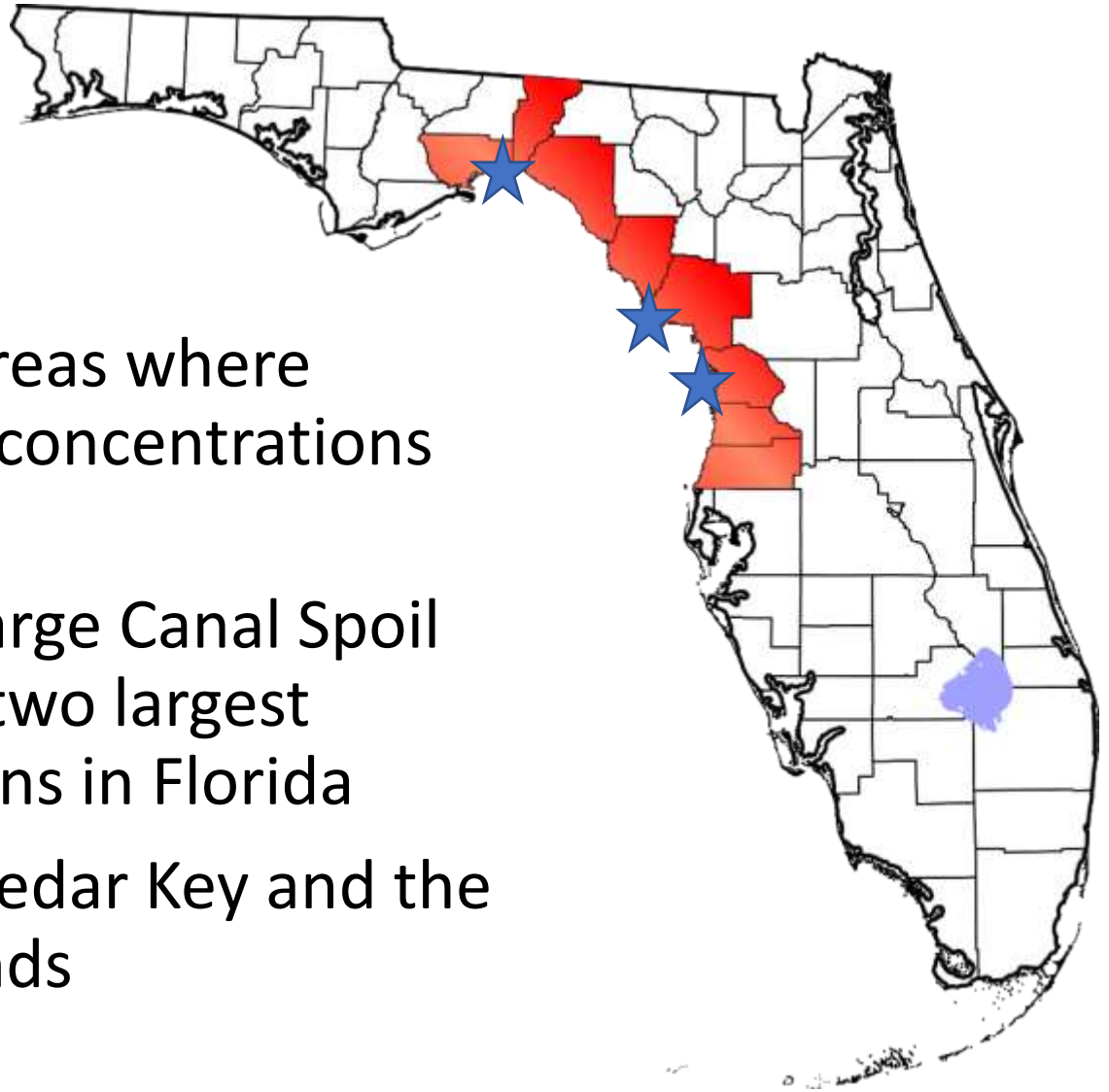
Improving Reproductive Success of American Oystercatchers in Florida's Southern Big Bend

Vitale, N., Brush, J., & Powell, A. 2021. Factors Limiting Reproductive Success of American Oystercatchers (Haematopus palliatus) in Florida's Southern Big Bend Region. *Waterbirds*, 44(4) 449-462

The Big Bend



- Only supports three areas where oystercatcher nesting concentrations occurs
- St. Marks NWR and Barge Canal Spoil Islands represent the two largest breeding concentrations in Florida
- Our study examined Cedar Key and the Barge Canal Spoil Islands

Barge Canal Spoil Islands

- Constructed mostly of limestone
- Most islands are densely vegetated

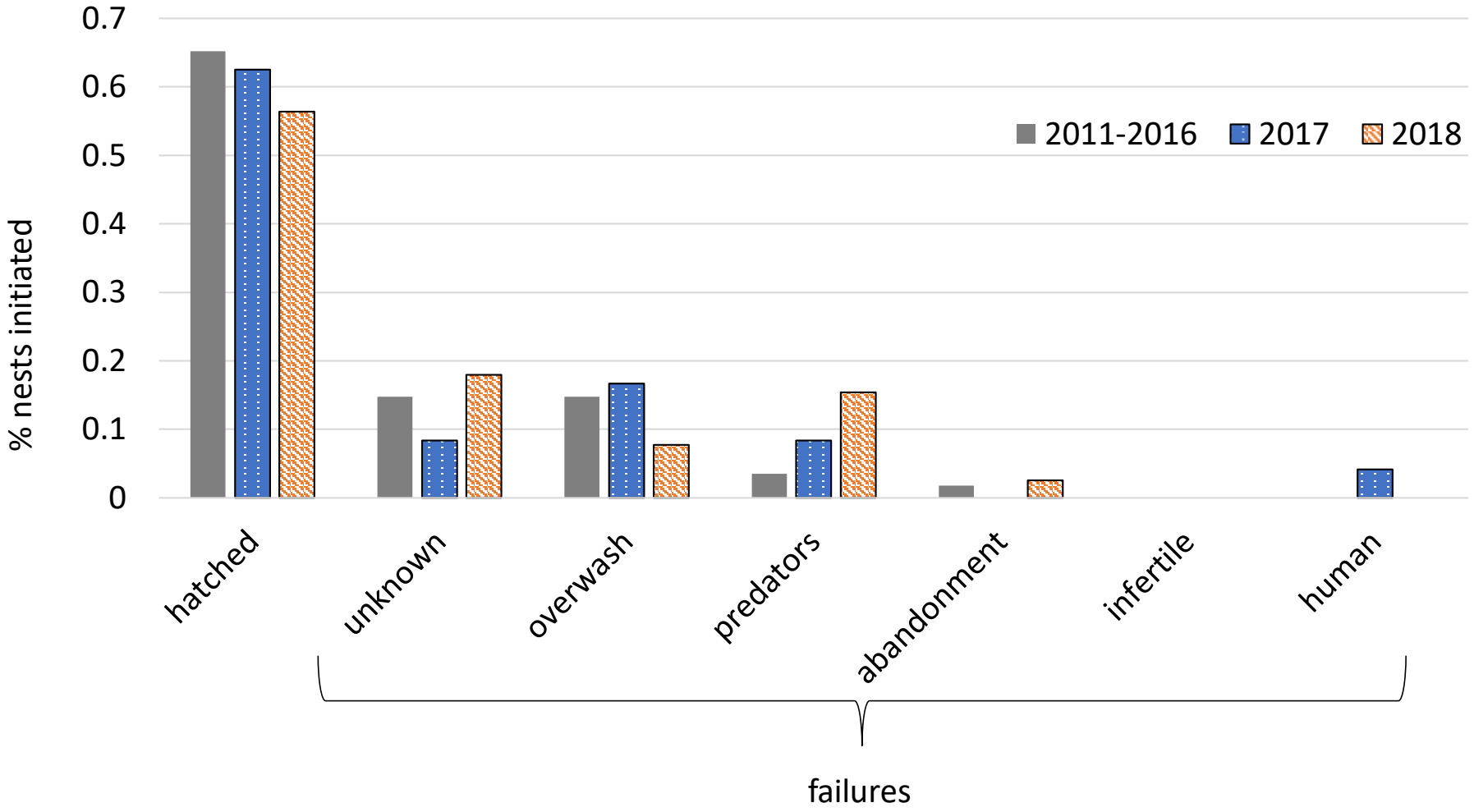
Site history

- High nesting effort
- Low productivity
- Many failures to unknown causes

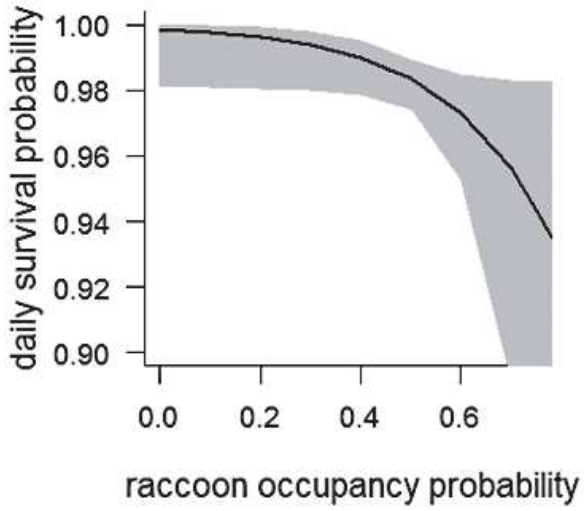
Two-year study

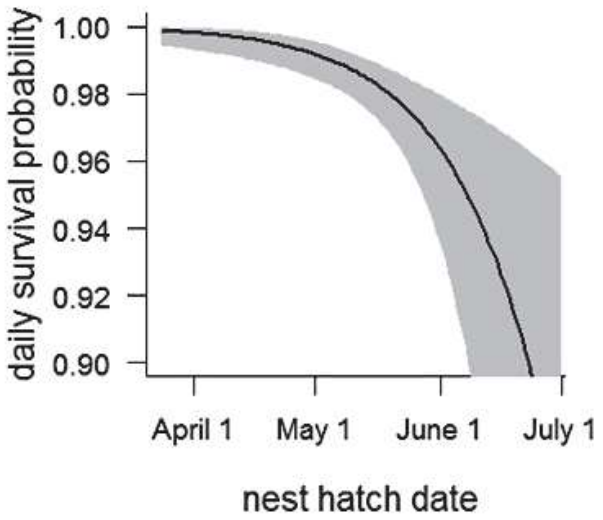
- 2017-2018
- Monitoring with motion sensing cameras
- Direct monitoring of nesting status and survival
  - Nests until hatch or fail
  - Chicks until 60 days or fail
- Chick tracking
  - Bands
  - VHF telemetry
  - Morphometric measurements
- Nest site habitat characteristics
- Human use surveys

Nest Survival



Chick Survival – 2017 and 2018





Impacts to reproductive success – food resources

- Survival did not increase with age
- Lower weight suggests worse body condition
- Old chicks found dead appeared to have starved
- 40% of chicks that survived to 35 days were lost by 60 days
- Most nests were on far spoil islands where food abundance was lower
- Adults appear to forage on islands other than where they nested

Results – Human disturbance

- Surveys and cameras both indicated low levels direct human use of islands
- >80% of human activity detected was fishing from boats
- Two documented cases of human caused failure
- Cameras detected numerous people nearly stepping on nests

Impacts to reproductive success

- Human disturbance
- Predators
  - Raccoons and crows
  - 14 predator species using the islands
- Food availability

What Now?

- 2019 – FWC presented data-based management options to site managers
- 2019-Present - Implementation
  - Predation management
    - Vegetation management
    - Removal or relocation
  - Disturbance reduction
    - Posting strategies
    - Public outreach

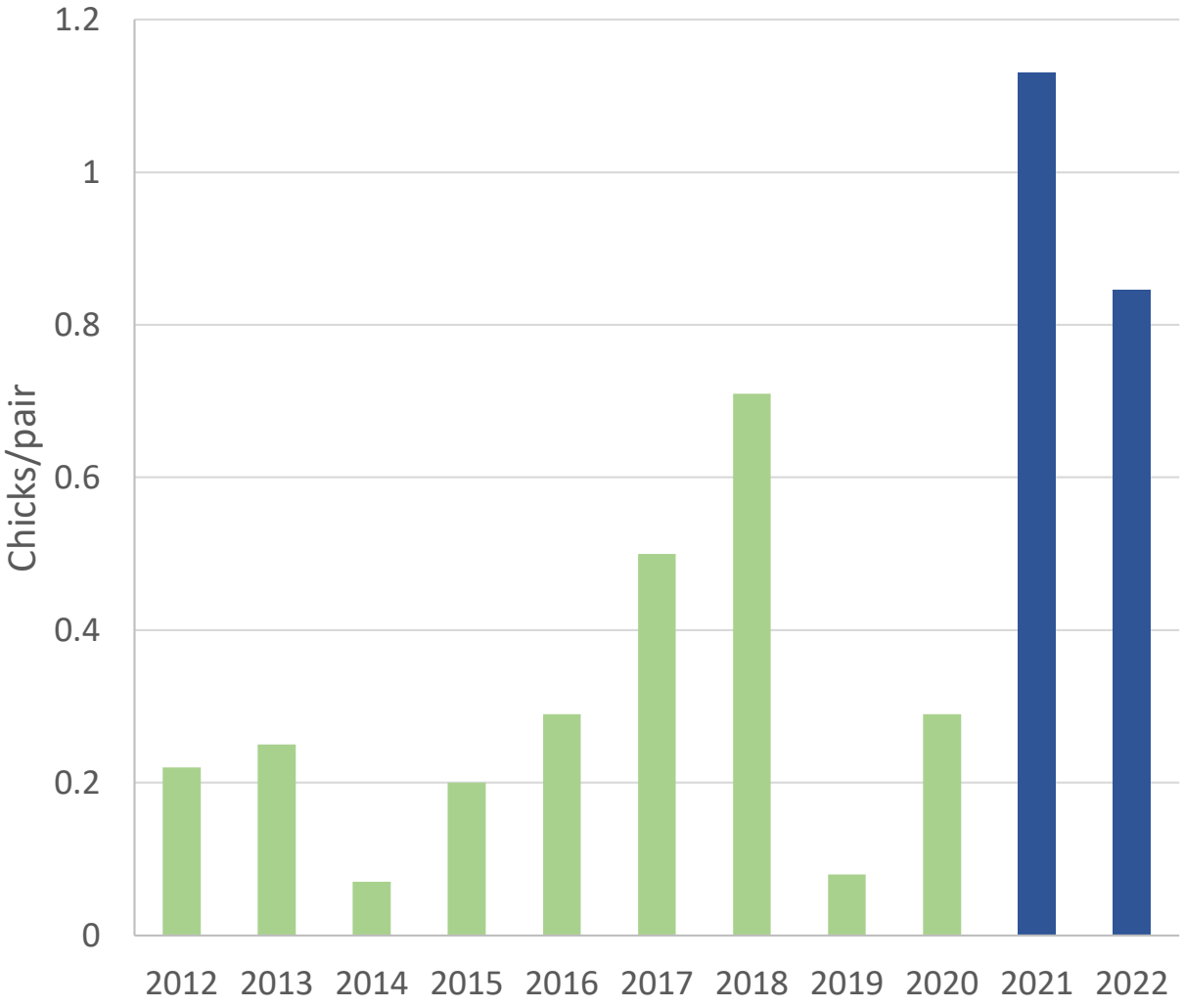
Vegetation Management

Predation Management

Reproductive outcomes for American Oystercatchers

Year	Breeding pairs	Nests initiated	Nests hatched	Hatch rate	Chicks hatched	Chicks fledged (35d)	Chicks/ pair	Survival to 60d
2022	26	26	22	85%	43	**22**	**0.85**	**20**
2021	23	33	20	61%	32	**26**	**1.13**	**22**
2020	24	34	16	47%	21	7	0.29	6
2019	24	43	10	23%	23	2	0.08	2
2018	24	39	22	56%	42	17	0.71	12
2017	26	24	15	63%	28	13	0.5	6
2016	17	NA	NA	37%	NA	5	0.29	NA
2015	22	NA	NA	NA	NA	4	0.2	NA

Oystercatcher Productivity



A team effort!

- FWC – Janell Brush, Joe Marchionno, Blair Hayman, Megan Wallrichs, Julia Magill, Andrew Townsend
- University of Florida – Abby Powell, Bill Pine, Jon Jaeger
- AMOY Working Group
- Florida State Parks (DEP)
- Nature Coast Shorebird Partnership
- Plus many others!

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