RPWG
F

Brian,

Refuge Plans are with Jill Parker
If you want those call her at
Fish + Wildlife @ 786-3377 ~~Get # from Stan~~

Sandy

FAX # 562-2297

RPW
F

US ENVIRONMENTAL PROTECTION AGENCY
TELECOMMUNICATIONS CENTER
WASHINGTON, DC 20460

EPA

FACSIMILE REQUEST AND COVER SHEET

PLEASE PRINT IN BLACK INK ONLY

CONFIDENTIAL

TO: Brian Ross

OFFICE/PHONE:

REGION/LAB: Alaska - Reg 10

FROM: Susan MacMullin

PHONE: | MAIL CODE:

OFFICE: OMEP

DATE: 8/27/90 | NUMBER OF PAGES TO INCLUDE THIS COVER SHEET: 11

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.

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Notes on the 8/8/90 Meeting with DOJ

Action: Second draft completed by 9/15 and modified as the results of the data synthesis become available. Third draft sometime in January.

- DOJ needs:
  - an assessment of what is feasible in restoration, and
  - arguments to support the assessments (e.g. what species are damaged

- Scoping of alternatives and evaluation of options according to the following criteria upon which restoration is based:
  1. Proof of injury
  2. Natural recovery is inadequate
  3. Restoration measures are technically feasible
  4. Environmental benefits of restoration
  5. Gross disproportion test
  6. Cost effectiveness

Notes:

- Include a section of "things that we couldn't think of any restoration efforts for"

- Timber rights: include Forest Service cost of leases (buy Backs); can we take timber rights by eminent domaine?

- Mineral rights: Contact DOI for their costs

- Maps of wetlands, timber rights, riparian, and mineral rights.
- Buffer zone acquisitions - which timber/mineral rights are close to sensitive areas.

- Argument to develop: the ecosystems are stressed or have been injured.
  - Evidence of stress
  - Damage assessment
    - nesting
    -bacteria (Coastal Colaition)

- In the uplands (Riparian) - AK is saying that they are seeing damages to salmon eggs. Timber rights may be a good way of valuing these.

- Wetlands: Where are they and what level of oiling?

- Do the Alaskan natives have claim to the Kenai Peninsula Park. The saw mill is part of the economic development.

- Return of artifacts - get costs from DOI

- Make the monitoring program a separate issue.

CONFIDENTIAL

DRAFT

Settlement Document

Restoration falls into three categories, direct restoration, replacement, and acquisition of equivalent resources. The ability to choose among the actions available in each category depends on the extent to which and the kinds of injuries sustained as a result of the Exxon Valdez Oil Spill on March 24, 1989. In the absence of a full analysis of injuries to the natural resources of these areas, this draft paper presents estimations of restoration costs based on analysis of three possible conditions:

Condition 1: Good natural recovery in the sound and little sustained damage.
Condition 2: Moderate natural recovery and moderate sustained damage.
Condition 3: Little natural recovery and large sustained damage.

BACKGROUND ON OTHER RESTORATION CLAIMS: Restoration claims for other disasters vary widely. In a CERCLA action, United States v. Shell, the claim was for $1.8 billion. In Colarado v. Idarado Mining Co., the claim was $149 million. In a CWA claim, United States v. Shell, a claim for $11.6 million was made. To date, we have been unable to determine the specific items that are the bases for these claims, except for Shell under the CWA.

On April 22-23, 1988, a storage tank owned by Shell, spilled at least 400,000 gallons of crude oil from a storage tank into the San Francisco Bay Delta Estuary and surrounding wetlands. The involved Federal, State, and local parties[1] negotiated an agreement with Shell shortly after the spill. A contingency evaluation study was used to reach the settlement cost. Significant assumptions were made (e.g. that the effects on fisheries were minor lasted for 4 years; that the area would recover naturally to prespill conditions in 10 years.) The settlement was used to fund the restoration of one heavily oiled wetland and acquisition of other wetlands outside of the spill area

METHOD FOR ESTIMATING RESTORATION COSTS: The Restoration Planning Workgroup developed six matrices of restoration options; mammals, fish and shellfish, birds, coastal habitats, recreational uses, and multiple resources and values. The following cost estimates are based on activities drawn from these six categories.

[1] FEDERAL: DOJ, EPA, DOI, Navy, CG, NOAA. STATE: Attorney General, Regional Water Quality Control Board, Fish and Game, State Lands, Parks and Recreation, Bay Conservation and Development Commission. LOCAL: Solano County DA, City of Benicia, City of Martinez, Contra Costa County DA, East Bay Regional Park District

Basis of Costs:

- 14 species of mammals, 13 species of birds, and approximately 40 species of fish and shellfish which may have sustained injury in the oil spill.
- The estimation for breeding program/relocation is based on FTEs over seven years. (Please see attached analysis.)
- Education is based on costs of pamphlets ($50 K), local TV and radio spots($5k - 10K), signs($500 each), museum exhibits (up to $1 million) and school curriculum ($50 k). Enforcement is considered to be minimal.
  Costs were estimated on EPA experiences.
- Acquisition of timber rights:
  - Based on analysis by the Coastal Coalition which calculates the value of timber rights as $30 - 40,000/acre
- Mineral rights
  - Based on assumption that mineral rights will be approximately = to the value of timber rights
- Wetlands restoration based on New Jersey figure of $300,000/acre.

MAMMALS

Assumed Level of Injury

Condition 1: Individuals of the species were killed but the populations remain intact.

Condition 2: For approximately a third of the species, the populations, not just individuals of the species, were injured.

Condition 3: For many of the species the populations were damaged.

Restoration Approaches

Condition 1: No restoration.

Condition 2: Replacement of individuals of each stressed population when possible. This would require a breeding program or relocation of individuals from other populations. In addition, efforts to reduce stress on these populations would be necessary. This may mean efforts as diverse as controlling boating traffic to limit contact with marine mammals to acquiring timber and mineral rights.

Condition 3: The restoration approach under condition 3 is the same as under condition 2, but with a more intensive level of effort.

Estimated Costs

Condition 1: None

Condition 2:

Breeding program/relocation for 5 species	$ 3,000,000
Education/enforcement to limit contact with injured species	800,000
Acquisition of timber rights (00,000 acres)	200,000,000
Acquisition of mineral rights	200,000,000
SUBTOTAL:	$ 403,800,000

Condition 3:

Breeding program	$ 7,000,000
Education/enforcement to limit contact with injured species	2,000,000
Acquisition of timber rights	500,000,000
Acquisition of mineral rights	500,000,000
SUBTOTAL	$1,009,000,000

BIRDS

Assumed Level of Injury

Condition 1: Individuals of the species were killed but the populations remain intact.

Condition 2: For approximately a third of the species, the populations, not just individuals of the species, were injured.

Condition 3: For many of the species the populations were damaged.

Restoration Approaches

Condition 1: No restoration.

Condition 2: Replacement of individuals of each stressed population when possible. This would require a breeding program or relocation from other populations. In addition, efforts to reduce stress on these populations would be necessary. This would mean efforts as limiting access to breeding areas and acquiring timber and mineral rights.

Condition 3: The restoration approach under condition 3 is the same as under condition 2, but with a more intensive level of effort.

Estimated Costs

Condition 1: None

Condition 2:		
Breeding program/relocation for 10 species	$	3,000,000
Education/enforcement to limit contact with injured species		800,000
Acquisition of timber rights[2]		
Acquisition of mineral rights[3]		
SUBTOTAL:	$	3,800,000
Condition 3:		
Breeding program/relocation for 30 species	$	6,000,000
Education/enforcement to limit contact with injured species		800,000
Acquisition of timber rights[4]		
Acquisition of mineral rights[5]		
SUBTOTAL:	$	6,800,000

[2] Costs calculated under "Mammals."

[3] Costs calculated under "Mammals."

[4] Costs calculated under "Mammals."

[5] Costs calculated under "Mammals."

FISH AND SHELLFISH

Assumed Level of Injury

Condition 1: Individuals of the species were killed but the populations remain intact.
Condition 2: For approximately a third of the species, the populations, not just individuals of the species, were injured.
Condition 3: For many of the species the populations were damaged.

Restoration Approaches

Condition 1: No restoration.

Condition 2: Replacement of individuals of each stressed population when possible. This would require establishment of new hatcheries or introduction of populations from outside of PWS. In addition, efforts to reduce stress on these populations would be necessary. This would mean efforts as diverse as imposing restrictions of commercial and sports fishing and acquiring timber and mineral rights.

Condition 3: The restoration approach under condition 3 is the same as under condition 2, but with a more intensive level of effort.

Estimated Costs

Condition 1: None

Condition 2:

Breeding program/relocation/hatcheries	$	15,000,000
Enforcement to limit commercial/sports fishing of injured species		3,000,000
Acquisition of timber rights[6]		
Acquisition of mineral rights[7]		
SUBTOTAL	$	18,000,000

Condition 3:

Breeding program/relocation	$	39,600,000
Education/enforcement to limit contact with injured species		4,000,000
Acquisition of timber rights[8]		
Acquisition of mineral rights[9]		
SUBTOTAL	$	43,600,000

HABITATS

[6] Costs calculated under "Mammals."

[7] Costs calculated under "Mammals."

[8] Costs calculated under "Mammals."

[9] Costs calculated under "Mammals."

Assumed Level of Injury

Condition 1: The damaged ecosystems are recovering on their own at a pace not likely to be enhanced by human intervention.

Condition 2: Some ecosystems would recover more quickly with restoration assistance.

Condition 3: Many of the ecosystems will require restoration efforts.

Restoration Approaches

Condition 1: No restoration.

Condition 2: Concentrate efforts on restoring and acquiring wetlands and marshes.

Condition 3: In addition to wetlands and marshes also apply restoration techniques to upland, intertidal and subtidal areas.

Estimated Costs

Condition 1: None

Condition 2:

Wetlands: excavation/replanting	
(150 acres $300,000/acre	$ 450,000,000
SUBTOTAL	$ 450,000,000

Condition 3:

Wetlands: excavation/replanting	
(200 acres $300,000/acre)	$ 600,000,000
Uplands: acquisition	100,000,000
Intertidal: reestablish food chain	200,000,000
Subtidal: establish marine parks	100,000,000
SUBTOTAL	

$1,000,000,000

CULTURAL RESOURCES

Assumed Level of Injury

Condition 1: The injury is mostly "intangible" (e.g., erosion of public trust in government) and cannot be recovered.

Condition 2: Some archeological sites and burial grounds were injured by the oil itself and by the cleanup efforts.

Condition 3: Many archeological sites and burial grounds were injured by the oil itself and by the cleanup efforts.

Restoration Approaches

Condition 1: No restoration.

Condition 2: Protect cultural sites from further degradation by controlling erosion. Return artifacts removed by archaeologists and cleanup workers after EVOS.

Condition 3: Same as condition 2, but with more intensive efforts.

Estimated Costs

Condition 1: None

Condition 2:

Erosion control	$	100,000
Program to return artifacts		100,000
SUBTOTAL	$	200,000

Condition 3:

Erosion control	$	500,000
Program to return artifacts		200,000
SUBTOTAL:		700,000

RECREATIONAL RESOURCES

Assumed Level of Injury

Condition 1: The injury is mostly "intangible" and cannot be recovered.

Condition 2: Sports fishing and general tourism is adversely affected.

Condition 3: The whole range of recreational uses - camping, hiking, boating, sport fishing - have been adversely affected.

Restoration Approaches

Condition 1: No restoration.

Condition 2: Outreach effort to bring tourism and sport fishing back to the Sound.

Condition 3: Outreach effort and establish new parks, refuges, and other protected areas.

Estimated Costs

Condition 1: None

Condition 2:

Outreach	$ 500,000
SUBTOTAL	$ 500,000

Condition 3:

Outreach	$ 500,000
Establish new recreational areas	2,000,000
SUBTOTAL	$ 2,500,000

MONITORING PROGRAM

Approach and Cost

Condition 1: Monitor indicator species for 10 years . . . . . $30-50 million

Condition 2: Monitor indicator species for 10 years, in year seven monitor recover of salmon . . . . . $50-70 million

Condition 3: Full scale monitoring comparable to the damage assessment . . . . . $350 million

SUMMARY OF ESTIMATED COSTS

Condition 1 $ 50,000,000

Condition 2 $ 947,300,000

Condition 3 $2,412,600,000

RPWG
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437 E Street, Suite 301
Anchorage, Alaska 99501
(907) 271-2461
FAX: (907) 271-2467

Oil Spill Restoration Planning Office

TO: MARTHA ("007") FOX

OFFICE/PHONE: ORC

FROM: BRIAN D. ROSS, U.S. EPA
Restoration Planning Team Leader

DATE: 9-11-90

PAGES (incl. cover): 12

MESSAGES: SUSAN MACMULLIN'S NOTES + REPORT - TO DOT.

ENJOY!

(SAY HI TO ANN PREZYNA!)

US ENVIRONMENTAL PROTECTION AGENCY
TELECOMMUNICATIONS CENTER
WASHINGTON, DC 20460

EPA

FACSIMILE REQUEST AND COVER SHEET

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Brian Ross

OFFICE/PHONE

REGION/LAB
Alaska - Reg 10

FROM
Susan MacMullin

PHONE | MAIL CODE

OFFICE
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Basis of Costs:

- 14 species of mammals, 13 species of birds, and approximately 40 species of fish and shellfish which may have sustained injury in the oil spill.
- The estimation for breeding program/relocation is based on FTEs over seven years. (Please see attached analysis.)
- Education is based on costs of pamphlets ($50 K), local TV and radio spots($5k - 10K), signs($500 each), museum exhibits (up to $1 million) and school curriculum ($50 k). Enforcement is considered to be minimal.
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  - Based on analysis by the Coastal Coalition which calculates the value of timber rights as $30 - 40,000/acre
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  - Based on assumption that mineral rights will be approximately = to the value of timber rights
- Wetlands restoration based on New Jersey figure of $300,000/acre.

MAMMALS

Assumed Level of Injury

Condition 1: Individuals of the species were killed but the populations remain intact.

Condition 2: For approximately a third of the species, the populations, not just individuals of the species, were injured.

Condition 3: For many of the species the populations were damaged.

Restoration Approaches

Condition 1: No restoration.

Condition 2: Replacement of individuals of each stressed population when possible. This would require a breeding program or relocation of individuals from other populations. In addition, efforts to reduce stress on these populations would be necessary. This may mean efforts as diverse as controlling boating traffic to limit contact with marine mammals to acquiring timber and mineral rights.

Condition 3: The restoration approach under condition 3 is the same as under condition 2, but with a more intensive level of effort.

Estimated Costs

Condition 1: None

Condition 2:

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Education/enforcement to limit contact with injured species	800,000
Acquisition of timber rights (00,000 acres)	200,000,000
Acquisition of mineral rights	200,000,000
SUBTOTAL:	**$ 403,800,000**

Condition 3:

Breeding program	$ 7,000,000
Education/enforcement to limit contact with injured species	2,000,000
Acquisition of timber rights	500,000,000
Acquisition of mineral rights	500,000,000
SUBTOTAL	$1,009,000,000

BIRDS

Assumed Level of Injury

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Condition 3: The restoration approach under condition 3 is the same as under condition 2, but with a more intensive level of effort.

Estimated Costs

Condition 1: None

Condition 2:		
Breeding program/relocation for 10 species	$	3,000,000
Education/enforcement to limit contact with injured species		800,000
Acquisition of timber rights[2]		
Acquisition of mineral rights[3]		
SUBTOTAL:	$	3,800,000
Condition 3:		
Breeding program/relocation for 30 species	$	6,000,000
Education/enforcement to limit contact with injured species		800,000
Acquisition of timber rights[4]		
Acquisition of mineral rights[5]		
SUBTOTAL:	$	6,800,000

[2] Costs calculated under "Mammals."

[3] Costs calculated under "Mammals."

[4] Costs calculated under "Mammals."

[5] Costs calculated under "Mammals."

FISH AND SHELLFISH

Assumed Level of Injury

Condition 1: Individuals of the species were killed but the populations remain intact.
Condition 2: For approximately a third of the species, the populations, not just individuals of the species, were injured.
Condition 3. For many of the species the populations were damaged.

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Condition 3: The restoration approach under condition 3 is the same as under condition 2, but with a more intensive level of effort.

Estimated Costs

Condition 1: None

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Breeding program/relocation/hatcheries	$ 15,000,000
Enforcement to limit commercial/sports fishing of injured species	3,000,000
Acquisition of timber rights[6]	
Acquisition of mineral rights[7]	
SUBTOTAL	$ 18,000,000

Condition 3:

Breeding program/relocation	$ 39,600,000
Education/enforcement to limit contact with injured species	4,000,000
Acquisition of timber rights[8]	
Acquisition of mineral rights[9]	
SUBTOTAL	$ 43,600,000

HABITATS

[6] Costs calculated under "Mammals."

[7] Costs calculated under "Mammals."

[8] Costs calculated under "Mammals."

[9] Costs calculated under "Mammals."

Assumed Level of Injury

Condition 1: The damaged ecosystems are recovering on their own at a pace not likely to be enhanced by human intervention.

Condition 2: Some ecosystems would recover more quickly with restoration assistance.

Condition 3. Many of the ecosystems will require restoration efforts.

Restoration Approaches

Condition 1: No restoration.

Condition 2: Concentrate efforts on restoring and acquiring wetlands and marshes.

Condition 3: In addition to wetlands and marshes also apply restoration techniques to upland, intertidal and subtidal areas.

Estimated Costs

Condition 1: None

Condition 2:

Wetlands: excavation/replanting	
(150 acres $300,000/acre	$ 450,000,000
SUBTOTAL	$ 450,000,000

Condition 3:

Wetlands: excavation/replanting	
(200 acres $300,000/acre)	$ 600,000,000
Uplands: acquisition	100,000,000
Intertidal: reestablish food chain	200,000,000
Subtidal: establish marine parks	100,000,000
SUBTOTAL	

$1,000,000,000

CULTURAL RESOURCES

Assumed Level of Injury

Condition 1: The injury is mostly "intangible" (e.g., erosion of public trust in government) and cannot be recovered.

Condition 2: Some archeological sites and burial grounds were injured by the oil itself and by the cleanup efforts.

Condition 3: Many archeological sites and burial grounds were injured by the oil itself and by the cleanup efforts.

Restoration Approaches

Condition 1: No restoration.

Condition 2: Protect cultural sites from further degradation by controlling erosion. Return artifacts removed by archaeologists and cleanup workers after EVOS.

Condition 3: Same as condition 2, but with more intensive efforts.

Estimated Costs

Condition 1: None

Condition 2:

Erosion control	$	100,000
Program to return artifacts		100,000
SUBTOTAL	**$**	**200,000**

Condition 3:

Erosion control	$	500,000
Program to return artifacts		200,000
SUBTOTAL:		**700,000**

RECREATIONAL RESOURCES

Assumed Level of Injury

Condition 1: The injury is mostly "intangible" and cannot be recovered.

Condition 2: Sports fishing and general tourism is adversely affected.

Condition 3: The whole range of recreational uses - camping, hiking, boating, sport fishing - have been adversely affected.

Restoration Approaches

Condition 1: No restoration.

Condition 2: Outreach effort to bring tourism and sport fishing back to the Sound.

Condition 3: Outreach effort and establish new parks, refuges, and other protected areas.

Estimated Costs

Condition 1: None

Condition 2:

Outreach	$	500,000
SUBTOTAL	$	500,000

Condition 3:

Outreach	$	500,000
Establish new recreational areas		2,000,000
SUBTOTAL	$	2,500,000

MONITORING PROGRAM

Approach and Cost

Condition 1: Monitor indicator species for 10 years . . . . . $30-50 million

Condition 2: Monitor indicator species for 10 years, in year seven monitor recover of salmon . . . . . $50-70 million

Condition 3: Full scale monitoring comparable to the damage assessment . . . . . $350 million

SUMMARY OF ESTIMATED COSTS

Condition 1 $ 50,000,000

Condition 2 $ 947,300,000

Condition 3 $2,412,600,000