

Pacific Fisher Newsletter

February, 2005

Compiled by Laura Finley, Yreka Fish and Wildlife Office



Photo Compliments of Len Linstrand III, North States Resources, Inc.
Photo taken in the Shasta Lake Region, in Shasta Co. CA, east of Interstate 5.

Well it looks like I am just going to make my self imposed deadline of trying to send out a fisher newsletter every couple of months. The bulk of this edition is the inclusion of the much awaited notes from the meeting to discuss fisher conservation topics held in conjunction with the western section of The Wildlife Society Conference, January 18 & 19, 2005 at the DoubleTree Hotel in Sacramento California. I have also included a few brief updates of activities underway through out California, Oregon and Washington that have been sent my way. As always I am encouraging information sharing so please feel free to send me or others on the mailing list, fisher news you think will be of interest. If it comes my way I will make sure and include the information in the next fisher newsletter. Welcome to those of you new to the fisher newsletter list, I hope you will find the information contained within, worthy of your time.

Notes from the Tuesday, January 18, 2005 Session in Sacramento, CA.

Keith Aubry, USDA PNW

Summary of genetic information from Pacific fisher in Oregon and Northern CA.

Current and future sampling efforts in the Siskiyou.

Development and status of web accessible Pacific fisher database.

In 1961, 24 Pacific fishers were translocated to several locations in Oregon from British Columbia by the Oregon State Game Commission; available evidence indicates that those reintroductions were unsuccessful. Subsequent reintroductions occurred in the southern Oregon Cascade Range: 11 from British Columbia from 1977-80, 6 from British Columbia in 1977, and 13 from Minnesota in 1981. These reintroductions were successful, and established a population of fishers in the southern Cascade Range in Oregon. Genetic data indicates that this population contains genetic material from both source populations (British Columbia and Minnesota). The only other known population of fishers in WA or OR is in the northern Siskiyou Mountains in southern Oregon. Genetic evidence indicates that this population represents the last remnant population of indigenous fishers in the Pacific Northwest. They also appear to represent the northernmost extent of a larger population of indigenous fishers that occurs in northwestern California. Genetic data also indicates that reintroduced and indigenous populations in Oregon are genetically isolated from each other by anthropogenic and ecological barriers in the I-5 corridor south of Medford. It is important that we continue to conduct standardized surveys for fishers, using the survey protocols of Zielinski and Kucera. Anecdotal sighting records are inherently unreliable and should not be used for making conservation decisions or management recommendations. Indigenous populations of fishers in the Pacific states are small, disjunct and isolated from each other by distances that exceed 400 km. Additional reintroduction may be required to restore connectivity among these populations. The Pacific fisher is endangered in Washington and protected in Oregon and California. Pacific fishers that were reintroduced to the southern Cascade Range in Oregon over 20 years ago have not expanded their range during that time, even with protection from trapping. Unclear why, but could be due to habitat limitations resulting from past timber harvest practices in the western hemlock forest zone.

Additional surveys are being conducted in the northern Siskiyou of Oregon this winter to refine our understanding of the distributional limits of Pacific fishers in that region, test several different non-invasive genetic sampling devices (hair-snagging devices), and collect additional tissue samples to verify and expand understanding of genetic relationships among extant Pacific fisher populations in northern California and southern Oregon.

Lastly, we are working on creating a permanent archive of standardized survey data and other verifiable occurrence records (e.g., museum specimens, road kills, opportunistic photos or DNA identifications) that consists of an interactive Internet mapping application. The website will be available to anyone via the Internet to evaluate both effort expended and results obtained from standardized surveys for forest carnivores. The objective of this project is to create a permanent archive of standardized survey efforts and results across all administrative boundaries in Pacific Northwest using the 4 m² sample unit recommended by Zielinski and Kucera. The remaining tasks that will be completed during the next few months are to conduct beta-testing with Forest Service and BLM biologists on the Forest Service Intranet, improve the functionality of the site, gather and input data from surveys conducted after 2000, and then make it available on the Internet for general use. In the future, we hope to and expand the geographic

scope of the application to California and the northern Rockies.

Q: Are Pacific fishers independent of each other? A: The genes are mixed up. In British Columbia, Pacific fishers are different.

Q: Does BLM have access to this Intranet site? A: Yes.

Lowell Diller, Green Diamond Resource Company

Summary of the results from Pacific fisher studies on Green Diamond lands.

Fifty percent of land that is owned by Green Diamond is in the Redwood zone. Patches of old growth are 30-40 acres in size and are 50 years of age. In 1994, fisher surveys utilized track plate techniques. Rest and den sites were identified for Pacific fishers in managed coastal forests using telemetry. A variety of types of structures were used in these managed coastal forests as rest sites, mistletoe is the most common. The tree sizes of 16 individual trees with maternal/natal den sites ranged from 24" dbh to >66" dbh and 9 den sites were in hardwoods, and 7 in conifers. Woodpeckers seem to be important in creating cavities for den sites. Other examples of den trees are in fire scarred trees. In all of the cases the den sites had small entries so the females could get through, but limit access to adult males and other potential predators. Determining abundance and density of Pacific fisher on Green Diamond managed land is based on two 100 sq/km study areas. The technique used to estimate density and abundance was to capture fishers initially mark with ear tags, and re-captured with cameras taken photos of ear tagged individuals. In 2002, 34 Pacific fishers were marked with an estimate of 146 Pacific fishers. In 2003, 32 fisher were marked and 228 were estimated to be in the study area. 14 of the 17 adult females appeared to be reproductive at the time of capture. The critical part of retaining the Pacific fisher on managed landscapes is leaving residual structure for resting and den sites. On Green Diamond managed land the future structure is going to be in riparian conservation areas.

Q: How much work occurred in rainy season? A: No studies done in rainy season.

Q: What is the clump size? A: 3 types: 1) Individual tree clumps ½ dozen trees important structure, 2) habitat retention areas, older structure based around it, and 3) individual tree of high value. Clumped is better.

Q: What criteria were used for den site, maternal den vs. natal den? A: Repeated use early in the season, if female was found at another site that was called a maternal den site.

Bill Zielinski, USDA PSW

Progress report on: Habitat Model for Northwest California, marten/Pacific fisher habitat predictor model for the northern Sierra, population model for removal and relocation of Pacific fishers.

The research opportunities provided by recent interest in reintroduction include updating the Northwest California landscape habitat suitability model (Carroll et.al. 1999) with new redwood region data. Over 1000 new survey locations are available and they plan to evaluate classification success of previous model using the new data and then to use the new data to develop a new regional landscape suitability model.

Evaluating the effect of fisher reintroduction on martens requires (1) predicted landscape suitability for Pacific fishers in the “gap” and (2) predicted landscape suitability for martens, which is forthcoming. We can use the fisher habitat models of Seo et al. (in prep.) to locate areas of high fisher habitat suitability and, for martens, we can use the pattern of recent marten detections and modified CWHR reproductive habitat to represent marten areas. Seo et al. used a variety of analytical approaches including logistic regression, classification and regression tree, and artificial neural network; the latter had best classification success.

Roger Powell and Bill Zielinski are also modeling different fisher removal and transplant scenarios using population viability software (VORTEX). Work on this has only recently begun; no results to present.

Also described was a new approach to monitoring fisher resting habitat across the occupied range based on the Forest Inventory and Analysis (FIA) Program. Forest vegetation data is collected every 10 years, with 5.5km spacing. The steps to build habitat models using predictors that are measured at FIA plots are to: 1) collect FIA vegetation data at fisher resting structures, 2) evaluate data at available FIA sites in the region, and 3) develop a habitat selection probability model. The model can be applied to the FIA data at each plot, every time it is sampled to yield a range-wide estimate of predicted resting habitat suitability. The FIA-based habitat model is completed in the Sierra Nevada and the field work will begin this summer in Northwestern California.

Mark Higley, Hoopa Tribal Forestry

Past and current Pacific fisher research on Hoopa.

The Hoopa Valley Indian Reservation is a 12x12 mile square. In mid-50s, the reservation began logging. The Pacific fisher study area is 84 square kilometers. Initial surveys were designed for Pacific fisher frequency of detection and were conducted in 1993-94. Surveys were done year around. Then the Radio Telemetry Study from 1996-1998 was undertaken: The following information is from this telemetry study.

- Female home range estimate of 175 ha (n=7) and Male home range estimates of 745 ha (n=2).
- General Rest Sites Characteristics –Hardwood live tree 55.8%, Conifer live tree 28.6%, conifer and hardwood snags 10.1%.
- Rest Site Tree Species – Douglas Fir 39.3%, Tanoak 26.2 %, Black Oak 22.4%.
- Rest Site Structure – Tree cavity 50%, Platform 22%, Stick Nest 17.1%
- Mean DBH of cavity rest sites: conifer 40.6”(n=12), hardwood 30.6” (n=74) and non cavity rest sites: conifer 45.5” (n=60) and hardwood 28.6” (n=46).
- Frequency of Visible Cavities Detected on Pacific fisher Random and Rest Site Plots by Tree Species 42% Black Oak, 27% Tanoak, 17% Madrone, 9% other hardwood and 5% Douglas fir.
- Compositional Analysis of Pacific fisher MCP Home Range selection from habitat types available within the study area - Significance is that they are avoiding open areas.
- Camera Station Development – using PVC pipe, 16 inches in diameter
- Re-sighting
- Estimation of effective trap area buffered by 2,200 meters for each project
- Trap Success – Total number of fisher captured from winter of 1997 to winter 98/99 was 208 captures representing 56 individuals.
- Population and Relative Density Estimates for three time periods – Re-sights highest is 73.3%
- Population appears to be smaller than it used to be based on recent trapping information in a project that is currently underway. 7 Pacific fishers were trapped recently and they were all young, 1 to 2 years of age.

Rick Truex, USDA Sequoia National Forest

Summary of past and current research and monitoring in southern Sierra.

2001 Sierra Nevada Forest Plan Amendment-Status and Trend monitoring for Pacific fisher
High Priority monitoring questions are; What is the status and trend in the geographic range, relative abundance for Pacific fisher population? And what is the status and trend in Pacific fisher habitat at the stand, home range and landscape scale ?

Population Status, 2001 > 250 sample units (with approx 1,500 survey stations) looking at Pacific fisher populations in Southern Sierra Nevada and Southeastern Klamath (about a 300 km separation between populations). The Pacific fisher population monitoring consists of a 10 year study with 2 components including the Pacific fisher occupied area in the southern Sierra region (Sierra, Sequoia NFs, and the Yosemite, Sequoia Kings Canyon NPs) and the unoccupied region to the north (Lassen, Plumas, Tahoe, Eldorado, Stanislaus and Inyo NFs). In the southern Sierra region there is an annual resample of 288 primary sample units. The objective of the project in the southern Sierra is to detect 20% decline in the index of abundance with 80% statistical power over 10 years. The field sampling is a Systematic sample based on the FIA grid. Elevation range from 800-3,200ft, the sites selected are based on historical density, and are 5km apart. Each sample consists of 6 track plates run for 10 days from June-October, and sampled all habitats. The 2002-2004 Program/Results was funded by Region 5 and earmarked \$550,000 per year. 420 sample units were completed (about 140 per year) and Pacific fishers were detected at 60 sites. In the northern region 90 sentinel sites were sampled and Pacific fisher were not detected.

The 2005 Program of Work will migrate data into FAUNA in the winter of 2004/05 and develop a public access database. The field Sampling, is to continue, with an emphasis on southern Sierra. Other ideas in development are collaboration with the NPS, DNA pilot sampling, transitioning to cause and effect monitoring, and monitor additional species such as ringtail, gray fox spotted skunk, etc. Also in 2005 the DNA Sampling Pilot Project will begin. The DNA pilot project includes six steps: hair snaring methods developed by Zielinski et. Al., track plate stations modified with barbed wire, snares at ½ of PSU sites, comparison of detection probabilities and species identification success, cost benefit analysis of methods and the development of processes for identification of individuals. Habitat models being used are developed are based on: resting habitat selection (Zielinski et. al, 2004), FIA- based habitat models, and landscape suitability models using remote sensing data and presence/absence data which allow for monitoring habitat across ownerships.

The Fire and Fire Surrogate Study included: fire and fire surrogate (prescribed fire and mechanical treatments). The collaborators were Bill Zielinski and Ric Schlexer, Pacific Southwest Research Station. It is a national program to examine effects of fuels treatments on various resources 13 sites nationwide and 2 sites in the Sierra Nevada.

Kathryn Purcell, USDA PSW

Fisher Response to Fuels Treatments: A Pilot Study Examining Occupancy and Habitat

The following are recommendations for research and monitoring of Pacific fishers in the Sierra Nevada: (1) individual identification of Pacific fishers from hair samples, (2) test and refine the hair snare field protocol, and (3) pilot study to assess Pacific fisher habitat use and response to fuels treatment.

Bill and Rick touched on the first two recommendations and I'll address the third. We need to study the response of Pacific fishers to habitat alteration resulting from forest management practices. Understanding this response is a high priority. Treatments are currently being implemented that provide opportunities for study. Fishers are difficult to study as they have large home ranges and occur at low densities. Traditional experimental designs are difficult or impossible to implement without the ability to randomly select treatment and control areas. We are examining whether a scientifically credible study design can be developed. We plan to use track plates to assess habitat occupancy and use a BACI design to examine whether changes in the proportion of sample units with a detection in treated areas differ from changes in control areas. Defining the treatment being studied is another challenge. Land management activities planned in individual management units are complex often involving several treatments, but the unifying goal is to apply treatments that will result in a stand capable of withstanding wildfire without catastrophic effects. The methods used will vary but will result in similar forest structure, regardless of the methods used. We expect this study to provide information needed by land managers and will lead to a decision-making framework that incorporates a competing objectives perspective: the need to manage for fuels while retaining, conserving, and restoring fishers and fisher habitat. .

Q: How are you going to monitor? A: We will look at before and after in control and treatment areas.

Q: Are the projects you look at, are they fuels projects? A: Treatments are already identified. We will be collecting information, such as vegetation and the structure distribution. Bill Zielinski said that this is in development. We want to hear from other people their ideas in terms for detection and density. Q: What is the timeframe? A: We are looking at putting something on the ground soon; however, this is a pilot study.

Reg Barrett, U. C. Berkeley

Update on current efforts. Mark Jordan, U. C. Graduate Student

In the Kings River study area, we are looking at the Pacific fisher population. There are two monitoring methods, hair snare and camera traps set up at the same station. The study area is 350 km in the Kings River and San Joaquin areas. Within that area, we did a two-year pilot study, June through July. The main problem for identifying individuals is the lack of fisher specific microsatellite data. We don't have enough genetic markers and that is my focus for next year.

Q: Are you going to generating data from the north coast soon? Also, once each researcher has an estimate, will all three be comparable? This would be the time to coordinate the efforts.

Q: Are you having a lot of tag loss? A: No, we are using sheep tags.

Noah Greenwald, Center for Biological Diversity

Update on Listing.

Center for Biological Diversity is the primary authors to petition to list the Pacific fisher. Since the Endangered Species Act was passed, listing has gone down during the Bush and Reagan administrations. The Fish and Wildlife Service does not have the funding to proceed with listing. Funding plays a big role. The main thing is that Fish and Wildlife Service routinely does not respond to critical habitat. Some budgets were absorbed by critical habitat. The Bush administration has policy against listing species. 270 candidate species have a substantial back log. The problems are that candidate species are considered

endangered. Fish and Wildlife Service provides no protection. The average time of the Fish and Wildlife Service is 10 years to review. Candidate Conservation Agreements uses reintroduction as a means to avoid listing, but are we protecting adequately? We are slipping. Current situation is stuck without any listing. ESA doesn't have provisions for candidate species. Fish and Wildlife Service is essentially operating illegally.

Q: Where is the listing of Pacific fisher in the courts? A: There is a 60-day Notice of Intent for the Pacific fisher. We have not filed to list yet. Q: What is the basis for listing? A: Whether it is actually precluded.

Q: Have you included the costs in your budget, it comes from the field station? A: Primary cost is from Justice Department for litigation. We see lack of prioritization from FWS.

Q: What is the possibility, given the current situation, are there different ways other than litigation, such as reintroduction? Is your organization looking at other alternatives? A: We do other stuff as well. There are still other species that need to be protected.

Jeff Lewis, Washington Department of Fish and Wildlife (presented by Keith Aubry, USDA PNW)

An update on the status of the Pacific fisher reintroduction effort in Washington

The feasibility study for reintroduction addresses our uncertainties about the amount and distribution of suitable habitat, and informs and gives credibility to an implementation plan recommended by IUCN and others, to prevent wasting resources and loss of credibility. The Olympic Peninsula is identified as the most suitable location for Pacific fisher reintroduction in Washington. The ownership is dominated by Olympic National Park and Olympic National Forest.

Our December 2004 activities included representatives from agencies discussing the feasibility study findings with regard to potential reintroduction areas on the Olympic Peninsula. The components of an implementation plan are a NEPA analysis for a Pacific fisher reintroduction on the Olympic Peninsula, source population, transport and release strategies, release sites, protection, and monitoring of survival, movements, and reproduction.

Our January 2005 activities include coordination with Tribes on the Olympic Peninsula. Representatives from eight Tribes have been invited to attend a meeting with agency representatives to discuss a potential Pacific fisher reintroduction.

Q: Are Pacific fishers available from British Columbia? A: We have made an informal inquiry with British Columbia Provincial biologists. Alberta, Canada, officials have offered to provide Pacific fishers if they are unavailable from British Columbia. The next steps will start spring and summer of 2005 by Working with NPS to begin NEPA and an implementation plan.

Q: NEPA released on National Park lands, shouldn't it be released on Forest Service land? (This question is not clear, my answer relates to what I think the question is asking A: Olympic National Park is responsible for wildlife management on their property, the USFS is not. As the landowner with the most suitable habitat and an agency responsible for wildlife management, the Olympic National Park and NPS are the appropriate leads for the NEPA analysis.

Q: What is the timeframe for reintroduction? A: 2006 appears to be the earliest we could initiate a reintroduction. Implementation would presumably occur over a 3-5 year period. Q: British Columbia is the best population for Pacific fisher, how far down? A: British Columbia is the best source of fishers for a Washington reintroduction, and would likely be suitable for a California reintroduction. California fishers would also be suitable for a WA reintroduction, however they are currently unavailable for a translocation to WA due to their protected status.

Q: The number one goal is to reestablish connectivity. Why that decision for the northern cascades? A: Ultimately, connectivity is the goal, however the best habitat appears to be located in the Olympic Peninsula and given our uncertainties with how successful a reintroduction will be in Washington, we would want to start there. If fishers become established on the Olympic Peninsula, we could use that population as a source for future reintroductions in the Cascades.

Bob Naney, USFS Region 6

Outline a process to develop a Fisher Conservation Assessment and Strategy (PCAS) for the Pacific coast DPS (or western US).

The process would follow a similar template to that of the Lynx CAS developed in 2000. A Pacific fisher Steering Committee comprised of executive level managers from federal and state agencies and Native American tribes would be established to provide oversight and direction in the development of the PCAS. A Pacific fisher Biology Team, an interagency team of wildlife biologists that apply scientific data and management principles to develop an assessment of risks to a particular species or group of species, thereby formulating the basis for management guidelines designed to conserve species and habitats described in the Conservation Strategy. The team advises the Steering Committee on the merits of proposals to amend conservation and management strategies based upon scientific analyses provided by the Science Team, and a Pacific fisher Science Team designated to create, interpret, and review data to provide a scientific basis for management and conservation of the species. The team advises the Steering Committee on the merits and scientific basis of proposals to amend conservation strategies. 2) Region 6/OR & WA BLM through coordination following development of the Interagency Special Status Species Program have ranked priority species for which conservation strategies will be developed and fisher ranked in the top 4. The objective is to develop a range-wide Pacific fisher Conservation Assessment and Strategy (CAS). The Lynx CAS was created as a conservation tool and to help with section 7 consultations.

Q: What is the due date of a conservation strategy? A: A meeting to discuss that is coming up.

Q: Is the conservation starting on federal land? A: Initially, it is to look at west coast Pacific fisher conservation.

Diana Craig, USFS Region 5,

Conservation Assessment status and other upcoming projects

Pacific fisher Conservation Assessment Overview and Update

Genesis of the conservation assessment – focused on requirement for doing a conservation assessment
Conservation Assessment will consist of the best available information. There will be a three-phase approach including a Conservation Assessment to scientific basis for conservation strategies and participating agencies and experts. A Conservation Assessment is a science report that describes our current knowledge, such as the ecology of the species historical and current status of populations and

habitat, risk factors that may be affecting the distribution. The geographic scope focuses on Pacific fishers within the Sierra Nevada. It recognizes the importance of connectivity among Pacific fisher populations with a Conservation Assessment, places a conservation assessment for Pacific fisher in the context of the species distribution in the Pacific states. The Pacific fisher habitat mapping is part of the conservation assessment wildlife habitat relationships model, summarized and evaluated based on fire hazard and risk, and location. The envirograms provides a link between ecology and risk factors. The benefits of the Conservation Assessment are that it is scientifically credible, peer-reviewed assessment, and provides presentation of broad scale information. The next steps are completion of additional text, final round of authors' review, and technical per review.

Q: Why is it a low priority for Forest Service? A: Not so much low, there is not enough manpower consistently. Funds are being put into this. The Forest Service has done an amazing job for the amount of funds allowed. There are other pieces other than the assessment.

Q: Is there a cross-parallel process for this statewide conservation effort? A: Yes, California Department of Fish Game is on the list.

Tom Kucera, U.C. Berkeley

Development of habitat guidelines for projects in USFS Region 5

The project is an attempt to provide technical assistance by developing fisher habitat guidelines to assist in assessing effects of USFS management projects on fisher habitat, and designing projects to enhance fisher habitat. Overall, we hope to provide an update to the 1999 Freel guidelines that forest biologists can use to promote Pacific fisher habitat. We will have a product by the end of the year.

Q: Can you include the conservation assessment and the Freel guidelines in the same document? A: It may slow the guideline process down.

Carole Jorgensen, BLM Medford OR

BLM Medford OR/ SOU survey efforts.

A Conservation Assessment and Strategy will take some time to develop. In the interim, field biologists and managers need interim guidance and information. Although managers need not accept the recommended guidance, the guidance should discuss what is best for the species. For example, telling biologist to consider good den habitat does us no good. However, suggesting we buffer known den sites by X meters would be very helpful). Good distribution maps and habitat associations would be helpful. Keith Aubry's data base (above) can help pull together confirmed locations, although some reliable field data may not meet the rigor of that database. Each USFS and BLM district needs to gather their fisher data (positive and negative) and enter it into GEOBOB (BLM's Arc9 database) and NRIS.(USFS system). If this data was in these two systems, along with the data in Aubry's database we could get a good distribution map. If we lack complete distribution data, it's important to know where to focus surveys to fill distribution gaps, and where surveys aren't as crucial. Sharing information among researchers and administrative units is important to avoid redundancy, share limited resources and to ensure that key issues are not overlooked. (again if the data was enter into the blm and usfs sssp databases this information would be easily available to everyone). Consistent techniques in mapping, habitat assessment and survey protocols will help improve the rigor of such surveys across the occupied range. (Note Aubry's database – BE CAREFUL – While it is a good idea to have one database that stores all the

fisher data please keep in mind a few things: 1) we are directed to use GeoBOB, the biggest advantage of GeoBob it all our SSSP data will be in one location. The same goes for the NRIS database. 2) Once again, by putting the data into Aubry's database we take the information out of BLM hands and this creates some unique problems (just look at ISMS and Heritage) 3) it would be better if Aubry contacted the USFS and BLM at the state level and had them send the fisher information from our sssp database.

The presumptions made about Pacific fishers in legal documents in one area may set precedence in another. It is prudent to discuss consistent ways to interpret the scientific data and survey results. Natural resource management is highly litigious. A poorly-supported NEPA document with poor rationale could set legal precedence and force actions that may be counterproductive. It would be helpful to field biologists and managers throughout the occupied range of fishers to discuss common rationale and strategies; agree on project modifications such as seasonal protection or habitat buffers; agree on the value and priority of surveys, and develop some interim management guidelines until conservation assessments and strategies are being developed, keeping in mind that in such a large area habitat and more than likely fisher activity will differ depending on region. Strategies such as buffering are great but should vary depending on region.

A similar meeting on fishers was held in Jacksonville, OR a year ago. We questioned attendees of that meeting about fisher work in their administrative units. All respondent who reported doing Pacific fisher surveys confirmed using a protocol. When we questioned further, nearly all were following a modified protocol. Variations included cameras recording longer or shorter time frames than the protocol, land patterns did not fit the protocol which calls for four square miles of contiguous habitat, the "best" habitat was often near roads, or only one camera set was installed per survey area (rather than two). From talking to the biologist throughout the NWFP, time constraints (usually only one person working on the project) and access were the two biggest issues with the current protocol.

People with fisher data often don't store data electronically. Data isn't consistently collected. Locations are often less precise than the habitat delineations, so it's difficult to determine the habitat conditions of the observations. Data sheets may indicate it was collected following a protocol when a modified protocol was actually used. Researchers don't share specific locations. Research results take years to publish and may not be available to the field managers until published. Habitat categories between BLM and Forest Service are incompatible, and no common database meets all needs of users. See comments above

There are some solutions for the interim period. Agreement at the BLM state offices and Forest Service Regional Offices could establish some common data elements to assist range-wide analysis of survey and habitat data, while still maintaining the agency's own data systems. Interim research reports could provide specific information (without analysis) to aid field biologists in NEPA documents. Agreement to support databases, such as the one Keith Aubry is developing, can be helpful to all land managers within the range of the fisher. Existing protocols could be evaluated to see if modified protocol methods are useful, or if protocols need adjustments for wider applicability. An informal network to share the latest information is needed. People could share example NEPA analysis. Researchers could share their answers to field biologists on specific situations. This information is generally unpublished and can make some agencies nervous, but could be controlled on a password protected website or shared through official agency channels as Internal documents not for dissemination. Most importantly, we need to keep talking with each other, with our respective decision makers, with researchers, and with the public, so we effectively make progress on recovering Pacific fisher populations to healthy levels.

Paul Phifer, USFWS, Region 1 Portland OR

Candidate Conservation Agreements and the Policy for Evaluation of Conservation (PECE policy)

Candidate Conservation Agreements are formal agreements between the Service and one or more parties to address the conservation needs of proposed or candidate species. The participant's voluntarily commit to implementing actions that will remove or reduce the treats to these species before they become listed or endangered.

The Policy for Evaluation of Conservation Efforts when Making Listing Decisions (PECE) provides guidance to Service personnel to use in determining whether a recently adopted or implemented conservation effort contributes to making listing a species unnecessary or contributes to forming a basis for listing as threatened rather than endangered. The purpose of the policy is to ensure consistent and adequate evaluation of conservation efforts identified in conservation agreements, conservation plans, etc.

Q: Have you used PECE? A: Yes, once and it is in court.

Notes from the Wednesday, January 19, 2005 Session in Sacramento, CA. “Pacific Fisher Issues Workshop”

PACIFIC FISHER ISSUES WORKSHOP Doubletree Hotel, Sacramento – January 19, 2005 Focus Question: What issues do we face in developing a conservation strategy for the Pacific fisher?							
Key Biological Information Needs	Need for a Structure for Effective Stakeholder Participation	Urgent Need for Management & Regulatory Guidelines	Need for Leadership & Commitment	Different Roles & Responsibilities of Fisher Stakeholders	Need for Risk Analysis	Need for Fisher Conservation Education	Improve Communication & Information Exchange
<ul style="list-style-type: none"> • GPS telemetry micro habitat data • Relationships with other species, porcupine, goshawk, marten? • Suitable habitat & spatial scales • Climate change adaptability of species • Connectivity across 	<ul style="list-style-type: none"> • Need to foster/support proactive efforts • Need process for complete stakeholder participation • Organizational structure for continued action • Share CA conservation assessment draft with others • Public & private 	<ul style="list-style-type: none"> • Fisher conservation guidelines for current project activities • How do we manage fisher habitat where they no longer occur • Appropriate regulation at various government levels • Implementation of regulatory responsibility • Continued impact with no 	<ul style="list-style-type: none"> • Ostrich Phenomenon • Commitment and leadership - upper level management & resources • Agency & landowner motivation • Legal status of fisher • Funding? • Need for leadership • Priorities for funding & time 	<ul style="list-style-type: none"> • Commitment from all landowners to restore & maintain fisher habitat • Competing values systems among stakeholders • Roles & responsibility – public vs. private • Impact of regulation on 	<ul style="list-style-type: none"> • Need for threats analysis • Risk factors for current population • Effects of “urban sprawl” • Population vulnerabilities (?) 	<ul style="list-style-type: none"> • Public interest? & education • Why the fisher? • Poster child 	<ul style="list-style-type: none"> • Dissemination of research data • Improve communication among & within agencies – set up tangible process • Develop consistent information /data • Transfer of information to managers • Keep up the newsletter – Good work!

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<ul style="list-style-type: none"> ownerships No defined end conservation goal Define habitat for healthy population Focus on female What about I-5 barrier Need for landscape level planning Fuels treatment impacts Get better distribution data Source populations for reintroduction efforts 	<ul style="list-style-type: none"> communication & cooperation Develop coordinated multi-agency & private approach 	<ul style="list-style-type: none"> relief How to proceed in face of uncertainty 	<ul style="list-style-type: none"> Identify priority research needs Too much process – not enough final product→happy fishers 	recreational activities			

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<ul style="list-style-type: none"> • Is population increasing or decreasing? • Why gaps in the range? 							

SUPPLEMENTAL NOTES

At the conclusion of the workshop, the group participated in a brief, reflective conversation about the table of issues they had just created. The following notes represent the ideas captured from that conversation.

Where do you have an intuitive sense of the priority issue?

- Need to focus on management/leadership commitment
- Ask management to mandate a conservation strategy
- Get message to management – a specific message

What are some ideas for how we can address the concerns?

- Focus on things within the power of those in the room
- Use resources at hand – grass roots
- Identify individuals to do the work
- Reduce impact to suitable habitat
- Sign and forward issue table to the decision makers
- Identify who we need leadership from
- Show successes

What's already in place that we could leverage to address a concern?

- California assessment draft could be shared
- There may be opportunity to move forward on private lands – should be consistent with an overall strategy
- Find out what creative methods are being used now

What are some practical next steps that this group could recommend?

- Conduct a risk analysis
- Communicate to decision-makers the results of this meeting
- Identify science team
 - Membership
 - Objectives
 - Funding
- Determine if some USFWS funds are available for this effort
- Prioritize key biological information needs
- Figure out how to keep communicating after this meeting
- Develop a process for stakeholder participation
- Clarify USFWS role
- Find ways to assign people to the tasks

NEWS FROM AROUND THE THREE STATES

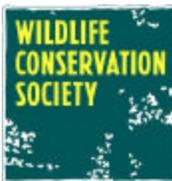
As the introductory photograph shows fisher have been detected around Shasta Lake in northern CA. The survey effort is being conducted by North State Resources, Len Linstrand III. Len has been conducting camera surveys for various private companies and federal agencies in the area. Len's email contact information is lindstrand@nsrnet.com if you would like more information about these recent detections and other work they have completed.

News from Dr. Keith Aubry (USFS, PNW) and Dave Clayton (USFS, Rouge/Siskiyou NF) of a fisher detected at one of their camera, video camera and hair snare stations located on the Siskiyou crest close to Mt. Ashland, just west of Interstate 5. Keith indicated that they got some great video footage of the fisher interacting with their hair snare trap that should help improve the design of the device even further.

In mid-February a group of independent consulting and timber industry biologists gathered together at the Yreka Fish and Wildlife Office to pool their knowledge of their survey efforts and detections of fisher in northern CA (mostly Siskiyou, Shasta and Trinity counties). This effort should assist these biologists in determining priority areas needing surveys in all of our ongoing, collective effort to better understand and describe the current distribution of Pacific fishers within their historic range.

As of today, Friday, February 25, 2005, the FWS has received approximately 20 proposals to consider for the candidate conservation money available for fisher. On March 4, 2005, a small group of FWS employees will be reviewing the proposals and coming up with a rank and recommendation for each project. The projects will then be discussed by Yreka Fish and Wildlife Office staff in conjunction with our office in Sacramento to make final decision on funding. Target date for final decisions is the 3rd week of March. I also continue to work on ferreting out other sources of money that could be combined with funding from the FWS in order to fund more of these projects. I would appreciate all ideas and tips along those lines that you wish to pass on.

Finally a great update provided by Sean Matthews of the Wildlife Conservation Society, Hoopa Tribal Forestry. Thank-you, Sean.



Hoopa Valley Pacific Fisher Research and Ecology Project



FEBRUARY 2005 UPDATE

General Overview of Research Project

In August 2004, Hoopa Valley Tribal Forestry and the Wildlife Conservation Society embarked on a collaborative two year study of the ecology of Pacific fisher on the Hoopa Valley Reservation in northwestern California. The fisher (*Martes pennanti*) is a medium-sized member of the weasel family, and resembles a house cat in size and shape, with shorter legs and a longer, wedge-shaped snout. Fisher populations in the Pacific states have

been petitioned for listing under the Endangered Species Act three times in the last decade. The most recent decision (April 2004) by the US Fish and Wildlife Service added the Pacific fisher to the candidate list of species for endangered species status. Additionally, the California Department of Fish and Game considers the fisher to be a species of special concern. Timber harvest has been identified as one of the primary causes of fisher population declines in Washington, Oregon, and California and recent surveys indicate that the fisher's range appears to have decreased by more than 50% in California.

Harvest of the forest resources of the Hoopa Valley Reservation began in earnest in the 1950's under the Bureau of Indian Affairs, with every acre deemed suitable for commercial timber logging, regardless of its importance to tribal culture. Intensive clear-cutting, primarily in the 1970's and 1980's, virtually eliminated old-growth forests on approximately 40% of the Reservation. In 1989 the Tribe took over responsibility for the management of the Reservation's forest resources and completed a community-based Tribal Forest Management Plan (FMP) that was recognized as an exemplary community-based plan by the United Nations. Due to the Tribe's emphasis on managing for cultural and ecological sustainability, its FMP was assessed and certified in 1999 as 'Ecologically Sustainable' by Smartwood, a representative of the Forest Stewardship Council.



Hoopa Valley Reservation and the Trinity River.

Due to the cultural significance of fisher and its current candidacy for federal protection, much of the Tribe's current FMP includes wildlife habitat protection guidelines that focus on conserving fisher habitat. However, it is still unclear what constitutes habitat for the northwestern fisher population. Fisher do not appear to be entirely dependent on old-growth forest, yet do require certain old-growth elements such as large diameter trees and logs for resting, denning, and foraging. Fisher on private timber lands to the west of the Reservation have little or no old-growth habitat available to them, and some fishers monitored on the Reservation in a 1996-98 study had very little old-growth within their home range. The information about fisher ecology that will result from this project will assist the Tribe to conserve fisher habitat, providing for the long-term persistence of fisher on the Reservation.

The principle goals of our research are to describe fisher rest sites, dens, and areas in which fishers active (traveling, hunting, etc.) on the Hoopa Valley Reservation. Adult female fisher are being radio-collared during the fall and winter of 2004-05. Female natal den sites will be located each year in order to characterize trees used for dens and the habitat surrounding them. This information will assist tribal forestry personnel to protect areas used by fisher during future timber harvest activities.

We are also determining the feasibility of using genetic tagging for fisher population monitoring and the feasibility of quantifying dispersal patterns of juvenile fishers. Accurate information on fisher densities and abundance outside the northeastern United States is very limited. The development of a methodology to estimate fisher density and vital rates (*e.g.* survival, reproduction) is necessary to develop baseline estimates to quantify impacts of conservation and restoration efforts. We will assess the feasibility of a new non-invasive approach of collecting hair samples from fishers and using genetic analysis to determine individual identifications. Previous research indicates that fishers are easily trapped and re-sighted in the region, and that individual identification from hair samples is very likely to be successful. There is a tremendous benefit to be gained from the development of an accurate, non-invasive population estimation method for fisher or any other at-risk species, including its use as a measure of the success of changes in forest management practices, re-introduction efforts, and general population trends.



One of the key factors in planning recover efforts or assessing risk of apparently isolated populations is to determine how capable fisher are of re-colonizing suitable habitat between existing populations and how far apart populations can be and still maintain gene flow. At this point in time the Southern Sierra population appears to be isolated from the northern California population. If recovery efforts were to consider re-introductions within the Sierra's it would be very valuable to know how far dispersing individuals could be expected to travel and what types of habitat appear to form barriers. We will investigate the feasibility of locating natal dens and removing juveniles for marking followed by a trapping effort in the late summer to early fall of 2005 in an attempt to re-capture the marked juveniles prior to dispersal but when they are large enough to radio collar. If any marked juveniles were recaptured during this effort we would radio collar them and track them as they dispersed. Data on dispersal will benefit the tribe and other local fisher researchers in recognizing logistical constraints and providing recommendations for further study while also providing some information on fisher dispersal behavior.