

Quantification of Lost Human Use: Proposed Work Plan and Budget
Chalk Point Oil Spill
June 30, 2000

Overview

The assessment of lost human use for the Chalk Point oil spill will cover recreational fishing, recreational boating, and public and private shoreline use (including swimming, picnicking, wildlife viewing, etc.). The assessment will occur in two phases. Phase One will entail initial damage assessment planning activities, literature research, fieldwork and collection of secondary data, to be completed by early fall. At that point, preliminary results will be compiled and the need for additional assessment activities will be evaluated. Phase Two will include any additional assessment work and production of the final report. The assessment activities outlined in this Work Plan may be modified as additional information becomes available.

The Available Data and Methods

For each damage category to be investigated, the same basic method will be applied to the available data. First, the percent reduction in the specified recreational activity will be estimated using historical participation data from sites where records are maintained. Examples of such sites include the Golden Beach private recreation area, Greenwell State Park and several shoreline fishing intercept points monitored by the National Marine Fisheries Service (NMFS). Effects due to factors other than the spill, such as year-to-year differences in weather, can be accounted for based on control sites elsewhere in the region that were unlikely to be affected by knowledge of the spill. Second, the full extent of current recreational participation will be estimated by observing current use levels. This will be accomplished using aerial observation and site visits and by conducting actual counts of the number of people using selected recreational access points.

Finally, the percent reduction will be applied to the estimated total participation to determine the reduction in recreational use due to the spill. Lost recreational value will be quantified, at least initially, using the benefits transfer approach: dollar figures regarding the value people place on specific recreational activities will be drawn from the economics literature.

One additional issue involves the extent of losses beyond the immediate impact zone. Referred to as "tainting," a decline in recreational activity beyond the immediate impact zone may result in substantial losses. The geographical boundaries of the zone where tainting occurred will be estimated from on-site interviews and available records of recreational use. The size of the drop-off in recreational activity due to the spill will likely be assumed to decrease at a linear rate from the edge of the immediate impact zone to the boundary of the tainting effect.

Task Description (Phase One Only)

The following sections describe the activities and budget projections for Phase One, due to be completed by early fall. The Phase Two portion of the Work Plan will be developed at the completion of Phase One.

1. Recreational Fishing

The Marine Recreational Fishing Statistical Survey is conducted annually by NOAA to record shoreline fishing activity at several sites along the Patuxent River. Data for the May-June period will be available by the end of August. By comparing fishing activity at these sites in 2000 to activity in past years, while making any necessary adjustments based on control-site data, the effect of the spill on the level of activity will be estimated.

The total amount of shoreline fishing on the Patuxent will be estimated using boat-based field observation to identify fishing access points and their relative size and extent of use combined with formal user counts at selected sites.

The value of a fishing trip will be determined using figures from previous studies. Should the total estimated fishing losses be large enough to justify additional research, an existing University of Maryland recreational fishing model may be modified to produce a site-specific value for fishing on the Patuxent River. This additional work would be described in the Work Plan for Phase Two.

2. Recreational Boating

Recreational boating includes water skiing, pleasure boating, canoeing and other activities. Boat-based fishing will be counted under recreational fishing. The reduction in boating participation will be determined using records from Golden Beach, which maintains five recreational sites a few miles downstream from the Chalk Point power generation facility. The sites include boat ramps and mooring facilities. Additional data may also be available from other boat ramps and private marinas along the Patuxent River. The total amount of boating participation affected will be estimated by conducting a count of boaters using marinas and boat ramps throughout the impact zone and area of tainting. The value of a boating trip will be assessed using the relevant economics literature.

3. Public Shoreline Use

The waterfront access at Golden Beach offers a mix of shoreline activity including swimming, picnicking and sunbathing. The percent decline in recreational use at a typical public shoreline facility will likely be based on the Golden Beach data (and other sources if available). The total amount of public shoreline use throughout the affected area will be determined using boat-based field observation to identify access points and their relative size, combined with formal user counts at selected sites. Literature-based values will be applied to the estimated decline in activity.

4. Private Shoreline Use

Households living on or near the shore of the Patuxent River suffered additional losses beyond the diminished use of local access facilities. The oiling of the river may have diminished the use and enjoyment of residential outdoor property.

To assess losses to private shoreline use, the number of houses surrounding the impact zone will be determined from town and county records. The typical rate of backyard use will be drawn from a previous study assessing damages for the 1989 Presidente Rivera oil spill on the Delaware River in New Jersey. The decline in use will be based on the Golden Beach data and other records that become available. If preliminary damage estimates warrant it, Phase Two will include a survey of local residents to better estimate the decline in use. Finally, the value of backyard use will be drawn from the relevant economics literature.

Budget (Phase One Only)

The activities described above will take place throughout the summer and early fall. It is anticipated that 984 hours of labor will be required, including fieldwork, analysis, and coordination with case team and trustees. Total projected cost is \$72,647. A more detailed breakdown of budget items is available upon request.