



United States Department of the Interior

OFFICE OF THE SOLICITOR
ALASKA REGION

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July 13, 2005

Via Facsimile (279-4239) and U.S. Mail

Herbert H. Ray, Jr., Esq.
Keesal, Young & Logan
Suite 650
1029 West Third Avenue
Anchorage, AK 99501-1954

Re: *M/V Selendang Ayu* - Cooperative Vegetation Study

Dear Bert:

I am writing regarding the performance of a cooperative vegetation study to be performed by the U.S. Fish and Wildlife Service (FWS) and the responsible parties (RPs) to evaluate injury to vegetation in connection with the *M/V Selendang Ayu* incident. I understand that the parties have reached agreement on the following terms of the cooperative vegetation study:

1. The parties have prepared a mutually acceptable protocol (Protocol) entitled, "Joint Protocol: Selendang Ayu Oil Spill Pre-Assessment Study Plan: Injury to Native Vegetation Communities on Unalaska Island." The Protocol was signed on July 12, 2005 by Deborah Rocque and Gary Mauseth for the FWS and the RPs, respectively. A copy of the signed Protocol is attached.

2. The RPs will pay all costs associated with performing the vegetation study. Costs which will be paid directly by the RPs include, but are not necessarily limited to, the costs of providing a helicopter and/or skiff and skiff operator to transport participants from Dutch Harbor, Alaska to locations where field work will occur. All costs incurred by the FWS, including, but not necessarily limited to, travel and transportation costs of individuals participating in the study, labor costs, per diem, equipment, indirect costs and supplies, shall be reimbursed by the RPs within thirty (30) days of receipt of appropriate cost documentation.

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3. Unless mutually agreed by both parties, data collected pursuant to and in accordance with the Protocol shall not be challenged by either party.

If the RPs are in agreement with the terms of the cooperative vegetation study as described above, please sign the acknowledgment line below and return to me (my fax number is 271-4143) by the close of business on Thursday, July 14, 2005. I look forward to hearing from you.

Sincerely,



Lisa M. Toussaint

By signing on the line below, I acknowledge that the RPs are in agreement with the terms of the cooperative reference beach study as described herein.

Signature

Date

Enclosure

cc: Deborah Rocque, U.S. Fish & Wildlife Service
Jenifer Kohout, U.S. Fish & Wildlife Service
Regina Belt, U.S. Department of Justice
Craig O'Connor, U.S. Department of Commerce
Breck Tostevin, State of Alaska

Joint Protocol:**Selendang Ayu Oil Spill Pre-Assessment Study Plan: Injury to Native Vegetative Communities on Unalaska Island*****Introduction***

On December 8, 2004, the *M/V Selendang Ayu* went aground north of Unalaska Island, spilling its load of soybeans and intermediate fuel oil (IFO 380) and marine diesel. Oil was distributed onto wetland, riparian, and terrestrial vegetation on Unalaska Island. Oil deposition and subsequent cleanup efforts may result in long-term alteration of vegetation communities in affected areas. We propose to assess the damage to nearshore vegetation communities and habitats, and collect baseline measurements that will allow for future assessments of vegetation recovery.

Besides contributing to the natural biological diversity on Unalaska Island, the vegetative communities are important as fish and wildlife habitat (e.g., fish nurseries, spawning areas, and bird nesting areas). Several passerines, like the Sanak Song Sparrow, a regional endemic, utilize the upland vegetation for nesting habitat and substrate and waterfowl nest near and forage in streams. Loss of vegetation or changes in vegetative species composition likely has negative impacts on these and other avian species. Native vegetation is also important for erosion control and bank stabilization. This area of Unalaska Island is also a refugia for numerous species of rare plants. The U. S. Fish and Wildlife Service, on behalf of the *Selendang Ayu* Natural Resource Trustees, will document the extent of injury (and subsequent recovery) to native vegetation on Alaska Maritime National Wildlife Refuge lands using quantitative vegetation measurement and qualitative rankings of oiling and cleanup activity damage.

Little is known about the natural rate of recovery of plant communities on Unalaska Island to damages related to oil spills and cleanup activities. While some information on relative sensitivity to hydrocarbons and disturbance is available for a few species, the data were often determined for other climatic regions of the plant species range (i.e., North Slope or Prince William Sound). The Aleutian climate may change a plant's recovery time compared to other areas.

We propose to collect ephemeral data on injuries to vegetative resources in the first growing season after the spill. We expect that vegetation communities impacted by oil or cleanup activities will have reduced live cover and increased litter cover relative to unimpacted areas. If there are differences among impacted and unaffected areas in this first growing season after the spill, we may extend the surveys over time by revisiting the survey sites in subsequent years.

Methods

General study areas will be selected from available SCAT maps (including cleanup locations) and resource maps, but specific plots will have to be selected on the ground

because available data are too coarse-scaled for this project. Impacted and unimpacted sites with similar profiles, wave action, and beach (or upland) type will be used for comparison because differences in flora among plots may be attributed to storm surges and salt-water incursions that occur in some areas.

After arrival at likely survey areas by skiff, 5 x 10 m plots will be selected within and assigned to each of the following categories: vegetative community (undetermined number of categories); degree of oiling; and disturbance associated with cleanup (4 categories; Table 1). Plot corners will be marked with 2 x 2 wooden stakes to allow repeat surveys to be done on the same location if necessary.

Within each plot, the species composition and extent of aerial cover will be quantified using the point intercept sampling method. Sample points will cover the plot in a 2 m x 20 cm grid (100 points per plot). At each sample point, a downward-pointing laser will be used to provide an intercept point. The laser will be mounted to minimize movement and experimental error. Each plant that intercepts the beam will be recorded to species (where possible) with the exception of bryoids (mosses and liverworts) and lichens. Bryoids will be recorded as "moss" or "lichen" regardless of species. Litter and bare soil will only be recorded when there is no intervening plant cover. Data from each plot will be used to calculate biodiversity, relative species abundance, and total live cover. Plant communities will be classified using the level IV of the Alaska Vegetation Classification (see attached Table; Viereck et al. 1992) based on the results of the quantitative vegetation measurements. Lasers will also be used to determine the degree of oiling within a plot. The degree of oiling will be calculated by the number of times the laser encounters oil in a plot (sum of sample point encounters) multiplied by the thickness (depth) of each encounter.

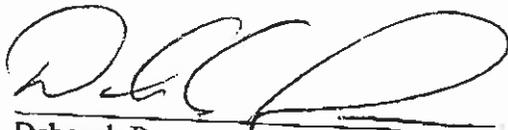
Injury will be determined by appropriate statistical comparisons of biodiversity, abundance, or community structure between impacted and unaffected plots. Appropriate statistical techniques, such as nested multiple analysis of variance, allow us to simultaneously determine whether oiling or any level of disturbance contributes to significant differences in measurement. Additionally, we will visually inspect, note, and photograph compacted soils, erosion and destabilization of stream banks, and gross changes in vegetative cover among plots.

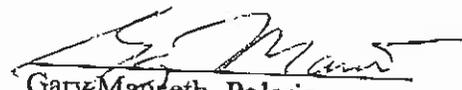
References

- Golodoff, S. 2003. Wildflowers of Unalaska Island: A Guide to the Flowering Plants of an Aleutian Island. University of Alaska Press, Fairbanks, AK.
- Hulten, E. 1968. Flora of Alaska and Neighboring Territories. Stanford University Press, Stanford, CA.
- Viereck, L.A., C.T. Dymess, A.R. Batten, and K.J. Wenzlick. 1992. The Alaska Vegetation Classification. USFS General Technical Report PNW-GTR-286

Table 1. Scoring system used to determine level of impact by cleanup activities. Biodiversity, abundance, biomass, and community structure will be compared among these categories, within each major vegetative type.

<i>Cleanup disturbance</i>	Score
No disturbance	0
Decrease in vegetation <25% and amount of exposed soil <5%	1
Decrease in vegetation 25-50%, and/or exposed soil 5-15%	2
Decrease in vegetation >50%, and/or >15% soil exposed	3


 Deborah Rocque, USFWS
 Authorized Representative


 Gary Marseth, Polaris
 Authorized Representative