Facilitating joint spatial planning for imperiled species and coastal resiliency with habitat models and social data

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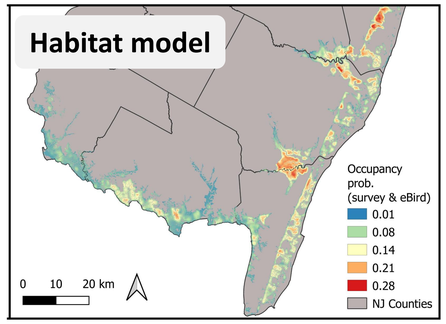
The eastern black rail
(*Laterallus jamaicensis jamaicensis*)



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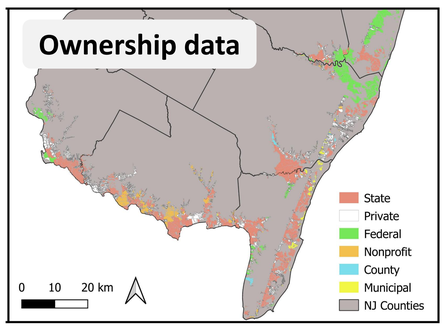
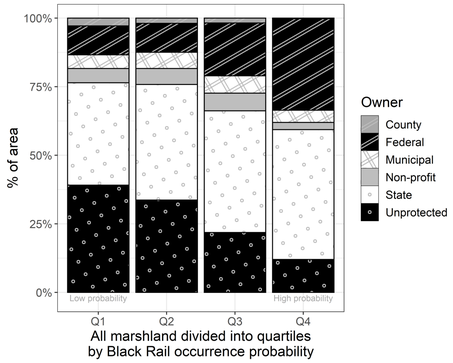
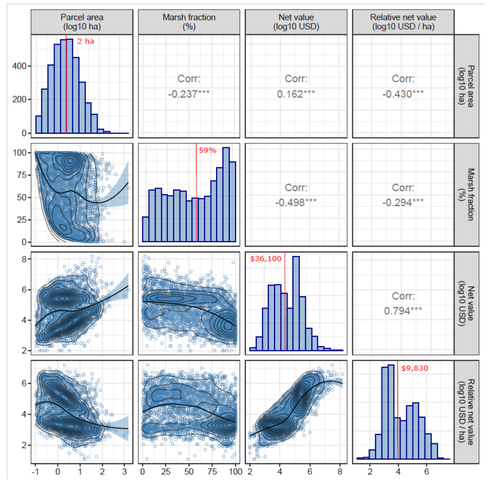




All rail habitat:
- 79% public or non-profit owned

"Best" (most likely) habitat:
- 88% public or non-profit owned
- larger & cheaper parcels



Private parcel characterization

A need for joint spatial planning

…to reconcile coastal resiliency and conservation efforts. This requires data integration from disparate domains: species **biology** and occurrence; the geography of **physical threats**; and the **social landscape** in which management and restoration decisions will occur.

What we did

We mapped rail occurrence probability in **New Jersey's 774 km² of saltmarsh** using NJDEP-collected survey data and Bayesian occupancy models. We summarized model output using public ownership data, estimating **how much** black rail habitat exists, **where** it is, and **who** owns it.

What we found

~ 260–2200 ha of occupied black rail habitat, or < 3% of saltmarsh. 79% of rail habitat is public or non-profit owned. Most likely rail habitat was less likely to be private. Private parcels with likely rail habitat were larger & less expensive.

Acknowledgements

This publication is the result of research sponsored by the New Jersey Sea Grant Consortium (NJSGC) with funds from the National Oceanic and Atmospheric Administration (NOAA) Office of Sea Grant, U.S. Department of Commerce, under NOAA grant number NA18OAR4170087 and the NJSGC. The statements, findings, conclusions, and recommendations are those of the authors and do not necessarily reflect the views of the NJSGC or the U.S. Department of Commerce. Thanks to Kashi Davis (NJDEP) for sharing data.