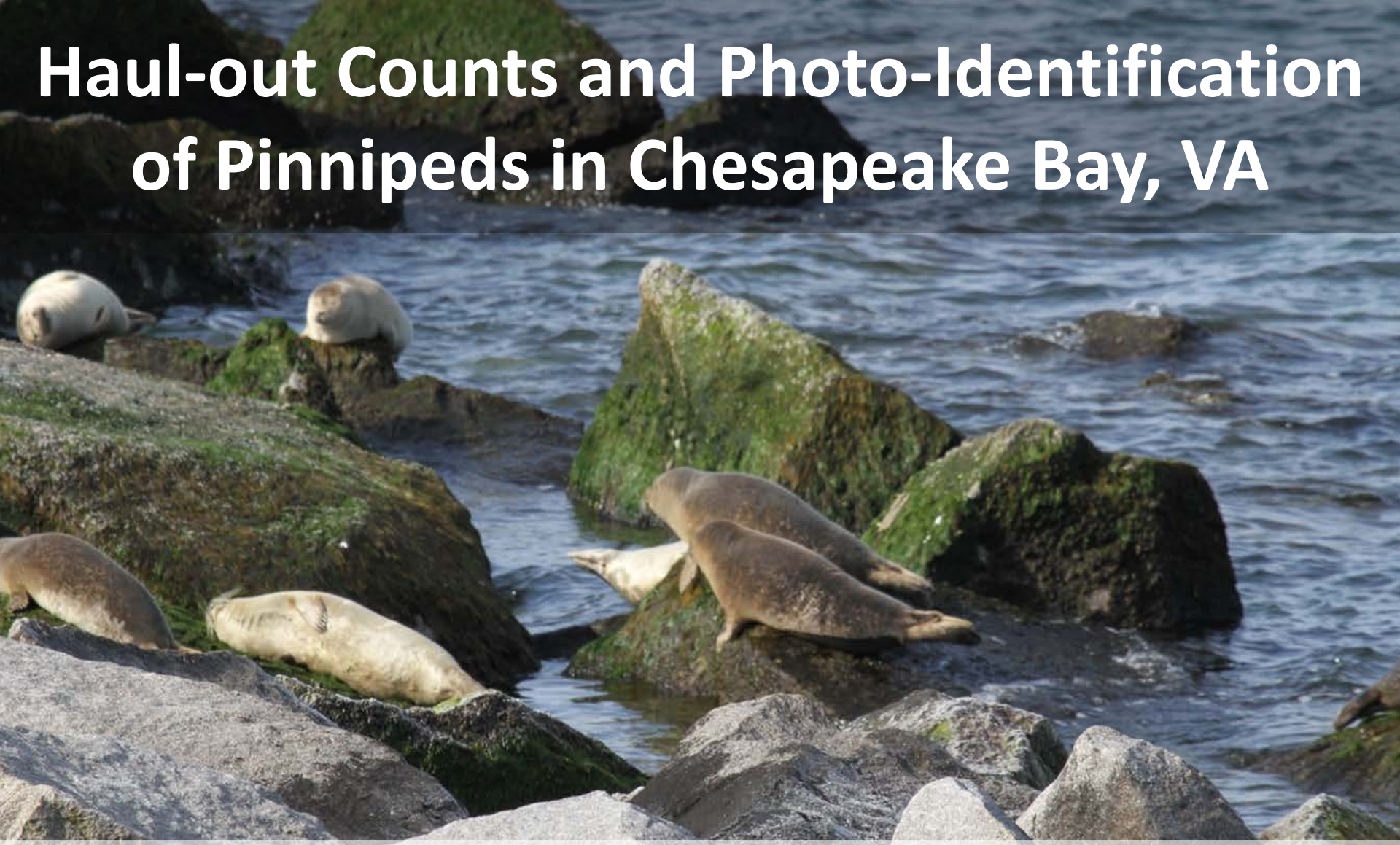
U.S. Navy Marine Species Monitoring Program

This is a work product for the purpose of technical review. All data and information in this presentation is preliminary and should not be cited or reproduced without first contacting the presenter. All field work is conducted under appropriate permits under ESA/MMPA.

Please visit the US Navy Marine Species Monitoring Program web portal for additional information on this project – www.navymarinespeciesmonitoring.us

US Navy Marine Species Monitoring Program – Atlantic Technical Review Meeting
Virginia Beach, VA *11-12 April 2017*

Haul-out Counts and Photo-Identification of Pinnipeds in Chesapeake Bay, VA



Deanna Rees, Danielle Jones, Brittany Bartlett

Naval Facilities Engineering Command Atlantic, Norfolk VA

Background

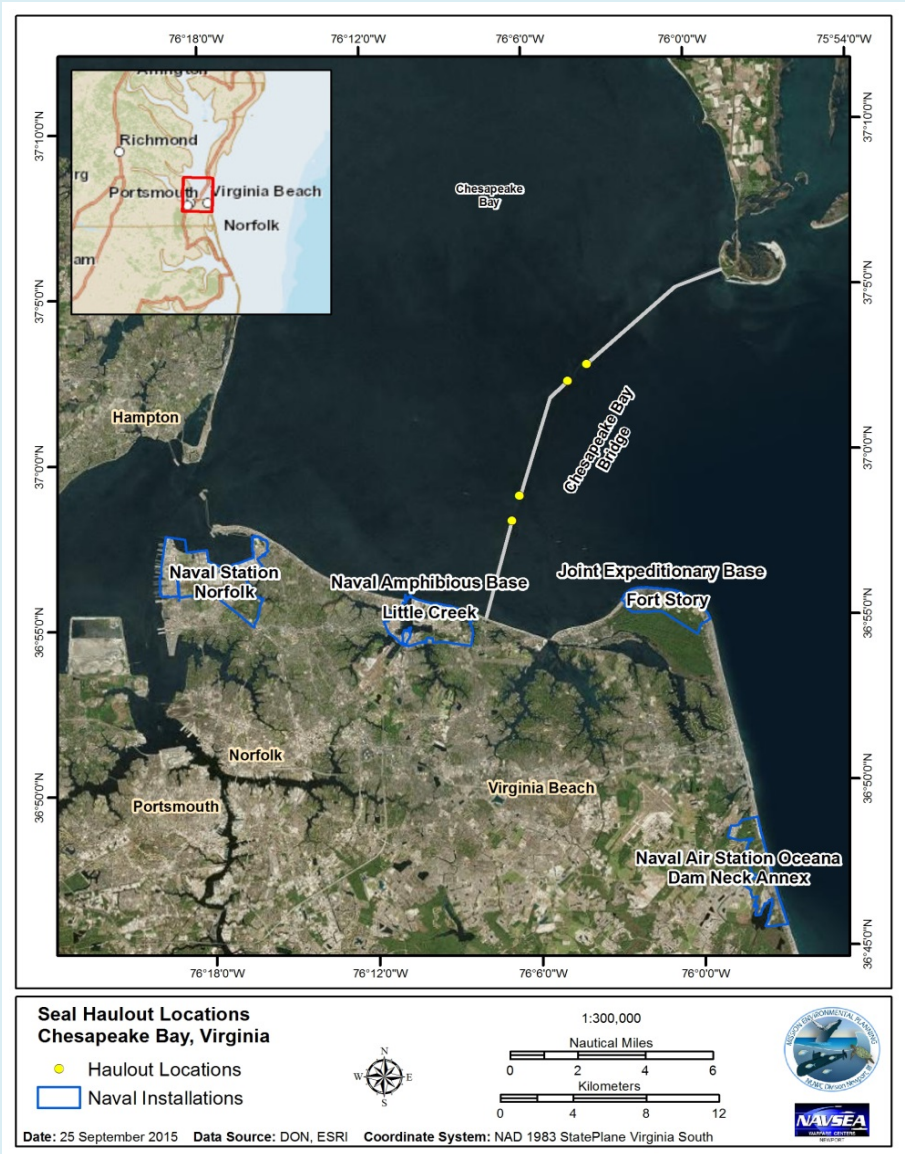
- Harbor seal (*Phoca vitulina concolor*) distribution seems to be expanding to mid-Atlantic region
  - Including important Navy areas (Norfolk/Virginia Beach)
- Prior to 2014, no dedicated survey data for pinnipeds in Virginia
- Observations from bridge tunnel workers indicate seals have been hauling out along the Chesapeake Bay Bridge Tunnel (CBBT) in Virginia for many years
- Navy decisions require best available information in order to properly comply with federal regulations

Purpose & Objectives

- Assess seal occurrence and haul-out patterns in areas important for Navy training and testing
- Conduct photo-ID to obtain baseline data
  - Examine site fidelity and movements within the region
- Collect data to provide for a more robust analysis in the assessment of potential impacts of Navy activities

Methods

- Land-based counts
- Counts are conducted 2-4x a month from Oct-May
- Counts made at 4 sites along the CBBT
- Counts occurred from morning to late afternoon and all tidal states
- 2 field seasons completed; 3rd is ongoing



Study Site

Chesapeake Bay Bridge Tunnel “Island”

Observation & Photographs

Observers use a vehicle as an elevated platform and to minimize disturbance

Current lens: Sigma 150-600mm
Added in 2016: 1.4x Teleconverter

Data Collected

- Best estimate of seals hauled out and in water
- Species
- Basic behavioral and disturbance data
- Presence of vessels in the survey area
- Environmental Data
  - Weather (wind, air temp, cloud cover, glare)
  - Tide
  - Water temp
  - BSS
- Photographs
  - 2010 to 2015 from local angler
  - 2014 to present during land-based counts

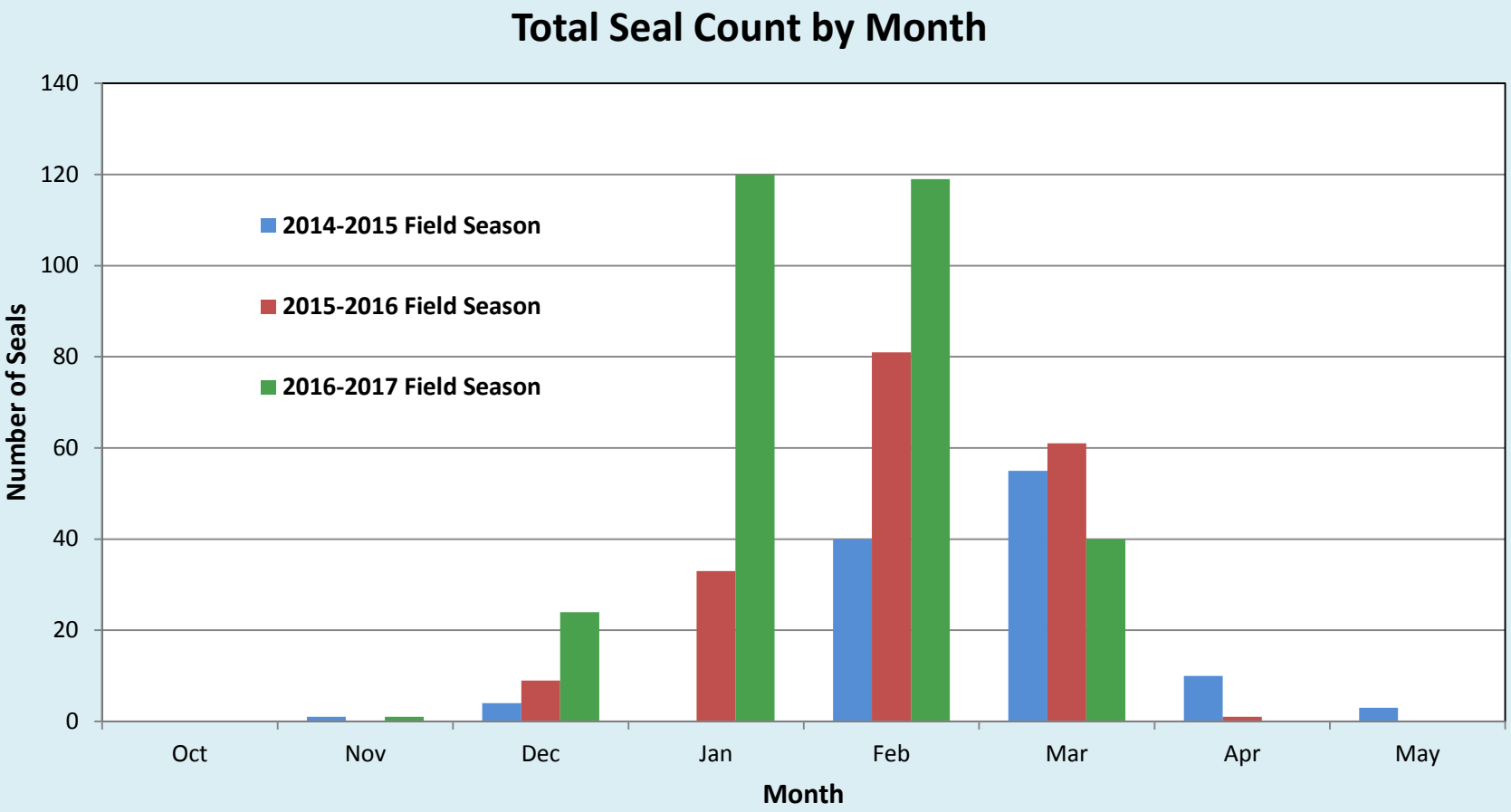
Results

- Majority of seals observed- harbor seals
  - One gray seal observed in 2014-2015 and 2015-2016 field seasons
- Seals observed from November to May
- Majority of seals observed at CBBT Island 3

Field Season	Number of Surveys	Number of Surveys with Seal Sightings	Total Seal Count	Max Seal Count for a Single Survey	Average Seal Count per Survey*
2014-2015	12	11	113	33	10
2015-2016	22	14	185	39	13
2016-2017	24	18	304	40	15

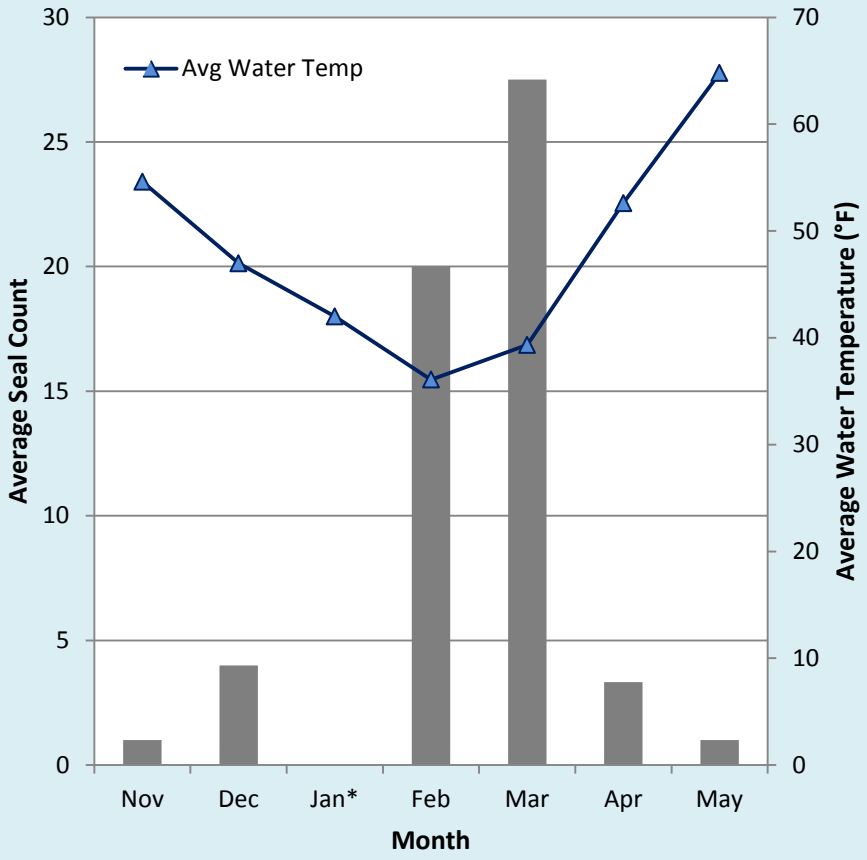
*On surveys when seals were observed

Results


Total Seal Count by Month
140
120
100
80
60
40
20
0
Number of Seals
2014-2015 Field Season
2015-2016 Field Season
2016-2017 Field Season
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Month

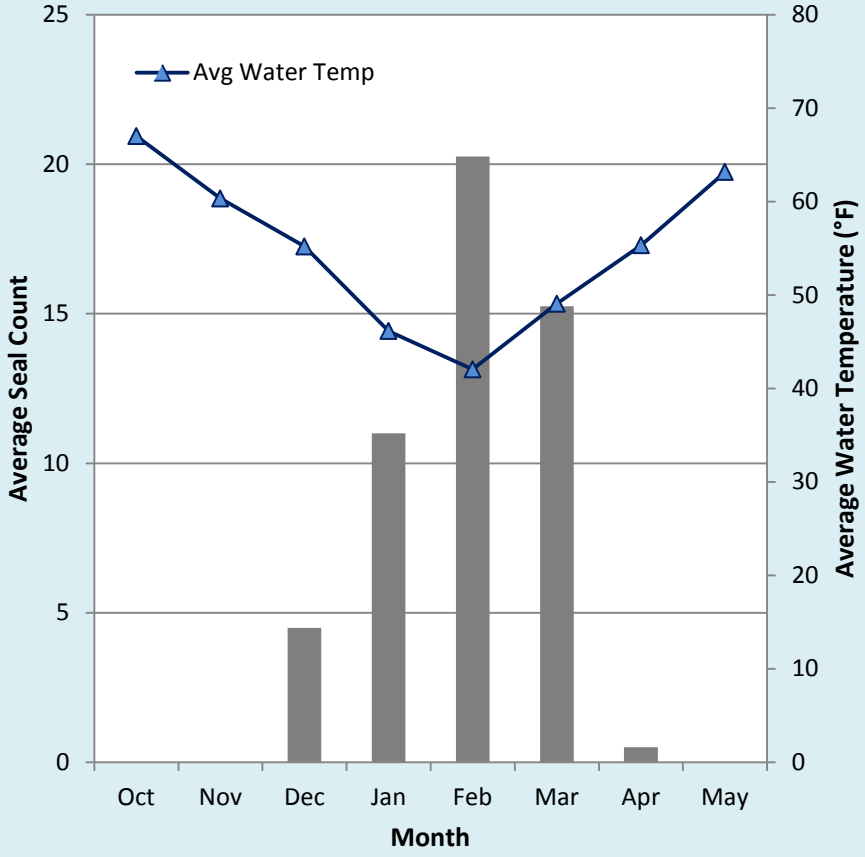
Results

Average Seal Count by Month with Corresponding Average Monthly Water Temperature



2014-2015 Field Season

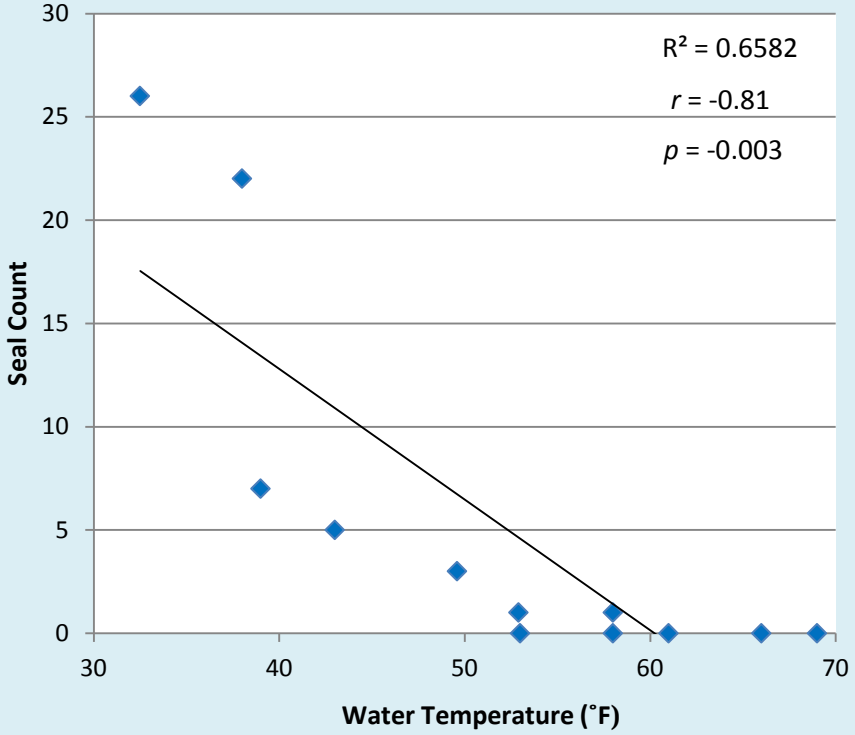
* No counts were conducted in January



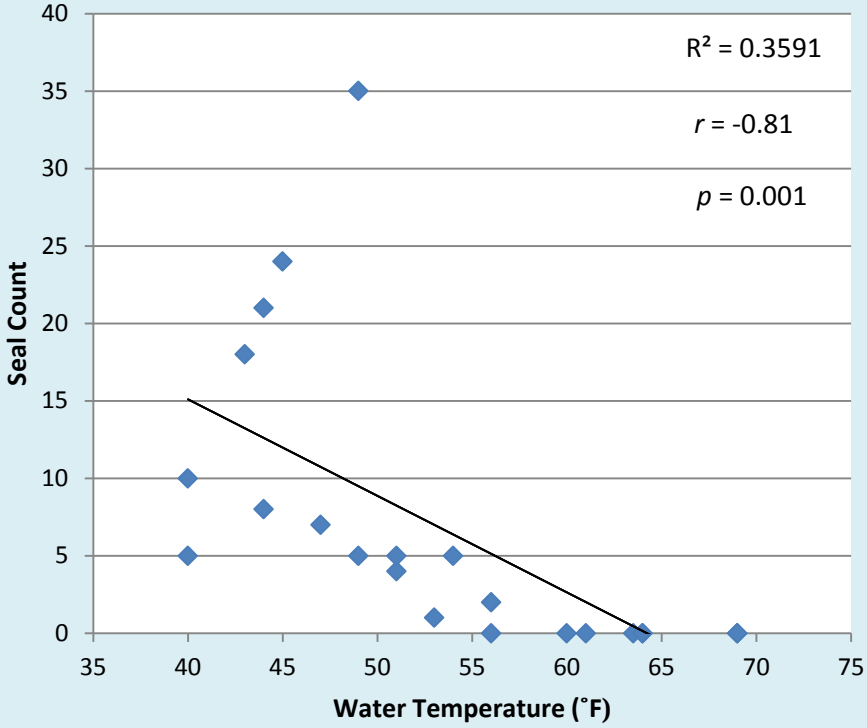
2015-2016 Field Season

Results

Seal Count vs. Water Temperature



2014-2015 Field Season



2015-2016 Field Season

Photo Identification Results

- 52 uniquely identified harbor seals (many photos still unprocessed)
- 6 seals (11.5%) were identified on more than one survey day
- Re-sightings spanned from 5-1,820 days
  - Two individuals were sighted in both the 2014-2015 and 2015-2016 field seasons

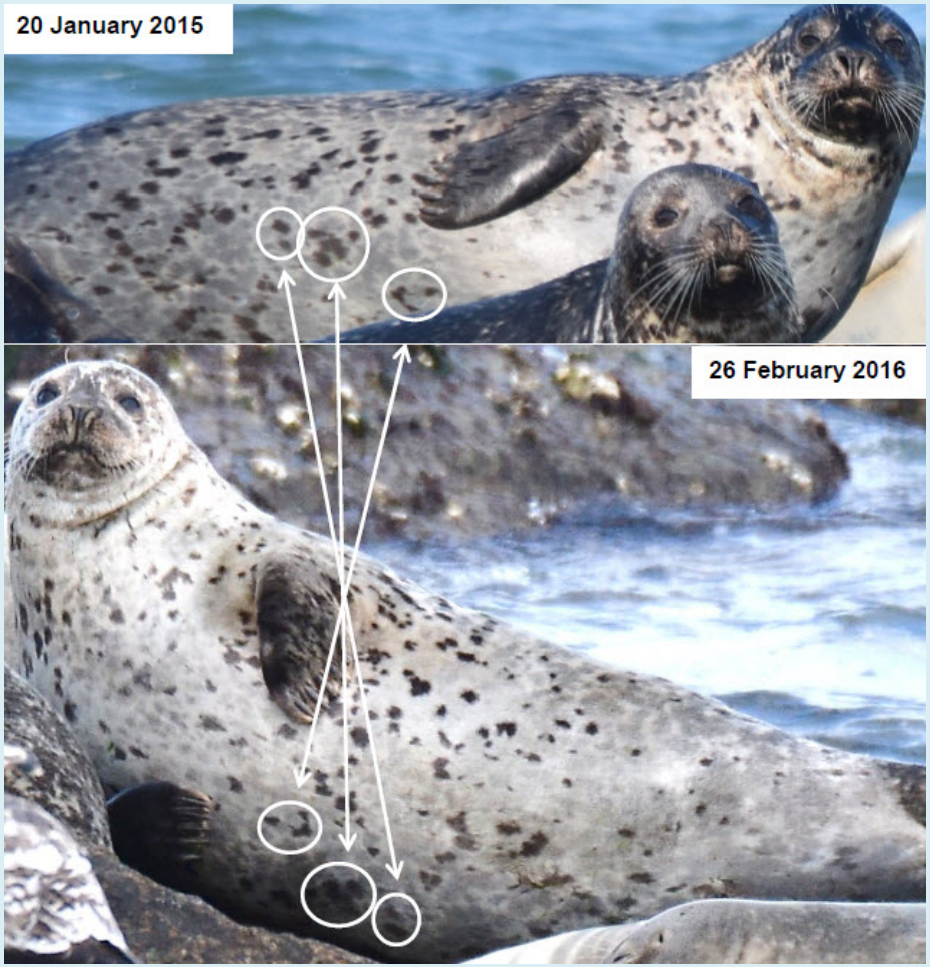


Photo Identification Results

Summary

- Results indicate that harbor seals regularly occur in Virginia from November to May
  - Peak counts between January and March
- Peak counts seemed to coincide with some of the lowest recorded water temperatures
  - Counts decreased as water temperatures rose above 55°F
- A degree of site fidelity
  - Individuals have been resighted both within a season and across multiple seasons

Next Steps

- Process 2016-2017 photos
- Analyze 2016-2017 count and environmental data
- Continue collaboration with NUWC, TNC & VAQS
- Tagging effort – investigate change from opportunistic to live capture

Acknowledgements

- USFF Environmental Readiness Division, esp. Laura Busch
- NAVFAC Atlantic Marine Resources Branch
- NUWCDIVNPT Environmental Division
- Chesapeake Bay Bridge Tunnel Authority
- Zak Poulton & Alex Wilke, TNC
- Sarah Mallette & Sue Barco, VAQS
- “Jet Ski” Brian Lockwood
- Len Thomas, CREEM
- Andrea Bogomolni & Lisa Sette, WHOI
- You: thank you for listening!

Questions?