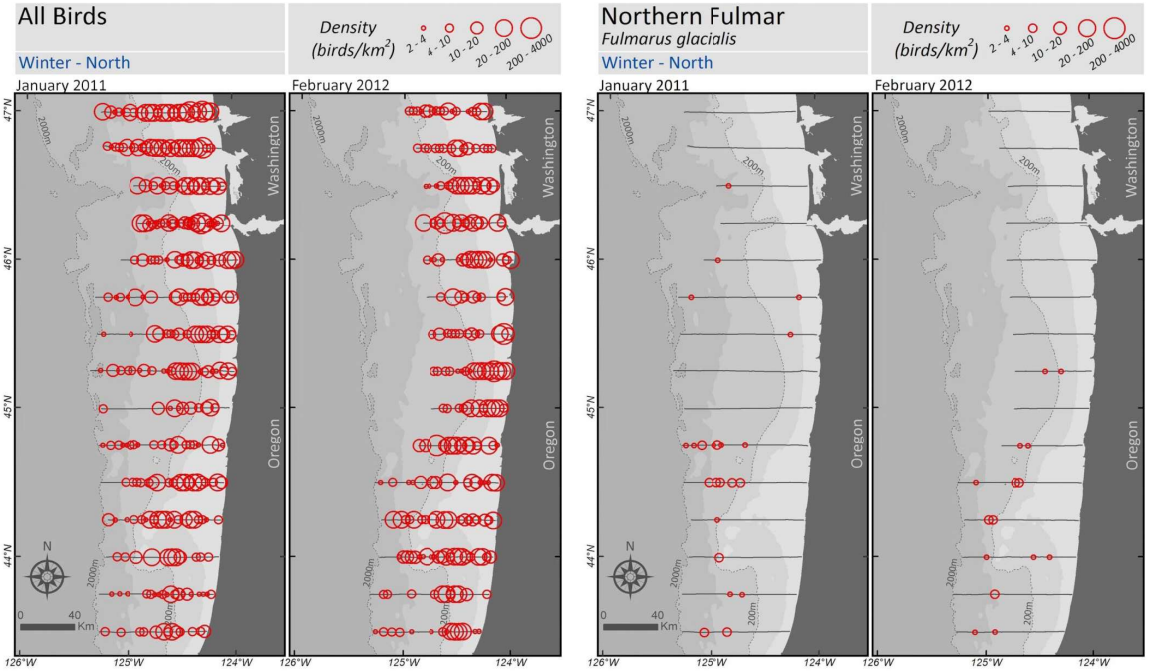


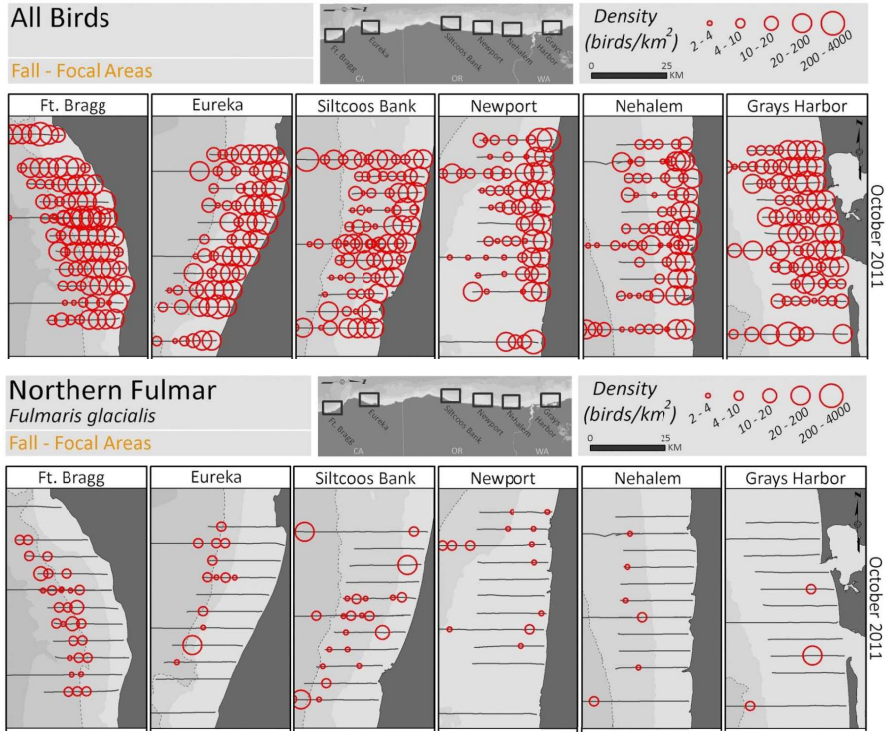
PaCSEA Design

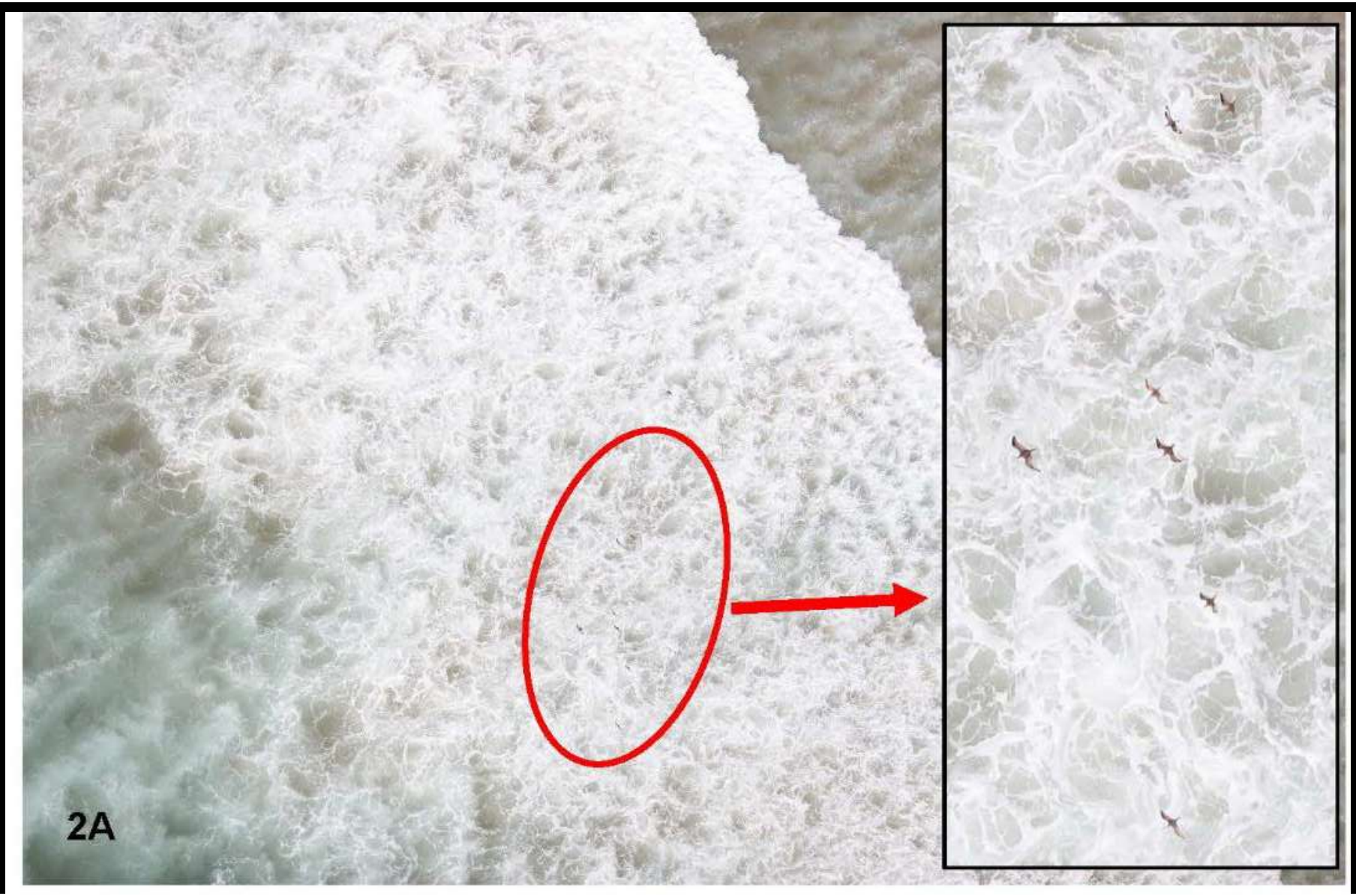
- 2 survey years: 2011 & 2012
- 3 oceanographic seasons (Winter, Upwelling, Davidson)
- Fort Bragg, CA (39.3° N) to Grays Harbor, WA (47° N)
- Focused on federal waters seaward of the 3-mile federal/state boundary
- 32 east-west-oriented uniform transects, 28-km spacing, to 2,000-m isobaths
- 6 focal areas consisting of ten 25-km parallel transect lines at 6-km spacing
- All marine birds, mammals, turtles, vessels, features

https://espis.boem.gov/final%20reports/5427.pdf

Marine Wildlife Surveys

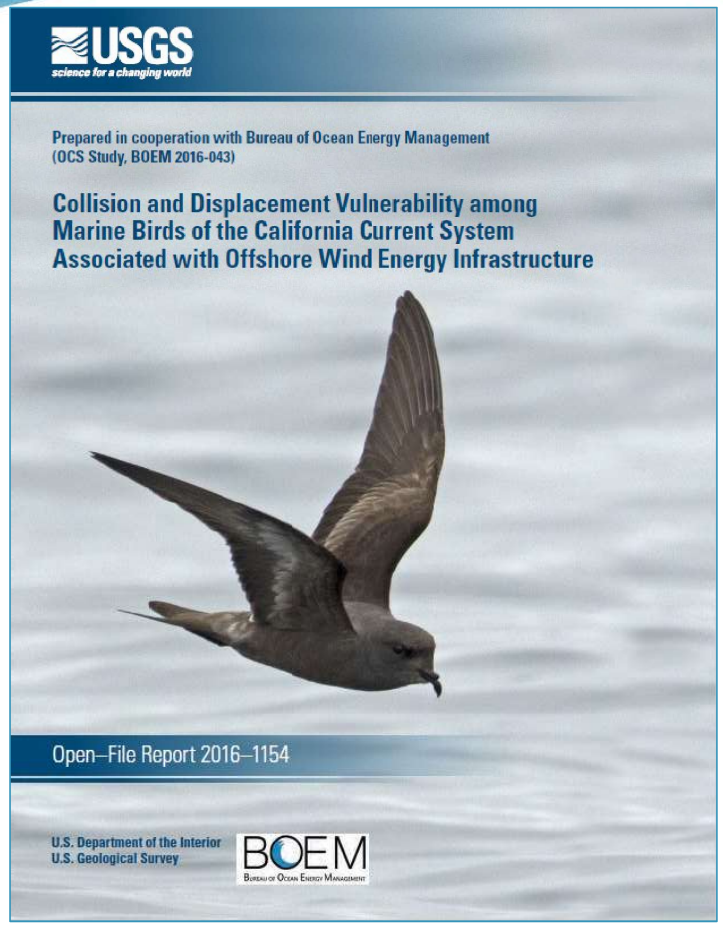





2A

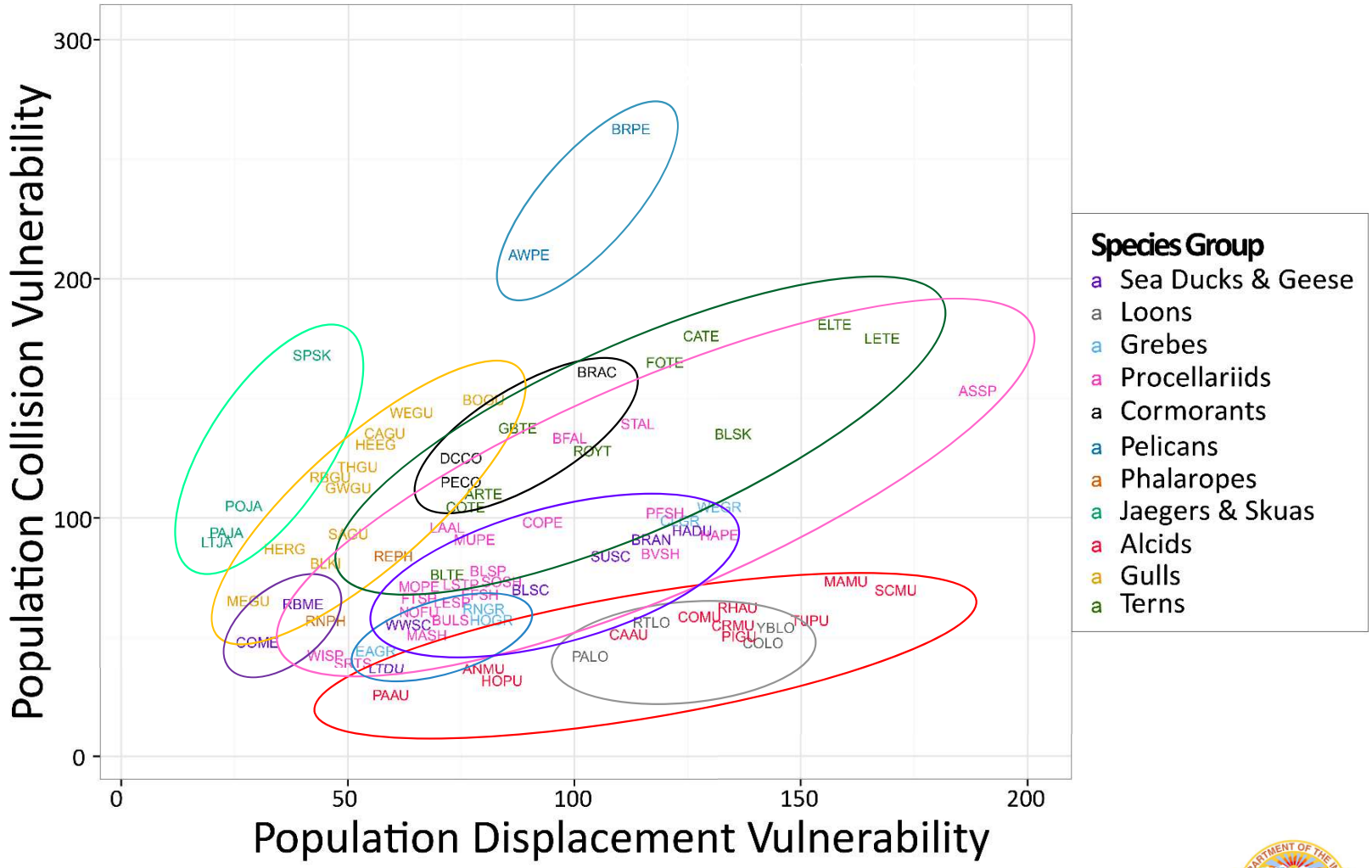

2E

Marine Bird Vulnerability to Offshore Wind Energy



- First comprehensive evaluation of marine bird vulnerability in Pacific
- Comprehensive vulnerability database for CCS species
  - 62 seabirds
  - 19 marine waterbirds
- Vulnerability driven by species-specific parameters
- Analyzed factors of **Displacement** and **Collision** Vulnerability, as a function of **Population** Vulnerability
- Uncertainty quantification
  - Opportunities to increase understanding
  - Database can be updated
- Vulnerability scores can be mapped using bird distributions to inform spatial planning

https://pubs.er.usgs.gov/publication/ofr20161154


Population Collision Vulnerability
Population Displacement Vulnerability
0
100
200
300
0
50
100
150
200
Species Group
a Sea Ducks & Geese
a Loons
a Grebes
a Procellariids
a Cormorants
a Pelicans
a Phalaropes
a Jaegers & Skuas
a Alcids
a Gulls
a Terns
BRPE
AWPE
SPSK
CATE
ELTE
LETE
FOTE
BRAC
ASSP
BOGU
WEGU
GBTE
STAL
BLSK
CAGU
HEEG
BFAL
ROYT
DCCO
THGU
RBGU
PECO
GWGU
ARTE
POJA
COTE
PAJA
LTJA
LAAL
COPE
PFSH
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BRAN
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BVSH
BLKI
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SCMU
MOPE
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MEGU
RBME
RHAU
RNPH
RTLO
COMU
TUPU
WWSC
CRMU
YBLO
COME
MASH
CAAU
PIGU
COLO
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PALO
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LTDU
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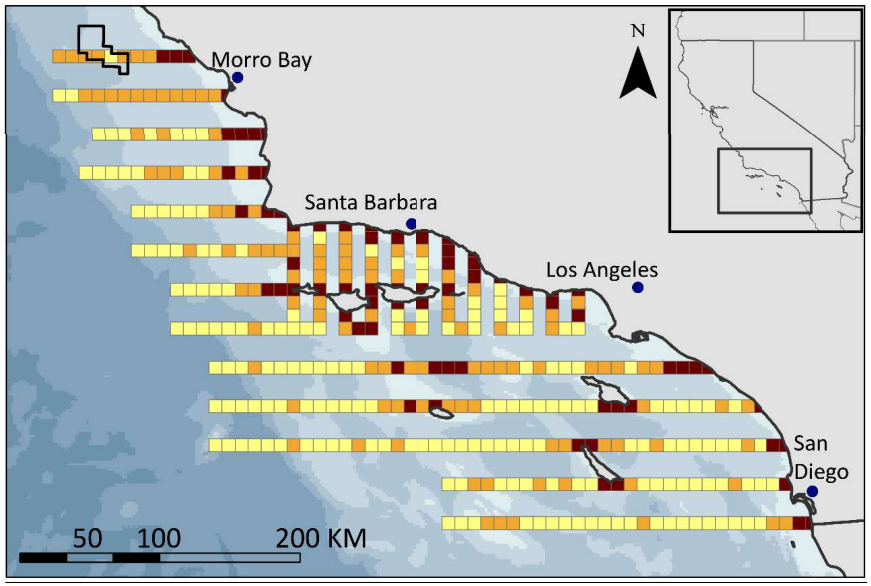
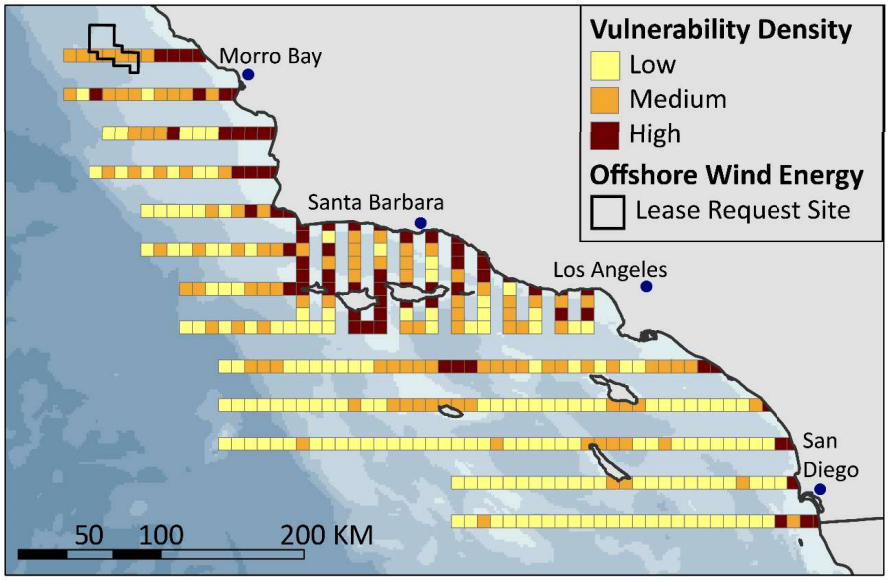
Marine Bird Vulnerability to Offshore Wind Energy

A.



B.



Population Collision Vulnerability

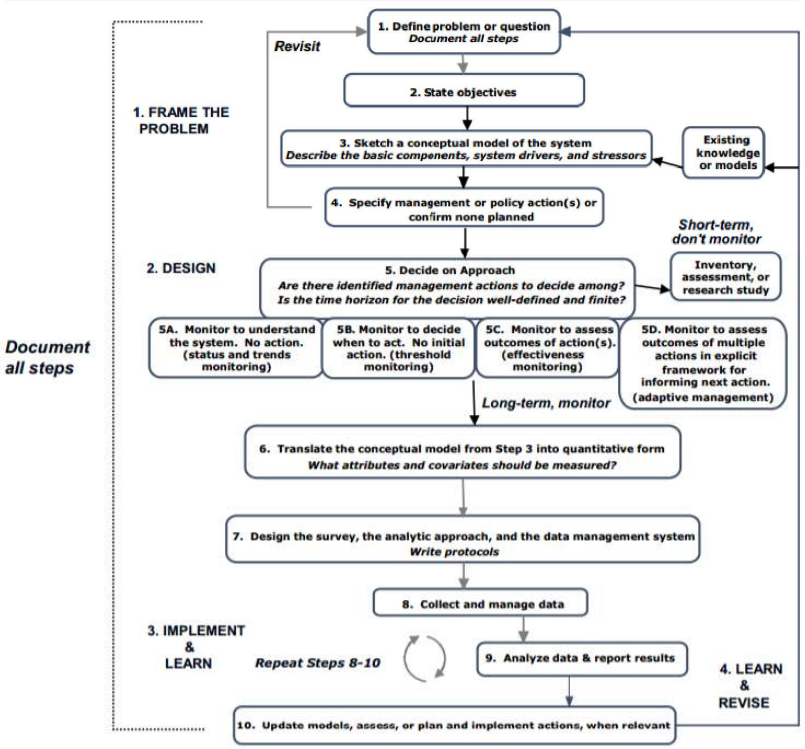
Population Displacement Vulnerability

Kelsey E, Felis J, Czapanskiy M, Pereksta D, and Adams J. 2018. Collision and displacement vulnerability to offshore wind energy infrastructure among marine birds of the Pacific Outer Continental Shelf. Journal of environmental management. 227. 229-247.

Proposed Pacific Seabird Monitoring Network

Specific Research Questions

- Using the Vulnerability Index and other sources, can we identify a suite of indicator species suitable for monitoring the potential effects of offshore energy activities in the Pacific?
- Building upon information gathered in data synthesis efforts, can we coordinate and supplement ongoing research to meet our objectives?
- Which monitoring design is the most efficient to distinguish regional population trend modifications resulting from offshore energy projects compared to other factors affecting seabirds?
- What lessons can we derive from a pilot monitoring effort to refine baseline information that can be applied to a long-term monitoring program designed to inform offshore energy?



Reynolds JH, Knutson MG, Newman KB, Silverman ED, and Thompson WL. 2016. A road map for designing and implementing a biological monitoring program. Environmental Monitoring and Assessment 188:1-25

New Avian Studies - Pacific

Acoustic Bat Study

- Enhance the understanding of seasonal bat migration activities offshore of the Pacific Coast

Over Water Migration Movements of Brant

- Identify oversea Black Brant migratory routes from Alaska to the Pacific Coast to understand pathways, timing, and flight altitude

Motus Wildlife Tracking

- Support data-collection efforts on the timing and scale of movements for shorebirds, marine birds, bats, and other taxa in relation to offshore energy and other coastal development projects
- Expand tracking capabilities along the Pacific Coast

West Coast Tribal Cultural Landscapes

Dave Ball, Historic Preservation Officer
BOEM Pacific Office

West Coast Tribal Cultural Landscapes

- A new study to work with interested Tribes along the Oregon coast and the areas around Humboldt and Morro Bays in California
- Builds on previous Cultural Landscapes efforts in the Pacific Region (Tribal Cultural Landscape[1]; Native Hawaiian Cultural Landscapes[2])
- Three-year effort with Udall Foundation's John S. McCain III National Center for Environmental Conflict Resolution, awarded August 2021

[1] Tribal Cultural Landscapes Guidance Document: https://www.boem.gov/2015-047/
[2] Native Hawaiian Cultural Landscapes Guidance Document: https://www.boem.gov/BOEM-2017-023/

West Coast Tribal Cultural Landscapes

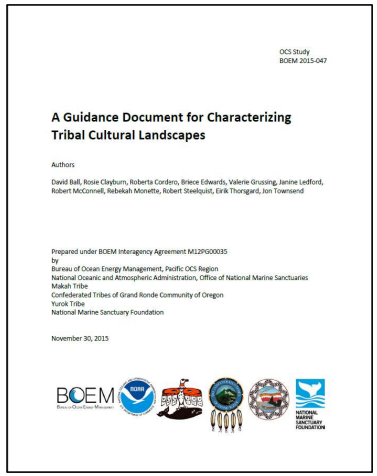
- **A holistic cultural landscape approach that integrates science with historical, archaeological, and traditional knowledge**
- **Develop working groups of interested parties to define parameters and outreach efforts**

Tribal Cultural Landscape:
Any place in which a relationship, past or present, exists between a spatial area, resources, and an associated group of indigenous people whose cultural practices, beliefs of identity connects them to that place. A tribal cultural landscape is determined by and known to a culturally related group of indigenous people with relationships to that place.

West Coast Tribal Cultural Landscapes

TCL Best Practices:

- Template for Indigenous Data Collection and Retention
- Process for application of TCL approach



OCS Study
BOEM 2015-047

A Guidance Document for Characterizing Tribal Cultural Landscapes

Authors

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Makah Tribe
Confederated Tribes of Grand Ronde Community of Oregon
Yurok Tribe
National Marine Sanctuary Foundation

November 30, 2015

Available online at:
http://www.boem.gov/2015-047/

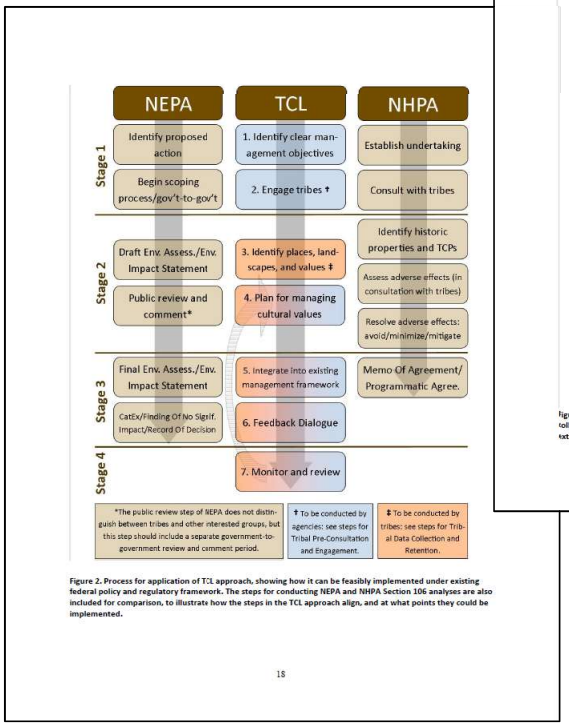

Figure 2. Process for application of TCL approach, showing how it can be feasibly implemented under existing federal policy and regulatory framework. The steps for conducting NEPA and NHPA Section 106 analyses are also included for comparison, to illustrate how the steps in the TCL approach align, and at what points they could be implemented.

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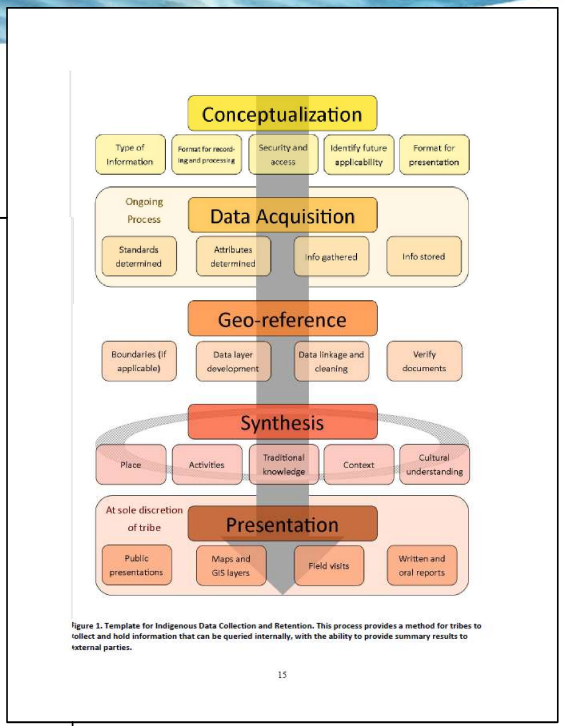

Figure 1. Template for Indigenous Data Collection and Retention. This process provides a method for tribes to collect and hold information that can be queried internally, with the ability to provide summary results to external parties.

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Udall Foundation

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NATIONAL CENTER

Mission

Help federal agencies and other affected stakeholders **address environmental disputes**, conflicts, and challenges, including helping agencies **build internal capacity to address those challenges**

National Center for Environmental Conflict Resolution
Udall Foundation

West Coast Tribal Cultural Landscapes

- **Objective:**
  - Build upon previous efforts and implement the framework of the TCL Guidance Document to develop new TCL assessments along areas of the Oregon coast, and Humboldt and Morro Bays in California
- **Methods:**
  - Assess the needs, issues, priorities, and obstacles associated with this effort by conducting up to 55 one-hour confidential interviews
  - Develop a strategy to engage West Coast Tribes near identified geographies, including inter-Tribal workshops or other culturally appropriate methods to develop new TCL assessments
- **Further information:**
  - www.boem.gov/PC-21-01
- **Contact information:**
  - Dave Ball (BOEM): david.ball@boem.gov
  - Dana Goodson (Udall): goodson@udall.gov