**Title:** Copyright and Di Do Coastal Ecosystems Mitigate Storm Surges and Tsunamis

**Statement of Problem:** Governments worldwide have recently embarked on many expensive restorasclaimerThe Stattion projects involving barrier islands, coastal marshes and mangrove forests following catastrophic disturbance A commone of South Carolly-held perception among the general public, policy-makers, and some scientists is that coastal ecosystems provide significant measurable protection to human habitation during extreme stormina owns the cops and tsunamis. Restoration activities have been particularly intensive after the December 2004 tsunami in the Indian Oyright to the Cocean and the 200de of Laws of So5 hurricane season in the Gulf of Mexico. Yet, the scientific evidence is equivocal. Field observations and some modeling studies cast douuth Carolina, 19bt on these widely held beliefs. Th76, as containede scientific question can be cast in terms of the interactions between coastal ecosystems and extreme events. Firstly, how herein. Any us are coastal ecosystems impacted by extreme events? And secondly, do coastal ecosystems mitigate the extreme event, that is, under what conditions do they afford some form of protection, and if so, how much?

**Objectives:** First, thoroughly review the literae of the text, sture concerning the roection headings,le of coastal ecosystems in mitigating damage to build a publicly accessible comprehensive database of actual observations that can be used for analyses. This literature review will also provide insights into ho or catchlines ow these perceptions came about and how 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 mangroves. However 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-policy makers and appropriate government entities to ensure the recommendations are included in the planning process.

**Relevance and Impact:** The cost off the 1976 Code restoring coastal ecosystems and communities is huge. Restoration must be based on sound science and the general public and decision makers must understais subject to thnd their options.

**Partnerships:** A number of scientists from all disciplines in USGS have expere terms of federtise pertinent to this project. Federal partners include the National Park Service and Fish and Wildlife Service, both of which have cal copyright and othoastal units along all US coastlines. The US Army Corps of Engineers would be extremely interested in the results.