

Spectacled caimans in Florida: An Overview



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THE CROC DOCS

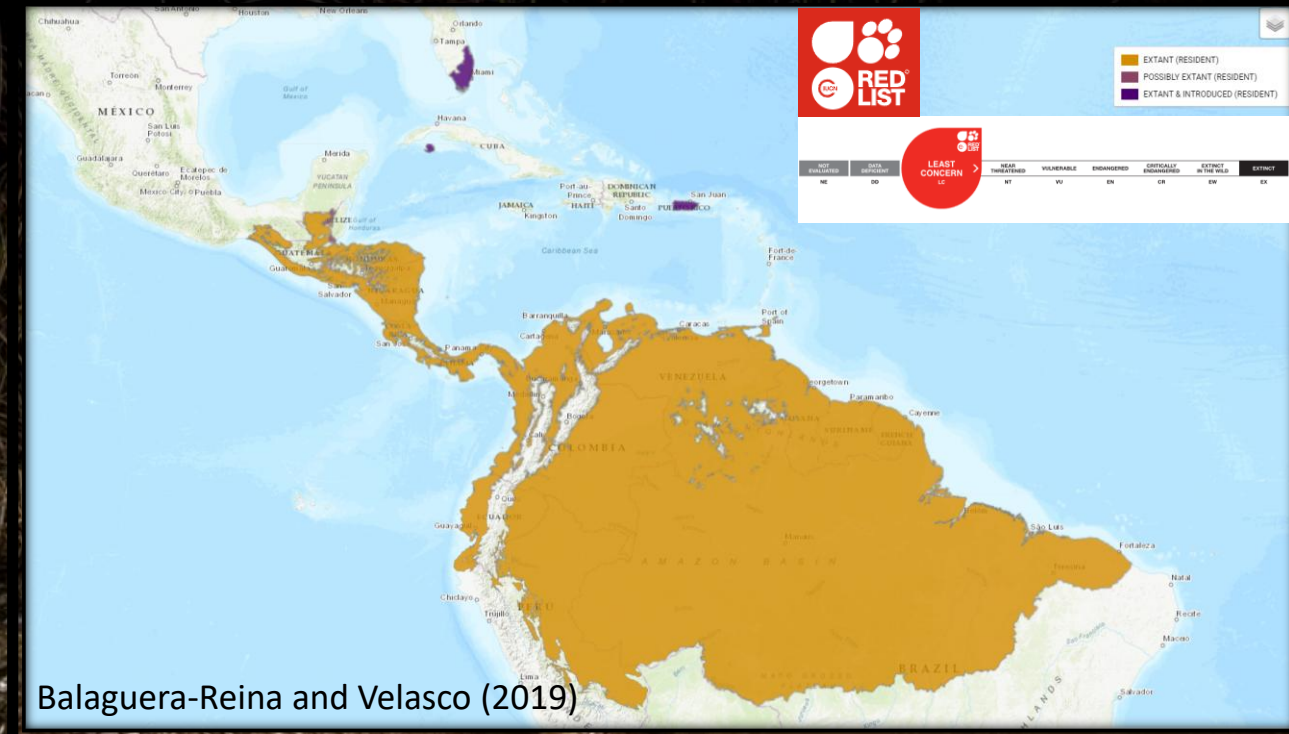
Today's presentation

- Spectacled caiman introduction and establishment
- Historic removal and control efforts
- CrocDocs work (2012 – present)
- What do we know now about spectacled caimans in South Florida
- Where are we now
- Future research



A brief history of...

- Native Central and South America
- Introduced in North America and the Caribbean
- First reported in Florida by King and Krakauer (1966)
- Defined as established in Homestead Air Reserve Base by Ellis (1980).
- *Caiman crocodilus fuscus* Roberto et al. (2021)

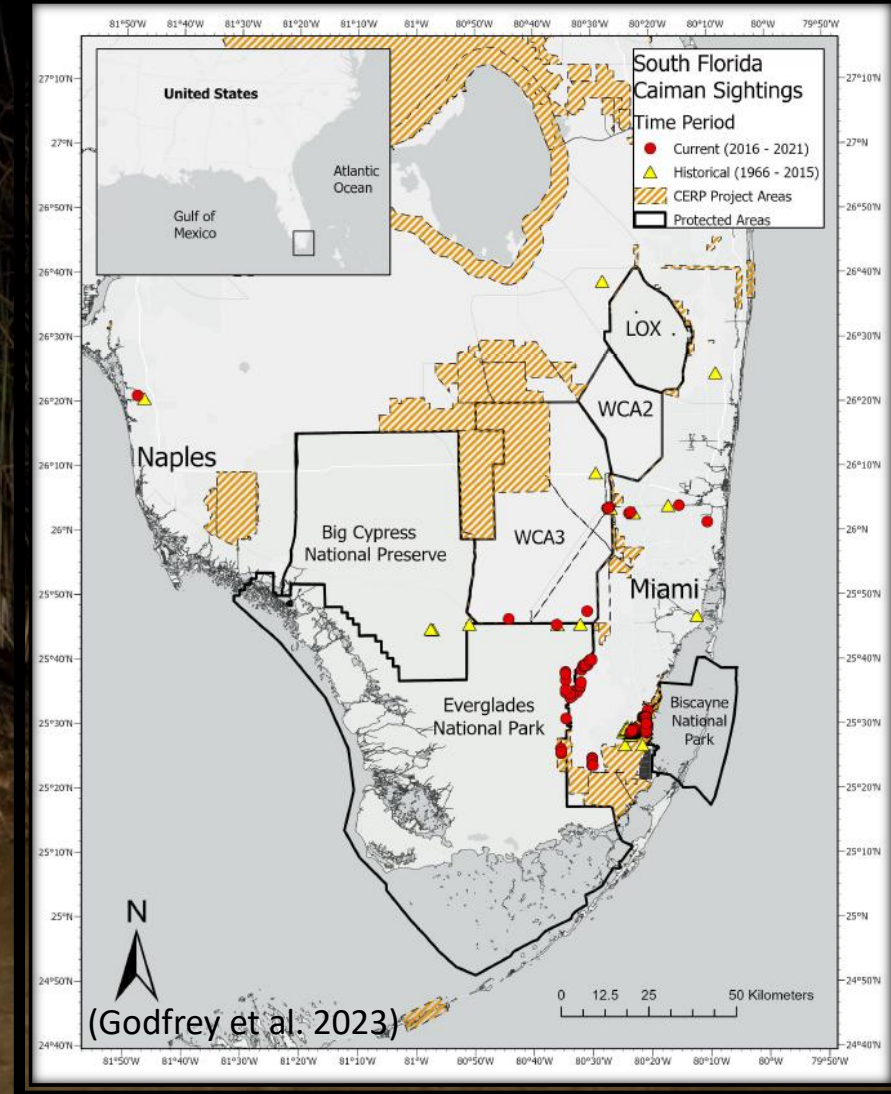


How did this happen?

- Hypothesis: spectacled caiman trade increases in the 1950's as response to American alligator trade-ban (Moore 1954, King and Krakauer 1966, Ellis 1980)

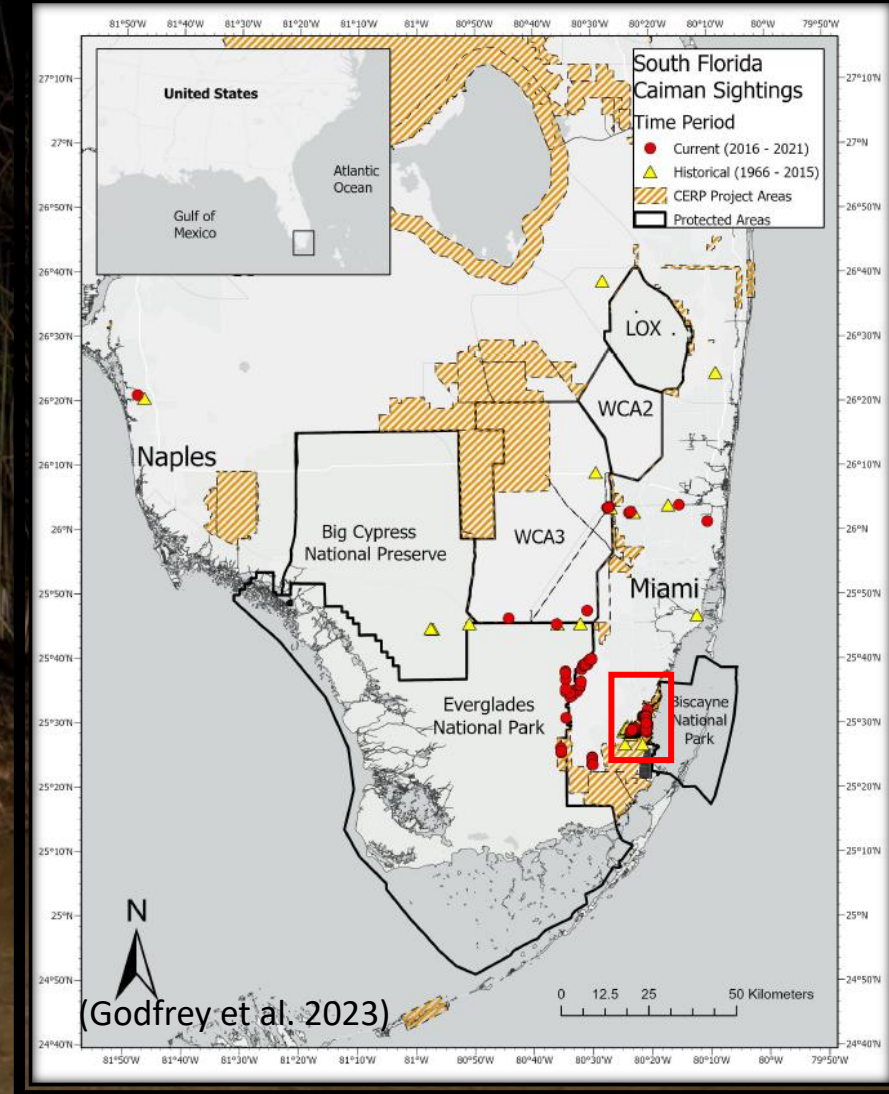
A brief history of...

- Spectacled caimans has been reported throughout the Greater Everglades (Godfrey et al. 2023)
- North Palm Beach County (King and Krakauer 1966)
- Miami canal system and Tamiami trail (Wilson and Porras 1983)
- Adjacent to Everglades National Park (Butterfield et al. 1997, Meshaka et al. 2000)
- An expert panel collaboration identified caiman as having a “highest impact concern” (Engeman and Avery 2016)



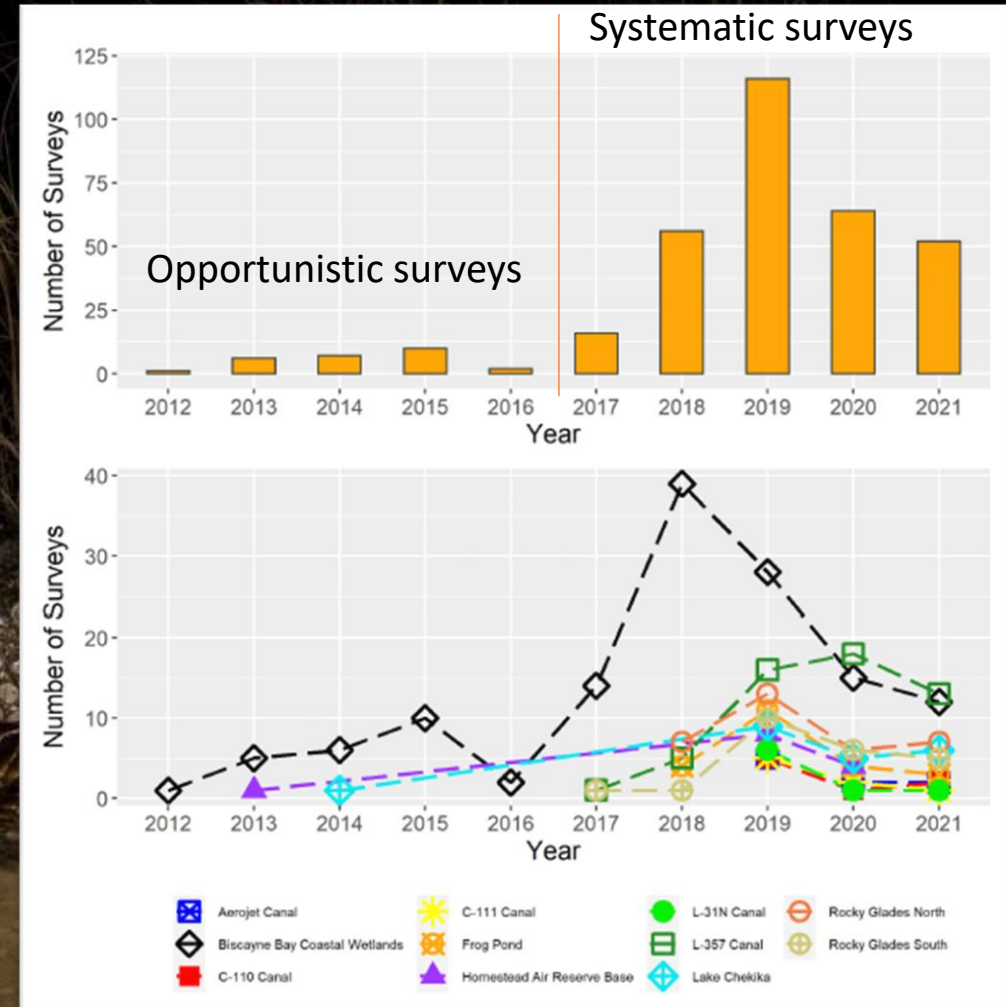
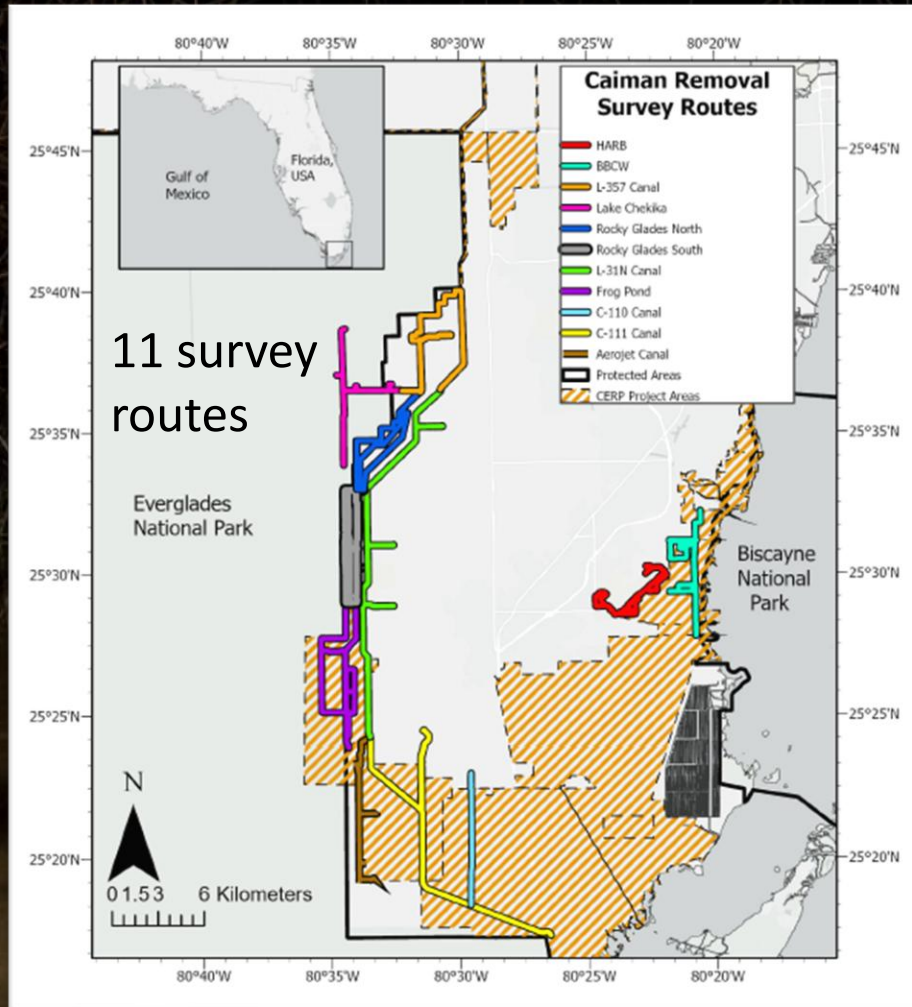
Caiman extirpation efforts

- In 1977 44 caimans were removed from HARB (Ellis 1980)
- Caiman removal feasibility analysis at HARB (AMEC 2012)
- Periodic surveys removed 44 caimans from 2009 to 2019



CrocDocs work (2012 - present)

Godfrey et al. (2023)



CrocDocs work (2012 - present)

Godfrey et al. (2023)

Table 1. Summary of spectacled caiman (*Caiman crocodilus*) surveys during 2012–2021 along 11 routes in South Florida, United States. NS = Number of Surveys, SE = Survey Effort, SD = Survey Distance, CO = Number of Caimans Observed, CR = Number of Caimans Removed

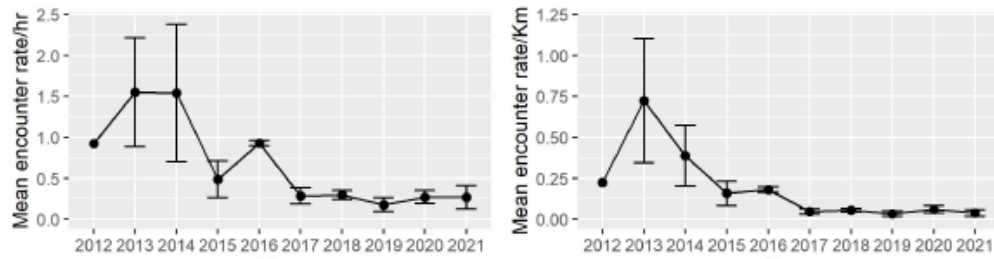
CERP Project	Survey Route	NS	SE (hrs)	SD (km)	CO	CR
Biscayne Bay Coastal Wetlands	Biscayne Bay Coastal Wetlands	132	416.71	2425.44	235	179
	Homestead Air Reserve Base	13	35.00	277.50	22	22
C-111 Spreader Canal Western Project	L-357 Canal	53	111.99	889.40	43	42
	Lake Chekika	21	74.93	429.90	8	1
	Rocky Glades North	33	84.41	792.90	6	5
	Rocky Glades South	23	62.15	623.80	1	1
	L-31N Canal	8	28.37	323.40	0	0
	Frog Pond	22	69.45	644.10	2	1
	Aerojet Canal	9	30.82	146.70	0	0
	C-110 Canal	8	14.16	108.70	0	0
	C-111 Canal	8	30.60	273.80	0	0
Total		330	958.59	6935.64	317	251

~ 80 %

- Observation peak October (n = 107) followed by March (56) and January (50)
- Most common habitat observed: marsh (104), canals (72), ditches (45), ponds (36)

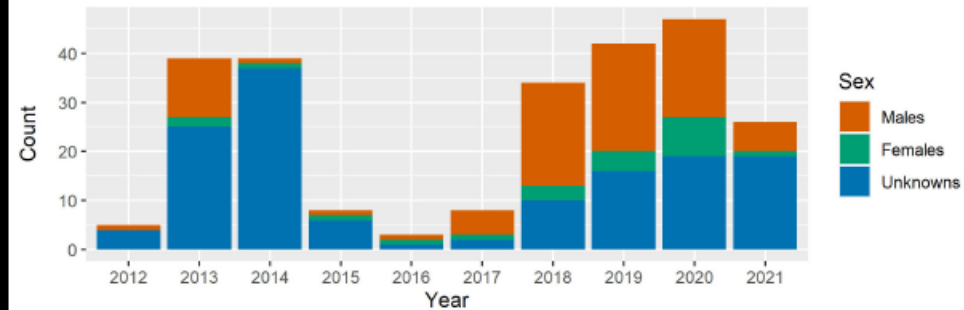
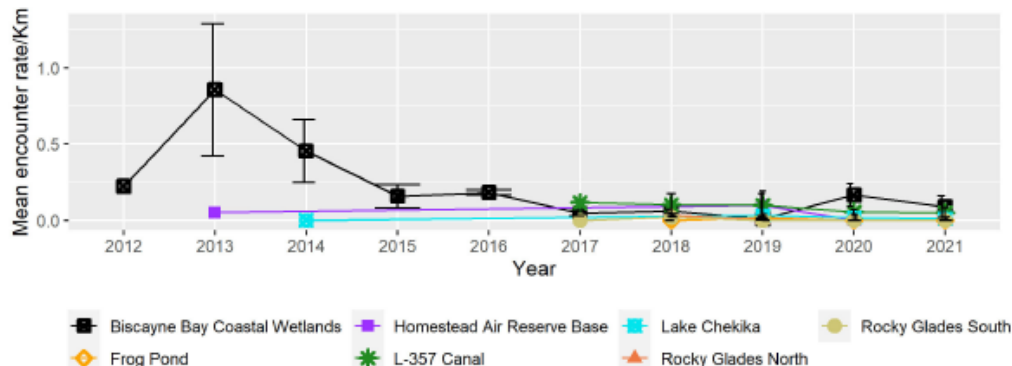
CrocDocs work (2012 - present)

Godfrey et al. (2023)

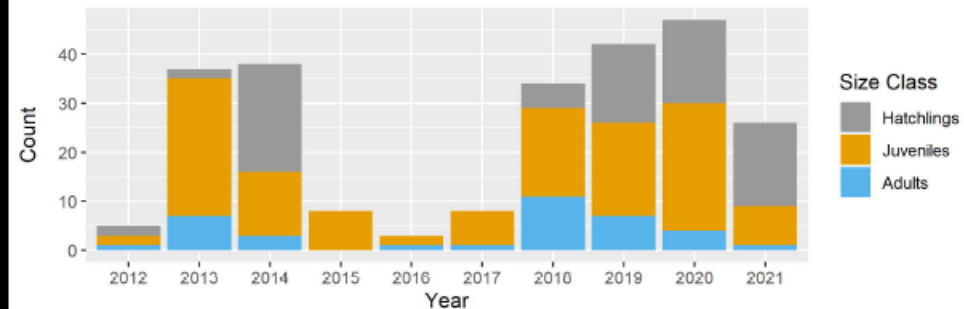


Maximum species control

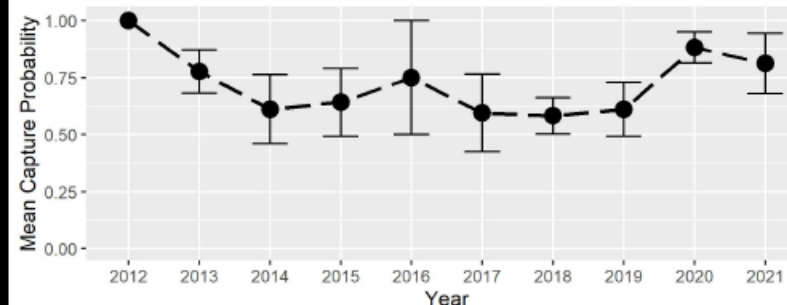
Sustained zero encounter rates from a described area through intermittent periods of at least 5 consecutive surveys and 5 years



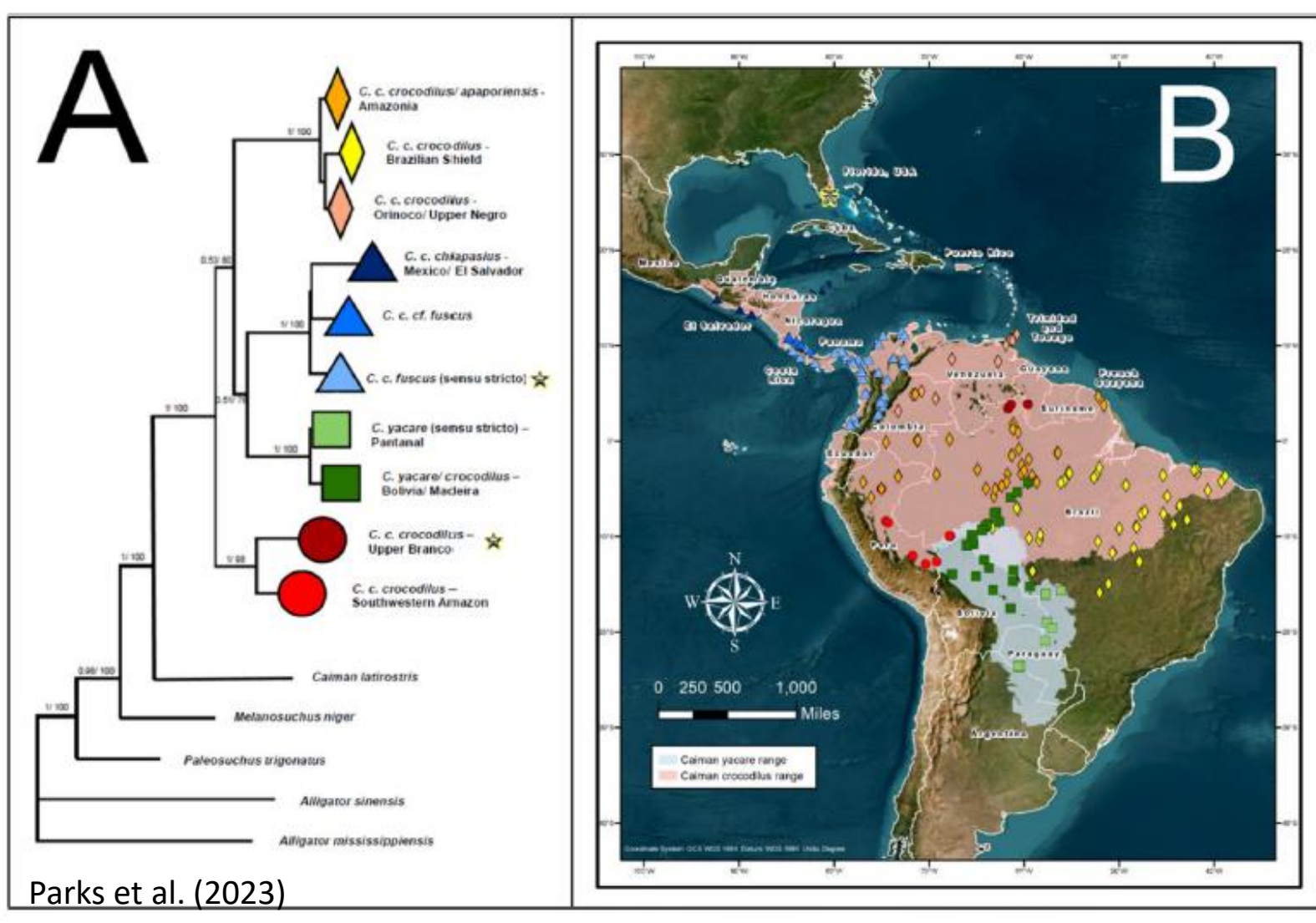
90 males
 22 females
 139 unsexed ind



Caiman removals

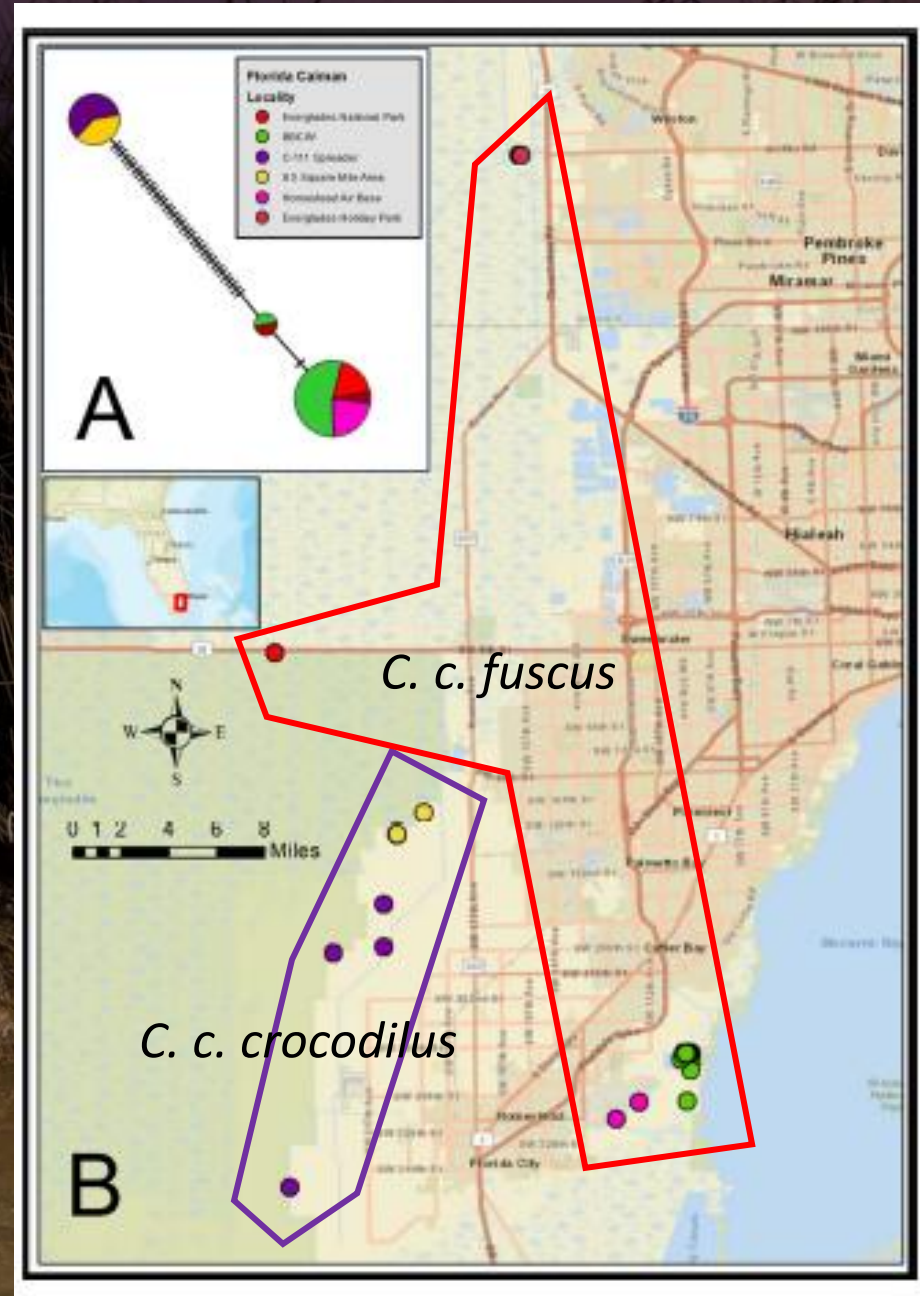
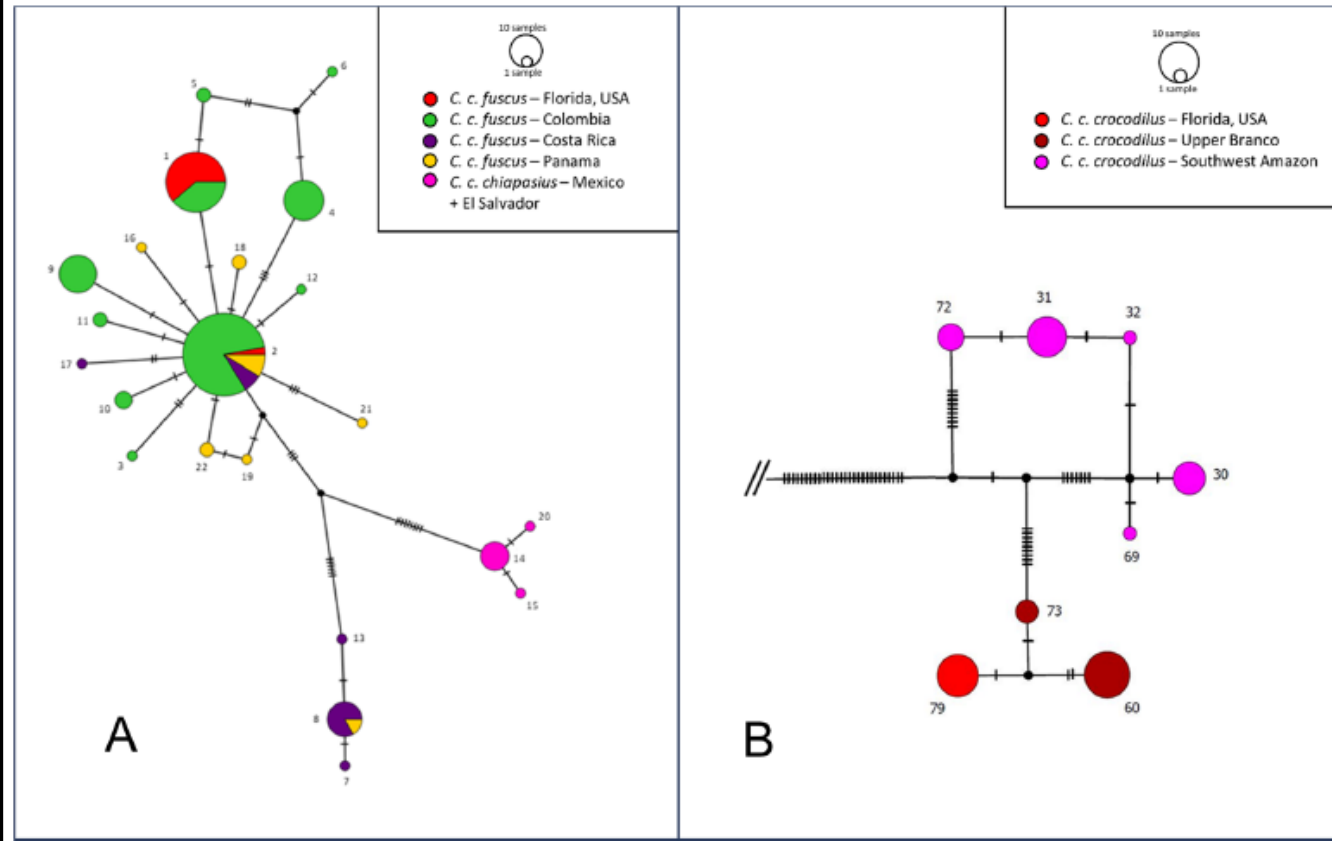


CrocDocs work (2012 - present)



- Colombia
- Brazil / Guyana / Suriname

CrocDocs work (2012 - present)



What do we know now?

- 342 caimans removed (Eastern South Florida) from 2012 to 2025
 - 88 caimans removed in HARB
- Two genetic lineages (subspecies) *Caiman crocodilus fuscus* and *Caiman crocodilus crocodilus*
 - Multiple introduction events
- Nesting and hatching season in Florida (mid-June to mid-July; mid-to-late September)
 - Behaviorally different from native range
- Individuals removed are commonly in good condition



Where are we now?

- Genetic surveillance (do we have more caiman genetic lineages in Florida?)
- Systematic surveys (standardized effort, counting all crocodylian species within a survey)
- Caiman nesting (find nest before hatching)
- Strengthening removal efforts (do we have caiman's refugia?)



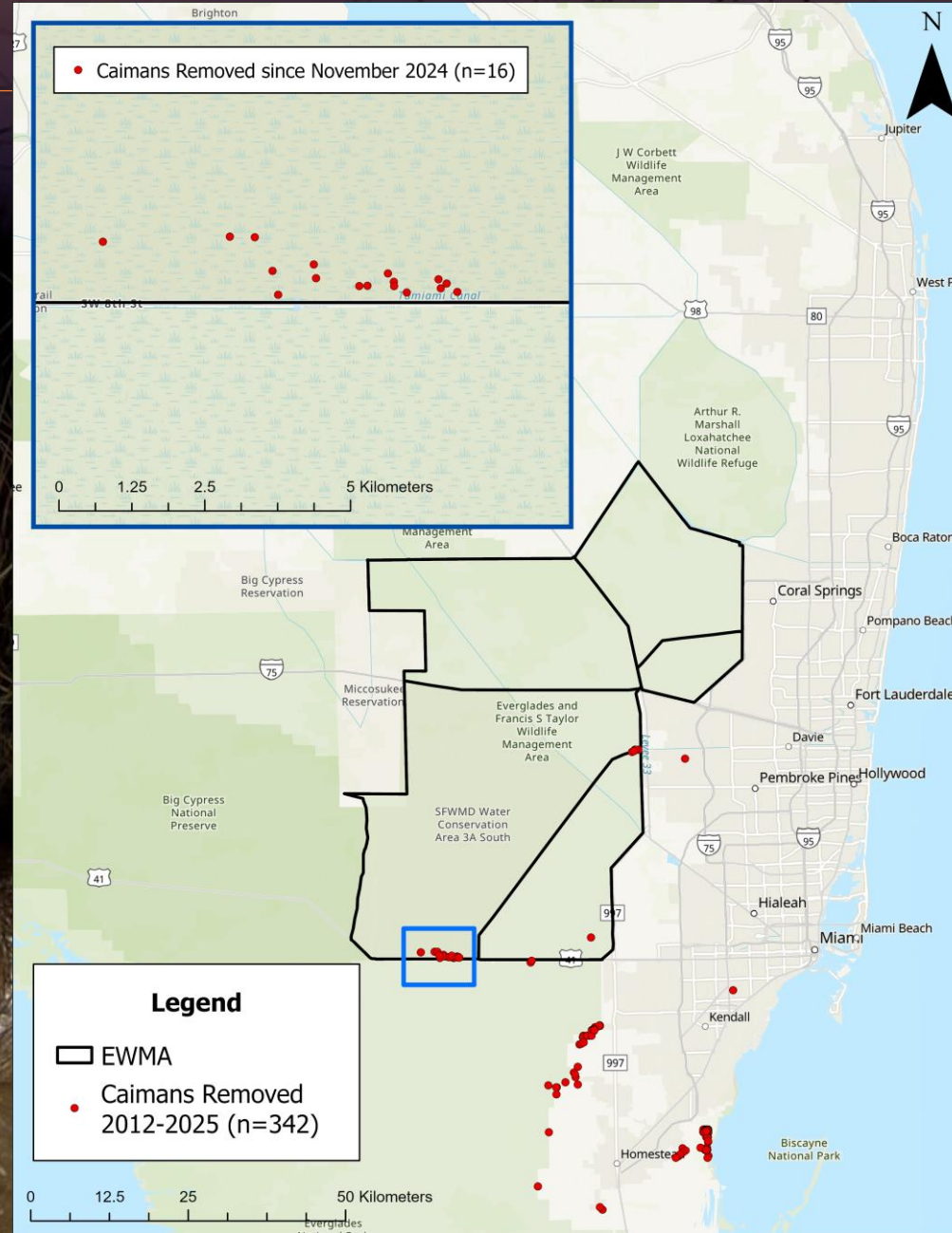
Future research

- Population genetics (do we have genetic admixture?, what is the effective population size?)
- How are caiman populations impacting Everglades trophic levels (what are they eating? What trophic level are they on?)
- Telemetry studies to better understand behavior and improve management

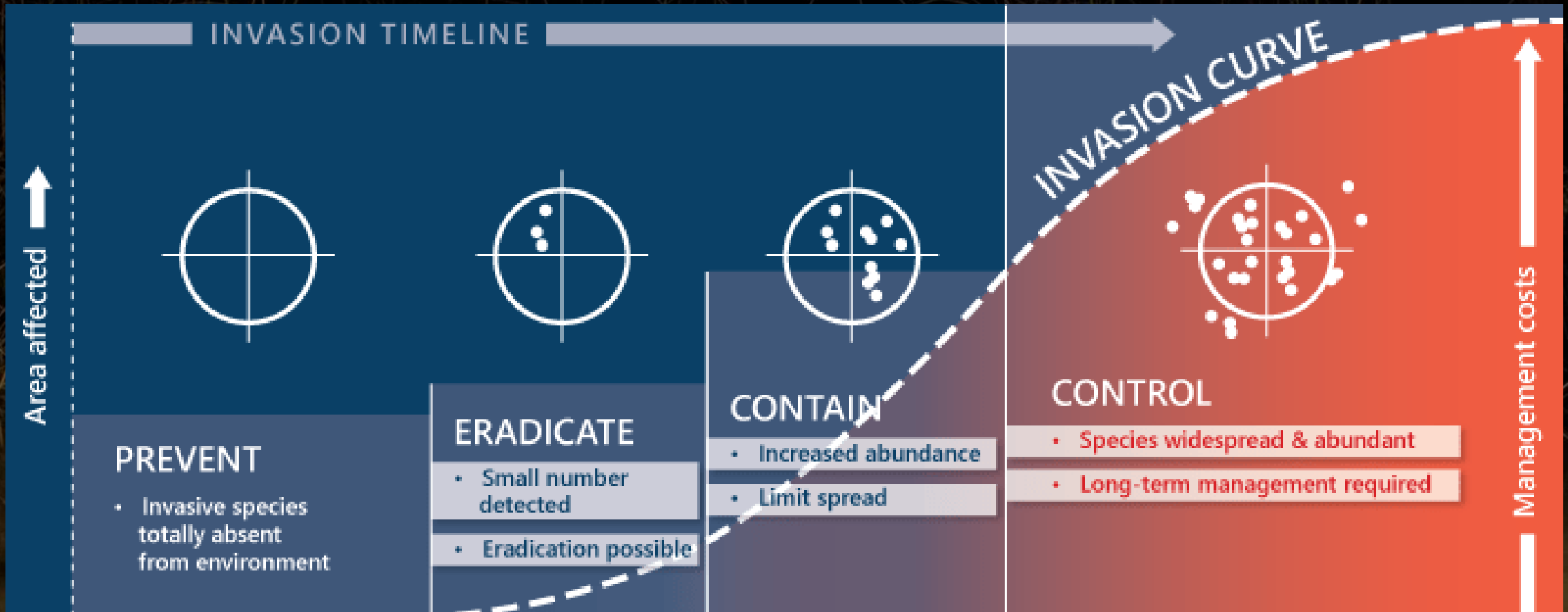


Future research

- Proposed Telemetry Study
 - Nesting Ecology
 - Movement Patterns
 - Habitat Use



The Invasion Curve





Questions?

