Science Evaluation

Bucket 2 – Council Selected Restoration Component

PROPOSAL TITLE

Gulf of Mexico Habitat Mapping and Water Quality Network

LOCATION

Gulf of Mexico US EEZ

SPONSOR(S)

NOAA, USGS

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

Technical Assotance & Program

REVIEWED BY:

DATE:

1/6/2015

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

The proposal objectives and methods in this valuable proposal have been justified using peer reviewed and publicly available information. However, the proposed application of the peer-reviewed information does not always match completely with the present state of the the science cited. For example, the proposal cites Halliwell et al., (2014) for support of using numerical circulation models to conduct observing system simulation experiments (OSSEs) to help design a more efficient water quality monitoring system. This will only work if the water quality parameters of interest are highly correlated with the physical parameters in the circulation models. This is neither acknowledged in the proposal nor taken into account in the section ascertaining risks of the project. Until there are available marine circulation models coupled to ecosystem models the benefits of running OSSEs will be limited to designing more efficient monitoring systems for physical parameters. That said, the OSSEs for physical parameters are the state of the art right now

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

Yes, but see my answer to 1.

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

- (●) YES
- ( ) NO
- ( ) NEED MORE INFORMATION

Comments

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

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

Much of the success of the project hinges on how well the CoP handles its responsibilities, but the implementation of the CoP is not described well enough to ascertain if it will be possible for it to be effective. There are a lot of details left out between stating that the CoP will identify data gaps through stakeholder engagement and the process of actually carrying it through.

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:

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:

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:

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)?

Although there is justification given to the methods used in the proposal, there is not a discussion of alternative methods. However, this criteria is not as applicable to this proposal since it is about expanding the habitat mapping and water quality monitoring systems in the Gulf.

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)

I do not see risk measures outlined in either of the "Initial Comprehensive Plan Aug 2013.pdf" or in the Restore Act. That said, the proposal discusses the risks and how they may be minimized.

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

In the following I am going to list a number of problems with the water quality program implementation plan in the proposal. These do not constitute fatal flaws, but should be addressed to strengthen the project should it be funded. This proposed project is sorely needed in the Gulf. Without it, or a similar project, there will be large unknowns in the effectiveness of other restoration efforts, and uncertainties in the state of the Gulf ecosystem will remain unacceptably high.

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

Yes

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

Yes

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

I cannot find any statistical requirements in the documents "Initial Comprehensive Plan Aug 2013.pdf" or in the Restore Act. That said, the proposal does have articulated measures of success, though these are not defined in a statistical fashion. It would be an improvement to have some quantitative estimation of the measures of success as defined in the proposal. For example, the proposal indicates that only about 5% of coastal Florida waters have high quality habitat data from which derived habitat products can be produced. How much improvement could be made to this over the life of the

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)

I cannot find any statistical requirements in the documents "Initial Comprehensive Plan Aug 2013.pdf" or in the Restore Act.
The program does have a monitoring program in place to determine project goals, success and help adaptive management. Importantly, this project will provide a crucial tool for other "Restore projects" to monitor their success.

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

Yes, although I cannot find any statistical requirements in the documents "Initial Comprehenisve Plan Aug 2013.pdf" or in the Restore Act.

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)

Yes.

Please summarize any additional information needed below:

In summary, although this proposal could be strengthened, its implementation can serve to provide critical foundational information for understanding the evolving ecosystem health of the Gulf and the efficay of restoration efforts.