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# Seabirds Killed Valdez Oil Spill



Resources, Community, and  
Economic Development Division

B-243083

November 27, 1991

The Honorable Frank H. Murkowski  
United States Senate

Dear Senator Murkowski:

This report responds to your questions about a federally funded study to estimate the number of seabirds killed as a result of the supertanker Exxon Valdez's striking a reef in Alaska's Prince William Sound in March 1989 and spilling approximately 11 million gallons of crude oil. This study, estimated to cost \$598,000, was one of 51 damage assessment studies included in the 1990 update of a state and federal plan designed to determine the oil spill's impact on natural resources and provide a basis for assessing damages and developing a restoration strategy. Specifically, you asked for information in two areas: (1) the request and approval of the seabird damage study and (2) the study's methodology, which required, among other things, using over 200 freshly killed seabirds.

This report summarizes and expands on the information we presented to you in an earlier briefing. Our ability to respond fully to some of your questions was limited by the Department of Justice's decision to withhold much of the information related to the study's methodology and results. Justice based this decision on the need to protect the government's interest in ongoing civil and criminal litigation relating to the spill. As agreed with you, we did not attempt to obtain information withheld by Justice. Our responses to your detailed questions are included as appendixes I and II to this report.

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## Results in Brief

The seabird damage study originated from a need for a more precise estimate of the number of seabirds killed as a result of the spill to support the federal government's claim for damages against Exxon<sup>1</sup> and to provide data for developing and implementing a restoration strategy. The seabird study was approved as part of an overall damage assessment and restoration plan by the state of Alaska and federal officials designated by law and regulation to act as trustees (referred to as the Trustees) for the natural resources damaged or destroyed by the oil spill. A Trustee Council, formed by the Trustees to address natural

<sup>1</sup>As used in this report, the name "Exxon" includes the Exxon Corporation and its subsidiaries—the Exxon Shipping Company, which owns the Exxon Valdez, and the Exxon Pipeline Company.

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resource damage and restoration relating to the Exxon Valdez oil spill, included the seabird study in the 1990 update of its overall damage assessment and restoration plan originally developed in 1989. Federal and state scientists and outside experts ranked this study as the most significant of some 18 proposed bird studies in the 1990 update. The study was performed under a contract awarded by Justice, but the Department of the Interior's Fish and Wildlife Service (FWS) reimbursed Justice for the contract and was responsible for its supervision. Field work was begun and completed in 1990.

The most controversial component of the study involved killing 219 seabirds, immersing them in oil, placing them in Prince William Sound, and tracking their drift patterns—through the use of a radio transmitter attached to each bird—to determine the number of birds recovered versus the number lost at sea. Researchers were to use the study findings, along with other data, to extrapolate the likely bird death toll attributable to the Exxon Valdez oil spill. Alternatives to using freshly killed birds for the study were considered but rejected primarily because freshly killed birds were considered necessary to replicate the effects of the spill and to yield credible results for scientific and litigation purposes.

Before the study, experts had estimated that the more than 36,000 dead seabirds recovered after the spill represented only a small portion of the total number killed. The estimate generally believed was a range of 100,000 to 300,000 birds killed. Preliminary results from the study indicated that the total number of seabirds killed by the spill ranged from 260,000 to 580,000, with a best approximation of between 350,000 and 390,000 seabirds.

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## Background

The crude oil that spilled from the Exxon Valdez spread to more than 1,200 miles of Alaska coastline, including portions of national forests, parks, and wildlife refuges managed by the federal government. This coastline is rich in fish and wildlife, such as herring, salmon, sea otters, whales, bald eagles, and seabirds, and the spill killed large numbers of many wildlife species.

Among the most conspicuous effects of the spill was the injury to seabirds. Seabirds are vulnerable to oil spills because they spend much of their time foraging on the sea's surface. When their plumage comes in contact with the oil, it loses buoyancy, causing many birds to drown. Birds that manage to avoid drowning may die from exposure (oiled

feathers provide poor insulation) or from ingesting oil that they try to preen from their plumage. Following the oil spill, more than 36,000 dead seabirds were recovered, frozen, and kept in storage as evidence of the effects of the spill. According to federal officials, these dead birds probably represented only a small portion of the number actually killed. Other birds were thought to have sunk, decomposed, been scavenged by other animals, or in some other way become unrecoverable.

### Natural Resources Trustee Organization for the Exxon Valdez Oil Spill

The Comprehensive Environmental Response, Compensation, and Liability Act; the Clean Water Act; and implementing regulations provide for the designation of federal and state officials to act as trustees to ensure that responsible parties pay to restore, rehabilitate, or replace natural resources damaged or destroyed by an oil spill. Oil from the Exxon Valdez affected the natural resources managed by the state of Alaska and three federal agencies—the Departments of Agriculture; Commerce, through the National Oceanic and Atmospheric Administration (NOAA);<sup>2</sup> and the Interior. The heads of these government entities are known as the Trustees.

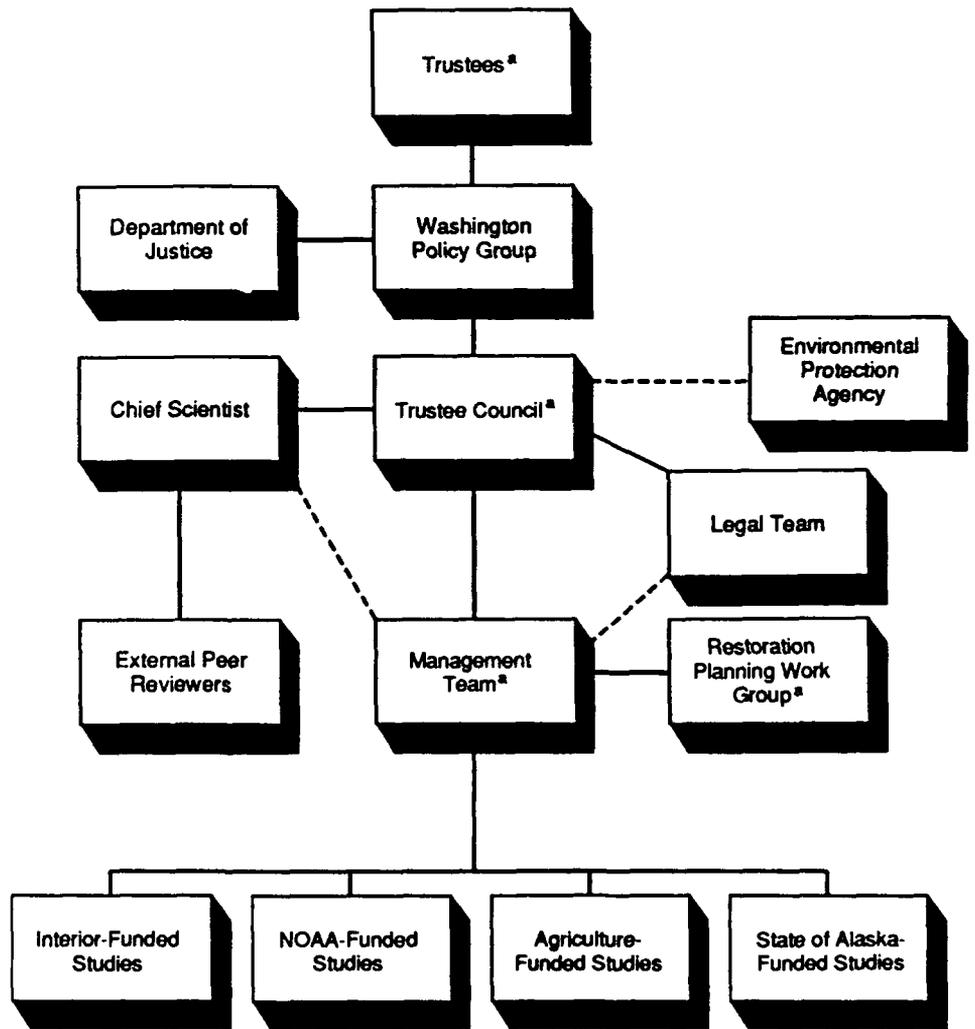
Although the response of the state of Alaska and of the various federal agencies to the oil spill was swift, a need soon emerged for a formal interagency structure to coordinate response and damage assessment activities. In May 1989, the Trustees established a regional Trustee Council—comprising representatives from the state of Alaska, the Departments of Agriculture and the Interior, and NOAA—to coordinate Trustee activities.<sup>3</sup> In addition to the Trustee Council, the Trustees also agreed to establish several other groups to facilitate actions to be taken and decisions to be made regarding the oil spill. A Management Team composed of representatives from the Trustee Council agencies, as well as a representative from the U.S. Environmental Protection Agency, was charged with putting together specific proposals to be considered by the Trustee Council. A Legal Team, with a representative from each of the state and federal agencies, as well as an adviser from Justice, was also

<sup>2</sup>According to an official of NOAA's Office of General Counsel, the Secretary of Commerce recused himself from his duties as a Trustee in connection with Exxon Valdez oil spill matters because of a potential conflict of interest. The Administrator of NOAA serves as Commerce's Trustee instead.

<sup>3</sup>Currently, the Trustee Council consists of representatives from the state of Alaska's Department of Fish and Game, Department of Environmental Conservation, and Office of Attorney General, as well as from regional offices of the Department of Agriculture's Forest Service, the Department of the Interior's FWS, and the National Marine Fisheries Service of the Department of Commerce's NOAA. Although not a member of the Trustee Council, the U.S. Environmental Protection Agency is assisting the Council in coordinating federal restoration efforts with those of the state of Alaska.

established. Later, an ad hoc Washington Policy Group was established to facilitate coordination among federal agencies in Washington, D.C., on Exxon-related issues. Justice also coordinates its activities with and advises the Trustees through the Washington Policy Group. (See fig. 1.)

**Figure 1: Natural Resources Trustee Organization for the Exxon Valdez Oil Spill**



\* Includes Environmental Protection Agency representation

The Trustee Council published its initial State/Federal Natural Resource Damage Assessment and Restoration Plan for the Exxon Valdez Oil Spill

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in August 1989 and has updated this plan in each of the 2 years since. The 1989 plan included 63 studies recommended by the Trustee Council and approved by the Trustees. These studies addressed fish, shellfish, marine mammals, terrestrial mammals, and birds, as well as damage to coastal habitat. With the plan's updates in 1990 and 1991, some of the original studies have been dropped, some have been continued, and some new ones have been added.

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## Oil Spill Litigation

Both the state of Alaska and the federal government filed claims against Exxon for damages caused by the oil spill. Seeking damages under state law, the state filed civil claims against Exxon in Alaska Superior Court in August 1989. A 10-count federal criminal indictment was returned in February 1990, and the criminal charges were scheduled for trial in April 1991. On March 13, 1991, the federal government asserted civil claims in a complaint in the U.S. District Court for the District of Alaska that was filed jointly with a proposed settlement of civil claims among the federal government, the state of Alaska, and Exxon. The proposed civil settlement agreement was contingent upon, among other things, the U.S. District Court's approval of a plea agreement for the criminal charges proposed on the same day and the Alaska State Legislature's approval of the civil settlement.

On April 24, 1991, the U.S. District Court rejected the criminal plea agreement on the grounds that the proposed fines did not adequately achieve deterrence, sent a wrong message that oil spills could be absorbed as a cost of business, and were inadequate to punish those who had committed environmental crimes. In May 1991, the Alaska House of Representatives rejected the civil settlement agreement, Exxon withdrew from the proposed civil settlement agreement, and Exxon withdrew its guilty pleas under the criminal plea agreement. Trial for the criminal charges was scheduled for October 7, 1991.

On September 30, 1991, the federal government, the state of Alaska, and Exxon filed another agreement to settle the civil claims, and the federal government and Exxon filed another plea agreement to resolve the criminal charges. Under the major terms of the civil agreement, Exxon (1) would pay \$900 million between 1991 and 2001 to satisfy the state and federal governments' civil damage claims and (2) might be liable for up to an additional \$100 million between 2002 and 2006 for projects to restore populations, habitats, or species that had suffered a substantial loss or decline in the areas affected by the oil spill if the damage could not reasonably have been known or anticipated by any Trustee on the

effective date of the agreement. The civil agreement was contingent upon the U.S. District Court's acceptance of the criminal plea agreement. Under the criminal plea agreement, Exxon agreed to plead guilty to four criminal charges arising from the oil spill, pay a \$150-million fine (\$125 million of which would be forgiven), and pay \$100 million (half to the federal government and half to the state of Alaska) as remedial and compensatory payments to be used exclusively for restoration of natural resources damaged by the Exxon Valdez oil spill. On October 8, 1991, the U.S. District Court approved both agreements.

## The Request and Approval Process for the Seabird Study

The seabird damage study was included in the 1990 update of the damage assessment and restoration plan. Although related to a study contained in the 1989 plan, the 1990 study resulted from a need for a study that would provide a more precise estimate of the number of seabirds killed by the spill to support the government's claim for damages and to provide data for developing and implementing a restoration strategy. The decision to do the study was based by the Trustees upon the advice of federal and state scientists, outside experts, and the Management Team. The Justice Department supported the study because it would facilitate the litigation.

According to FWS' Alaska Regional Director, who chaired the Trustee Council in 1989 and 1990, various damage assessment studies were proposed, evaluated, assessed, and ranked by federal and state of Alaska scientists and outside experts in developing the plan. These scientists and experts ranked the seabird damage study, which was to improve the estimate of killed birds, as the most significant bird study. On the basis of its scientific merit and the study's importance to Justice's anticipated litigation, the Council recommended and the Trustees approved the study as a part of the 1990 update of the damage assessment and restoration plan. The study was performed largely under a contract awarded by Justice to Ecological Consulting, Inc. (ECI). FWS, however, reimbursed Justice for the costs of the contract and was responsible for its supervision.

After the Trustees approved the 1989 plan, it was published for public review and comment. Comments were received from approximately 75 reviewers representing industry, environmental groups, public agencies, and individuals. The reviewers commented on the overall nature and content of the plan and provided technical remarks concerning many of the individual studies. These comments were considered during evaluation of the 1989 effort and formulation of the 1990 update. The 1990

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and 1991 updates of the damage assessment and restoration plan followed a similar public review and comment process.

Many of the studies were initiated before the plan or updates were published and before the public was given an opportunity to comment on them. Industry representatives and environmental groups complained about this. With specific regard to the seabird study, a Justice official explained to us that there was a need to get this study under way as quickly as possible while the weather was still good. Officials were concerned, he said, that any significant time delay would prevent the study's completion and adversely affect its results. In addition, according to Justice, the damage assessment process did not legally require public comment. According to the Justice official, the seabird study was discussed on May 14, 1990, with the local Alaskan chapters of the National Wildlife Federation and of the Audubon Society.<sup>4</sup> These groups were informed before the birds were actually killed that the study would involve the killing, or "taking," of additional birds.

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## The Seabird Study's Methodology

The purpose of the study was to assess the mortality of seabirds following the Exxon Valdez oil spill. The contractor hired to conduct the study planned to devise and use computer models to extrapolate the total number of bird deaths from the number of seabirds recovered—approximately 36,000. The components of the study were (1) a synthesis of already available information, (2) an examination of a sample of the birds recovered following the spill to determine the proportion likely to have died as a result of the effects of oiling, and (3) a field study to determine the rate at which birds were lost at sea. The field study involved killing seabirds, coating their carcasses in oil to simulate oil spill conditions, tagging each with a radio transmitter, placing them in the waters of Prince William Sound, tracking their drift patterns, and determining the number of seabirds that were and were not recovered.

Citing the litigation-sensitive nature of the study, Justice neither made available to us the full details of the study's methodology nor allowed us to discuss the study with the contractor. The study's methodology was reviewed by federal and state of Alaska scientists and by six experts hired for their expertise in a number of specialties associated with bird studies. Five of the experts were hired by Justice, and the sixth was hired by the state of Alaska. The outside experts all had doctoral

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<sup>4</sup>The local chapter of the Sierra Club was also invited to participate in this discussion but did not do so.

degrees in the fields of biology, animal sciences, or statistics; had been associated with universities for many years; and had published extensively in their areas of expertise. In addition, at the time they were hired, they were employed principally in academia, not in areas related to damage assessment and restoration.

Alternative methodologies for the field study component of the seabird study were considered by the contractor, federal and state scientists, and the outside experts. For example, dead birds that had been exposed to the sea immediately after the oil spill, collected, and frozen were eliminated as an acceptable alternative because, over time, their buoyancy and drift characteristics had changed significantly. Chicken carcasses and blocks of wood were also considered as alternatives but rejected because their buoyancy and drift characteristics differed from those of seabirds. Using freshly killed birds in the seabird study was proposed by the contractor and agreed to by the federal and state scientists and outside experts.

Because the study's methodology called for the killing of seabirds, ECI was required to apply for permits to do so from both FWS and the state of Alaska's Department of Fish and Game. ECI's application for taking up to a maximum of 500 birds was received by FWS on April 14, 1990. FWS issued the original permit on May 3, 1990, authorizing the taking of up to 500 birds and noting that ECI would have to obtain a state permit as well. Minor amendments to the permit were issued on May 10 and 14; this latter date was the date on which the discussions were held with the two conservation groups in Alaska. As a result of feedback from that meeting, FWS recommended modifying the permit to prohibit the collection of birds from the area of Prince William Sound where bird populations had been affected by the oil spill. FWS and the conservation groups were concerned that killing more birds in this location could further affect the bird populations there and could provoke a legal challenge.

To reduce the number of birds killed, a modification limiting the take of birds to 350 was included in a third amendment to FWS' permit, dated May 16, 1990. Alaska's Department of Fish and Game asked the contractor whether it was necessary to kill birds for the proposed research and was informed that frozen carcasses had been tried unsuccessfully in earlier studies elsewhere. The final permits issued by FWS and the state on May 17, 1990, authorized killing up to 350 birds.

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The birds used for the study were killed between May 20 and August 4, 1990. A total of 219 birds of various species were killed; each species was common to Alaska and representative of those killed by oil in the first few months after the spill. In accordance with the FWS permit, the birds were killed outside Prince William Sound in areas unaffected by the oil spill. The bird carcasses were radio tagged and released in Prince William Sound and the Gulf of Alaska. The movement and fate of the carcasses were monitored by aircraft. A small number of the carcasses were placed on various beaches, and the carcasses were monitored to determine the rate of loss attributable to scavengers. Preliminary results from the study indicate that between 260,000 and 580,000 seabirds were killed by the Exxon Valdez oil spill, with a best approximation of between 350,000 and 390,000 seabirds killed. Because of the pending litigation, Justice had not released the final results of the study during the course of our work.

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## Agency Comments

We provided copies of a draft of this report to the Departments of the Interior, Commerce, and Justice and to the Attorney General of the state of Alaska for review and comment. The agencies generally agreed with the information in the report, and their comments, including several clarifying points, were incorporated in the report where appropriate. Alaska's Attorney General provided comments to the Department of Justice, which Justice considered in providing its comments to us. The agencies' written comments are included as appendixes III, IV, and V.

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We conducted our review between January and October 1991 in accordance with generally accepted government auditing standards. To answer your questions on the seabird study, we gathered documents and interviewed officials in Juneau and Anchorage, Alaska; Seattle, Washington; and Washington, D.C. In Alaska, we interviewed officials of the state, the Trustee Council, FWS, and the two conservation groups consulted on the study. In Seattle, we interviewed Justice officials. In Washington, D.C., we spoke with officials from Justice, NOAA, and FWS.

As previously mentioned, our ability to respond fully to some of your questions was limited by Justice's decision to withhold much of the information concerning the study's methodology and results in view of the pending litigation. In appendixes I and II, we have indicated where this lack of information may have limited our responses to your specific questions.

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We are sending copies of this report to the Secretaries of the Interior, Agriculture, and Commerce; the Attorney General of the United States; the Attorney General of the state of Alaska; and other interested parties and will make copies available to others upon request. If you or your staff have any questions concerning this report, please call me at (202) 275-7756. Other major contributors to this report are listed in appendix VI.

Sincerely yours,

A handwritten signature in cursive script that reads "James Duffus III". The signature is written in black ink and is positioned above the typed name.

James Duffus III  
Director, Natural Resource  
Management Issues



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**Figure**

**Figure 1: Natural Resources Trustee Organization for the  
Exxon Valdez Oil Spill**

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**Abbreviations**

ECI	Ecological Consulting, Inc.
FWS	Fish and Wildlife Service
GAO	General Accounting Office
NOAA	National Oceanic and Atmospheric Administration

# Questions and Responses Concerning the Request and Approval Process

Senator Murkowski raised a number of specific questions concerning the request and approval process for the seabird damage study. His questions and our responses are as follows.

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## Question

Was the Trustee panel established to oversee resource damage assessments and recovery efforts given an adequate opportunity to consider the study? Were the Trustees aware that the study would involve the destruction of up to 350 additional birds?

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## GAO's Response

The Trustee Council, along with federal and state of Alaska scientists and outside expert peer reviewers, reviewed the proposal for the seabird study and were fully aware of the study's components. When these scientists, along with the Management and Legal Teams, met in late 1989 to informally rank approximately 18 bird studies that had been proposed for funding in 1990, the seabird study received the highest priority among the proposed bird studies. The former chairman of the Trustee Council told us that the Council had agreed that the seabird study was significant and needed to be done, even though additional birds would have to be killed and such an action would probably be unpopular with the public. He said, and a review of Fish and Wildlife Service (FWS) and state permits issued in Alaska confirmed for us, that it is not uncommon for hundreds of birds as well as other wildlife to be killed for scientific studies.

Even though the Trustee Council and others knew that birds would be killed so that their carcasses could be used for the study, Interior's Washington Policy Group representative told us that the Secretary of the Interior had not specifically been informed about the proposed killing. The representative briefed the Secretary on all studies for which his department was responsible, including the seabird study. However, this representative told us that in the past the Washington Policy Group had not involved itself in the specific methodology of the studies, and information about the seabird study provided to him by the Trustee Council did not clearly state that additional birds would be killed. Hence, neither the Secretary of the Interior nor Interior's Washington Policy Group representative was aware of this aspect of the seabird study. Moreover, the 1990 State/Federal Natural Resource Damage Assessment and Restoration Plan for the Exxon Valdez Oil Spill did not specifically state that birds would be killed for this study.

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## Question

Was there any attempt made by any individuals or agencies involved to conceal the fact that the study would involve the destruction of a large number of additional birds?

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## GAO's Response

We found no evidence of any deliberate concealment of the fact that birds would be killed for this study. A number of individuals were aware that the study's methodology included killing a quantity of birds. For instance, members of the Trustee Council, the Management Team, the Legal Team, federal and state of Alaska scientists, and outside expert peer reviewers—each of whom was involved in developing the damage assessment studies—and officials of two conservation groups in Alaska were among those who were aware that birds would be killed as a part of the study.

Interior's Washington Policy Group representative told us that no attempt had been made to conceal the fact that birds would be killed. Rather, he told us that spokespersons for Interior had not checked beyond Washington headquarters before stating to the media that the Secretary did not know about and would not have approved such a study. He explained that the following steps have been taken to prevent such miscommunication from recurring: (1) Interior's Washington Policy Group representative now pays much closer attention to the details of individual study methodologies and (2) Interior representatives on the Trustee Council and the Management Team have been instructed to state explicitly when animals and birds will be killed for studies, or when anything else potentially controversial is being considered.

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## Question

By what agency was the study requested, and for what purpose? Was it a necessary step in establishing a recovery plan, or was it intended to provide information to support a request for compensatory and/or punitive damages?

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## GAO's Response

The decision to do the study was based by the Trustees upon the advice of the federal and state scientists, the outside experts, and the Management Team. The Justice Department supported the study because it would facilitate the litigation against parties responsible for the Exxon Valdez oil spill. The study would also provide data for developing and implementing a restoration strategy. The litigation would determine damages—the estimated monetary value of the injured resources and the cost to restore these resources and the services they provided. The

damages obtained through litigation would provide funds to restore, replace, or acquire the equivalent of the injured natural resources and services and to reimburse agencies for costs incurred in responding to the oil spill.

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**Question**

What is the explanation for the disparity between FWS' claim that the study was done at the urging of the Department of Justice, and Justice's reported insistence that it neither asked for nor authorized the study?

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**GAO's Response**

Even though certain officials within Justice were familiar with the details of the study, we were told that Justice's spokesperson was not aware of the agency's involvement. When the spokesperson sought to obtain answers to questions about the study for the media, he received incorrect information from Justice sources whom he thought to be knowledgeable but who were actually not involved in the study. Thus, miscommunication about Justice's involvement in the study resulted in erroneous information being provided to the media by the Justice spokesperson.

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**Question**

What agency and/or individual gave final approval for the study and related contract arrangement? Were these decisions subject to an appropriate agency review process?

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**GAO's Response**

The Trustees have final authority to approve the studies in the damage assessment and restoration plan. The Secretary of the Interior, whose department is responsible for all of the bird studies, was briefed on and approved the plan that included the seabird study. It was the Trustee Council, however, that had full knowledge of the study's methodology and that recommended approval of the plan to the Trustees. Before the Council issued its recommendation, the study was subjected to a series of reviews by federal and state scientists and expert peer reviewers.

Discussions between FWS and Justice resulted in identifying and contracting with Ecological Consulting, Inc. (ECI), of Portland, Oregon, to conduct the seabird study. The Trustees, through the Trustee Council, budgeted \$598,000 for the study. Justice arranged for the contract with ECI. Justice documented its intent to hire ECI by submitting a written justification for the proposal. Justice also provided us with its contract

documentation showing that it had followed an internal Justice contracting system for hiring a contractor. Under an interagency agreement between Justice and FWS, FWS agreed to reimburse Justice for ECI's work and to supervise the contract.

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## Question

Was the contract for taking the birds awarded on a competitive basis, giving adequate opportunities for proposals from other companies, including those in Alaska?

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## GAO's Response

The contract was not awarded on a competitive basis. Justice executed a sole source contract with ECI, forgoing competition for awarding the contract. The contracting method was justified by Justice on the basis of the compelling need to begin field work immediately before inclement weather prevented completion of the study and adversely affected its results. Justice maintained that ECI was the one source that could practically be retained within the limited time for performance of the study.

Justice, in its justification document for sole source contracting with ECI, additionally stated that ECI was recognized for its expertise in oil spill damage assessment and had conducted prelitigation studies for most major oil spills occurring in U.S. marine waters since 1984. Justice also noted that ECI was completing an oil spill damage assessment study in another location, which would serve as a prototype for the proposed field work in Alaska. Because ECI had the technical capability and was available to do the work within the required time frame, Justice concluded that ECI was the best qualified firm for this particular job. Justice officials were also impressed with ECI's performance as the government's expert witness in previous oil spill cases. Consequently, Justice felt that ECI could not only conduct the study but would also be an excellent expert witness if the case went to court.

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## Question

Should an opportunity for public comment on the study have been offered?

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## GAO's Response

According to Justice, the damage assessment process does not legally require public comment. Regulations dealing with the Trustees' assessment of damages to natural resources provide for public involvement before the performance of any methodologies contained in assessment plans. However, the assessment procedures set forth in the regulations,

including those related to public comment, are not mandatory. On the other hand, if the procedures are not followed, the government loses its advantage of having the study's results accepted as initial proof of damages on trial.

FWS did, however, informally discuss the study with officials from two conservation groups in Anchorage, Alaska, in May 1990, just a few days before implementing it. The conservation groups were not pleased with what they considered the lack of information available to the public about the damage assessment studies in general, and about the seabird study in particular. However, partially as a result of that meeting, the contractor's permit was modified to exclude the taking of birds from the areas in Prince William Sound that had been directly affected by the oil spill.

The Trustee Council eventually provided an opportunity for formal public comment on the seabird study; however, details about the study were not available to the public until the 1990 update to the damage assessment and restoration plan was published in August 1990, well after the beginning of field work in May of that year. Comments and responses to the 1990 update, which included the seabird study, were not published until April 1991. A conservation group and oil industry representatives commented in the April document that the Trustees had failed to include the public before the studies began. The Trustee Council responded that in order to conduct an adequate assessment, it had been necessary to begin collecting data before completing the public comment process. The Council also stated that because of the litigation-sensitive nature of the damage assessment process, the Trustees had attempted to solicit public comment without compromising or otherwise jeopardizing their ability to pursue damage claims in court.

In one of the comments specifically regarding the seabird study, the oil industry stated that the tracking of birds killed by researchers was unnecessary and that other methods were available to estimate the number of birds killed by the spill. The Trustee Council responded that careful review had shown that a reliable estimate of bird deaths required killing and radio-tracking a small number of birds. The Council stated that other methods had been considered but had been judged to be inadequate to achieve a reliable bird mortality estimate.

In another comment concerning the seabird study, the oil industry stated that the 1990 update to the damage assessment and restoration plan did not state that birds would be killed as part of the seabird study,

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**Appendix I  
Questions and Responses Concerning the  
Request and Approval Process**

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and therefore this portion of the study was not subject to public comment. The oil industry further commented that the Trustees would have canceled the seabird study if it had been made public before publication of the 1990 update of the damage assessment and restoration plan. The Council responded that, although detailed information on the killing of birds was not provided in the 1990 plan, the plan did specifically note that carcasses would be radio-tracked to determine recovery rates. Furthermore, the Council responded that (1) the seabird study was approved after thorough review, (2) the number of birds killed was kept to an absolute minimum, and (3) the birds were taken from populations not affected by the oil spill.

# Questions and Responses Concerning the Seabird Study's Methodology

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Senator Murkowski also asked several questions concerning the seabird study's methodology. His questions and our responses are as follows.

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## Question

Was the taking of additional birds over and above those killed by the oil spill a necessity? Was it impossible to design an adequate study using the preserved carcasses of birds killed during the oil spill itself? If so, was it possible to reach the same objective with a smaller number of kills?

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## GAO's Response

Because of the government's ongoing litigation, Justice neither made available to us the full details of the study's methodology nor allowed us to discuss the methodology with the contractor. Therefore, our ability to answer these questions fully is limited.

Justice officials told us that the contractor, ECI, had initially considered using carcasses recovered after the oil spill for the seabird study before ultimately deciding that using freshly killed birds was necessary. Information provided to us by Justice indicates that ECI's testing of birds had revealed that the buoyancy and drift characteristics of carcasses that had been oiled, frozen, and then thawed differed significantly from those of freshly killed birds. Justice also said that ECI had considered other alternatives, such as using decoys, blocks of wood, or chicken carcasses for the study but had also rejected these alternatives.

We cannot evaluate whether fewer birds would have been adequate for the study. However, FWS initially approved the taking of up to 500 birds for use in the study. The former chairman of the Management Team told us that the Management and Legal Teams had urged that the number of birds to be killed be reduced as much as possible because of the issue's sensitivity. Subsequently, FWS modified ECI's federal permit to reduce to 350 the maximum number of birds to be taken. Alaska's Department of Fish and Game also voiced concerns about ECI's initial request to kill up to 500 birds for the study. However, after ECI responded to the state's written questions about the study and the state examined ECI's study methodology, the state also granted ECI permission to take up to 350 birds. The total number of birds actually killed for use in the study was 219.

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**Question**

Were adequate scientific control measures established to ensure that the characteristics displayed by freshly killed birds duplicated, insofar as possible, the characteristics of birds killed by the oil spill?

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**GAO's Response**

Evaluating scientific control measures requires access to the study's methodology, which Justice did not provide us. However, information that we did obtain concerning earlier studies conducted by the contractor suggests that ECI compared such factors as buoyancy and drift between freshly killed birds and birds that had been killed, kept in frozen storage, and then thawed.

The president of ECI, in answering questions from the state of Alaska about the methodology used in this study, stated that ECI's earlier studies in other locations had compared freshly killed and previously frozen and thawed carcasses. From these studies, ECI had found that previously frozen and thawed carcasses sank much more rapidly than fresh carcasses, and that winds and currents caused fresh and previously frozen and thawed carcasses to drift in different directions and at different rates. Therefore, ECI determined that freshly killed carcasses should be used for the seabird study.

In addition, evidence suggested that the size or surface/volume ratio of the carcass may strongly influence the decomposition rate. These and other more subtle differences led ECI to conclude that data collected using carcasses of bird species much different from the species actually affected by the spill would be difficult to evaluate. Therefore, the contractor used species of birds similar to those that had died from the spill.

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**Question**

Was the study proposal given adequate scientific peer review before it was approved and conducted? Did any such review process include panelists who were not associated with the ongoing Prince William Sound research effort?

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**GAO's Response**

The seabird study was reviewed during the proposal and development stages by federal and state of Alaska scientists, as well as by five outside expert peer reviewers hired by Justice and one hired by the state of Alaska. Although we were told by Justice that the study proposal was evaluated extensively on a number of occasions by various

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**Appendix II  
Questions and Responses Concerning the  
Seabird Study's Methodology**

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agency and nonagency scientists, we are unable to comment on the adequacy of such reviews because Justice did not release information on the results of the review process.

The experts hired to review this study had backgrounds in a number of associated scientific specialties. For instance, information about the experts provided to us by Justice and the state of Alaska shows that each had a doctoral degree in biology, animal sciences, or statistics, and all had published extensively in their areas of expertise. In addition, at the time the experts were hired, each was employed principally in academia, not in areas related to damage assessment and restoration.

# Comments From the Department of the Interior



United States Department of the Interior



OFFICE OF THE SOLICITOR  
Washington, D.C. 20240

OCT - 8 1991

Mr. James Duffus III  
Director, Natural Resources Management Issues  
General Accounting Office  
Washington, D.C. 20548

Re: B-243083

Dear Mr. Duffus:

This is in response to your letter of September 17, 1991, concerning the draft report entitled National Resource Damage Assessment: Information on Study of Seabirds Killed by Exxon Valdez Oil Spill. We appreciate this opportunity to review and comment on the draft report, and offer the following:

Page 3, para. 2. The statement "before the study, experts had estimated ...a range of between 38,000 and 720,000 birds killed," is incorrect. The estimate generally believed was a range of 100,000 to 300,000 birds killed, as reported in Piatt *et al.*, "Immediate Impact of the 'Exxon Valdez' Oil Spill on Marine Birds," *The Auk*, Vol. 107, No.2, April 1990.

Page 12, para. 1. The statement "FWS recommended modification of the permit...since the [conservation] groups had indicated that killing more birds from this area could provoke a legal challenge," is incomplete. The Service recommended modification because of the potential legal challenge and because it concurred with the concern of the conservation groups that collection in oiled areas might cause a further impact to birds in these areas.

We share your sensitivity and concern that this report not compromise the pending criminal and civil litigation resulting from the Exxon Valdez Oil Spill. Accordingly, we urge you to continue to work closely with the Department of Justice to assure that this report does not unduly impact the pending litigation.

Sincerely,

Martin J. Spuberg  
Deputy Solicitor

# Comments From the Department of Commerce



UNITED STATES DEPARTMENT OF COMMERCE  
Chief Financial Officer  
Assistant Secretary for Administration  
Washington, D.C. 20230

9 OCT 1991

Mr. John M. Ols, Jr.  
Director, Housing and Community  
Development Issues  
Resources, Community and Economic  
Development Division  
U.S. General Accounting Office  
Washington, D.C. 20548

Dear Mr. Ols:

Thank you for your letter requesting comments on the draft report entitled, "Natural Resources Damage Assessment: Information on Study of Seabirds Killed by Exxon Valdez Oil Spill."

We have reviewed the enclosed comments of the Under Secretary for Oceans and Atmosphere and believe they are responsive to the matters discussed in the report.

Sincerely,

  
Preston Moore

Enclosure



UNITED STATES DEPARTMENT OF COMMERCE  
The Under Secretary for  
Oceans and Atmosphere  
Washington, D.C. 20230

SEP 26 1991

Mr. John M. Ols, Jr.  
Director, Housing and Community  
Development Issues  
Resources, Community, and Economic  
Development Division  
U. S. General Accounting Office  
Washington, D. C. 20548

Dear Mr. Ols:

Thank you for your letter requesting our review and comments on the draft General Accounting Office report entitled "Natural Resources Damage Assessment: Information on Study of Seabirds Killed by Exxon Valdez Oil Spill."

We believe the report portrays an accurate and fair description of the events pertaining to the planning of the seabird study.

Two changes are recommended in the letter to Senator Murkowski. On page 5, line 5, the Trustee Council was established to coordinate "trustee activities" not "governmental response." In footnote 3, same page, the words "in assessing damage and" should be eliminated since EPA did not participate in the damage assessment.

We appreciate the opportunity to comment on the draft report.

Sincerely,

A handwritten signature in cursive script that reads "John A. Knauss".

John A. Knauss

THE ADMINISTRATOR



# Comments From the Department of Justice



U.S. Department of Justice

Washington, D.C. 20530

OCT 31 1991

Mr. James Duffus III  
Director, Natural Resources  
Management Issues  
General Accounting Office  
Washington, D.C. 20548

Re: B-243083

Dear Mr. Duffus:

This is in response to your letter of September 17, 1991, concerning the draft report entitled Natural Resources Damage Assessment: Information on Study of Seabirds Killed by Exxon Valdez Oil Spill. We greatly appreciate the opportunity to comment on the draft report and we are pleased to observe that GAO has been sensitive so as not to jeopardize this important litigation. Our comments relate to two issues that arise several times in the report.

Throughout the report GAO observes that Justice requested the damage assessment in order to support the litigation. See Page 8, para. 3; page 18, last para.; page 19, first full para. These statements are at best misleading. The Department of Justice did not request this assessment or any other study. The recommendation to do the study was made by the principal investigators for the State of Alaska and the United States in consultation with the peer reviewers having expertise in seabirds. The peer reviewers and principal investigators were of the opinion that the recommended study was the best known way to get a more accurate count of the seabirds killed. The peer reviewers were further of the opinion that the study would be extremely helpful in support of the expert testimony they would be requested to present in the expected litigation against Exxon Corporation and Exxon Shipping, Inc. The Department of Justice supported that recommendation. The final decision to do the study was a consensus one of the Trustees based upon the advice of the principal investigators, the peer reviewers and the management team. Clearly the Justice Department supported the study because it would facilitate the litigation. The language of the Report should be modified to correctly reflect the consensus decision making process of the Trustees - a process followed in regard to authorization of all of the Natural Resources Damages Assessment (NRDA) studies.

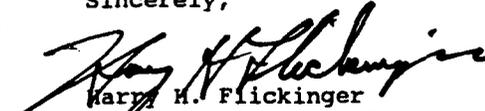
Mr. James Duffus, III

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At several locations in the report, GAO mentions previous studies done by Ecological Consultants, Inc. (ECI). See Page 12, para. 1; page 21, para. 1; page 26, para. 1. We have no objection to mentioning these studies, generally, but do object to mentioning the geographic locations. These studies have been done for cases still in litigation and disclosure at this time could be detrimental to the development of the cases. Removing the name of the exact locations of the studies does not meaningfully alter the central idea of the GAO report. We urge you to do so.

We are happy to report that both the civil and criminal actions with Exxon have been settled on terms we consider very favorable to the United States. However, litigation with other entities continues and we request that you continue to work closely with us to assure that there are no undue impacts on the pending litigation.

Sincerely,



Harry M. Flickinger  
Assistant Attorney General  
for Administration

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# Major Contributors to This Report

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