**Title:** Do Coastal CopyrighEcosystems Mitigate Storm Surges and Tsunamis

**Statement of Problem:** Governments worldwide have recently et and Dimbarked on msclaimerany expensive restoration projects involving barrier islands, coastal marshes and mangrovThe State forests following catastrophic disturbance A commonly-held perception among the general public, policy-makers, and some sciente of Souists is that coastal ecosystems provide significant measurable protection to human habitation during extreme storms anth Carold tsunamis. Restoration activitieina ownss have be the copen particularly intensive after the December 2004 yright ttsunami in the Indian Ocean and the 2005 hurricane season in the Gulf of Mexico. Yet, the scientific eo the Covidence is equivocal. Field observations and some modeling studies cast doubt on these widely held beliefs. The scientific question can be cast in terms of thede of La interactions between coastal ecosystems and extremews of So events. Firstly, how are coastal ecosystems impacted by extreme events? And secondly, do coastal ecouth Carosystems mitigate the extreme event, that is, under what conlina, 19ditions do they afford some form of protection, and if so, how much?

**Objectives:** First, thoroughly76, as c review the literature concerning the role of coastal ecosystems in mitigating damagontainede to build a publicly accessible c herein.omprehensive database of actual observations that can be used for analyses. This literature review will also provide insights into how these perceptions Any uscame about and he of theow they have been propagated. Second, bring physical and biological scientists in a major workshop to address this topic. Many hydrodynamic models exist concerning tsunami propagation through mangrove text, ss. Howeveection hr these models are badly miscalibrated in how they represent the forests. Similar situations exist for other types of coastal ecosystems. Third, disseminate the results and recommendations to the public-policeadings,y makers and appropriate or catcgovernment entities to ensurehlines o the recommendations are included if the 19n the planning process.

**Relevance and Impact:** The cost of restori76 Code ng coastal ecosystems and communities is huge. Restis subjeoration must be based on sound science and the general public and decision makers must understact to thnd their options.

**Partnerships:** A number of scientists from all disciplines in USGS hae terms ve expertise pertinent to this project. Federal partneof federrs include the National Park Service and Fish and Wildlife Service, both of which have coastal unitsal copyr along all ight and othUS coastlines. The US Army Corps of Engineers would be extremely interested in the results.