

**Deepwater Horizon NRDA  
Lost Human Use Assessment Plan  
Claim for Past Costs**

May 3, 2012

**Overview**

On April 20, 2010, an explosion occurred on the Deepwater Horizon (DWH) oil rig in the Gulf of Mexico, approximately 50 miles southeast of the Mississippi Delta. Following the explosion and fire, the rig sank, leading to the rupture of a pipe and the subsequent release of oil. This oil has impacted natural resources in many locations in the Gulf of Mexico. As a result, the natural resource trustees (i.e., state and federal agencies and federally recognized tribes) initiated a natural resource damage assessment (NRDA). As part of this assessment, the National Oceanic and Atmospheric Administration (NOAA) contracted with a nationally known NRDA consulting firm and a team of experts to conduct work to characterize and quantify public losses resulting from the oil spill.

This assessment plan (AP) applies to both the direct use/recreation assessment and the total value assessment being conducted by the natural resource trustees. The assessment is being implemented as part of the NRDA to quantify the economic value of direct/recreational services that have been lost as a result of the DWH oil spill and to quantify the total value (both direct/recreational use and passive use) lost as a result of the DWH oil spill. All work is being conducted in a manner consistent with the Oil Pollution Act (OPA) and the OPA NRDA Regulations. This assessment plan describes the trustees overall approach to assessing lost value starting from the beginning of the natural resource damage assessment through December 2012.<sup>1</sup>

The activities described herein encompass a variety of efforts for estimating the diminished use and lost value from the DWH oil spill. These efforts are a continuation of previous work, which began in May, 2010 and include surveys of recreational activities, investigations of possible approaches for estimating lost total value and initiation of those approaches, and background studies on economic activity related to marine recreation and total value. For direct/recreational use losses, the focus is on three sectors: boating and boat-based fishing, shoreline fishing, and shoreline use. Additional work on the impacts of the spill on tourism and consumer prices for seafood will be evaluated.

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<sup>1</sup> The trustees have documented the costs that were incurred for the first stage of assessment plan activities, specifically for the period July 4, 2010 through October 8, 2011. That cost package will accompany this assessment plan in requests for payment to the Responsible Parties and the U.S. Coast Guard if necessary. The cost package provides a detailed accounting of the costs for the activities from July 4, 2010 through October 8, 2011.

## **Standards of Performance**

Because all work performed under the work plan must meet high standards of professional performance and technical rigor, highly qualified and experienced experts design and implement the work. Work products are developed to meet or exceed generally accepted technical standards, methods, and procedures used in the field of natural resource valuation.

## **General Approach to the Study**

The estimation of lost value involves four general information-collection efforts: determination of direct use/recreational use under spill-impacted conditions; determination of baseline recreational use; assessment of the value of lost and diminished recreation trips; and assessment of the lost total value (both direct/recreational and passive use).

The direct/recreational use sampling under impacted conditions was started and will continue until it is determined that direct/recreational use in the Gulf of Mexico has returned to baseline levels. As more information becomes available, the onsite sampling effort will be adjusted as appropriate. The second effort, determination of baseline direct/recreational use, involves repeating the onsite sampling effort after the return to baseline conditions and for a period of time comparable to the period of spill impacts. The third effort involves assessing the value of recreational trips lost, as well as the diminution in the value of trips that are taken in other than baseline conditions. Future work will be the continuation of the recreation assessment that is already underway and the development of appropriate strategies for assessing baseline use and valuing lost recreation. The total value assessment activities are also the continuation of the ongoing total value assessment.

The AP involves the following activities, which are described in more detail below:

- Implement onsite sampling efforts

- Implement surveys that will provide information about spill impacts to recreation, both locally and nationally

- Develop plans for implementing valuation studies, including an approach to valuation that would be applicable to each major category of recreation (boating and boat-based fishing, shoreline fishing, and shoreline use other than fishing)

- Investigate approaches to the quantification of lost trips and valuation of specialized recreational activities

- Identify and acquire studies and datasets that provide supporting information on the levels of recreational use

- Perform a literature review of the recreation valuation literature for potential use in benefits transfer

- Investigate baseline use and information that can be used to characterize a return to baseline conditions

Perform a study of multiple-day recreation trips and investigate the best approaches to the valuation of these trips  
Investigate trends in economic activity related to recreation and the relationship of these trends to the pattern of activities observed in the onsite sampling  
Development of the draft total value survey instrument(s)  
Testing of the draft total value instrument(s)  
Undertake total value literature reviews and studies  
Initiate total value survey administration procedures and population sampling  
Retain experts, including peer reviewers, as necessary  
Follow chain of custody and QA/QC data and information handling procedures.

### **Team Development, Management, and Support**

The Trustees have assembled a team of highly skilled and experienced professionals/experts in the fields of environmental and natural resource economics, survey research, econometrics and other social sciences, and NRDA. The team may be augmented, as necessary, to address specific needs. The work of the experts will be rigorously peer reviewed.

Stratus Consulting will provide technical, managerial, and administrative support for conducting the NRDA and producing deliverables. To allow for efficient management of the team, team members will be assigned to specific subject areas for which they will provide direct support. Subject-area teams will be adjusted, as necessary, to meet the overall schedule and goals of the assessment. Stratus will ensure team organization and communications, conduct team meetings and communicate with NOAA and team members. The focus of this task is to ensure the efficient use of experts and to ensure regular communication within the expert consulting team and with the co-trustees.

### **Categories of Lost Direct Use/Recreation Being Assessed**

#### **Direct Use/Recreation**

Each major category of the recreational lost use assessment is listed below:

Boating and boat-based fishing

Shoreline fishing

Shoreline use

There will be additional assessment studies. These additional recreation studies will focus on developing information to support the assessment of the major recreation categories. We anticipate commissioning focused papers to address specific topics in some of these assessment areas. The additional studies are as follows:

General survey

Valuation  
Benefit transfer  
Supplemental baseline  
Secondary support data  
Other recreational activities

### **Specific Direct Use/Recreation Assessment Tasks**

#### ***Task 1: Implement onsite data collection in support of the assessment of recreational human use impacts***

The onsite sampling involves counts and interviews to assess recreational use for boating and boat-based fishing, shoreline fishing, and shoreline use. Onsite sampling will continue to be conducted at sites throughout coastal areas of Louisiana, Mississippi, Alabama, and western Florida. This activity includes the evaluation of the onsite sampling effort and potential adjustments to the sampling effort.

#### ***Task 2: Collection, compilation, and review of existing data on human uses of affected natural resources***

This work includes collecting and reviewing additional supporting information from existing sources. Secondary support data include a variety of sources of regularly gathered data from markets, governments, and other sources that might provide insight on the spatial and temporal extents of the spill. This information will be used to support the primary data collection effort.

The trustees and their experts will continue a search of the relevant literature for studies of recreational activities in the Gulf. In addition, they will continue to identify and obtain literature and datasets that are related to the major recreation categories but gathered for reasons not related to the assessment of the spill. This work will include acquiring related datasets, undertaking a literature review, and communicating findings.

#### ***Task 3: Monitoring of Impacts on Other Direct Human Uses of Impacted Natural Resources***

The trustees will continue to collect data and information concerning impacts on other direct human uses of impacted natural resources and maintain it according to current trustee chain-of-custody and storage protocols. We will continue to collect information on recreational site closures and commercial fishing closure notices and changes that occur to these closures because of re-oiling, response actions, or other DWH-related activity.

***Task 4: Develop and implement a framework for consistent assessment and valuation of major recreational activities***

The trustees' expert team will investigate various valuation approaches that are suitable for the three major recreational activities being assessed: boating and boat-based fishing, shoreline fishing, and shoreline use. This framework will reflect the needs of valuation for litigation. Identified studies will be initiated as appropriate.

In this task, the team will consider the potential for impacts to recreational activities in the coastal environment. They will also investigate approaches to valuing losses for these activities, as well as valuing losses to certain activities of special interest that are included in the onsite sampling, such as recreational shrimping.

Surveys have been developed to characterize spill impacts to residents of Louisiana, Mississippi, Alabama, and Florida; to characterize spill impacts to residents elsewhere in the United States; and to quantify the number of trips and characterize spill impacts to boaters not included in the onsite sampling. These surveys will continue to be implemented during this phase of work.

Based on the findings from previous work, and the activities described above, the trustees' experts will continue to develop recommendations and implement survey-based approaches/methodologies for estimating lost human use. Approaches may include telephone, mail, in-person, or web-based surveys.

***Task 5: Evaluate approaches for addressing multiple-day trips***

In studies of recreational demand and use, multiple-day trips often require separate analysis. We will investigate the options available to address the issue of multiple-day trips.

***Task 6: Evaluate baseline recreational use***

This task involves the compilation of information on the socioeconomic conditions surrounding the DWH oil spill, including affected demographics and the extent of spill effects and includes the need to:

Evaluate the applicability of information developed in the previous step for determining baseline use.

Investigate supporting documentation, including consumer expenditures and tourism impacts:

*Consumer expenditures:* investigate the feasibility of evaluating the sensitivity of budget shares, described in the Consumer Expenditure Survey (CES), to movements in the real business cycle. This will be done in three steps. First, we will review the CES literature to determine the previous work presented in the literature. Next, we will develop a conceptual framework for the sensitivity review. Finally, we will perform

empirical work in order to analyze the available CES data with respect to the business cycles. Analysis will incorporate regional influences (i.e., Gulf region versus the rest of the United States).

*Tourism impacts:* the trustees will investigate the potential impacts of tourism disruptions on the markets for hotel rooms, vacation rental property, and home sales in the southeastern United States. Initial investigations may look at the available data sources to develop an initial estimate of the relative level of impacts on tourism.

### ***Task 7: Study the benefit-transfer literature***

This task is a part of valuation study planning. A literature review of available benefit-transfer approaches and studies is being conducted. The benefit transfer method is being evaluated for possible use in the assessment of direct/recreational use losses.

### **Total Value**

The initial sets of tasks for the total value study are as follows:

Focus group script and instrument development

Injury scenario development

Economic theory

Survey research

Survey administration

Econometric/statistical modeling and analysis

Additional total value studies are focusing on developing information to support the assessment. We are conducting focused research efforts in these study areas. The additional studies address psychology, judgment, and decision-making associated with the development and implementation of the survey instrument.

### **Specific Total Value Assessment Tasks**

#### ***Task 8: Develop total value survey instrument***

The trustees are developing a technically feasible and defensible approach to address the specific valuation questions using stated preference methods. We are performing the following sub-activities to develop the draft survey instrument:

Develop focus group materials and plan for and conduct focus groups  
Consult with NOAA and other experts to develop injury descriptions  
Develop draft survey instruments  
Test draft survey instruments, including focus groups, one-on-one interviews, and small- scale pretests.

***Task 9: Develop total value survey administration and sampling plan***

We are developing the overall pilot and final survey administration plan, draft and final interviewer training materials, and an initial and final survey sampling plan. Specific activities in this task include:

Develop an overall survey administration and implementation plan and schedule  
Develop draft and final interviewer training materials  
Develop overall sampling plans  
Determine the availability of appropriate sample lists or develop them as necessary  
Develop data-handling and chain-of-custody protocols.

***Task 10: Evaluate need for supporting total value economic studies***

The trustees are evaluating the need for specific economic studies to support the overall valuation approach. During this task we are conducting the following activities:

Identify specific supporting economic studies to be investigated  
Initiate literature reviews  
Develop a specific study design and plans  
Communicate with the NOAA team on completion of identified studies.

***Task 11: Analyses of collected data and preparation of requested reports***

This task will support the analysis of all data collected and preparation of reports required to support presentation of the NRDA claim.

***Task 12: Evaluate options for econometric and statistical modeling and analysis of total value data***

The trustees are evaluating options for initial econometric and statistical modeling of the survey data. Specific activities include:

Perform double-key entry of data  
Provide data quality assurance/quality control (QA/QC)  
Implement data archive protocols  
Develop analysis datasets  
Perform preliminary analysis of pretest data.

## **Anticipated Deliverables**

The following deliverables may be prepared during this phase of the project:

- Periodic reports (oral and/or written) on counts of major recreational activities
- Ongoing updates on surveys undertaken
- Survey sampling plans
- Draft survey instruments for each survey conducted
- Valuation plans
- Report on the additional recreational activities covered
- Direct use assessment report or portions thereof
- Total value assessment report or portions thereof
- Documents associated with settlement negotiations
- Coordination calls and meetings.