

Peer Review Plan

Date: 9/6/2013

Source Center: U.S. Geological Survey (USGS)
St. Petersburg Coastal and Marine Science Center
600 4th Street South
St. Petersburg, FL 33701

Preliminary Title: Assessing Mobility and Redistribution Patterns of Sand and Oil Agglomerates in the Surf Zone.

Subject and Purpose: Heavier-than-water sand and oil agglomerates that formed in the surf zone following the Deepwater Horizon oil spill continue to cause beach re-oiling. To understand this phenomena and inform operational response now and for future spills, a numerical method to assess the mobility and alongshore movement of these "surface residual balls" (SRBs) was developed and applied to the Alabama and western Florida coasts. Hydrodynamic conditions were characterized through wave scenarios, and circulation around inlets was examined. Alongshore flow, SRB mobility, and potential flux were used to identify likely patterns in transport and deposition. Results indicate that under calmer waves, cm-size SRBs are unlikely to move alongshore, whereas transport is very likely during storms. Analysis shows that the greater mobility of sand compared to SRBs makes burial and exhumation of SRBs likely. Inlets, due to ebb-flood flow asymmetry, are shown to trap SRBs. Analysis of field collection data supports these model results. The manuscript for the subject information product will be submitted to the journal *Marine Pollution Bulletin* for publication.

Impact of Dissemination: This information product is considered by the USGS to be Influential Scientific Information.

Timing of Review (Including Deferrals): August-September 2013. Deferrals are not anticipated at this time.

Manner of Review, Selection of Reviewers, and Nomination Process:

Review will be by individual letters/memoranda/documents. USGS will select peer reviewers pursuant to requirements in Survey Manual chapter 502.3—Fundamental Science Practices: Peer Review (<http://www.usgs.gov/usgs-manual/500/502-3.html>).

Expected Number of Reviewers: Anticipate a minimum of two peer reviewers.

Requisite Expertise: Oceanography; hydrodynamic modeling; sediment/contaminant transport.

Opportunity for Public Comment: No opportunity for public comment is formally incorporated for this product.

Agency Contact: peer_review_agenda@usgs.gov.