

Perdido Key Beach Mouse Recovery Action Plan



Perdido Key beach mouse (*Peromyscus polionotus trissyllepsis*)

U.S. Fish and Wildlife Service, Southeast Region – Panama City, Florida Ecological Services Field Office, July 28, 2009

■ **Target:** Prevent Extinction and Improve the Status of the Perdido Key Beach Mouse

Perdido Key beach mouse:

Status: Endangered

Recovery Priority Number: 3C (high degree of threat/high recovery potential)

Recovery Plan: Choctawhatchee Beach Mouse, Perdido Key Beach Mouse, and Alabama Beach Mouse Recovery Plan, 1987

5-year Review: completed in September 2007

Other: Listed as endangered on June 6, 1985 (50 FR 23872), designation of critical habitat, October 12, 2006 (71 FR 60238)

Threats:

Habitat loss and fragmentation: Habitat loss and fragmentation associated with residential and commercial real estate development is the primary threat contributing to the endangered status of beach mice. Isolation of small populations of beach mice reduces or precludes gene flow between populations and can result in the loss of genetic diversity. The conservation of multiple large, contiguous tracts of habitat is essential to the persistence of beach mice.

Restricted range: The Perdido Key beach mouse (PKBM) is endemic to the 16-mile long barrier island known as Perdido Key, Escambia County, Florida. Currently, the only known populations exist at Perdido Key State Park (PKSP) and Gulf Islands National Seashore, Johnson Beach Unit (GINS). Perdido Key beach mice at PKSP are currently at extremely low numbers; habitat is in recovery since the 2004-2005 storm seasons. Recent surveys at GINS indicate the adult population includes only a few hundred individuals. GINS is a long but narrow spit of land that can be overwashed in tropical storms or hurricanes. Future overwash events may result in the extirpation of the populations.

Catastrophic events: For example, weather events even minor storms could cause the species' extinction.

Predation: Predation in beach mouse populations that have sufficient recruitment and habitat availability is natural and not a concern. However, predation pressure from natural and non-native predators may result in the extirpation of small, isolated populations of beach mice. In particular, free ranging feral and domestic cats can have a devastating effect on beach mice populations.

Development: Coastal development reduces availability and connectivity of habitat; increases human associated perturbations including free-roaming pets, ambient lighting, and recreational use.

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Current Status: Hurricane Ivan made landfall in September 2004 just west of Perdido Key, resulting in severe impacts to the barrier island and the Perdido Key beach mouse. Hurricanes are part of the natural ecosystem as are other coastal weather events and a factor in the maintenance of beach mouse habitat through shoreline accretion, erosion, and dune formation. However, the loss and fragmentation of habitat have amplified the potential impacts, such that minor storms now pose a significant threat. While several habitat improvement and restoration projects have been completed since then, monitoring has shown a severe decline in what had previously been the largest, most secure population of the beach mouse. Currently, the known populations could easily be lost in a tropical storm or hurricane, resulting in their extirpation. Threats may act in concert especially when coupled with events such as tropical storms, reduced food availability, and/or reduced reproductive success; isolated populations may experience severe declines or extirpation.

Target: Prevent species' extinction and improve the species status within its range.

Measure: Ensure the viability of the PKBM populations and minimize immediate threat of extinction. Increase population size. Improve Recovery Status from Declining to Stable.

Actions:

RA=Recovery Action; 1st # = priority; 2nd # = task no.	FY09	FY10	FY11	FY12	FY13	Costs	Responsible Parties and Notes
Complete reintroduction study previously funded with FY08 national recovery initiative preventing extinction funds (PVE) at \$50,000 and FY 09 \$35,000 PVE funds. RA: 1-22 ; RA: 2-251 ; RA: 2-252, 2-2521, 2-2522, 3-2531; RA: 1-24 ; RA: 2-25	X	X				\$85,000 Contracted	FWS, Florida Fish and Wildlife Conservation Commission, and contractor (Zoo-Logic)
Complete reintroduction of PKBM to Perdido Key State Park and other lands as determined. Funding needed for wild and captive genetic determinations and survival of reintroduced mice. Project may need to be phased because of funding needs. FY09 work-planning. RA: 3-12 ; RA: 2-1221 ; RA:2-2533	X	X	X			\$35,000 Genetics \$75,000 reintroduction work and studies needed	FWS, FL Fish and Wildlife Conservation Commission, and contractor (Zoo-Logic).
Continue feral cat and predator control on	X	X	X	X	X	\$75,000/yr	USDA-Wildlife Services

public lands, on Perdido Key (\$15,000 each year). Preventing extinction funds received in FY09. RA: 2-1213; RA: 2-341; RA: 2-34						21,000 contracted in FY09	(control), FWS, Florida Department of Environmental Protection and National Park Service
Continue to work with County to adopt beachfront lighting ordinance which will reduce nighttime lighting of the dunes and scrub habitat of the PKBM (draft ordinance reviewed by Service). RA:3-1215		X				\$0 Service in kind	Escambia County
Revise Recovery Plan, the 1987 Recovery Plan should be revised and updated to reflect the current status and threats to the PKBM, and recovery criteria, objectives, and tasks should be developed.			X	X		\$35,000 Total needed	FWS and partners or a contractor
Emergency Response Plan, a contingency plan should be developed to outline actions taken in case of severe threats to the persistence of PKBM (i.e., forecasted category 5 hurricane, feral cat population increase, population crash). RA: 3-4 (oil spills only)		X				\$10,000 Total needed	FWS and partners or a contractor
Appropriate parcels for land acquisition should be identified using LIDAR data (to identify high-elevation habitat) and current knowledge of PKBM movements and habitat use. The Service in concert with the state and County staff has identified potential parcels that would benefit the recovery of the PKBM. RA: 1-1223; RA:2-131; RA: 1-14		X	X	X	X	\$500,000 – 10 million Total needed	FWS with partners: Escambia County, State of Florida, Trust for Public Lands, Nature Conservancy. County requesting FWS section 6 funds
Outreach and education, opportunities to convey the importance of coastal dune habitat to the public should be sought after and pursued. Additional “Share the Shore” signs were purchased by the Service. In addition, an	X Funded by the Co.	X Funded by the Co.	X Funded by the Co.			\$25,000 Total needed for outreach plan	Escambia County to lead

outreach/education program focused on the threats feral cats pose to wildlife should also be developed. Most of this is to be conducted under Perdido Key-wide ITP (if issued). RA: 3-313; RA:2-33							
Research should be conducted to investigate the effectiveness of corridors currently set aside in HCPs. Studies should determine the minimum dimensions needed by PKBM to ensure movement of individuals and genetic exchange through corridors.		X	X	X		\$65,000 Total needed	Contractor
Hurricane response studies, One project is underway to determine how beach mice recolonize areas after storm events (funded by Daphne and Panama City Field Offices). Further research should be implemented to determine the response of beach mice to storm events. This may include placing transmitters on beach mice immediately prior to a hurricane event to determine whether (or to what extent) beach mice retreat to the scrub dunes, remain in their burrows, or perish. RA: 1-11	X	X	X			\$50,000 – \$300,000 Total needed	FWS and partners
Translocation, Multiple populations of PKBM are crucial for its long-term persistence. Plans should be developed to translocate PKBM to GSP if that population is found to be extirpated, and feral cat and other threats have been minimized or removed. RA: 2-1221; RA: 1-22; RA: 1-24	X	X	X	X	X	\$35,000 Total; one- time cost for first year needed	FWS, partners and/or contractors
Habitat restoration using sand fencing and/or application of fertilizer have yielded greater vegetative cover and greater densities of beach	X Funded					Assistance provided thru PVE	FWS and partners

mice. Current project to be done at Gulf Islands National Seashore. RA: 2-1222						funds \$27,500 for fertilizer project	
Habitat restoration as needed but particularly after hurricanes or other significant weather events using vegetation planting. RA: 2-1222	X	X	X	X	X	\$25,000 per year if needed or \$125,000 total needed.	FWS and partners
The State greenhouse project should be continued to conduct research on cultivating and to produce commercially unavailable vegetation for dune restoration of PKBM habitats. RA:2-1222	X Funded	X	X	X	X	\$10,000 per year. New funds \$40,000 total needed. Previous Greenhouse project provided via post hurricane funds; total \$200,000 – not all work on Perdido Key	Florida Dept. Of Environmental Protection
Research on the effects of artificial lighting on beach mice should be undertaken. The research should focus on the different types of now considered “wildlife lighting lamps” and how beach mice breeding, foraging and movement behavior and home range. RA:1-11		X	X			25,000 Total needed	FWS, partners and/or contractors
Ongoing and Future Conservation Actions	Responsible Party					Estimated Cost	

Monitoring of PKBM on public lands (continuing) RA:1-231	Florida Fish and Wildlife Conservation Commission	\$35,000/ yr needed
Completion of HCP and application of a Perdido Key-wide ITP by Escambia County (in progress) RA:2-15	Escambia County, (\$460,000) assistance provided thru section 6 grant (\$492,000)	\$656,000

Role of other Agencies: The Florida Fish and Wildlife Conservation Commission will play a key role in monitoring species status and in providing the staff for reintroduction of beach mice. The National Park Service and Florida Department of Environmental Protection will play important roles in approvals and providing staff to assist in the reintroduction efforts as well as feral cat and other predator control efforts as they own the public lands on which we intend to capture mice, reintroduce them, and provide predator control. Escambia County will be involved in all of the actions but in particular in approving a lighting ordinance to reduce the threat of nighttime lighting.

Role of Other ESA Programs: We are in the process of negotiating a Perdido Key-wide Habitat Conservation Plan with Escambia County and the Florida Fish and Wildlife Conservation Commission. We have numerous small development HCP's in various stages of development and one section 7 consultation for a large proposed development project.

Role of Other FWS Programs: None

Revised Action Plan Due: July 2014