THE UNION RIVER ESTUARY RESTORATION: 5 YEARS LATER

Mendy Harlow

Executive Director

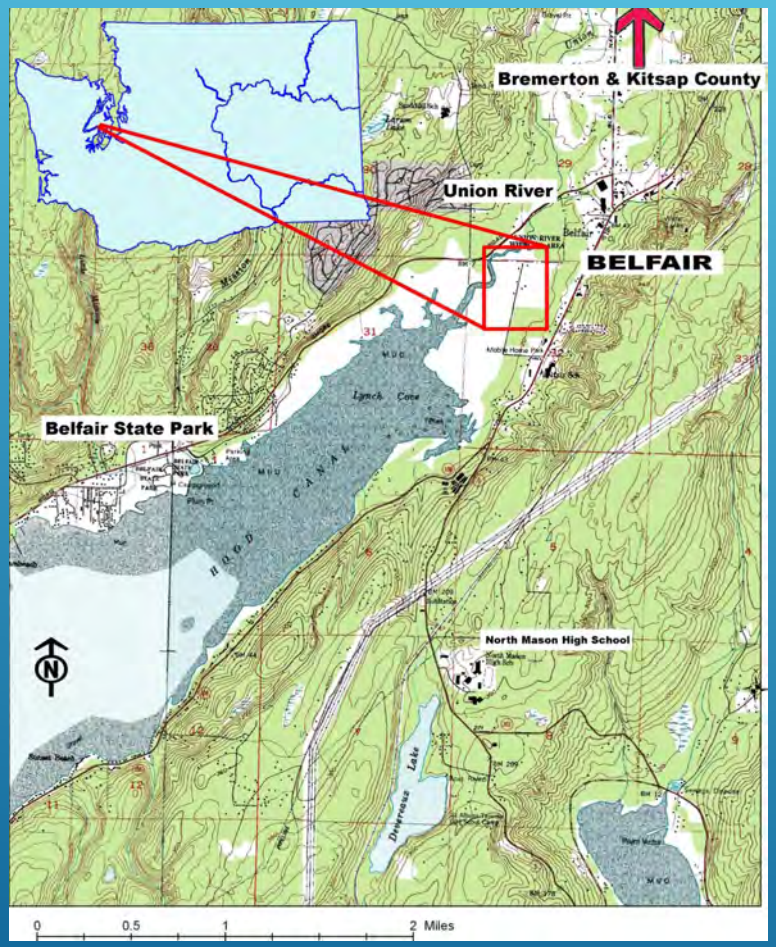
Hood Canal Salmon Enhancement Group

Salmon Recovery Conference 2019

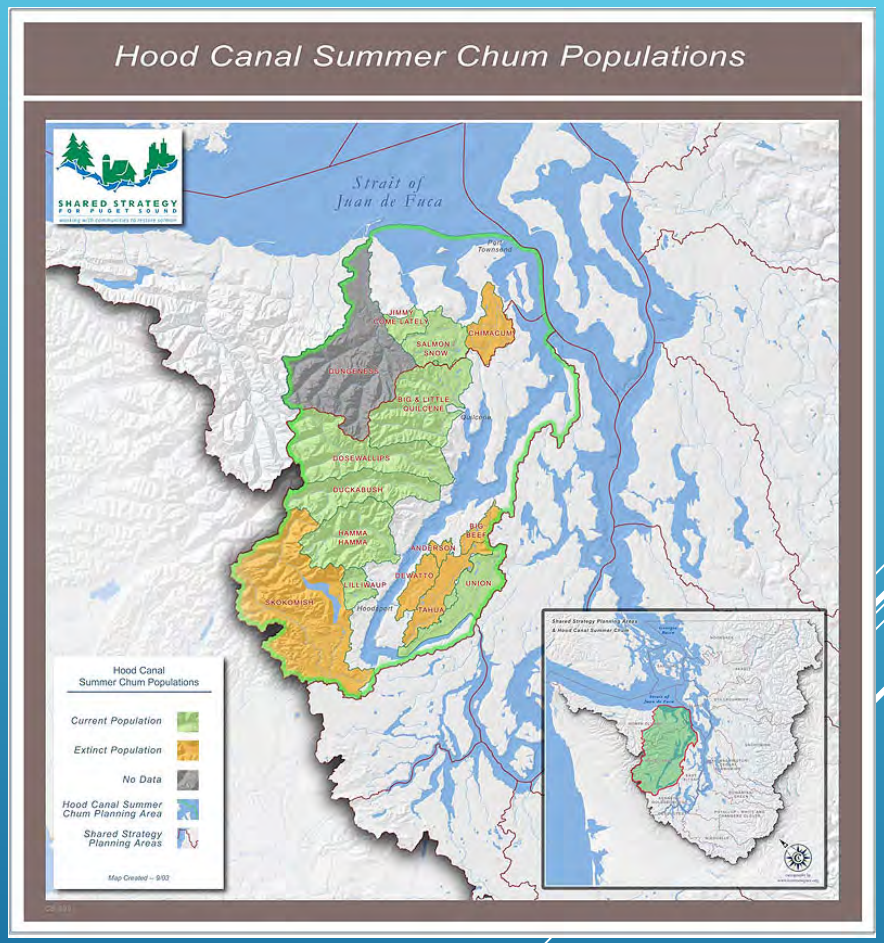
In partnership with: Washington Dept Of Fish and Wildlife

Funded by:
National Coastal Wetlands, USFWS
Salmon Recovery Funding Board

VICINITY MAP



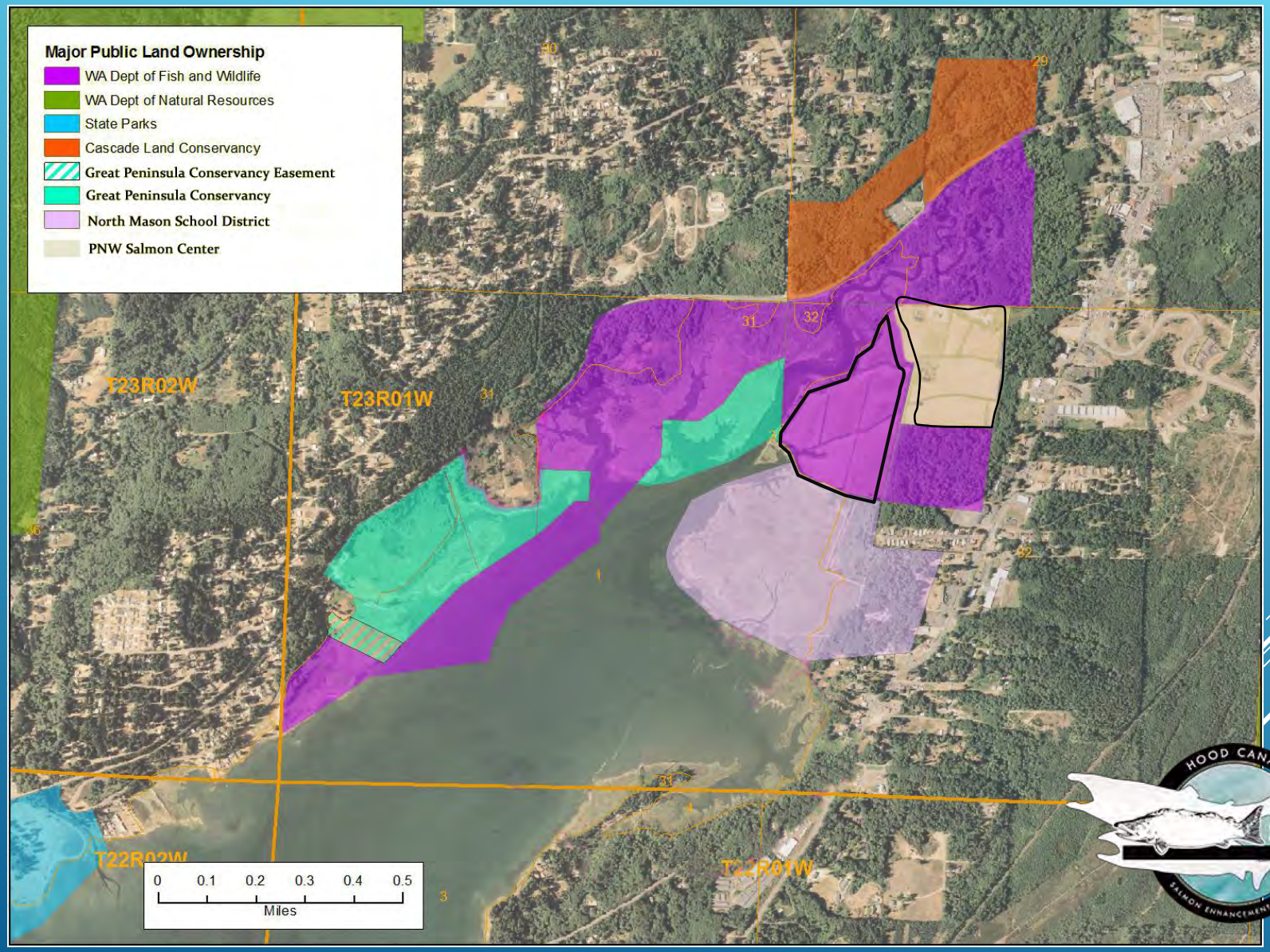
TARGET SPECIES



PROJECT OVERVIEW

PROJECT OVERVIEW

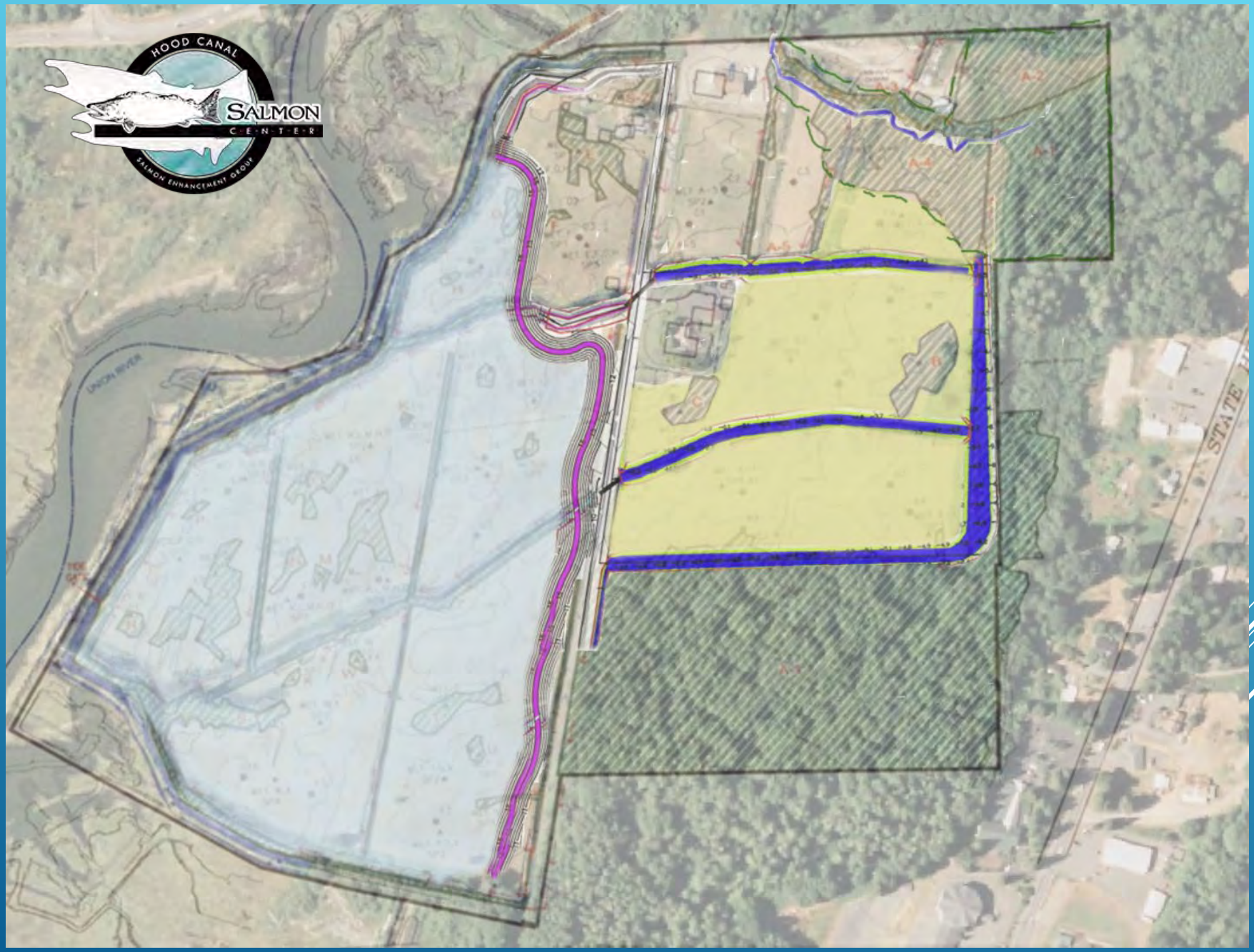
UNION RIVER ESTUARY CONSERVATION EFFORTS



PROJECT OBJECTIVES

- Creation of Salt Marsh
- Improve Salt Marsh Connectivity and Circulation
- Improve and maintain access to existing pedestrian trail

HOOD CANAL
SALMON
C·E·N·T·E·R
SALMON ENHANCEMENT GROUP


HOOD CANAL
SALMON
CENTER
SALMON ENHANCEMENT GROUP
STATE

HOOD CANAL
SALMON
C·E·N·T·E·R
SALMON ENHANCEMENT GROUP

October 2013, Photo by Doris Small

September 2015, Photo by Roy Clark, WDFW

October 2018

INFORMATION COLLECTED

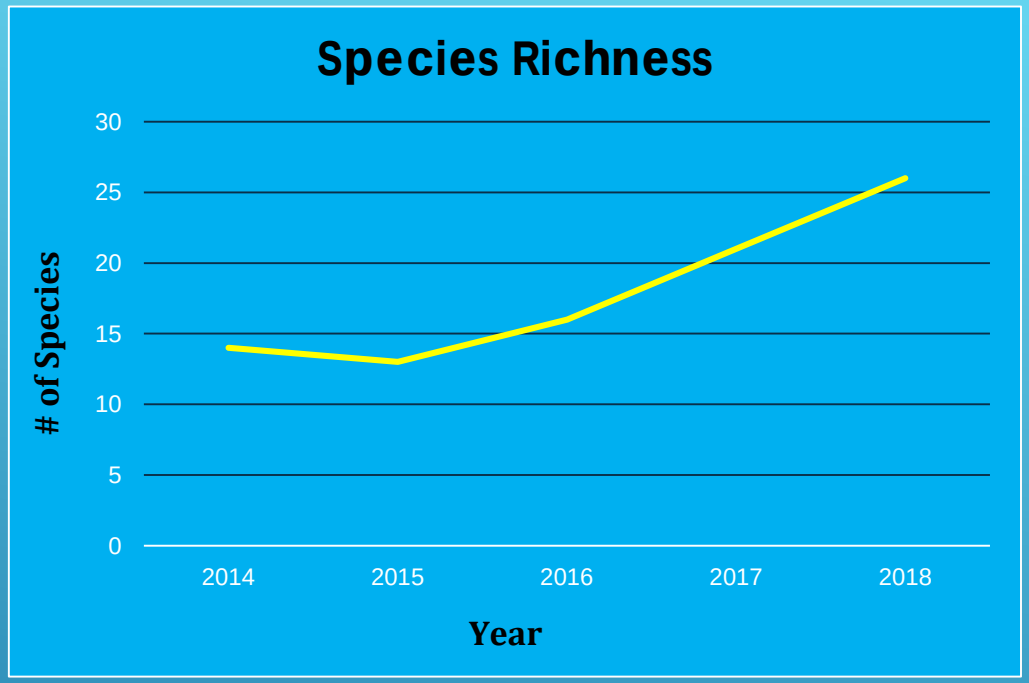
- Vegetation in the Salt Marsh
- LWD Movement
- Bird Species Abundance
- Adult Summer Chum Abundance
- Juvenile Summer Chum Abundance

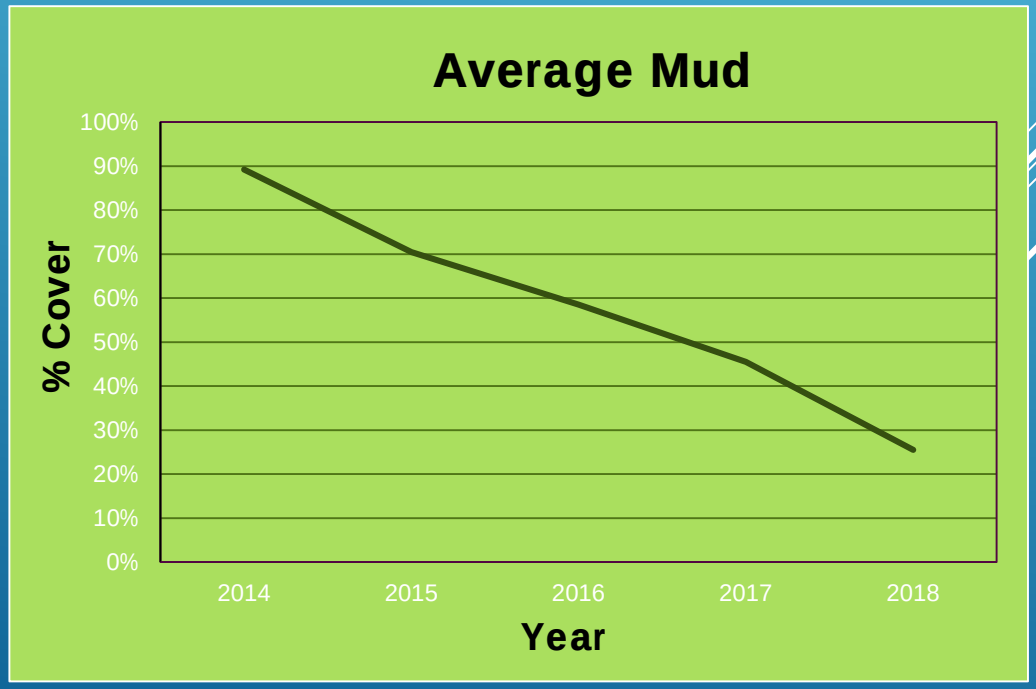
SALTMARSH VEGETATION MONITORING

SALTMARSH VEGETATION

New Species Found 2015-2018

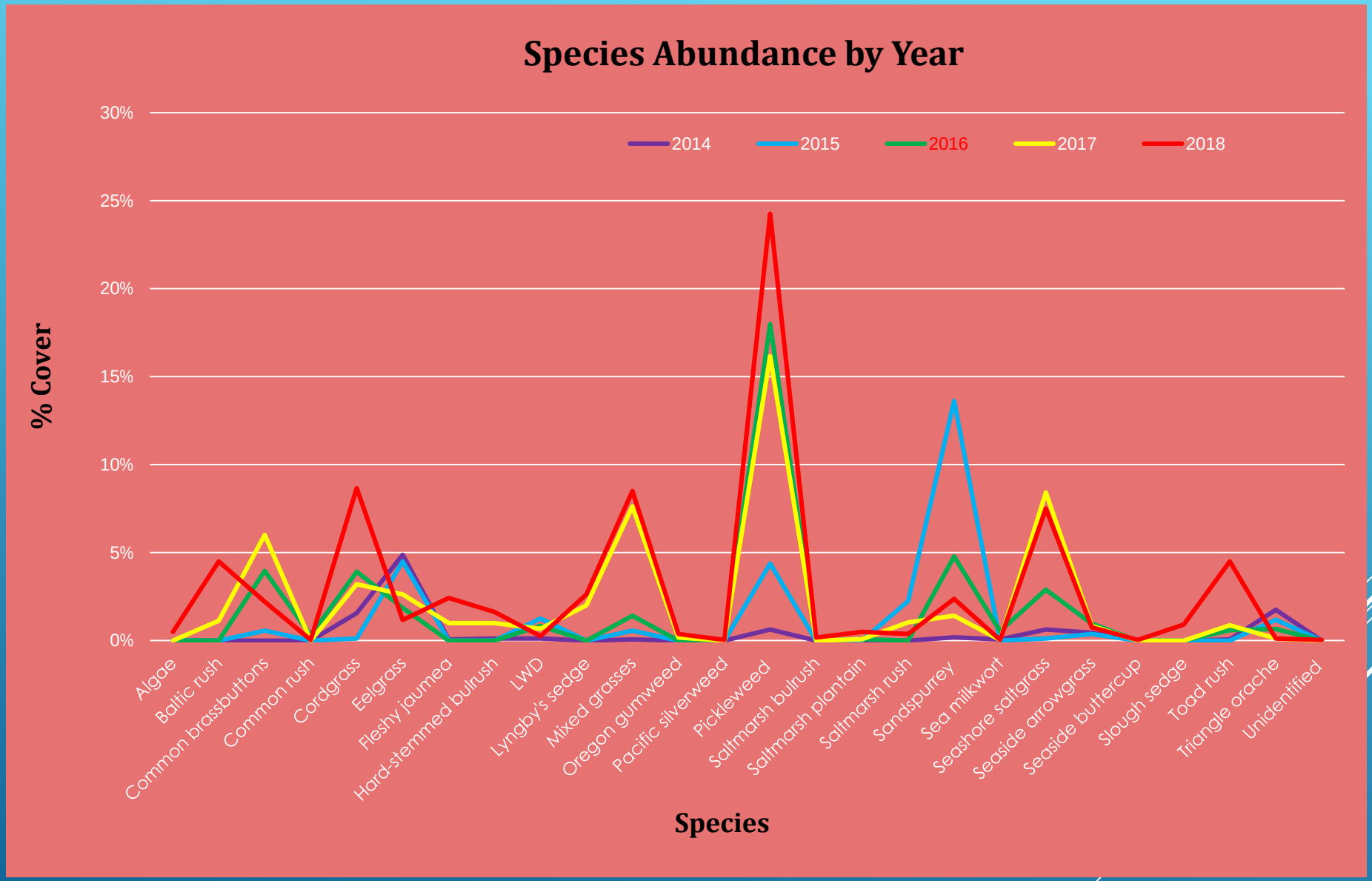
Baltic rush
Lyngby's sedge
Sough sedge
Saltmarsh plantain
Oregon gumweed
Seaside buttercup
Pacific silverweed
Saltmarsh bulrush
Common brassbuttons
Common rush


Species Richness
30
25
20
15
10
5
0
# of Species
2014
2015
2016
2017
2018
Year


Average Mud
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
% Cover
2014
2015
2016
2017
2018
Year

HOOD CANAL
SALMON
C·E·N·T·E·R
SALMON ENHANCEMENT GROUP
April 2014

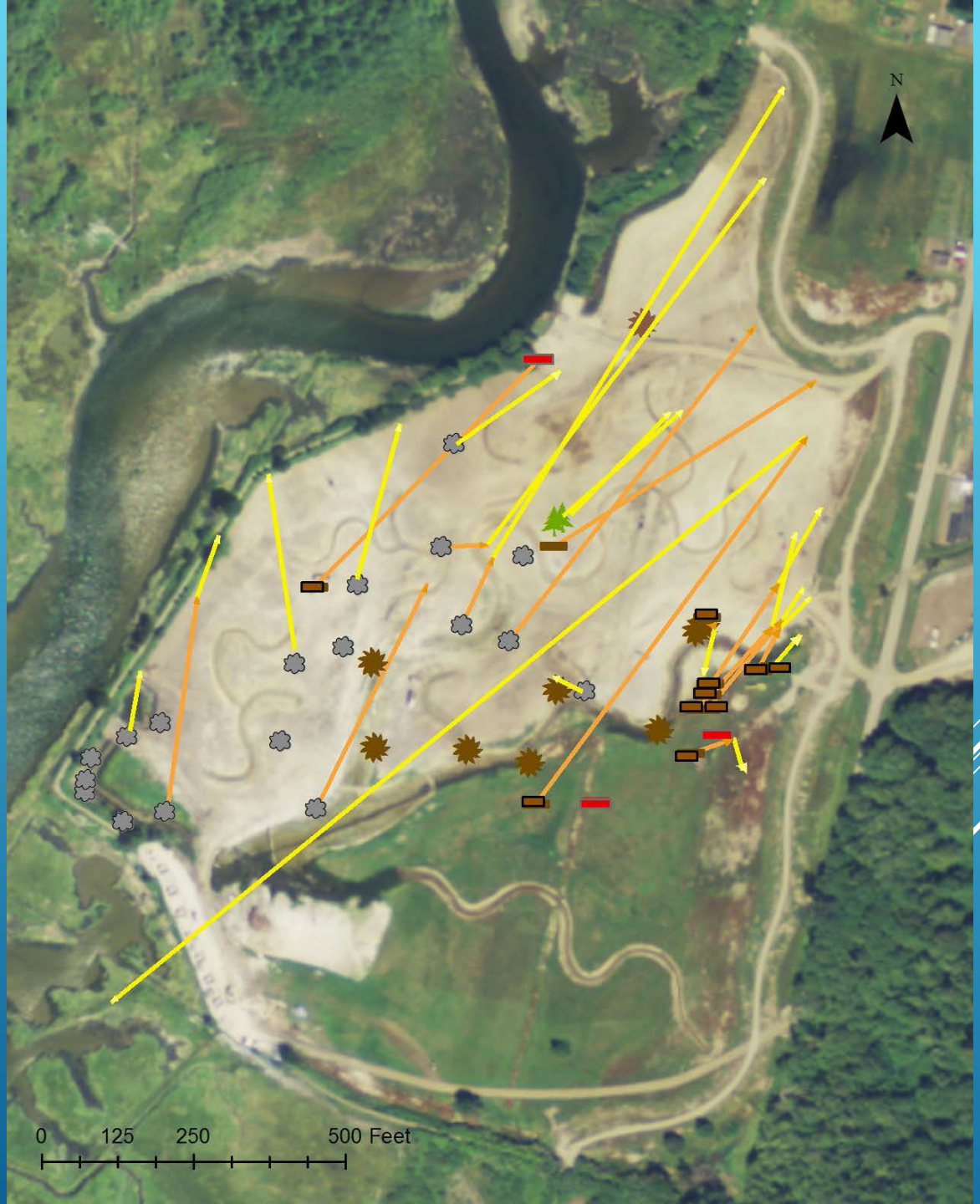
HOOD CANAL
SALMON
C·E·N·T·E·R
SALMON ENHANCEMENT GROUP
March 2019


Species Abundance by Year
30%
25%
20%
15%
10%
5%
0%
% Cover
2014
2015
2016
2017
2018
Algae
Baltic rush
Common brassbuttons
Common rush
Cordgrass
Eelgrass
Fleshy jaumea
Hard-stemmed bulrush
LWD
Lyngby's sedge
Mixed grasses
Oregon gumweed
Pacific silverweed
Pickleweed
Saltmarsh bulrush
Saltmarsh plantain
Saltmarsh rush
Sandspurrey
Sea milkwort
Seashore saltgrass
Seaside arrowgrass
Seaside buttercup
Slough sedge
Toad rush
Triangle orache
Unidentified
Species

LWD RECRUITMENT AND MOVEMENT

LWD MOVEMENT 2014-15

DORIS SMALL, WDFW

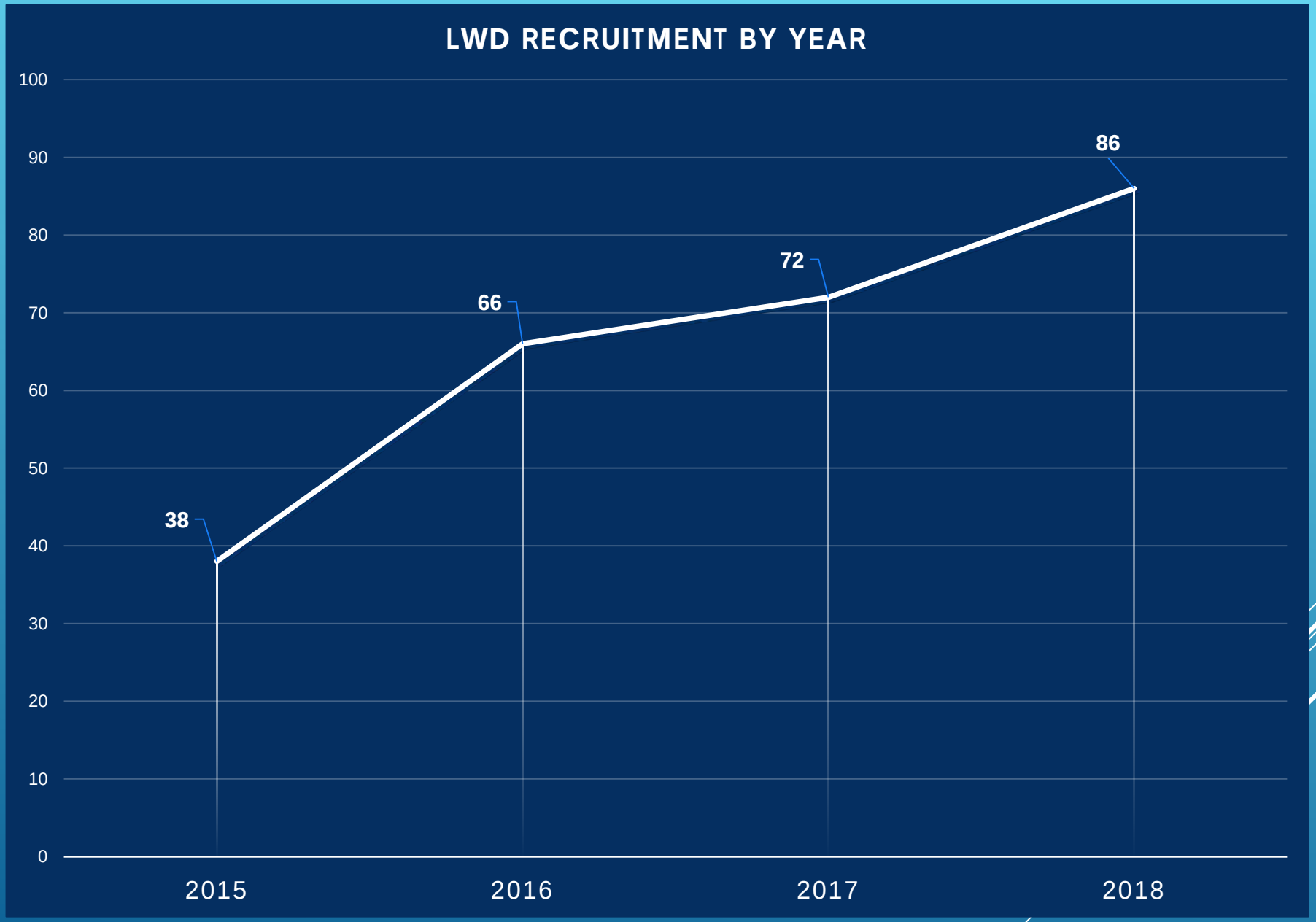


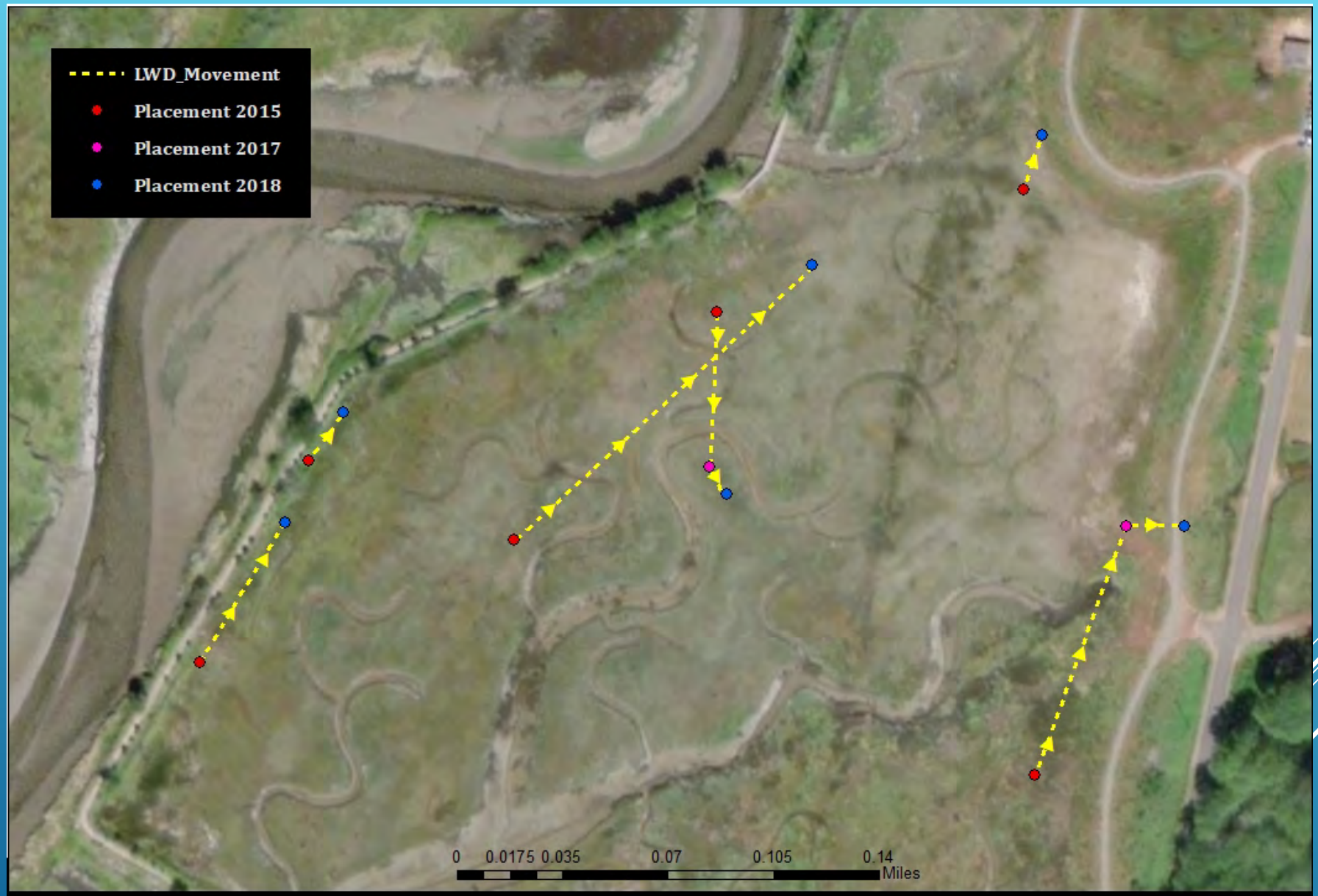
2015

2016

2017

2018

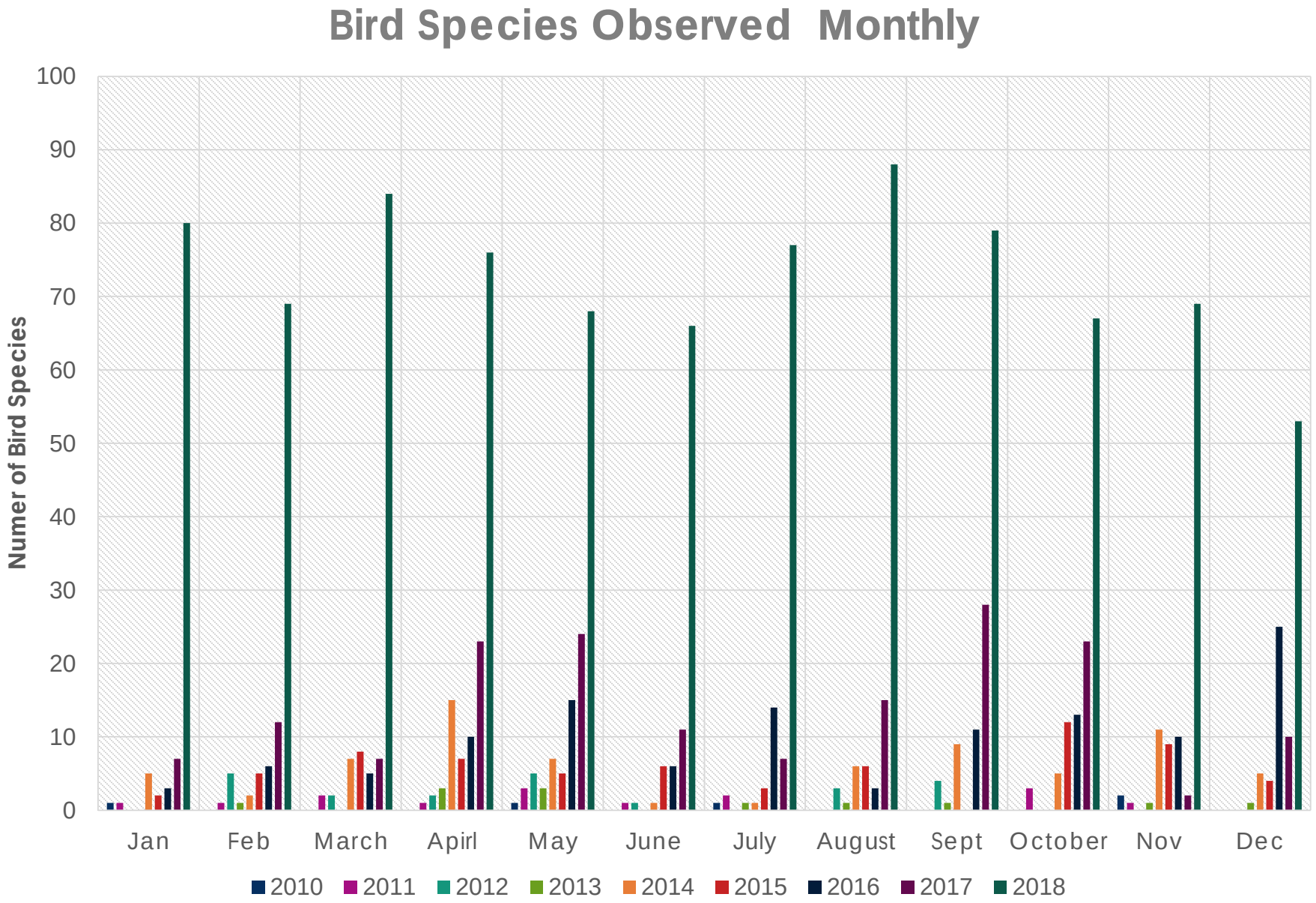

LWD RECRUITMENT BY YEAR
100
90
80
70
60
50
40
30
20
10
0
38
66
72
86
2015
2016
2017
2018



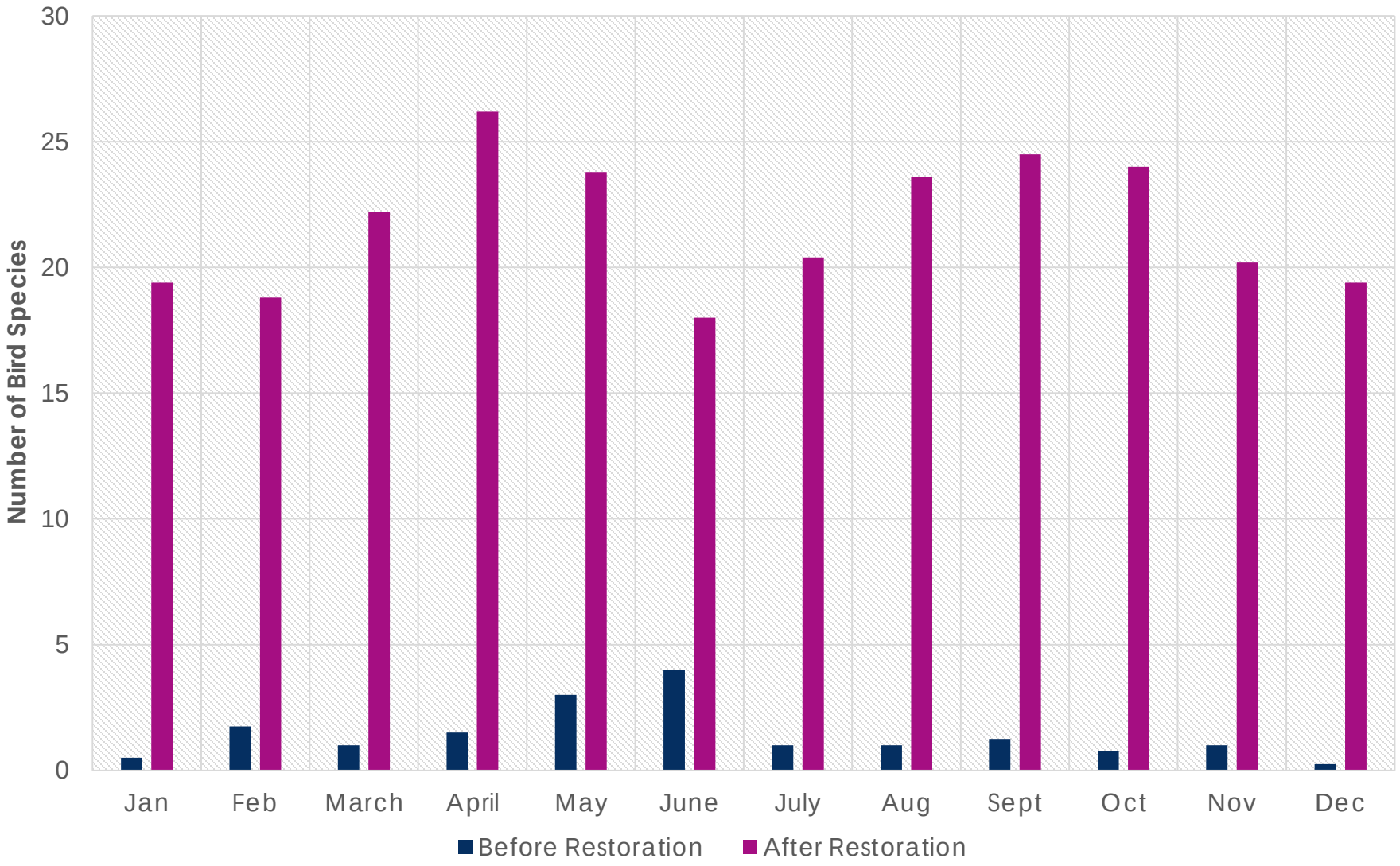
LWD Movement 2015 - 2018

BIRD SPECIES RICHNESS

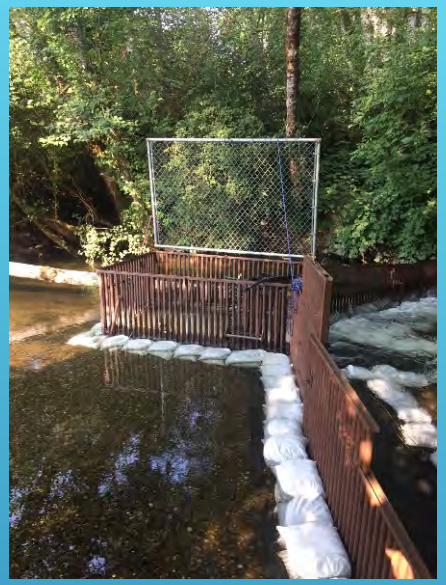
Kitsap Audubon Society

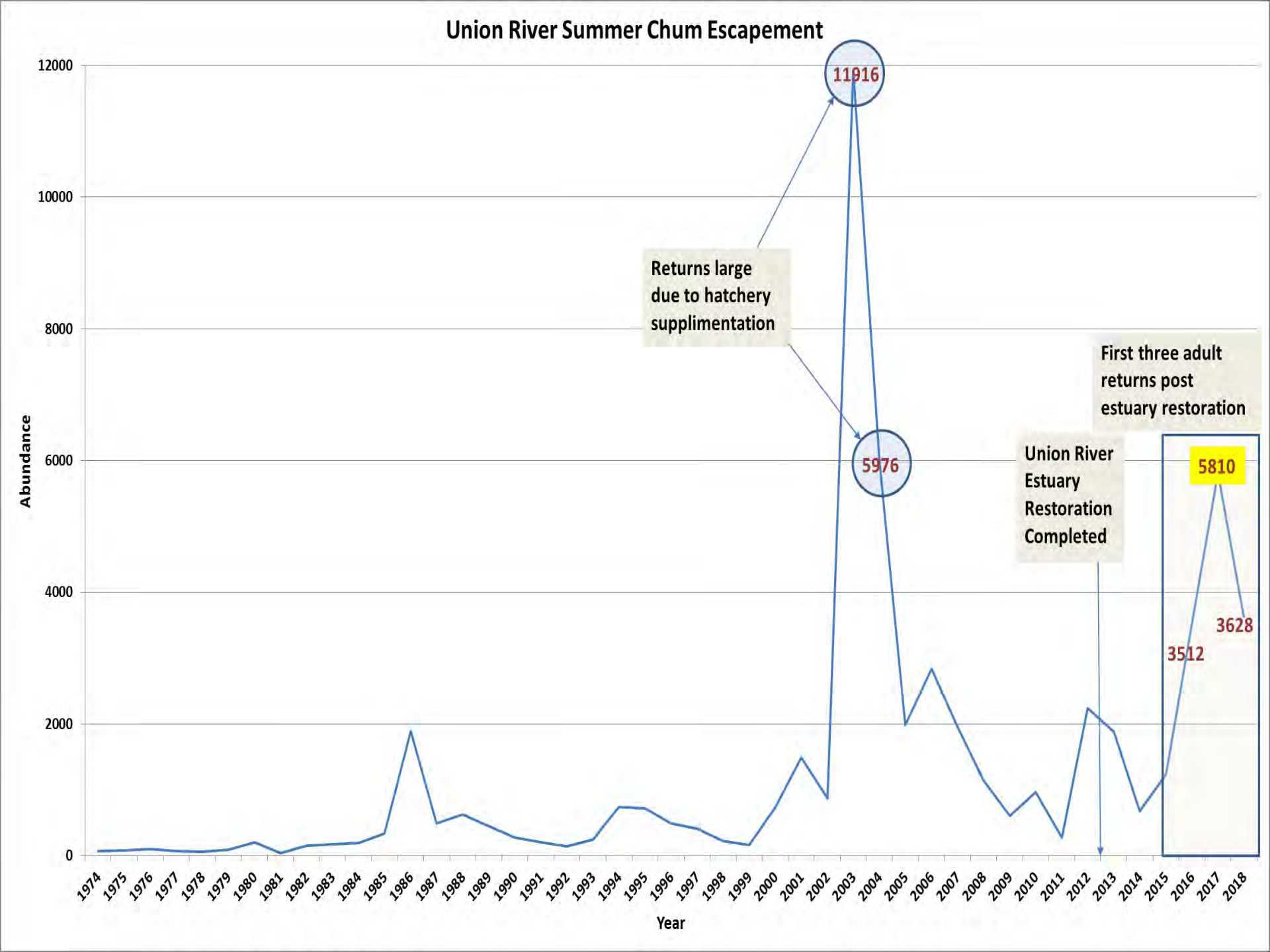

Bird Species Observed Monthly
Numer of Bird Species
100
90
80
70
60
50
40
30
20
10
0
Jan
Feb
March
Apirl
May
June
July
August
Sept
October
Nov
Dec
2010
2011
2012
2013
2014
2015
2016
2017
2018

BIRD SPECIES OBSERVED PRE/POST RESTORATION

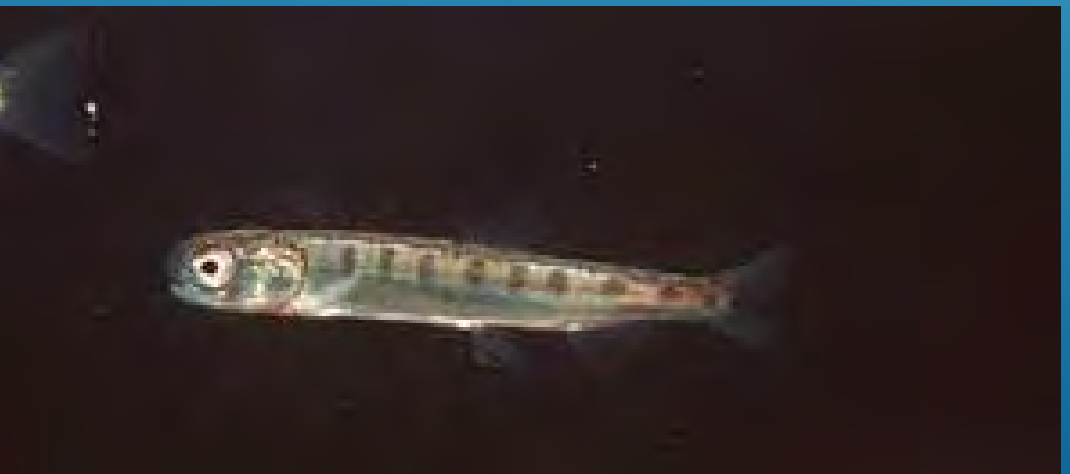


UNION RIVER SUMMER CHUM ADULT MONITORING

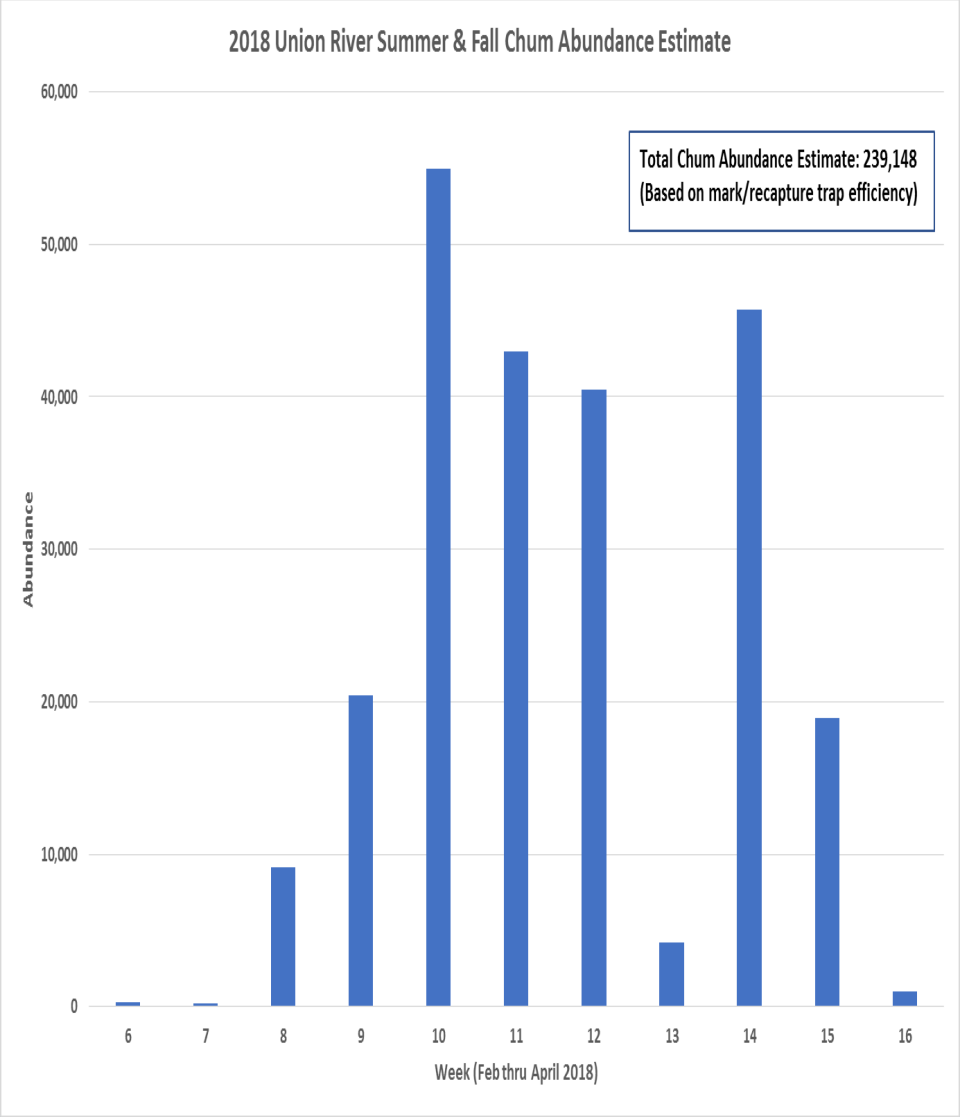


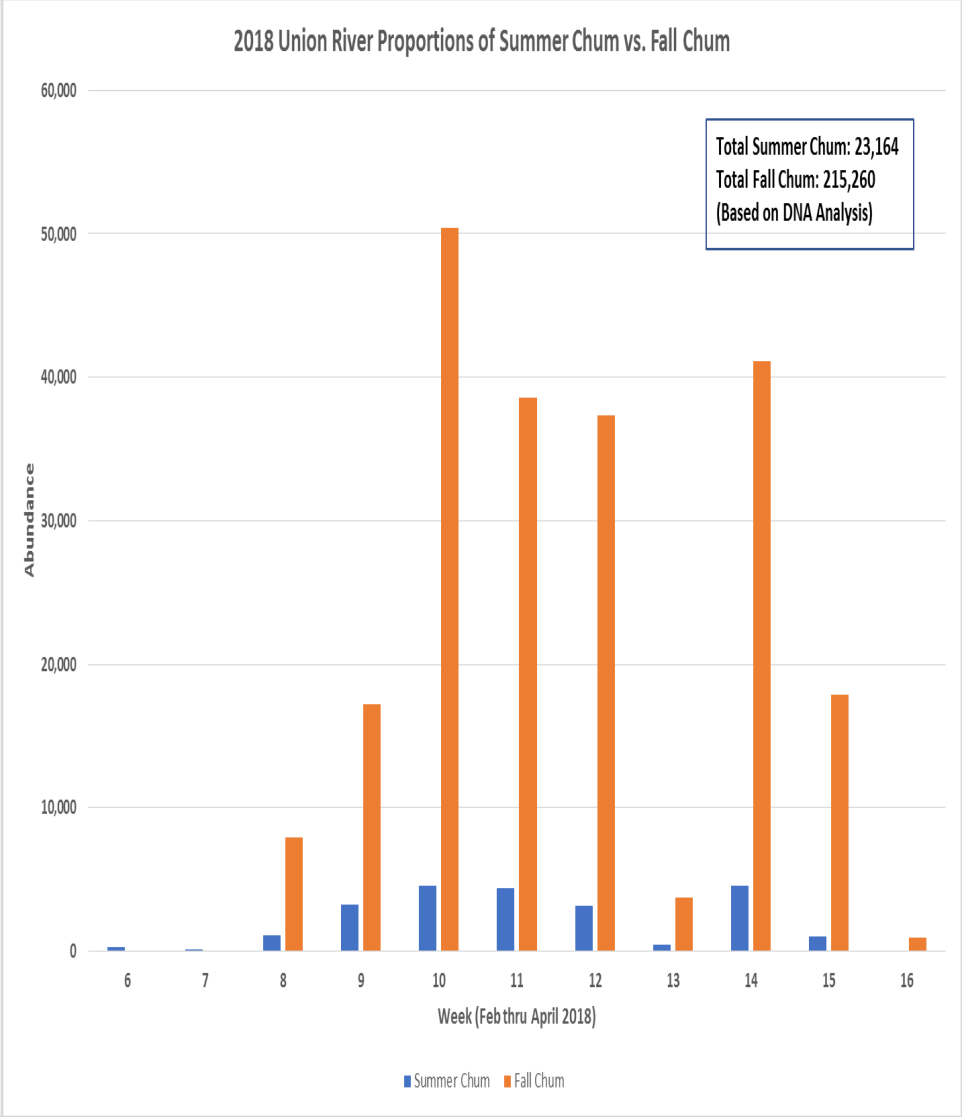

Union River Summer Chum Escapement
Abundance
Year
0
2000
4000
6000
8000
10000
12000
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
11916
5976
3512
5810
3628
Returns large due to hatchery supplimentation
Union River Estuary Restoration Completed
First three adult returns post estuary restoration

UNION RIVER JUVENILE SUMMER CHUM MONITORING



2018 UNION RIVER OUTMIGRATION ABUNDANCE AND DNA RESULTS





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