Candidate Conservation Agreement with Assurances for Fisher for the Stirling Management Area

between

Sierra Pacific Industries

and

U.S. Fish and Wildlife Service

This Candidate Conservation Agreement with Assurances (CCAA), effective and binding on the date of the last signature below, is between Sierra Pacific Industries (SPI) (Applicant) and the U.S. Fish and Wildlife Service (Service), referred to as "Parties." The Administrators of this CCAA are:

Sierra Pacific Industries designates the following as the Agreement Administrator;

Sierra Pacific Industries Corporate Office
P.O. Box 496014
Redding, CA 96049-6014
19798 Riverside Ave.
Anderson, CA 96007
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(530) 378-8139 (Fax)

U. S. Fish and Wildlife Service designates the following as the Agreement Administrator;

Yreka Fish and Wildlife Office
1829 South Oregon Street
Yreka, CA 96097
(530) 842-5763 (Phone)
(530) 842-4517 (Fax)

Permit Number: ___TE166855-0________________

I. Authorities and Purpose

Sections 2, 7, and 10 of the Endangered Species Act of 1973, as amended (ESA), and the Fish and Wildlife Coordination Act, allow the Service to enter into this CCAA. Section 2 of the ESA states that encouraging interested parties, through Federal financial assistance and a system of incentives, to develop and maintain conservation programs is a key to safeguarding the Nation's heritage in fish, wildlife, and plants. Section 7 of the ESA requires the Service to review programs that it administers and to utilize such programs in furtherance of the purposes of the ESA. By entering into this CCAA, the Service is utilizing its Candidate Conservation Program to further the conservation of the Nation's fish, wildlife, and plants. Section 10(a) of the ESA authorizes the issuance of permits to "enhance the survival" of a listed species. The Service's implementing regulations at 50 CFR 17.22 (d) provide the application requirements and issuance criteria for CCAAs.

SPI enters into this CCAA under the inherent authority of the corporate management of Sierra Pacific Industries.

The purpose of this CCAA is for SPI to implement a conservation measure for fisher (*Martes pennanti*) in California. The conservation measure consists of management of fisher denning and resting habitat on SPI lands in the Sierra Nevada. This CCAA will meet the conservation goals of the Service in that it provides incentive for SPI to implement habitat conservation measures for fishers. In addition this CCAA provides incentive to SPI to accept reintroduced fisher onto enrolled lands that historically contained fisher, but currently do not. If the California Department of Fish and Game (CDFG) should implement a reintroduction action with SPI's approval of the plan, this CCAA will provide the opportunity to evaluate future larger scale reintroduction efforts based on monitoring mortality, movement patterns, and habitat use of released fisher. If reintroduction should occur, this CCAA would directly benefit the status of the fisher in currently unoccupied habitat, and provides SPI regulatory certainty concerning land use restrictions that might otherwise apply should fisher become listed under the ESA.

II. Responsibilities of the Parties

SPI will accomplish the objective of this CCAA through programs of habitat management and development of fisher denning and resting habitat on the enrolled lands, totaling approximately 160,000 acres (Figures 1 and 2). A legal description of parcels included in the CCAA is on file at the Yreka Fish and Wildlife Office. Monitoring of the habitat conservation measure (e.g., increase in acreage of fisher denning and resting habitat) will be reported every 5 years. Monitoring for colonizing fisher will occur at a minimum every 5 years. Additionally, if fisher colonize the enrolled lands, or are reintroduced onto enrolled lands, changes to habitat will be reported on an annual basis (see reporting section of this document). Monitoring of habitat and habitat elements and reintroduced fisher will be agreed upon by CDFG, SPI, and the Service prior to a reintroduction.

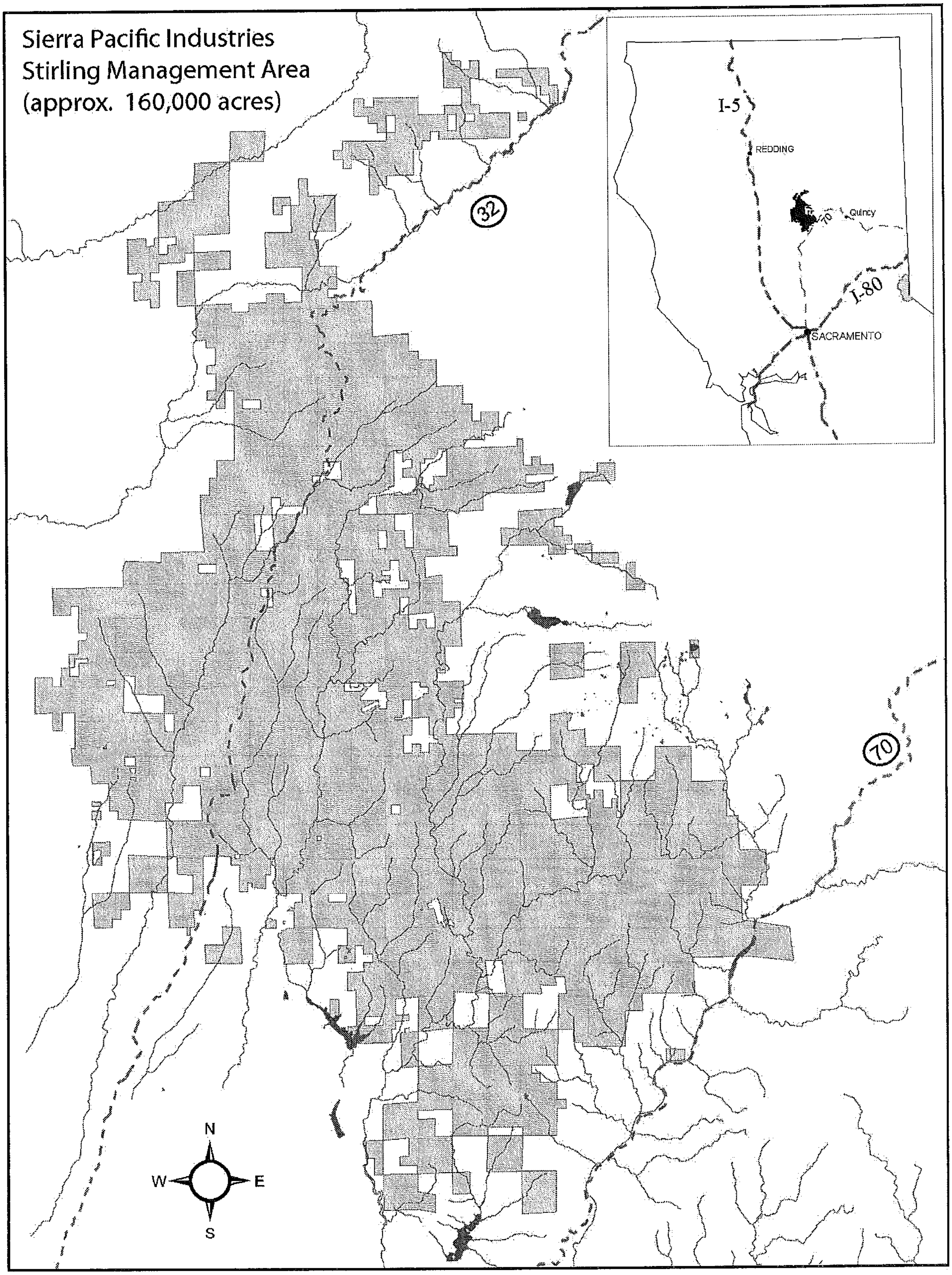

Figure 1. Map of Enrolled Lands

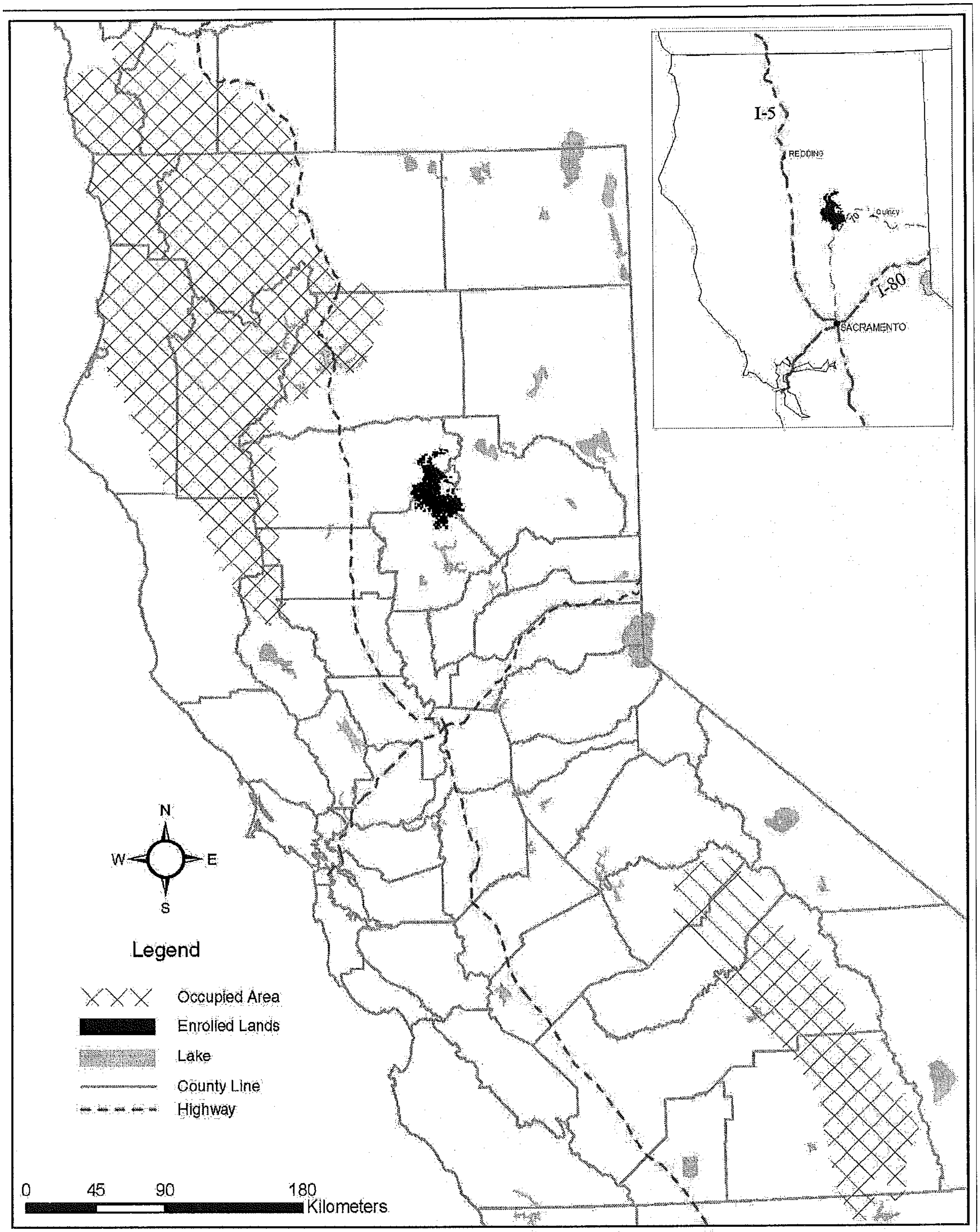

Figure 2. Opinion based distribution of fisher in California and southwestern Oregon. Distribution representations based on current understanding of extent of occurrence for fisher from contemporary survey and research data (USFWS 2008). Enrolled lands shown for reference.

Upon approval of the CCAA the Service will issue SPI a section 10(a)(1)(A) permit, in accordance with 50 CFR 17.22 (a), that would provide SPI with authorization for incidental take of fisher on the enrolled lands and provide regulatory assurances, consistent with 50 CFR 17.22 (a)(5), should the species be listed under the ESA in the future. The permit would authorize incidental take of fisher consistent and associated with this CCAA, resulting from the otherwise lawful activities, including forest management activities, on the SPI lands enrolled in this agreement. Covered forest management activities include felling and bucking timber, yarding timber, loading and landing operations, salvage of timber, transport of timber and rock, road construction and maintenance, rock pit construction and use, site preparation, tree planting, vegetation control, pre-commercial thinning and pruning, collection of minor forest products, grazing, and fire suppression. Covered activities may be conducted by SPI employees, contractors, agents, or other assigns. The duration of the Agreement is 20 years.

Conservation Opportunities on Private Lands

Opportunities exist on private lands to enhance the ability to manage fisher habitat and support fisher reintroduction. These opportunities and advantages indicate that conservation activities for the fisher on private lands have an important role in aiding the Service and CDFG conservation efforts for the fisher in California. Some examples of these opportunities include the following:

1. Private landowners can actively manage forest stands and landscapes to allow for the design and implementation of studies to determine how fishers respond to various management practices;
2. Reintroduction and other conservation methods can be implemented on private lands in a relatively short time frame, potentially providing invaluable application of a particular conservation technique;
3. The maintenance and growth of fisher habitat on private lands can substantially improve the baseline condition for fishers. Private lands comprise an important low-elevation component of the fisher's former range in the central and northern Sierra Mountains in California; and
4. Private land managers can efficiently and effectively control access to their lands, reducing non-habitat based potential threats on fisher.

III. Enrolled Lands

The enrolled properties are lands owned or managed by SPI in Butte, Plumas, and Tehama Counties in California, and are located in the Stirling Management Area. The enrolled lands are industrial forestlands in California that are characterized by a mix of primarily second growth pine and mixed conifer forests. Fishers are believed to have been extirpated from these lands (Zielinski et al. 2005). The enrolled lands in Butte, Plumas, and Tehama Counties are primarily large tracts of private holdings. The enrolled lands are the largest unoccupied contiguous SPI tract within the historic range of fishers. These lands were chosen for the CCAA because the area has been identified by CDFG as a likely location for an experimental introduction, should it occur.

IV. Conservation Measure

The objective of this CCAA is to increase the capability of the enrolled lands to support fisher. SPI commits to management during the 20-year period of this CCAA that will move the enrolled SPI forestlands to a condition that supports more denning and resting habitat for fishers than that which exists today. In order to achieve this conservation measure, SPI will utilize their forest management plan, as embodied in SPI's Northern District Option A demonstration of Maximum Sustained Production of High Quality Timber Products (SPI Northern District Option A, 2002) and other management policies. Maintaining and increasing the habitat capability of fisher habitat in unoccupied areas is important to allow for future planned reintroduction efforts or colonization by fisher through natural dispersal. Denning and resting habitat has been identified as one of the likely factors limiting fisher populations. Therefore, the conservation measure in this CCAA specifically addresses fisher denning and resting habitat. Currently the enrolled lands contain approximately 23% fisher denning and resting habitat. During the 20-year period of this CCAA, the enrolled lands will maintain a minimum level of 20% of fisher denning and resting habitat at any given time period, and by the end of the permit period fisher denning and resting habitat will increase to approximately 33%. At the 10-year monitoring point, we expect the enrolled lands to be at least 26% denning and resting habitat. This means that, over the next 20 years, 100% of the denning and resting habitat committed to in this CCAA will be provided by timber stands that currently exist on the enrolled lands.

V. Expected Benefits

Implementation of this CCAA is expected to maintain and increase fisher denning and resting habitat on the enrolled lands.

In the future, if fisher re-occupy their historic range in the Sierra Nevada Mountains, the enrolled lands are expected to provide support for fisher populations.

An additional purpose of this CCAA is to provide incentive for SPI to accept translocated fisher onto the enrolled lands that historically contained fisher, but currently do not.

This CCAA may encourage other necessary properties to enter into conservation agreements with the Service that will conserve fishers and their habitat.

VI. Background of Existing Distribution of Fisher in Western North America

Historically, the west coast population of fishers extended south from the Cascades, Hozameen, and Okanagan Ranges in British Columbia; through the Cascades and the coast ranges of Washington and Oregon; the north coast ranges in California; Klamath-Siskiyou Mountains in Oregon and California; and the Sierra Nevada in California (Powell and Zielinski 1994). Fishers currently occur in portions of the Cascade, Hozameen, and Okanagan Ranges in British Columbia; in the southern Cascade Range in Oregon (the descendents of a reintroduced population) (Aubry and Lewis 2003); the Klamath-Siskiyou Mountains of northern California and southern Oregon; the north coast ranges of California; and as isolated populations in the southern Sierra Nevada in California (Zielinski et al. 1995). In California, fishers historically occurred in portions of seven ecological subregion sections: Northern California Coast, Klamath Mountains, Northern California Coast Ranges, Northern California Interior Coast Ranges, Southern Cascades, Sierra Nevada, and Sierra Nevada Foothills (Grinnell et al. 1937, McNab and Avers 1994).

The Service, in response to a petition to list the west coast population of fisher (USDI Fish and Wildlife Service 2004), determined that unregulated trapping throughout North America for furs beginning in the 1700s, predator bounties that began in the 1800s and continued until 1960, predator and animal damage control programs operating until the 1970s, and the loss and fragmentation of habitat from urban development, forest management activities, and road construction all resulted in the decline in distribution and abundance of fisher (Dixon 1925, McKelvey and Johnston 1992, Powell 1993, Lewis and Zielinski 1996). Fisher harvests occurred in California from 1919 to 1946 (mean harvest: 18.5/year; range: 1-102), and declined steadily until the trapping season was closed in 1946 (Lewis and Zielinski 1996). The fisher season has remained closed in California, but despite protection from commercial harvest, the current fisher range is greatly reduced as compared to the range described by Grinnell et al. (1937) (Zielinski et al. 2005).

The northwestern California-southwestern Oregon population now occurs in the southern portions of Curry, Josephine, and Jackson Counties in southwestern Oregon and in Del Norte, Siskiyou, Humboldt, Trinity, Shasta, and northern Mendocino Counties in northwestern California (Zielinski et al. 1995, Slauson and Zielinski 2007); Yaeger, pers. comm.)(Occupied Area). Contemporary surveys and recent field studies suggest that the northwestern California – southwestern Oregon population is the largest in the western United States, though formal estimates of the number of individuals have not been reported (Powell and Zielinski 1994). The southernmost fisher population occurs in the southern Sierra Nevada where the range extends from Yosemite National Park south to northern Kern County (Zielinski et al. 2005). This population no longer extends to the northern Sierra Nevada and California Cascades as it once did, and is approximately 400 km from the northwestern California-southwestern Oregon population (Zielinski et al. 2005). Lamberson et al. (2000) for modeling purposes estimated the number of fisher in this population at 100-500 individuals.

Historical information regarding the distribution of fishers is limited primarily to the work of Grinnell et al. (1937). Grinnell et al. (1937) provided a general account of distribution of fisher in California, but did not provide a detailed assessment of habitat associations; their reports of habitat use were largely anecdotal and generally made with reference to observations of foraging fishers. Grinnell et al. (1937) states that fisher "belongs to middle altitudes, 2000 ft (near sea level occasionally) to 5000 ft" at the northern part of their range; in the Mount Whitney region they occur "ordinarily 4000 ft to 8000 ft;" and vagrant individuals occur "as high as 10,900 ft near Mount Lyell." The distribution of trapping records suggests fishers occurred in many forest types not specifically mentioned in Grinnell et al.'s 1937 species account.

VII. Habitat

The recovery and long-term survival of populations of fishers in California is dependent on habitat on public and private lands. Within the fisher's range in California, there are many important areas that are currently or may potentially be used by fishers occurring on privately owned lands. SPI and the Service recognize the importance of conservation efforts on non-Federal lands as being crucial to the future connectivity of fisher populations in California.

Information regarding the life history attributes of fishers in general, and the status of habitat and potential threats to fishers in the west coast distinct population segment can be found in the Service's 12-month finding (USDI Fish and Wildlife Service 2004). However, the information in the 2004 12-month finding is not specific to the conditions, current and projected, on the enrolled lands. Findings and preliminary analysis from recent (post 2004) fisher habitat studies that are more applicable to the enrolled lands are discussed below.

General Habitat Description

Based on many studies of fisher habitat in the west coast population (California, Oregon, and British Columbia), the important components of fisher habitat appear to be species composition, site productivity, management history, and the ecological and disturbance processes of the forest. Fisher populations need landscapes that provide protective cover, adequate prey, and tree cavities for rest and reproductive den sites.

Fishers do not appear to rely on a specific forest type in any given area. The most consistent predictors of fisher occurrence at large spatial scales appear to be forested habitat and relatively high amounts of cover (Carroll 1997, Dark 1997, Weir and Harestad 1997, Weir and Corbould 2007) rather than any particular type of forest community. While at smaller spatial scales, several studies have documented fishers using or selecting particular forest types (Buck et al. 1983, Dark 1997, Klug 1997, Self and Kerns 2001), the patterns of use at these spatial scales appear to be related to various local conditions (e.g., composition and adjacency of habitat types, forest age, disturbance history, etc.). These local conditions likely influence the abundance of suitable den structures critical for reproduction, suitable resting sites, and diversity or abundance of prey populations rather than characteristics that are inherently unique to a particular forest type.

At the largest scale, large tracts of forest with denser canopy cover and productive prey habitat are important for population persistence. Across the west coast populations, fishers generally have a positive association with increasing canopy at all spatial scales investigated (Carroll et al. 1999, Slauson et al. 2001, Weir and Harestad 2003, Yaeger 2005, Aubry and Raley 2006). It has been observed that often in stands that are used for resting, where the values of canopy cover may be low, fishers may be able to compensate by using microsites within stands with higher than average stand values of canopy closure (Self and Kerns 2001). Self and Kerns (2001) also suggest that a dense shrub layer, which would provide a high level of overhead cover for a fisher traveling on the ground, may contribute to the overall canopy layer in relatively sparse forested areas for activities such as traveling or foraging.

Hardwood trees are important to fishers but their value varies by ecological region. Hardwood mast production has been indicated as an important contributor to fisher prey density; thus, they are potentially indicative of high quality fisher habitat (Zielinski et al. 2004b, Yaeger 2005). However, large parts of occupied fisher range do not contain mast producing hardwoods; thus, they are not requisite for sustainable fisher populations in such areas. Where mast production by hardwoods is substantive (Zielinski et al. 2004b, Yaeger 2005), small fisher home range sizes and/or high densities indicate that this can be an important contributor to fisher habitat and productive fisher populations. Fisher commonly use cavities in hardwood trees for denning and resting (Zielinski et al. 2004a, Yaeger 2005, Higley and Matthews 2006, Self and Callas 2006). It is unclear whether these differences in use patterns result from fisher resource selection or merely reflect the relative prevalence of tree species with cavities within each study area.

Within forests, trees with cavities and other atypical microsite structures are necessary for denning and resting. In areas where both hardwoods and conifers occur, hardwoods are typically used for denning more frequently than conifers, presumably because hardwoods develop cavities more readily than conifers. Although live trees and snags of both hardwoods and conifers are used, most dens in hardwoods are in live trees, while a high proportion of dens in conifers are snags (Aubry and Raley 2006, Higley and Matthews 2006, Self and Callas 2006). Structures used for both denning and resting sites are typically more abundant (although low in density) in habitats with characteristics of older forests (large trees, large snags, and logs and associated pests and pathogens). Ecological processes typically associated with older forests necessary for the creation of cavities in live trees and snags include physical damage that provides an avenue for disease and decay to affect the health of the tree. Management processes can also contribute to the maintenance and creation of cavities in live trees and snags. Time and the above processes are needed to develop larger diameter trees and trees with the specific structural characteristics fishers use (Zielinski et al. 2004a, Yaeger 2005, Aubry and Raley 2006). These processes are specific to tree species, disturbance history, overall stand conditions, and other environmental and management factors.

Fisher use of and selection for structural elements found in older forests has likely led to the belief that fishers require complex forest ecosystems and are dependent upon old growth forest in the western United States. However, studies in British Columbia (Weir and Harestad 1997, Davis 2003, Weir and Corbould 2006) and California (Klug 1997, Self and Callas 2006) have shown that fisher persist in areas with little old growth habitat. The perception of fisher being dependent on old growth forests stems from the fact that fisher use structural elements for denning and resting which, unless provided for by management, are often rare or absent in heavily managed landscapes.

Research on fisher denning and resting habitat has occurred on both national forest and private lands in California. Tables 1 and 2 describe rest and den sites (including the den, rest tree, and nearby stand characteristics).

Table 1. Values associated with resting locations of radio-collared fisher at various study areas in California and southern Oregon

Study Area	Source	n Indiv Fisher	Rest Tree Type	n Structure	Average dbh of Rest Tree (in)	StDev of Rest Structure (in)	Average QMD[a] of Rest Site (in)	StDev of Rest Site QMD (in)
Southern Oregon Cascades	Aubry and Raley 2006	19	Live Tree	259[b]	25.1 males 34.6 females			
			Snag	54[c]	47.6 males 44.9 females			
North Coast (Six Rivers)	Zielinski et al. 2004a	22	Hardwood	32	34.5	11.9		
			Conifer	64	49.1	14.9		
			Snag	50[d]	46.8	12.9		
			Log	10	37.4	17.4		
Coastal Klamath Province (Hoopa)	Yaeger 2005	19	Hardwood	86	29.6	10.2	14.4	5.5
			Conifer	52	43.1	15.9		
			Hardwood snag	5	28.7	9.0		
			Conifer snag	7	45.1	19.3		
			Conifer Log	5	36.6	2.6		
Interior Klamath Province (Trinity Lake)	Yaeger 2005	19	Hardwood	26	28.3	10.7		
			Conifer	154	38.8	16.1		
			Hardwood snag	4	26.6	6.6		
			Conifer snag	18	39.5	11.9		
			Conifer Log	9	92.3	19.8		
Interior Klamath Province (Weaverville)	Self pers comm.	9	Hardwood	11	29.8	15.0	11.0	1.7
			Conifer	10	29.8	11.8		
			Conifer Snag	4	43.8	3.3		
Interior Klamath Province (Castle Creek)	Self and Kerns 2001	3	Conifer	23	29.9	12.5	13.3	3.0
			Hardwood	4	21.0	2.6		
			Snag	5	41.0	14.0		
			Log	2	38	-		
Southern Sierra Nevada[e]	Zielinski et al. 2004a	23	Hardwood	146	25.6	8.4		
			Conifer	70	43.4	14.9		
			Snag	93[c]	47.4	20.0		
			Log	33	51.8	36.1		
Southern Sierra Nevada	(Mazzoni 2002)	9	Live Tree	53	37.5	11.0		
			Snag	9	40	17.5		

[a] - QMD calculations do not include rest structure
[b] - less than 2% hardwood
[c] - n = 3 hardwoods
[d] - conifer only
[e] - giant sequoias removed from calculations of dbh

dbh-diameter breast high (4.5ft above ground)
StDev-Standard Deviation
in-inches
QMD-Quadratic Mean Diameter

Table 2. Values associated with reproductive den (natal and maternal combined) locations of radio-collared fisher at various study areas in California, southern Oregon, and British Columbia

Study Area	Source	n Indiv Fisher	Den Tree Type	n Structure	Average dbh of Den Tree (in)	StDev of Den Structure (in)	Average QMD[a] of Den Site (in)	StDev of Den Site QMD (in)
British Columbia	Weir 2003		Hardwood	19	41.5			
British Columbia	Weir 2007	4	Hardwood	9	19.8	3.5		
Southern Oregon Cascades (natal dens)	Aubry and Raley 2006	6	Live tree	7	36.2			
			Snag	6	35.0			
Southern Oregon Cascades (maternal dens)	Aubry and Raley 2006	6	Live tree	8	38.2			
			Snag	5	51.9			
			Log	5	41.3			
North Coast (Six Rivers)	Truex et al. 1998	4	Hardwood	1	20.9			
			Conifer	4	46.0			
Coastal Klamath Province (Hoopa)	Yaeger 2005	5	Hardwood snag	1	24		13.0	5.1
			Hardwood	8	25.1	5.6		
			Conifer snag	1	37.9			
Coastal Klamath Province (Hoopa)	Higley and Matthews 2006	16	Live tree	37	40.9			
			Snags	10				
Interior Klamath Province (Trinity Lake)	Yaeger 2005		Hardwood	5	28.2	13.8		
			Conifer snag	1	30.7			
Interior Klamath Province (Weaverville)	Self 2008	9	Hardwood	37	24.8	11.6	10.7	1.5
			Conifer	5	43.4	20.7		
			Snag	20	33.7	14.3		
Southern Sierra Nevada	Truex et al. 1998	4	Hardwood	4	26.3			
			Conifer	3	49.3			

[a] - QMD calculations do not include den structure.
dbh-Diameter Breast High (4.5ft above ground)
StDev-Standard Deviation
in-inches
QMD-Quadratic Mean Diameter

The data in Tables 1 and 2 provide insight into the range of characteristics of fisher den and rest sites. These data serve as the foundation for the use of Lifeform 4 as a conservation measure on the enrolled lands.

Habitat Conditions on the Enrolled Lands

SPI manages about 1,218,000 acres of forestland within the historic range of the fisher in California. These forestlands predominantly lie at lower elevations with over 90% distributed below 6,000 feet. Within the current range of fisher, SPI manages approximately 356,000 acres in Humboldt, Shasta, Siskiyou, and Trinity Counties in California; these forestlands continue to be occupied by fishers. The portion of the SPI ownership enrolled to meet the Conservation Measure is located in Butte, Tehama, and Plumas Counties and comprises approximately 160,000 acres. These enrolled lands lie outside the current distribution of fishers in California.

SPI manages habitat for over 240 species of wildlife across their ownership. Habitat for these species are grouped into Lifeforms (stand structural categories) based upon the breeding and feeding habitat needs of each species. SPI uses plot based inventory data as a basis for the description of stands. Plot based inventory data are then used to describe the characteristics that represent each Lifeform class (1-4) stand. Lifeform 4, which SPI uses to describe fisher denning and resting habitat, is identified as a "large tree dense forest" condition. The structural requirements for this Lifeform were developed from the data collected from a variety of species associated with Lifeform 4, including fisher den and rest sites on SPI managed forestlands. Over one-third of the data are from fisher den and rest sites.

Lifeform 4 stands will contain either 1) a quadratic mean diameter (QMD) of trees 13 inches or greater[1], a canopy closure of 60% or greater[2], and a minimum average of 9 trees per acre at least 22 inches dbh or 2) stands with a canopy closure of 60% or greater and a minimum average of 20 trees per acre at least 22 inches dbh. Only those stands meeting the above structure conditions combined with one or more potential fisher denning structures (conifer tree ≥30 inches dbh or hardwood tree ≥ 22 inches dbh, with the potential of containing a cavity, basal hollow or other suitable defect) are identified as Lifeform 4 stands.

Lifeform 4 (the large tree, dense forest condition) is the stand definition used in describing the current and future amounts of fisher denning and resting habitat on SPI land throughout the range of the fisher in California. To best describe Lifeform 4, and ensure its benefit to a variety of wildlife species, fisher data (from den and rest sites) were combined with similar data from other species that are associated with the large tree, dense forest condition. Specifically, data on nest sites located on SPI land for the northern goshawk and spotted owl (both "northern" and "California"), den and rest sites for fisher and the American marten, and maternal day roost sites for the silver-haired bat were used in this analysis. Over 350 den, rest, nest, and maternal roost sites of these 6 species located on SPI land comprise this data set. Over one third of the data are from fisher den and rest sites. The parameters developed from this data set were used to describe the "large tree, dense forest" condition- Lifeform 4.

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1 **QMD is calculated using all trees with a diameter breast high (dbh) greater than or equal to 5 inches.**

2 **Canopy closure is calculated from a canopy closure model using all trees 6 inches dbh and larger.**

The Lifeform 4 habitat description for fisher denning and resting on SPI land is used to determine the percent of land that is suitable for denning and resting by fisher. The Lifeform 4 description is applied to SPI forest inventory data to determine current amounts of Lifeform 4 stands. In addition, using this denning and resting habitat description coupled with SPI's proposed management and appropriate forest growth models, we can predict the trend in the amount of denning and resting fisher habitat that will occur on the enrolled lands in the future.

SPI provides their forest stand projections based on compliance with the current California Forest Practice Act's Maximum Sustained Production regulation (14 CCR §913.11(a), §933.11(a) and §953.11(a)) and other state and federal laws. SPI uses a proprietary projection model for projecting future growth and harvests. While the model projections are proprietary, the actual growth models used are long standing cooperative growth and yield models that were developed by the University of California, Berkeley and the U.S. Forest Service. These models are available to the public. The cooperative growth and yield models inside SPI's proprietary planning model are CONIFER, CACTOS, and GSPACE. The results and accuracy of these projections have been reviewed, verified, and approved by the California Department of Forestry and Fire Protection (CALFIRE) through their review and approval of SPI's Option A demonstration of maximum sustained production. To be specific as to the 20 years of this CCAA, all stands that contribute to meeting the conservation measure exist today and their projected growth is modeled only with regionally calibrated CACTOS. This inventory and projection provides an accurate assessment of SPI's current and future ability to provide denning and resting habitat for the fisher on its ownership, and specifically on the enrolled lands.

SPI managed lands also provide other stands in addition to Lifeform 4, with sufficient canopy closure and tree size to provide both prey and foraging habitat for fishers (Lifeform 2). Lifeform 2 is described as stands with a QMD of 6-13 inches with 40-100 % canopy closure; and stands with a 24 inches QMD or greater, and a canopy closure of 40-60%. The combination of both Lifeform 4 and Lifeform 2 habitat types (as well Lifeforms 1 and 3) are currently providing landscapes that support fishers in SPI's Weaverville fisher telemetry study area (Self and Callas 2006). For comparison purposes, Table 3 depicts current percent of Lifeform habitats and average basal area of trees from inventory plots on SPI lands. Inventory plots summarized for comparison purposes are from the Weaverville fisher telemetry study area, the area currently occupied by fisher in Northern California on SPI managed lands, and SPI lands in the Stirling Management Area (see later text for detailed descriptions of Lifeform habitats). These comparisons suggest that, using these selected stand and landscape attributes, the Stirling Management Area should be capable of supporting use and reproduction by fisher, should they re-occupy the area.

Table 3. Lifeform (habitat) percentages on SPI managed lands for areas currently occupied by fisher compared with the Stirling Management Area

	Occupied Fisher Landscape on SPI managed lands (n=89,022 plots)	Weaverville Fisher Telemetry Study Area (100% MCPs)[a] (n=2,948 plots)[b]	Stirling Management Area (n=40,000 plots)
Percent Lifeform 1	10	8	6
Percent Lifeform 2	69	83	59
Percent Lifeform 3	9	7	12
Percent Lifeform 4	12	2	23
Basal Area/ac (sqft)	113	83	137

[a] - n= 6 female fisher, MCP-Minimum Convex Polygon

[b] - plots summarized only from SPI owned land within the MCP, plot information not available for non-SPI ownerships

In addition to these Lifeforms, SPI manages for selected habitat elements important to fishers and their prey. SPI's forest inventory plots are implemented at one plot per four acres and are measured every ten years. For comparison purposes, Table 4 displays data from SPI's forest inventory plots located in three areas, summarizing the data of selected habitat elements important to fishers and their prey on the enrolled lands. The fisher 100% Minimum Convex Polygons (MCP) information is from plots located within SPI's Weaverville fisher telemetry study area (Self and Callas 2006), within the MCP (MCP calculated using program CALHOME, Kie, et al. 2006) for six females in the study. The final column is plot data from forest inventory plots on the enrolled lands. These data show that, for these selected habitat elements, the Stirling Management Area is generally very similar to areas currently supporting resident, reproducing fisher populations. The exceptions are that Stirling currently supports slightly fewer large logs, but has more large black oaks. Overall, these data suggest that habitat for fisher and their prey, using these selected parameters, should be of adequate quality to support a fisher population.

Table 4. Selected habitat elements important to fisher and their prey currently available on SPI managed lands (values are per acre averages)

Selected Habitat Elements	Occupied Fisher Landscape on SPI managed lands (n=89,022 plots)	Weaverville Fisher Study Area (100% MCPs)[a] (n=2,948 plots)	Stirling Area (n=40,000 plots)
Snags≥15 in. dbh	1.55	1.62	2.17
Snags≥25 in. dbh	0.46	0.56	0.58
Snags≥31 in. dbh	0.24	0.36	0.28
Snags≥41 in. dbh	0.07	0.07	0.07
Logs≥20 in dbh	0.49	0.682	0.37
Trees≥15 in. dbh	21.53	13.69	27.60
Trees≥21 in. dbh	7.97	3.96	10.73
Trees≥31 in. dbh	1.37	0.67	1.78
Trees≥41 in. dbh	0.28	0.14	0.26
Hardwoods ≥25 in. dbh (excludes Black Oaks)	0.27	0.42	0.40
Black Oaks≥25 in. dbh	0.17	0.15	0.26

[a] - n= 6 female fisher
dbh-diameter breast high
MCP-Minimum Convex Polygon

VIII. Threats Addressed by this CCAA

Current information indicates that the greatest long-term risk to fishers in the western United States is likely extinction due to isolation of small populations (Heinemeyer and Jones 1994). Truex et al. (1998) conclude: "Recolonization of the central and northern Sierra Nevada may be the only way to prevent fisher extinction in the isolated southern Sierra Nevada population."

Habitat throughout the fisher's range has historically been lost or fragmented by logging, fire, farming, and human development (Douglas and Strickland 1987, Powell 1993, Powell and Zielinski 1994). The extent of past timber harvest is one of the primary causes of fisher decline across the United States (Powell 1993), and has been suggested as one of the main reasons fishers have not recovered in Washington, Oregon, and portions of California (Aubry and Houston 1992, Powell and Zielinski 1994, Lewis and Stinson 1998, Truex et al. 1998).

The impact of past timber harvest operations on fishers specifically, or the degree to which fisher would be affected by current timber harvest operations, is difficult to quantify. Fishers exist in areas where timber is actively managed (Klug 1997; Self and Kerns 2001; Yaeger 2005; Self and Callas 2006), and additional research is needed to better understand this interaction. In the past, emphasis on conifer production on forest lands within the fishers the west coast population often led to silvicultural treatments that simplify the forest by removing large trees, snags, and down wood. Many of these silvicultural treatments have also excluded undesirable timber production species of both hardwoods and conifers. Forest practices that do not provide forest structural elements important to fisher, when implemented successfully over large areas, alter the ecological function of the landscape and its ability to sustain fishers may be compromised. A landscape's ability to support fishers can be threatened if forest management activities substantially reduce the amount or quality of denning and resting habitat. On the enrolled lands, the primary potential risks to existing and future fisher habitat are the loss of denning and resting habitat and structures. However, as discussed below, on the enrolled lands SPI proposes to increase the amount of denning and resting habitat during the 20-year time period of this agreement. Most importantly, because the enrolled lands are not currently occupied by fisher, this agreement provides an opportunity to provide for habitat conditions that may contribute to suitability for fisher habitation and to measure and better understand the interaction between timber management and fisher ecology, if a reintroduction or colonization should occur.

IX. Management Practices and Policies on Enrolled Lands

SPI implements a suite of management practices and policies that are not included as conservation measures within this CCAA, but are expected to benefit fisher, should they re-occupy the enrolled lands. These management practices and policies will provide a range of seral stages across the enrolled lands, which will provide an increasing trend in additional support for use by fisher, during but primarily after the 20-year life of this CCAA. Originally instituted under the auspices of the Z'berg-Nejedly Forest Practice Act of 1973, the Forest Practice Rules (FPRs) contain resource protection requirements via two avenues. First, they set prescriptive standards for minimum protection levels for all activities. Additionally, a Registered Professional Forester proposes a harvest accompanied by an associated cumulative effects analysis; then a State multidisciplinary team reviews and must find that a specific Timber Harvest Plan (THP) does not result in a significant adverse impact. In addition to the FPRs, SPI implements a number of company policies which support fisher conservation. SPI policies are described below.

Managing Disturbance

Whenever possible, SPI uses even-aged management techniques to minimize the number of forest management entries necessary over the life of a stand. In even-aged management stands, SPI limits activities within stands to final harvest; re-establishment, including site preparation, planting, and vegetation control; one pre-commercial thinning and potential pruning; commercial thinning; and a potential second commercial thinning. This represents time intervals from 10 to 40 years between entries, while other silvicultural systems may enter a stand as often as every 7 years.

Managing Amount of Habitat

Landscape assessment areas, generally planning watersheds averaging about 10,000 acres in size, are managed to remain within a defined set of habitat Lifeforms. SPI uses variable rates of entry, a variety of silvicultural systems, timing of entry, and location of management activities to manage and maintain habitats within a target range, as follows:

- Lifeform 1: 5-25% early seral habitat. Early seral habitat on SPI lands is described as stands with a QMD of less than 6 inches with 0-100% canopy closure;

- Lifeform 2: 20-40% small tree or moderately dense forest. Small tree or moderately dense forest habitat on SPI lands is described as stands with a QMD of 6-13 inches with 40-100% canopy closure, and stands with a 24 inches QMD or greater, and a canopy closure of 40-60%;
- Lifeform 3: 5-15% open forest. Open forest habitat on SPI lands is described as stands with a QMD greater than 6 inches with canopy closures ranging from 0-40%; and
- Lifeform 4 stands will contain either 1) a quadratic mean diameter (QMD) of trees 13 inches or greater[3], a canopy closure of 60% or greater[4], and a minimum average of 9 trees per acre at least 22 inches dbh or 2) stands with a canopy closure of 60% or greater and a minimum average of 20 trees per acre at least 22 inches dbh. Only those stands meeting the above structure conditions combined with one or more potential fisher denning structures (conifer tree ≥30 inches dbh or hardwood tree ≥ 22 inches dbh, with the potential of containing a cavity, basal hollow or other suitable defect) are identified as Lifeform 4 stands.

Regeneration units (exclusive of rehabilitation areas) average no more than 20 acres and will not exceed 40 acres in size. As feasible, regeneration units are "grouped" to create areas 20 to 60 acres in size to eventually provide contiguous larger habitat patches of generally the same age and structure class to benefit wildlife species.

Through timely rehabilitation of substantially damaged forest lands, careful and prudent management of plantations, and minimizing the number of harvest entries in any one stand, SPI will maintain at least 80% of the enrolled lands with at least 50% total overhead cover as measured at 2 feet off the ground (over fisher canopy closure).

SPI reduces the risk of wildfire by (1) making use of commercial and biomass thinning techniques, (2) using prescribed fire as necessary to treat harvest areas and underburn strategic stands to reduce fuel loading, and (3) pre-commercial thinning and pruning where feasible to reduce fuel ladders so that ground fires do not become crown fires.

Managing Habitat Elements within Stands

Snags and Green Wildlife Trees

Within assessment areas, SPI retains all snags containing less than 25% sound board foot volume (generally decay classes 2[5]), not posing hazards to operators, and not obstructing operations. SPI emphasizes snag retention in Water and Lake Protection Zones (WLPZs) (see definitions in CAFPR 14 CCR 936). Hazardous or obstructive snags ≥ 15 inches dbh (generally decay class 2) that are felled are left on the ground, as often as operationally possible, for the purposes of providing down wood. In assessment areas not meeting or suspected of not meeting snag-retention minimums (SPI Snag Retentions Policy, 2001, Table 5 on pg 6), snag retention is emphasized within regeneration-unit green tree retention areas. Islands of un-harvested trees

3 **QMD is calculated using all trees with a diameter breast high (dbh) greater than or equal to 5 inches.**

4 **Canopy closure is calculated from a canopy closure model using all trees 6 inches dbh and larger.**

5 **As described in Bull et al. (1997), snag class 2 "represents those snags that show some evidence of decay and have lost some bark and branches, and often a portion of the top. Most nesting by woodpeckers, as well as extensive foraging in and under the bark and in the interior of the wood, is in this structural class."**

will be left unmanaged over the life of the stand within which they reside to provide legacy features and ecological processes associated with tree damage and mortality from insects, disease and inter-tree competition.

When present, SPI retains an average of two or more green wildlife trees per regeneration harvest unit[6]. Retention is emphasized in WLPZs. Primary candidate trees for retention are large conifer and hardwood species (>30 inches dbh and >22 inches dbh, respectively) that contain cavities, basal hollows, reformed tops, obvious signs of heart rot, or a number of large diameter branches.

Within tractor regeneration units, hardwood conversions, or rehabilitation units, SPI retains at least an average of 2% of the unit area in islands of green trees 0.1 acre or larger in size with dominant and co-dominant trees ranging between 8 and 18 inches dbh. Where available, the focus for the green tree retention areas is oaks greater than 22 inches dbh. In other cases, SPI locates green tree retention areas to include important existing stand components such as green wildlife trees, large snags or logs, mast-producing hardwoods (hardwood trees >8 inches dbh), or at the confluence of topographic draws. In the future, at the time of the next harvest entry, these islands will be available candidates for continued retention of forest structural diversity.

Mast-Producing Hardwoods
SPI will not convert stands dominated by mast producing hardwood trees (e.g. Quercus spp.) to conifer stands unless at least 5% of the capable assessment area is comprised of similar stands with trees capable of producing significant mast crops (hardwood trees >8 inches dbh). In assessment areas, where less than 5% of the capable area is in stands with hardwoods large enough to produce significant mast crops, SPI protects up to two regenerating hardwood trees per acre from herbicide application. In addition, SPI will retain two individual hardwoods in all regeneration and rehabilitation units, which will be greater than 22 inches dbh, when available. In individual marked tree harvest areas, SPI retains at least two hardwoods per acre, which will be greater than 22 inches dbh, when available.

Large Down Wood
SPI retains existing down wood containing less than 25% sound board foot volume, generally decay classes 2 and 3 (Bull et al. 1997), at least 20 inches diameter at the large end and at least 10 feet in length. Exceptions to this policy may occur as needed to ensure successful regeneration, reduce fire risk, reduce potential drainage-structure damage, or as unavoidably consumed by prescribed burning. Mechanical disturbance to existing down logs is minimized. Down wood will be provided through time due to the recruitment of snags, green culls, and residual material to the forest floor from natural processes and forest management activities.

Riparian Inclusions
SPI identifies and protects riparian vegetation adjacent to permanent and intermittent water sources within project areas. SPI identifies and uses equipment limitation zones to prevent damage to existing riparian vegetation. Except as approved for specific rehabilitation projects, pesticides will not be used within Class I, II, and IV WLPZs (see definitions in CA FPR 14 CCR 936). If the FPRs are amended to allow, SPI will at its discretion, and with Service concurrence,

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6 **Average regeneration harvest unit on SPI land is 16 acres in size.**

implement management prescriptions designed to provide for a variety of age classes of hardwood riparian vegetation.

Shrub and Grass Layers
SPI uses pruning, commercial, and biomass thinning prescriptions, as feasible, to encourage development of shrub and herbaceous layers within forest stands. SPI will minimize the use of herbicides after trees are "released" (growing freely) to allow for the establishment and growth of herbaceous and shrub layers. In accordance with air quality limitations, SPI will use underburning as a method of reducing fire hazard and to stimulate development of shrub and herbaceous layers in strategically located forest stands.

X. Incidental Take

In accordance with ESA regulations, the fisher will be treated as if it were listed under the ESA, regardless of its current regulatory status. Upon approval of the CCAA, the Service will issue SPI a section 10(a)(1)(A) permit, in accordance with 50 CFR 17.22 (d), that would provide SPI with authorization for incidental take of fisher and provide regulatory assurances should the species be listed under the ESA in the future. The permit would authorize incidental take of fisher consistent and associated with this CCAA resulting from the otherwise lawful activities, including forest management activities, on the enrolled lands in Butte, Plumas, and Tehama Counties. Covered forest management activities include felling and bucking timber, yarding timber, loading and landing operations, salvage of timber products, transport of timber and rock, road construction and maintenance, rock pit construction and use, site preparation, tree planting, vegetation control, pre-commercial thinning and pruning, collection of minor forest products, grazing, and fire suppression. Covered activities may be conducted by SPI employees, contractors, agents, or other assigns.

XI. Expected Level of Potential Take

Unless fishers colonize or are reintroduced onto enrolled lands, take is not expected to occur. Should fisher reoccupy the enrolled lands, take may result from (1) disturbance to pregnant or nursing female fishers during the early denning season, (2) cutting down a den tree containing a late term pregnant fisher or fisher kits, (3) reduction in the amount of habitat to a level that significantly impairs a fisher's ability to breed, feed, or shelter, or (4) fisher mortality caused by vehicle traffic associated with otherwise lawful activities. This take will be in the form of harm, harass, wound, and kill, as defined in section 3 of the ESA.

Fishers occupy large home ranges, and hence, at any time there are only a few in any given area. Mean estimates of fisher home ranges from 7 study areas in California ranged from 1.7 to 23.5 km^2 for females and 7.4 to 58.1 km^2 for males (Buck et al. 1983, Self and Kerns 2001, Mazzoni 2002, Zielinski et al. 2004b, Yaeger 2005). In addition, fishers are rarely encountered in the forest, and are believed to generally avoid human contact whenever possible (Ruggiero et al 1994). Thus cutting of occupied rest trees is very unlikely, and we do not anticipate take to occur in this manner.

(1) The potential for take, in the form of harassment, due to disturbance from forest management activities is most likely limited to the situation where a female fisher is disturbed to the degree she abandons her young when she is nursing non-mobile young. However, the probability of such take is low because females have not been observed abandoning their young even after researchers handled young at dens (Higley, pers. comm.). It is unlikely that any forest management activities would be more disruptive than such invasive research activities. It is unknown how a persistent, non-discrete activity such as harvest may affect a den site. Female fishers regularly move young to new den locations.

(2) The potential for take, in the form of wounding or killing, of a fisher exists from felling of den trees. In the instance of a late-term pregnancy or non-mobile young, the likelihood of take from cutting down an occupied den tree is quite low. This is the result of the inherent low density of fishers, their primary den tree characteristics (hardwoods, and cull live trees and snags), and the breeding biology of fisher. These natural history attributes in conjunction with the minimal harvest activity that occurs on the enrolled lands during March through May (the most vulnerable period) minimize the potential of this form of take.

(3) Fishers use landscapes with a wide variety of stand conditions for foraging, denning and resting activities. Of these habitats, denning and resting habitat is thought to be the most at risk from forest management activities. The loss or reduction in the amount of habitat to a level that significantly impairs a fisher's ability to breed, feed, or shelter is a potential form of take. Thus the loss of, or a significant reduction in, the amount of denning and resting habitat or structural elements in an individual fisher home range may cause individual fishers to discontinue use of the area, which would result in take in the form of harm. The provisions within this CCAA providing for a net increase in the amount of fisher denning and resting habitat improve the ability of the enrolled lands to provide for individual fisher home ranges should fisher be reintroduced or re-occupy the area.

(4) Fishers have been killed attempting to cross both paved and unpaved roads. Fisher road kills have occurred on forest dirt roads as well as high use roads such as state and interstate highways (Truex et al. 1998); Klug pers. comm.; Yaeger pers. comm.). Thus, as fishers will attempt to cross roads, it seems that the size and type of road are less important than the traffic on the road (Dark 1997). Various levels of vehicle traffic occur on the enrolled lands, are intermittent in nature, and are likely to continue at current levels. However, the levels of traffic that do and will occur on the enrolled lands are much less than occur on public roads and other public use areas, including National Forest lands. Mortality of fisher related to vehicle collision from use of roads associated with otherwise legal activities is a potential source of take, in the form of harm, wound, and kill, within this CCAA. However, the potential for take from vehicle traffic is believed to be very low due to the ability of vehicle traffic to be regulated on the enrolled lands. Forest roads on SPI's private lands are regulated by gates and seasonal restrictions.

We recognize that take of reintroduced or newly colonized individuals is possible from covered forest management activities. However, based upon the best survey data available, the enrolled lands are presumed to be unoccupied and therefore the fisher baseline on enrolled lands is defined as zero individuals. If fishers occupy enrolled lands through reintroduction, there is also the possibility that reintroduced fisher may not survive as a result of stress or other factors related to reintroduction efforts. This mortality to reintroduced fisher is not attributable to covered forest management activities. Whether the loss is due to covered forest management activities or reintroduction processes, the loss of the reintroduced animals would not reduce the existing baseline on the enrolled lands.

In summary, although difficult to quantify, incidental take and the resulting effects to fisher are expected to be minimal. Because habitat maintenance and enhancement measures will be in place, impacts from land use activities are expected to be generally limited to disturbance, are likely to occur sporadically, and are not expected to nullify the conservation benefit expected to accrue under the CCAA. We estimate the anticipated take as follows:

- During the first 5 years, colonization (i.e., sustained occupancy by fisher emigrating from outside the area) is not expected to occur; therefore, take is unlikely to occur.

- Fishers would be monitored, if experimentally reintroduced, during the first 5 years and take would be avoidable, except from road mortality (per 4 above) or habitat reduction (per 3 above). We would expect no more than 1 mortality during that time.

- Probability of take of either reintroduced or colonizing fishers during the balance of this agreement (15 years) is still low, and is expected to be limited to road kill or habitat reduction (1 every 5 years; 3 total) and the incidental, accidental felling of 1 den tree (per 1 or 2 above) (containing 1 female and 2 kits; 3 total).

Therefore, we anticipate that take over the 20-year life of this permit will be no more than 7 fishers. The take of no more than 7 fishers would occur within a population that is expected to persist or to increase in response as the habitat conditions on the enrolled lands improve over time. The Service concludes that the level of take as described above, when combined with those benefits that would be achieved if conservation measures are also implemented on other necessary properties, would preclude or remove the need to list the species.

Mitigation Measures Designed to Minimize and Mitigate any Potential for Take

In order to minimize the potential of disturbance potentially causing the loss of a breeding female or one or more of her young, harvest activities within the breeding season (late February to mid-May) will be minimized, for the duration of the CCAA. No more than 25% of SPI's yearly volume harvested from the enrolled lands will come from this time period in any one year and a rolling 3-year average will not exceed 20%. The normal logging season for SPI can be year-round, but over 95% of harvest activities occur from mid-February through mid-November.

If SPI agrees to accept reintroduced fisher, release sites will not be located within ¼ mile of active logging, to minimize take of newly introduced animals. SPI agrees to modify its harvest scheduling and will not initiate vegetation disturbing activities within ¼ mile of a known occupied den tree for the period of March 15th through July 15th.

XII. Assurances Provided

In accordance with the ESA regulation 50 CFR 17.22(d)(5) and through this CCAA, the Service provides SPI assurances that no additional conservation measures or additional land, water, or resource use restrictions, beyond those voluntarily agreed to and described in this CCAA, will be required should the fisher become listed as a threatened or endangered species for the duration of the permit period. Unless otherwise stated, these assurances will be authorized with the issuance of an enhancement of survival permit under section 10(a)(1)(A) of the ESA.

XIII. Assurances Provided to Property Owner in Case of Changed or Unforeseen Circumstances

The regulatory assurances provided by the Permit are linked to the existence of changed circumstances and unforeseen circumstances. "*Changed circumstances* means changes in circumstances affecting a species or geographic area covered by a conservation plan or agreement that can reasonably be anticipated by SPI and the Service and that can be planned for (e.g., the listing of new species, or a fire or other natural catastrophic event in areas prone to such events)" 50 CFR 17.3. "*Unforeseen circumstances* means changes in circumstances affecting a species or geographic area covered by a conservation plan or agreement that could not reasonably have been anticipated by SPI and the Service at the time of the conservation plan's or agreement's negotiation and development, and that result in a substantial and adverse change in the status of the covered species" 50 CFR 17.3. In the event of changed and unforeseen circumstances the Service is committed to working with SPI to implement measures that limit the level of authorized take of fishers and allow SPI to continue to implement their site-specific plan in compliance with this Agreement and the Permit.

The assurances listed below apply to SPI. The assurances apply only to the enrolled properties where the Section 10(a)(1)(A) permit and the CCAA itself are being properly implemented, and are applicable only with respect to the species (fisher) covered by this CCAA.

Changed Circumstances Provided for in the CCAA

Wildfire or pest infestation that cumulatively removes more than 2000 acres of Lifeform 4 on the enrolled lands will constitute a changed circumstance. If during the 10-year monitoring review, the enrolled lands are found to be outside the expected range for percent fisher denning and resting habitat, this will constitute a changed circumstance. SPI will notify the Service within 30 days of identifying such a changed circumstance. Within 90 days of notification, the parties will meet and evaluate the conservation measure and identify actions that will be employed to address the change in circumstances. If a change in the conservation measure is determined to be necessary and agreed to by both parties, the CCAA and all supporting documents will be modified and/or amended as appropriate.

Changed Circumstances Not Provided for in the CCAA

If additional conservation measures are necessary to respond to changed circumstances that are not provided for in this CCAA, the Service will not require any conservation measures in addition to those provided for in the CCAA without the consent of the property owner, provided the CCAA is being properly implemented.

Unforeseen Circumstances

If the Service determines that additional conservation measures are necessary to respond to unforeseen circumstances, the Field Supervisor of the Yreka Fish and Wildlife Office may require additional measures of SPI, but only if such measures maintain the original terms of the CCAA to the maximum extent possible. Additional conservation measures will not involve the commitment of additional land, water, or financial compensation, or additional restrictions on the use of land, water, or other natural resources available for development or use under the original terms of the CCAA without the consent of SPI. The Service will have the burden of demonstrating that unforeseen circumstances exist, using the best scientific and commercial data available. These findings must be clearly documented and based upon reliable technical information regarding the status and habitat requirements of fishers. Refer to 50 CFR 17.22(d)(5)(iii).

XIV. Monitoring

Generally there will be two foci of monitoring: (1) monitoring of the habitat to ensure that the conservation measure is being met; and (2) monitoring for fisher in currently unoccupied areas to determine if the otherwise suitable habitat becomes occupied. Monitoring of the habitat conservation measure (increases in fisher denning and resting habitat) will be reported every 5 years. Monitoring for colonizing fisher will occur at least every 5 years. Additionally, if fishers colonize the enrolled lands, or if fishers are reintroduced onto enrolled lands, changes to habitat will be reported on an annual basis. Monitoring of habitat and habitat elements and reintroduced fisher will be agreed upon by CDFG, SPI, and Service prior to reintroduction.

Habitat Monitoring Methods

SPI is constantly re-inventorying the enrolled lands on a pace to complete all enrolled lands every ten years. As updated inventory data becomes available, projections will be validated, and fully reported every 10 years of the permit period. SPI also annually updates stand inventory data for harvests, fires, and other significant changes. Thus, for monitoring periods shorter than 10 years, SPI can use the updated stand inventory data and existing growth rates to project expected amounts of fisher denning and resting habitat throughout the enrolled lands.

Population Monitoring Methods

If fishers are detected on the enrolled lands, monitoring of the potential "colonizing population" will be designed and implemented jointly by the parties to this CCAA, as determined necessary to ascertain the status of any new population.

XV. Reporting

SPI will be responsible for completion of an annual report on Agreement implementation by

March 31 each year. This report will include, but is not limited to: (1) a summary of acres (and overall percent of the management area) of fisher denning and resting habitat changed over the past year by cause, including cumulative totals after the first year; (2) changes in ownership; (3) a summary of the estimated take from the implementation of conservation measures, monitoring activities, and any other take obviously resulting from land and water use related to the Agreement's covered activities; and (4) any amendments to the CCAA that occurred that year.

At years 5, 10, and 15 the annual report will also include, but is not limited to: (1) the projected increase in fisher denning and resting habitat; (2) the amount of closed canopy conditions on the enrolled lands that are $\geq$ 50% at 2 feet above the ground; and (3) a summary of the methods, location, and outcome of population monitoring. Monitoring elements 1 and 2 above will be projected from growth and yield models for years 5 and 15 and year 10 will be validated with updated plot inventory data. If fishers are reintroduced to the enrolled lands, the monitoring report will be agreed upon by CDFG, SPI, and Service prior to reintroduction. If fishers recolonize the enrolled lands, the future contents of the monitoring report will be agreed to by SPI and the Service.

XVI. Notification of Take Requirement

By signature of this CCAA, SPI, to the extent they can determine an actual potential take is going to occur, agrees to provide the Service with an opportunity to rescue individuals of the covered species before any authorized take occurs. To the extent feasible, the Service will be notified at least 30 days in advance of the activity that would cause such a take.

XVII. Duration of CCAA and Permit

This CCAA will be for the duration of 20 years from the date the Service issues the permit. The section 10(a)(1)(A) permit will become effective on the date of a final rule that lists fisher as threatened or endangered and continues through the end of the CCAA term. The permit will cover SPI from the date their lands are enrolled under the CCAA until the end of the CCAA and permit term (if the permit is issued). Enrolled lands will be maintained in their existing and/or improved states as described above, from the date the land is enrolled under the CCAA until the end of the permit term. The permit and CCAA may be extended beyond the specified terms prior to permit expiration through the permit renewal process and with the agreement of the Parties.

XVIII. Modifications

During the term of the CCAA, the Service may not imposc any new requirements or conditions on, or modify any existing requirements or conditions applicable to, SPI or successor in interest to SPI, to compensate for changes in the conditions or circumstances of any species or ecosystem, natural community, or habitat covered by the CCAA except as previously agreed to in this Agreement in Changed or Unforeseen Circumstances and/or stipulated in 50 CFR 17.22(d)(5).

XIX. Modification of the CCAA

Any party to this CCAA may propose modifications or amendments to this CCAA by providing written notice to, and obtaining the written concurrence of, the other Parties. Such notice shall include a statement of the proposed modification, the reason for it, and its expected results. The Parties will use their best efforts to respond to proposed modifications within 60 days of receipt of such notice. Proposed modifications will become effective upon the other Parties' written concurrence.

Modifications to the CCAA will occur occasionally, through the removals or additions of land to the enrolled lands through sale, purchases, or land exchanges. These changes are not expected to annually comprise more than 5% of the aggregate acreage of the enrolled lands. These changes are considered minor in nature, and at the landowner's discretion, and shall be included or excluded from the CCAA, with written notification to the Service in the annual report. Removals or additions of land in the enrolled lands exceeding 5% annually or 10% cumulatively over the life of the permit will require SPI to provide written notice and obtain written concurrence from the Service and may require the Service to amend the permit in accordance with all applicable legal requirements.

If the policies regarding managing wildlife habitat described in Section IX "Management Practices and Policies on Enrolled Lands" are modified, resulting in the likely reduction in the expected future capability of the land to support fisher, this would require a modification of this CCAA. Such a modification will require SPI to provide written notice and obtain written concurrence from the Service, and may require the Service to amend the permit in accordance with all applicable legal requirements.

If a fisher reintroduction program is implemented on enrolled lands, and monitoring efforts (as identified above) determine that reintroduced individuals or their progeny moved beyond the boundaries of enrolled lands of this CCAA, the enrolled lands of this CCAA will be expanded to other SPI owned or managed lands in order to include the newly occupied areas. The boundary of the expanded enrolled lands will be established upon mutual agreement by Service and SPI, and will require the Service to amend the permit in accordance with all applicable legal requirements. This process for modifying and amending the CCAA will provide certainty to SPI regarding land use restrictions that might otherwise apply should fisher become listed under the ESA.

XX. Amendment of the Permit

The permit may be amended in accordance with all applicable legal requirements including, but not limited to the ESA, the National Environmental Policy Act, and the Service's permit regulations at 50 CFR 13 and 50 CFR 17. Both SPI and Service can propose an amendment. The party proposing the amendment shall provide a statement describing the proposed amendment and the reasons.

XXI. Termination of the CCAA

As provided for in Part 8 of the Service's CCAA Policy (64 FR 32726, June 17, 1999), SPI may, for good cause, terminate implementation of the CCAA's voluntary management actions prior to the CCAA's expiration date, even if the expected benefits have not been realized. If the CCAA is terminated, SPI is required to surrender the enhancement of survival permit at termination, thus relinquishing take authority (if fishers have become listed at time of termination) and the assurances granted by the permit. SPI is required to give 60 days written notice to the other Parties of intent to terminate the CCAA. SPI must give the Service and CDFG an opportunity to relocate affected species. Relocation of such affected fishers is not mandatory.

If SPI and the Service agree to a subsequent CCAA that includes the enrolled lands in this CCAA, this CCAA will terminate upon signing of such a new CCAA, and SPI will surrender the permit for this CCAA in accordance with 50 CFR 13.26.

XXII. Permit Suspension or Revocation

The Service may suspend or revoke the permit for cause in accordance with the laws and regulations in force at the time of such suspension or revocation (50 CFR 13.28(a)). The Service may also revoke the permit if continuation of permitted activities would likely result in jeopardy to any listed species, or directly or indirectly alter designated critical habitat such that it would result in adverse modification or destruction of the critical habitat, in accordance with 50 CFR 17.22(d)(7). Before revoking a permit, the Service, with the consent of SPI, will pursue all appropriate options to avoid revocation.

XXIII. Remedies

Each party shall have all remedies otherwise available to enforce the terms of this CCAA and the permit, except that no party shall be liable in damages for any breach of this CCAA, any performance or failure to perform an obligation under this CCAA or any other cause of action arising from this CCAA.

XXIV. Dispute Resolution

The Service and SPI agree to work together in good faith to resolve any disputes, using dispute resolution procedures agreed upon by all Parties.

XXV. Succession and Transfer

This CCAA and its ESA section 10(a)(1)(A) permit shall be binding on and shall inure to the benefit of SPI and respective successors and transferees in accordance with applicable regulations in 50 CFR 13.24 and 13.25.

In accordance with 50 CFR 13.24, successors other than the permittee will have the same obligations and rights with respect to the enrolled lands under the CCAA and ESA section 10(a)(1)(A) permit if all provisions and qualifications for a successor are met.

Pursuant to 50 CFR 13.25, the rights and obligations under this CCAA and the ESA section 10(a)(1)(A) permit are transferable to subsequent nonfederal property owners. If the CCAA and permit are transferred, the new landowner(s) will have the same obligations and rights with respect to enrolled lands as SPI. The new landowner(s) must agree, in writing, to become a Party to the original agreement and permit. In accordance with 50 CFR 17.22(d)(3)(i), SPI shall notify the Service, in writing, of any transfer of ownership of any portion of CCAA enrolled lands.

XXVI. Availability of Federal Funds

The Parties acknowledge that the Service will not be required under this CCAA to expend any federal agency's appropriated funds unless and until an authorized official of that agency affirmatively acts to commit to such expenditures as evidenced in writing. Implementation of this CCAA is subject to the requirements of the Anti-Deficiency Act and the availability of appropriated funds. Nothing in this CCAA will be construed by the Parties to require the obligation, appropriation, or expenditure of any money from the U.S. Treasury.

XXVII. No Third-Party Beneficiaries

This CCAA does not create any new right or interest in any member of the public as a third-party beneficiary, nor shall it authorize anyone not a party to this CCAA to maintain a suit for personal injuries or damages pursuant to the provisions of this CCAA. The duties, obligations, and responsibilities of the Parties, SPI and Service, to this CCAA with respect to third Parties shall remain as imposed under existing law.

XXVIII. Notices and Reports

Any notices and reports, including monitoring and annual reports, required by this CCAA shall be delivered to the persons/position listed below, as appropriate:

Sierra Pacific Industries designee:

______________________________ 5/15/08
Date

Dan Tomascheski
Vice President for Resources
Sierra Pacific Industries
P.O. Box 496014
Redding, CA 96049-6014
19798 Riverside Ave.
Anderson, CA 96007

Service designee:

______________________________ 5/15/08
Date

Phil Detrich
Field Supervisor
Yreka Fish and Wildlife Office
1829 South Oregon St.
Yreka, CA 96097

IN WITNESS WHEREOF, THE PARTIES HERETO have executed this Agreement to be in effect as of the date that the Service issues the permit.

Literature Cited

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Appendix A.

Glossary of Terms

As referenced in the
Candidate Conservation Agreement with Assurances for the Fisher (*Martes pennanti*) by the U.S. Fish and Wildlife Service

Candidate Conservation Agreement with Assurances: Formal agreement between the Service and one or more parties to address the conservation needs of proposed or candidate species, or species likely to become candidates, before they become listed as endangered or threatened. This approach provides non-Federal property owners who voluntarily agree to manage their lands or waters to remove threats to candidate or proposed species assurances that their conservation efforts will not result in future regulatory obligations in excess of those they agree to at the time they enter into the agreement.

Candidate Species: Species for which the Service has sufficient information on file relative to status and threats to support issuance of proposed listing rules.

CCAA: *see* Candidate Conservation Agreement with Assurances

Conservation measures for fishers: Actions that a non-Federal property owner voluntarily agrees to undertake when entering into a CCAA.

Enhancement of Survival Permit: A permit issued by the Service under the authority of section 10(a)(1)(A) of the Endangered Species Act. It allows an otherwise prohibited action that benefits the conservation of a listed species. These permits are issued as part of a Candidate Conservation Agreement with Assurances.

Enrolled lands: Lands that have been enrolled in this CCAA that have been issued a Certificate of Inclusion.

ESA: The Endangered Species Act of 1973. The purposes of this Act are to provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, to provide a program for the conservation of such endangered species and threatened species, and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions set forth.

Service: United States Fish and Wildlife Service

FPRs; California Forest Practice Rules. www.fire.ca.gov

Incidental take: "Take" is defined in the Endangered Species Act (ESA) as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct of any threatened or endangered species 16USC 1532 (19). The incidental take of the threatened or endangered species results from but is not the purpose of otherwise lawful activities conducted by the applicant.

Participating landowner: Landowners who have developed a Service-approved site specific plan for fishers and are actively implementing conservation measures for the species.

Regulatory assurances: Assurances that provide non-Federal property owners who voluntarily agree to manage their lands or waters to remove threats to candidate or proposed species that their conservation efforts will not result in future regulatory obligations in excess of those they agree to at the time they enter into the Agreement.

Safe Harbor Agreement: A voluntary arrangement between the Service with the purpose to promote voluntary management for listed species on non-Federal property while giving assurances to participating landowners that no additional future regulatory restrictions will be imposed.