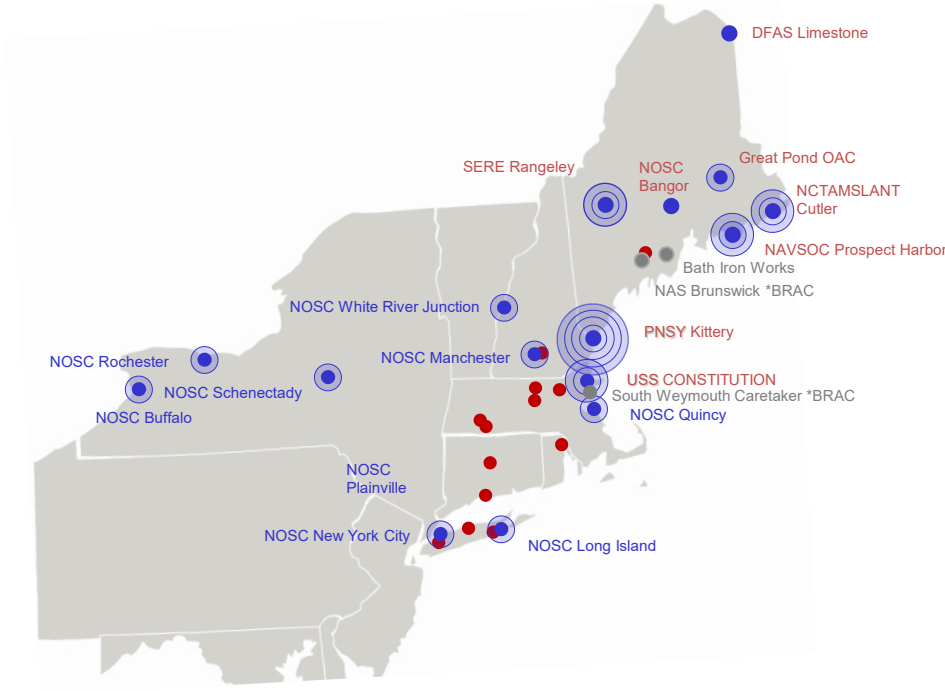




NSA Maine Natural Resource Program – Special Area Cutler

Ian Trefry
Natural Resource Manager
NSA Maine Environmental Division



NSA Maine Area of Responsibility

- 6 States
- 4 Navy Installations
- 1 MWR Recreation Site
- 11 Naval Support Centers
- USS Constitution Dry Dock
- 4 INRMPS
- 1 NR Billet

Overview of Significant Natural Resources

- Wetlands and Waterbodies
 - Over 5,000 acres of wetlands, 200 miles of freshwater streams, 3 miles of freshwater shoreline, and 23 miles of coastline.
- Protected Species
 - 9 Federal, 17 State, and 77 Species of Special Concern.
- Critical Habitat
 - Atlantic salmon and Atlantic Sturgeon



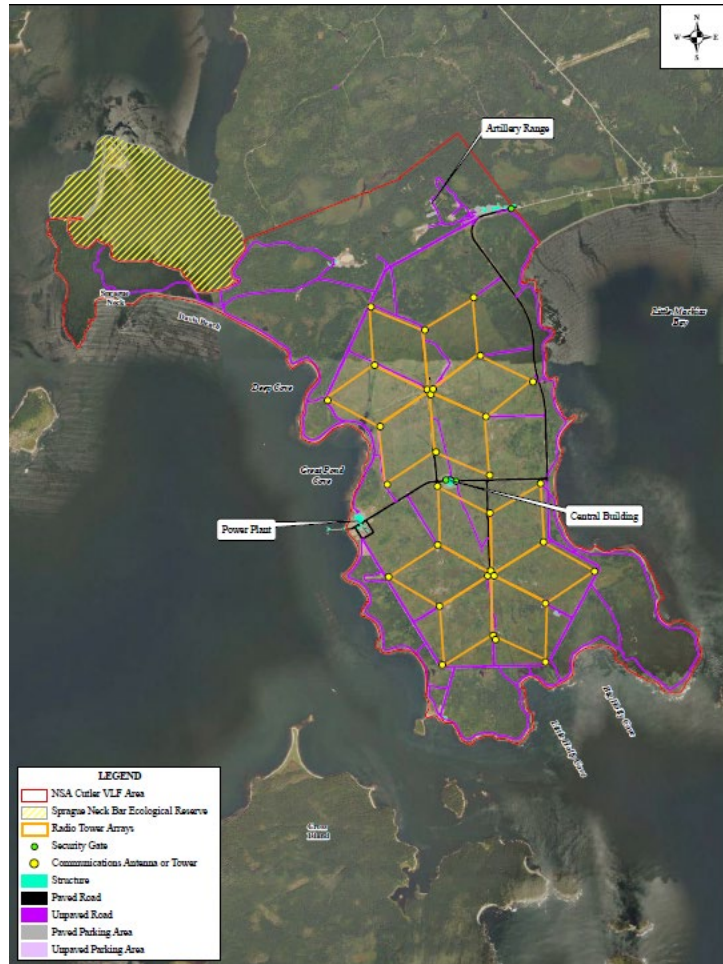
Significant Natural Resources Continued



- Migratory Birds
- Navy's First Ecological Reserve Area
 - NSA Cutler - Sprague Neck
- Conservation Lands
 - Approximately 40,000 acres

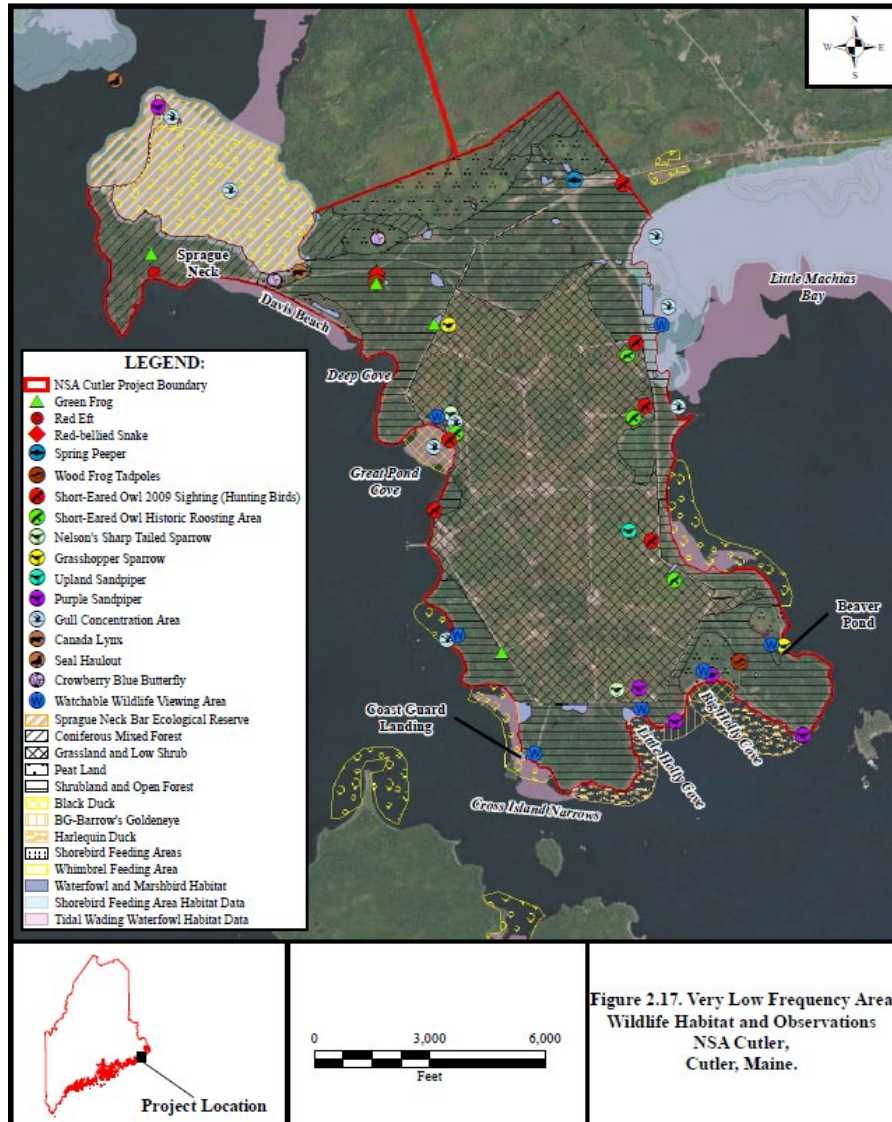
Special Area Cutler

- Commission June 23, 1961
- Mission is to provide navigational signals and maintain communications with ships, planes, and submarines in the North Atlantic Ocean, Arctic Ocean, and the Mediterranean Sea.
- 2,860 Acres
 - 1,800 acres is maintained grassland



NSA Cutler Significant Natural Resources

- Designated a national and global Important Bird Area
 - Extensive Grasslands (grassland dependent birds)
 - Extensive coastal habitats (shorebird/seabird staging and resting)
 - Sprague Neck Bar and mudflat
- Federally Listed Species:
 - Piping plover, roseate tern, red knot, Canada lynx, Atlantic salmon (& CH), northern long-eared bat, {tri-colored bat, monarch butterfly}.
- 1975 –2009: 285 avian species documented at NSA Cutler (USFWS, ME Audubon)
- First INRMP signed in 2012 (development started in 2009)
 - USFWS wanted INRMP projects focus on collecting avian data.





USFWS Concern

“The Service has significant concerns that the INRMP does not address the cumulative effect of collision mortality by birds and bats at the Cutler facility. A recent review of bird mortality at towers³ cited multiple studies that document 260 to 1998 birds are killed annually at single, 800-1000 foot guyed towers. Given that there are 26 guyed towers 800-1000 feet tall at the Cutler VLF facility, as much as 62 miles of overhead wires, and the facility is located in a major bird flyway, take of migratory birds and bats could be thousands or even tens of thousands of birds annually.” - USFWS Maine Field Office 2012 INRMP Review

27 Avian Focused Projects 12-year Period

2014 Avian Radar and Acoustic Monitoring Surveys

2015 Avian Fatality Monitoring

2015 MAPS Year 1

2015 Shorebird Surveys Year 1 (ISS)

2016 Avian Fatality Monitoring Year 2

2016 MAPS Year 2

2017 Avian Fatality Monitoring Year 3

2017 MAPS Year 3

2017 Shorebird Survey Year 2 (ISS)

2017 Grassland Bird Survey

2017 Raptor Migration Survey

2018 MAPS Year 4

2018 Eagle Protection Plan – Bald Eagle Movement Study

2018 Avian Radar and Acoustic Monitoring Surveys Year 2

2018 Pilot Raptor Banding Station

2019 MAPS Year 5

2020 Shorebird Survey Year 3

2020 Migratory Raptor Research Project (Peregrin falcon)

2021 Shorebird Survey Year 4

2022 Shorebird Survey Year 5

2022 Grassland Bird Survey Year 2

2023 Shorebird Survey Year 6

2024 Shorebird Survey Year 7

2024 Grassland Bird Survey Year 3

2025 Avian Fatality Monitoring

2025 Shorebird Survey Year 8

2026 Shorebird Survey Year 9

Results

- 234 of the reported 285 avian species have been re-confirmed at NSACutler
- Tremendous amount of baseline data across all habitats. Now what?
- We still do not have a good handle on fatality estimates
 - 2025 ran 2-week pilot efficiency trial = K9 vs Human (K9's won by large margin)
 - 2026 funded to conduct full season of K9 fatality Monitoring. Field work to be conducted in 2027.



Avian Hazards





Illustrations of Avian Hazards



2015 Avian Fatality Monitoring



Table 1. Summary of Three-Year Fatality Monitoring at NCTAMSLANT DET Cutler.

METRIC	SEASON ¹	YEAR 1 (2015)	YEAR 2 (2016)	YEAR 3 (2017)
Hazardous Area	Spring	800 acres	800 acres	800 acres
	Fall	800 acres	800 acres	400 acres
Number of Search Plots	Spring	40 (30 square, 10 polygon)	40 (30 square, 10 polygon)	40 (30 square, 10 polygon)
	Fall	40 (30 square, 10 polygon)	N/A	19 (14 square, 5 polygon)
Size of Each Search Plot	Spring	5 acres (approximate)	5 acres (approximate)	5 acres (approximate)
	Fall			
Study Period	Spring	5 consecutive weeks	5 consecutive weeks	5 consecutive weeks
	Fall	5 consecutive weeks	N/A	5 consecutive weeks
Search Interval	Spring	Weekly	Weekly	Weekly
	Fall			
BIRD FATALITY ESTIMATE ²				
Estimated Total Number of Fatalities	Spring	1,806 (90% CI =1,324–8,028)	1,417 (90% CI = 975–3,018)	1,079 (95% CI = 713–1,716)
	Fall	1,550 (90% CI =1,027–3,318)	N/A	372 (95% CI = 243–639)
	Total	3,355 (90% CI =2,429–11,074)	N/A ³	N/A ³
Mean Estimated Fatality Rate per Plot	Spring	11.28 (90% CI = 8.27–50.17)	8.85 (90% CI = 6.09–18.86)	6.74 (95% CI = 4.46–10.72)
	Fall	9.68 (90% CI = 15.18–69.21)	N/A	2.32 (95% CI = 1.52–3.99)
	Total	20.97 (90% CI = 15.18–69.21)	N/A ³	N/A ³
Number of Fatalities Found	Spring	95	105	102
	Fall	144	N/A	15
	Total	239	N/A ³	117
Adjustment Factor ⁴	Spring	19	13	11
	Fall	11	N/A	25
	Total	14	N/A ³	N/A ³
BAT FATALITY ESTIMATE ²				
Estimated Total Number of fatalities per year		N/A (no bats found)	N/A (no bats found)	N/A (no bats found)
Mean Estimated fatality rate per plot per year		N/A (no bats found)	N/A (no bats found)	N/A (no bats found)
Adjustment factor		N/A (no bats found)	N/A (no bats found)	N/A (no bats found)

¹Spring = 15 April–30 May | Fall = 1 September–15 October²Excludes incidental fatalities (see Table 10)³Total fatalities for Year 2 and Year 3 were not calculated⁴Scales up the data collected from the search plots to all 160 plots at the Installation (see Section 0)

CI = Confidence interval

N/A = Not applicable



Avian Radar

Figure 2.19. Very Low Frequency

Spring201

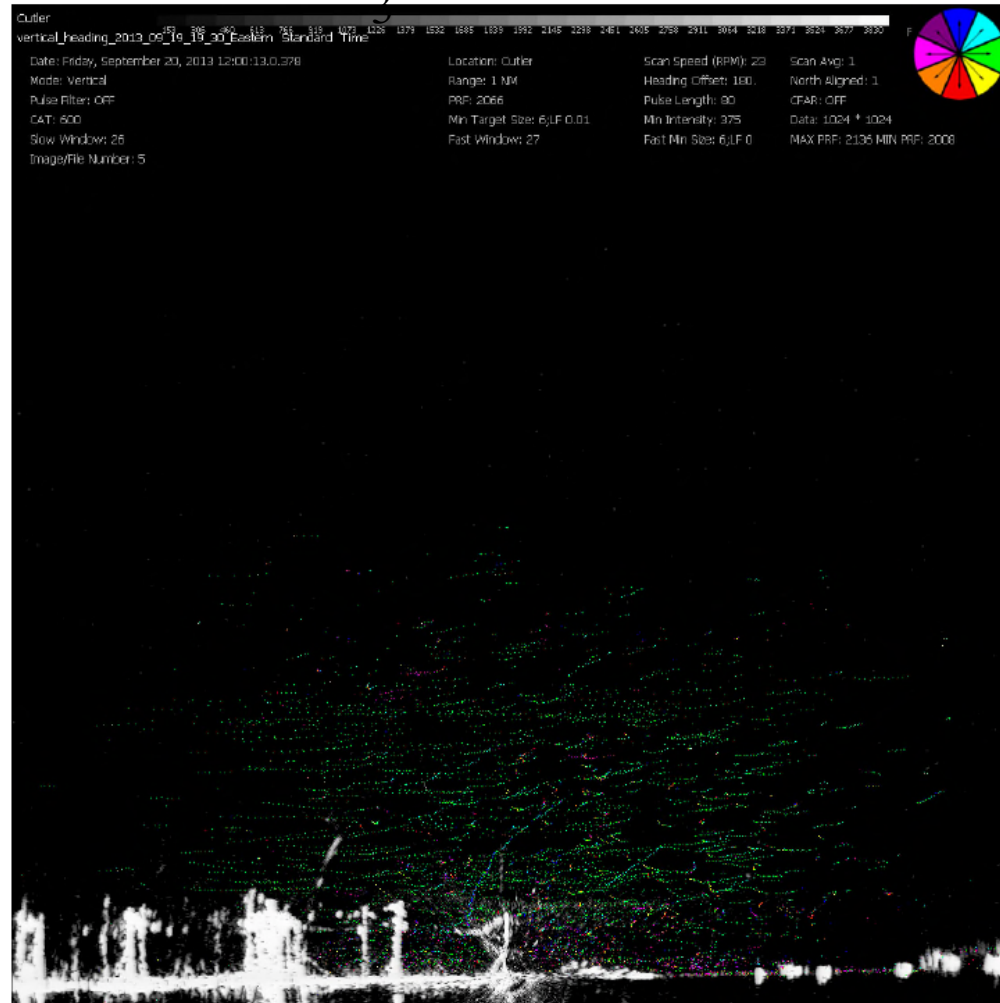


Figure 2-5. Nocturnal Migration (mostly green dots) at the Installation (left of center) and Nearshore Airspaces (right of center), NCTAMSLANT DET Cutler, Spring 2013.

Fall 2016

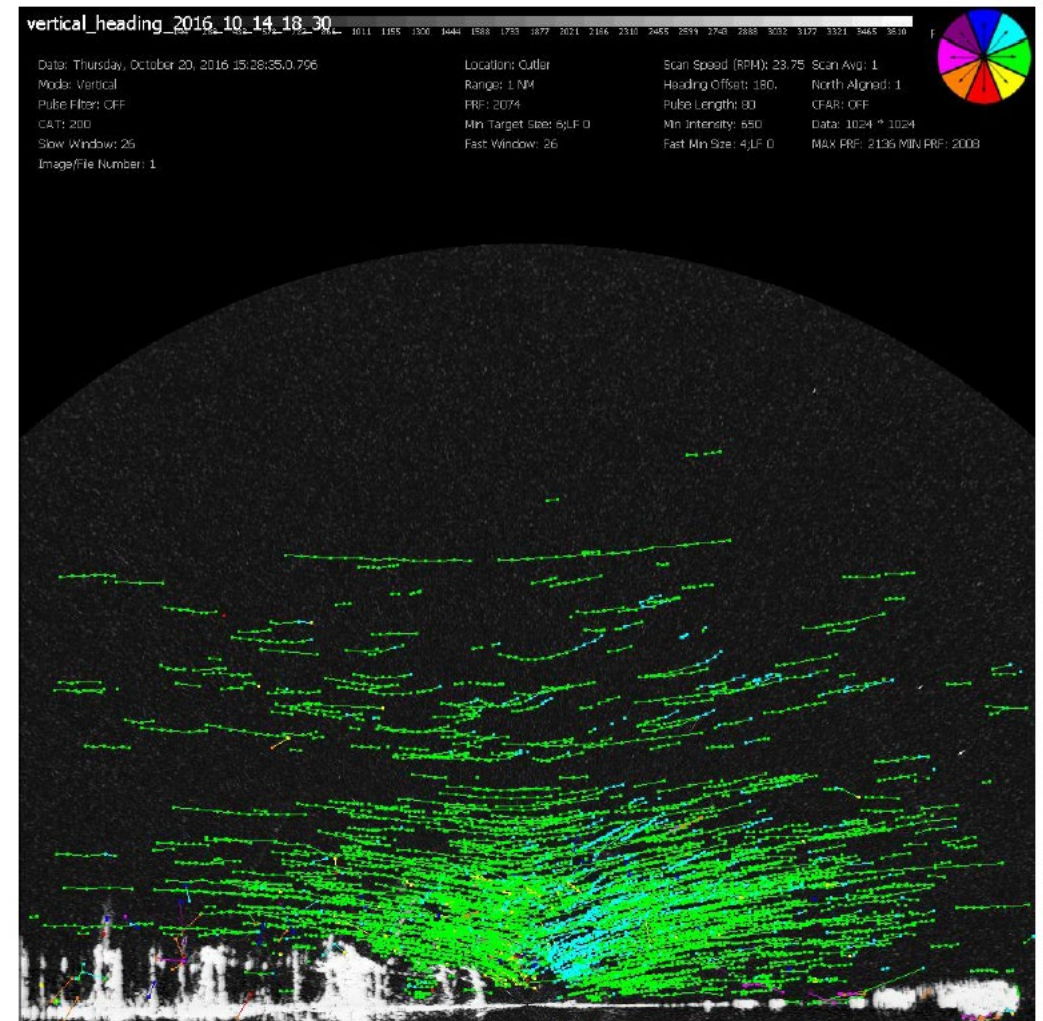
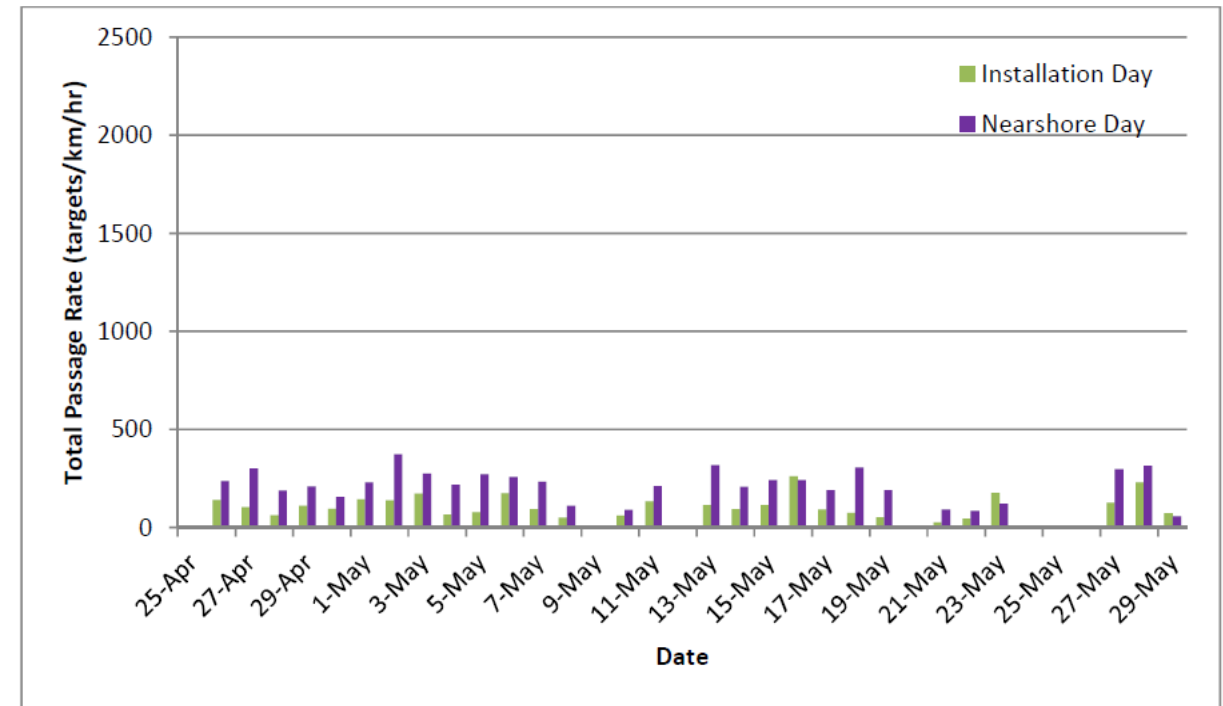
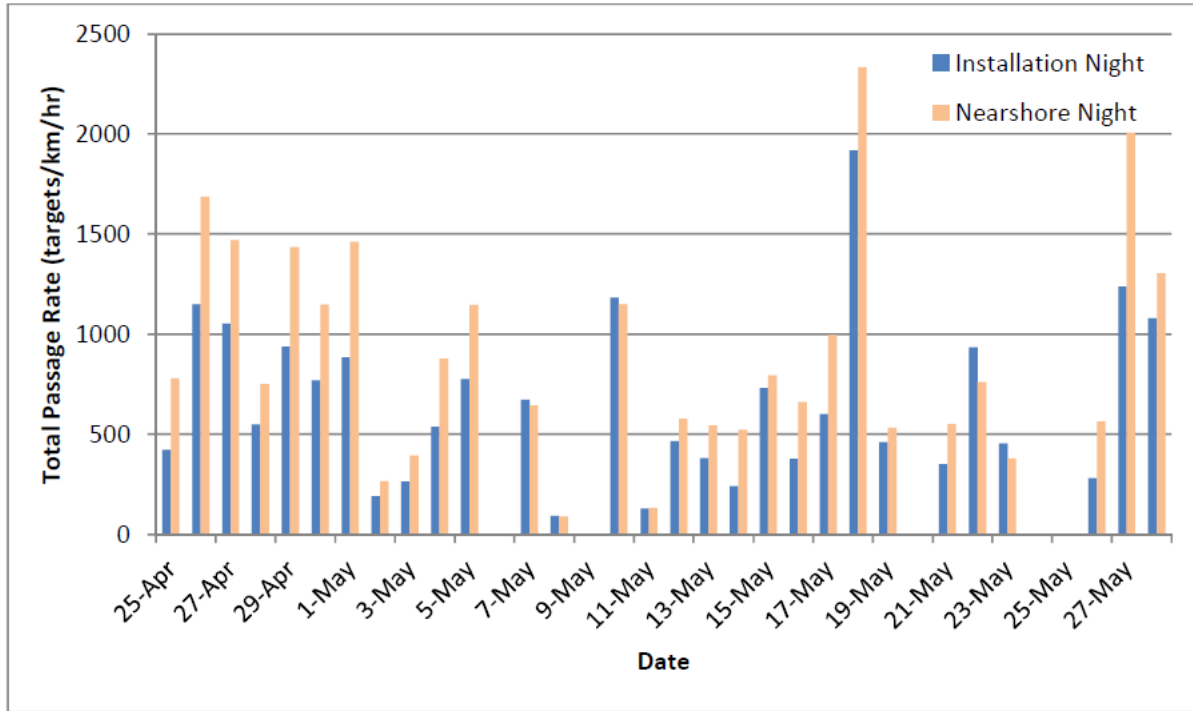
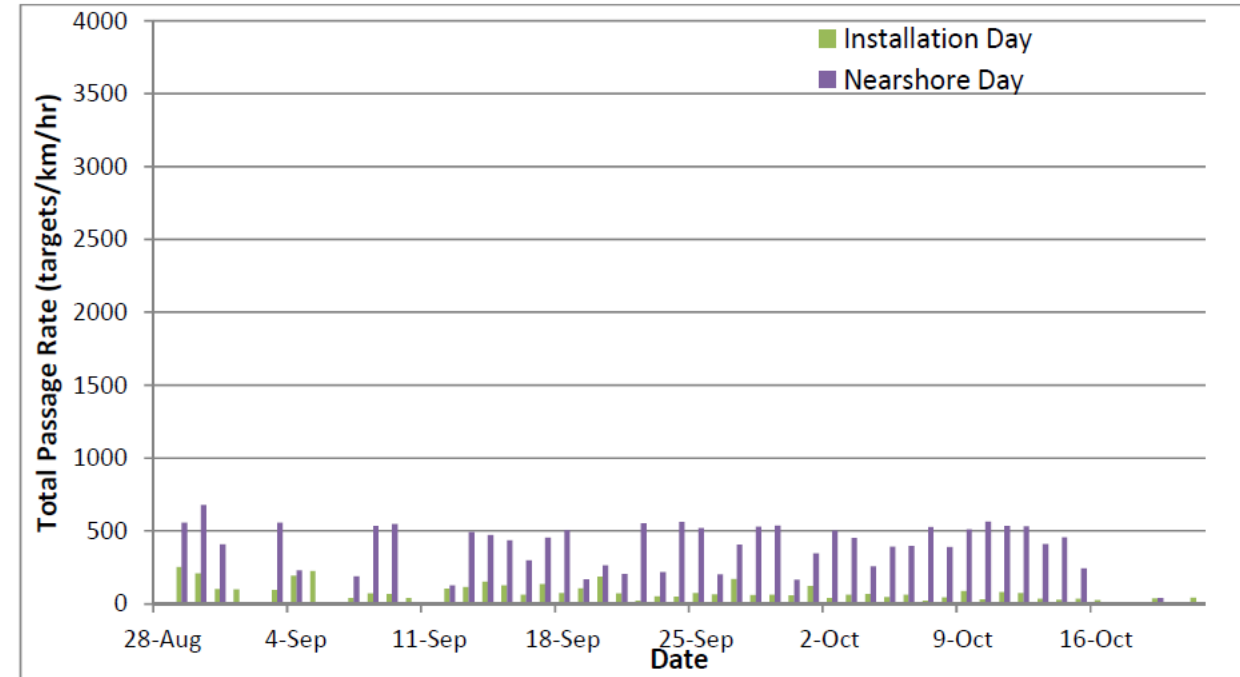
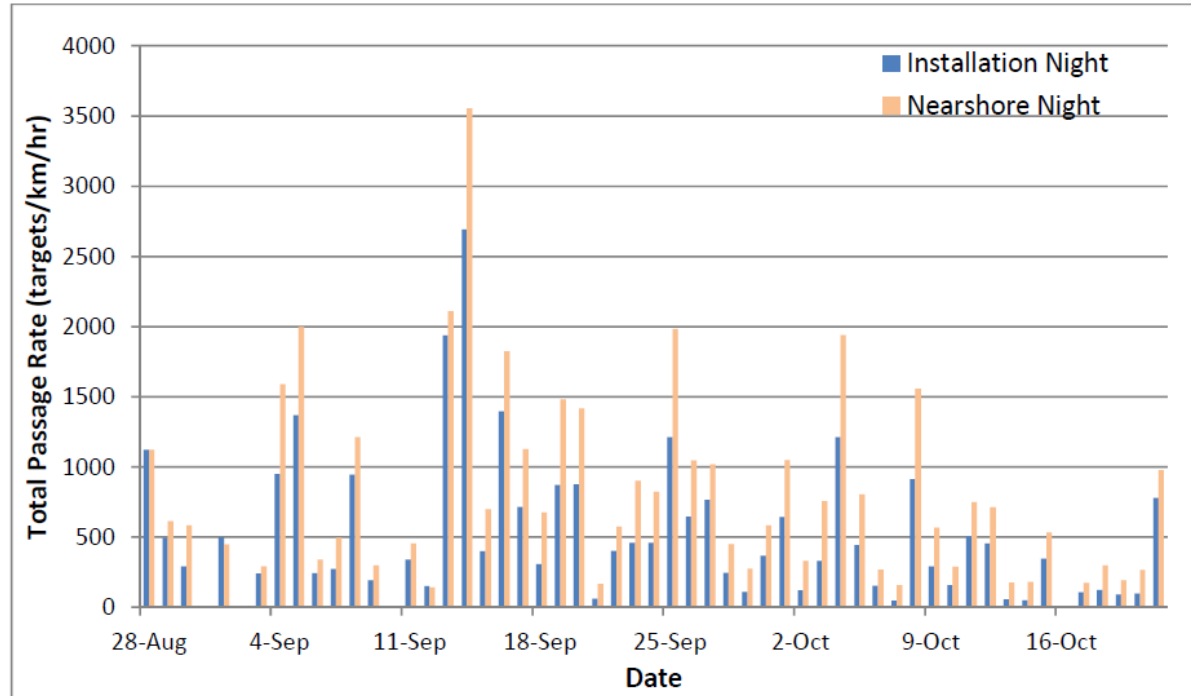


Figure 2-5. Nocturnal Migration (mostly green dots) at the Installation (left of center) and Nearshore Airspaces (right of center), NCTAMSLANT DET Cutler, Fall 2016.

2013 Spring Night vs Day Passage Rates



2013 Fall Night vs Day Passage Rates



Human Observations 2017

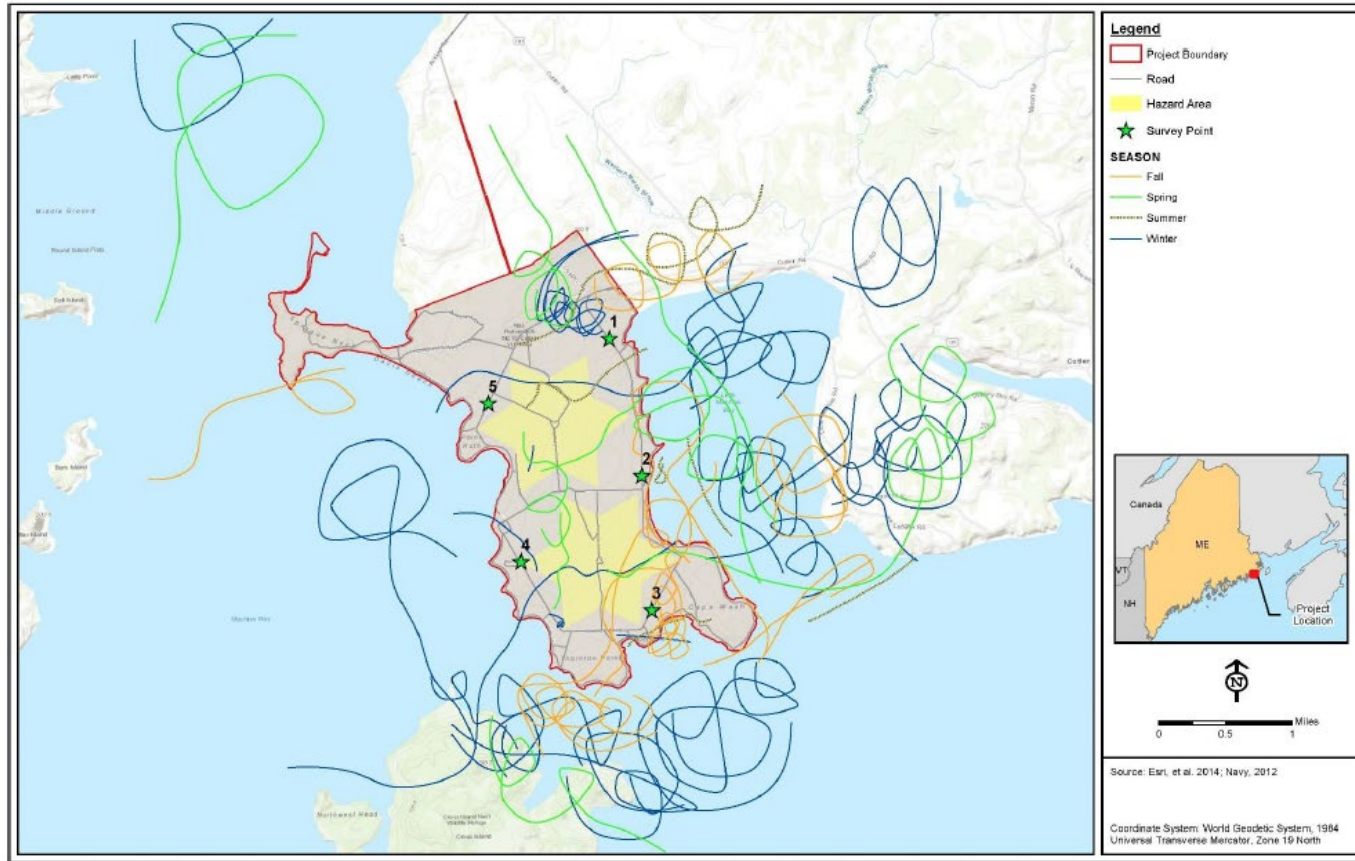
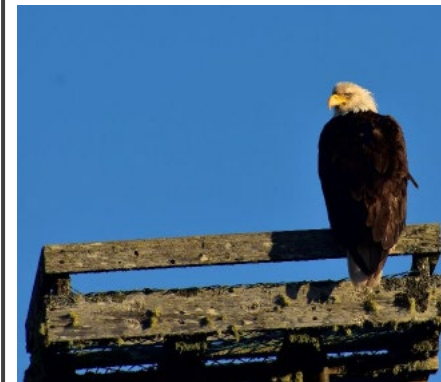
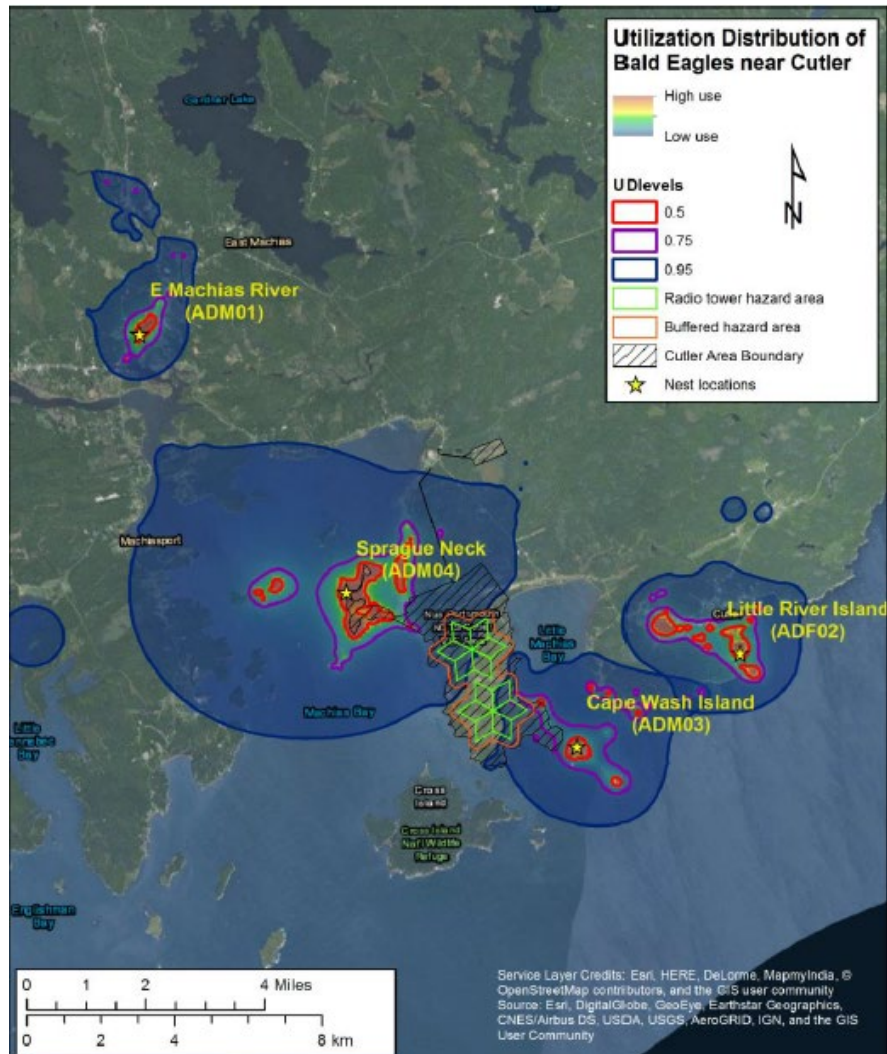


Figure 3. Flight Paths Observed During Eagle Use Surveys and Survey Point Locations, November 2016–October 2017, NCTAMSLANT DET Cutler, Maine.

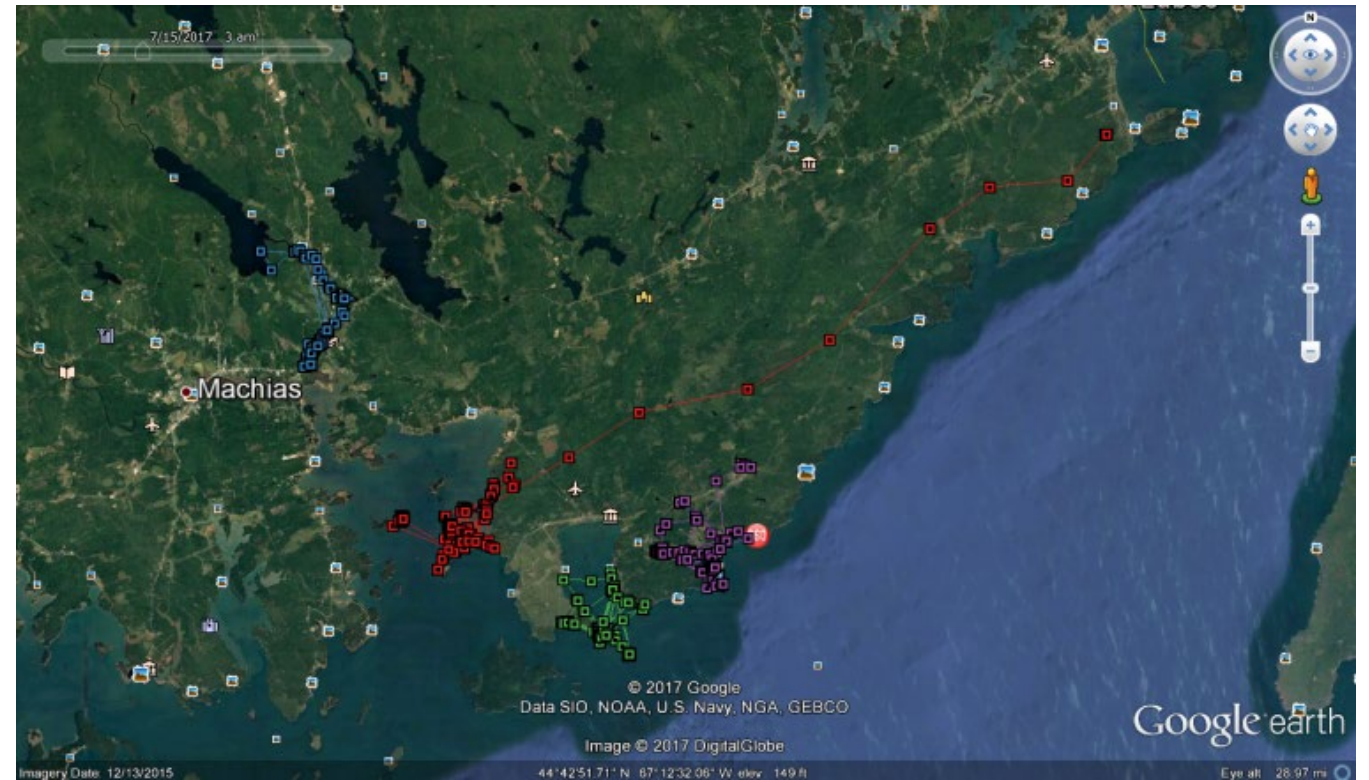
Eagle Use Surveys



Eagle Use Surveys



Satellite Tag Observations 2017



Questions?

Quiz







































