



Panama City Crayfish Management Plan

February 11, 2016

Division of Habitat and Species Conservation

Florida Fish and Wildlife Conservation Commission

Version 2

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Report date: February 10, 2016

Staff are very pleased to present to you today the Panama City Crayfish Management Plan (PCC) and accompanying proposed rules. The management plan represents more than a decade of conservation efforts by stakeholders and partners.

Photo cover: Panama City crayfish, photo by Barry Mansell, used by permission

PCC Management Plan Timeline



Originally listed in 1987 as a Species of Special Concern, the Panama City crayfish has had a decade of listing actions and management planning efforts. Two listing moratoriums – beginning in 2003 and again in December 2007 – halted the listing process and management plan development while listing rules were evaluated. In 2003, during the first moratorium, the Commission received a 2nd petition, to delist the species; both petitions were evaluated in 2006.

In 2010, when listing rules were again revised, staff focused efforts on conducting Biological Status Reviews for species that had not been reviewed in the last 5 years, and then on the development of Species Action Plans, integrated conservation strategies, and the draft ISMP, which was presented in November 2015. The PCC was not included in these planning processes, because the management plan had been close to completion in 2008, and significant stakeholder input had helped guide development of management practices that were incorporated into the management plan. The PCC Plan was more detailed than the SAPs, and was not revised to fit the more streamlined SAP approach.

Threats to the Panama City Crayfish

2006 Criteria for Threatened

Geographic Range:

- Extent of occurrence
- Area of occupancy
- Severely fragmented
- Continuing decline



2010 Criteria for Threatened

Geographic Range:

- Extent of occurrence
- Area of occupancy
- Severely fragmented
- Continuing decline



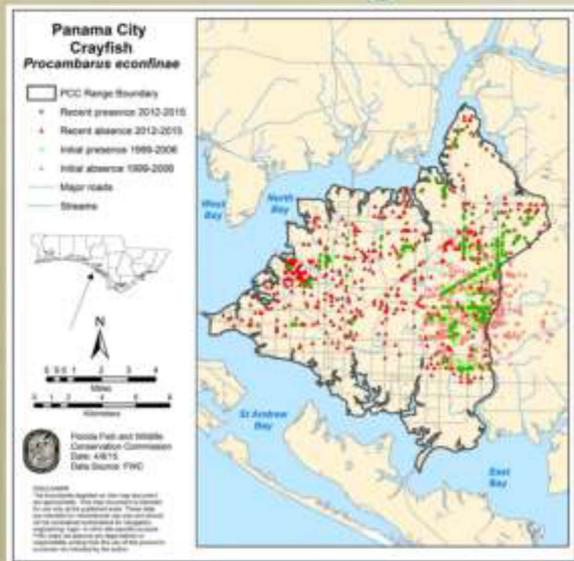
The PCC met the 2006 criteria for listing as Threatened based on small geographic area, fragmentation, and decline in available habitat. Changes in listing process in 2010 kept these same categories, but used a larger area of occupancy and extent of occurrence for Threatened status. PCC also met the updated criteria for listing as Threatened.



The 2006 Biological Status Report found that the PCC met the listing criteria described in rule for the geographic range of the species. The 2006 criteria included 3 levels of imperilment – Endangered, Threatened, and Species of Special Concern; the PCC met the criteria for Threatened. The 2010 rule eliminated the 3 levels of imperilment, moving to a single category of Threatened. This single category was based on the IUCN Vulnerable category, which the PCC still met.

The small range of the PCC, coupled with rapid development and loss of known occupied sites, were cited in the BSR as the primary threats to the species.

Range and Biology



- Natural habitat is wet pine flatwoods
- Distinguished from other crayfish by reproductive organs
- Form burrows during dry season, breed during high water

The PCC is located within Bay County, bordered by North Bay, East Bay, St. Andrew Bay, and the Bayou George and Callaway Creek drainages. The map shows surveys from 1999 to the present; red represents sites with no crayfish, and green represents sites where crayfish have been found. Areas outside of the range – indicated by the black line – have been surveyed, but no Panama City crayfish have been found.

Conservation Goal

To ensure the long-term conservation of the Panama City crayfish throughout its range so that it no longer warrants listing by the state of Florida.



The conservation goal for the PCC is to reverse the conditions that triggered the criteria that led to listing. Although the range of the species is limited by geographical barriers, the decline in locations and fragmentation are both factors that can be addressed through conservation actions.

For example, preserve areas like the one pictured here, provide excellent models of how conservation partnerships have led to improving conditions for the PCC. The site is managed by FWC through a conservation agreement, and since management was initiated to remove overgrown vegetation, PCC have been documented on site. Significant improvement in our understanding of the management tools available has occurred since 2007, and have allowed staff to focus recovery and conservation actions on natural habitats.

Photo: Talkington Preserve, Bay County. FWC photo

Conservation Objectives

1. Increase the total area of occupied PCC habitat to 2,000 acres: 1,500 acres in the eastern portion of its range consisting of parcels that are each greater than 25 acres and at least five parcels in the western portion of its range that are each greater than 5 acres.
2. Develop and evaluate methods to accurately determine PCC densities and assess population status (age structure and sex ratios) to determine a minimum viable population size and to develop translocation guidelines.



Male



Female



Two conservation objectives have been identified for the PCC. The first objective focuses on reversing the conditions that triggered the criteria for listing (fragmentation and decline in locations) by establishing a goal for conservation acreage. These sites would be held in long term easements with management for crayfish. Modeling of potential habitat has estimated that approximately 8000 acres of habitat (occupancy unknown) remain within the PCC range.

The 2nd objective addresses the data gaps that still exist for the species. Filling these data gaps is not essential to addressing the listing criteria, but they will assist in the long term site-specific management goals.

Photo: male and female Panama City crayfish. FWC photo.

Conservation Actions

- 16 Actions identified
- Focus on habitat restoration and conservation, filling data gaps, education, and outreach



The current management plan has identified conservation actions following a format similar to the SAPs. These actions provide concrete steps for achieving the objectives and goal. These actions are prioritized within the Implementation chapter of the plan.

Photo: FWC staff dip-net for crayfish during high water. FWC photo.

Regulatory Approaches

- Authorizations for certain activities
- Conservation Management Practices in lieu of permitting
- Streamlined approach when permitting is recommended



Permitting guidelines have not been developed for the PCC, although the regulatory approaches for the species are outlined in the Management Plan. Input on permitting and impacts have helped to guide the approaches outlined in the management plan and led to the development of authorizations within the management plan and the conservation management practices.

Staff will continue to work with stakeholders in developing the permitting guidelines, particularly in regards to any avoidance, minimization, and mitigation scenarios.

Photo: 2 treatment options for improving habitat conditions. FWC photo.

Authorizations in Management Plan

Activities that have the potential to benefit the PCC may also cause take, however the benefits outweigh the potential negative impact of the activities. Other activities may be necessary for health or human safety.

- Land Management
- Agriculture
- Silviculture
- Culvert replacement and maintenance
- Emergency actions for flood control or other health and human safety concerns.



The management plan includes authorization for certain activities that may cause take, without the need for any permitting.

Land management guidance is provided in the management plan. Silviculture and agriculture – specifically cow/calf operations - following FDACS water quality BMPs are consistent with PCC management. Approximately 9000 acres in PCC range are already enrolled in these BMPs.

Culverts maintain hydrology in roadside swales that may support PCC; maintenance or replacement of these culverts, when following FDEP requirements does not require permitting.

Conservation Management Practices (CMPs)

- Measures that minimize impacts to Panama City crayfish.
- Use of CMPs for specified activities serves as authorization for potential take of PCC.
- No permitting is needed if following CMPs, since these are authorized in the management plan.
 - Road and ditch maintenance
 - Utility and transmission line right of way



The management plan also identifies Conservation Management Practices that minimize impacts to the Panama City crayfish during certain activities. During the 2006 to 2007 period of management plan development, many of the stakeholder meetings focused on the development of these management practices. Incorporating these into the plan allows regulatory assurance for standard activities.

Streamlined Permitting

Recommendations for areas to explore:

- Exemption for single family homes
- Small conservation contribution for single family homes
- 'Proportionate fair share' process similar to infrastructure costs
- Value of on-site mitigation sets contribution level for off-site mitigation
- Vacant land value of sites with suitable habitat as basis of conservation contribution



In addition to the authorizations and conservation management practices, which eliminate the need for permitting, the other regulatory approach is to create a streamlined approach to permitting needs. To help achieve this goal, staff have held multiple meetings with stakeholders and partners in Bay County to seek input on the development of the permitting guidelines. Draft impact assessment and mitigation scenarios have been shared with stakeholders, however this component of permitting is still under development with substantial additional input is needed from stakeholders. Ideas received from stakeholders are being shared with economists for evaluation for further development.

Rule Change

The proposed rule change would remove the Panama City crayfish from 68A-27.005, F.A.C. and add it to 68A-27.003, F.A.C.



The proposed rule change would finalize the recommendation to list the PCC as Threatened, originally made in 2002, and confirmed with the 2nd status review in 2006.

Stakeholder Engagement

- Stakeholder involvement in previous plan development.
- Re-engaged stakeholders in 2015
 - County and city staff
 - 4 Public Meetings
 - Permitting workshop
 - Conservation Partners



Staff have been working to re-engage stakeholders since planning was re-initiated in 2014. During this time, staff with Bay County and the cities of Lynn Haven and Panama City have met with FWC to discuss concerns and provide input on the proposed authorizations and CMPs.

Staff have also met with other partners and stakeholders to discuss shared conservation goals.

Photo: FWC stakeholder meeting, general MyFWC photo.

Next Steps

- Public Comment period for PCC Management Plan
- Continued work on Permitting Guidelines
- Additional stakeholder involvement



If approved to proceed, a 45 day public comment period will begin for receiving comments on the PCC management plan. The proposed rule change will be advertised.

During this time, staff will continue to engage stakeholders to work on the permitting guidelines, with a goal of bringing the final guidelines to the Commission with the final plan.

Photo: PCC collected during a survey. FWC photo.

Staff Recommendations

- Approve advertisement of the proposed Rule revisions to:
 - 68A-27.003 (remove PCC) and 68A-27.005 (add PCC)
- Approve advertising the management plan for public comment
- Direct staff to continue development of permitting guidelines



Staff is recommending Commission approval to advertise the proposed rule revisions that accompany the Panama City Crayfish Management Plan.

Staff is also recommending Commission approval to advertise the management plan for a 45 day comment period.

The following slides are considered backup material
and are not anticipated to be part of the actual
presentation



Conservation Easements with Management Agreements



Four sites have an MOU between FWC and the entities that own the site. The MOU allows FWC to provide management assistance to maintain these sites to support PCC.

Progress Toward Conservation Objective 1

	Current acres of <u>potential</u> habitat (including swales)	Current acres of <u>potential</u> habitat (excluding swales)	Minimum # acres needed to meet Objective	Current acreage set aside in perpetual easements
Western Range	2,876	1,835	500	194* (on 3 parcels)
Eastern Range	7,172	6,305	1,500	36
TOTAL	10,048	8,140	2,000	220'

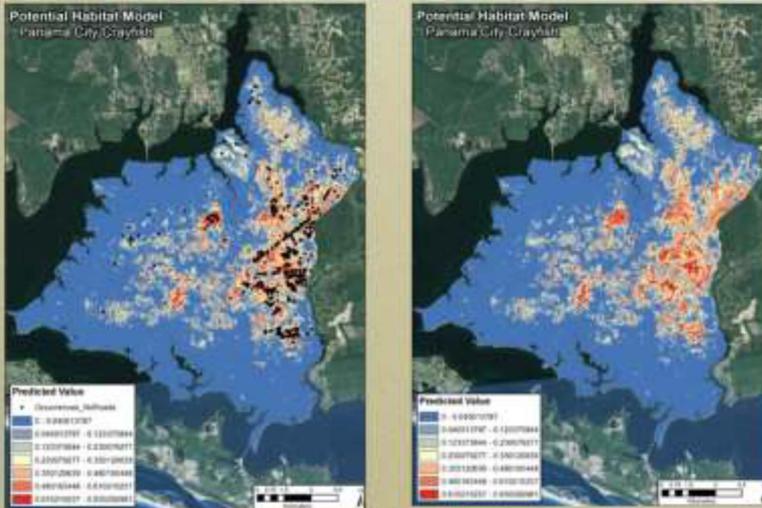
*The Lynn Haven Mitigation Area (wetland mitigation) encompasses 152 of these acres, which we feel we can reasonably assume are protected in perpetuity.

*This acreage total is conservative as additional occupied habitat exists within utility and transmission ROW's, but Agreements to ensure the long-term management of these ROW's have yet to be solidified.



The existing easements with management agreements and a wetland mitigation site known as the Lynn Haven Mitigation Area are currently counted toward the objective. These sites equal approximately 10% of the acreage needed to obtain the objective.

Habitat Modeling Used for Objective 1



Occurrence data, soil type, canopy cover, and other factors were modeled to create a potential habitat layer.



In order to better understand the total potential habitat available to Panama City crayfish, FWC staff developed a habitat model based on: occurrence data, soil type, canopy cover, and other factors. The map on the left shows the occurrence data (black spots) overlaying the map of potential habitat.

Removing Ditches

With Transportation Corridors



Estimated 10,048 acres of PCC habitat

Without Transportation Corridors



Estimated 8,140 acres of PCC habitat



Stakeholder discussion has centered on how important roadside ditches may be to PCC conservation. Narrow, steep-sided ditches do NOT provide habitat for the PCC, whereas some gently sloping and grassy ditches and swales are often occupied by crayfish. However, by its nature, this ditch habitat is suboptimal, subject to alteration and degradation, and cannot be easily managed for long-term conservation.

Because our emphasis is the restoration and conservation of larger parcels of wet pine flatwoods, this habitat model was developed considering two different options:

- One (on the left) that includes transportation corridors (i.e., roadside ditches) as one of the habitat layers, and
- One (on the right) where that layer was removed. There is a difference of about 1,900 acres between the two models.

Our target total of 2,000 acres of conserved PCC habitat represents approximately 20% of the 10,000 acres in the model with transportation corridors, or 25% of the 8,000 acres without that layer. We believe that both amounts – with or without transportation corridors included in the model – should be sufficient to allow us to meet our objective and halt the decline of PCC.