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Salish Sea Ecosystem Conference

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Apr 30th, 10:30 AM - 12:00 PM

## **Evaluating Puget Sound Marine Protected Areas to Improve MPA Policy and Implementation**

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<https://cedar.wwu.edu/ssec/2014ssec/Day1/41>

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# Evaluating Puget Sound Marine Protected Areas to Improve Policy and Implementation



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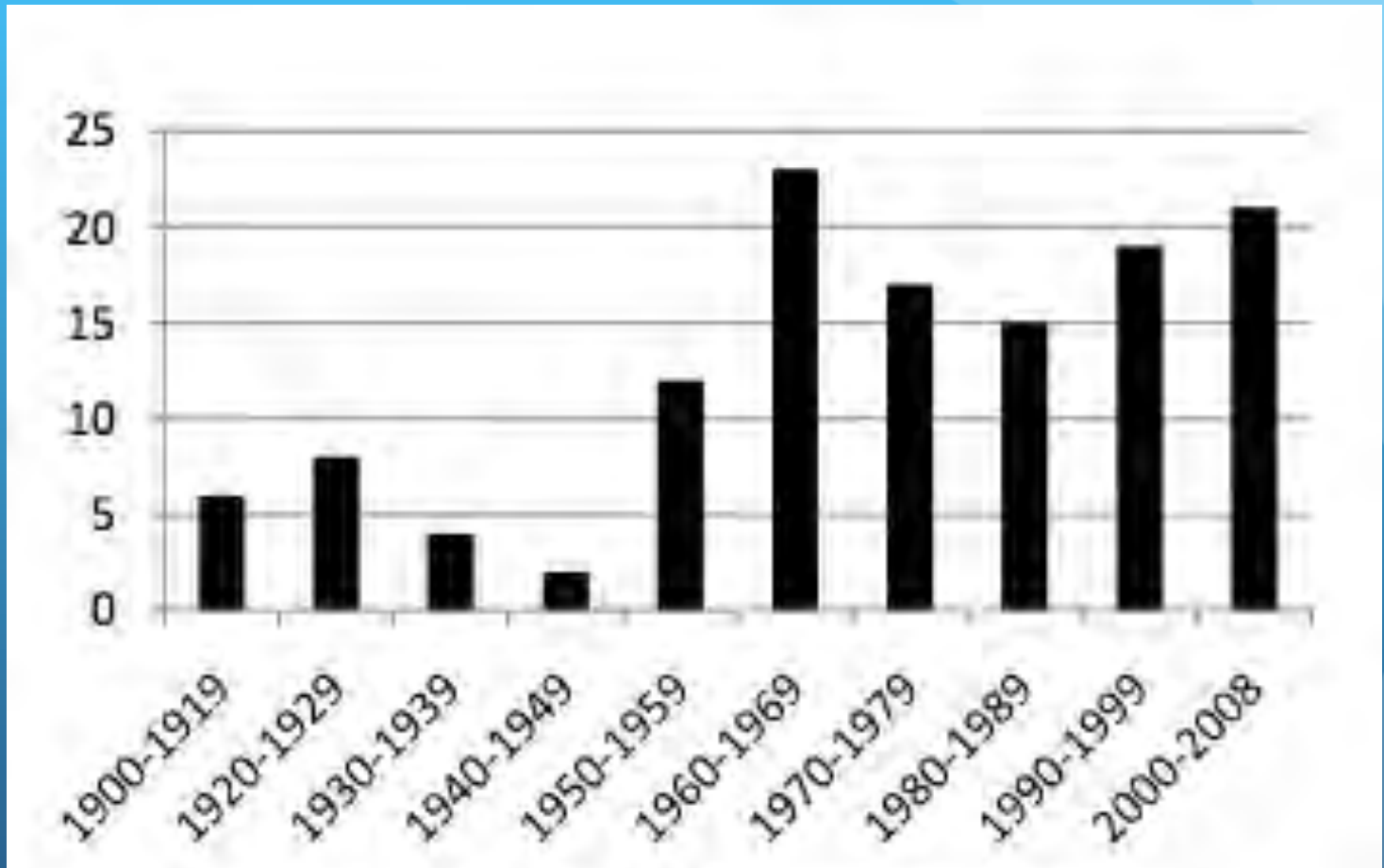
School of Marine and  
Environmental Affairs  
University of Washington

# Definition of a Marine Protected Area

*The Washington State Legislature defined an MPA as “a geographic marine or estuarine area designated by a state, federal, tribal, or local government in order to provide long term protection for part or all of the resources within that area.” (Substitute Senate Bill 6231 (2008))*

# History of Puget Sound MPA Establishment

Number of MPAs Established



Year  
(Van Cleve, 2009)

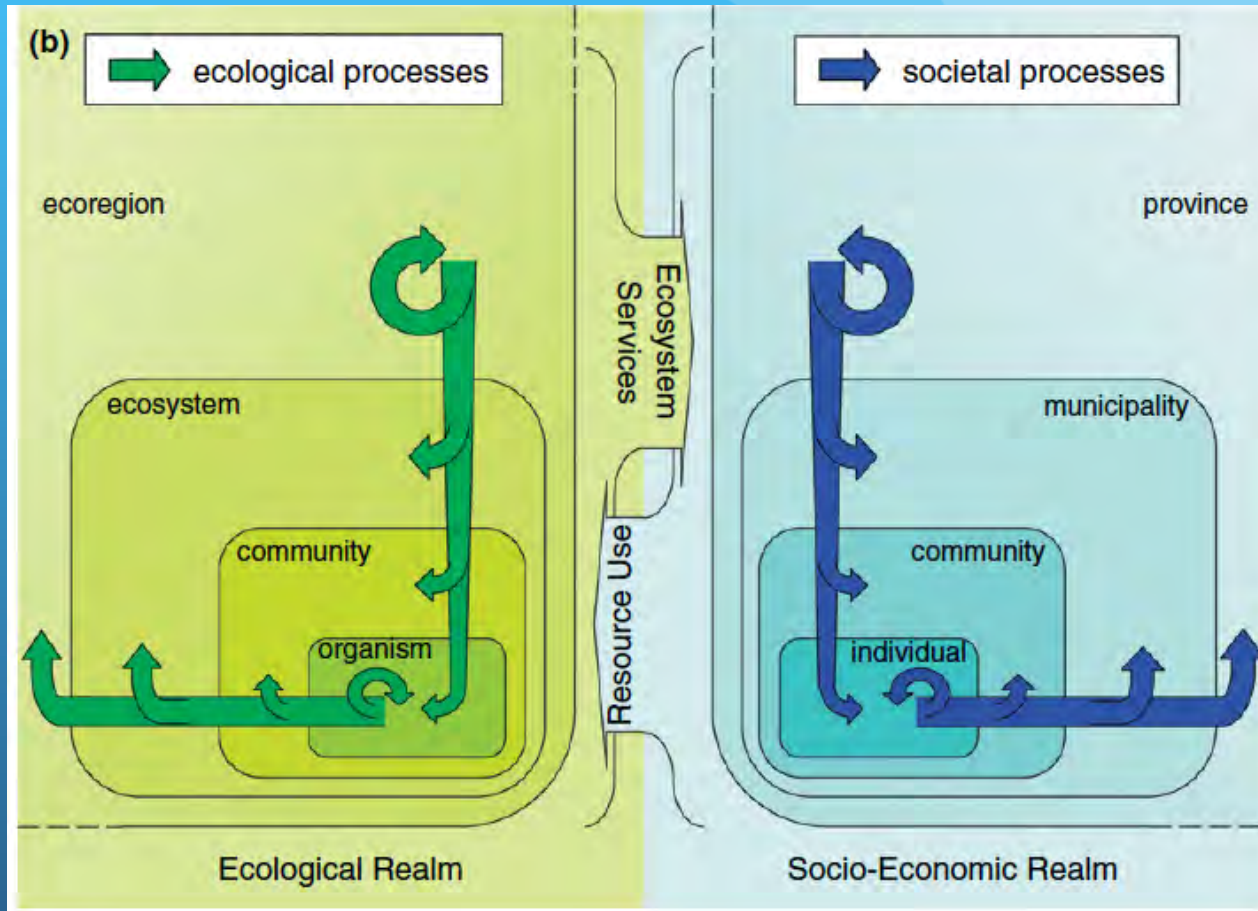
# Project Goals

- Assess efficacy of existing MPAs
- Evaluate social capacity to develop and adaptively manage MPAs
- Foster sustainable livelihoods and encourage recreational diving and rockfish restoration
- Inform climate change and ocean acidification mitigation strategies

# Research Questions

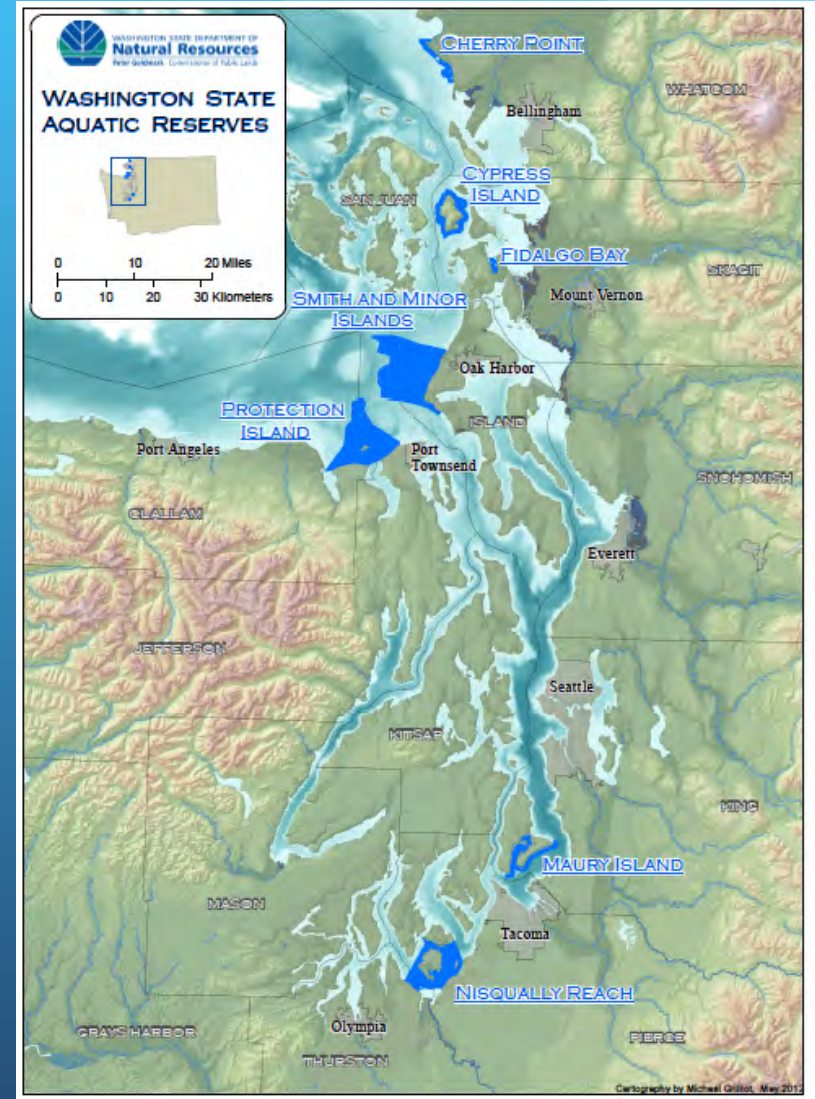
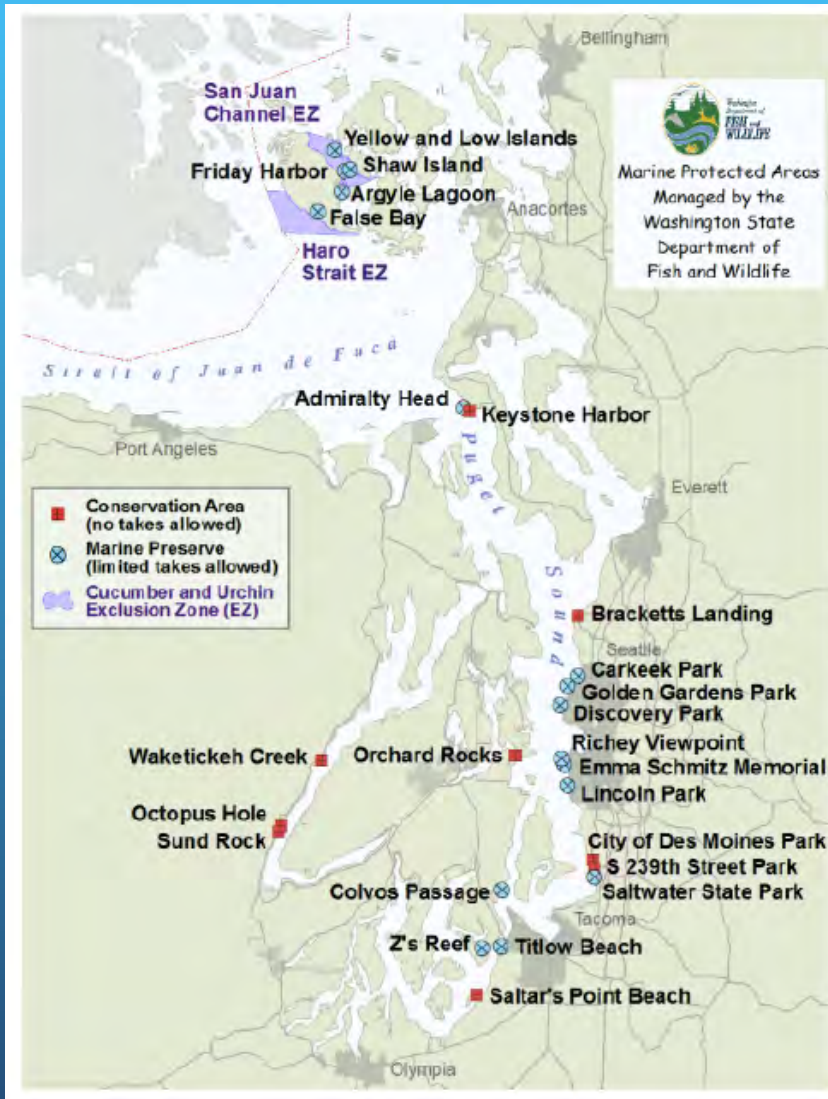
1. What conditions and processes lead to successful MPA implementation in diverse contexts?
2. What are the opportunities for MPA planning processes to improve management effectiveness and declare new, successful MPAs?
3. Should and can MPAs be used to increase social-ecological resilience in response to changing use patterns and environmental conditions?

# Analytical Framework



Glaser, M., Christie, P., et al. 2012. Measuring and understanding sustainability-enhancing processes in tropical coastal and marine social-ecological systems. *Current Opinion in Environmental Sustainability* 4:300-308.

# Marine Protected Area Sites





# Site Selection

## Literature Review

- Review grey literature, such as planning documents, technical reports, white papers, etc.

## Informational Interviews

- Interview key personnel involved in MPA management in the Puget Sound

GIS analysis of human uses and MPAs

Available biophysical data in relation to MPAs

# Surveys

Conduct structured surveys at ~25 MPA sites within the Puget Sound

- Survey ~10 actively engaged people in 25 distinct MPA sites (n=250)
- Survey ~30 citizens-at-large in each site (n=750)



# Variables of Interest

## Independent

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- Status of the environment in and around the MPAs
- Economic benefits from the MPA
- Compliance with MPA rules
- Rule enforcement effectiveness
- Overall MPA effectiveness

## Dependent

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- Informant variables: age, education, occupation, perceptions of marine resources, etc.
- Community variables: population density and homogeneity, number of civic organizations, etc.
- Process variables: communication mediums; conflict resolution, compliance, and enforcement mechanisms; etc.

# Semi-Structured Interviews

Interviews focused on:

- MPA management
- Conflicts and collaborations
- Policy decision-making

Transcribe and analyze using Atlas.ti software

Identify key themes and relations between them



# Target Participants

MPA managers

NGO personnel

Local MPA leaders

Resource users (e.g.,  
fishers, divers, kayakers)



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Photo by J. Nichols

# Biophysical Assessment

- Secondary biophysical data if available
- Biophysical variables may include data on fish abundance and water quality



Photo by J. Nichols



Photo by C. Krembs at Dept of Ecology

# Participatory Scenario Planning

Two-day scenario workshop in Hood Canal during winter or spring 2015

Present and discuss research findings

Discuss key topics such as hypoxia, declining fish stocks, ocean acidification impacts, climate change, and other stressors

Evaluate social capacity to plan, manage, and adapt to existing and future management needs

# Anticipated Results

Understand social-ecological dimensions to improve the likelihood of MPA success

Offer guidance to resource managers and policy makers about MPA design and siting options

Develop policy recommendations to improve current and future adaptive potential of MPAs in the Puget Sound



# Collaborating Institutions



SCHOOL OF

**Marine & Environmental Affairs**

College of the Environment • University of Washington



# **PugetSoundPartnership**

LEADING PUGET SOUND RECOVERY

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