

RESTORATION PLANNING WORK GROUP MEETING

9/10/91

Attendees:

- S. Senner
- K. Rice
- K. Klinge
- J. Strand
- A. Weiner
- M. Brodersen
- B. Iseah

Bart Freedman attended via teleconference.

Task: Review options presented in matrix and focus on options that could be rejected and the reason.

The following restoration options were rejected:

SEA OTTER

- B
- C
- J

COMMON MURRE

- B

HARLEQUIN DUCK

- B
- D

Option review segment of meeting adjourned. Senner, Rice, Brodersen, Weiner and Strand remained to discussion prospective employment of Jennifer Hayes.

RESTORATION PLANNING WORK GROUP MEETING

9/11/91

Attendees:

- S. Senner
- K. Rice
- K. Klinge
- J. Strand
- A. Weiner
- M. Brodersen
- B. Iseah

Task: Continue reviewing options presented in matrix and focus on options that could be rejected and the reason.

The following restoration options were rejected:

HARBOR SEAL

- B
- C
- J

MARbled MURRELET

- B
- E
- F
- N

PINK SALMON

- F
- N

Option review segment of meeting completed. Senner, Rice, Brodersen, Weiner, Klinge and Strand remained for further discussion. Meeting scheduled for 9/12/91 with Senner, Klinge, Rice and Iseah to review option decisions made on 9/10 and 9/11.

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DESCRIPTION OF THE RESTORATION OPTIONS STATUS SUMMARY TABLES

**RESTORATION OPTIONS** and **MATRIX LETTER** correspond to the matrices published in the "Blue Book" (1990). Additional options that were not included in the Blue Book were assigned a letter with the prefix "New".

**RESTORATION END POINTS** include the 'generic restoration options' that were circulated for peer review. Modification of these end points will occur as comments from principal investigators are incorporated.

The **STATUS** column describes the current (corresponding to the date at the beginning of each table) status of the options in the review process.

- "Carried Forward" - describes the need for further review, these options will either be accepted or rejected.
- "Rejected" - means that the option was considered but failed to meet one or more of the evaluation criteria.
- "N/A" - means that the option is not applicable for the species under consideration.
- "Evaluate under..." - the option was more appropriately reviewed under a different heading such as Multiple Resources or Coastal Habitats.

The **DOCUMENT NUMBER** contains codes which corresponds to other documents related to the decision process. The codes consist of the prefixes "ref" or "mem" to indicate whether the document is a reference sheet or a memo; a two letter code to describe the species, and an alphanumeric suffix to link the document to the restoration option or supplemental information. For example the code "refSO-K" refers to the reference document for Sea Otters under restoration option K. "memSO-K2" would reference the second memo obtained for the same restoration option. The following codes are being used for the species under consideration: SO = Sea Otters, HS = Harbor Seals, CM = Common Murres, HD = Harlequin Ducks, MM = Marbled Murrelets, DV = Dolly Varden/cutthroat trout, PS = Pink Salmon.

The **ACTION PENDING** column lists information needed to complete the review process for the restoration options. Most of these will document the need to request memos from experts to comment on the validity of decisions made by RPWG.

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SPECIES RESTORATION OPTIONS STATUS SUMMARY - *SEA OTTERS*

10-11 Sept. 1991

SEA OTTERS

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
No action	A	Natural Recovery	Carried Forward	refSO-A	
Restrict/eliminate legal harvest of marine/terrestrial mammals	L	Reduce harvest or incidental take	Carried Forward	refSO-L	
Reduce human-use impacts/conflicts through management changes (e.g. fishing and trapping restrictions)	K	Reduce harvest or incidental take Minimize disturbance	Carried Forward	refSO-K	
Minimize harassment and illegal shooting of marine mammals through education and law enforcement	M	Minimize disturbance	Carried Forward	refSO-M	



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SPECIES RESTORATION OPTIONS STATUS SUMMARY - SEA OTTERS

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
Preserve foraging habitats (e.g. mussel beds and eelgrass)	D	Maintain prey base and/or reduce competition for prey  Protect/acquire marine/coastal habitat	Carried Forward	refSO-D	
Eliminate sources of contaminated prey	New P	Eliminate sources of contaminated prey	Carried Forward	refSO-P	
Acquire/Protect Coastal habitats such as haulout/rookery sites, whale "rubbing" beaches etc...	F	Protect/acquire marine/coastal habitats (e.g., pupping areas)	Carried Forward	refSO-F	
Establish new wildlife refuges, sanctuaries, and viewing areas	G	Protect/acquire marine/coastal habitats (e.g., pupping areas)	Carried Forward	refSO-G	
Acquire/protect habitats in uplands (e.g., old-growth forest), and along streambanks and coastal perimeters	E	Protect/acquire marine/coastal habitats (e.g., pupping areas)	Carried Forward	refSO-E	

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SPECIES RESTORATION OPTIONS STATUS SUMMARY - SEA OTTERS

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
Conduct long-term monitoring/research program on mammal populations and ecology	O	Monitor recovery, including from restoration actions	Carried Forward	refSO-O	
Supplement winter-season foods for stressed animals feeding in intertidal habitats (e.g. deer)	B		Rejected	refSO-B	
Translocations to augment populations within and outside of oil-spill area	C		Rejected	refSO-C	Req. memo J. Siniff
Reduce incidental loss of marine mammals by buying back limited-entry gillnet permits	J		Rejected	refSO-J	Copy NMFS memo J. Strand
Reduce marine debris and expand stranding/entanglement rescue operations	H		Evaluate under Multiple Resource	refSO-H	

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SPECIES RESTORATION OPTIONS STATUS SUMMARY - *SEA OTTERS*

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
Establish international wildlife rehabilitation/public education center	N		Evaluate under multiple resource	refSO-N	
Eliminate high-sea gillnet fisheries and the resulting incidental mortality to marine mammals	I		N/A	refSO-I	

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SPECIES RESTORATION OPTIONS STATUS SUMMARY - **HARBOR SEALS**

10-11 Sept. 1991

**HARBOR SEALS**

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
No Action	A	Natural Recovery	Carried Forward	refHS-A	
Restrict/eliminate legal harvest of marine/terrestrial mammals	L	Reduce harvest or incidental take	Carried Forward	refHS-L	
Reduce human-use impacts/conflicts through management changes (e.g. fishing and trapping restrictions)	K	Reduce harvest or incidental take  Maintain prey base and/or reduce competition for prey	Carried Forward	refHS-K	
Minimize harassment and illegal shooting of marine mammals through education and law enforcement	M	Minimize disturbance	Carried Forward	refHS-M	

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SPECIES RESTORATION OPTIONS STATUS SUMMARY - *HARBOR SEALS*

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
Preserve foraging habitats (e.g. mussel beds and eelgrass)	D	Maintain prey base and/or reduce competition for prey  Protect/acquire marine/coastal habitat	Carried Forward	refHS-D	
Acquire/Protect Coastal habitats such as haulout/rookery sites, whale "rubbing" beaches etc...	F	Protect/acquire marine/coastal habitats (e.g., pupping areas)	Carried Forward	refHS-F	
Establish new wildlife refuges, sanctuaries, and viewing areas	G	Protect/acquire marine/coastal habitats (e.g., pupping areas)	Carried Forward	refHS-G	
Acquire/protect habitats in uplands (e.g., old-growth forest), and along streamsides and coastal perimeters	E	Protect/acquire marine/coastal habitats (e.g. pupping areas)	Carried Forward	refHS-E	

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SPECIES RESTORATION OPTIONS STATUS SUMMARY - *HARBOR SEALS*

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
Conduct long-term monitoring/research program on mammal populations and ecology	O	Monitor recovery, including from restoration actions	Carried Forward	refHS-O	
Supplement winter-season foods for stressed animals feeding in intertidal habitats (e.g. deer)	B		Rejected	refHS-B	
Translocations to augment populations within and outside of oil-spill area	C		Rejected	refHS-C	Req. memo Kathy Frost
Reduce incidental loss of marine mammals by buying back limited-entry gillnet permits	J		Rejected	refHS-J	copy NMFS memo (John Strand)
Reduce marine debris and expand stranding/entanglement rescue operations	H		Evaluate under Multiple Resource	refHS-S	

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SPECIES RESTORATION OPTIONS STATUS SUMMARY - *HARBOR SEALS*

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
Establish international wildlife rehabilitation/public education center	N		Evaluate under Multiple Resource	refHS-N	
Eliminate high-sea gillnet fisheries and the resulting incidental mortality to marine mammals	I		N/A	refHS-I	
Eliminate sources of contaminated prey	New P		N/A	refHS-P	

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SPECIES RESTORATION OPTIONS STATUS SUMMARY - *COMMON MURRES*

10-11 Sept 1991

COMMON MURRES

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
No Action	A	Natural Recovery	Carried Forward	refCM-A	
Provide artificial nest sites/substrates to enhance productivity or redirect nest activities to alternative sites	E	Enhance productivity through manipulations/social facilitation at breeding colonies where murres still nest or attempt to nest	Carried Forward	refCM-E	
Enhance productivity through social facilitation at breeding colonies	New Q	Enhance productivity through manipulations/social facilitation at breeding colonies where murres still nest or attempt to nest	Carried Forward	refCM-Q	
Acquire nesting habitats and colony sites	F	Protect/acquire marine/coastal habitats (e.g. breeding colonies)	Carried Forward	refCM-F	



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SPECIES RESTORATION OPTIONS STATUS SUMMARY - COMMON MURRES

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
Re-establish abandoned colonies and establish new colonies	New R	Re-establish abandoned colonies and establish new colonies	Carried Forward	refCM-R	
Eliminate high-seas gillnet fisheries and the resulting mortality to birds	L	Minimize the incidental take of sea-birds by commercial fisheries	Carried Forward	refCM-L	Req. memo Kent Wohl
Minimize disturbance form tourists, fishermen, researchers, and others through public education and law enforcement	O	Minimize disturbance	Carried Forward	refCM-O	
Conduct long-term research/monitoring program on bird populations, ecology, and prey	P	Monitor recovery, including from restoration actions	Carried Forward	refCM-P	

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SPECIES RESTORATION OPTIONS STATUS SUMMARY - COMMON MURRES

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
Eliminate predators (e.g. Foxes) from islands that are or were important for ground-nesting birds	J	Reduce predation -eliminate alien predators -reduce/discourage avian predators at colonies	Carried Forward	refCM-J	
Augment natural reproduction through captive breeding (as source of eggs or young), fostering and related techniques	B		Rejected	refCM-B	Req. memo Dan Roby (Captive breeding technique)
Stabilize eroded beach/ supratidal habitats used by nesting birds	C		N/A	refCM-C	
Mariculture of shellfish to supplement prey base	D		N/A	refCM-D	

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SPECIES RESTORATION OPTIONS STATUS SUMMARY - *COMMON MURRES*

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
Protect watershed areas necessary to maintain water quality and habitats that sustain the avian prey base	G		N/A	refCM-G	
Restrict logging on timbered slopes, streamsid es, and coastal perimeters that serve as nesting/resting habitats	H		N/A	refCM-H	
Restrict hunting and reduce illegal "taking" of eggs and adult birds	I		N/A	refCM-I	
Restrict near-shore gillnet fisheries to minimize conflicts with bird populations	K		N/A	refCM-K	

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SPECIES RESTORATION OPTIONS STATUS SUMMARY - COMMON MURRES

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
Acquire stopover/wintering habitats in the Pacific flyway	M		N/A	refCM-M	
Eliminate sources of contaminated prey	New S		N/A	refCM-S	
Protect wetland habitats important to migratory birds, nationally and internationally	N		N/A	refCM-N	

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SPECIES RESTORATION OPTIONS STATUS SUMMARY - *HARLEQUIN DUCKS*

10-11 Sept. 1991

HARLEQUIN DUCKS

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
No Action	A	Natural Recovery	Carried Forward	refHD-A	
Restrict Hunting and reduce illegal 'taking' of eggs and adult birds	I	Reduce harvest from sport and/or subsistence hunting	Carried Forward	refHD-I	
Provide artificial nest sites/substrates to enhance or redirect nest activities to alternative sites	E	Enhance productivity by providing artificial nest sites	Carried Forward	refHD-E	
Acquire nesting habitats and colony sites	F	Protect/acquire coastal/upland habitats (e.g., nesting and moulting areas)	Carried Forward	refHD-F	
Protect watershed areas necessary to maintain water quality and habitats that sustain the avian prey base	G	Protect/acquire coastal/upland habitats (e.g., nesting and moulting areas)	Carried Forward	refHD-G	

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SPECIES RESTORATION OPTIONS STATUS SUMMARY - *HARLEQUIN DUCKS*

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
Restrict logging on timbered slopes, streambanks, and coastal perimeters that serve as nesting/resting habitats	H	Protect/acquire coastal/upland habitats (e.g., nesting and moulting areas)	Carried Forward	refHD-H	
Eliminate sources of contaminated prey	New S	Eliminate sources of contaminated prey	Carried Forward	refHD-S	
Conduct long-term research/monitoring program on bird populations, ecology and prey	P	Monitor recovery, including from restoration actions	Carried Forward	refHD-P	
Minimize disturbance from tourists, fishermen, researchers, and others through public education and law enforcement	O	Minimize disturbance to moulting birds	Carried Forward	refHD-O	

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SPECIES RESTORATION OPTIONS STATUS SUMMARY - *HARLEQUIN DUCKS*

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
Augment natural reproduction through captive breeding (as a source of eggs or young), fostering and related techniques	B		Rejected	refHD-B	
Mariculture of shellfish to supplement prey base	D		Rejected	refHD-D	Coastal Habitat (?)
Acquire stopover/wintering habitats in the Pacific flyway	M		Carried Forward	refHD-M	
Protect wetland habitats important to migratory birds, nationally and internationally	N		Carried Forward	refHD-N	
Stabilize eroded beach/supratidal habitats used by nesting birds	C		N/A	refHD-C	

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SPECIES RESTORATION OPTIONS STATUS SUMMARY - HARLEQUIN DUCKS

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
Eliminate introduced predators (e.g., foxes) from islands that are or were important for ground-nesting birds	J		N/A	refHD-J	
Restrict near-shore gillnet fisheries to minimize conflicts with bird populations	K		N/A	refHD-K	
Eliminate high-seas gillnet fisheries and the resulting incidental mortality to birds	L		N/A	refHD-L	
Re-establish abandoned colonies and establish new colonies	New R		N/A	refHD-R	
Enhance productivity through manipulations/social facilitation at breeding colonies where murre still nest or attempt to nest	New Q		N/A	refHD-Q	



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SPECIES RESTORATION OPTIONS STATUS SUMMARY - **MARBLED MURRELETS**

10-11 Sept. 1991

**MARBLED MURRELETS**

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
No Action	A	Natural recovery	Carried Forward	refMM-A	
Acquire nesting habitats and colony sites	F	Protect/acquire upland habitats (e.g.nesting areas)	Carried Forward	refMM-F	
Protect watershed areas necessary to maintain water quality and habitats that sustain the avian prey base	G	Protect/acquire upland habitats (e.g.nesting areas)  Maintain prey base and/or reduce competition for prey	Carried Forward	refMM-G	
Restrict logging on timbered slopes, streamsid es, and coastal perimeters that serve as nesting/resting areas	H	Protect/acquire upland habitats (e.g.nesting areas)	Carried Forward	refMM-H	
Restrict near-shore gillnet fisheries to minimize conflicts with bird populations	K	Minimize the incidental take of sea-birds by commercial fisheries	Carried Forward	refMM-K	

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SPECIES RESTORATION OPTIONS STATUS SUMMARY - *MARBLED MURRELETS*

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
Conduct long-term research/monitoring program on bird populations, ecology and prey	P	Monitor recovery, including from restoration actions	Carried Forward	refMM-P	
Acquire stopover/wintering habitats in the Pacific flyway	M	Protect/acquire upland habitats (e.g.nesting areas)	Carried Forward OR N/A	refMM-M	Do they migrate from PWS?
Augment natural reproduction through captive breeding (as source of eggs or young), fostering and related techniques	B		Rejected	refMM-B	
Provide artificial nest sites/substrates to enhance productivity or redirect nest activities to alternative sites	E		Rejected	refMM-E	

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SPECIES RESTORATION OPTIONS STATUS SUMMARY - **MARbled MURRELETS**

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
Stabilize eroded beach/supratidal habitats used by nesting birds	C		N/A	refMM-C	
Mariculture of shellfish to supplement prey base	D		N/A	refMM-D	
Restrict hunting and reduce illegal "taking" of eggs and adult birds	I		N/A	refMM-I	
Eliminate high-seas gillnet fisheries and the resulting incidental mortality to birds	L		N/A	refMM-L	
Eliminate introduced predators (e.g., foxes) from islands that are or were important for ground-nesting birds	J		N/A	refMM-J	
Protect wetland habitats important to migratory birds, nationally, and internationally	N		N/A	refMM-N	

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SPECIES RESTORATION OPTIONS STATUS SUMMARY - **MARBLED MURRELETS**

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
Minimize disturbance from tourists, fishermen, researchers, and others through public education and law enforcement	O		N/A	refMM-O	
Enhance productivity through manipulations/social facilitations at breeding colonies where murrens still nest or attempt to nest	New Q		N/A	refMM-Q	
Re-establish abandoned colonies and establish new colonies	New R		N/A	refMM-R	
Eliminate sources of contaminated prey	New S		N/A	refMM-S	

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SPECIES RESTORATION OPTIONS STATUS SUMMARY - *DOLLY VARDEN/CUTTHROAT TROUT*

10-11 Sept 1991

*DOLLY VARDEN/CUTTHROAT TROUT*

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
No Action	A	Natural Recovery	Carried Forward	refDV-A	
Improve productivity in stream/lake habitats by construction of fishways, fertilization, and other means of enhancement	B	Enhance stream and/or lake habitats	Carried Forward	refDV-B	
Supplement spawning substrates	C	Enhance stream and/or lake habitats	Carried Forward	refDV-C	
Enhance wild stocks/populations rather than hatchery stocks (e.g., egg boxes)	G	Enhance or replace wild stocks through hatcheries and other techniques	Carried Forward	refDV-G	
Preserve wild gene pools and local populations through hatchery techniques	H	Enhance or replace wild stocks through hatcheries and other techniques	Carried Forward	refDV-H	

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SPECIES RESTORATION OPTIONS STATUS SUMMARY - *DOLLY VARDEN/CUTTHROAT TROUT*

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
Transplants to augment natural recoveries	J	Enhance or replace wild stocks through hatcheries and other techniques	Carried Forward	refDV-J	
Catalog and protect spawning habitats	K	Protect/acquire coastal/upland habitats	Carried Forward	refDV-K	
Protect upland habitats (e.g. timbered slopes) to maintain water quality in streams and nearshore habitats	L	Protect/acquire coastal/upland habitats  Maintain water quality	Carried Forward	refDV-L	
Map baseline management information and acquire development rights to fisheries habitats in and along rivers	M	Protect/acquire coastal/upland habitats  Acquire access to alternative streams	Carried Forward	refDV-M	
Close or restrict individual fisheries to speed natural recovery	R	Reduce sport harvest	Carried Forward	refDV-R	

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SPECIES RESTORATION OPTIONS STATUS SUMMARY - DOLLY VARDEN/CUTTHROAT TROUT

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
Identify and catalog individual stocks to enable more targeted management actions	S	Redirect sport harvest to alternative streams	Carried Forward	refDV-S	
Improve ecological and harvest data to enable better management decisions	T	Redirect sport harvest to alternative streams	Carried Forward	refDV-T	
Redirect sport harvest to alternative streams	New W	Redirect sport harvest to alternative streams	Carried Forward	refDV-W	
Conduct long-term research/monitoring programs on populations and ecology	V	Monitor recovery, including from restoration actions	Carried Forward	refDV-V	
Construct new hatcheries and/or expand existing hatcheries to provide additional fish for stocking programs	I		N/A	refDV-I	
Construct artificial habitat structures	D		N/A	refDV-D	



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SPECIES RESTORATION OPTIONS STATUS SUMMARY - *DOLLY VARDEN/CUTTHROAT TROUT*

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
Mariculture and shore/intertidal habitat enhancement	E		N/A	refDV-E	
Control predators on fish eggs and juveniles	F		N/A	refDV-F	
Buy back limited entry fishing permits to reduce pressure on resources	N		N/A	refDV-N	
Change management emphases/harvest practices (e.g., focus on "terminal" rather than mixed stock fisheries)	O		N/A	refDV-O	
Redirect fisheries efforts to alternative species to encourage recovery of affected species	P		N/A	refDV-P	

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SPECIES RESTORATION OPTIONS STATUS SUMMARY - *DOLLY VARDEN/CUTTHROAT TROUT*

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
Restrict high-seas interceptions to provide more control over fish mortality	Q		N/A	refDV-Q	
Establish new/alternative stocks	New X		N/A	refDV-X	
Increase public relations and quality assurance efforts to redevelop damaged markets	U		N/A	refDV-U	

SPECIES RESTORATION OPTIONS STATUS SUMMARY - *PINK SALMON*

10-11 Sept. 1991

**PINK SALMON**

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
No Action	A	Natural Recovery	Carried Forward	refPS-A	
Improve productivity in stream/lake habitats by construction of fishways, fertilization, and other means of enhancement	B	Enhance productivity through stream improvement and augmenting of populations (e.g., egg boxes, spawning channels)	Carried Forward	refPS-B	
Supplement spawning substrates	C	Enhance productivity through stream improvement and augmenting of populations (e.g., egg boxes, spawning channels)	Carried Forward	refPS-C	

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SPECIES RESTORATION OPTIONS STATUS SUMMARY - PINK SALMON

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
Enhance wild stocks/populations rather than hatchery stocks (e.g., egg boxes, etc..)	G	Enhance productivity through stream improvement and augmenting of populations (e.g., egg boxes, spawning channels)	Carried Forward	refPS-G	
Preserve wild gene pools and local populations through hatchery techniques	H	Enhance productivity through stream improvement and augmenting of populations (e.g., egg boxes, spawning channels)	Carried Forward	refPS-H	
Transplants to augment natural recoveries	J	Enhance productivity through stream improvement and augmenting of populations (e.g., egg boxes, spawning channels)	Carried Forward	refPS-J	

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SPECIES RESTORATION OPTIONS STATUS SUMMARY - PINK SALMON

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
Protect upland habitats (e.g., timbered slopes) to maintain water quality in streams and nearshore habitats	L	Maintain water quality  Protect/acquire upland/coastal habitats (e.g., anadromous streams)	Carried Forward	refPS-L	
Catalog and protect spawning habitats	K	Protect/acquire upland/coastal habitats (e.g., anadromous streams)	Carried Forward	refPS-K	
Map baseline management information and acquire development rights to fisheries habitats in and along rivers	M	Protect/acquire upland/coastal habitats (e.g., anadromous streams)	Carried Forward	refPS-M	
Construct new hatcheries and/or expand existing hatcheries to provide additional fish for stocking programs	I	Artificial propagation to provide additional fish	Carried Forward	refPS-I	

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SPECIES RESTORATION OPTIONS STATUS SUMMARY - PINK SALMON

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
Change management emphases/harvest practices (e.g., focus on "terminal" rather than mixed stock fisheries)	O	Refine management practices and adjust harvest levels to restore wild stocks and maintain genetic diversity	Carried Forward	refPS-O	
Close or restrict individual fisheries to speed natural recoveries	R	Refine management practices and adjust harvest levels to restore wild stocks and maintain genetic diversity	Carried Forward	refPS-R	
Identify and catalog individual stocks to enable more targeted management actions	S	Refine management practices and adjust harvest levels to restore wild stocks and maintain genetic diversity	Carried Forward	refPS-S	
Improve ecological and harvest data to enable better management decisions	T	Refine management practices and adjust harvest levels to restore wild stocks and maintain genetic diversity	Carried Forward	refPS-T	

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SPECIES RESTORATION OPTIONS STATUS SUMMARY - PINK SALMON

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
Conduct long-term research/monitoring program on populations and ecology	V	Monitor recovery, including from restoration actions	Carried Forward	refPS-V	
Establish new/alternative stocks	New X	Establish new/alternative stocks	Carried Forward	refPS-X	
Restrict high-seas interceptions to provide more control over fish mortality	Q	Refine management practices and adjust harvest levels to restore wild stocks and maintain genetic diversity	Carried Forward	refPS-Q	
Control predators on fish eggs and juveniles	F		Rejected	refPS-F	
Buy back limited entry fish permits to reduce pressure on resources	N		Rejected	refPS-N	
Construct artificial habitat structures	D		N/A	refPS-D	
Mariculture and shore/intertidal habitat enhancement	E		N/A	refPS-E	

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Attorney-Client Communication  
Attorney Work Product

SPECIES RESTORATION OPTIONS STATUS SUMMARY - PINK SALMON

RESTORATION OPTIONS	MATRIX LETTER	RESTORATION END POINT	STATUS	DOC. NUMBER	ACTION PENDING
Redirect fisheries efforts to alternative species to encourage recovery of affected species	P		N/A	refPS-P	
Increase public relations and quality assurance efforts to redevelop damaged markets	U		N/A	refPS-U	
Redirect sport harvest to alternative streams	New W		N/A	refPS-W	



Reference No.: SO-A  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species    Sea Otter

Option     A

Natural recovery - no action

Application of Criteria

- A.    The results of any actual or planned response actions
  
- B.    Technical feasibility
  
- C.    Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
- D.    Potential effects of the action on human health and safety
  
- E.    The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: SO-B  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

Evaluation of Restoration Options

Species Sea Otter

Option B

Supplement winter season foods for stressed animals feeding in intertidal habitats (e.g., deer)

Application of Criteria

A. The results of any actual or planned response actions

N/A

B. Technical feasibility

Questionable; methodology is largely untested and logistically very difficult, especially during the crucial winter season

C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts

D. Potential effects of the action on human health and safety

Dangerous for workers

E. The relationship of the expected costs of the proposed actions to the expected benefits

Too expensive to produce and distribute prey over sufficient area to be effective

F. Cost-effectiveness

Exorbitant per otter

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Food supplements could benefit non-target species

Recommendation

Reject

Comments

Goal is to restore habitat, not artificially supplement prey for one species

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: SO-C  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
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### Evaluation of Restoration Options

Species Sea Otter

Option C

Translocations to augment populations within and outside of oil spill area

#### Application of Criteria

A. The results of any actual or planned response actions

Oiled otters returned to PWS with a tremendously high mortality (after release) rate and at great risk of injury to other population

B. Technical feasibility

Results very disappointing in terms of survivor ratio being very low; issue is whether habitat can sustain otters; source population unlike California for potential colonization

C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts

Always great disease potential when you have translocation; potential impacts on source through loss of donor individuals to that population; also may reduce natural spreading

D. Potential effects of the action on human health and safety

E. The relationship of the expected costs of the proposed actions to the expected benefits

Needs further study

F. Cost-effectiveness

If mortality is high, cost-effectiveness is low; needs further study

H. Consistency with applicable federal and state laws and policies

May require permit through Marine Mammal Protection Act

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

Reject

Comments

Get memorandum from Don Siniff (expert comments)

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<sup>1</sup>Not from NRDA regulations as currently proposed.



- H. Consistency with applicable federal and state laws and policies
  
- I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible
  
- J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

Further consideration needed (still a live option)

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: SO-E  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

Evaluation of Restoration Options

Species Sea Otter

Option E (grouped with D,F & G)

Acquire/protect habitats in uplands (e.g., old-growth forest),  
and along streamsidess and coastal perimeter

Application of Criteria

- A. The results of any actual or planned response actions
  
- B. Technical feasibility
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
- D. Potential effects of the action on human health and safety
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits
  
- F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

Further consideration needed (still a live option)

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: SO-F  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species     Sea Otter

Option     F (grouped with D,E & G)

Acquire/protect Coastal habitats such as haulout/rookery sites,  
whale "rubbing" beaches, etc.

Application of Criteria

- A.    The results of any actual or planned response actions
  
- B.    Technical feasibility
  
- C.    Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
- D.    Potential effects of the action on human health and safety
  
- E.    The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further consideration needed (still a live option)

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: SO-G  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

### Evaluation of Restoration Options

Species Sea Otter

Option G (grouped with D, E & F)

Establish new wildlife refuges, sanctuaries, and viewing areas

### Application of Criteria

- A. The results of any actual or planned response actions
- B. Technical feasibility
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
- D. Potential effects of the action on human health and safety
- E. The relationship of the expected costs of the proposed actions to the expected benefits
- F. Cost-effectiveness

- H. Consistency with applicable federal and state laws and policies
  
- I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible
  
- J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further consideration needed (still a live option)

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: SO-H

Date: 9/10-11/91

Attorney/Client Communication

Attorney Work Product

Privileged/Confidential

### Evaluation of Restoration Options

Species Sea Otter

Option H

Reduce marine debris and expand stranding/entanglement rescue operations

### Application of Criteria

- A. The results of any actual or planned response actions
- B. Technical feasibility
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
- D. Potential effects of the action on human health and safety
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

considered under multiple resources

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: SO-I  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

Evaluation of Restoration Options

Species    Sea Otter

Option     I

Eliminate high-sea gillnet fisheries and the resulting incidental mortality to marine mammals

Application of Criteria

- A.    The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B.    Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C.    Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D.    Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E.    The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: SO-J  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

Evaluation of Restoration Options

Species Sea Otter

Option J

Reduce incidental loss of marine mammals by buying back limited-entry gillnet permits

Application of Criteria

- A. The results of any actual or planned response actions
- B. Technical feasibility
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
- D. Potential effects of the action on human health and safety
- E. The relationship of the expected costs of the proposed actions to the expected benefits

Enormous cost to buy permits or otherwise restrict the fishery and would produce little benefit to population; all indications are that incidental take is low

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

Reject

Comments

Attach NMFS memorandum from John Strand re: fishermen reported take in 1991 season

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: SO-K  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
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Evaluation of Restoration Options

Species Sea Otter

Option K (grouped with L & M)

Reduce human-use impacts/conflicts through management changes  
(e.g., fishing and trapping restrictions)

Application of Criteria

- A. The results of any actual or planned response actions
- B. Technical feasibility
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
- D. Potential effects of the action on human health and safety
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further study

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: SO-L  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species     Sea Otter

Option     L (grouped with K & M)

Restrict/eliminate legal harvest of marine/terrestrial mammals

Application of Criteria

- A.    The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B.    Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C.    Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D.    Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E.    The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further study

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: SO-M  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

Evaluation of Restoration Options

Species     Sea Otter

Option     M (grouped with K & L)

Minimize harassment and illegal shooting of marine mammals through education and law enforcement

Application of Criteria

- A.    The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
  
- B.    Technical feasibility
  
  
  
  
  
  
  
  
  
  
  
- C.    Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
  
- D.    Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
  
- E.    The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further study

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: SO-N  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species     Sea Otter

Option     N

Establish international wildlife rehabilitation/public education center

Application of Criteria

A.     The results of any actual or planned response actions

Results from release of rehabilitated otters were very disappointing

B.     Technical feasibility

C.     Potential for additional injury resulting from the proposed action, including long-term and indirect impacts

D.     Potential effects of the action on human health and safety

E.     The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

A public education center does not appear to contribute directly to the injuries from EVOS; however, for the reason stated below will be given further consideration

Comments

In some form a public education center could contribute to other restoration measures and to otters specifically (e.g., reduce disturbance) (consider under multiple resources)

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: SO-0

Date: 9/10-11/91

Attorney/Client Communication

Attorney Work Product

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Evaluation of Restoration Options

Species Sea Otter

Option 0

Conduct long-term monitoring/research program on mammal populations and ecology

Application of Criteria

- A. The results of any actual or planned response actions
- B. Technical feasibility
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
- D. Potential effects of the action on human health and safety
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further study

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: SO-P  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

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Species     Sea Otter

Option     P

Eliminate sources of contaminated prey

Application of Criteria

- A.    The results of any actual or planned response actions
  
  
  
  
  
  
  
- B.    Technical feasibility
  
  
  
  
  
  
  
- C.    Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
- D.    Potential effects of the action on human health and safety
  
  
  
  
  
  
  
- E.    The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: CM-A  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

Evaluation of Restoration Options

Species Common Murre

Option A

Natural recovery - no action

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

Defer for further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: CM-B  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

### Evaluation of Restoration Options

Species Common Murre

Option B

Augment natural reproduction through captive breeding (as a source of eggs or young), fostering and related techniques

### Application of Criteria

A. The results of any actual or planned response actions

N/A

B. Technical feasibility

Methodology for introduction into the wild highly unlikely to be feasible at scale necessary to influence population

C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts

D. Potential effects of the action on human health and safety

Climbing the cliffs is very dangerous

E. The relationship of the expected costs of the proposed actions to the expected benefits

Very costly with questionable benefits to population

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

Reject

Comments

Will invite memo from Dan Robey re: captive breeding/fostering techniques

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: CM-C  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

### Evaluation of Restoration Options

Species Common Murre

Option C

Stabilize eroded beach/supratidal habitats used by nesting birds

### Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: CM-D  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

### Evaluation of Restoration Options

Species Common Murre

Option D

Mariculture of shellfish to supplement prey base

### Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: CM-E  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

### Evaluation of Restoration Options

Species Common Murre

Option E

Provide artificial nest sites/substrates to enhance productivity or redirect nest activities to alternative sites

### Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
- B. Technical feasibility
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further evaluation

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: CM-F  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Common Murre

Option F

Acquire nesting habitats and colony sites

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: CM-G  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

Evaluation of Restoration Options

Species Common Murre

Option G

Protect watershed areas necessary to maintain water quality and habitats that sustain the avian prey base

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: CM-H  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

Evaluation of Restoration Options

Species Common Murre

Option H

Restrict logging on timbered slopes, streamsides, and coastal perimeters that serve as nesting/resting habitats

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: CM-I  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Common Murre

Option I

Restrict hunting and reduce illegal "taking" of eggs and adult birds

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: CM-J  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Common Murre

Option J

Eliminate introduced predators (e.g., foxes) from islands that are or were important for ground-nesting birds

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: CM-K  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Common Murre

Option K

Restrict near-shore gillnet fisheries to minimize conflicts with bird populations

Application of Criteria

- A. The results of any actual or planned response actions
  
- B. Technical feasibility
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
- D. Potential effects of the action on human health and safety
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: CM-L  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Common Murre

Option L

eliminate high-seas gillnet fisheries and the resulting incidental mortality to birds

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review (obtain memorandum from Kent Wohl at USFWS)

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: CM-M  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species     Common Murre

Option     M

Acquire stopover/wintering habitats in the Pacific flyway

Application of Criteria

- A.     The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B.     Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C.     Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D.     Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E.     The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: CM-N  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species      Common Murre

Option      N

Protect wetland habitats important to migratory birds, nationally and internationally

Application of Criteria

- A.      The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B.      Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C.      Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D.      Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E.      The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: CM-O  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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### Evaluation of Restoration Options

Species Common Murre

Option 0

Minimize disturbance from tourists, fishermen, researchers, and others through public education and law enforcement

#### Application of Criteria

- A. The results of any actual or planned response actions
  
- B. Technical feasibility
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
- D. Potential effects of the action on human health and safety
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: CM-P  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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### Evaluation of Restoration Options

Species    Common Murre

Option    P

Conduct long-term research/monitoring program on bird populations, ecology, and prey

#### Application of Criteria

- A.    The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B.    Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C.    Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D.    Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E.    The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.





F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: CM-R  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Common Murre

Option R (new)

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Re-establish abandoned colonies and establish new colonies

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: CM-S  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species     Common Murre

Option     S (new)

Eliminate contaminated prey

Application of Criteria

- A.    The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B.    Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C.    Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D.    Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E.    The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

02.1

DRAFT

Reference No.: HS-A

Date: 9/10-11/91

Attorney/Client Communication

Attorney Work Product

Privileged/Confidential

R.P.W.

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### Evaluation of Restoration Options

Species Harbor Seal

Option A

Natural recovery - no action

#### Application of Criteria

- A. The results of any actual or planned response actions
- B. Technical feasibility
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
- D. Potential effects of the action on human health and safety
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: HS-B  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Harbor Seal

Option B

Supplement winter-season foods for stressed animals feeding in intertidal habitats (e.g., deer)

Application of Criteria

A. The results of any actual or planned response actions

N/A

B. Technical feasibility

Questionable; methodology is largely untested and logistically very difficult, especially during the crucial winter season

C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts

D. Potential effects of the action on human health and safety

Dangerous for workers

E. The relationship of the expected costs of the proposed actions to the expected benefits

Too expensive to produce and distribute prey over sufficient area to be effective

F. Cost-effectiveness

Exorbitant per seal

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Food supplements could benefit non-target species

Recommendation

Reject

Comments

Goal is to restore habitat, not artificially supplement prey for one species

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: HS-C  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

### Evaluation of Restoration Options

Species Harbor Seal

Option C

Translocations to augment populations within and outside of oil-spill area

#### Application of Criteria

A. The results of any actual or planned response actions

Oiled seals returned to PWS with a tremendously high mortality (after release) rate and at great risk of injury to other population

B. Technical feasibility

Results very disappointing in terms of survivor ratio being very low; issue is whether habitat can sustain seals; source population unlike California for potential colonization

C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts

Always great disease potential when you have translocation; potential impacts on source through loss of donor individuals to that population; also may reduce natural spreading

D. Potential effects of the action on human health and safety

E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

If mortality is high, cost-effectiveness is low; needs further study

H. Consistency with applicable federal and state laws and policies

May require permit through Marine Mammal Protection Act

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

Reject

Comments

Get memorandum from Kathy Frost (expert comments)

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<sup>1</sup>Not from NRDA regulations as currently proposed.



F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: HS-F  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

Evaluation of Restoration Options

Species Harbor Seal

Option F (grouped with D,E & G)

Acquire/protect Coastal habitats such as haulout/rookery sites, whale "rubbing" beaches, etc.

Application of Criteria

A. The results of any actual or planned response actions

B. Technical feasibility

C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts

D. Potential effects of the action on human health and safety

E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: HS-G  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Harbor Seal

Option G (grouped with D, E & F)

Establish new wildlife refuges, sanctuaries, and viewing areas

Application of Criteria

- A. The results of any actual or planned response actions
  
- B. Technical feasibility
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
- D. Potential effects of the action on human health and safety
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: HS-H  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

Evaluation of Restoration Options

Species Harbor Seal

Option H

Reduce marine debris and expand stranding/entanglement rescue operations

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

multiple resources

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: HS-I  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Harbor Seal

Option I

Eliminate high-sea gillnet fisheries and the resulting incidental mortality to marine mammals

Application of Criteria

- A. The results of any actual or planned response actions
- B. Technical feasibility
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
- D. Potential effects of the action on human health and safety
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: HS-J  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Harbor Seal

Option J

Reduce incidental loss of marine mammals by buying back limited-entry gillnet permits

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

Enormous cost with little biological benefit. (see Strand memo)

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

Reject

Comments

See Strand NMFS memo

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: HS-K  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Harbor Seal

Option K (grouped with L & M)

Reduce human-use impacts/conflicts through management changes (e.g., through management changes (e.g., fishing and trapping restrictions)

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: HS-L  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Harbor Seal

Option L (grouped with K & M)

Restrict/eliminate legal harvest of marine/terrestrial mammals

Application of Criteria

- A. The results of any actual or planned response actions
  
- B. Technical feasibility
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
- D. Potential effects of the action on human health and safety
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: HS-M  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

Evaluation of Restoration Options

Species Harbor Seal

Option M (grouped with K & L)

Minimize harassment and illegal shooting of marine mammals through education and law enforcement

Application of Criteria

- A. The results of any actual or planned response actions
  
- B. Technical feasibility
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
- D. Potential effects of the action on human health and safety
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: HS-N  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

### Evaluation of Restoration Options

Species Harbor Seal

Option N

Establish international wildlife rehabilitation/public education center

#### Application of Criteria

A. The results of any actual or planned response actions

Results from release of rehabilitated seals were very disappointing

B. Technical feasibility

C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts

D. Potential effects of the action on human health and safety

E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

Does not appear to contribute directly to the injuries from EVOS; will not be considered further in this context

Comments

Some form of public education center could contribute to other restoration measures; (considered under multiple resources)

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: HS-0  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Harbor Seal

Option 0

Conduct long-term monitoring/research program on mammal populations and ecology

Application of Criteria

- A. The results of any actual or planned response actions
  
  
- B. Technical feasibility
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
- D. Potential effects of the action on human health and safety
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: HD-B  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Harlequin Duck

Option B

Augment natural reproduction through captive breeding (as a source of eggs or young), fostering and related techniques

Application of Criteria

A. The results of any actual or planned response actions

N/A

B. Technical feasibility

Well established for other species of waterfowl, but not for harlequins; if prey base is the problem, augmenting production doesn't help

C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts

D. Potential effects of the action on human health and safety

E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

Not viewed as an option if contamination and availability of food is the source of the problem; reject for present

Comments

May reopen subsequently

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: HD-C  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Harlequin Duck

Option C

Stabilize eroded beach/supratidal habitats used by nesting birds

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
- B. Technical feasibility
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: HD-D  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

Evaluation of Restoration Options

Species Harlequin Duck

Option D

Mariculture of shellfish to supplement prey base

Application of Criteria

A. The results of any actual or planned response actions

N/A

B. Technical feasibility

Can raise mussels artificially

C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts

Commercial mariculture ventures

D. Potential effects of the action on human health and safety

E. The relationship of the expected costs of the proposed actions to the expected benefits

Costs are high in relation to low benefits for Harlequin

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

Reject

Comments

Will deal with under Coastal Habitat

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: HD-E  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Harlequin Duck

Option E

Provide artificial nest sites/substrates to enhance productivity  
or redirect nest activities to alternative sites

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed  
action, including long-term and indirect impacts
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
- E. The relationship of the expected costs of the proposed  
actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: HD-F  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Harlequin Duck

Option F (grouped with G, H, & I)

Acquire nesting habitats and colony sites

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
- B. Technical feasibility
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: HD-G  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

### Evaluation of Restoration Options

Species Harlequin Duck

Option G (grouped with F, H, and I)

Protect watershed areas necessary to maintain water quality and habitats that sustain the avian prey base

### Application of Criteria

A. The results of any actual or planned response actions

B. Technical feasibility

C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts

D. Potential effects of the action on human health and safety

E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

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H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: HD-H  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Harlequin Duck

Option H (grouped with F,G, & I)

Restrict logging on timbered slopes, streamsides, and coastal perimeters that serve as nesting/resting habitats

Application of Criteria

- A. The results of any actual or planned response actions
  
- B. Technical feasibility
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
- D. Potential effects of the action on human health and safety
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: HD-I  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Harlequin Duck

Option I (grouped with F,G, & H)

Restrict hunting and reduce illegal "taking" of eggs and adult birds

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits
  
  
  
  
  
  
  
  
- F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: HD-J  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

### Evaluation of Restoration Options

Species Harlequin Duck

Option J

Eliminate introduced predators (e.g., foxes) from islands that are or were important for ground-nesting birds

#### Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: HD-K  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Harlequin Duck

Option K (grouped with L)

Restrict near-shore gillnet fisheries to minimize conflicts with bird populations

Application of Criteria

- A. The results of any actual or planned response actions
  
- B. Technical feasibility
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
- D. Potential effects of the action on human health and safety
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: HD-L  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Harlequin Duck

Option L (grouped with K)

Eliminate high-seas gillnet fisheries and the resulting incidental mortality to birds

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: HD-M  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

### Evaluation of Restoration Options

Species Harlequin Duck

Option M (grouped with N)

Acquire stopover/wintering habitat in the Pacific flyway

#### Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

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H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: HD-N  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Harlequin Duck

Option N (grouped with M)

Protect wetland habitats important to migratory birds, nationally and internationally

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: HD-0  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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### Evaluation of Restoration Options

Species Harlequin Duck

Option 0

Minimize disturbance from tourists, fishermen, researchers, and others through public education and law enforcement

#### Application of Criteria

- A. The results of any actual or planned response actions
  
- B. Technical feasibility
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
- D. Potential effects of the action on human health and safety
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

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H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review (in relation to molting)

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: HD-P  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

Evaluation of Restoration Options

Species Harlequin Duck

Option P

Conduct long-term research/monitoring program on bird populations, ecology, and prey

Application of Criteria

- A. The results of any actual or planned response actions
- B. Technical feasibility
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
- D. Potential effects of the action on human health and safety
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: HD-Q  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

Evaluation of Restoration Options

Species Harlequin Duck

Option Q (grouped with R) (new)

Enhance productivity through manipulation/social facilitation

Application of Criteria

- A. The results of any actual or planned response actions
- B. Technical feasibility
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
- D. Potential effects of the action on human health and safety
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: HD-R  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Harlequin Duck

Option R (grouped with Q) (new)

Re-establish abandoned colonies and establish new colonies

Application of Criteria

A. The results of any actual or planned response actions

B. Technical feasibility

C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts

D. Potential effects of the action on human health and safety

E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: PS-A  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

RPW  
I

### Evaluation of Restoration Options

Species Pink Salmon

Option A

Natural recovery - no action

### Application of Criteria

- A. The results of any actual or planned response actions
- B. Technical feasibility
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
- D. Potential effects of the action on human health and safety
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: PS-B  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

Evaluation of Restoration Options

Species Pink Salmon

Option B

Improve productivity in stream/lake habitats by construction of fishways, fertilization, and other means of enhancement

Application of Criteria

- A. The results of any actual or planned response actions
- B. Technical feasibility
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
- D. Potential effects of the action on human health and safety
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: PS-C  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Pink Salmon

Option C

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Supplement spawning substrates

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
- B. Technical feasibility
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: PS-D  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Pink Salmon

Option D

Construct artificial habitat structures

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: PS-E  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Pink Salmon

Option E

Mariculture and shore/intertidal habitat

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: PS-F  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

Evaluation of Restoration Options

Species Pink Salmon

Option F

Control predators on fish eggs and juveniles

Application of Criteria

A. The results of any actual or planned response actions

N/A

B. Technical feasibility

On a broad scale, hard to do; feasible on a local scale to control or reduce selected predators

C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts

Conflicts directly with restoration of other injured species (e.g., Harlequin Duck and Dolly Varden)

D. Potential effects of the action on human health and safety

E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

May not be consistent with applicable state and federal laws

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

None

Recommendation

Reject

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: PS-G  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Pink Salmon

Option G (grouped with H, I, J, & K)

Enhance wild stocks/populations rather than hatchery stocks  
(e.g., egg boxes, etc.)

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: PS-H  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Pink Salmon

Option H (grouped with G,I,J, & K)

Preserve wild gene pools and local populations through hatchery techniques

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: PS-I  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

### Evaluation of Restoration Options

Species Pink Salmon

Option I (grouped with G, H, J, & K)

Construct new hatcheries and/or expand existing hatcheries to provide fish for stocking programs

#### Application of Criteria

- A. The results of any actual or planned response actions
- B. Technical feasibility
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
- D. Potential effects of the action on human health and safety
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: PS-J  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

Evaluation of Restoration Options

Species Pink Salmon

Option J (grouped with G,H,I, & K)

Transplants to augment natural recoveries

Application of Criteria

- A. The results of any actual or planned response actions
  
- B. Technical feasibility
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
- D. Potential effects of the action on human health and safety
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: PS-K  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

Evaluation of Restoration Options

Species Pink Salmon

Option K (grouped with G,H,I, & J)

Catalog and protect spawning habitats

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: PS-L  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Pink Salmon

Option L (grouped with M)

Protect upland habitats (e.g., timbered slopes to maintain water quality in streams and nearshore habitats)

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: PS-M  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Pink Salmon

Option M (grouped with L)

Map baseline management information and acquire development rights to fisheries habitats in and along rivers

Application of Criteria

- A. The results of any actual or planned response actions
  
- B. Technical feasibility
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
- D. Potential effects of the action on human health and safety
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Same benefits can be obtained through management and harvesting practices

H. Consistency with applicable federal and state laws and policies

Would require change in law to implement

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

Reject

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: PS-0  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Pink Salmon

Option O

Change management emphases/harvest practices (e.g., focus on "terminal" rather than mixed stock fisheries)

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: PS-P  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species     Pink Salmon

Option     P

Redirect fisheries efforts to alternative species to encourage recovery of affected species

Application of Criteria

- A.     The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B.     Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C.     Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D.     Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E.     The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

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H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A (intended for rockfish)

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: PS-Q  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species    Pink Salmon

Option     Q

Restrict high-seas interceptions to provide more control over fish mortality

Application of Criteria

- A.    The results of any actual or planned response actions
  
  
- B.    Technical feasibility
  
  
- C.    Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
- D.    Potential effects of the action on human health and safety
  
  
- E.    The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: PS-R  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Pink Salmon

Option R (grouped with S & T)

Close or restrict individual fisheries to speed natural recoveries

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: PS-S  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Pink Salmon

Option S (grouped with R & T)

Identify and catalog individual stocks to enable more targeted management actions

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: PS-T  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species    Pink Salmon

Option     T (grouped with R & S)

Improve ecological and harvest data to enable better management decisions

Application of Criteria

- A.    The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B.    Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C.    Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D.    Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E.    The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: PS-U  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

Evaluation of Restoration Options

Species Pink Salmon

Option U

Increase public relations and quality assurance efforts to  
redevelop damaged markets

Application of Criteria

- A. The results of any actual or planned response actions
  
- B. Technical feasibility
  
- C. Potential for additional injury resulting from the proposed  
action, including long-term and indirect impacts
  
- D. Potential effects of the action on human health and safety
  
- E. The relationship of the expected costs of the proposed  
actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: PS-V  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Pink Salmon

Option V

Conduct long-term research/monitoring program on populations and ecology

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: PS-W  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Pink Salmon

Option W (new)

Redirect sport harvest to alternative streams

Application of Criteria

- A. The results of any actual or planned response actions
- B. Technical feasibility
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
- D. Potential effects of the action on human health and safety
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: PS-X  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species    Pink Salmon

Option    X (new)

Establish new or alternative stocks

Application of Criteria

- A.    The results of any actual or planned response actions
  
  
  
  
  
  
  
  
- B.    Technical feasibility
  
  
  
  
  
  
  
  
- C.    Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
- D.    Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
- E.    The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further research

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: PS-Y  
Date: 9/10-11/91

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8-2.1  
RPW  
I

Evaluation of Restoration Options

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Species Pink Salmon

Option Y (new)

Reclassify water quality standards

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

**Further research**

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

8.2.1

DRAFT

Reference No.: MM-A  
Date: 9/10-11/91

Attorney/Client Communication  
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Privileged/Confidential

RPWT  
I

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Evaluation of Restoration Options

Species Marbled Murrelet

Option A

Natural recovery - no action

Application of Criteria

- A. The results of any actual or planned response actions
  
- B. Technical feasibility
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
- D. Potential effects of the action on human health and safety
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: MM-B  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
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### Evaluation of Restoration Options

Species Marbled Murrelet

Option B

Augment natural reproduction through captive breeding (as a source of eggs or young), fostering and related techniques

### Application of Criteria

A. The results of any actual or planned response actions

B. Technical feasibility

Basic lack of understanding of breeding biology relating to captive breeding; highly speculative and would probably require extensive research at great cost and time

C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts

D. Potential effects of the action on human health and safety

E. The relationship of the expected costs of the proposed actions to the expected benefits

High cost for marginal return

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

None

Recommendation

Reject

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: MM-D  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species    Marbled Murrelet

Option     D

Mariculture of shellfish to supplement prey base

Application of Criteria

- A.    The results of any actual or planned response actions
  
- B.    Technical feasibility
  
- C.    Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
- D.    Potential effects of the action on human health and safety
  
- E.    The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: MM-E  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Marbled Murrelet

Option E

Provide artificial nest sites/substrates to enhance productivity or redirect nest activities to alternative sites

Application of Criteria

A. The results of any actual or planned response actions

B. Technical feasibility

Based on present understanding of nest site selections, if you already have sufficient nesting habitat, (i.e., a strand of old trees) it cannot be augmented by artificial nest sites; under current conditions no reason to suspect that nest sites are not limited in oil spill area

C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts

D. Potential effects of the action on human health and safety

E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

Reject

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: MM-F  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

Evaluation of Restoration Options

Species Marbled Murrelet

Option F (grouped with G & H)

Acquire nesting habitats and colony sites

Application of Criteria

- A. The results of any actual or planned response actions
- B. Technical feasibility
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
- D. Potential effects of the action on human health and safety
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: MM-G  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Marbled Murrelet

Option G (grouped with F & H)

Protect watershed areas necessary to maintain water quality and habitats that sustain the avian prey base

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: MM-I  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

Evaluation of Restoration Options

Species     Marbled Murrelet

Option     I

Restrict hunting and reduce illegal "taking" of eggs and adult birds

Application of Criteria

- A.    The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B.    Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C.    Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D.    Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E.    The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: MM-J  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
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Evaluation of Restoration Options

Species Marbled Murrelet

Option J

Eliminate introduced predators (e.g., foxes) from islands that are or were important for ground-nesting birds

Application of Criteria

- A. The results of any actual or planned response actions
  
- B. Technical feasibility
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
- D. Potential effects of the action on human health and safety
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: MM-K  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species     Marbled Murrelet

Option      K

Restrict near-shore gillnet fisheries to minimize conflicts with  
bird populations

Application of Criteria

- A.     The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B.     Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C.     Potential for additional injury resulting from the proposed  
        action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D.     Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E.     The relationship of the expected costs of the proposed  
        actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: MM-L  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
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Evaluation of Restoration Options

Species Marbled Murrelet

Option L

Eliminate high-seas gillnet fisheries and the resulting incidental mortality to birds

Application of Criteria

- A. The results of any actual or planned response actions
  
- B. Technical feasibility
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
- D. Potential effects of the action on human health and safety
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: MM-M  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Marbled Murrelet

Option M

Acquire stopover/wintering habitats in the Pacific flyway

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
- B. Technical feasibility
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review ?

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: MM-N  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
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Evaluation of Restoration Options

Species Marbled Murrelet

Option N

Protect wetland habitats important to migratory birds, nationally and internationally

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: MM-O  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Marbled Murrelet

Option 0

Minimize disturbance from tourists, fishermen, researchers, and others through public education and law enforcement

Application of Criteria

- A. The results of any actual or planned response actions
- B. Technical feasibility
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
- D. Potential effects of the action on human health and safety
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: MM-P  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Marbled Murrelet

Option P

Conduct long-term research/monitoring program on bird populations, ecology, and prey

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: MM-Q  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Marbled Murrelet

Option Q (new)

Enhance productivity through manipulation/social facilitation

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: MM-R  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species     Marbled Murrelet

Option     R (new)

Re-establish abandoned colonies and establish new colonies

Application of Criteria

- A.    The results of any actual or planned response actions
  
- B.    Technical feasibility
  
- C.    Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
- D.    Potential effects of the action on human health and safety
  
- E.    The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

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H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: MM-S  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Marbled Murrelet

Option S (new)

Eliminate contaminated prey

Application of Criteria

- A. The results of any actual or planned response actions
- B. Technical feasibility
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
- D. Potential effects of the action on human health and safety
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: DV-A  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

RPWG  
I

Evaluation of Restoration Options

Species Dolly Varden/Cutthroat Trout

Option A (grouped with B & C)

Natural recovery - no action

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: DV-B  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
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Evaluation of Restoration Options

Species Dolly Varden/Cutthroat Trout

Option B (grouped with A & C)

Improve productivity in stream/lake habitats by construction of fishways, fertilization, and other means of enhancement

Application of Criteria

- A. The results of any actual or planned response actions
  
  
- B. Technical feasibility
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
- D. Potential effects of the action on human health and safety
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: DV-C  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

Evaluation of Restoration Options

Species Dolly Varden/Cutthroat Trout

Option C (grouped with A & B)

Supplement spawning substrates

Application of Criteria

- A. The results of any actual or planned response actions
  
- B. Technical feasibility
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
- D. Potential effects of the action on human health and safety
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: DV-D  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

Evaluation of Restoration Options

Species Dolly Varden/Cutthroat Trout

Option D

Construct artificial habitat structures

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A (ex: reefs)

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: DV-F  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

Evaluation of Restoration Options

Species Dolly Varden/Cutthroat Trout

Option F

Control predators on fish eggs and juveniles

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: DV-G  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

### Evaluation of Restoration Options

Species Dolly Varden/Cutthroat Trout

Option G

Enhance wild stocks/populations rather than hatchery stocks  
(e.g., egg boxes, etc.)

#### Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: DV-H  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

Evaluation of Restoration Options

Species Dolly Varden/Cutthroat Trout

Option H

Preserve wild gene pools and local populations through hatchery techniques

Application of Criteria

- A. The results of any actual or planned response actions
  
- B. Technical feasibility
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
- D. Potential effects of the action on human health and safety
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: DV-I  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Dolly Varden/Cutthroat Trout

Option I

Construct new hatcheries and/or expand existing hatcheries to provide fish for stocking programs

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: DV-J  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

Evaluation of Restoration Options

Species Dolly Varden/Cutthroat Trout

Option J

Transplants to augment natural recoveries

Application of Criteria

- A. The results of any actual or planned response actions
- B. Technical feasibility
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
- D. Potential effects of the action on human health and safety
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: DV-K  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

Evaluation of Restoration Options

Species Dolly Varden/Cutthroat Trout

Option K

Catalog and protect spawning habitats

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: DV-L  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
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### Evaluation of Restoration Options

Species Dolly Varden/Cutthroat Trout

Option L

Protect upland habitats (e.g., timbered slopes) to maintain water quality in streams and nearshore habitats

### Application of Criteria

- A. The results of any actual or planned response actions
  
- B. Technical feasibility
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
- D. Potential effects of the action on human health and safety
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits
  
- F. Cost-effectiveness

- H. Consistency with applicable federal and state laws and policies
  
- I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible
  
- J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: DV-M  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Dolly Varden/Cutthroat Trout

Option M

Map baseline management information and acquire development rights to fisheries habitats in and along rivers

Application of Criteria

- A. The results of any actual or planned response actions
  
- B. Technical feasibility
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
- D. Potential effects of the action on human health and safety
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: DV-N  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Dolly Varden/Cutthroat Trout

Option N

Buy back limited entry fishing permits to reduce pressure on resources

Application of Criteria

- A. The results of any actual or planned response actions
- B. Technical feasibility
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
- D. Potential effects of the action on human health and safety
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: DV-0  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Dolly Varden/Cutthroat Trout

Option 0

Change management emphases/harvest practices (e.g., focus on "terminal" rather than mixed stock fisheries)

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: DV-P  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Dolly Varden/Cutthroat Trout

Option P

Redirect fisheries efforts to alternative species to encourage recovery of affected species

Application of Criteria

- A. The results of any actual or planned response actions
  
- B. Technical feasibility
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
- D. Potential effects of the action on human health and safety
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: DV-Q  
Date: 9/10-11/91

Attorney/Client Communication  
Attorney Work Product  
Privileged/Confidential

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Evaluation of Restoration Options

Species Dolly Varden/Cutthroat Trout

Option Q

Restrict high-seas interceptions to provide more control over fish mortality

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: DV-R  
Date: 9/10-11/91

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Evaluation of Restoration Options

Species Dolly Varden/Cutthroat Trout

Option R

Close restrict individual fisheries to speed natural recoveries

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: DV-S  
Date: 9/10-11/91

Attorney/Client Communication  
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### Evaluation of Restoration Options

Species Dolly Varden/Cutthroat Trout

Option S

Identify and catalog individual stocks to enable more targeted management actions

#### Application of Criteria

- A. The results of any actual or planned response actions
  
  
- B. Technical feasibility
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
- D. Potential effects of the action on human health and safety
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: DV-T  
Date: 9/10-11/91

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Attorney Work Product  
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Evaluation of Restoration Options

Species Dolly Varden/Cutthroat Trout

Option T

Improve ecological and harvest data to enable better management decisions

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: DV-U  
Date: 9/10-11/91

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Evaluation of Restoration Options

Species Dolly Varden/Cutthroat Trout

Option U

Increase public relations and quality assurance efforts to redevelop damaged markets

Application of Criteria

- A. The results of any actual or planned response actions
  
  
  
  
  
- B. Technical feasibility
  
  
  
  
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
  
  
  
  
- D. Potential effects of the action on human health and safety
  
  
  
  
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: DV-V  
Date: 9/10-11/91

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Evaluation of Restoration Options

Species Dolly Varden/Cutthroat Trout

Option V

Conduct long-term research/monitoring program on populations and ecology

Application of Criteria

- A. The results of any actual or planned response actions
  
- B. Technical feasibility
  
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
  
- D. Potential effects of the action on human health and safety
  
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.



Reference No.: DV-W  
Date: 9/10-11/91

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Evaluation of Restoration Options

Species Dolly Varden/Cutthroat Trout

Option W (new)

Redirect sport harvest to alternative streams

Application of Criteria

A. The results of any actual or planned response actions

B. Technical feasibility

C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts

D. Potential effects of the action on human health and safety

E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

further review

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.

Reference No.: DV-X  
Date: 9/10-11/91

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Evaluation of Restoration Options

Species Dolly Varden/Cutthroat Trout

Option X (new)

Establish new and alternative stocks

Application of Criteria

- A. The results of any actual or planned response actions
- B. Technical feasibility
- C. Potential for additional injury resulting from the proposed action, including long-term and indirect impacts
- D. Potential effects of the action on human health and safety
- E. The relationship of the expected costs of the proposed actions to the expected benefits

F. Cost-effectiveness

H. Consistency with applicable federal and state laws and policies

I. Acquisition of equivalent land for public (federal/state) management, where restoration, rehabilitation, and/or other replacement of land is not possible

J. Degree to which proposed actions benefit more than one species, communities, or ecosystems<sup>1</sup>

Recommendation

N/A

Comments

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<sup>1</sup>Not from NRDA regulations as currently proposed.