

Living on the Edge: Gulls and Humans in Off-shore Colonies

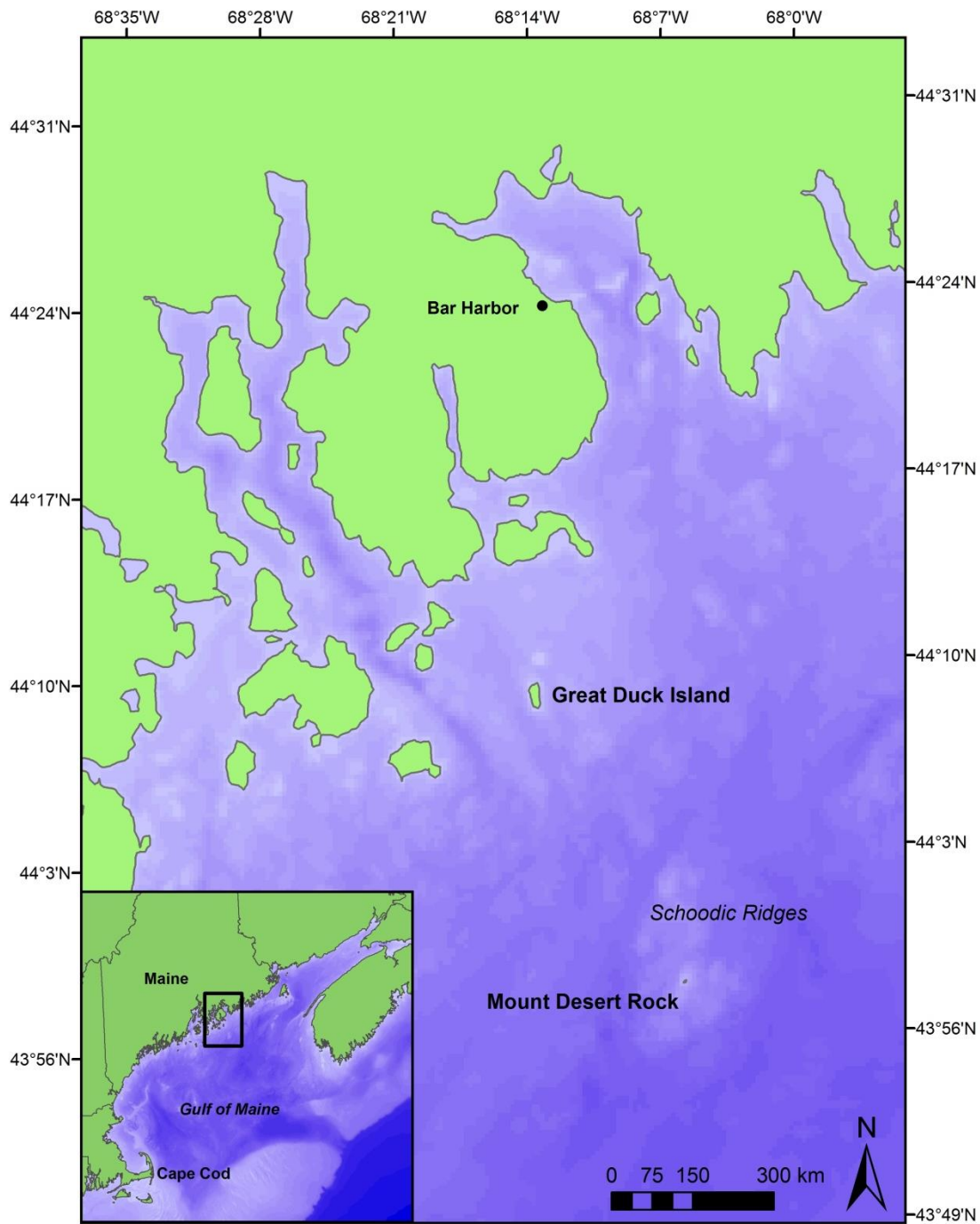


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Gulls and Humans

- Increased interaction between nesting birds and people
- Effects on nesting gull behavior
- Study Sites:
 - Mount Desert Rock (MDR)
 - Great Duck Island (GDI)





Data Source: USGS, NOAA

Mount Desert Rock



Photo courtesy: www.coa.edu



Photo courtesy: www.marinas.com

Great Duck Island

Great Duck Island

Old Colony (1889)
Reestablished after 1986
Cohabitation with directed
gull research

1999 South End: 107 nests
2013 South End: 432



Rocky Coastal nesting
"Berm"

Field nesting

Mount Desert Rock

Gull nesting mid 1990s
Cohabitation without directed
gull research

1999 count: 99 nests
2013 count: 132 nests



More suitable nesting habitat near
the house

METHODS

- Measuring flush distance
- Nest approached directly by researcher until gull takes flight from nest.
- Distance bird gets off of nest and took flight recorded.
- Distance to nearest neighbor



Annie Hart, Mount
Desert Rock

Poto curtisy: John Anderson

GDI VS MDR Flush Distance

MDR

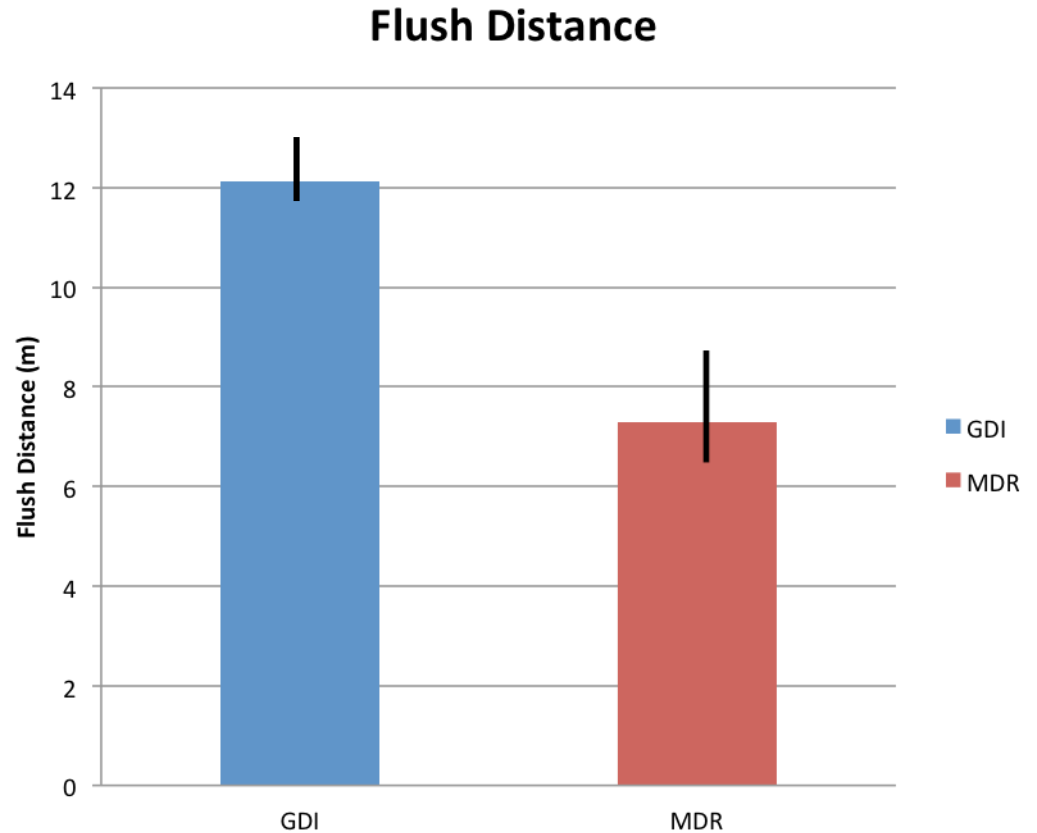
SE= 1.46

GDI

SE= 0.72

Dwass-Steel-Critchlow-Fligner
test
 $p < 0.05$

- Significant difference in flush distance between MDR and GDI



Berm GDI vs Field GDI

Berm

SE= 0.88

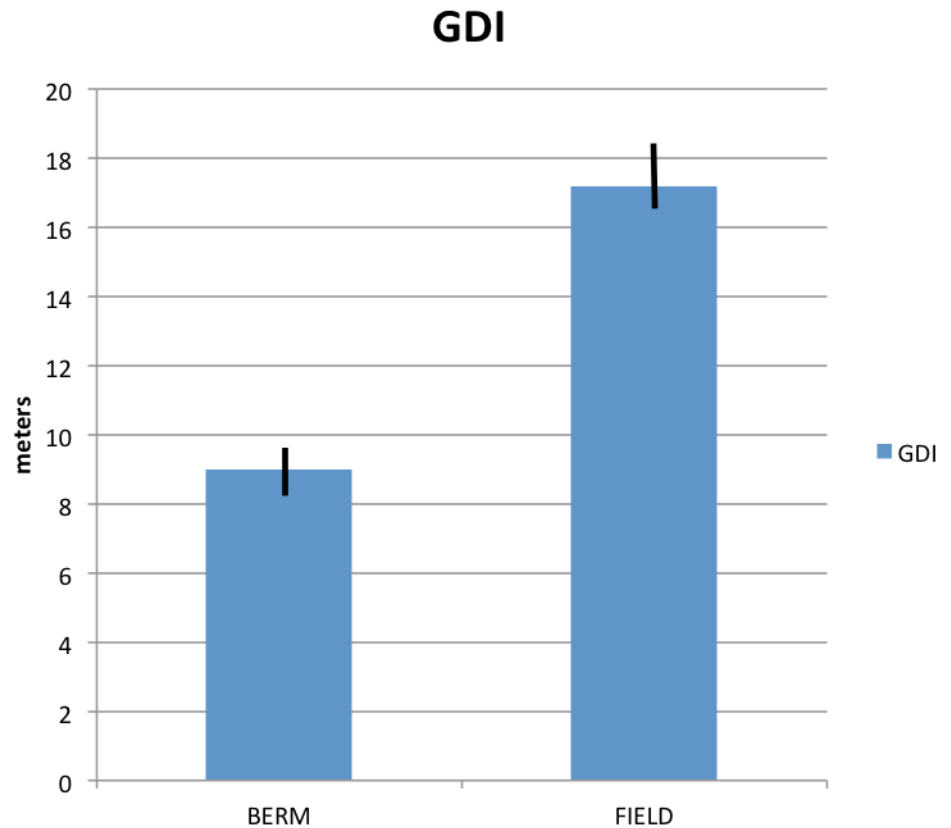
Field

SE= 1.19

Dwass-Steel-Chritchlow-Fligner Test

$p < 0.05$

- Significant difference between flush distance between habitat types
- Flush distance result from habitat or from distance to nearest neighbor?



GDI correlation: nearest neighbor/ flush distance

Pearson Correlation Matrix

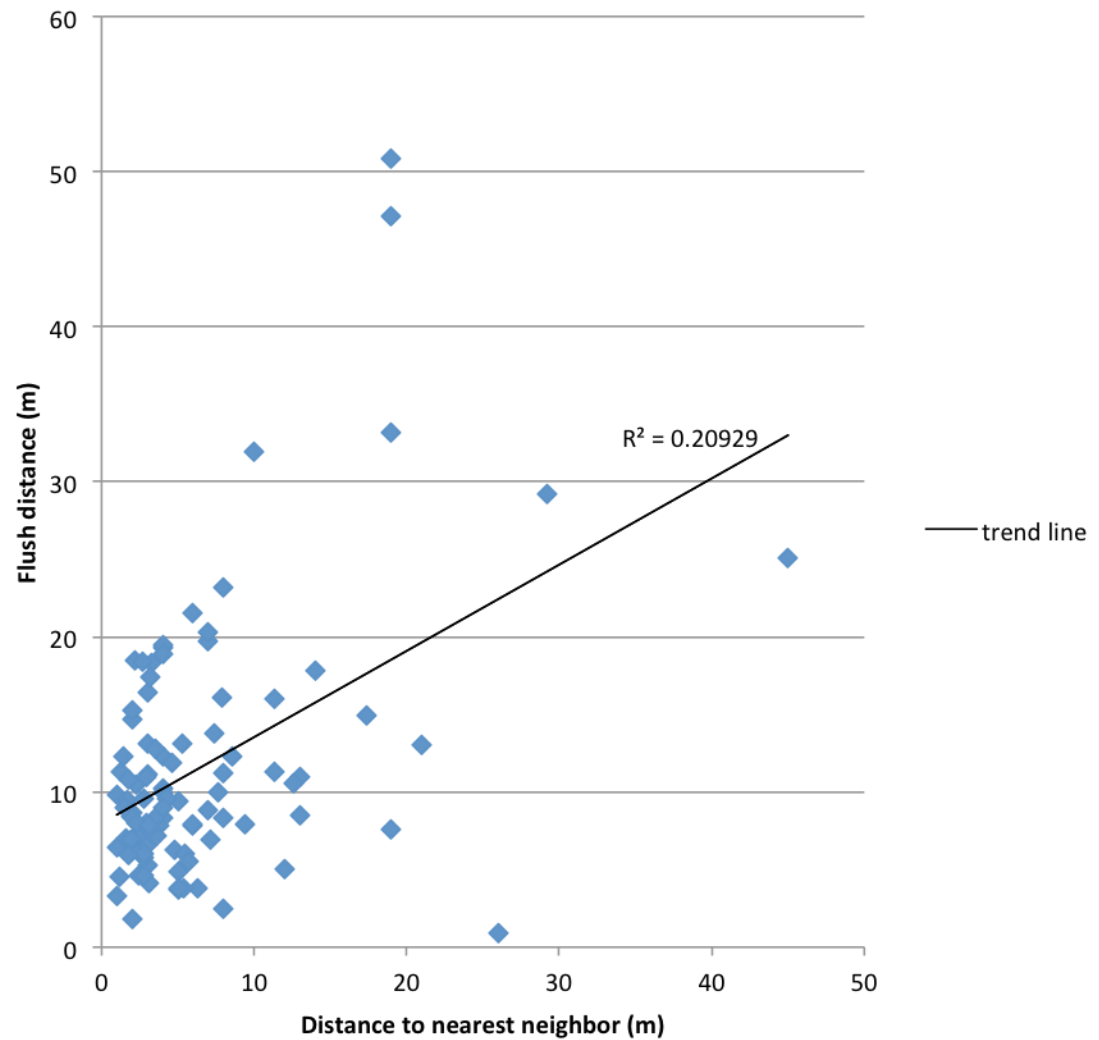
$p < 0.05$

Further the distance to nearest neighbor earlier the flight response.

Distance to nearest neighbor greater in Field habitat than on Berm

Greater distance from neighbor makes it easier for bird to identify directed approach by researcher.

	Nearest neighbor	flush distance (m)
Berm	3.8	9.2
Field	5.18	14.15



GDI Berm vs MDR

No significant difference between GDI berm and MDR distance to nearest neighbor

Berm GDI

SE=0.88

MDR

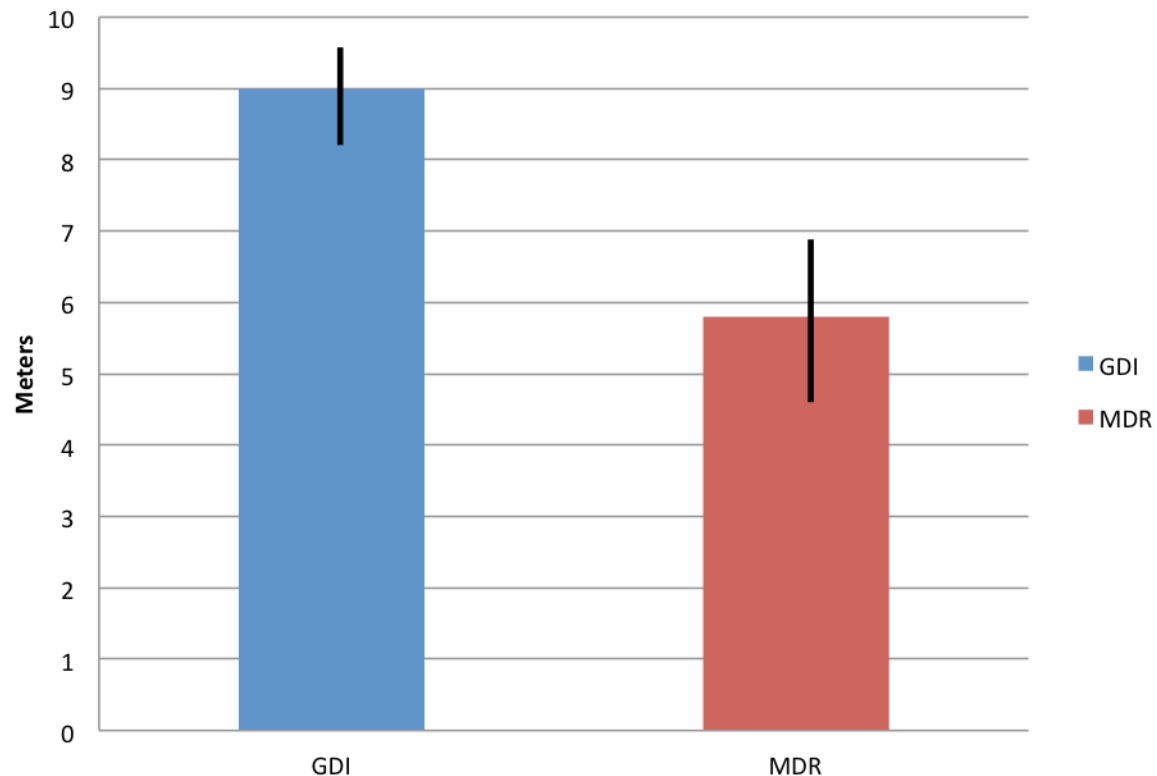
SE= 1.46

Dwass-Steel-Critchlow-Fligner

p<0.05

- Still significant difference between MDR and GDI when only comparing GDI berm to MDR
- What might cause the differences in behavior on the two islands?

Flush Distance GDI Berm vs MDR



Differences in Gull Flush Distance

- Habituation
- Energy Trade Off
- Less general predation pressure on MDR compared to GDI



Conclusion

- Flush distance increases with distance to nearest neighbor
- Gulls on GDI flush earlier when approached than Gulls on MDR
- Several factors may influence this observation
 - habituation
 - energy trade off
 - difference in general predation pressure



Acknowledgements



- Annie Hart
- John Anderson
- Kate Shlepr
- U.S. Dept of the Interior/National Park Service
- College of the Atlantic Drury Research Fund
- The Nature Conservancy
- The State of Maine Dept. of Inland Fisheries and Wildlife
- College of the Atlantic



The Nature
Conservancy



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