Science Evaluation

Bucket 2 – Council Selected Restoration Component

PROPOSAL TITLE

Matagorda Bay System Priority Landscape Conservation Project

LOCATION

Within 15 miles of the San Antonio, Espiritu Santo, Matagorda or East Matagorda Bays and associated estuaries

SPONSOR(S)

Texas

TYPE OF FUNDING REQUESTED (Planning, Technical Assistance, Implementation)

Implementation

REVIEWED BY:

DATE:

January 9, 2015

Best Available Science:

These 6 factors/elements help frame the reviewers answers to A, B and C found in next section:

1. Have the proposal objectives, including methods used, been justified using peer reviewed and/or publicly available information?

- ○ YES
- ○ NO
- ◉ NEED MORE INFORMATION

Comments

Objectives/methods justified using peer-reviewed/public data were present but several issues arose. First, many of the sources used were either generally applicable, outdated, or in some cases absent. The depth of literature review appears limited - for example what appears to be a major historical publication and early management plan specific to the Matagorda Bay Estuary were not referenced (Ward et al. 1980. Matagorda Bay, TX: its hydrography, ecology, and fishery. USFWS Biological Services Program (FWS/OBS-81-52; Ward et al 1982. Matagorda Bay: a management plan. Espey, Huston & Associates, Austin TX). Justification in the proposal that acquisition would complement other existing conservation projects (e.g., Aransas NWR) were made without reference to refuge acquisition boundaries. General reference to protection of estuary species (e.g., seagrass and shellfish) with little direct reference to those species populations in the system. The in-text reference to monitoring by the state of Texas for 40 years on a multitude of species but no direct reference to the data

2. If information supporting the proposal does not directly pertain to the Gulf Coast region, are applicant's methods reasonably supported and adaptable to that geographic area?

- ○ YES
- ○ NO
- ○ NEED MORE INFORMATION

Comments

3. Are the literature sources used to support the proposal accurately and completely cited?

- ◉ YES
- ○ NO
- ○ NEED MORE INFORMATION

Comments

Literature sources that were used were accurately and completely cited but literature sources were limited in scope (see response to question 1).

4. Are the literature sources represented in a fair and unbiased manner?

- ◉ YES
- ○ NO
- ○ NEED MORE INFORMATION

Comments

Literature sources are represented in a fair and unbiased manner, though too general and limited in scope (see response to question 1).

5. Does the proposal evaluate uncertainties and risks in the scientific basis for the proposal, including any identified by the public and Council members?

- ○ YES
- ○ NO
- ◉ NEED MORE INFORMATION

Comments

Risks/uncertainties are evaluated and considered minimal due to willingness of sellers. Risks mentioned included fluctuating real estate market, and limited likelihood willing sellers would not sell. Risks associated with climate change were mentioned but poorly assessed (addressed below). No risk was mentioned associated with availability of funding for restoration/management following acquisition. Risks/uncertainties were not listed as identified by public and Council members.

6. Does the proposal evaluate uncertainties and risks in achieving its objectives over time? (e.g., is there an uncertainty or risk that in 5-10 years the project/program will be obsolete or not function as planned given projections of sea level rise?)

- ○ YES
- ○ NO
- ◉ NEED MORE INFORMATION

Comments

Risks associated with climate change were mentioned but poorly assessed . Could have easily examined one of the many SLR scenarios to assess predicted SLR on specific tracts of interest to better address this uncertainty. The proposal did not address uncertainty due to land use change (predicted future development), changes in temperature and precipitation (all may be stressors/drivers on this system over time).

Based on the answers to the previous 6 questions, and giving deference to the sponsor to provide within reason the use of best available science the following three questions can be answered:

A. Has the applicant made a reasonable determination that the proposal is based on science that uses peer-reviewed and publicly available data?

- ○ YES
- ○ NO
- ◉ NEED MORE INFORMATION

Information Needed:

Proposal uses a small subset of peer-reviewed literature and makes mention of publicly available data but does not do an adequate job of developing a biological justification for the land acquisition with available scientific information. There is a breadth of science literature on the Matagorda Bay estuary that could have been used to support the need and scientific basis to protect this ecosystem.

B. Has the applicant made a reasonable determination that the proposal is based on science that maximizes the quality, objectivity, and integrity of information (including, as applicable, statistical information)?

- ○ YES
- ○ NO
- ◉ NEED MORE INFORMATION

Information Needed:

Proposal provides adequate general information on the value of estuarine systems in Texas but lacks a convincing argument using a sound scientific basis for protection of this particular bay system. The argument that acquisition of parcels in this bay is necessary because it is relatively undeveloped does not provide adequate biological justification in my opinion.

C. Has the applicant made a reasonable determination that the proposal is based on science that clearly documents and communicates risks and uncertainties in the scientific basis for such projects?

- ○ YES
- ○ NO
- ◉ NEED MORE INFORMATION

Information Needed:

The proposal provides a limited qualitative assessment of uncertainty and lacks an attempt to quantify uncertainty in an empirical manner. This is particularly concerning since data is available to quantify uncertainty in some topics (e.g., sea level rise, land use change, inflow, real-estate markets, coast-wide species monitoring). Risks are not clearly communicated in my opinion.

Science Context Evaluation

A. Have other methods been discussed and reasons provided to why the method is being selected (e.g., scientifically sound; cost-effectiveness)?

This is primarily a fee-simple land acquisition project, therefore alternative methods of land acquisition are limited. Conservation easement has been discussed and selected as a means of acquiring habitat on parcels where a willing seller is not available. The proposal does an adequate job describing why fee-simple land acquisition is the method of choice. Methods for management and/or restoration of healthy estuarine systems following acquisition of these parcels are only

B. Has your agency/vendor/project manager conducted a project/program like the one proposed?

No.

C. Is there a risk mitigation plan in place for project objectives? (captures risk measures as defined under best available science by the Comprehensive Plan and Act)

There is no risk mitigation plan provided as part of the proposal, though risk and uncertainty was minimally addressed in the project narrative.

D. Does the project/program consider consequences with implementation? (captures risk measures as defined under best available science by the Comprehensive Plan and Act)

Consequences of the proposed project are described in the project benefits section of the proposal narrative and focus on potential benefits to endangered species, particularly whooping crane, water quality, living marine resources, and community resiliency. Proximity of Aransas NWR and ancillary observation of whooping cranes in the proposed acquisition area lead to the the suggestion of a consequence that acquisition of these parcels will support whooping crane foraging needs. Proposed consequences of increased water quality leading to increased habitat for marine and tidal organisms were also described,

E. Does the project/program have clearly defined goals?

Yes the project clearly defines the goal of restoration and conservation of habitat as linked to the Comprehensive Plan, and highlights the rare opportunity to work toward acquiring entire tidal systems. However, the project does not expand beyond the goal outlined in the Comprehensive Plan (i.e., does not appear to develop a subset of project-specific goals).

F. Does the project/program have clearly defined objectives?

Yes the project clearly defines the primary objective of restoring, enhancing and protecting habitats, with secondary objectives of restoring, improving and protecting water resources, protecting and restoring living coastal and marine resources, restoring and enhancing natural processes and shoreline, and promoting natural resource stewardship and environmental education as linked to the Comprehensive Plan. However, the project does not expand much beyond the objectives outlined in the Comprehensive Plan by defining specific objectives related to the project or describing how the project meets each of those

G. Does the project/program have measures of success? (captures statistical information requirement as defined by the Comprehensive Plan and Act)

Measures of success described in the proposal include acres of high-quality habitat and miles of protected shoreline (i.e., programmatic outputs). The proposal also suggests net contribution of the acquired lands to the health/productivity/diversity of the Texas coastal areas through regular surveys, or programmatic outcomes, but fails to describe metrics and methods in detail that will be used to measure success of the project beyond outputs. Missing are potential metrics that could serve as indicators of health and productivity of the system following acquisition and any detailed statistical basis (e.g., survey design,

H. Is a monitoring program in place to determine project goals, success and help adaptive management (if applicable)? (captures statistical information requirement as defined by the Comprehensive Plan and Act)

The proposal suggests the partnership of federal, state, and other conservation groups along the Texas coast has collected monitoring data on shellfish, finfish, bird, turtle, demographics, inflows, nutrient, sediment, and chemistry for 40 years within the major bay systems. Monitoring is proposed to include "a significant level of natural and cultural resource survey and inventory" once tracks are acquired. In the data/information sharing plan the proposal suggests TPWD biologists will be responsible for surveys of plants/animals in accordance with data colllection protocols. Planned aquatic surveys include

I. Does the project/program consider recent and/or relevant information? (captures statistical information requirement as defined by the Comprehensive Plan and Act)

The project does consider some recent/relevant information in describing and justifying the proposal (e.g., 2013 TPWD recreation plan, Gulf of Mexico regional ecosystem restoration strategy, IPCC climate change information, 2014 TX land trends, etc). However, there are other major omissions that should have been included in the project narrative - for example, the proposal makes no mention of the specific gulf coast prairies and marshes subsection of the TX Conservation Action Plan, which has specific action plan items relevant to the Matagorda Bay system (e.g., protect fishery nursery habitat in eastern arm of Matagorda Bay). The project considers the ongoing datasets derived from comprehensive state biological surveys but goes

J. Has the project/program evaluated past successes and failures of similar efforts? (captures the communication of risks and uncertainties in the scientific basis for such projects as defined by the Comprehensive Plan and Act)

The project describes in some detail the success of the nearby Powderhorn Ranch state lands and Aransas National Wildlife Refuge and suggests acquisition of these Matagorda Bay system tracts would compliment those public landholdings. Powerdhorn Ranch appears to be a successful example of acquisition, restoration/management, followed by monitoring. Activities at Powderhorn Ranch toward development of a state park, visitor and interpretive center are also mentioned as successes. Past successes in leveraging partnerships through the Knobloch Family Trust appears to be an important part of increasing the conservation estate in that area. Though some risks and uncertainties are generally described, particularly if

Please summarize any additional information needed below:

The proposal was well-written and proposes to acquire a large amount of land for protection. The ability to acquire 27,000 acres of habitat and 28 miles of bay/coast frontage in a large multi-bay estuary system with inherent natural diversity in a relatively undeveloped landscape seems like a perfect candidate for a land acquisition project through RESTORE. There appear also to be potential for additional land purchase to further expand the conservation network in this bay system, and the leveraged conservation partnerships including the Knobloch Family Trust is highly valuable for this area. The proposal makes a good point related to the ecosystem restoration strategy that acquisition of lands for permanent conservation while the