

Endangered Beach Mice in the Southeastern United States



Jordan Wingate, Environmental Program Manager

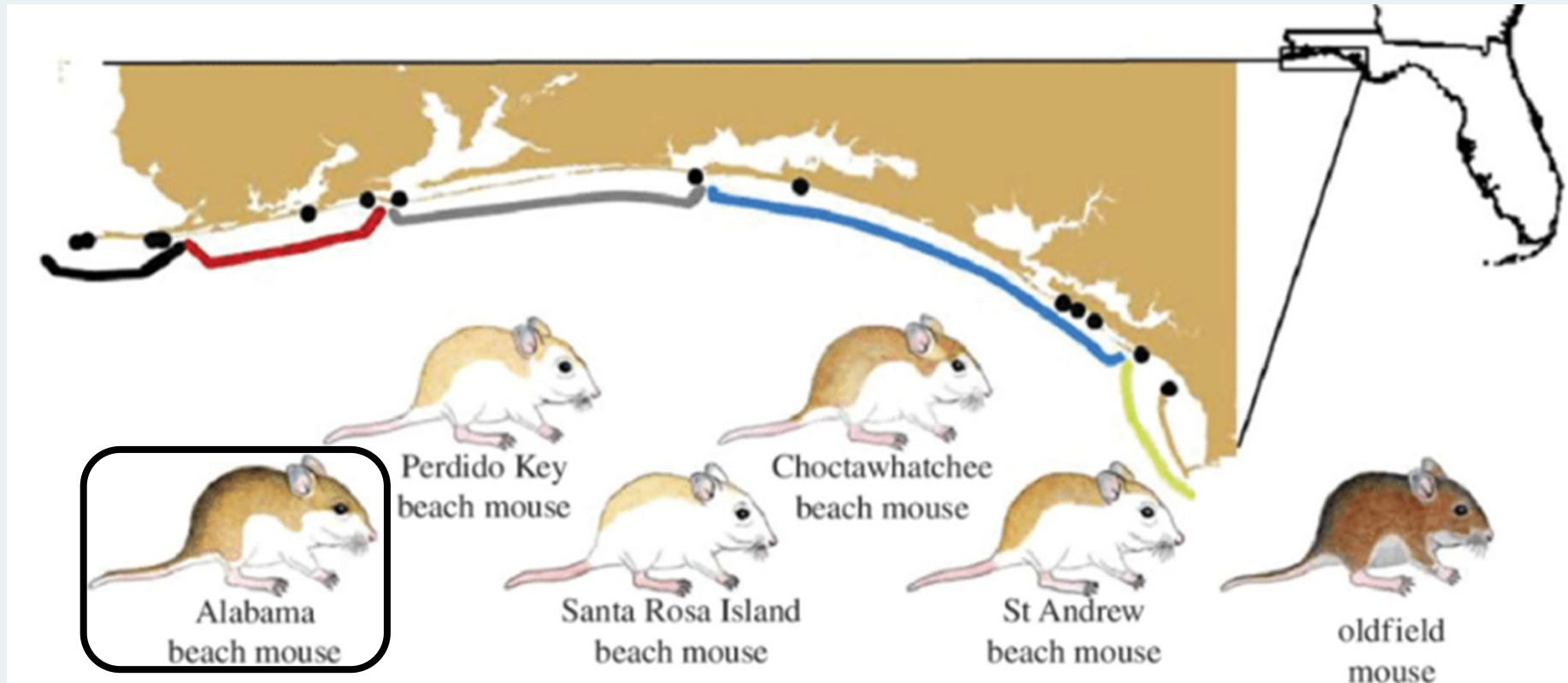
Subspecies of Beach Mice in the Southeastern US

- Alabama Beach Mouse (ABM)
- Perdido Key Beach Mouse (PKBM)
- Santa Rosa Island Beach Mouse (SRIBM)
- Choctawhatchee Beach Mouse (CBM)
- St. Andrew Beach Mouse (SABM)
- Southeastern Beach Mouse (SEBM)
- Pallid Beach Mouse (PBM) - extinct
- Anastasia Island Beach Mouse (AIBM)

Alabama Beach Mouse (ABM)

Peromyscus polionotus ammobates

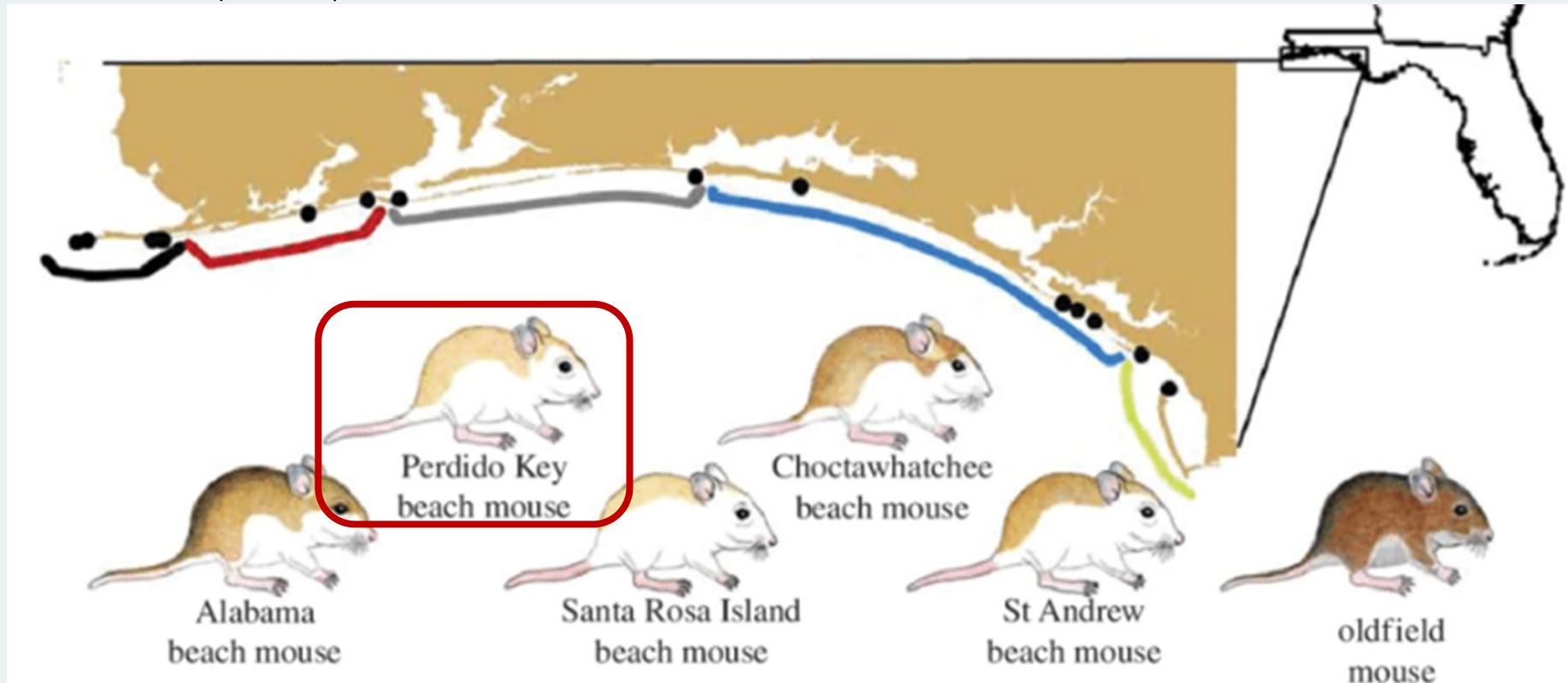
- Range: historically extended from Ono Island to Fort Morgan



Perdido Key Beach Mouse (PKBM)

Peromyscus polionotus trissyllepsis

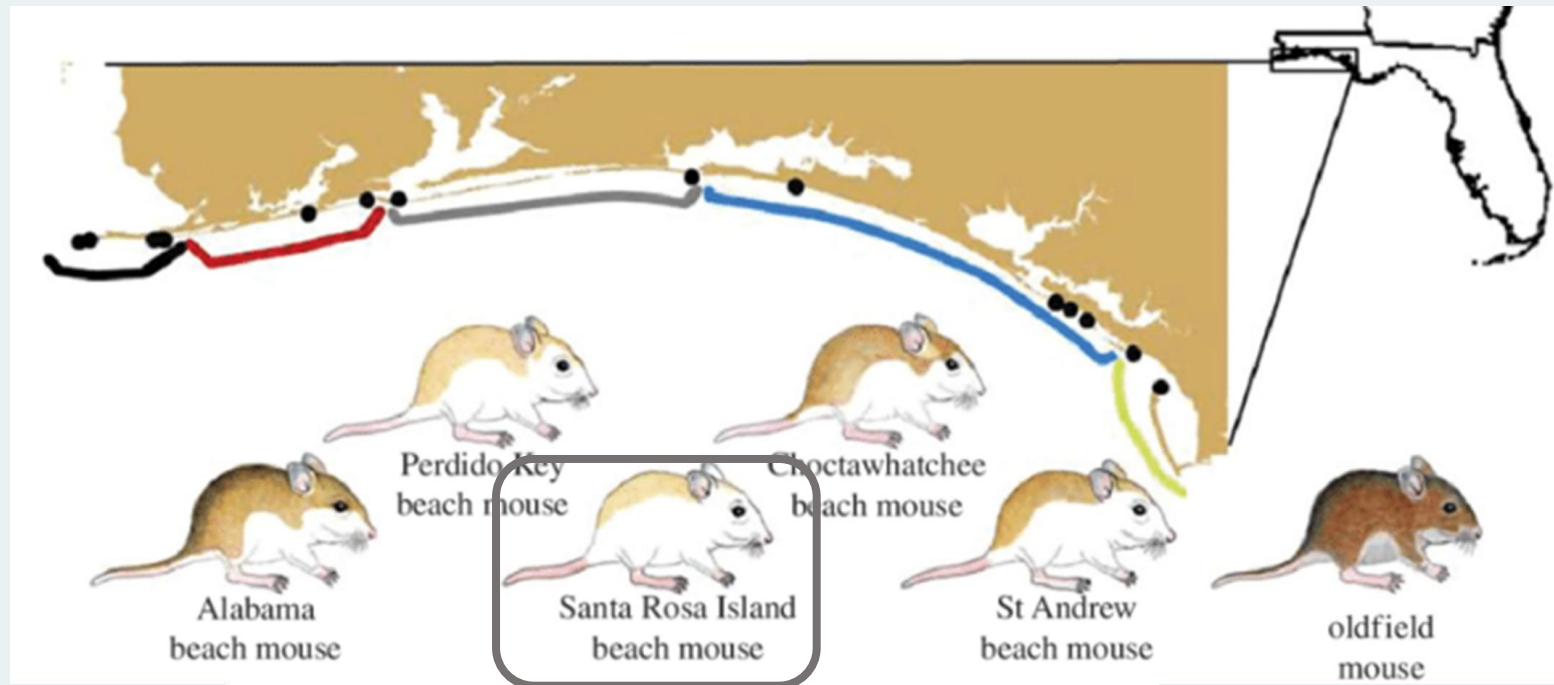
- Range: Gulf State Park to Johnson Beach – Gulf Islands National Seashore (GUIS)



Santa Rosa Island Beach Mouse (SRIBM)

Peromyscus polionotus leucocephalus

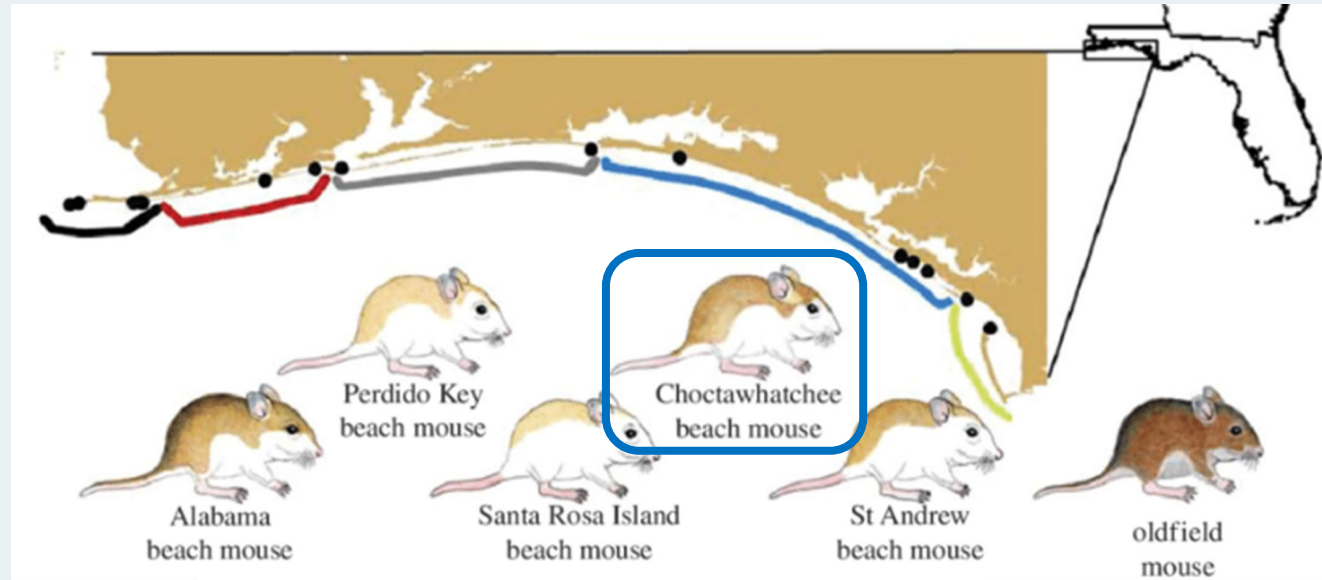
- Range: Fort Pickens (GUIS) to Okaloosa County
- Only subspecies of beach mouse that is not federally listed
- Lightest fur color of all beach mouse species



Choctawhatchee Beach Mouse (CBM)

Peromyscus polionotus allophrys

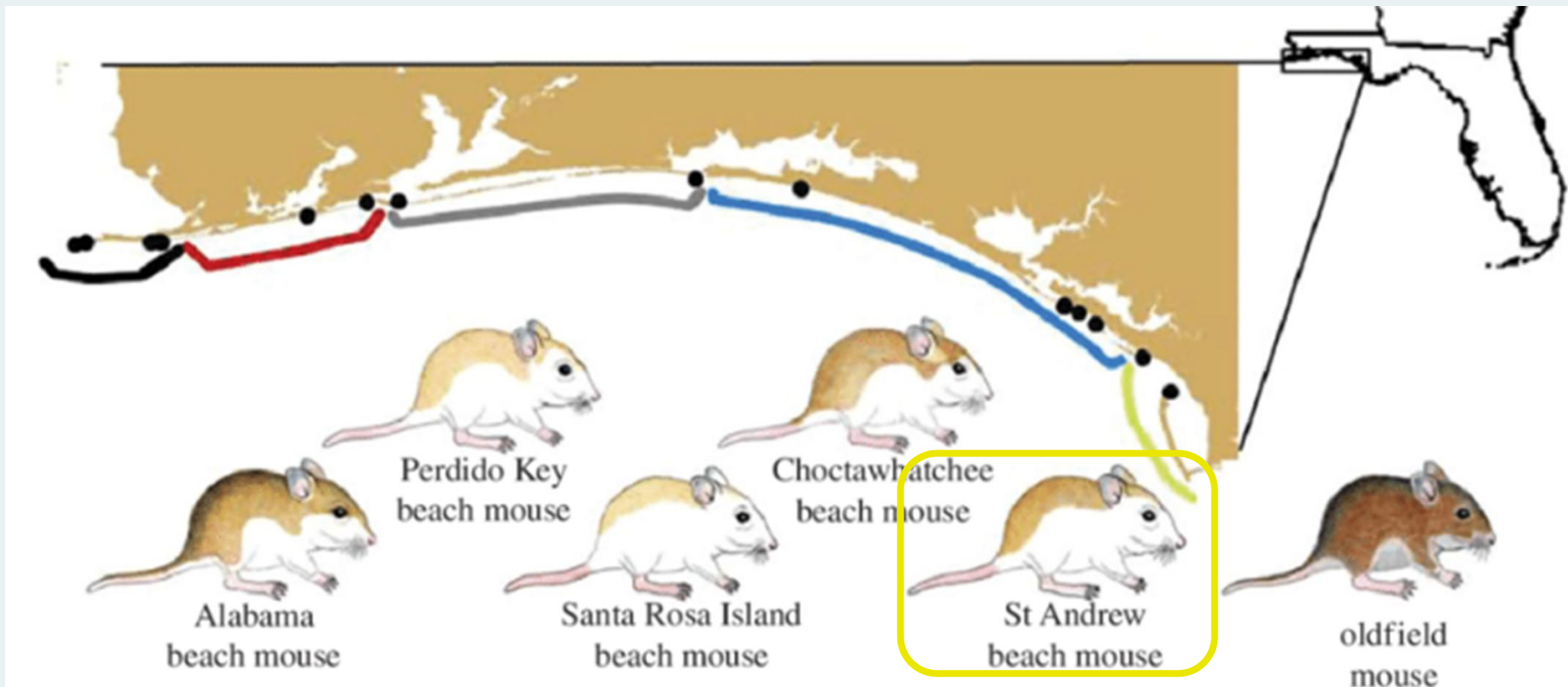
- Range: historically extended from Henderson Beach State Park to East Crooked Island on Tyndall AFB
 - No longer exist on Henderson Beach State Park
- Population is in decline
- Blinking out on Grayton beach



St. Andrew Beach Mouse (SABM)

Peromyscus polionotus peninsularis

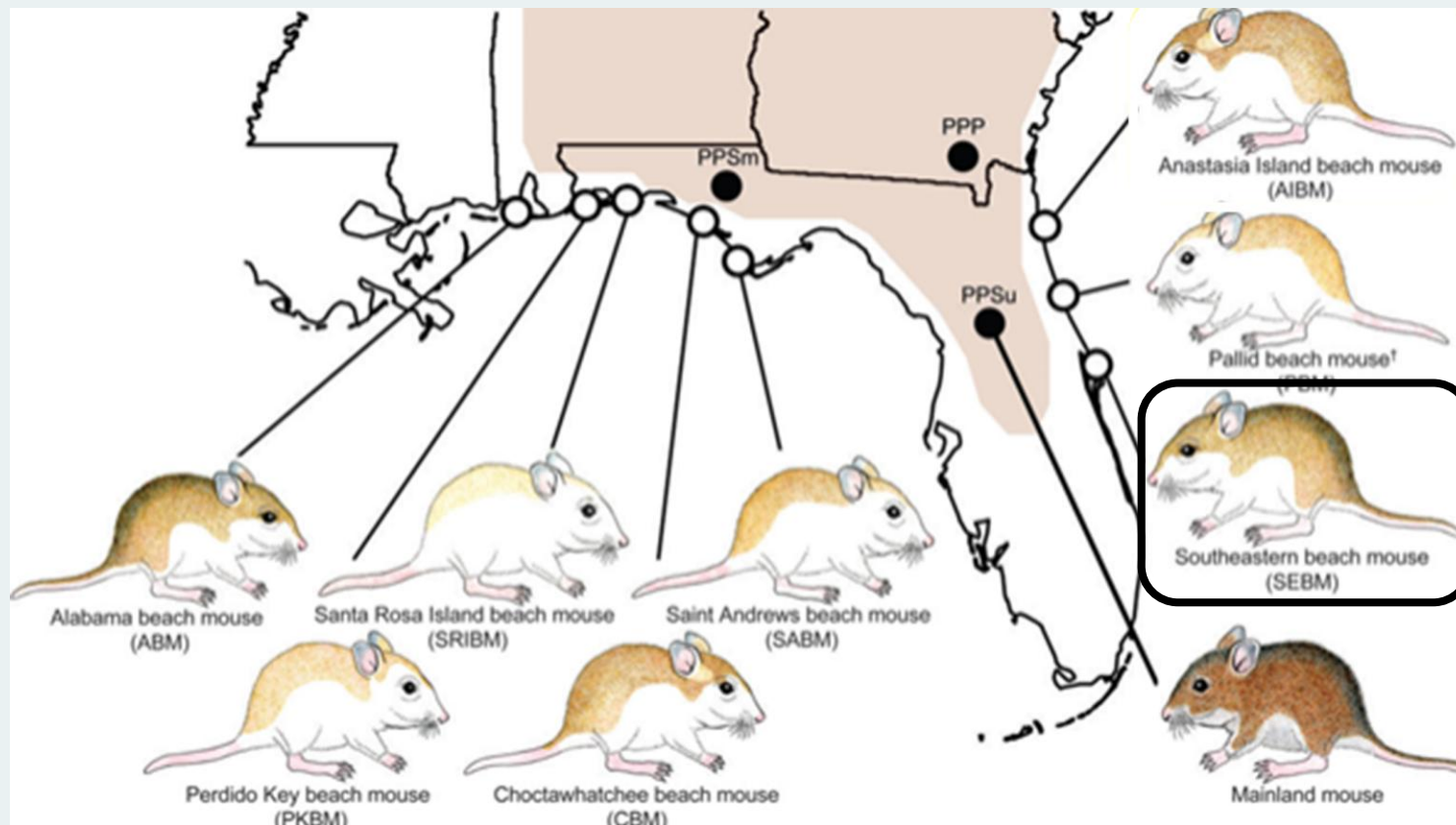
- Range: East Crooked Island on Tyndall AFB to St. Joseph Peninsula



Southeastern Beach Mouse (SEBM)

Peromyscus polionotus niveiventris

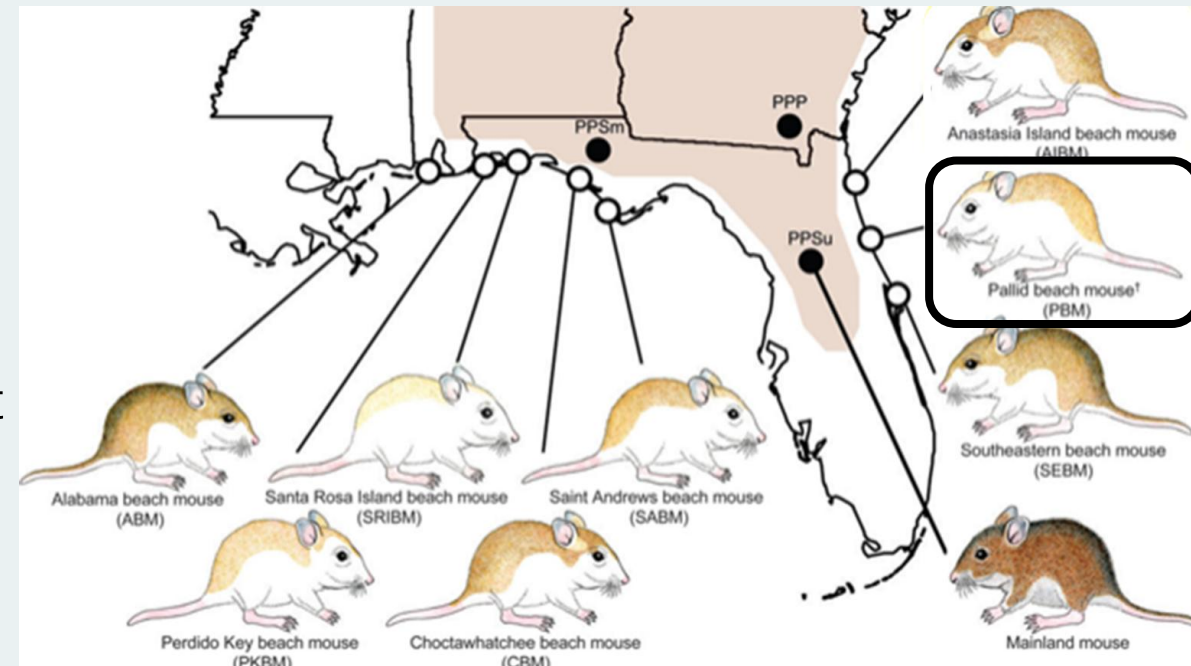
- Range: historically extended from Ponce Inlet in Volusia County south to Hollywood Beach in Broward County



Pallid Beach Mouse (PBM) - extinct

Peromyscus polionotus decoloratus

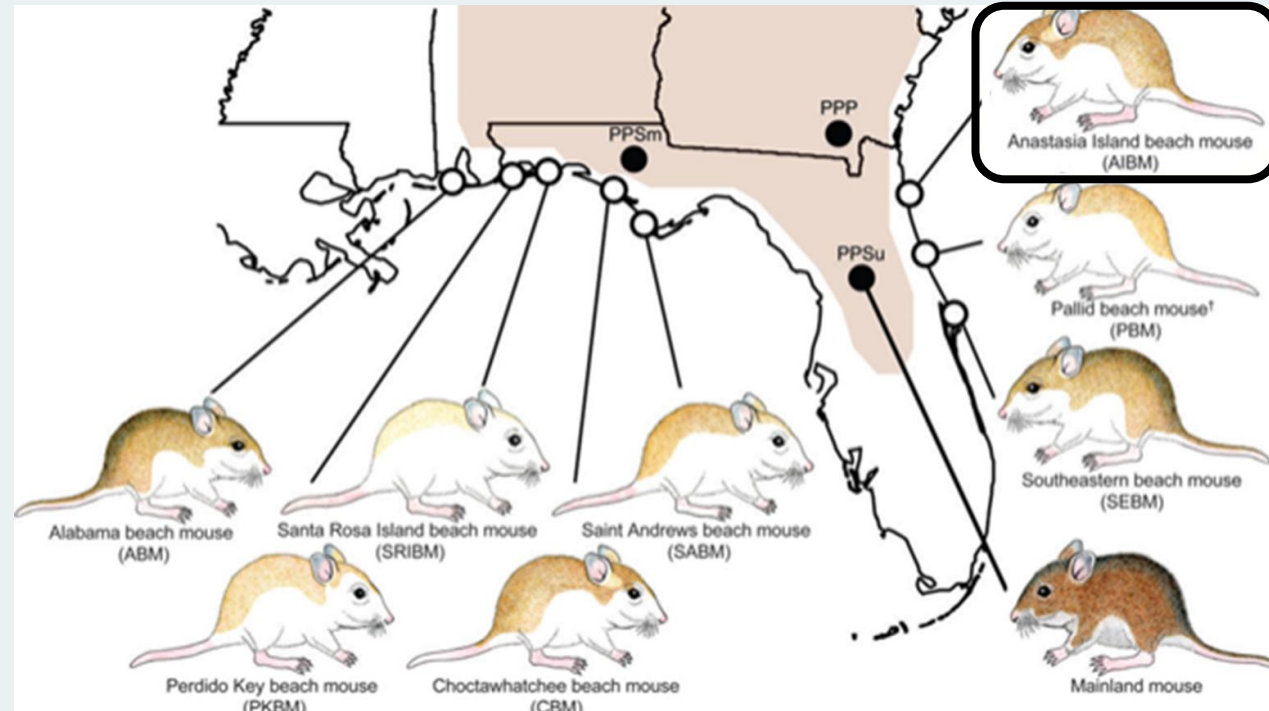
- Pallid beach mouse or Ponce de Leon beach mouse
- Range: historically resided in Ponce park, Volusia County and Bulow, Flager County
- No mice observed since 1959
 - Believed extinction was due to habitat destruction and fragmentation, predation from free-roaming cats, and competition from invasive species such as house mice



Anastasia Island Beach Mouse (AIBM)

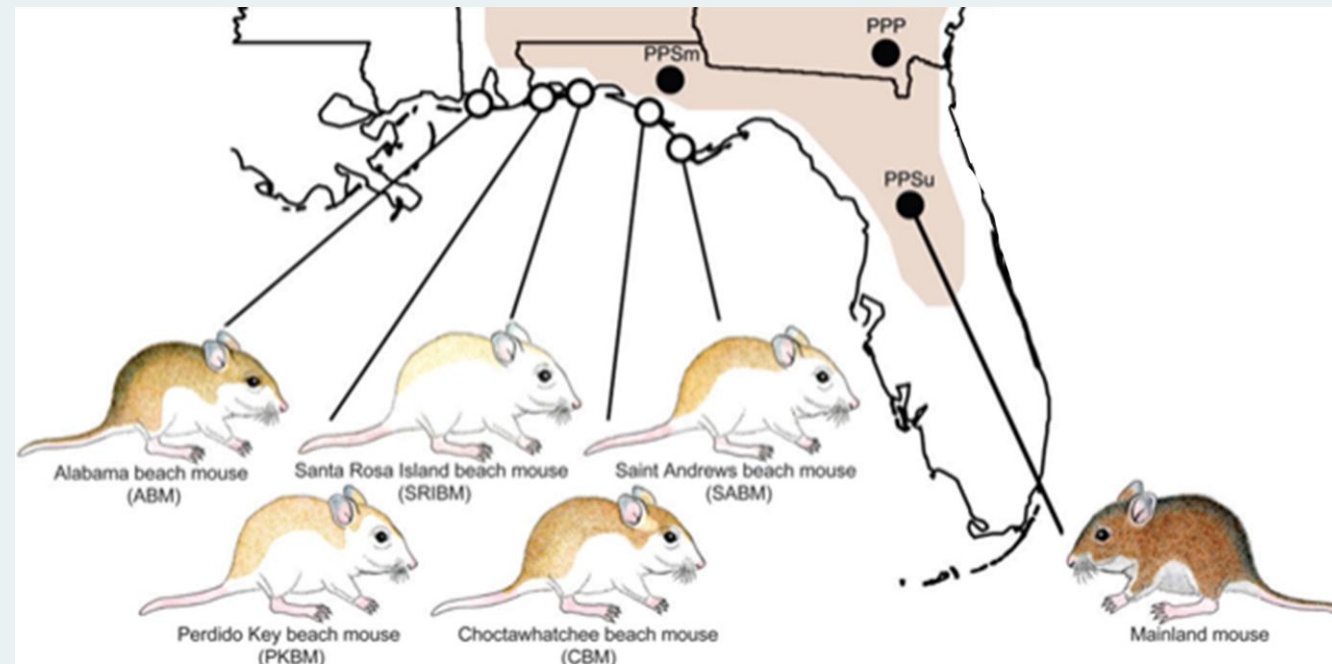
Peromyscus polionotus phasma

- Range: Anastasia Island within Anastasia State Park at the north end and Fort Matanzas National Monument at the south end
- Most critically endangered beach mouse
 - Historically extended further north to Mickler's Landing potentially as far as St. Johns River
 - Range limited due to habitat loss



Panhandle Beach Mice Species

- All of these species of mice have evolved from the old field mouse
- Western to Eastern Species
 - Perdido Key beach mouse
 - Santa Rosa Island beach mouse
 - Choctawhatchee beach mouse
 - Saint Andrews beach mouse



Why is the Beach Mouse Important?

- The beach mouse is a federally listed species that helps to disperse seeds in the dune ecosystems. This helps to stabilize dune ecosystems to provide protection to the mainland during hurricanes and storm events.
- These mice can be indicator species of dune health because if dunes are not stable enough for a mouse to burrow they will not be present in certain areas.



Seed Dispersal in Action



Monitoring for Beach Mice

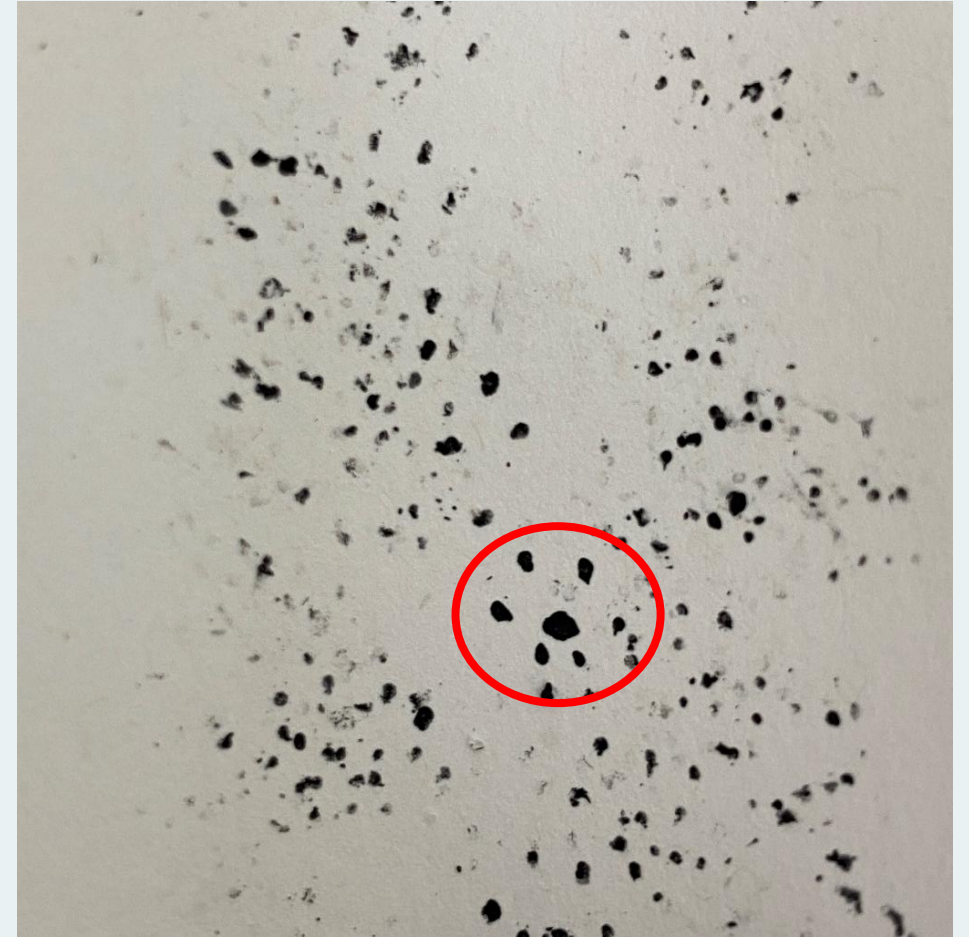
- Biologists have established beach mouse track tubes along coastal dunes from Gulf to Escambia County, Florida. Sites include state, federal, and private property each site varying in size, number of track tube stations, and beach mouse detection rates.
- Tracks provide an indirect and noninvasive method of determining beach mouse presence from footprints left on track cards and in the sand. Track tubes stations do not provide population estimates, instead they indicate areas occupied by beach mice and fluctuations over time.
- Across the panhandle track tubes are checked monthly or bi-monthly to provide a snapshot of occupation of beach mice in a given area.
- This information allows property owners to infer the status of beach mouse presence on their land. This is important to monitor to see how the mice move in the habitat throughout the year.



Monitoring for Beach Mice

- Biologists can determine that beach mice are present in an area by detecting their tracks on the cardstock placed in a track tube or in the sand within 3 meters of the tube.
- Each track tube station consisted of a baited PVC tube lined with cardstock and an ecofriendly ink pad that records footprints as beach mice enter the tube. Most transects contain stations spaced 100 or 500 meters apart, but stations can vary according to survey location.
- Yearly maps are created to show the percentage rate that beach mice tracks were detected at track tubes sites. There are natural falls throughout the year but a significant drop is a concern.
 - If numbers significantly drop the US Fish and Wildlife Service can step in and trap these beach mice and provide an accurate population estimate.





How Biologists Check Track Tubes



Track Cards



Beach Mice Burrow & Tracks in the Sand



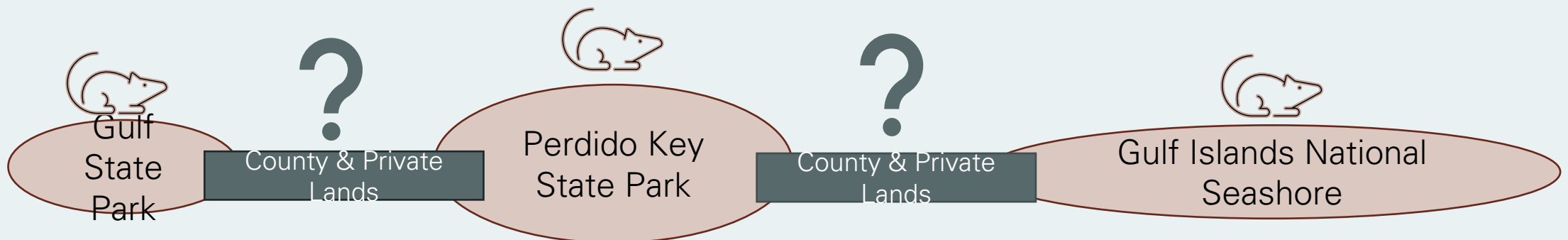
Perdido Key Beach Mouse

- Endemic to Perdido Key
- Home range is 1.25 acres
- Burrow in coastal dune system
- Nocturnal
 - Can travel up to 2 miles in a single night
- Omnivore, mainly feeding on seeds and insects
 - Very opportunistic diet
- Critically endangered; federally listed in 1989



Perdido Key Beach Mouse Monitoring

- Joint effort between Gulf Islands National Seashore, Florida & Alabama State Parks, US Fish and Wildlife Service, and Escambia County
- Why does Escambia County monitor?
 - Effectiveness of conservation initiative
 - Short-term population changes
 - Long term population and genetic dynamics
 - Predator & Disturbance Management
 - Habitat Conservation Plan



ESCO Perdido Key Beach Mouse Monitoring

- Track Tube Monitoring (Bi-Monthly)
 - Baited track tubes that use animal safe ink to record footprints
 - The mouse enters the track tube and walks on the track card
 - We can measure their footprints to verify species



Track Tube Measurement and Species

House Mouse
< 5.48 mm



Perdido Key Beach Mouse
5.48-6.7 mm



Cotton Mouse
6.7-8.3 mm



Cotton Rat & Other Rats
8.3-10.9 mm



Other Rat spp.
11-13 mm

ESCO Track Tube Detection Rates 2025



PK East



PK West

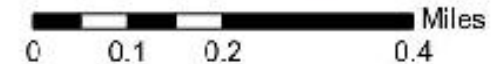


Beach Mouse Detection Rates

38 tubes checked bi-monthly Jan-December for 6 total checks.
Excluded locations include those that were checked less than 3 times due to new placement, site status change, missing tube or other circumstance.

Legend

- 0.000000 - 0.200000
- 0.200001 - 0.400000
- 0.400001 - 0.800000
- 0.800001 - 1.000000



ESCO Perdido Key Beach Mouse Monitoring

- Camera Trapping (As needed)
 - Game cameras mounted inside baited bucket or elsewhere to record species identification
 - This is used to confirm beach mice in an area where we see beach mouse or house mouse footprint measurements



Perdido Key Beach Mouse Monitoring

- Live Trapping (Periodically)
 - Sherman traps are used to capture mice at night
 - Species selective
 - High effort and skill
 - Highly invasive to the animal
 - Risk of injury and death to animal
 - Is mainly used to determine population estimates and translocation events
 - US Fish and Wildlife Service conducted 5 year reviews
 - Brevard Zoo breeding program

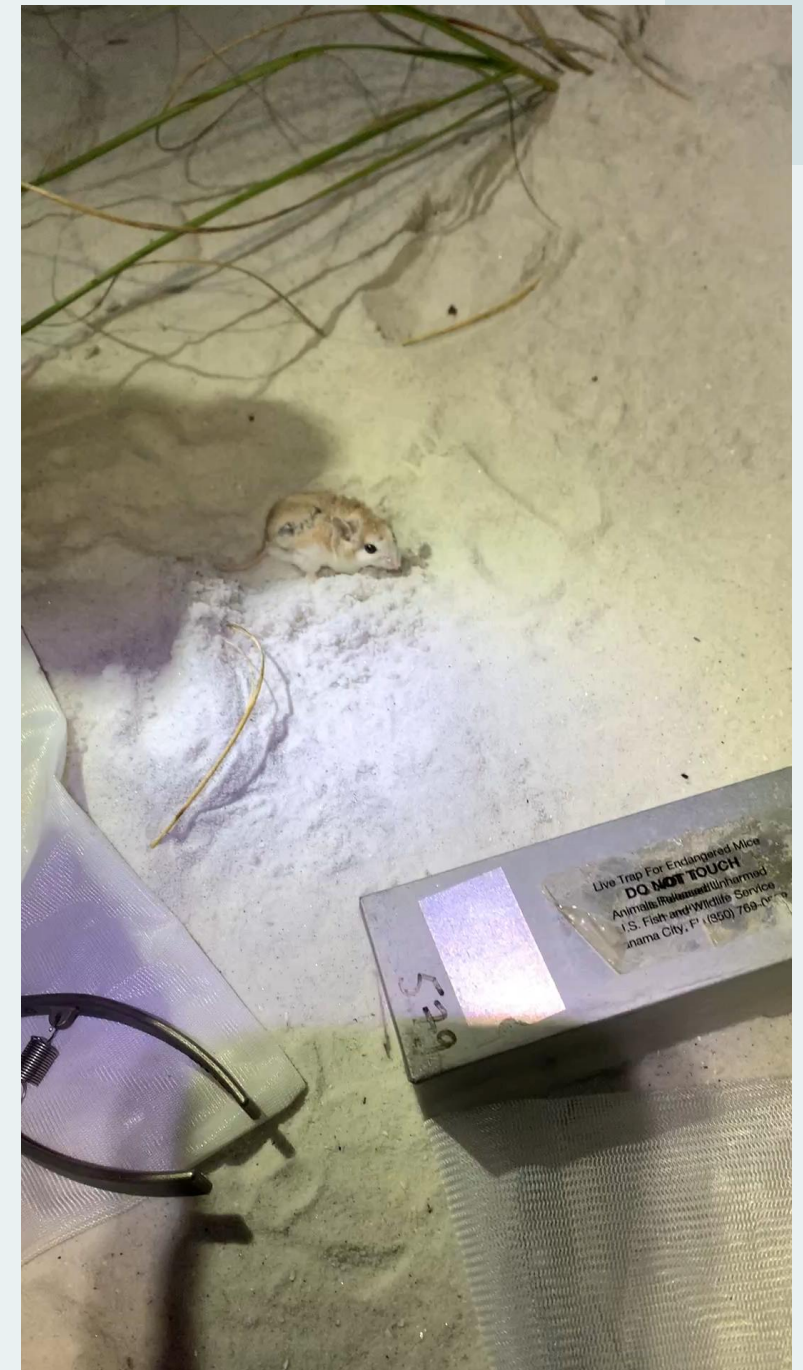
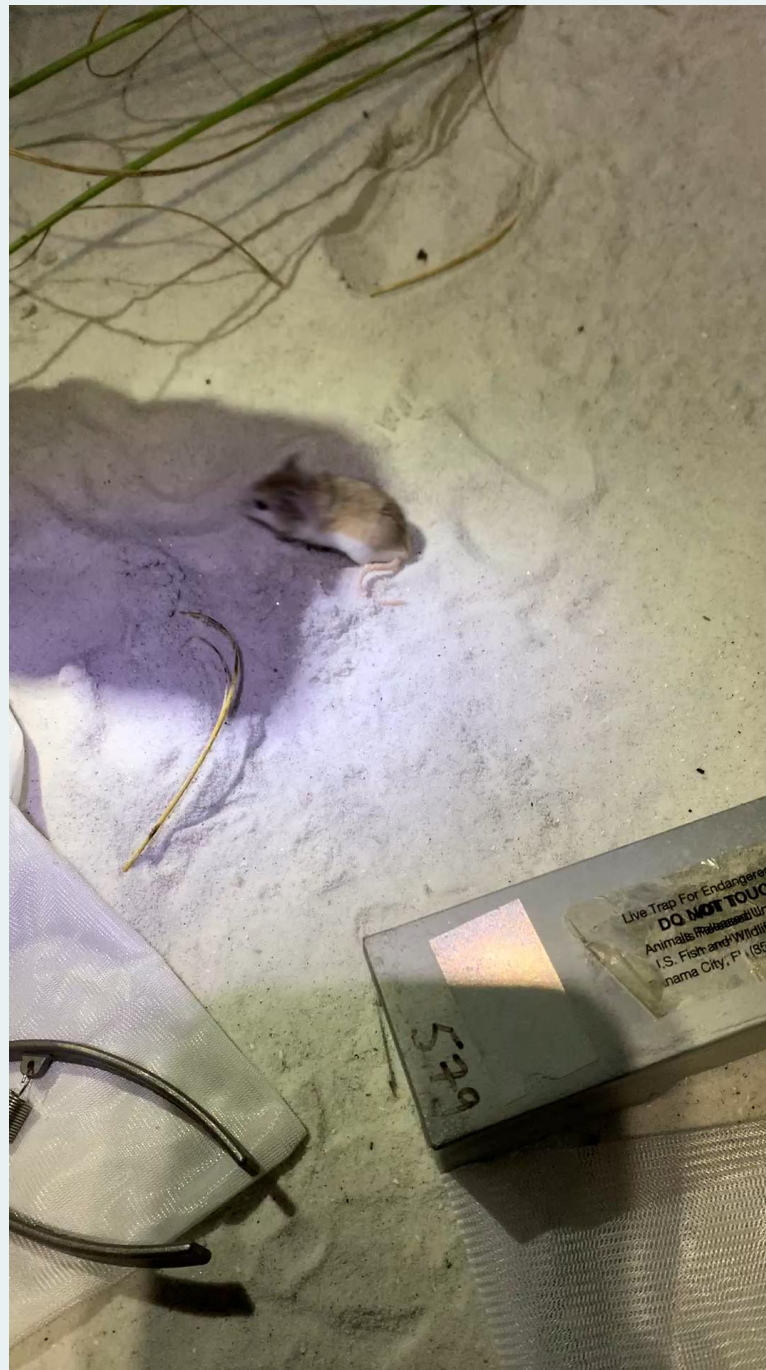


Perdido Key Live Trapping

- Mark-Recapture Sampling
 - Every 5 years
 - Trap the entirety of Perdido Key to estimate the population and look at genetic diversity
 - Captured mice are weighed, sexed, ear tagged, biopsied for genetics
 - Traps are set around sunset and checked around midnight for 5 consecutive nights



Trapping Release



Escambia County Updates!!

- Educational Ambassadors on Perdido Key
- We received Corona (left) and Lupin (right) from the Brevard Zoo on June 26th
- We will be posting a live camera link to our new coastal program website soon
- Naming opportunity coming soon





Questions?

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