Tufted Puffin
Periodic Status Review and Recovery Plan

**Washington Department of Fish and Wildlife**

1

Introduction

- Combined document
- First periodic status review
  - Status recommendation
- State recovery plan
  - Guide conservation and recovery efforts in WA

DRAFT
STATE OF WASHINGTON   February 2019
Tufted Puffin Recovery Plan
and Periodic Status Review

Thor Hanson, S.F. Pearson, P. Hodum, and D.W. Stinson

Washington Department of
**FISH AND WILDLIFE**
Wildlife Program
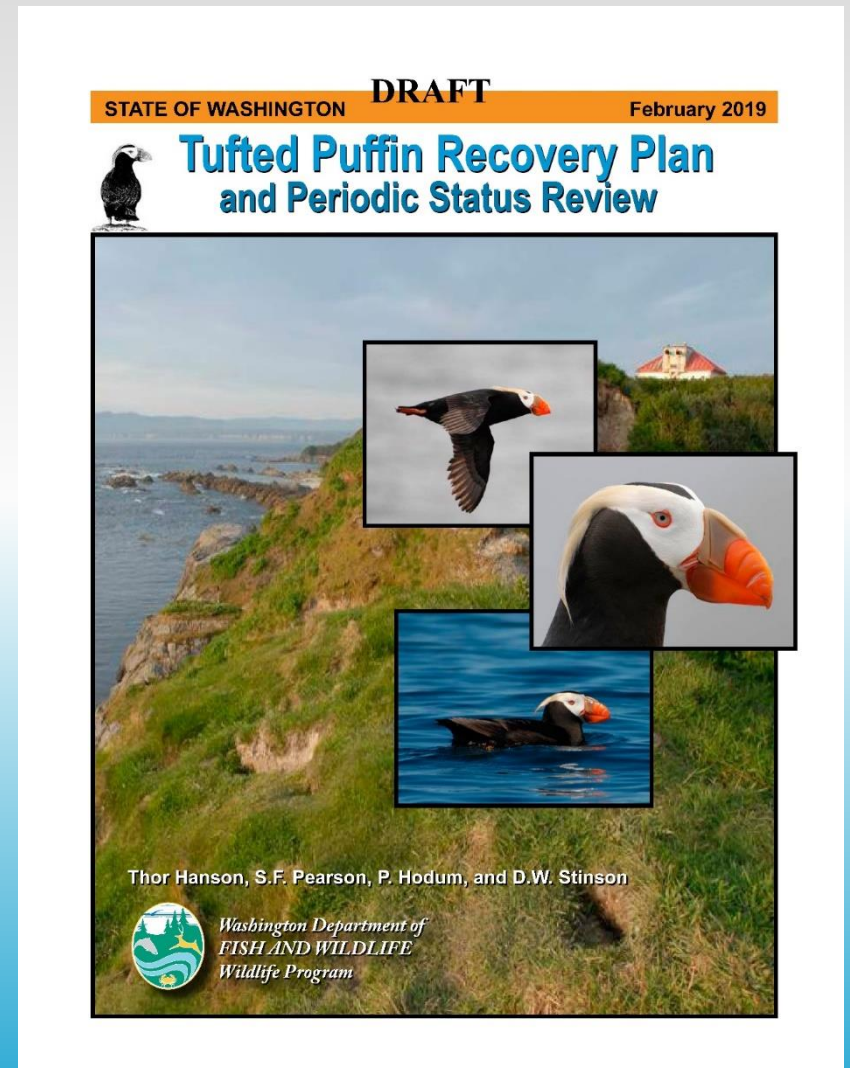
Introduction

- Public-Private Partnership
  - SeaDoc Society
    - Dr. Joseph Gaydos
    - Dr. Thor Hanson
  - University Puget Sound and Oikonos
    - Dr. Peter Hodum

The SeaDoc Society — People and science healing the sea

Est. 1888 — UNIVERSITY of PUGET SOUND

oikonos
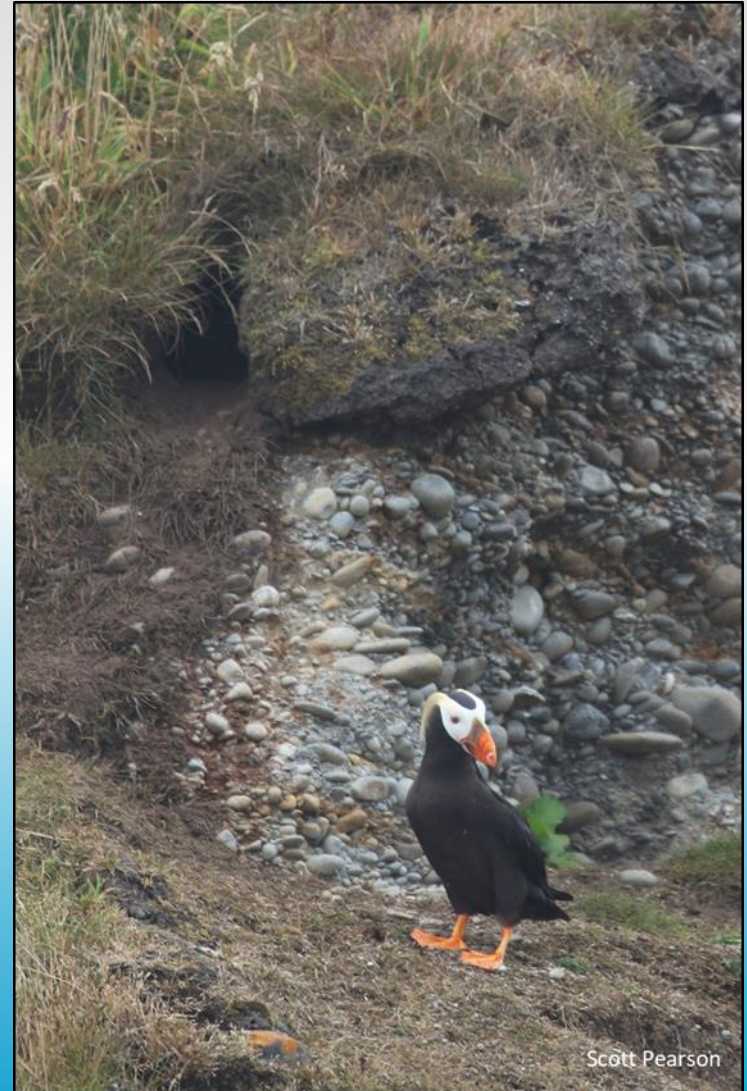
Scott Pearson

Range-wide Distribution

- Japan through Russia, Alaska, B.C., and down to California
- 82% breed in North America
- Winter throughout the central North Pacific
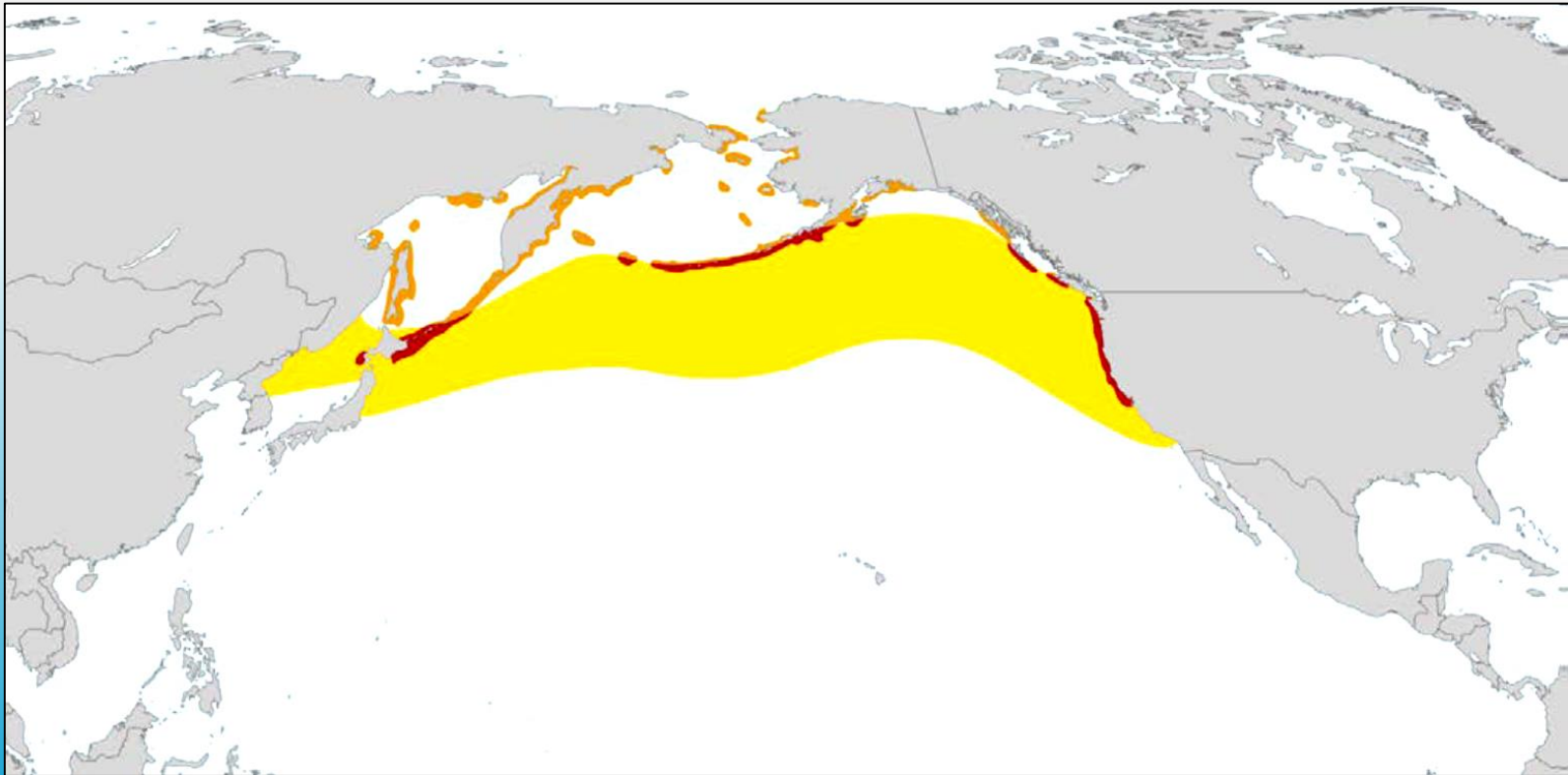
Nesting

- Nest in burrows on islands, headlands

Scott Pearson

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Nesting

- Nest in burrows on islands, headlands
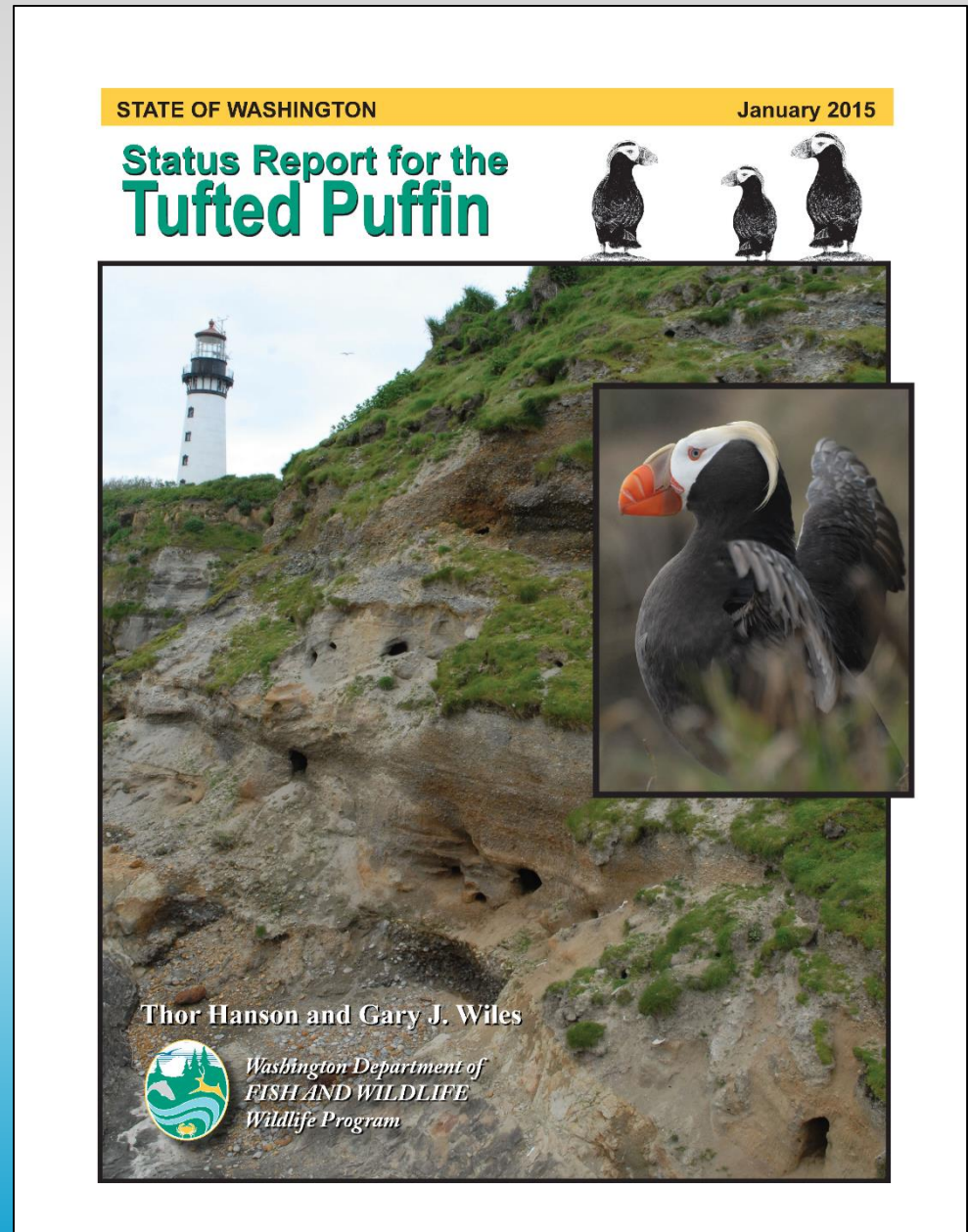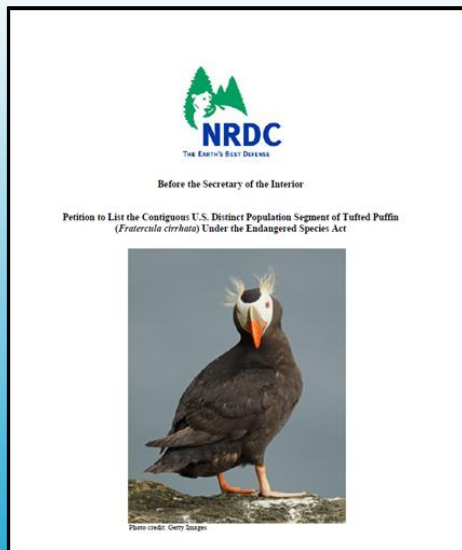

Scott Pearson

Diet

- Forage fish, squid, krill
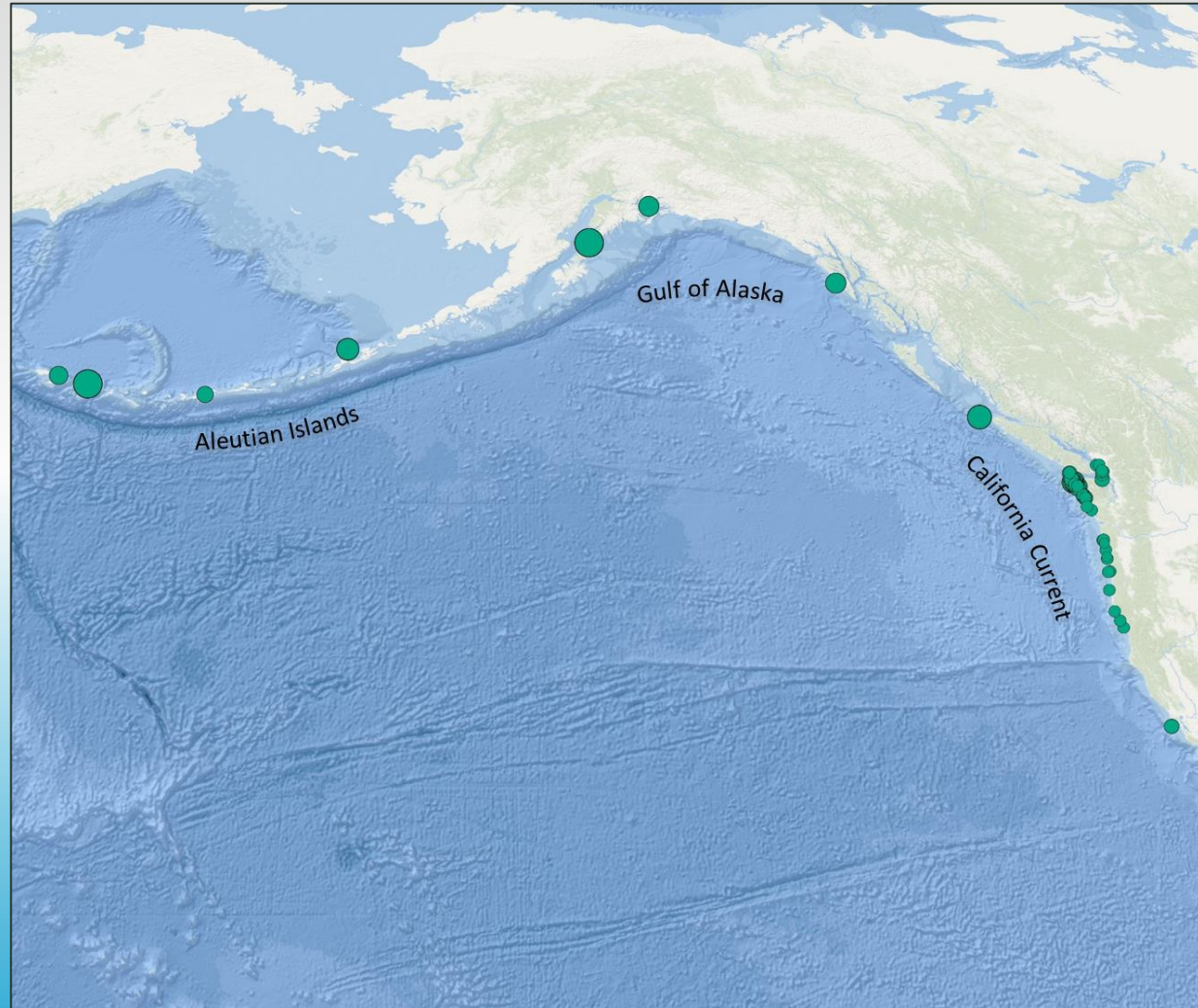- Where currents, coastline features, concentrate schools of prey (often at shelf break, 50 km offshore)

Legal Status

- WA Endangered species in 2015
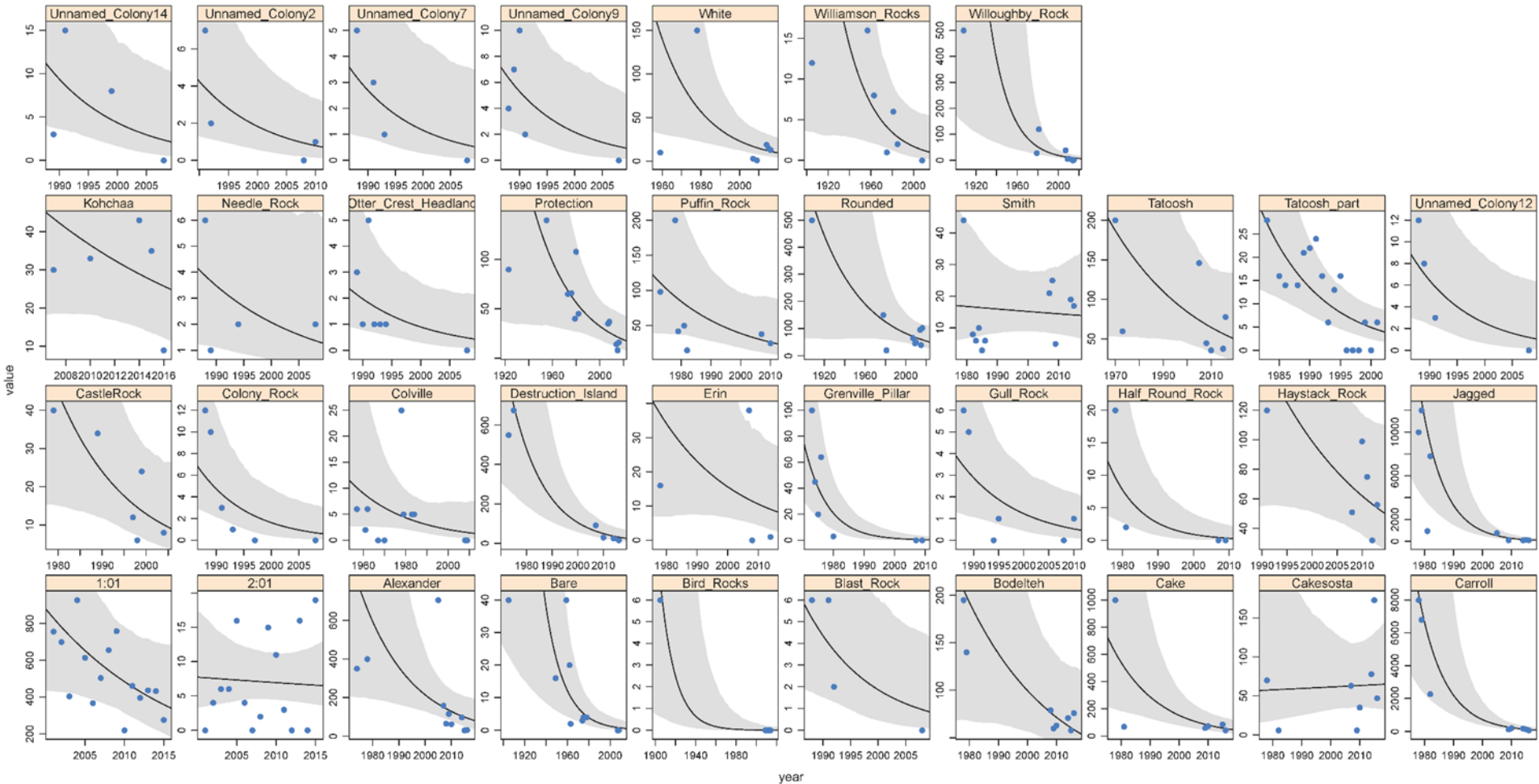- Under review for ESA listing
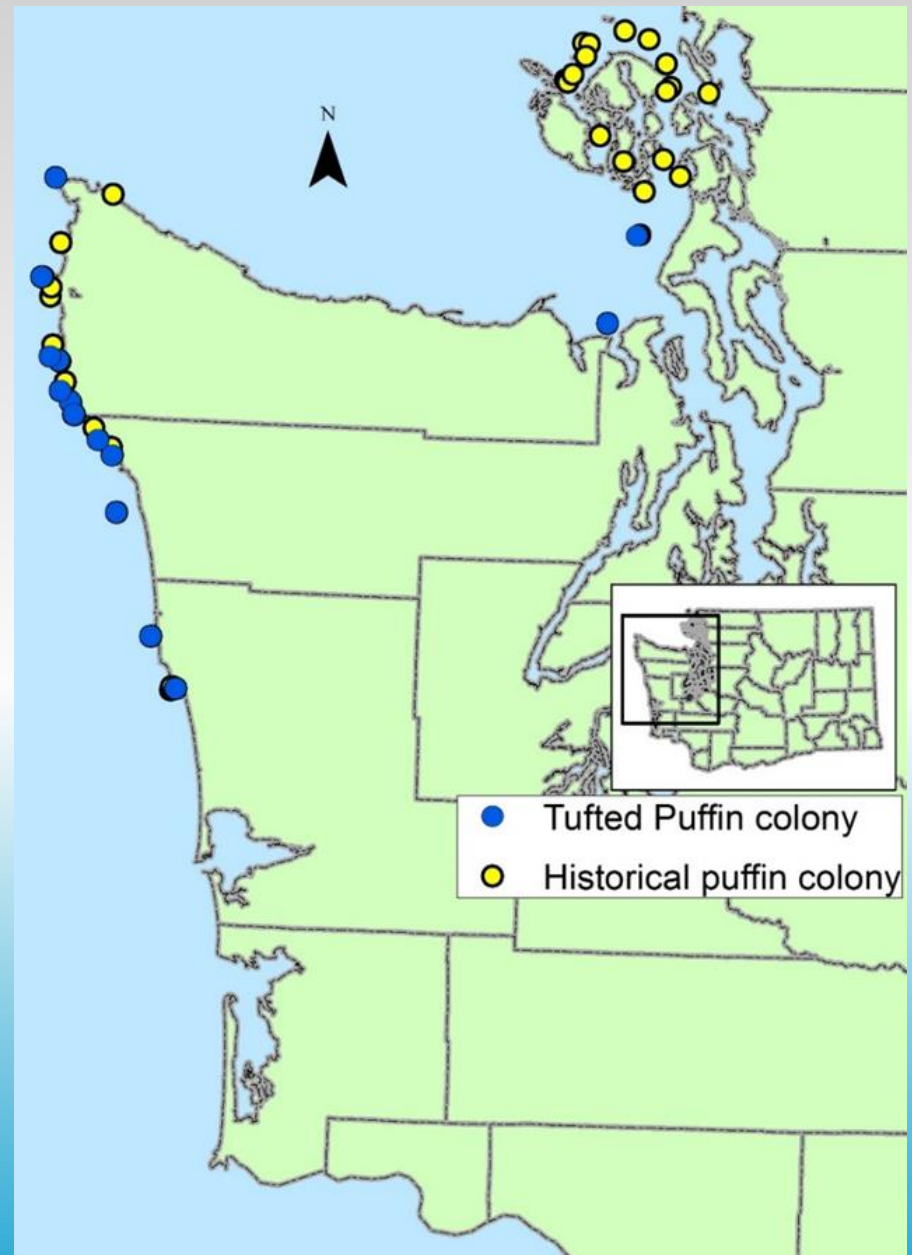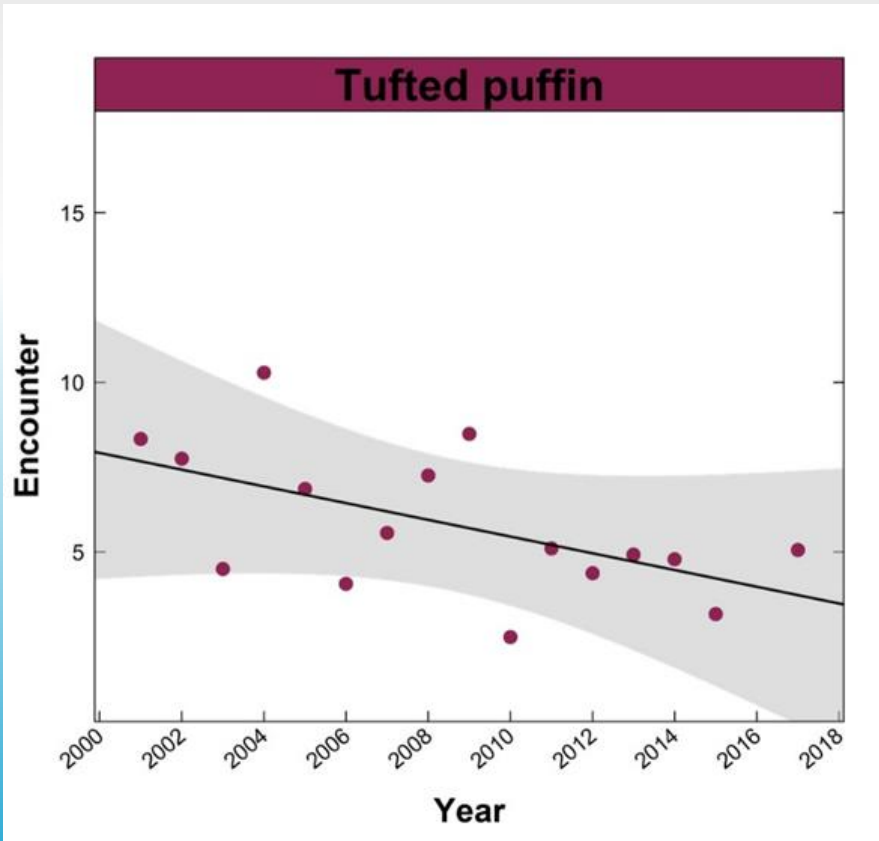
Range-wide Population Status

- 11 datasets
  - Colony-based
  - At-sea
- 112 years (1905-2016)
- From Farallon Islands to the Aleutians

California Current Results

# Population Status in Washington

Factors Affecting Tufted Puffins

- Climate change effects
  - Forage fish availability
  - Sea surface temperature
  - Sea level rise
  - Ocean acidity
- Other factors
  - Avian predation and kleptoparasitism
  - Human disturbance
  - Introduced plants and animals
  - Plastic and chemical pollution

Recovery Objectives

- Achievable
- Scientifically defensible
- Resilient
- Context
  - Historical
  - Regional
- Worked closely with our partners
  - Dr. Peter Hodum
 - Dr. Thor Hanson
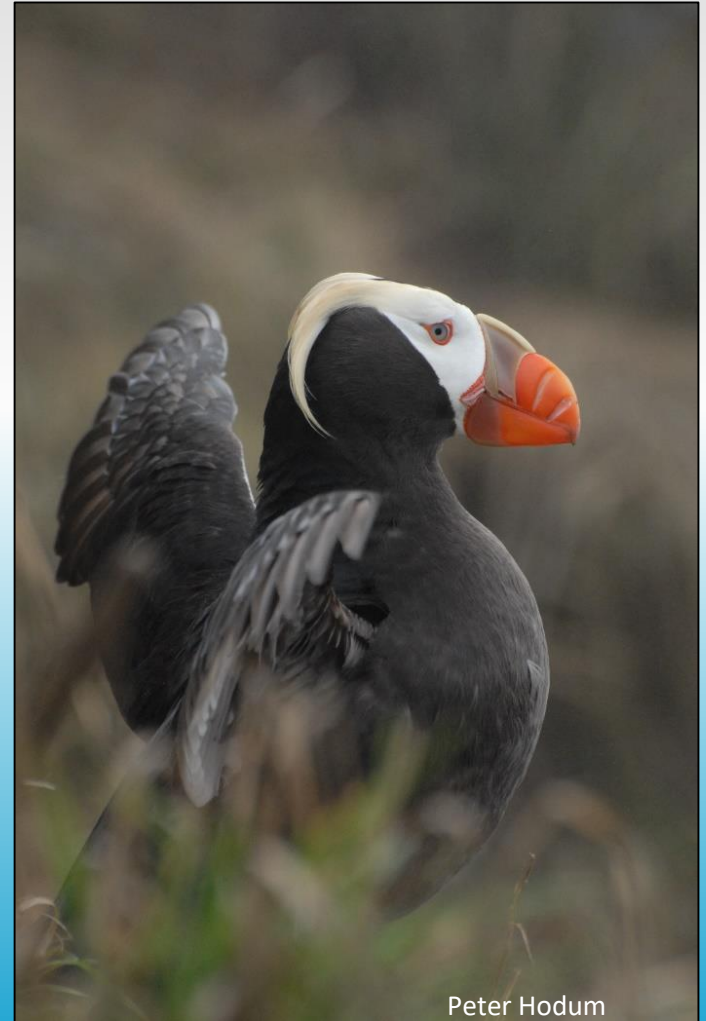
Peter Hodum

Recovery Objectives

	Population Distribution	Population size	Population Trend
Current Estimate	~ 19 occupied colonies	On-the-water population estimate $\leq$ 1500	Negative trend
Downlist to Threatened	Minimum 8 occupied colonies	On-the-water population estimate $\geq$ 4,500 OR mean breeding population estimate $\geq$ 6,500	Positive trend for 10 years prior to downlisting
Downlist to Sensitive	Minimum 10 occupied colonies; ideally including 2 in Salish Sea	On-the-water population estimate $\geq$ 7,500 OR breeding population of $\geq$ 10,000	Positive trend for 15 years prior to downlisting
Delist			Positive trend for 20 years prior to delisting

Recovery Tasks

- Monitor populations
- Maintain and enhance habitat at nesting colonies
- Reestablish colonies with reintroductions if feasible
- Ensure adequate prey availability
- Reduce threats of disturbance, mortality, and contamination
- Conduct research necessary for recovery
- Develop partnerships
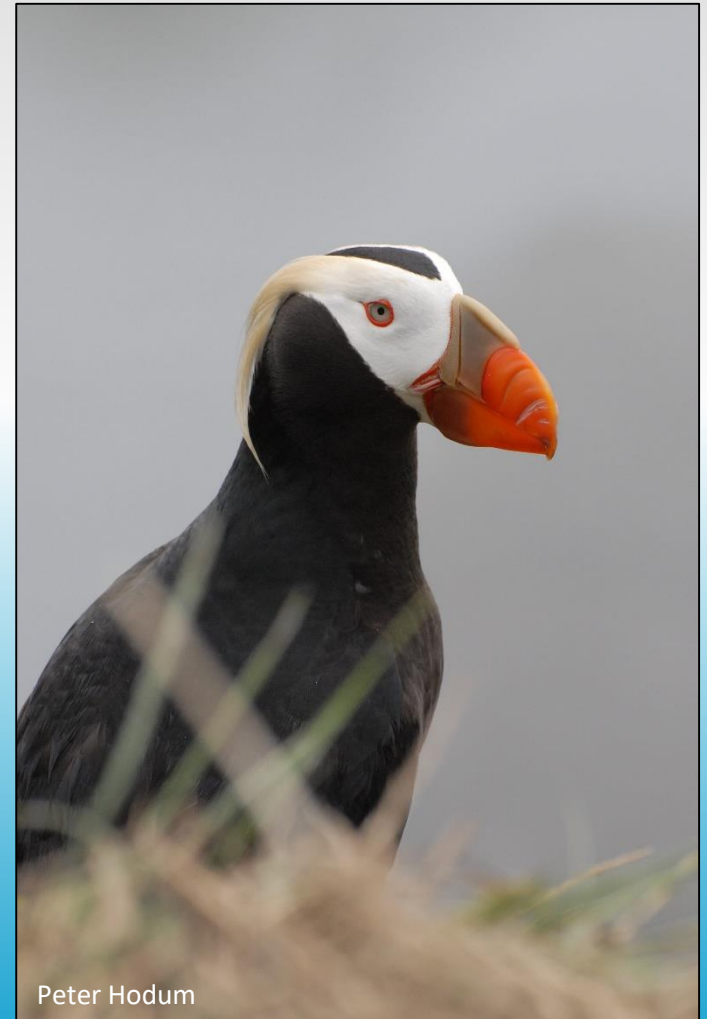- Develop and implement public outreach and education programs

Recovery Priorities
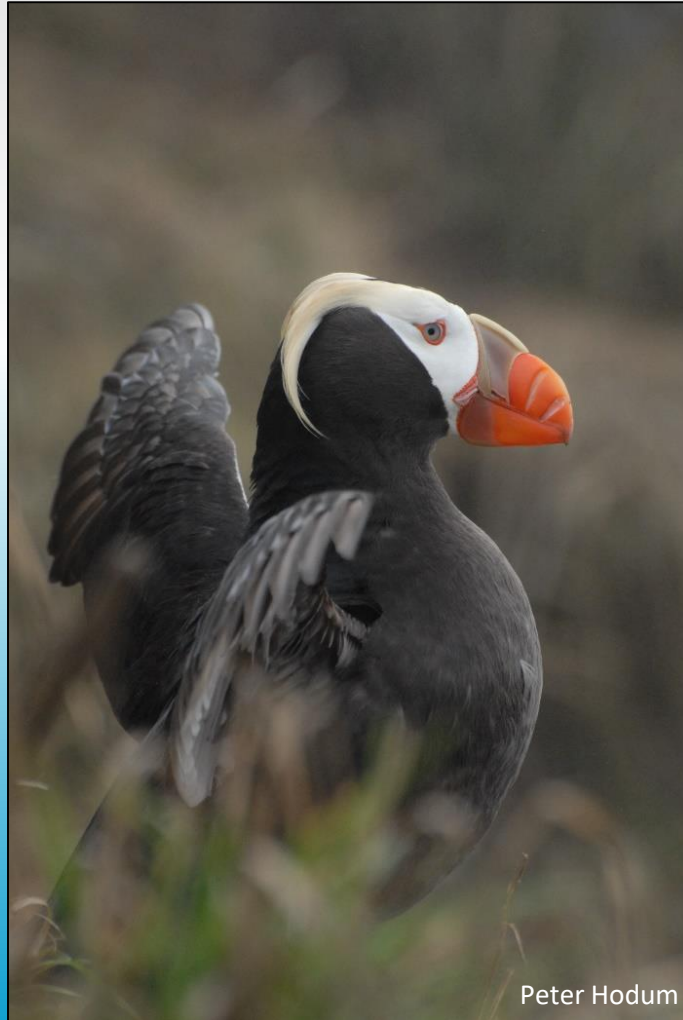
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Immediate High-priority Actions

Conduct population surveys

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Immediate High-priority Actions

Remove rabbits from Destruction Island

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Immediate High-priority Actions

Peter Hodum

Immediate High-priority Actions

- Encourage measures to reduce human related climate change

Hart et al. (2018), Will the California Current lose its nesting tufted puffins? PeerJ 6:e4519; DOI 10.7717/peerj.4519

Immediate High-priority Actions

Gain a better understanding of puffin diet and foraging areas in Washington and the effects of prey availability on productivity
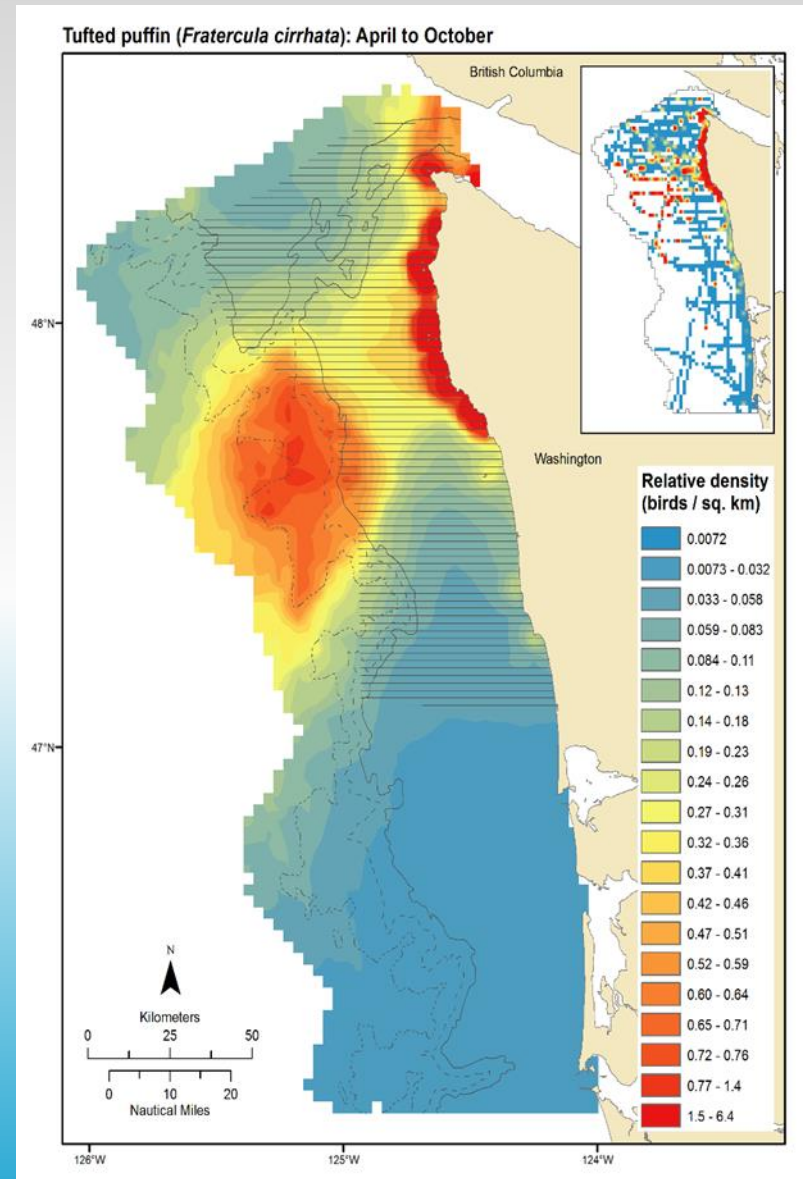
Immediate High-priority Actions

- Diet
  - Stable isotopes
  - Fecal sampling - DNA
  - Photographs

Winter Habitat Use and Movement Patterns

- Solar GPS satellite transmitters to track winter movement patterns
- Deploy transmitters in August 2019

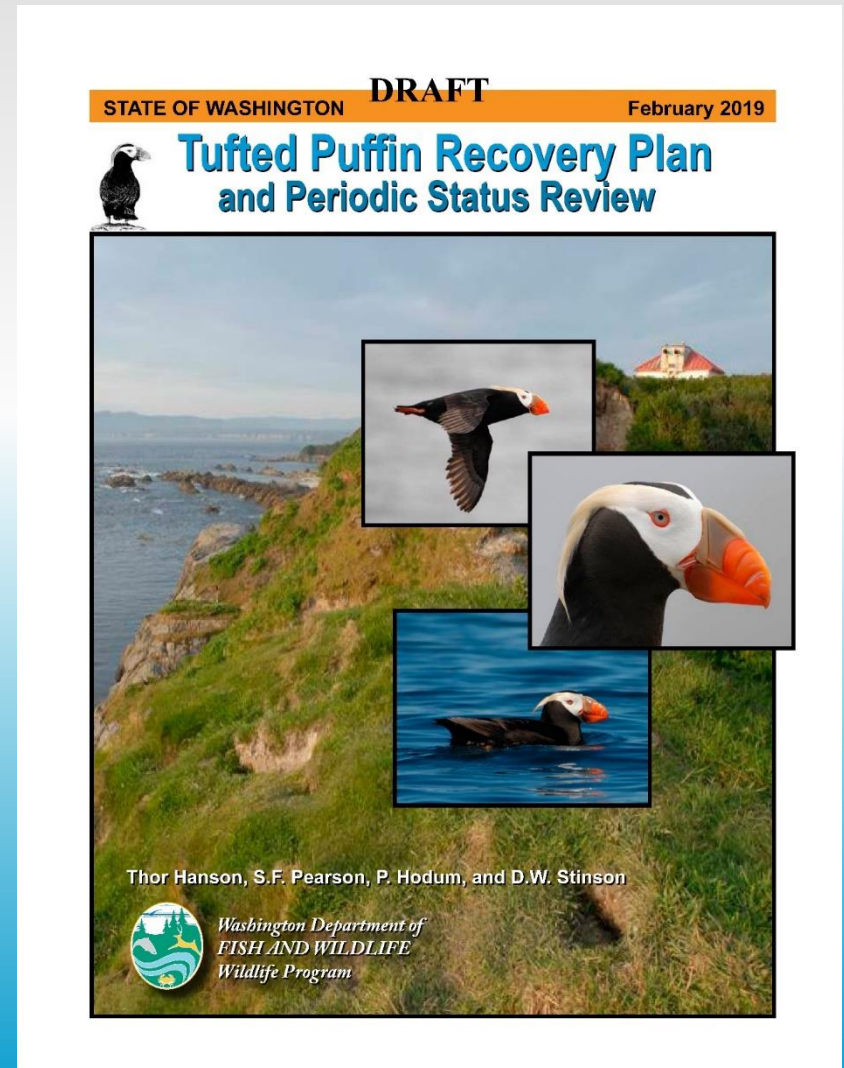Tufted puffin (*Fratercula cirrhata*): April to October

Additional Recovery Priorities

- Genetic structure
- Monitoring strategies
  - Diet
  - Reproduction
- Comparative studies
- Influence of climate change
- Habitat restoration

Summary and Recommendation

- Recommend:
  - Remain classified as an endangered species

- 22 Public comments
  - 20 supported recovery actions and keeping the puffin classified as endangered
    - Several urged implementation of priority actions
  - 2 did not support expenditures for puffin recovery

Questions?

Peter Hodum