# Ecological Review Essentials
**(revised 3/16/01)**

***The transition to a planning-phase/phase-one/phase-two approach was done to ensure a higher standard of project development and evaluation prior to the decision to commit construction dollars. It is essential that proposed projects have been well designed and evaluated and can demonstrate a high probability of successfully achieving the purpose as assigned by Congress in CWPPRA, i.e. "...significantly contribute to the long-term restoration or protection of the physical, chemical and biological integrity of the coastal wetlands in the State of Louisiana...." While there exists clear guidance as to how planning efforts develop proposed projects prior to Phase One, there is little in the way of a clear rationale for how a proposed project's biotic benefits will be assessed during Phase One. The following approach will allow for a consistent, clear, and logical assessment. The goal, strategy and goal-strategy relationship should have been worked out prior to Phase One. They are listed again in this Phase One process in order to ensure that these vital links between planning and Phase One are stated in a consistent manner and readily available to those responsible for Phase One project E&D and evaluation. The Project Feature Evaluation and Assessment of Goal Attainability would be Phase One activities–these are being done to varying degrees already; however, not on a consistent, standardized basis.***

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## Ecological Review Components

A. **Goal statement.** What is (are) the main biotic goal(s) of the proposed project?
State the biotic response desired from the project, *e.g. restore intermediate marsh acreage, increase marsh sustainability, reduce loss rates, increase productivity and or biodiversity, restore barrier island plant communities, etc.* The goal should be determined in the planning phase (pre-Phase One).

B. **Strategy statement.** What is (are) the strategy(ies) for achieving the goal stated in "A"?
Describe the physical factors that will cause the desired biotic responses, *e.g. periodically expose water bottoms, reduce water and/or salinity levels, create sheet-flow over the marsh in designated areas, use rock rip-rap along the canal bank to reduce erosion rates, reintroduce alluvial sediments, create a barrier island platform that after settlement will support the desired habitat, etc.* The strategy(ies) should be determined in the planning phase.

C. **Strategy-goal relationship.** How will the strategy(ies) achieve the goal(s)?
Describe how the physical factors affected by the project will cause the desired biotic response, *e.g. by reducing the average salinities and tidal amplitudes the marsh loss rate will be reduced in this predominantly intermediate marsh, by reducing edge erosion the marsh will be protected, by creating a stable platform from dredged material a barrier island plant community can be reestablished.* The strategy-goal relationship should be defined in the planning phase.

D. **Project Feature evaluation.** Do quantitative, engineering evaluations of specific project features such as weirs, culverts, siphons, etc. support the contention that the intended strategy will be achieved? If so, to what degree?

Quantitatively evaluate the project features and an evaluate them in terms of the desired physical causal factors, *e.g. compute how many cfs of river water the culverts will discharge into the project area, and how much sediment will be associated with it over the course of an average twelve-month period, quantify average water level or salinity reduction, etc.* If there are more than one design alternative, this step should be performed on each alternative. This evaluation would be conducted during the initial E&D of Phase One with the results being reviewed during the 30% design conference.

E. **Assessment of goal attainability.** Does the relative degree of the project's physical effects, as determined in step "D," support the contention that the project will achieve the desired biotic goal(s) stated in "A"

Assess the degree to which the project features would cause the stated biological goal: based on expert judgement, assisted with appropriate statistical and other computational tools, such as computer models, and a review of monitoring data and other scientific information. This would also be the appropriate time to identify and assess the potential risks associated with the project. Again, if more than one design alternatives are involved, step "E" should be performed on each alternative. Steps "D" and "E" may be used in an iterative fashion, such that if designs do not support biological goal attainment other designs could be developed and reassessed. This step evaluates the desired project biotic response based on the level of physical changes induced by the project, *e.g. determine the results are associated with projects that have caused similar hydrological responses in similar marsh settings, evaluate the evidence that supports the contention that a barrier island platform with the predicted after-settlement profile and grain-size composition will sustain the desired plant community, etc.* This evaluation would be conducted during the initial E&D of Phase One with the results being reviewed during the 30% design conference.