United States Department of the Interior

FISH AND WILDLIFE SERVICE

IN REPLY REFER TO:

ARCATA FISH & WILDLIFE OFFICE
1125 16TH STREET, ROOM 209
ARCATA, CA 95521

Memorandum

February 24, 1999

To: Manager, California/Nevada Operations Office
Fish and Wildlife Service

Regional Administrator, Southwest Region
National Marine Fisheries Service

From: Project Leader, Arcata Fish and Wildlife Office
Fish and Wildlife Service

Subject: Biological and Conference Opinions Regarding Issuance of an Incidental Take Permit to the Pacific Lumber Company, Scotia Pacific Company LLC and Salmon Creek Corporation (collectively "PALCO") (1-14-99-18)

This document constitutes the Biological/Conference Opinion prepared by the Northern California Area Office of the National Marine Fisheries Service (NMFS) and the Arcata Fish and Wildlife Office of the Fish and Wildlife Service pursuant to Section 7 of the Endangered Species Act of 1973, as amended (Act), on the effects of issuing an incidental take permit to PALCO for 17 species pursuant to Section 10(a)(1)(B) of the Act and signing an Implementation Agreement with PALCO. The proposed incidental take of up to 17 species would occur as a result of habitat loss and disturbance associated with timber management and associated activities on PALCO lands as described in the *Habitat Conservation Plan for the Properties of the Pacific Lumber Company, Scotia Pacific Company, LLC and Salmon Creek Corporation* dated February 1999 which are hereby incorporated by reference.

Through my signature, I approve the Biological/Conference Opinion on behalf of the Fish and Wildlife Service and through this transmittal I submit, the Opinion to Dr. Hogarth for his approval, as evidenced by his signature in the signature block below, on behalf of the National Marine Fisheries Service.

Dr. William T. Hogarth, Ph.D

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southwest Region
501 West Ocean Boulevard, Suite 4200
Long Beach, California 90802-4213
TEL (310) 980-4000; FAX (310) 980-4018

STATEMENT OF APPROVAL

On February 24, 1999 on behalf of the National Marine Fisheries Service (NMFS) I approved the Biological and Conference Opinions for covered species and proposed critical habitat under the jurisdiction of NMFS, Regarding Issuance of an Incidental Take Permit to the Pacific Lumber Company, Scotia Pacific Company, LLC and Salmon Creek Corporation (collectively "PALCO") (FWS 1-14-99-18).

For each of the covered species under NMFS jurisdiction I concur with the finding of no jeopardy and the finding of no adverse modification to proposed critical habitat.

William T. Hogarth

William T. Hogarth, Ph.D
Regional Administrator
Southwest Region
National Marine Fisheries Service

Biological Opinion

Pacific Lumber Company
Habitat Conservation Plan/Sustained Yield Plan
for the
Headwaters Forest Project

February 24, 1999

Errata List:
Biological Opinion on Pacific Lumber Company's
Sustained Yield Plan/Habitat Conservation Plan for the
Headwaters Forest Project

March 22, 1999

For purposes of this errata list, a paragraph (¶) is any continuous block of print. This includes the end of a paragraph from the prior page, a table or figure, and anything else that generally is perceived as one block. Any heading is to be considered part of the paragraph that follows it.

Section	Pg.	¶	Change from [Delete]	Change to [Add]
{Introduction}				
	1	1		{Insert above the "Memorandum" line} **In reply refer to:** 1-14-99-18
Species Not Covered by the Incidental Take Permit	2	2	SYP/HCP and IA	Sustained Yield Plan and Habitat Conservation Plan (SYP/HCP) and Implementing Agreement (IA)
	2	4	ITP	Incidental Take Permit (ITP)
Consultation History	4	1	30 unlisted species	29 unlisted species and one proposed species
	4	3	ESA	Acts
DESCRIPTION OF THE PROPOSED ACTION				
COMPONENTS OF THE PROPOSED ACTION				
Covered Activities: Timber Management	13	2	Data are from the proposed SYP/HCP.	Compiled from data in unnumbered table "Harvest Regime (acres)" in Final EIS/EIR, Appendix Q.
Operating Conservation Programs: Marbled murrelet conservation plan	21	7	[described infra]	
STATUS OF THE SPECIES (rangewide and/or recovery unit)				
LISTED SPECIES/CRITICAL HABITAT				
American peregrine falcon	56	2	USDI Fish and Wildlife Service 1998	USDI Fish and Wildlife Service 1998a
	58	2	USDI Fish and Wildlife Service 1998	USDI Fish and Wildlife Service 1998a
	58	7	USDI Fish and Wildlife Service 1998	USDI Fish and Wildlife Service 1998a
	59	3	USDI Fish and Wildlife Service 1998	USDI Fish and Wildlife Service 1998a

Section	Pg.	¶	Change from [Delete]	Change to [Add]
Northern Spotted Owl	66	5	[Berbach et al. (Berbach et al. 1993) reported that over 75 percent of the quarter-townships in the coastal counties of Del Norte, Humboldt, and Mendocino exceeded this standard.]	{move text to page 312, paragraph 5. Last sentence}
	69	3	[HEREAFTER THIS REFERENCE ISN"T HIHGLIGHTED]	
	70	5	population	populations
Marbled murrelet	74	5	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	75	1	Nelson (1997)	Nelson (1997a)
	75	4	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	76	1	Nelson 1997	Nelson 1997a
	76	3	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	76	3	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	76	3	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	76	4	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	76	5	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	76	6	Nelson 1997	Nelson 1997a
	77	2	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	77	3	Nelson 1997	Nelson 1997a
	77	5	Nelson 1997	Nelson 1997a
	78	1	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	78	3	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	78	4	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	78	5	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	78	6	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	78	7	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	79	4	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	80	4	Nelson 1997	Nelson 1997a
	81	2	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	81	2	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	81	3	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	81	4	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	81	4	Nelson 1997	Nelson 1997a
	81	4	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	82	1	Nelson 1997	Nelson 1997a

Section	Pg.	¶	Change from [Delete]	Change to [Add]
	82	1	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	82	2	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	82	2	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	82	3	Nelson 1997	Nelson 1997a
	82	3	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	83	4	(K. Moore, pers. comm.)	(K. Moore, pers. comm., January 18, 1999)
	84	2	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	84	3	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	84	3	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	86	2	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	86	2	Nelson 1997	Nelson 1997a
	86	3	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	87	2	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	87	3	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	87	3	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	88	1	USDI Fish and Wildlife Service 1998	USDI Fish and Wildlife Service 1998b
Marbled murrelet critical habitat	90	3	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
Western snowy plover	94	1	CDFG	California Department of Fish and Game
SONC Coast ESU coho salmon	96	4	50 FR 38011	USDC National Oceanic and Atmospheric Administration 1995
	96	4	62 FR 24588	USDC National Oceanic and Atmospheric Administration 1997a
	97	3	Bell (1986)	Bell (1991)
	97	4	Lester and Genoe 1970	Lister and Genoe 1970
	98	4	62 FR 24588	USDC National Oceanic and Atmospheric Administration 1997a
	98	4	62 FR 3847	USDC National Oceanic and Atmospheric Administration 1997b
	98	4	62 FR 62741	USDC National Oceanic and Atmospheric Administration 1997c
	99	2	CDFG (1994)	the California Department of Fish and Game (1994)
	99	2	NMFS (1997)	National Marine Fisheries Service (1997a)
	101	1	CDFG (1994)	the California Department of Fish and Game (1994)
	101	1	(CDFG 1994).	(California Department of Fish and Game 1994).

Section	Pg.	¶	Change from [Delete]	Change to [Add]
	101	1	CDFG (1994)	The California Department of Fish and Game (1994)
	102	2	(PALCO 1998)	(Pacific Lumber Company 1998)
	102	2	(IFR 1998)	(Institute for Fisheries Resources 1998)
	102	2	Plan	PALCO ownership
	102	2	IFR (1998)	Institute for Fisheries Resources (1998)
	102	2	Plan	PALCO ownership
PROPOSED SPECIES/CRITICAL HABITAT				
Southern Oregon and California Coastal ESU chinook salmon	102	4	54 FR 32085	USDC National Oceanic and Atmospheric Administration 1989
	102	4	55 FR 46515	USDC National Oceanic and Atmospheric Administration 1990
	102	4	59 FR 440	USDC National Oceanic and Atmospheric Administration 1994
	102	4	63 FR 11482	USDC National Oceanic and Atmospheric Administration 1998a
	103	2	[Bell 1986, cited in]	
	103	5	(NMFS 1997)	(National Marine Fisheries Service 1997b)
	105	3	63 FR 11482	USDC National Oceanic and Atmospheric Administration 1998a
	105	4	CDFG (1965)	California Department of Fish and Game (1965)
	105	4	CDFG (1965)	California Department of Fish and Game (1965)
	105	4	NMFS (1996)	The National Marine Fisheries Service (1996)
	106	1	NMFS (1997)	National Marine Fisheries Service (1997a)
Coho salmon critical habitat	108	3	62 FR 62741	USDC National Oceanic and Atmospheric Administration 1997c
Proposed chinook salmon critical habitat	110	2	63 FR 11482	USDC National Oceanic and Atmospheric Administration 1998a
UNLISTED SPECIES				
Bank swallow	112	1	(CDFG 1992)	(California Department of Fish and Game 1992)
	112	8	(CDFG 1995)	(California Department of Fish and Game 1995)
	113	2	(CDFG 1992)	(California Department of Fish and Game 1992)
Pacific fisher	113	4	The fisher is a medium-sized carnivorous mammal	The fisher (*Martes pennanti*) is a medium-sized carnivorous mammal

Section	Pg.	¶	Change from [Delete]	Change to [Add]
	113	5	The Pacific fisher is one of three subspecies	The Pacific fisher (*Martes pennanti pacifica*) is one of three subspecies
Red tree vole	123	7	(CDFG 1997)	(California Department of Fish and Game 1997a)
	124	4	CDFG (1997)	California Department of Fish and Game (1997a)
	124	5	Meiselman (1996)	Meiselman (1992)
Northern red-legged frog	127	5	[Mark Jennings, pers. comm., 1993, cited in]	
Foothill yellow-legged frog	131	1	Ashton et al. 1997	Ashton et al. 1998
	132	3	[G. Fellars, pers. comm., cited in]	
Northwestern pond turtle	136	2	(CDFG 1998a)	(California Department of Fish and Game 1998a)
Tailed frog	139	3	[The authors did not provide statistics for the mean area of suitable sites they evaluated, but they are mostly on the order of several square yards to several tens of square yards each (Ollivier, pers. comm., 1998).]	
	141	5	(L. Ollivier, pers. comm., 1998)	(L. Ollivier, pers. comm., November 4, 1998)
	144	2	(L. Ollivier, pers. comm., 1998)	(L. Ollivier, pers. comm., November 4, 1998)
Northern California ESU steelhead	148	5	61 FR 41541	USDC National Oceanic and Atmospheric Administration 1996a
	149	1	62 FR 43937	USDC National Oceanic and Atmospheric Administration 1997d
	149	1	63 FR 13347	USDC National Oceanic and Atmospheric Administration 1998b
	151	1	Bell (1973)	Bell (1991)
	151	4	61 FR 56138	USDC National Oceanic and Atmospheric Administration 1996a
	151	5	63 FR 13347	USDC National Oceanic and Atmospheric Administration 1998b
	152	1	61 FR 56138	USDC National Oceanic and Atmospheric Administration 1996a
	152	1	NMFS (1997)	National Marine Fisheries Service (1997a)
	152	3	63 FR 13347	USDC National Oceanic and Atmospheric Administration 1998b
	153	1	CDFG 1994	California Department of Fish and Game 1994

Section	Pg.	¶	Change from [Delete]	Change to [Add]
	153	2	CDFG (1965)	California Department of Fish and Game (1965)
	153	4	CDFG 1991	California Department of Fish and Game 1991
	154	4	CDFG (1994)	The California Department of Fish and Game (1994)
SOC Coasts coastal cutthroat trout	156	3	Johnson 1999	Johnson et al. 1999
	158	2	Michael 1980. Fuss 1982	Michael 1980, Fuss 1982
	159	1	CDFG	California Department of Fish and Game
	159	1	1980-1989,	1980-1989;
	159	2	61 FR 41514	USDC National Oceanic and Atmospheric Administration 1996b
	160	5	T. Confer, Oregon Department of Fish and Wildlife, unpublished data	Johnson et al. 1999
	160	5	T. Confer, Oregon Department of Fish and Wildlife, unpublished data	Johnson et al. 1999
	161	1	T. Confer, Oregon Department of Fish and Wildlife, unpublished data	Johnson et al. 1999
ENVIRONMENTAL BASELINE (in the action area)				
Baseline common to all species	162	4	action outside	action area outside
BASELINE COMMON TO PACIFIC SALMONIDS				
	163	3	209,803	211,000
Essential habitat features for Pacific salmonids	164	2	NMFS Draft 1997	National Marine Fisheries Service 1997c
	164	3	DO	dissolved oxygen (DO)
	166	4	CDFG (1997) and PALCO	the California Department of Fish and Game (1997b) and the Pacific Lumber Company
	168	3	NMFS (1997)	The National Marine Fisheries Service (1997c)
	169	3	(NMFS 1996)	(National Marine Fisheries Service 1996)
	169	4	(NMFS 1996)	(National Marine Fisheries Service 1996)
	170	3	mush	must
Existing habitat conditions in the action area	170	4	209,803	211,000
	171	2	209,834	211,000
	172	2	Project Area	action area
	174	2	IFR (1998) provides	The Institute for Fisheries Resources (1998) provides

Section	Pg.	¶	Change from [Delete]	Change to [Add]
	174	2	According to IFR (1998)	According to the Institute for Fisheries Resources (1998)
	176	1	IFR (1998) analyzed	The Institute for Fisheries Resources (1998) analyzed
	176	1	IFR (1998) reported	The Institute for Fisheries Resources (1998) reported
	177	5	IFR (1998) noted	The Institute for Fisheries Resources (1998) noted
	179	2	IFR (1998) noted	The Institute for Fisheries Resources (1998) noted
	179	2	IFR (1998) were	The Institute for Fisheries Resources (1998) were
	181	1	[Elements of recovery: an inventory of upslope sources of sedimentation in the Mattole River Watershed with rehabilitation prescriptions and additional information for erosion control prioritization (MRC, Petrolia, CA).]	
	182	1	IFR (1998) noted	The Institute for Fisheries Resources (1998) noted
	182	1	IFR (1998) shows	The Institute for Fisheries Resources (1998) shows
	182	1	IFR (1998) notes	The Institute for Fisheries Resources (1998) notes
Known or suspected factors affecting salmonid habitat	183	5	Construction of road network networks has	The construction of road networks has
	183	5	Swanston and Swanston 1976	Swanston and Swanson 1976
	184	1	Crossings have also be a source	Crossings have also been a source
	190	1	NCRWQCB	North Coast Regional Water Quality Control Board
	192	2	(Pacific Fisheries Management Council 1997, 1998).	(Pacific Fisheries Management Council 1997).
	192	3	NMFS 1996	National Marine Fisheries Service 1996
	193	3	CDFG	California Department of Fish and Game
	193	3	NMFS	National Marine Fisheries Service
	194	4	63 FR 13347	USDC National Oceanic and Atmospheric Administration 1998b
	195	2	(NMFS 1997)	(National Marine Fisheries Service 1997a)
	196	2	(NMFS 1986)	(National Marine Fisheries Service 1996)
	196	3	Opinion	opinion
	196	3	These effects are discussed in NMFS (1996)	The National Marine Fisheries Service (1996) has previously discussed these effects
	197	1	from the Project to at the action area	from the project to the action area
	198	2	NMFS 1996	National Marine Fisheries Service 1996
	199	3	(NMFS 1998)	(National Marine Fisheries Service 1998a)
	199	3	NMFS (1998)	National Marine Fisheries Service (1998a)

Section	Pg.	¶	Change from [Delete]	Change to [Add]
	200	3	action areal	action area
LISTED SPECIES/CRITICAL HABITAT				
American peregrine falcon	204	4	USDI Fish and Wildlife 1998	USDI Fish and Wildlife Service 1998a
Northern spotted owl	205	4	EIS/EIR.	EIS/EIR).
	205	4	(S. Chinnici, pers. comm., Wildlife Biologist, PALCO, December 1, 1998)	(S. Chinnici, pers. comm., Wildlife Biologist, Pacific Lumber Company, December 1, 1998)
	206	3	table 23, footnote 1: based on PALCO	based on Pacific Lumber Company
	206	3	table 23, footnote 4: (USDI Fish and Wildlife 1992a)	(USDI Fish and Wildlife Service 1992a)
	207	1	(PALCO 1999)	(Pacific Lumber Company 1999)
	207	2	PALCO (1999)	Pacific Lumber Company (1999)
	207	5	(PALCO 1999)	(Pacific Lumber Company 1999)
Bald eagle	208	5	CDFG	California Department of Fish and Game
	208	6	table 24, footnote 1: CDFG	California Department of Fish and Game
	209	4	69,231	63,170
	209	5	Table 25: total of first column 69,231	Table 25: total of first column 63,170
Marbled murrelet	210	8	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
	211	2	Nelson 1997	Nelson 1997a
	211	5	researchers (USDI Fish and Wildlife Service 1997)	researchers (USDI Fish and Wildlife Service 1997a)
	211	5	Recovery Team (USDI Fish and Wildlife Service 1997)	Recovery Team (USDI Fish and Wildlife Service 1997a)
	213	1	Ralph et al. 1994	Ralph et al. 1994b
	213	2	Service	FWS
	213	2	(S. Chinnici, January 19 and January 25, 1999)	(Chinnici 1999a and 1999b)
	213	2	Appendix 1	Appendix A
	213	4	table 26, footnote 1: Appendix 1: 12477 - 1837 (S. Chinnici, January 25, 1999) = 10, 610	Appendix A: 12,477 - 1,837 = 10,610 acres (Chinnici 1999b)
	214	4	Service	FWS
	215	1	(Marbled Murrelet Recovery Team, November 30, 1998; S. Chinnici, PALCO, pers. comm., January 19, 1999)	(Marbled Murrelet Recovery Team, November 30, 1998; Chinnici 1999a)
	215	3	the Service believes	the FWS believes
	215	3	The Service discussed	The FWS discussed

Section	Pg.	¶	Change from [Delete]	Change to [Add]
	215	7	Service	FWS
	215	7	(Marbled Murrelet Recovery Team, November 30, 1998).	(Marbled Murrelet Recovery Team 1998)
	215	7	(S. Chinnici, pers. comm., January 19 and January 25, 1999)	(Chinnici 1999a and 1999b)
	216	1	(as updated by P. Detrich, USFWS, pers. comm., January 2, 1999, T. Reid, pers. comm., January 11, 1999, and S. Chinnici, PALCO, pers. comm., January 19 and January 25, 1999).	(as updated by Detrich (1999); T. Reid, pers. comm., January 11, 1999; and Chinnici 1999a and 1999b)).
	216	1	table 27, footnote 3: 376 (unoccupied per S. Chinnici, pers. comm., January 25, 1999)	376 (unoccupied per Chinnici 1999b)
	216	1	table 27, footnote 4: (unsuitable per S. Chinnici, pers. comm., January 25, 1999) = 10,610	(unsuitable per Chinnici 1999b) = 10, 610 acres
	217	3	Service	FWS
	218	2	table 28, footnote^: continuos	continuous
	219	2	Service	FWS
	219	3	Ralph et al. 1994	Ralph et al. 1994b
	220	1	(USDI Fish and Wildlife Service, pers. comm., February 28, 1997)	(USDA Forest Service et al. 1997)
	220	1	S.K. Nelson, pers. comm., October 31, 1997)	Nelson 1997b)
	221	3	Hamer and Nelson 1995b, page 80;	Hamer and Nelson 1995, page 80;
	221	4	(Hamer and Nelson 1995b)	(Hamer and Nelson 1995)
	222	1	(T. Robards, pers. comm.)	(T. Robards, pers. comm. as cited in USDI Fish and Wildlife Service and California Department of Forestry and Fire Protection 1998, appendix N)
	222	3	USDI Fish and Wildlife Service 1997	USDI Fish and Wildlife Service 1997a
SONC Coast ESU coho salmon	227	2	population in California (CDFG 1994)	population in California (California Department of Fish and Game 1994)
	227	2	(CDFG 1994)	(California Department of Fish and Game 1995)
	227	2	(CDFG 1964)	(California Department of Fish and Game 1965)
	227	3	in 1996 (IFR 1998).	In 1996 (Institute for Fisheries Resources 1998)
	227	3	(CDFG 1995)	(California Department of Fish and Game 1995)
	227	3	survey by CDFG	survey by the California Department of Fish and Game

Section	Pg.	¶	Change from [Delete]	Change to [Add]
	227	3	Mattole River (IFR 1998)	Mattole River (Institute for Fisheries Resources 1998)
	227	3	(MSG 1997)	(Mattole Salmon Group 1997)
Proposed Species/Critical Habitat:				
Southern Oregon and California Coastal ESU chinook salmon	228	3	mainstem (IFR 1998)	mainstem (Institute for Fisheries Resources 1998)
	228	3	CDFG (1995) reported	California Department of Fish and Game (1995) reported
	228	3	these watersheds (IFR 1998)	these watersheds (Institute for Fisheries Resources 1998)
	228	3	watershed (IFR 1998)	watershed (Institute for Fisheries Resources 1998)
	228	3	MSG (1997)	Mattole Salmon Group (1997)
	228	3	(cited in IFR 1998)	(cited in Institute for Fisheries Resources 1998)
Unlisted Species:				
Bank swallow	230	2	(CDFG 1995)	(California Department of Fish and Game 1995)
Pacific fisher	230	7	On PALCO lands there are 69,231 acres of LSH. This constitutes approximately 32 percent of the current ownership outside of the Headwaters acquisition area, and Grizzly Creek Complex.	On PALCO lands there are an estimated 63,170 acres of LSH. This constitutes approximately 30 percent of the current ownership.
	231	2	{in first column of numbers} 69,231	63,170
	231	2	Action area (outside of PALCO lands)[2])	Action area (outside of PALCO lands)[1,2]
	231	2	62,491	67,795
	231	2	{First footnote} Habitat information derived from PALCO 1999.	Habitat information for PALCO lands was derived from Pacific Lumber Company (1999).
	231	2	{second footnote} Habitat information for California derived from...	Habitat information for California outside of PALCO lands was derived....
Red tree vole	233	2	Approximately 69,231 acres of LSH (redwood, Douglas-fir, and montane hardwood/conifer habitat types combined) occur on PALCO lands.	Approximately 63,170 acres of LSH (redwood, Douglas-fir, and montane hardwood/conifer habitat types combined) occur on PALCO lands, and an additional 5,304 acres occur within the Headwaters acquisition area.
	233	3	{in first column of numbers} 69,231	63,170

Section	Pg.	¶	Change from [Delete]	Change to [Add]
	233	3	Action area (outside of PALCO lands)[2]	Action area (outside of PALCO lands)[1,2]
	233	3	{in first column of numbers} 62,491	67,795
	233	3	{First footnote} Habitat information derived from PALCO 1999.	Habitat information for PALCO lands was derived from Pacific Lumber Company (1999).
	233	3	{second footnote} Habitat information for California derived from...	Habitat information for California outside of PALCO lands was derived....
Northern red-legged frog	234	3	(PALCO 1998)	(Pacific Lumber Company 1998)
Foothill yellow-legged frog and northwestern pond turtle	237	1	(PALCO 1998)	(Pacific Lumber Company 1998)
	237	3	July 28, 1998, in Final EIS/EIR).	July 28, 1998).
	237	3	(PALCO 1998)	(Pacific Lumber Company 1998)
Tailed frog	242	3	Hanski 1977	Hanski 1997
Southern torrent salamander	243	5	Ollivier (pers. comm., 1998 and 1999)	Ollivier (pers. comm., November 4, 1998)
	244	1	17of 28	1 of 28
	244	2	(unpublished data)	(unpublished data, reviewed in Welsh et al. 1998)
Northern California ESU steelhead	244	5	tributaries (IFR 1998)	tributaries (Institute of Fisheries Resources 1998)
	244	5	CDFG (1995)	the California Department of Fish and Game (1995)
	245	1	(IFR 1998)	(Institute for Fisheries Resources 1998)
	245	1	CDFG (1995)	California Department of Fish and Game (1995)
SOC Coasts ESU coastal cutthroat trout	245	4	(IFR 1998)	(Institute for Fisheries Resources 1998)
EFFECTS OF THE ACTION				
EFFECTS COMMON TO SPECIES ASSOCIATED WITH LATE-SERAL HABITAT				
Effects Common to Species Associated with Late-Seral Habitat	248	5	47	46
	249	1		{Add the following sentence at the end of the title for table 36} [Decades 1 through 5 do not include the Grizzly Creek complex.]
	249	1	{in first column of numbers} 6,569	7,181
	249	1	{in first column of numbers} 18,205	16,223

Section	Pg.	¶	Change from [Delete]	Change to [Add]
	249	1	{in first column of numbers} 44,457	39,766
	249	1	{in first column of numbers} 69,231	63,170
	250	1	18,383 acres	18,402 acres
	250	2		{Add the following sentence at the end of the title for table 37} [Acres in the present row include the Headwaters acquisition area and the Grizzly Creek Complex, but acres in the rows for decades 1 through 5 do not.]
	250	2	{first column} Present	Present[1]
	250	3		{The following footnote is added} [[1] The present baseline includes LSH within the Headwaters acquisition area.]
	251	1	6347	6346
	252	2	Using a "worst-case" estimate, LSH could be reduced within the PALCO ownership from 32 percent (69,231 acres) to 10 percent (21,170 acres) of the ownership. This would constitute a 60 percent (47,304 acre) decrease in the amount of LSH.	Using a "worst-case" estimate, LSH could be reduced within the PALCO ownership (excluding the Headwaters acquisition area and the Grizzly Creek Complex) from 30 percent (63,170 acres) to 10 percent (21,170) acres of the ownership. This would constitute a 66 percent (42,000 acre) decrease in the amount of LSH.
	252	4	12885	12991
	253	3	7382	7385
	253	3	30 percent	31 percent
EFFECTS COMMON TO PACIFIC SALMONIDS				
Assessment approach	258	3	62 FR 62741, November 1997	USDC National Oceanic and Atmospheric Administration 1997c
	258	3	63 FR 11482, March 1998	USDC National Oceanic and Atmospheric Administration 1998a
Background summary of baseline conditions	260	2	PALCO	The Pacific Lumber Company
	260	4	558.0	557.0
	261	1	PALCO	The Pacific Lumber Company

Section	Pg.	¶	Change from [Delete]	Change to [Add]
	261	1	CDF	the California Department of Forestry and Fire Protection
	262	1	PALCO	The Pacific Lumber Company
	262	1	CDF	the California Department of Forestry and Fire Protection
	262	7	PALCO	The Pacific Lumber Company
	263	2	PALCO	The Pacific Lumber Company
Summary of the proposed incidental take permit	263	3	211,700	211,000
Effects of the proposed incidental take permit	269	2	MRC 1987	Mattole Restoration Council 1989
	271	4	315.24	316.24
	272	2	MRC	Mattole Restoration Council
	274	4	afer	after
Effects of the proposed conservation measures	275	2	Plan	SYP/HCP
	276	1	[, and others]	
	276	4	CDFG	the California Department of Fish and Game
	284	1	Foster Wheeler, 1999	Pacific Lumber Company (1999)
	284	3	NMFS (1998)	the National Marine Fisheries Service (1998b)
	285	1	Bingham, in litt. 1991, California Board of Forestry, in litt. 1992	Bingham 1991, California Board of Forestry 1992
	289	4	PALCO	The Pacific Lumber Company
	289	4	PALCO	The Pacific Lumber Company
	290	1	PALCO	The Pacific Lumber Company
	291	4	Knudsen 1992	Knudsen et al. 1992
	295	2	[, in litt.,]	
	297	1	NMFS	National Marine Fisheries Service
Listed Species/Critical Habitat:				
Northern spotted owl	306	2	draft Recovery Plan (USDI 1992).	draft Recovery Plan (USDI 1992a).
	306	4	(USDI Fish and Wildlife Service et al. 1997).	(USDA Forest Service et al. 1997).
	309	1	an increase of 6,769 acres	an increase of 6,770 acres
	309	2	(data from PALCO 1999).	(data from The Pacific Lumber Company 1999).
	309	2	Table 51. Total, Decade 0: 170,404	Table 51. Total, Decade 0: 170,403
	309	2	Table 51. Total, Decade 1: 167,313	Table 51. Total, Decade 1: 167,312

Section	Pg.	¶	Change from [Delete]	Change to [Add]
	309	2	Table 51. Total, Decade 2: 166,247	Table 51. Total, Decade 2: 166,246
	309	2	Table 51. Total, Decade 3: 175,112	Table 51. Total, Decade 3: 175,113
	309	2	Table 51. Total, Decade 4: 172,506	Table 51. Total, Decade 4: 172,507
	309	2	Table 51. Total, Net Change: 6,769	Table 51. Total, Net Change: 6,770
	311	3	(a benefit to the owl) of 6,769 acres	(a benefit to the owl) of 6,770 acres
	311	3	an increase of 3.9 percent from the total of 170,404	an increase of 3.9 percent from the total of 170,403
	312	5		Add the following sentence to the end of the paragraph: Berbach et al. (1993) reported that over 75 percent of the quarter-townships in the coastal counties of Del Norte, Humboldt, and Mendocino exceeded this standard.
Bald eagle	315	2	69,231	63,170
Marbled murrelet	317	1	(S. Chinnici, pers. comm., January 19and January 25, 1999)	(Chinnici 1999a and 1999b)
	318	2	Updated source from Appendix 1 and S. Chinnici, pers. comm., January 25, 1999.	Updated source from Appendix 1 and Chinnici 1999b.
	319	1	(as updated by S. Chinnici, pers. comm., January 25, 1999).	(as updated by Chinnici 1999b).
	319	1	Footnote 5: Table 5A:6533-1837 (unsuitable per S. Chinnici, January 25, 1999)- 376 (unoccupied per S. Chinnici, January 25, 1999) =4334	Footnote 5: Table 5A:6533-1837 (unsuitable per Chinnici 1999b)- 376 (unoccupied per Chinnici 1999b)=4334
	319	1	Footnote 6: (unsuitable per S. Chinnici, January 25, 1999)	Footnote 6: (unsuitable per Chinnici 1999b)
	319	1	Footnote 8: P. Detrich, January 2, 1999	Footnote 8: Detrich 1999
	325	2	UOG stands (S. K. Nelson, pers. comm., November 12, 1998)	UOG stands (Nelson 1998)
	326	3	(see also Marbled Murrelet Recovery Team, November 30, 1998)	(see also Marbled Murrelet Recovery Team 1998)
	327	1	(see also Marbled Murrelet Recovery Team, November 30, 1998)	(see also Marbled Murrelet Recovery Team 1998)
	329	4	(approximately 30 mmbf per acre; T. Reid, pers. comm.)	(approximately 30 mmbf per acre; T. Reid, pers. comm., December 16, 1998)
	330	4	(Marbled Murrelet Recovery Team, November 30, 1998; P. Karieva, December 7, 1998)	(Marbled Murrelet Recovery Team 1998, P. Karieva 1998a)

Section	Pg.	¶	Change from [Delete]	Change to [Add]
	333	1	land management practices (USDI Fish and Wildlife Service 1997)	land management practices (USDI Fish and Wildlife Service 1997a)
	333	2	and the Recovery Plan (USDI Fish and Wildlife Service 1997)	and the Recovery Plan (USDI Fish and Wildlife Service 1997a)
	335	3	recovery of the species (USDI Fish and Wildlife Service 1997)	recovery of the species (USDI Fish and Wildlife Service 1997a)
	335	3	Marbled Murrelet Recovery Team, November 30, 1998).	Marbled Murrelet Recovery Team 1998).
	337	5	(P. Karieva, December 7, 1998).	(P. Karieva 1998a).
	338	2	D. Murphy, September 10, 1997; P. Karieva, December 7, 1998).	D. Murphy 1997; P. Karieva 1998a).
	338	4	Karieva, December 7, 1998; D. Murphy, September 10, 1997).	Karieva 1998a, Murphy 1997).
	338	5	(USFWS 1997	(USDI Fish and Wildlife Service 1997a
	339	3	3,473 acres of young seral	3,472 acres of young seral
	341	1	Table 57. Total, Residual DF OG: 13	Table 57. Total, Residual DF OG: 14
	341	1	Table 57. Total, Mid-seral: 3003	Table 57. Total, Mid-seral: 3,004
	341	1	Table 57. Total, Young seral: 3473	Table 57. Total, Young seral: 3,472
	341	1	Table 57. Total, Other seral: 408	Table 57. Total, Other seral: 409
	341	1	Table 57. Grand total: 18759	Table 57. Grand total: 18,760
	342	2	(USDI Fish and Wildlife Service 1997, page 142-144).	(USDI Fish and Wildlife Service 1997a, page 142-144).
	342	2	(USDI Fish and Wildlife Service 1997, page 143).	(USDI Fish and Wildlife Service 1997a, page 143).
	342	3	(USDI Fish and Wildlife Service 1997) describes	(USDI Fish and Wildlife Service 1997a) describes
	342	3	(USDI Fish and Wildlife Service 1997, page 133). Therefore,	(USDI Fish and Wildlife Service 1997a, page 133). Therefore,
	342	3	lands" (USDI Fish and Wildlife Service 1997	lands" (USDI Fish and Wildlife Service 1997a
	343	1	weather (USDI Fish and Wildlife Service 1997	weather (USDI Fish and Wildlife Service 1997a
	344	1	Table 58. Total, Late-seral: 2,786	Table 58. Total, Late-seral: 2,787
	344	1	Table 58. Total, Other MMCAs: 3,440	Table 58. Total, Other MMCAs: 3,441
	344	1	Table 58. Grand total: 12,306	Table 58. Grand total: 12,307
	346	1	(CDFG 1998a, PALCO 1998).	(California Department of Fish and Game 1998a, The Pacific Lumber Company 1998).

Section	Pg.	¶	Change from [Delete]	Change to [Add]
Unlisted Species				
	351	2	{First column in Table 59} Baseline	Baseline[1]
	351	2		{The following footnote is added} [[1] Baseline acres include habitat within the Headwaters acquisition area.]
Pacific fisher	352	1	{First column in Table 60): Baseline	Baseline[1]
	352	1		{The following footnote is added} [[1] Baseline acres include habitat within the Headwaters acquisition area.]
	352	3	LSH would be reduced within the PALCO ownership	LSH would be reduced within the PALCO ownership (excluding the Headwaters acquisition area)
	352	3	32 percent (69,231acres)	30 percent (63,170 acres)
	352	3	69 percent (47,304 acres)	66 percent (42,000 acres)
Northern red-legged frog, foothill yellow-legged frog and northwestern pond turtle	361	5	126.814	126,328
	363	3	Therefore, the FWS concludes that outside RMZs an unknown amount of habitat could be affected by timber harvest and associated activities.	Therefore, the FWS concludes that outside RMZs an unknown amount of habitat could be affected by timber harvest and associated activities; however, a gross estimate is provided.
Tailed frog and southern torrent salamander	367	3	PALCO	The Pacific Lumber Company
Summary of response to proposed action				
Listed Species/Critical Habitat: Northern spotted owl	369	2	6,769	6,770
	370	4	6,769	6,770
	370	4	170,404	170,403
Listed Species/Critical Habitat: Bald eagle	371	2	69,231	63,170
Listed Species/Critical Habitat: Marbled murrelet	371	5	(Marbled Murrelet Recovery Team, November 30, 1998; P. Karieva, December 7, 1998).	(Marbled Murrelet Recovery Team 1998, Karieva 1998a).
	372	1	(H. Carter, pers. comm., November 11, 1998; S. K. Nelson, Pers. comm., November 12, 1998).	(Carter 1998, Nelson 1998).

Section	Pg.	¶	Change from [Delete]	Change to [Add]
	372	2	(P. Karieva, pers. comm., December 7, 1998).	(Karieva 1998a)
	373	1	(Marbled Murrelet Recovery Team, pers. comm., November 30, 1998, P. Karieva. pers. comm., December 1 and 7, 1998).	(Marbled Murrelet Recovery Team 1998, Karieva 1998a and 1998b).
	373	2	(Marbled Murrelet Recovery Team, pers. comm., November 30, 1998).	(Marbled Murrelet Recovery Team 1998).
Unlisted Species: Northern red-legged frog, foothill yellow-legged frog and northwestern pond turtle	389	6	Adverse impacts are likely to occur as a result of the loss or modification of 91,840 to 191,767 acres. Additional habitat associated with 486 acres of mapped wetlands may be adversely affected.	Adverse impacts are likely to occur as a result of the loss or modification of 91,840 to 191,767 acres (page 238 and Table 63).
CUMULATIVE EFFECTS				
Listed Species/Critical Habitat				
Marbled murrelet	401	4	(e.g., D. Murphy, September 10, 1997).	(e.g., Murphy 1997).
	402	1	(P. Karieva, December 1, 1998)	(Karieva 1998b)
	402	1	Marbled Murrelet Recovery Team (November 30, 1998).	Marbled Murrelet Recovery Team (1998).
	402	2	(see USDI Fish and Wildlife Service letters dated May 20, 1997, August 8, 1997, November 25, 1997).	(USDI Fish and Wildlife Service 1997b, 1997c, and 1997d).
	402	3	(National Resource Council 1995; Karieva, December 1 and December 7, 1998).	(National Resource Council 1995, Karieva 1998a and 1998b).
	402	4	(USDI Fish and Wildlife Service 1997, page 3).	(USDI Fish and Wildlife Service 1997a, page 3).
	402	4	(USDI Fish and Wildlife Service 1997).	(USDI Fish and Wildlife Service 1997a).
	403	4	(USDI Fish and Wildlife Service Jan. 28, 1998).	(USDI Fish and Wildlife Service 1998b).
	404	1	(Frampton, November 29, 1994; Henson, August 23, 1994).	(Frampton 1994, Henson 1994).
	404	2	(USDI Fish and Wildlife Service Jan. 28, 1998).	(USDI Fish and Wildlife Service 1998b).
INCIDENTAL TAKE STATEMENT				
	407	3	{delete entire third paragraph}	
Pacific fisher	412	1	51,400	42,000
	412	2	51,500	42,000

Section	Pg.	¶	Change from [Delete]	Change to [Add]
Red tree vole	412	5	51,400	42,000
	412	6	56,900	47,000
	412	6	51,500	42,000
Reasonable and prudent measures & terms and conditions				
	415	8	All of the conservation and management measures of the HCP's Operating Conservation Program, together with the terms identified in the associated IA, are hereby incorporated...	All of the conservation and management measures of the HCP's Operating Conservation Program, together with the terms identified in the associated IA, and any section 10(a)(1)(B) permit and permits issued with respect to the proposed HCP/SYP, are hereby incorporated...
Reporting Requirements	416	2	PALCO	Pacific Lumber Company