

Selection Panel Review Summary

Proposal No.: 026

Proposal Title: Water Quality Monitoring in the Cache Slough Complex

Principal Investigator: Swee Teh

Amount Requested: \$1,495,004

Amount Funded: \$1,495,004

Summary: The project is to assess the role of water borne chemical contaminants in the observed decline of pelagic species in the Cache Slough area, an important nursery area for the pelagic species, where toxicity has been found in a previous study. The project will include (1) field and laboratory bioassays of water column toxicity to phytoplankton, zooplankton, amphipods, and native fish, (2) chemical analysis of toxic samples, (3) in cases where there is a lack of published effect concentration data, conduct effect concentration testing to examine the sensitivity of test organisms to detected contaminants, (4) bioassessment of benthic macroinvertebrates colonizing artificial substrates, and (5) investigation of biomarkers characteristic of exposure to water from various sampling locations, water quality conditions and toxic events. Six sites in the Cache Slough area will be monitored from Feb 2012 to Jan 2013.

Assessment: The Project Team is well-established and the proposal has good collaboration. The project goals and approach were well thought out. The Selection Panel shared concerns over the focus on acute toxicity, when a focus on chronic toxicity could be more informative, and on the biomarkers of pesticides, and not on metals when metals are part of the chemical screening. Other concerns included how the fish would be handled in regards to biomarkers, how comparable are the laboratory toxicity tests to the field toxicity tests (esp. the biomarker testing where the laboratory fish will be kept in clean water one month after the bioassay and the field fish appear to be sacrificed immediately), are these the appropriate sampling sites, and how will the results be applied to future management actions. The project should provide information on the effects of contaminants. Finally, the project should be evaluated as a two-year project, because a one-year study likely would not provide worthwhile information. A three-year study may provide greater value. Most importantly, the project should take into consideration results from the current study to see how they inform the work being proposed.