



HOMER SOCIETY OF NATURAL HISTORY
PRATT MUSEUM
3779 Bartlett Street
Homer, Alaska 99603
(907)235-8635



RPWG
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December 3, 1991

COPY

Dear "Darkened Waters" Supporter:

It is with great pleasure that we send you a group of invitations to the special viewing for "Darkened Waters: Profile of an Oil Spill" at the Smithsonian Institution's National Museum of Natural History. We would like for you to distribute these invitations within your organization in hopes that a representative of your organization can attend the special viewing. The Pratt's Curator of Education Martha Madsen will be representing us at the event. Even if you cannot join us at the Smithsonian on December 13, I hope that you will be able to visit the exhibition sometime during its stay in Washington, D. C.

Thank you again for your support in making "Darkened Waters" a reality.

Sincerely,

Betsy Pitzman
Museum Director

Enclosure: "Darkened Waters" invitations



Darkened Waters

PROFILE OF AN OIL SPILL



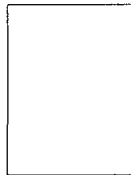
A TRAVELING EXHIBIT BY PRATT MUSEUM, HOMER, ALASKA

Pratt Museum

3779 BARTLETT

HOMER, ALASKA, 99603

(907) 235-8635



*The Director of the National Museum of Natural History
and the*

Director of the Pratt Museum, Homer, Alaska

*invite you to a special viewing of
the traveling exhibition*

Darkened Waters: Profile of an Oil Spill

Friday, December 13, 1991

3:00 p.m. until 5:00 p.m.

First Floor

National Museum of Natural History

Smithsonian Institution

*Constitution Avenue at Tenth Street, N.W.
Washington, D.C.*

EXHIBITION DATES: DECEMBER 13, 1991-APRIL 19, 1992

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US ENVIRONMENTAL PROTECTION AGENCY
TELECOMMUNICATIONS CENTER
WASHINGTON, DC 20460

FACSIMILE REQUEST AND COVER SHEET

PLEASE PRINT IN BLACK INK ONLY

TO

Brian Ross

Here is the information about photos for the museum exhibit.

OFFICE/PHONE for 907 271 2467

RPW6

I will send them a note about your pictures for subject # 32. Feel free to recommend

REGION/LAB

other photographers or send any other photos you think they can use. Thanks a lot!

FROM

Janet ARTFO

PHONE

202 245 4371

MAIL CODE

OFFICE

DATE

NUMBER OF PAGES TO INCLUDE THIS COVER SHEET

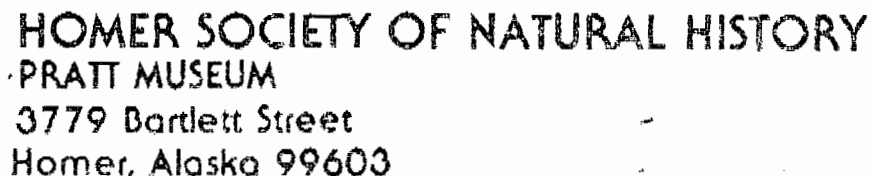
Please number all pages

INFORMATION FOR SENDING FACSIMILE MESSAGES TO EPA HEADQUARTERS

EQUIPMENT	FACSIMILE NUMBER NUMBER	VERIFICATION NUMBER
RAPICOM	(202) 382-7883 (auto)	(202) 382-2078
PANAFAX	(202) 382-7884 (auto)	(202) 382-2078
PANAFAX	(202) 382-7886 (auto)	(202) 382-2078
MANUAL	(202) 382-2078	

The EPA Communications Center has the capability for sending and receiving facsimile messages to CCITT Group I, II, and III Equipment.

EPA Form 5040-5 (Rev. 12-83) Replaces EPA Form 5040-5A and the previous edition of EPA Form 5040-5, which are obsolete.



Accredited by the
American Association
of Museums

"Darkened Waters: profile of an oil spill" Traveling Exhibit Photograph Request List

Photograph Subject	Descriptive Notes
1. Exxon Valdez on Bligh Reef	This is for the entry panel. A 12 foot horizontal format photomural.
2. Northern Interior Alaska	This is another large format shot showing pipeline in a grand, beautiful landscape. 4 smaller shots will be inset over this.
3. Prudhoe Bay oil field.	
4. Alyeska tanker terminal at Valdez.	
5. Beautiful Prince William Sound.	This shot is a large horizontal format photomural showing the pre-spill beauty of the Sound. Several smaller shots of PWS wildlife will be collaged on the mural, (see #6-11 below)
6. Barren Islands scenic-pre-spill.	
7. Common Murres-pre-spill in Kenai Fjords National Park	
8. Sea Lions-pre-spill in PWS, Kodiak or Maritime Refuge area.	
9. Bears on a Katmai National Park beach-pre-spill scenic.	
10. Kayakers and whales in PWS or Kenai Fjords National Park-pre-spill.	
11. Sea otters in Kachemak Bay-scenic pre-spill.	
12. MAC or other community coordinating meeting during the spill response.	
13. Boom deployed and skimmer operation-probably an aerial.	
14. Dispersant application -clearly showing aerial application on water.	
15. Test burning the oil slicker another spill.	
16. Lightering the Exxon Valdez.	
17. Boomed off PWS fish hatcheries and the action of deployment.	
18. Type B choroline cleanup-2 shots needed showing the magnitude of this at full force...Omini-boom, high pressure washes, lots of people and boats.	
19. Heavily oiled intertidal area	
20. Oiled seal, sea lion or seabird still alive.	
21. Oiled harbor seal with pup.	
22. Oiled archaeological site, artifacts, crews in training or transect work (locating, protecting, retrieving artifacts).	
23. Floatel or group of cleanup vessels.	
24. Oiled otter capture action shot	
25. Seabird rehabilitation work action shot.	
26. Raptor rehabilitation shot	
27. Otter rehabilitation shot.	

(more)

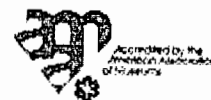
Photograph Request List continued

28. Alaskans and the land—This is for a large format shot. We want to show the close sense of place and relationship of Alaskans to the land and to the idea of Alaska.
29. Chaos in Valdez or another affected community during the early days of the spill.
30. Idled commercial fisherman—maybe a shot of a fisherman "fishing for oil" rather than fish, fishermen at the Exxon Claims Office, or boats in harbor—all at the dock/slip.
31. Scenic of Shuyak Island
32. Recovery/restoration work 1990.
33. 1990 Shoreline treatment, representative of typical work being done.
34. 1990 Commercial fishing
35. 1990 Native subsistence gathering in affected area.
36. 1990 Tanker with escort tugs through PWS
37. 1989-90 oil spill legislation -Representative Mike Davis in legislative action or Congressman George Miller of California in action on oil spill legislation.
38. Continuing spills-1989/90 oil spills somewhere else like New York, Rhode Island, Galveston.
39. The Exxon Mediterranean



HOMER SOCIETY OF NATURAL HISTORY
PRATT MUSEUM
3779 Bartlett Street
Homer, Alaska 99603

(907)235-8635



August 30, 1990
Janet Pawlukiewicz
EPA OMEP WH556F
401 M Street, SW
Washington, D. C. 20460
Dear Janet:

As you may know, the Pratt Museum is creating a traveling exhibit, "Darkened Waters: profile of an oil spill." It is scheduled to open February 14, 1991 at the Smithsonian Institution's National Museum of Natural History. Following 3 months there, the exhibit will travel throughout the country for the next 3 years, being featured at approximately 12 institutions.

We are in the design development stage and will begin fabrication of the 1200 square foot exhibit in November. Based upon the original "Darkened Waters" exhibit, the traveling display contains many of the first exhibit's photographs. However we have expanded the scope beyond the rather hastily put together original still shown at the Pratt. I enclose a copy of the Interpretive Outline for the traveling exhibit.

In order to have the best possible images, (many of which will be large format prints), we need a number of new photographs. I attach a list of what we need and am asking your help by supplying us with the use of any images you can. Because of a tight budget, we cannot offer to pay you, but will credit you below any of your photographs. Our preference is to work from colored slides, although negatives will work too.

The exhibit is being fabricated by a professional exhibit design firm from Portland, Oregon and I assure you that we are using only high quality photo processors to make the best possible prints.

Time is of the essence so please fill out the enclosed card and return it to us immediately. Then if you have a selection of slides that might work in the exhibit, send them on to us to look at. We would like to select our images by September 24. Make sure all of the slides are labeled with your name and include an inventory of subjects and places in the photographs. We would prefer to receive page 2 "Darkened Waters" Photographs Request

*I will note
send you
about your
slides in
the card*

them in protective sleeves or boxes. In the case of negatives, if you do not have a contact sheet, we would like to make one. As soon as we are finished reviewing your slides, we will return any we cannot use. We would like to keep those we can use, up to two months, dependent on the response from other photographers we are soliciting slides from. If this is a problem, let's talk about it and we will accomodate your needs.

Please mail any slides to us registered mail, return receipt requested so that you know we received your slides. So that we can get copies made, fill out and return the enclosed photographic release form when you send any photographs, giving us your permission to use the image(s) for the specific purpose of the traveling exhibit.

One last request is for your recommendation of other photographers that we might contact. Please make suggestions on the enclosed postcard.

Finally I want to thank you in advance for your efforts in helping us. We are undertaking this large project at the request of over 30,000 visitors who have seen the museum's exhibit since it opened in June, 1989. As we go forth, the interest and willingness to help by so many individuals has shown us that this work is worthwhile and important. Please call me if you have questions about the exhibit and our photographic needs. If I am not available, my co-worker and Curator of the "Darkened Waters" exhibit, Mike O'Meara would be happy to help you.

We look forward to hearing from you soon.
Sincerely,



Martha Madsen
Curator of Education

Enclosures: Return Postcard, List of Photographs needed, Exhibit Interpretive Outline, Photograph Release Form

Hi Janet! (This is a canned letter... I know you know of the exhibit...) I highlighted a few photos your agency, in particular can maybe give us.

Thanks!

1. University of Alaska Natural Resource Damage Assessment and Restoration Feasibility Study support barge--stationed in Herring Bay--Summer 1990. Studies on restoration of intertidal communities, especially rockweed (Eucus sp.) and associated grazers and predators (snails and starfish) were carried out from this base.
2. Restoration feasibility study permanent site marker in the intertidal zone in Herring Bay--summer of 1990.
3. Restoration feasibility study cage (exclosure) used in the intertidal fauna study. Used to monitor the recolonization and ecological interaction of plants and animals in the intertidal zone. Similar exclosures were set at varying depths in the intertidal zone. Herring Bay--Summer 1990.
4. Mixture of remains and recolonization of rockweed ("bones") at heavily oiled and hot water washed cleanup site (1989) in Herring Bay--Summer 1990.
5. Recolonization of rockweed and barnacles on rocks that were steam cleaned in 1989--Knight Island--Summer 1990.
6. Rockweed growing on barnacle in steam cleaned area on Green Island--Summer 1990. Observed that rockweed recolonized more quickly on rough surfaces, such as rocks covered with barnacles or craggy rocks, than on smooth rocks.
7. Early signs of recovery and ecological succession--During the summer 1990 on formally heavily oiled and heavily cleaned beach on Green Island, there was a population explosion of opportunistic pioneer species, such as snails pictured here (Littorina sp). There was little competition for these animals in 1990, however, in the years ahead, more species will recolonize, providing competition and gradual rebuilding of full ecosystem (succession).
8. Salt marsh growth in Bay of Isles, Knight Island--Summer of 1990. Salt marshes constitute a small percentage of the coastline

in the oil spill area and are important ecological communities, providing protection and food(?) for many animals and preventing coastal erosion by slowing down flow of water. It is especially difficult to remove oil in saltmarshes without damaging the plants. This marsh remains heavily oiled and continued to die back during the Summer of 1990. It is a potential site for direct restoration, such as replanting or reseeding salt marsh plants.

9. Close up of salt marsh plants showing how different species were affected by the oil at different rates. The plant in the foreground, Triglochin sp, was originally thought to be hardier but over the summer it died back. Carex sp (in the background) and Puccinellia sp (not shown) grew back more fully over the summer of 1990. Restoration work carried out in these communities in the oil spill area will advance the state of the art in salt marsh restoration.

10. Sleepy Bay, Latouche Island, September 1990. Shows dramatic improvement of treated (bioremediated) area (right side of picture) over untreated area.

RWG

continued -- section 3, panel C.2 -- page 12

(Alan -- regarding the previous page -- in the reference notes I've included a sample shoreline profile and infiltration diagram from the AK Oil Spill Comm. report. If we do include this I will try to get other examples prior to fabrication. Also, it seemed logical to move the oil/sediment sample here from section 7.)

Chemicals Were Applied to Some Beaches in Hope of Breaking Down the Oil.

Photo -- solvent application

actually not one

COREXIT 9580-M2, a kerosene-based dispersant manufactured by Exxon was applied on a trial basis. COREXIT did help dissolve oil from the rocks, but large quantities of it were required to move small amounts of oil back into the water. Cleanup crews found the oil-chemical mixture difficult to contain in their floating booms. Permission for widespread application was never obtained.

*Alvin
Events
Seattle*

*Carl
Shaw
Hawthorne
Lafayette*

Photo -- bioremediation, before and after

sp? Custom Blend

The chemical fertilizers Inipol and Custom Blend were spread on many beaches. This was proposed by the U.S. Environmental Protection Agency and is known as "bioremediation". Fertilizer can enhance the growth of natural, oil consuming bacteria. It was hoped that this would speed the breakdown of the oil.

Studies said yes

By the summer of 1990, tests indicated that treatment helped reduce the amount of surface oil present. Exxon and the EPA were enthusiastic about the process. State scientists were cautiously optimistic. National Park Service personnel and independent biologists had strong reservations about its use. Environmental effects are unknown and the fate of oil "removed" has not been documented. ~~No studies have been designed to identify and monitor potential long-term impacts.~~

& subsurface

*have been
extensive
studies*

check fully

- refer to report 2

(Tom Baugh)

pictures

*Several studies have been
done to document effects
& findings are...*

(Becky -- we have discussed the need to highlight such terms as "bioremediation", "treated", and "environmentally stabilized". Should we make them bold, use italics, quotation marks, or ??)

continued -- section 3, panel C.2 -- page 13

*Several methods
subsurface of
Although were used, persisted.*

Concluding statement for treatment techniques:

None of the Shoreline Cleanup Methods Employed By Exxon Proved to Be Effective In Removing Buried Oil. Exxon officials originally stated their intention to clean all the oil from the shoreline. They soon found it necessary to accept a less ambitious standard. Except for very lightly oiled beaches, some oil always remained when crews moved on. The term clean was abandoned and such areas were referred to as "treated" or "environmentally stabilized."

Diagram -- natural cleanup

And Mother Nature Did Her Part

Many natural processes also helped to "clean up" oil. Even without artificial stimulation, bacteria continued to break down oil. Other animals absorbed and passed oil, changing and moving it in the process. Winter storms and tides washed shorelines, moving oil about and further dispersing it. Prolonged exposure to sea water, oxygen, and sunlight promoted chemical breakdown.

Nothing can make oil simply disappear. As it is dispersed, dissolved, and chemically broken down, the oil remains present in the environment. Natural cleanup processes can expose many organisms to dangerous pollutants. Long periods of time can be required to reduce concentrations to harmless levels. However, during the summer of 1990, scientific observation of the spill area indicated that untreated shorelines were recovering better than those that were "cleaned up".

SCAT - Joe Talbot or Andy Teal / Art Wiener AD&C
NOAA (263 1766) (to come)
(907)

Ledger idea introduction -- (see section 3 references at end of notes for statistics that might be used with this idea)

In the months following the spill, neglect of planning and preparation would prove costly. Exxon estimates that it spent \$2 billion on the cleanup in 1989. Even so, its profits increased over the previous year. In addition, costs were incurred by many public agencies and some individuals.

*action breaks into simpler organic compounds
bacterial breakdown does occur oil \rightarrow $CO_2 + H_2O$
fatty acids
oil carbons (fatty acids) move through food chain
pervasive on*

*incorporated in food chain as a natural product
sub. first as fatty acid
 \downarrow
excretion
 $CO_2 + H_2O$*

*royal
No clear
may have
p. 9-10 Sep*

*South Bay
SNUG Bank
Heavy oil
heavy cleaning
coming back
muddy*

*lightly oiled
vs
heavily oiled*

General
make
correlative

CONSEQUENCES OF CLEANUP

In Places the Cleanup Created Greater Environmental Damage Than the Oil.

The massive cleanup effort went forward in spite of biologists' warnings that the environmental costs might outweigh any potential benefits. The oil industry and the Bush administration were under enormous pressure from the state and the public to do something about the spill. Extensive beach cleanup efforts were largely cosmetic and extremely harmful to the environment.

Photo series -- normal beach community, oiled, cleanup action, 1 year after the spill (Dennis Lees said he can help get some of theses)

Hot water pressure washing effectively destroyed all life on beaches where it was employed. Organisms were cooked and blasted off rocks along with the oil. Fine sediments were sluiced away, changing the shore's natural profile and smothering the lower beach. Oil was moved from high intertidal areas into previously uncontaminated, lower intertidal and subtidal habitats.

Photo -- application of Inipol or COREXIT

Test applications of the dispersant COREXIT and extensive use of the bioremediation fertilizer Inipol added more toxic material to contaminated areas. Potential toxic effects to nearshore organisms have not been extensively studied and are not understood. The impact of increased bacterial and algal growth brought on by fertilization is not known and is not being monitored.

SEP EPA PR

Photo -- cleanup crew trash, Naked Island

Part of the 1990 cleanup involved cleaning up from the cleanup. The army of workers generated mountains of trash and human waste which had to be dealt with. The Alaska Department of Environmental Conservation identified 400 sites where trash from the first summer's cleanup effort was left behind. Where Exxon crews picked up, trash unrelated to the cleanup was collected as well.

gender
positive

Photo -- harbor seals and pups

The presence of large numbers of people can damage habitat and displace wildlife unaccustomed to humans or noise. Harbor seals come to certain beaches every year in mid-May to give birth to their pups. This activity is easily disrupted by the presence of humans. Cleanup activity was directed away from these areas because the remaining oil was judged to pose a lesser threat.

Photo -- archaeological site or artifact

Stone tools, rock carvings, and other artifacts as much as 2,000 years old are located in the spill area. In conjunction with state and federal authorities, Exxon developed the Cultural Resources Program to minimize disturbance to archaeological sites during the cleanup effort.

Twenty-six archaeologists participated in extensive field surveys resulting in many newly discovered cultural sites. Cleanup crews were trained to recognize and deal properly with artifacts. Work was monitored to prevent unauthorized removal or damage to objects. Shoreline treatment was prevented when it would have endangered important sites. Largely successful, the program was unable to prevent all damage or loss of artifacts.

Photo -- group of vessels or "floatel"

According to Exxon's estimates, more petroleum was burned during the cleanup than was spilled by the Exxon Valdez. It is impossible to say what environmental impacts resulted from burning 18 million gallons of fuel in the spill area. No attempt was made to monitor or evaluate this activity.

Section end questions

What, if any, is moral and ethical significance of the death of so many animals and the pollution or destruction of our remaining pristine environments?

Was the cleanup effort worthwhile or justified given its ineffectiveness and additional environmental impact?

Emphasis on prevention.

(Alan -- remember, if you don't think the Riki Ott profile works in section 2, it might be used somewhere in this section.)

-- END OF SECTION FOUR NOTES --