

Effects of a large-scale rodent eradication on migratory shorebird populations at Midway Atoll



This information is preliminary and is subject to revision. It is being provided to meet the need for timely best science. The information is provided on the condition that neither the U.S. Geological Survey nor the U.S. Government shall be held liable for any damages resulting from the authorized or unauthorized use of the information.

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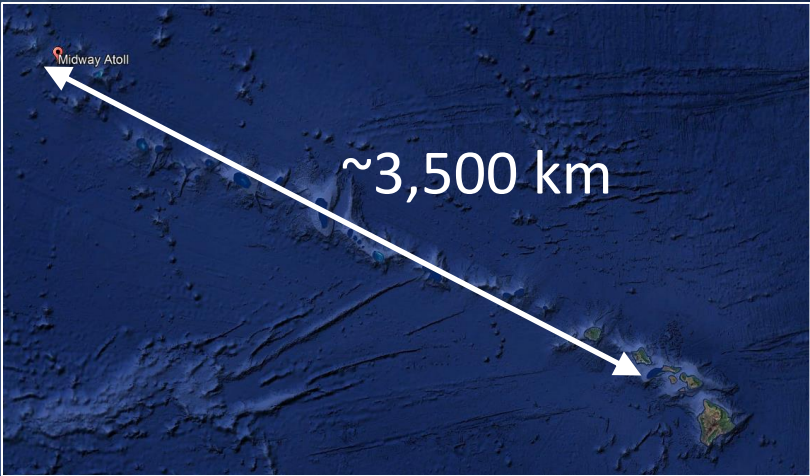
Jon Plissner and Amanda Adams, Midway Atoll NWR





Preliminary information –
subject to revision
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~10 km

Sand Island
452 ha.

Eastern Island
142 ha.

4.20 km

Image © 2024 Airbus
Data NOAA
Data LDEO-Columbia, NSF, NOAA







Midway has mice



Detrimental effects of eradications on native wildlife



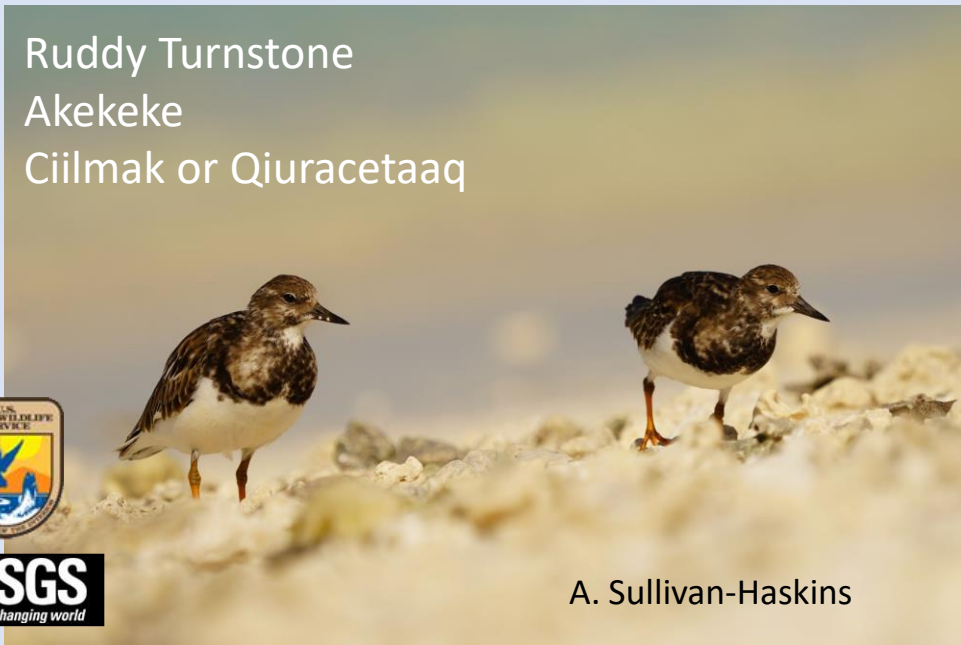
Pacific Golden-Plover
Kolea
Tuliiq-tuliiq



Bristle-thighed Curlew
Kioea
Ikikikiaq



Ruddy Turnstone
Akekeke
Ciilmak or Qiuracetaaq



USGS
science for a changing world

Wandering Tattler
Ulili
lisuraar



Objectives

- Estimate trends in pre- and post-eradication population sizes
- Use mark-resight modelling to assess the effect of the eradication on survival of Midway shorebirds



Project timeline

- Eradication planned for summer 2021
- Aerial- and hand-dispersed poison (brodifacoum)
- Actual eradication conducted summer 2023
- Fieldwork initiated spring 2021
- 7 trips total to date, 2–4 weeks
- Eradication was unsuccessful



Captures



Species	Season				Species Total
	Winter 2020– 2021	Winter 2021– 2022	Winter 2022– 2023	Winter 2023– 2024	
Bristle-thighed Curlew	3	6	32	17	58
Pacific Golden-Plover	16	29	51	40	136
Ruddy Turnstone	21	45	9	6	81
Total by season	40	80	92	63	275



Local Movements Bristle-thighed Curlew ($n = 19$)



Local Movements Pacific Golden-Plover ($n = 17$)



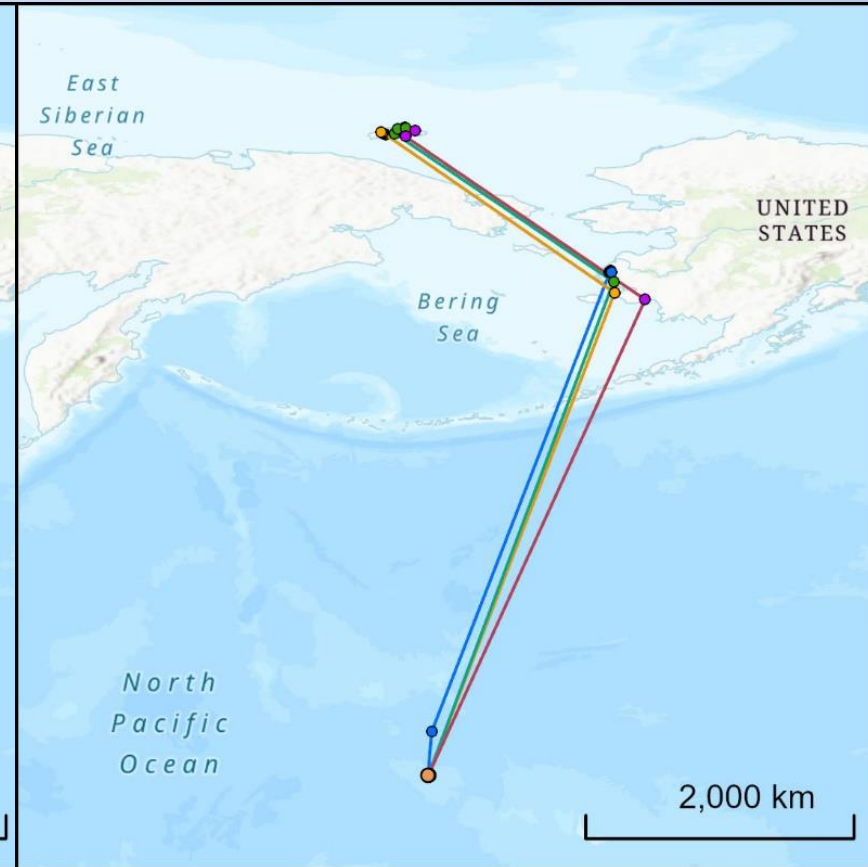
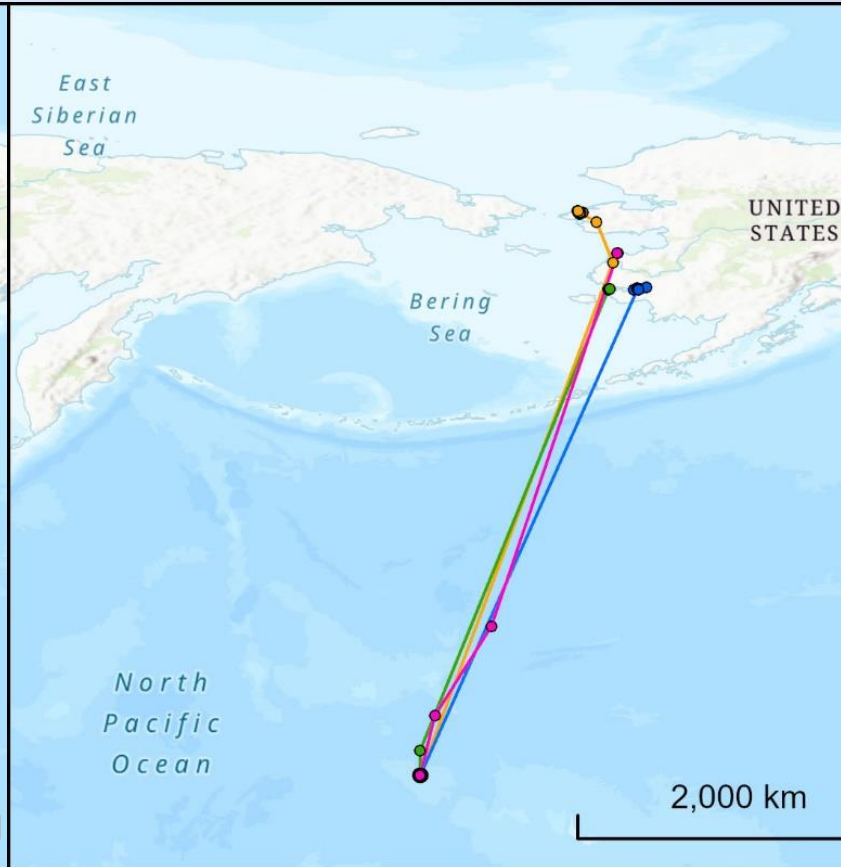
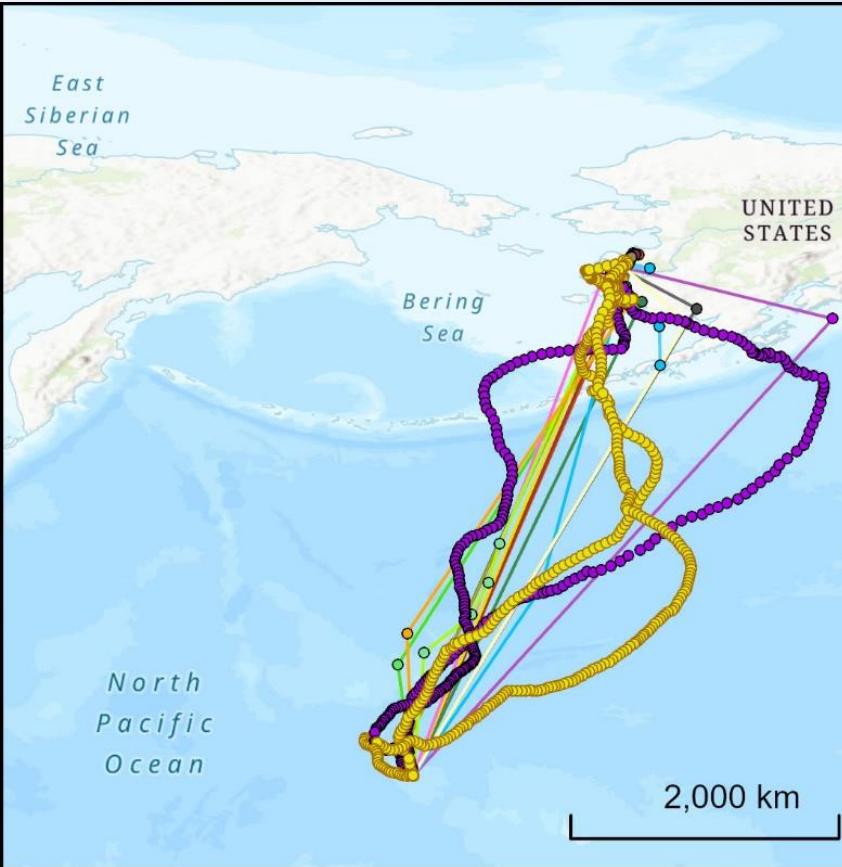
Esri, Maxar, Earthstar Geographics, and the GIS User
Community, Esri, NASA, NGA, USGS

A satellite-style map of a coastal area with a large island. The map is overlaid with a network of yellow dashed lines representing movement paths between various colored circular markers. The markers are concentrated in two main areas: a large cluster on the lower-left part of the island and a smaller cluster on the lower-right part. The text 'Local Movements Ruddy Turnstone (n = 13)' is centered over the map in white.

Local Movements Ruddy Turnstone ($n = 13$)



Northward Movements



Bristle-thighed Curlew

Pacific Golden-Plover

Ruddy Turnstone

Stay tuned for survival estimates and results of island-wide surveys...



Financial and in-kind support



- USGS/USFWS Science Support Program
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- USFWS Pacific Monuments
- USFWS Papahānaumokuākea Marine National Monument
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