

What Changes to EAHCP Biological Goals and Objectives Should the Permit Renewal Process Consider?

The Permit Options Report presents recommended changes to consider for biological goals and objectives:

1 Refine Hierarchy of Biological Goals and Objectives

- Restructure biological goals and objectives to be hierarchical in conformance with USFWS guidance.
- Consider goals that are more broad statements of future conditions.
- Consider objectives that are measurable habitat-based or species-based targets.

Challenges

- EAHCP biological goals include specific population targets or habitat metrics rather than serve as a broad statement of desired future conditions.
- Population-based metrics can be difficult and expensive to measure and achieve as overarching goals or objectives.

Rationale for Change

- Clarify how EAHCP contributes to species recovery.
- Clarify how objectives and conservation measures align with desired species outcomes.
- Provide guidance for future decisions on implementing conservation measures or adaptive management decisions.
- Clarify how achievement of objectives and goals is defined.

? Question to Consider

How could existing biological goals and objectives be re-structured to fit USFWS guidance?

2 Increase Flexibility of Biological Goals and Objectives for Fountain Darter

- Consider long-term biological goals and objectives that are more achievable.
- Consider objectives that are based on information from previous management and understanding of spring system ecology.

Example from the EAHCP: The EAHCP defines Long-term Biological Goals for fountain darter within each Study Reach in the Comal and San Marcos springs systems in two ways: (1) with a specific areal coverage (square meters) of each type of aquatic vegetation and (2) with a specific mean fountain darter density (number per square meter) for each type of aquatic vegetation.

Challenges

- Difficult to achieve goals through management of vegetation. Goals for areal coverage of plant species are too prescriptive and inflexible given the variation in hydrologic conditions.
- Variation in planting success for areal vegetation coverage poses problems for annual planning and funding.

Rationale for Change

- Revising goals and objectives for fountain darter to allow for greater flexibility in habitat management would make them more feasible to achieve.

? Question to Consider

Are the biological goals and objectives serving to measure the success of the EAHCP? Why or why not?

3 Develop Biological Goals and Objectives for Non-listed Species

- Add biological goals and objectives for non-listed species, such as Edwards Aquifer diving beetle (*Haideoporus texanus*; petitioned), Texas troglobitic water slater (*Lirceolus smithii*; petitioned), and Comal springs salamander (*Eurycea* sp.; not listed).

Challenges

- Developing goals and objectives for these species may be difficult because data on the species' life history traits to inform desired future conditions and conservation objectives is lacking.
- Biological objectives should be measurable and associated with monitoring actions, so adding biological objectives for these species may increase biological monitoring needs.

Rationale for Change

- Adding biological goals and objectives for the three non-listed Covered Species could help demonstrate the effectiveness of the HCP in conserving these species, which could help prevent the listing of these species.
- If USFWS lists these species, having biological goals and objectives in the EAHCP would serve as a clear measuring point to demonstrate the plan's conservation of these species.

? Question to Consider

Is it feasible to develop effective biological goals and objectives for these species, given what is known about them?