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OPTIONS FOR THE MONETIZATION OF THE ELLIOTT STATE FOREST

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TABLE OF CONTENTS

FIGURES

EXECUTIVE SUMMARY

The Elliott State Forest (ESF), located in the Coast Range of southwestern Oregon, is part of a portfolio of lands known as the Common School Trust Lands. The Oregon Constitution stipulates that net revenue generated from Common School Trust Lands must be placed in the Common School Fund, where it is managed for the exclusive benefit of public school districts in the state. The Elliott State Forest is managed by the Oregon Department of Forestry, on behalf of the State Land Board, which has jurisdiction over all Common School Trust Lands (Oregon Department of Forestry and Oregon Department of State Lands, 2011).

In recent years, environmental litigation has made the financial obligations of the ESF unattainable through timber harvest. The Oregon State Land Board is currently searching for options with which it can balance the legal and financial responsibilities of the forest with the social and political forces that are hindering the ESF from fulfilling those responsibilities.

Strata Policy (Strata) was asked by Cascade Policy Institute to complete a review of available options for the continuing monetization of the ESF. We have organized a "menu" of potential options for the ESF based on literature review, examples of trust land use in other states, and current academic thought. These options were briefly evaluated for feasibility, taking into account the specific circumstances and characteristics of the ESF.

Below we have organized our findings as "viable options," "possibly viable options," and "individually unviable options." The more feasible options were more heavily investigated and are described in greater detail. Where applicable, successful case studies are presented to illustrate how these options could work for the ESF. Although some options were considered individually infeasible for monetization purposes, these options could possibly be used in conjunction with other options or be part of a political solution to help appease potential parties that may disagree with other forms of monetization.

Based on our findings, we have determined three major viable options for the ESF. The first viable option includes the full privatization of the ESF. The second viable option is a land exchange between the federal government and the state government. The federal government would receive control of the ESF in exchange for less controversial federally-owned land that could be developed and monetized for Oregon schools. The last viable option consists of successfully negotiating a renewed Habitat Conservation Plan (HCP) with federal agencies.

Strata has identified two possibly viable options. One option involves converting the ESF into a "charter forest," and the other option would be to monetize ecosystem services through compensatory mitigation requirements such as mitigation banks. Both of these systems, however, require hard work and a real desire to pursue options that are not easily achieved. It is our experience that federal agencies in particular are ill equipped and not incentivized to pursue these types of options.

Strata found several individually unviable options for monetizing the ESF. One of these options includes a continuation of the current management plan with a take-avoidance strategy on the entire forest, while still leasing parcels and allowing partial logging. Another option is financially exploiting recreational opportunities such as hunting, cabins, fishing, and hiking. Other individually unviable options include energy development within the forest, using the forest in a carbon-offset program, or selling the land of the ESF to conservation groups.

BACKGROUND

In the early 20th century, Oregon Governor Oswald West and Francis Elliott, the first State Forester of Oregon, resolved to form a state forest that would provide money for the state, especially for education. Francis Elliott negotiated with the federal government during the 1920s to create state forest tracts to fulfill his goal of revenue generation. Scattered tracts of Oregon-owned Common School Land within national forest boundaries across the state were traded for one contiguous block of national forest land that became the ESF in 1930 (Figure 1) (Oregon Department of Forestry, n.d.(a)).

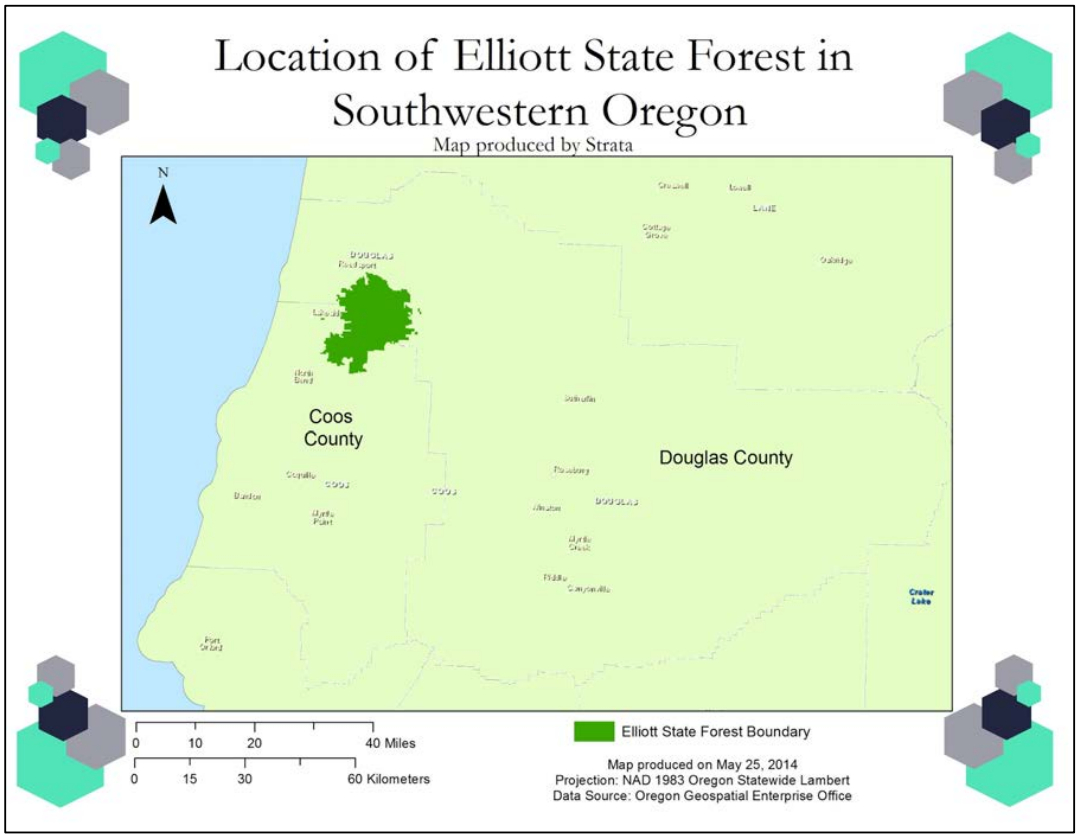


Figure 1. Map showing location of Elliot State Forest in southwestern Oregon.

By law, ESF net timber harvest revenue is invested in the Common School Fund. Specifically, a large portion of annual Fund earnings is allocated to the public schools across the state twice each year. Early management plans in the ESF were meant to maximize timber harvest and establish a road system that could be used for fire suppression and timber removal.

Aquatic and terrestrial habitat preservation became much more important later in the 20th century and early 21st century due to heightened public awareness and litigation by preservation groups. By 1995, concerns over endangered species, such as the spotted owl

and marbled murrelet, led state policymakers to approve a new Management Plan and Habitat Conservation Plan (HCP) for the ESF to comply with the Endangered Species Act of 1973 (ESA) (Oregon Department of State Lands, 2011).

An HCP is a document that shows how an entity intends to reduce the effects of development activities so that the "taking" of endangered species is as limited as possible. "Taking" means harming, killing, capturing, or harassing any endangered species that could occur with development activity, especially timber harvest. The U.S. Fish and Wildlife Service (USFWS) and other applicable federal agencies require states to draft an HCP in order to apply for an "incidental take permit" (ITP). Any entity that engages in activities that would lead to "incidental taking" of endangered species must have an HCP and the subsequent ITP. In the case of ESF, if logging activities will cause a taking of any endangered species, an HCP and ITP are necessary.

An HCP contains three pieces of information: the expected effects of the proposed taking, how impacts will be minimized, and how the HCP will be funded. Habitat Conservation Plans apply to federally listed endangered species and species that are threatened but not yet listed. Applicants for an ITP must comply with four provisions: (1) prepare an HCP acceptable to all applicable federal agencies, (2) submit an implementation agreement, (3) pay an application fee, and (3) draft a National Environmental Policy Act (NEPA) analysis (U.S. Fish and Wildlife Service, 2011).

The 1995 HCP for the ESF included a 60-year ITP for spotted owls and 6-year Incidental Take Permit for marbled murrelet. The ITP for marbled murrelet expired in 2001, forcing Oregon state agencies and federal agencies to work together to revise and renew the HCP for marbled murrelet in order to obtain a new ITP.

In addition to marbled murrelet, protecting coho salmon was another species that necessitated revision of the HCP for the EFS beginning in the early 2000s (Oregon Department of State Lands and Oregon Department of Forestry, 2014).

The Oregon Department of Forestry (ODF) and Oregon Department of State Lands (ODSL) worked with the USFWS and the National Marine Fisheries Service (NMFS) beginning in 2001 to draft portions of the HCP that would address marbled murrelet and coho salmon. State and federal agencies negotiated the terms of the revised HCP and made the draft available for public review in 2008 and 2009. After the public review process, the negotiations about the HCP revisions stalled, and the state and federal agencies could not move forward with the process. The NMFS stated that Oregon's HCP did not provide proper or sufficient conservation measures for the species the NMFS was interested in. In other words, the State of Oregon's plan did not sufficiently protect aquatic/riparian habitats in the ESF. Based on the opinion of the NMFS, Oregon's plan did not provide an adequate timber buffer around salmon streams, which regulate stream temperature, limit stream sedimentation, and provide a means for large wood recruitment that creates pools and eddies essential for salmon habitat (Phippen, 2014).

After years of planning and revisions, ODF and ODSL could not come to a compromise or consensus with the demands from the USFWS and NMFS. The state and the federal governments could not agree on management practices for the HCP that would be both

consistent with the purpose of Common School Trust Lands and also meet the criteria for ITPs for compliance with the ESA. The Oregon State Land Board (SLB) and the Oregon Board of Forestry (OBF) directed the ODF to develop a "take-avoidance strategy" by modifying the draft 2006 Forest Management Plan. A take-avoidance strategy allows for compliance with the ESA because the state avoids any action that would cause a taking of an endangered species. Since the expiration of the Incidental Take Permit for marbled murrelet, the ODF avoids any activity in murrelet habitat within the ESF (Oregon Department of State Lands, 2011).

The HCP revision stalemate has limited the ESF's ability to fulfill its financial responsibilities to Oregon schools. Because the ESF still lacks an HCP for marbled murrelet and coho salmon, one third of the timber in the ESF cannot be harvested—otherwise the ESF risks violating the ESA (Oregon Department of State Lands and Oregon Department of Forestry, 2014).

The marbled murrelet issue affects about 25 percent of the annual proposed sales in the ESF. The original intent of revising the HCP was to increase annual harvest volumes from 27 million board feet (mmbf) to 40 mmbf. If there were no endangered species in the ESF, 50 mmbf would be the long-term sustainable harvest level. After years of meetings and talks between the ODF, ODSL, USFWS, and NMFS, the final draft of the HCP was finished in March 2007 and presented by the ODF for public review (Oregon Department of Forestry, 2007).

In an attempt to resolve the issue, new talks between the ODF and the NMFS began in fall 2013. Mr. Ken Phippen, the Oregon Coast Branch Chief of National Oceanic and Atmospheric Administration (NOAA) Fisheries, sees these new discussion as "positive" and states that the talks are "currently going forward," but the discussion process is still ongoing, and details about the meetings have been limited (Phippen, 2014).

Despite the possible progress on the HCP, timber harvests are still extremely low, and the ODF is incurring deficits. Harvests on the ESF for fiscal years 2013 and 2014 were projected to reach 40 mmbf. However, the actual timber harvest was 4.5 mmbf in 2013. A similar amount is projected for fiscal year 2014. This reduced harvest level is anticipated to extend at least through 2015. The ESF is supposed to be a revenue generator for the Common School Fund, but in fiscal year 2013, the ESF actually became a drain on that fund. The ESF generated only $409,509 in timber harvest sales but cost the state $3,441,723, a net deficit of about $3 million (Oregon Department of State Lands, 2014).

In addition to the legal battles over the HCP, environmentalist concerns are limiting the monetization potential of the ESF. In January 2012, Cascadia Wildlands, Audubon Society of Portland, and Center for Biological Diversity filed a lawsuit against the State of Oregon regarding habitat in the ESF for marbled murrelet. This lawsuit stopped and deferred timber sales for over a year until it was settled in February 2014. The results from the settlement were not beneficial for the monetization of the ESF because the timber harvest levels and associated revenues were permanently limited. In addition to ecological concerns, many groups are concerned with the sale of parcels of land in the ESF. In December 2013, the SLB approved selling 2,700 acres within the ESF in order

to help recover from the $3 million deficit caused by limited timber harvest. Timber sales helped the Department of State Lands determine the market value of land within the ESF (Oregon Department of State Lands and Oregon Department of Forestry, 2014).

Cascadia Forest Defenders, n.d. Expect Resistance. Retrieved from *www.forestdefensenow.com/2014/03/message-to-timber-companies-who-bid-on.html*

The bidding process commenced in 2014, and the Department of State Lands made deals with timber companies to sell three parcels. The State of Oregon will sell a 788-acre parcel to Seneca Jones Timber Co. for $1.8 million and 665 acres to The Scott Timber Co. for $2.5 million. Privatizing these public lands is highly controversial. Cascadia Wildlands, Audubon Society of Portland, and the Center for Biological Diversity filed suits against the State of Oregon in April 2014, arguing that a state law that makes it illegal to sell land that was originally national forest land should invalidate the sales. The SLB members, which includes the Governor, Secretary of State, and State Treasurer, have said that the sales are a test to determine the forest's value for larger sales or land swaps (Davis, 2014).

With the legal and political issues surrounding the ESF, Oregon state agencies have created several contingency plans to continue the monetization. As of 2009 the contingency plans from the ODF and ODSL included five options. Option A was to retain the 1995 HCP for spotted owls and use a take-avoidance strategy for marbled murrelet and other endangered and threatened species. Option B was to suspend work on the revised HCP, terminate the 1995 HCP, and develop a new plan using take-avoidance. Option C was to continue managing under the 1995 HCP until the revision process is

successfully completed. Option D was to sell the ESF. A fifth option was a combination of the Options B and C (Oregon Department of State Lands and Oregon Department of Forestry, 2009).

The current situation with the ESF is very complex and has no quick or simple solutions. The future of the new HCP is uncertain, and the negotiations between state and federal agencies may once again reach a stalemate. The outcome from litigation against the forest parcel sales is also uncertain. If the courts rule that sales of the forest to private entities are illegal, the options for the ESF could be severely limited in the future. We have presented our options for possible solutions to the ESF so that it can balance its legal role as a provider for the public schools of Oregon with federal regulations regarding endangered species and the strong environmental sentiment of the people of Oregon.

VIABLE OPTIONS

FULL PRIVATIZATION

Possibly the most financially beneficial option for the SLB to consider is the full-disposal of the ESF. In a report commissioned by Cascade Policy Institute, Eric Fruits of Economics International concluded that selling or leasing ESF assets could provide stable funding for Oregon schools of approximately $40 million to $50 million annually.

Since peaking in 2000, incomes from the ESF have declined. In fiscal year 2013, the ESF generated $410,000 in revenue and $3.4 million in total costs, resulting in a loss of $3 million. This greatly reduced the value of the Common School Fund. The ODSL anticipates the losses to continue into the next several fiscal years. Even during the housing boom of the mid 2000s, which significantly increased demand for lumber, income from the ESF had been trending downward (Fruits, 2014, p. 4).

Appraisals by the Northwest Forestry Services and reports made for the ODSL and ODF have placed the value of the ESF between $139 million and $802 million (Fruits, 2014, p. 5). Examining the diversified portfolio and returns of the Oregon Investment Council that invests all State of Oregon funds, including the Common School Fund, the Oregon Public Employees Retirement Fund, and the State Accident Insurance Fund, Fruits concludes that even under the worst-case scenario, management of proceeds from the sale of the ESF by the Oregon Investment Council would produce positive fund transfers to Oregon schools for at least 50 years (Fruits, 2014, p. 7).

The median result for simulations using the Public Employees Retirement Fund investment returns provides for an average of $53 million a year to Oregon schools in the first 5 years and would grow with projected inflation to an average of $73 million a year for the next 45–50 years. The median result for simulations using Common School Fund investment returns provides for an average of $25 million a year to schools in the first 5 years and would grow with projected inflation to an average of $39 million a year for the next 45–50 years (Fruits, 2014, p. 7-8).

The challenges associated with full privatization are primarily legal or political in nature. As we summarized in our introduction, even the public auction of three small parcels on ESF resulted in legal challenge from a number of environmental groups.

LAND EXCHANGES

INTRODUCTION

Land exchanges between federal, state, and local governments or between governments and private entities have a long history in the United States. The U.S. Congress authorized land exchanges involving the U.S. Forest Service (Forest Service) and the equivalent of the U.S. Bureau of Land Management (BLM) as early as 1911 (Center for Natural Resources & Environmental Policy, 2010). Historically, these exchanges primarily occurred through discretionary administrative acts by the Forest Service or BLM and involved relatively small parcels.

Recent legislation, such as the Federal Land and Management Act (FLPMA), the Federal Land Transaction Facilitation Act of 2000, and NEPA has established criteria for administrative land disposal decisions. These criteria define the restrictions on exchanges, such as restricting potential parcels to only those that are difficult and uneconomic to manage and ensuring the transfer will serve important public policy goals.

In addition to the administrative land exchange process, Congress can pass legislation that facilitates land exchanges. These legislative exchanges proceed very differently from their administrative counterparts because Congress may make any number of changes to the normal requirements. For example, Congress can designate the specific parcels to be transferred, force agency action, and establish land exchange timeframes (Center for Natural Resources & Environmental Policy, 2010).

The practice of land exchanges has accelerated in recent decades. According to the Government Accountability Office's most recent research on the topic, during the October 2004 to June 2008 time period, BLM and Forest Service processed 250 land exchanges. Completion times for these exchanges varied widely, from 2 months to 12 years. These exchanges involved 638,429 federal acres and 621,588 nonfederal acres. Third parties facilitated 47 of the 250 exchanges, 9 were conducted in multiple phases, and 20 were specifically legislated by Congress (Government Accountability Office, 2009).

One viable solution to the problems facing the SLB is to perform such a land exchange with the federal government. This option is especially feasible considering the extensive amount of federal land ownership in the state that could be exchanged for parts of ESF or the ESF in its entirety. Within Oregon, the federal government owns vast tracts of timberland that could be exchanged for the ecologically sensitive and controversial ESF (Figure 3).

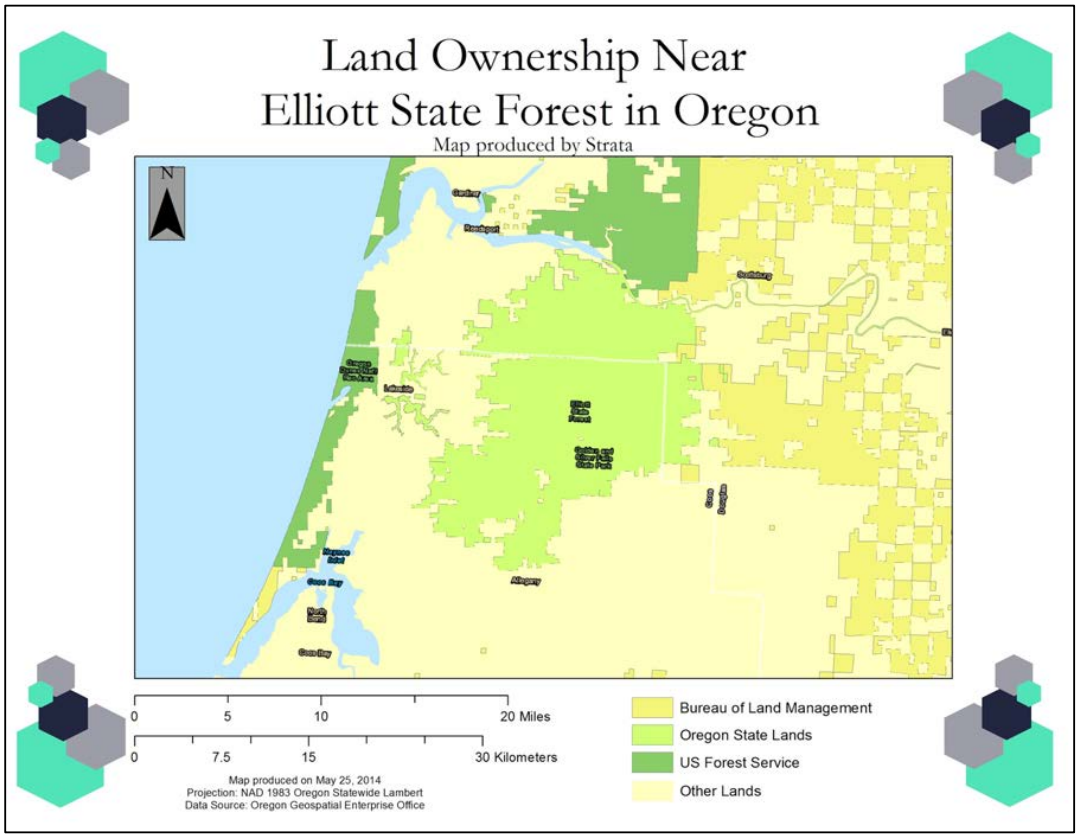


Figure 3. Map showing land ownership near Elliot State Forest.

About half of Oregon is considered forestland, which is defined as land capable of having at least 10 percent cover of trees. The federal government manages about 60 percent of that forestland. Roughly 80 percent of total forestland in Oregon is classified as timberland that can produce commercial-grade timber, and excludes forestland with low growth rate areas where logging is restricted, such as wilderness areas (Oregon Forest Resource Institute, 2013).

Several case studies highlight how successful land exchanges have been completed in other states. Three cases in Utah, Minnesota, and California are especially useful because these states faced challenges similar to the one faced by the Oregon SLB on their respective state school trust lands.

UTAH CASE STUDY I

The State of Utah and the BLM recently completed a successful land swap that bears a number of resemblances to the dilemma facing the SLB.

BRIEF BACKGROUND OF UTAH SCHOOL AND INSTITUTIONAL TRUST LANDS ADMINISTRATION

At the time Utah became a state in 1896, the federal government granted one ninth of the land in the state to be held in trust for the support of public schools. Four 1-mile square sections in each township became school trust land. The State of Utah became the trustee with fiduciary obligation and duty of undivided loyalty to the trust. The public schools became the sole beneficiaries of the trust (Utah State Office of Education, 2014).

In the 1980s the Division of State Land and Forestry (within the Utah Department of Natural Resources) was managing the school trust lands. Studies conducted by researchers at the University of Utah showed that millions of dollars were being lost through mismanagement of the trust. A movement within the education establishment in the state began to study possible solutions to paltry revenues from trust lands (Utah State Office of Education, 2014).

The state legislature authorized the Public School Trust Lands Task Force in 1991 and 1992 to study issues surrounding school trust lands. In 1993 Governor Michael Leavitt authorized the creation of a citizen advisory committee to also study the issue. Both groups proposed similar changes, including the creation of a new, independent agency that would administer and manage the school trust lands. The new agency would be set up like a corporation with a board of trustees appointed by the governor from nominations provided by a nominating committee (Utah State Office of Education, 2014).

The Utah School and Institutional Trust Lands Administration (SITLA) was created in 1993 and opened its doors on July 1, 1994, charged with administering 3.4 million acres of surface land and 4.3 million acres of mineral rights. Since the creation of SITLA, net revenue has increased from $15 million to about $80 million annually (Utah State Office of Education, 2014).

EXCHANGE

On February 7, 2014, a complex Utah land exchange between federal and state land management agencies was approved by BLM. On May 8, 2014, Governor Gary Herbert signed a document recognizing the completion of an equal-value land exchange. The State of Utah acquired 34 parcels totaling 35,516 acres, primarily in Uintah County, that have high potential for development. The BLM received 58 parcels, totaling 25,034 acres, high in conservation and recreation value. The BLM acres were primarily in Grand County and contain recreation sites such as Corona Arch and Morning Glory Arch (BLM Utah State Office, 2014).

Trust Lands Director Kevin Carter said of the exchange, “Exchanging trust lands for public lands benefits all Utahns. Newly acquired trust lands can be developed to generate funds for Utah’s public schools, while iconic landscapes and riparian areas along the Colorado River will be protected as public lands” (BLM Utah State Office, 2014). Carter also reported at the summit finalizing the exchange that SITLA has earned approximately $500 million from mineral development on lands exchanged with the

federal government. These mineral revenues, combined with investment by the State Treasurer, has grown the Permanent School Fund to more than $1.75 billion (Loyola, 2014).

Discover Moab, n.d. Delicate Arch. Retrieved from www.discovermoab.com/archesnationalpark.htm

The exchange protected environmentally-sensitive lands along the Colorado River corridor and helped position SITLA with lands more suitable for development and revenue generation.

The transfer did not happen without challenges. The idea for the exchange was born back in 2002, but it was finally realized nearly 5 years ago with Congressional authorization of the Utah Recreational Land Exchange Act of 2009. The transfer met hurdle after hurdle. One major complication arose in 2013 when the U.S. National Park Service (NPS) raised concerns about a parcel the BLM was planning on trading to SITLA. The parcel is across the Green River from Dinosaur National Monument and can be seen from the park's famed Dinosaur Quarry 3 miles to the north. Officials within NPS worried that the potential energy development on the parcel would degrade the monument's visitor experience. The problem was finally resolved when the Grand Canyon Trust, an environmental group, put up $6,400 to lease the mineral estate for 10 years to prevent development (Maffly, 2014).

The sheer length of the exchange process added more complications. During the years it took to appraise the lands, natural gas prices plummeted, devaluing BLM land proposed for the exchange. Meanwhile, the appraisals for SITLA's Grand County sections came in unexpectedly high, especially those with stunning geological features and scenic views. For example, the popular hiking destination near Moab, Corona Arch, was appraised at over $2.4 million. The appraisals for the federal lands fell about $14 million shorter than

the value of SITLA lands. To equalize the value, SITLA dropped 36 parcels totaling 20,273 acres from the exchange (Maffly, 2014).

Despite the hiccups, interest groups that usually are at odds ultimately endorsed the deal. Conservationists are pleased that the plan removes threat of development on SITLA inholdings inside scenic places and wilderness study areas. SITLA is allowed to consolidate its checkerboard holdings into larger tracts that are easier to develop without federal interference (Maffly, 2014).

UTAH CASE STUDY II

Another land exchange in Utah provides an example of how state and federal agencies have dealt with endangered species issues. Three airports in rural southern Utah experienced difficulty in the maintenance of their facilities due to the presence of the endangered Utah prairie dog. The U.S. Fish and Wildlife Service and the Federal Aviation Administration agreed to allow the airports to continue development for the next twenty years, but in order to offset the impacts to the endangered species at the airports, the FAA provided $800,000 to purchase replacement habitat in other locations.

Utah's School and Institutional Trust Lands Administration (SITLA) offered to sell 800 acres of the administration's land containing prairie dog habitat located five miles northwest of Bryce Canyon National Park. This 800-acre trust land parcel was sold to The Nature Conservancy using the FAA funds. Because of the presence of the prairie dogs, SITLA could not use the parcel of land near Bryce Canyon to generate meaningful revenue for the state schools. This land transaction has been a benefit for the conservation of an endangered species while also adding money to the school trust fund for a parcel of land that was previously unproductive (KCSG News, 2013).

MINNESOTA CASE STUDY

The State of Minnesota is facing a remarkably similar dilemma to the SLB in fulfilling a constitutional obligation to generate revenue for schools on state trust lands limited by environmental considerations. The state is currently working with the Forest Service on a mutually beneficial strategy to transfer ownership of roughly 86,000 acres currently designated as school trust lands to federal ownership. These lands are located within the Boundary Waters Canoe Area Wilderness (BWCAW) on the Superior National Forest.

BACKGROUND

When Congress established a territorial government for Minnesota in 1849, it reserved sections 16 and 36 of each township for the purpose of supporting schools and education in the territory. Originally, a total of 8.3 million acres were set aside for Minnesota School Trust Lands. Most of those lands have been sold, with revenues deposited into the Permanent School Fund. There are now only 2.5 million acres of school trust land, and more than 92 percent of it is located within ten northern Minnesota counties, including the land within BWCAW (Conservationists with Common Sense, 2014).

Although the state trust lands have existed since Minnesota statehood in 1858, federal designation of the area as wilderness in 1978 restricted revenue-generating activity such as logging or mining on the land. With mining companies offering millions of dollars in lease payments for new mines, state officials in St. Paul are striving to create land swaps that could allow money to flow into the trust (Hemphill, 2012). The state is trying to obtain land that is not limited by Wilderness designation and could be managed to meet the objectives of school trust lands to generate revenue for public schools in Minnesota (U.S. Forest Service, 2012). Forest Service managers of Superior National Forest also desire to work out a land exchange, as foresters prefer to manage large tracts without having to work around small bits of non-federal lands (Hemphill, 2012). They have been trying to consolidate ownership through acquiring non-federal lands within the BWCAW (U.S. Forest Service, 2012).

Beginning in 2010, the Minnesota Legislature's Permanent School Trust Fund Advisory Committee appointed a working group consisting of the State of Minnesota, Forest Service, and interested stakeholders, including representatives of the school trust, the timber industry, environmental community, mining industry, and local government officials. The working group collaborated through 2011 to identify land parcels on national forest lands outside of BWCAW that could potentially serve as a candidate for a land exchange or acquisition. As part of the group, the Forest Service's main priority was to identify federal ownership parcels located in areas of predominantly state ownership to achieve ownership patterns that could lower resource management costs (U.S. Forest Service, 2012). They also established the following criteria for the land exchange:

1. Retain federal land needed to protect and manage administratively or Congressionally designated, unique, proposed, or recommended areas;

2. Avoid splitting federal surface from federal mineral estates particularly in areas of potential mineral development;

3. Avoid high profile or controversial areas that would likely cause conflict if proposed;

4. Avoid parcels identified as candidates in other proposed land exchange projects (U.S. Forest Service, 2012);

These criteria or similar criteria could likely be used by the Forest Service in Oregon should a land exchange be explored for the ESF.

The working group compiled their findings and presented a map identifying federal land candidates considered for potential exchange to the Advisory Committee in December of 2011. On April 27, 2012, the Governor of Minnesota Mark Dayton signed an omnibus land bill that included language to "expedite" a land exchange between the federal government and the State of Minnesota. The bill also included a provision for the state to sell any "surplus lands" in the BWCAW to the U.S. government. The Minnesota Department of Natural Resources formally proposed the exchange of school trust lands for Forest Service lands located within Superior National Forest in a letter dated August 22, 2012.

The state and the Forest Service are currently collaborating on a feasibility analysis of the proposal. The analysis includes a preliminary review that addresses implications on threatened and endangered species, known cultural and historical resources, wetlands and floodplains, tribal issues, hazardous materials, and management efficiency. If the feasibility analysis supports the exchange, the Forest Service may move forward with a NEPA review, including public scoping and an opportunity for public review and appeal (U.S. Forest Service, 2012).

CALIFORNIA CASE STUDY

In 2007, after 3 years of negotiation among federal, state, and local government agencies, the Mammoth Community Facilities Exchange provided 12.5 acres of land for extended public facilities for the County of Mono, the Town of Mammoth Lakes, the State Administrative Office of the Courts, and other local agencies. In return, the Forest Service obtained 3,061 acres of privately held, environmentally sensitive land in Mono, Inyo, Placer, and Eldorado counties.

The Southern Mono Healthcare District initiated this administrative exchange, but the negotiation involved many parties and was actively assisted by a third-party facilitator, the Western Land Group (U.S. Forest Service, 2007).

LESSONS FOR OREGON

There are a number of potential challenges with land exchanges. The Center for Natural Resources and Environmental Policy at the University of Montana has compiled a list of common objections raised to land exchange practices:

1. Land exchanges are completed without meaningful public scrutiny and input;
2. Agency procedures to evaluate environmental impacts were not adequate;
3. Third-party facilitators did not disclose relationships with landowners;
4. Appraisals often overvalue private land while undervaluing federal land;
5. Federal agencies deal improperly with corporations with which they have close ties;
6. When exchanges involve lands in different counties, the county in which a private land parcel becomes public land will lose property tax revenues, which likely will not be fully compensated by federal programs such as Payments in Lieu of Taxes;
7. Lands transferred into federal ownership are often logged, degraded, or of otherwise low quality, while the lands conveyed into non-federal ownership are often prime or high-quality forest lands; and

8. The process affords the agencies too much discretion and not enough accountability to the public (Center for Natural Resources & Environmental Policy, 2010).

Despite these potential challenges and objections, the benefits of land exchanges often outweigh those objections. In the ESF's case, the benefits of an exchange are obvious. Exchanges allow lands to be administered by agencies with experience in either conservation or development. They can facilitate wilderness and historical resource protection, enhance recreation opportunities, and improve energy development potential. They encourage consultation and communication between federal, state, local, and private entities. Exchanges also provide an avenue for local communities to determine whether the development potential of land exceeds their conservation value, or vice versa.

The ESF has resources that the public and environmental community desires to protect. This is a strong bargaining chip that the SLB could use in a potential land exchange with the federal government. As noted above, potential federal parcels to be swapped are many. Finding the exact lands and working out a compromise between the logging industry, environmentalists, recreationalists, the public school establishment, and government officials will not be easy, but it is clearly possible as Utah, Minnesota, and over 250 other completed land exchanges have demonstrated. It is a very strong option for the SLB to consider.

The SLB could explore the possibility of using a third-party facilitator to help navigate the difficult political and legal challenges that would ensue following an exchange of the ESF.

These case studies did not necessarily address the Endangered Species Act, which could potentially complicate any land exchanges between the Oregon and federal governments. The Headwaters Agreement of 1996 in California is one example where a federal land exchange was affect by the Endangered Species Act. However, because the root of the ESF's problems are based on endangered species, it would be illogical for the government of Oregon to exchange the ESF for another parcel of land that has endangered species on it. Exchanging land should only be done if Oregon can acquire land which can be used for revenue generation without the constraints of endangered species regulation.

HABITAT CONSERVATION PLANNING

Passing an HCP for the ESF is likely a viable option for the Common School Trust Land in the ESF to fulfill its financial responsibility. Habitat Conservation Plans throughout the country have been used to balance development and conservation, but the stalemate between federal and state agencies has made revising the latest version of the ESF's HCP difficult. Overcoming this stalemate and compromising on the specific stipulations in the HCP will allow the ODF to obtain an ITP for marbled murrelet and coho salmon. With an ITP, ODF will be able to generate sufficient revenue through increased timber harvest while also making allowances for the number of endangered or threatened species that are found there.

Once the complex situation of the ESF HCP is understood, it becomes clear that a functional HCP may be one of the best ways to monetize the ESF because an HCP and ITP for marbled murrelet and coho salmon will open up more areas for logging. Below is an explanation of the past and current status of the ESF HCP, followed by our conclusions.

The HCP of the ESF is subject to the oversight of both the USFWS and NMFS. An HCP is a necessary part of the State of Oregon's application for the federal ITP if the ODF intends to take northern spotted owls, marbled murrelet, or Oregon Coast coho salmon. (U.S. Fish and Wildlife Service, 2008).

National Geographic, n.d. Northern Spotted Owl [photograph]. Retrieved from *images.nationalgeographic.com/wpf/media-live/photos/000/063/cache/northern-spotted-owl_6327_990x742.jpg*

After the ITP expired for marbled murrelet in 2001, the ESF HCP was being revised by state and federal agencies for the long-term taking of marbled murrelet and coho salmon, which were listed as a threatened species in 2008, as well as some unlisted species (Figure 2) (Oregon Fish and Wildlife Office, 2008).

In order to protect marbled murrelet, the current forest management has involved take-avoidance strategies since 2001, complying with the ODF's marbled murrelet management plan. Essentially, any area that has been designated as murrelet habitat in the ESF is not used to harvest timber. In order to protect coho salmon, aquatic and riparian strategies were adopted by the SLB in 1995, which included a 100-foot buffer in which no or limited logging around fish-bearing streams was allowed, and a 50-foot buffer on perennial streams with no fish. In addition to the already-listed species, the proposed HCP originally accounted for other bird, amphibian, fish, and mammal species that are not currently listed as endangered species (Oregon Department of State Lands and Oregon Department of Forestry, 2009).

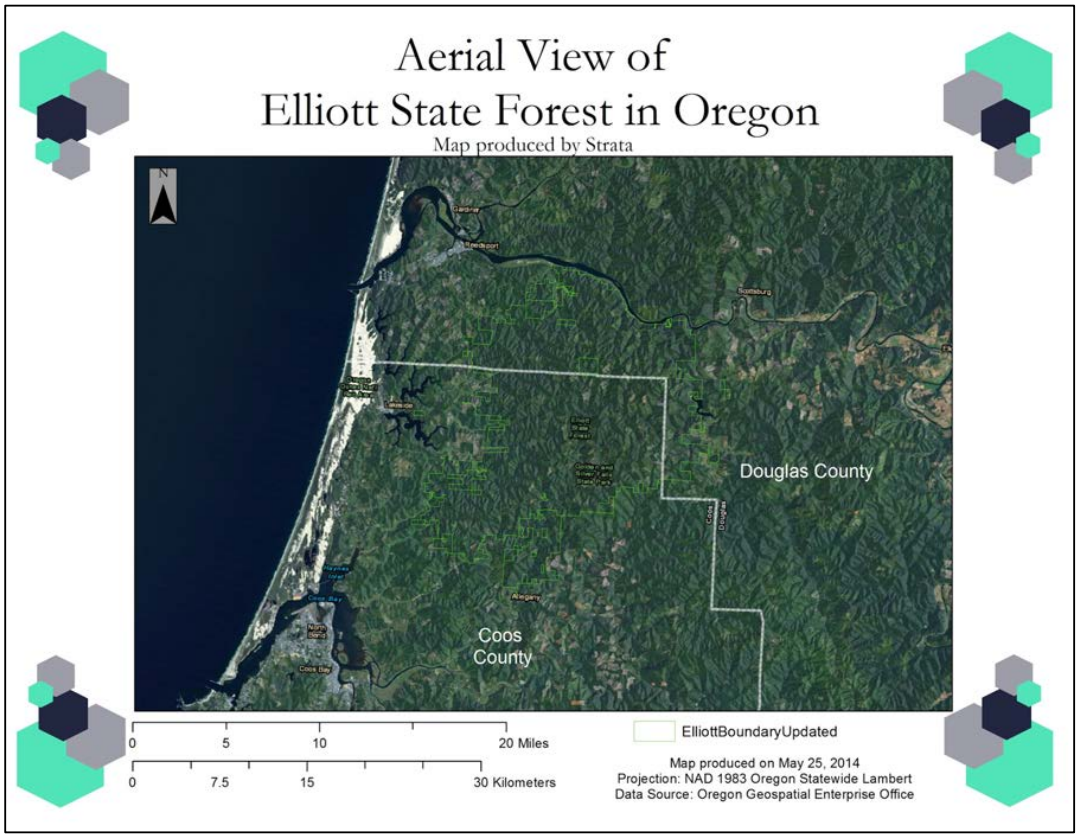


Figure 2. Land cover map of the vicinity of the Elliot State Forest.

The NMFS has stated that because coho salmon depend on streams in the ESF, they are at risk from logging and roads. The State of Oregon requested an ITP under the provisions of the ESA, but in a letter dated July 21, 2009, the NMFS said that it cannot legally grant the permit if the State of Oregon does not change the existing HCP. The NMFS found several reasons for not approving the ITP, including low levels of streamside shade, high sediment levels from roads, removal of near-stream trees needed for habitat creation, and increased risk of landslides. The State of Oregon has been aware of the NMFS's doubts with the ESF management plan since 2006. The ODF hoped to maintain the management strategies as proposed in the HCP with no alterations (Pacific Rivers Council).

An ITP may be granted by federal agencies if the following conditions are met: (1) taking individuals of a species will be incidental to timber harvest, (2) the applicant will minimize and mitigate the impacts of taking, (3) there will be adequate funding to implement the HCP, and (4) the likelihood of the survival and recovery of the species will not be reduced. Habitat conservation plans are necessary for a state to receive an ITP from the appropriate federal agencies (Oregon Fish and Wildlife Office, 2008).

It is important to know the details about why the ESF HCP could not progress so that officials in the state and government agencies and the general public can know exactly what needs to be resolved for the HCP to be passed. In 2009 Kim W. Kratz, Director of the Oregon State Habitat Office Habitat Conservation (a Division of NMFS) sent a letter to Jim Young, the Coos District Forester of the ODF, regarding the coho salmon issues. In the letter, Kratz said that, beginning in 2005, NMFS and the ODF had differences of opinion on the ODF's strategies to protect aquatic species, especially coho salmon. Despite NMFS' concerns with the strategies, said Kratz, ODF wanted to continue the NEPA process with a draft environmental impact statement (DEIS), which is a necessary step to pass an HCP. Due to time constraints, NMFS and ODF agreed in 2006 to postpone negotiations and revisit them after completing a DEIS. The NFMS and ODF agreed to continue the negotiations after gaining the necessary public comments on the DEIS.

Once the public comment period closed in early 2009, only six aquatic-related concerns needed to be addressed by the draft HCP. These concerns became some of those that caused the 2006 postponement. During a meeting on March 5, 2009, the NMFS provided a summary of proposed HCP strategies that were deemed adequate for protecting aquatic habitat or the conservation needs of coho salmon. The NMFS recommended changes draft HCP's strategies for compliance with the ESA.

NOAA Fish Watch, n.d. Coho Salmon [photograph]. Retrieved from *www.fishwatch.gov/seafood_profiles/species/salmon/species_pages/coho_salmon.htm*

The remaining, unresolved concerns of the NMFS included management strategies on stream temperature, wood delivery, fine sediment delivery, increased road mileage, unstable slope protection, and the certainty of proposed compensatory mitigation. Stream temperature and instream wood delivery would be the most difficult concerns to

solve and would require the greatest changes in the HCP strategies. These two issues are the most significant discrepancies between the proposed strategies of the ODF and the NMFS's demands for protecting coho salmon.

If the ODF does not reconsider their demands to aquatic management in the ESF, they should remove coho salmon and other NMFS-related species from the HCP. Despite the past disagreements between the state and federal agencies, NMFS has state that it still wants to work with the ODF to resolve the salmon issues (Kratz, 2009).

As of 2009 the issues the USFWS had with the HCP included the level of murrelet take, amount of owl habitat remaining at the end of the ITP, how to address potential future barred owl issues, and the monitoring of habitat effectiveness and unlisted covered species. The issues the NMFS had were the aquatic and riparian strategies, such as large wood, in-stream water temperature, increasing road miles, mitigation for upland activities, identification of unstable slopes, and implementation of best management practices (Oregon Department of State Lands and Oregon Department of Forestry, 2009).

Rich Szlemp, a USFWS biologist working on HCP in the Portland Office, said that the USFWS determines whether the habitat area is sufficient for the species in order to issue ITPs if an HCP is agreed upon. The no-incidental-take policy limits where the ODF can extract timber based on endangered species that are present in certain areas of the ESF. Szlemp acknowledges that while endangered species prevent the ODF from harvesting timber in certain areas, there are still many areas that are free to be used for extraction and the presence of endangered species is only one factor that limits timber extraction. Under the current take-avoidance policy, the ODF will have fewer and fewer acres that can be logged without entering into endangered species habitat. Logging operations cannot enter into this endangered species habitat unless they obtain an ITP.

The USFWS produced a draft HCP in 2008, but Szlemp said a few aspects of the USFWS's demands have changed since the draft. One of these changes includes a critical habitat designation on the EFS. A critical habitat designation has legal ramifications only for land that is under federal control or has federal connections. Since the EFS is state land, the critical habitat designation does not apply to the current management scheme. However, because the USFWS thought that the critical habitat designation has an important function, they required the 2008 draft to be revised again in order to look more closely at the forest structure and the long-term plans of the area designated as crucial habitat. These changes were the cause of the further negotiations in later in 2008 and 2009 that eventually led to stalemate. Szlemp stated that he thought that the 2008 HCP draft for the marbled murrelet was sufficient, and not much has changed or is expected to change with regard to that species.

Szlemp says that, from the perspective of the USFWS, the parties to the HCP are fairly close to coming to an agreement based on the 2008 HCP draft. The renewed talks between the state and federal agencies began again in fall of 2013. However, as mentioned before, the critical habitat designation on the non-federally owned ESF may change the perspective and demands of the USFWS.

Critical habitat designations affect only land under federal control or with federal connections. If the ODF is granted an ITP, it constitutes a federal connection, so Szlemp

explained that the situation would become more complicated because only "federally connected" places are under the jurisdiction of critical habitat designations. Also, if the ODF received federal money to manage the ESF, that would also be a federal connection, and the USFWS would have to review the impacts on the ESF. These issues must be discussed in the coming months of negotiations between the federal and state agencies involved in the writing and carrying out of the HCP.

Despite the past negotiations between the ODF and USFWS, riparian buffer regulations from the NMFS were the most significant factor that stalled of negotiations for the HCP. The NMFS was adamant about the protection of the riparian habitat. Szlemp implied that the concerns of USFWS could be overcome more easily than the concerns of the NMFS.

Officials in the USFWS and NMFS have stated that they feel confident that an HCP could be passed in the next few years. The renewed negotiations are still in their preliminary stages, and the federal negotiators have stated that they wonder if the ODF's expectations and demands have changed since the 2008–2009 negotiation breakdown. Because of Oregon's financial concerns, Szlemp feels that the sale of some parcels of the ESF is a "fairly extreme measure, especially for public land" (Szlemp, 2014).

The proposed HCP provides for fire suppression, aquatic habitat restoration, minimization of potential harmful effects of mechanized timber harvest, and other management practices. The proposed HCP includes conservation areas for spotted owls and marbled murrelet, where little or no harvest would occur and specific harvest instructions for riparian areas (U.S. Fish and Wildlife Service, 2008).

The ODSL and SLB have allowed the ODF and the OBF to plan and authorize annual logging activities and operating plans in the ESF. At the end of 2011, ODF, OBF, ODSL, and SLB approved a new forest management plan for the ESF. Forest management plans provide policies and guidance for district implementation plans and annual operations plans. These plans help ODF to fulfill a "desired future condition" for state forests. State forests and their districts categorize the types of management activities, such as thinning, partial cuts, clearcuts, and reforestation. The plans also stipulate the way that the forests are used to bring forests to their desired future condition. Management plans lay out management activities such as roads, slope stability, recreation, and aquatic resource enhancement projects. Habitat Conservation Plans are separate from forest management plans, but HCPs are often incorporated into forest management plans (Oregon Department of Forestry, n.d.(b)).

The 2011 Elliott Forest Management Plan nominally increased the amount of logging on the forest from approximately 25 mmbf to 40 mmbf per year. Until the new 2011 forest management plan was passed, the ODF could clear-cut 500 acres of the ESF. The 2011 plan allowed clear-cutting up to 1,000 acres in the ESF each year. This clear-cutting often occurs in old growth areas that are thought be to suitable marbled murrelet habitat. However, the USFWS has classified the ESF as "critical habitat" after the murrelet was protected under the ESA in 1992 (Center for Biological Diversity).

In past management schemes, the ODF used an age-based, multiple-harvest-rotation strategy to harvest timber from the ESF. Forest-management strategies are presently

based on forest structure so that a diversity of tree-stand types and older forest conditions can benefit species associated with mature forests. The current strategy is a more selective means of harvesting timber (Oregon Fish and Wildlife Office, 2008).

In contrast to Oregon, Washington's HCP for state trust lands shows an effective means of protecting endangered species like the northern spotted own while also allowing for the extraction of timber from the state lands. Washington's HCP allows the state to comply with the ESA while also allowing the state the flexibility to meet the trust responsibilities of generating money for the school trust through forest products. Millions of board feet of timber are currently being extracted from Washington State Trust Lands under the HCP, which is generating revenue for Washington schools (Washington State Dept of Natural Resources, 2014).

In conclusion, if the ODF and NMFS can compromise on the management strategies of stream temperature, wood delivery, fine-sediment delivery, road mileage, unstable slope protection, and the certainty of proposed compensatory mitigation, then an HCP could be passed. With this new HCP, the ODF could obtain an ITP for coho salmon and marbled murrelet.

A new HCP would open areas for logging that are unavailable under the current take avoidance strategy. More acres available to be logged means more revenue generated for the State of Oregon. Whether or not the revised HCP would allow enough timber harvest for the SLB board to meet its fiduciary obligations to public schools is an open question. Certainly the SLB needs to avoid losing money on the ESF, and a revised HCP could allow for that. The members of the Board will judge whether a new HCP will satisfy the legal interests of CSF beneficiaries in the context of examining other feasible alternatives.

POTENTIALLY VIABLE OPTIONS

CHARTER FOREST

The idea of adopting charter forests has garnered increased attention in the media recently. Robert H. Nelson, a professor at the University of Maryland and a Senior Fellow at the Independent Institute, is at the forefront of the charter forest push. Pointing to the wide successes of charter schools across the nation, Nelson and other proponents argue that public lands, especially those managed by the Forest Service, should adopt similar management models.

Writing for the Independent Institute, Nelson points out that charter schools are one of the few areas of government reform that enjoy bipartisan support. Their secret is local management autonomy. Freed from bureaucratic shackles, charter school managers can hire and fire more freely than their traditional public school counterparts. They can set and enforce standards for both teachers and students that might cause protest at regular schools. They also have the freedom and flexibility to experiment (Nelson, 2014(a)).

While Nelson has primarily advocated for charter forest adoption on federal lands managed by the Forest Service, he has also expressed support for an experimental charter forest on state lands such as the ESF (Nelson, 2014(b)).

Randal O'Toole at the Cato Institute has written extensively on charter forests. He points out that in 2003, the U.S. Department of Agriculture under the George W. Bush Administration included a provision for a "pilot charter forest legislative proposal that establishes forests or portions of forests as separate entities, outside of the existing structure and reporting to a local trust entity for oversight." The administration never actually wrote specifics for the proposal because they desired to leave the door open to many different proposals from various groups, such as the Idaho Federal Lands Task Force, the Forest Options Group (which consists of environmental, industry, and Forest Service leaders), and the Lubrecht Group in Missoula, Montana (O'Toole).

The structure of a charter forest as proposed by Nelson, O'Toole and others include a local board of directors, which could include economists, environmentalists, government officials, and recreational and commercial users of forest resources. Members of the board of directors would be partially appointed by the federal government (or state government in the ESF's case) and partially elected by a "friends group." Membership in this friends group would be open to the public, allowing for input from a variety of stakeholders and interested parties (O'Toole).

Besides being an excellent forum for debate and education, the friends group would have no formal powers besides the election of the charter forest's board of directors. Similar to charter schools, charter forests would receive public funds to support their operations based upon the forest's size, the ways in which it is used, and other appropriate criteria. Charter forests would be exempt from current requirements for public land use planning as well as the writing of environmental impact statements (Nelson, 2014(a)).

While charter forests with the proposed structure above have never been adopted, a number of organizations that share some of the same characteristics have been tested, with varied degrees of success.

THE QUINCY LIBRARY GROUP

Quincy is a small town in northeastern California with a resource-based economy. For 15 years, a 2.3-million-acre area near Quincy had been the subject of great controversy between the environmental community, logging industry, and government agencies. In 1992, an environmental activist, a county supervisor, and a senior executive from a logging company began meeting at the Quincy Library to devise a compromise plan for the area. More and more people began attending these meetings as word spread, and by the end of 1993 the Quincy Library Group (QLG), as it became known, had developed a compromise plan that was widely accepted within the region.

When the Forest Service refused to implement the plan, the group went to Washington D.C. and succeeded in persuading Congress to pass the Quincy Library Group Forest Recovery and Economic Stability Act in 1997. The QLG showed that antagonistic groups with conflicting agendas may be able to reach consensus when the benefits of

cooperation are sufficient, and even in the absence of government inducement (Bruce, 2005).

THE APPLEGATE PARTNERSHIP

The approximately 500,000-acre Applegate Watershed is located in the Siskiyou Mountains of southwestern Oregon. Nearly two thirds of the roughly 12,000 residents live adjacent to Grants Pass, and the remaining live in unincorporated towns and rural areas that are dependent on timber production. There is an unusually large constituency of environmental activists in the region. The Forest Service and BLM manage 70 percent of the watershed, while the remaining 30 percent is primarily in private ownership.

In the early 1990s, listing as endangered of the northern spotted owl brought lawsuits and injunctions, virtually shutting down logging on federal lands in the watershed. Fire hazard became an increased concern to citizens. The BLM and Forest Service were largely autonomous and independent in the region. All of these factors contributed to a desire and need for improved cooperation.

In October 1992 the Applegate Partnership was formed to bring the varying interest groups together. The group has now met monthly for over 20 years (Moore, 2013). While critics say the measurable outcomes of the group are few, the Applegate Partnership was highlighted by the Forest Service as a case study for successful collaborative groups (Rolle, 2002).

The QLG and Applegate Partnership are not isolated examples. Long delays in preparation for a wilderness area in California's Sierra Nevada brought about the formation of the Whiskey Creek Group, a coalition of wilderness users. Groups in the Platte River area and the Brownsville region of Texas have also formed similar groups. The purpose in highlighting all of these collaborative groups is to suggest that it is not necessary for environmental decisions to be made by centralized government agencies (Bruce, 2005).

A proposed charter forest would have a friends group and board of directors made up of disparate groups, similar to the voluntarily formed groups described above. The success of these groups support the idea that governing bodies of charter forests could actually reach consensus and successfully manage public lands.

The attractive qualities of turning ESF into a charter forest would be localizing the decision-making process, removing regulatory and bureaucratic costs, and increasing participation by interested parties. A board of directors managing the ESF would also remove political actors from the equation, potentially increasing the potential for difficult decisions to be made without the political baggage.

The obvious drawbacks of adopting a charter forest on ESF would be that the SLB already has relatively strong autonomy on deciding what to do with the forest, especially compared to the Forest Service, the failings of which largely propel the charter forest movement. There is valid concern that increasing the number of decision-making actors from the three members of the current SLB to a multi-member board of directors would only cause decision-paralysis.

In conclusion, the concept of charter forests is certainly worthy of consideration and brings new perspective to the natural resource debate. However, relinquishing administration of the ESF to a charter forest board of directors does not solve the challenges of fulfilling the constitutional obligation to generate funds for the common school trust fund.

At this stage, the charter forest concept should only be viewed by the SLB as an experiment that could potentially generate some innovation in management. We are cautious in recommending this option given it has few real-world case studies. Additionally, we should note that federal agencies lack many of the tools and incentives for programs like this to work within their existing framework. As a result, there must be a clear commitment to innovation for all parties involved in this type of solution.

PAYMENTS FOR ECOSYSTEM SERVICES THROUGH COMPENSATORY MITIGATION

A possibly viable option for the monetization of the ESF is receiving payments for ecosystem services through compensatory mitigation on state trust lands. Compensatory mitigation allows for trust land to fulfill its responsibilities while also fulfilling conservation desires through the marketing of ecosystem services.

The Lincoln Institute of Land Policy published a working paper in 2011 listing ways the states in the western United States could be using their trust lands as a market for ecosystem services that generates money for schools in a non-extractive way. Ecosystems services are benefits to society based in natural processes, which may include water filtration, climate stabilization, nutrient cycling, and carbon sequestration. State trust lands and land managers can take advantage of ecosystem services markets for revenue generation, particularly through mitigation banking or conservation banking (Culp et al., 2011).

The U.S. Environmental Protection Agency (EPA) has defined a mitigation bank as "a wetland, stream, or other aquatic resource area that has been restored, established, enhanced, or preserved to provide compensation for unavoidable impacts to aquatic resources permitted under Section 404 of the Clean Water Act or a similar state or local wetland regulation." In other words, a mitigation bank is the preservation of an area that offsets, or compensates for, negative impacts in a similar ecosystem in a similar region.

The purpose of a mitigation bank is to substitute the function and value of a negatively altered wetland habitat for an unaltered habitat. Mitigation banks can be established when a state government agency enters into formal agreement with a regulatory agency like the EPA. Most mitigation banks are designed to compensate only for impacts to wetlands, but some banks compensate for impacts to streams (Environmental Protection Agency).

The USFWS defines conservation banks as "permanently protected lands that contain natural resource values which are conserved and permanently managed for species that are endangered or threatened under the ESA." In other words, conservation banks offset, or compensate for, negative impacts to endangered species elsewhere. In conservation

banks, the USFWS approves a specified number of habitat or species credits that bank owners may sell in exchange for permanently protecting and managing the land. Oregon is one of the few states that already has an approved conservation bank system from the USFWS (U.S. Fish and Wildlife Service, 2013).

Mitigation banking and conservation banking are fundamentally the same. The main difference between mitigation banking and conservation banking is that while the purpose of wetland mitigation banking is to replace the exact function and values of negatively affected wetlands, the purpose of conservation banking is to offset negative effects to a species (Culp et al., 2011).

State trust land managers can both generate revenue and achieve conservation outcomes as new markets open for regulatory compliance for mitigation of environmental impacts. State trust land managers who oversee extensive land tracts can exploit markets by providing endangered species mitigation and wetlands/aquatic resources mitigation. Mitigation banking has already become popular in Oregon, Washington, and Montana.

Mitigation or conservation banking provides compensatory mitigation credits, which forms a kind of market. Because these markets are connected to mandatory federal regulations, mitigation/conservation banking can be viable markets state trust land managers to tap. When compared to traditional methods of generating revenue like grazing and timber harvest, marketing ecosystem services can be financially competitive and diversify the portfolio for trust land agencies.

One drawback, however, is that predicting the demand for ecosystem services can be difficult. Past permitting trends and future plans for development are ways to calculate the demand. For example, the U.S. Army Corps of Engineers (USACE) issues permits for projects affecting aquatic resources under the Clean Water Act. The USACE record of past permits can provide a basis for estimating future demand. However, there is no guarantee that past trends will continue into the future.

For wetland restoration mitigation credits, one credit is usually equivalent to 1 acre of protected resources. In the United States, the average prices for credits are $75,535 for wetland credits, $260 for stream credits, and $31,683 for habitat credits. Also, for conservation banks, one credit will equal 1 acre of habitat, but credit values depend upon several factors including habitat quality, habitat quantity, species covered, conservation benefits, and available resource values.

The Lincoln Institute for Land Policy says that ecosystem services credits are advantageous because they offer a source of income from areas with high conservation value where extractive development is not especially viable. Ecosystem service credits better used as one component of an income portfolio that also includes a range of other revenue streams, not a stand-alone means of revenue generation (Culp et al., 2011).

OREGON CASE STUDY

In 2009, the Oregon State Legislative Assembly passed Senate Bill 513 (SB513), which assigned the Oregon Sustainability Board to develop a statewide ecosystem services market for advancing environmental protection. One of SB513's goals was to encourage

state agencies to use market-based approaches to promote conservation while also generating revenue.

SB513 established the Ecosystem Services Markets Working Group (ESMWG), which is a working group to make recommendations on managing statewide ecosystem services markets. The ESMWG includes people from local and state agencies, federal agency representatives, members of the conservation and development communities, and private landowners. The Oregon State Land commissioner also participates in the development of the marketplace to make sure that it provides for state trust lands to provide key ecosystem services to be considered within that market.

The Lincoln Institute for Land Policy thinks that Oregon's strategy for ecosystem services market/compensatory mitigation has significant potential to conserve ecologically important state trust lands in a way that fulfills the of the trust in generating revenue. Oregon could be a pioneer in leading an ecosystem services market for state trust lands. Because the Oregon State Land Commissioner is in the working group, other members in the group can better comprehend the unique responsibilities of state trust lands and persuade them to include trust lands in ecosystem services markets. Especially in eco-conscious Oregon, protecting the ecological values of some trust lands while generating revenue from those ecosystem services, state trust land managers fulfill the public's competing expectations for conservation and profits (Culp et al., 2011).

In conclusion, the State of Oregon has already recognized the viability of using these markets. Oregon already has the legal infrastructure in place to use their ecosystem services markets to monetize the ESF. The ESF already has a large amount of riparian/aquatic habitat and endangered species habitat that could be used as mitigation banks and conservation banks. The habitats of the ESF would be conserved and produce profit while other, less-controversial state trust lands were exploited for development.

We categorize this option as potentially viable with the caveat that a real desire to make meaningful and innovative land-use changes would be required. It is our experience that federal agencies in particular are ill equipped and incentivized to pursue these types of options.

NORTH CAROLINA CASE STUDY

North Carolina provides an example operating an ecosystem service market through mitigation banking. This example from Doyle and BenDor (2012) could provide a basic framework for an ecosystem service market operated on the ESF by the State of Oregon.

Over the past several decades, North Carolina's population has been growing rapidly, causing suburban sprawl over large areas of the state. Much of the area affected by population growth in North Carolina is dominated by wetlands, which has led to negative impacts on riparian ecosystems.

One of the largest entities impacting wetlands was the North Carolina Department of Transportation (NCDOT). During the 1990s, NCDOT had to delay construction projects because there was an insufficient amount of mitigation credits from private bankers.

Because of the issues with NCDOT construction projects, the North Carolina government set up the Wetland Restoration Program in 1996, which was later renamed as the Ecosystem Enhancement Program (EEP) in 2003. Beginning in 1998, mitigation credits from the EEP became purchasable by private developers as well as public agencies. This allowed a market to form around a new type of credit consumer, for which the EEP could provide compensation under an in-lieu fee (ILF) program. ILF programs operate through governments or non-profit organizations that collect fees from developers and consolidate these fees to gain the monetary means to restore wetlands.

For North Carolina, stream and wetland mitigation credits comprise a market of trades between private developers and commercial banks, between NCDOT and EEP, and between private developers and EEP. If the ESF were to be managed in a similar fashion by the state, the forest could potentially serve as a mitigation bank for environmental impacts within some geographic region such as the State itself, similar ecosystems, or watersheds. Credits on the ESF could essentially be purchased to allow impacts elsewhere. Not only would the ESF be preserved in perpetuity, but other impacts would have a valid and perpetual form of mitigation.

There have been several weaknesses with North Carolina's system. In the beginning, the EEP often undercharged developers, which basically means the state subsidized environmental degradation by land developers. Also, some mitigation sites were located on streams that were smaller on average than streams at impacted sites. However, mitigation done by the EEP led to virtually no loss of streams or wetlands, which is the largest goal of wetlands and stream regulation (Doyle and BenDor, 2012).

INDIVIDUALLY UNVIABLE OPTIONS

TAKE-AVOIDANCE STRATEGY ON ENTIRE FOREST

The simplest option for the monetization of the ESF is to continue operating under the current forest management plan. This means using the take-avoidance strategy with partial logging and leasing parcels for logging. Because the state lacks an ITP due to the lack of a current HCP, take-avoidance is the only course of action that the State of Oregon can pursue under the provisions of the ESA without major legal or administrative changes.

The provisions of the 2011 Forest Management Plan outline the take-avoidance strategy and how partial logging functions. Take-avoidance includes surveying for endangered species and maintaining that habitat. Take-avoidance policies are intended to reduce potential harm to threatened and endangered wildlife from forest management practices.

Under the 2011 plan, timber harvests are ideally expected to extract 1 percent of the forest's total acreage each year. Any area that is harvested will be replanted in compliance to Oregon state laws. The forest management plan has also established conservation areas that comprise about one third, or 28,000 acres, of the ESF (Oregon Department of State Lands, 2011).

The intent of the 2011 Forest Management Plan was to increase harvests on the ESF, but that goal is not close to being met. Under the status quo, the ESF will continue to siphon money away from the Common School Fund instead of generating money for it. The current management system does not seem like it will generate substantially more money anytime in the near future, meaning that the State of Oregon will need to pursue other options or risk losing millions of dollars from the Common School Fund for the next several years.

RECREATION

Recreation opportunities in the ESF will not significantly provide more revenue than the status quo of limited logging. First, the population of the area surrounding the ESF is relatively small. Second, the ESF has no unique or special attractions that would bring in a significant number of tourists to produce any substantial profit for the Common School Fund (Figure 4).

Coos County, in which the ESF is partially located, has a population of about 62,000 (U.S. Census Bureau, 2014(a)). Douglas County contains the other portion of the ESF, and its population as of 2013 was approximately 107,000 people (U.S. Census Bureau, 2014(b)). Coos Bay, one of the ESF's nearest significant towns, has a population close to 16,000 (U.S. Census Bureau, 2014(c)). Roseburg, another town near the ESF, has only 22,000 people (U.S. Census Bureau, 2014(d)). The relatively small population likely makes recreation an unviable option to support the Common School Fund.

Some of the explored options were hunting, fishing, camping, hiking, and constructing cabins. According to Ryan Greco, the assistant district forester for the Coos District, there is some hunting and fishing, but the amount is insignificant. In order to monetize through these means, a large increase in traffic would be necessary (Greco, 2014). Given the population, it is simply not feasible.

Currently, the ESF does not require any entry fees. The campsites that are available are used on a first-come, first-served basis. Any hiking trails are used the same as the campsites. The logging roads serve as trails for ATVs, but the small population does not allow for any substantial, revenue-producing activities.

Another possibility for monetization is selling lots for the purpose of constructing cabins. However, the selling of parcels of land has been controversial and any attempt to do so has been met with resistance from various environmental groups.

The ESF is surrounded by other forests and parks with many similar opportunities, but these other areas have a much stronger appeal for tourists. Areas relatively close to the ESF contain more desirable include Crater Lake National Park and the Oregon Coast. Without unique sites or attractions, and given the small population in the area, monetizing the ESF through entrance fees for hunting, fishing, camping, hiking, and other recreational activities is not a viable, revenue-producing option on its own.

However, increasing entrance fees for recreational opportunities may be one way to generate addition money for the Common School Fund. If the State of Oregon increased

or established fees for ESF recreation, it must ensure that increased prices do not drive away the visitors who would have come to the ESF.

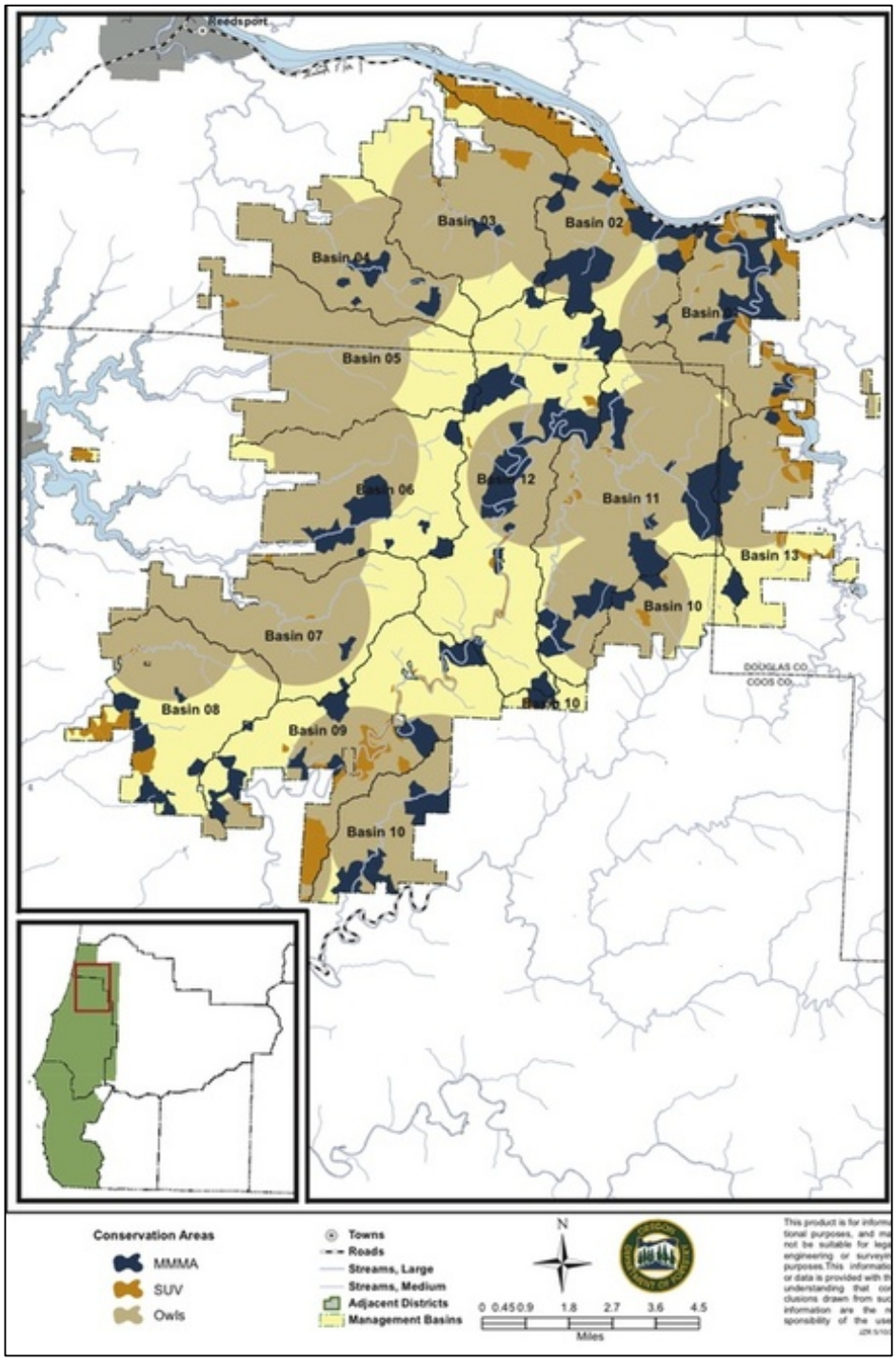
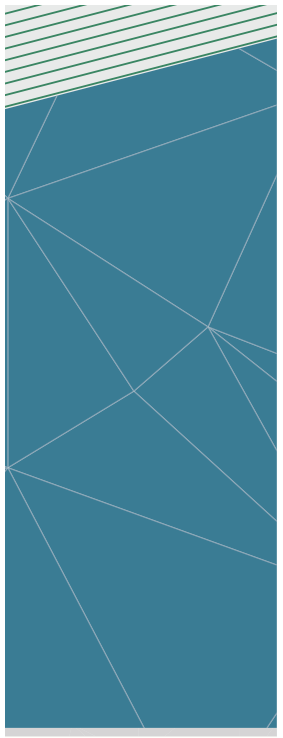


Figure 4. Map showing listed species habitat and lack of recreation potential.

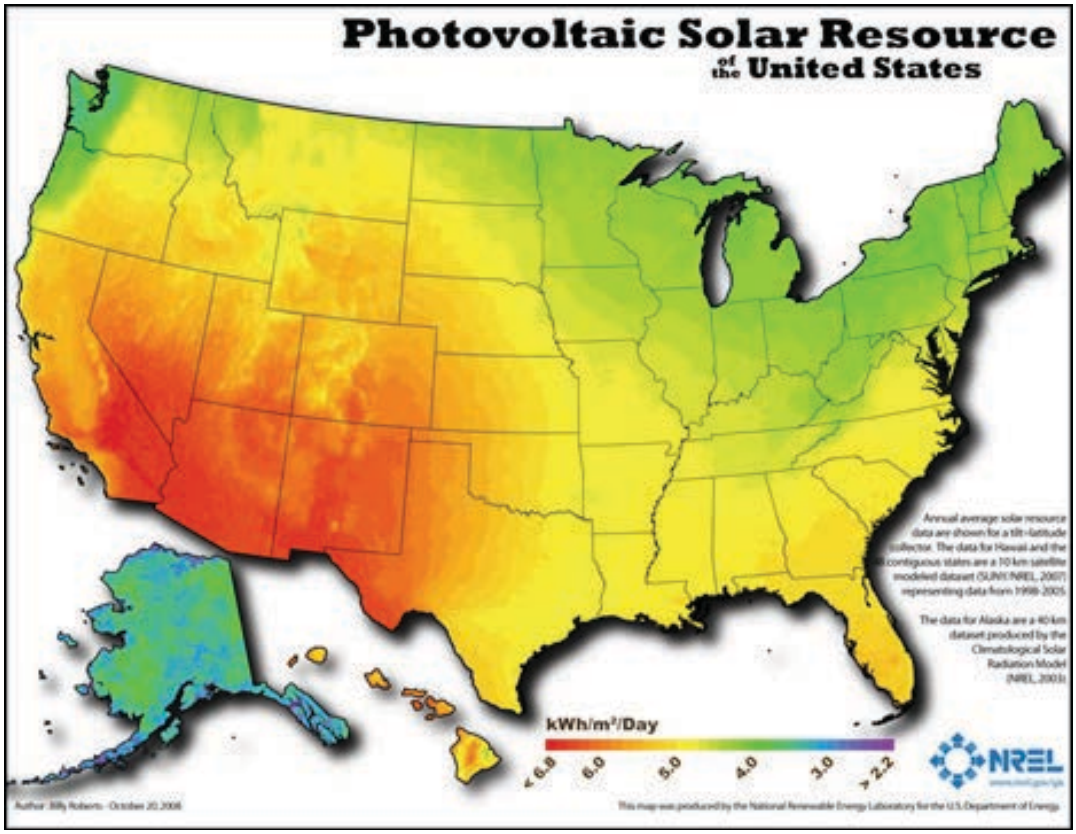


ENERGY DEVELOPMENT

Most types of energy development in the ESF are neither feasible nor profitable. We have looked at the potential for renewable energy development, specifically solar, wind, geothermal, hydroelectric, hydrogen production, and biomass. We have also looked into traditional fossil fuels such as oil, coal, and natural gas.

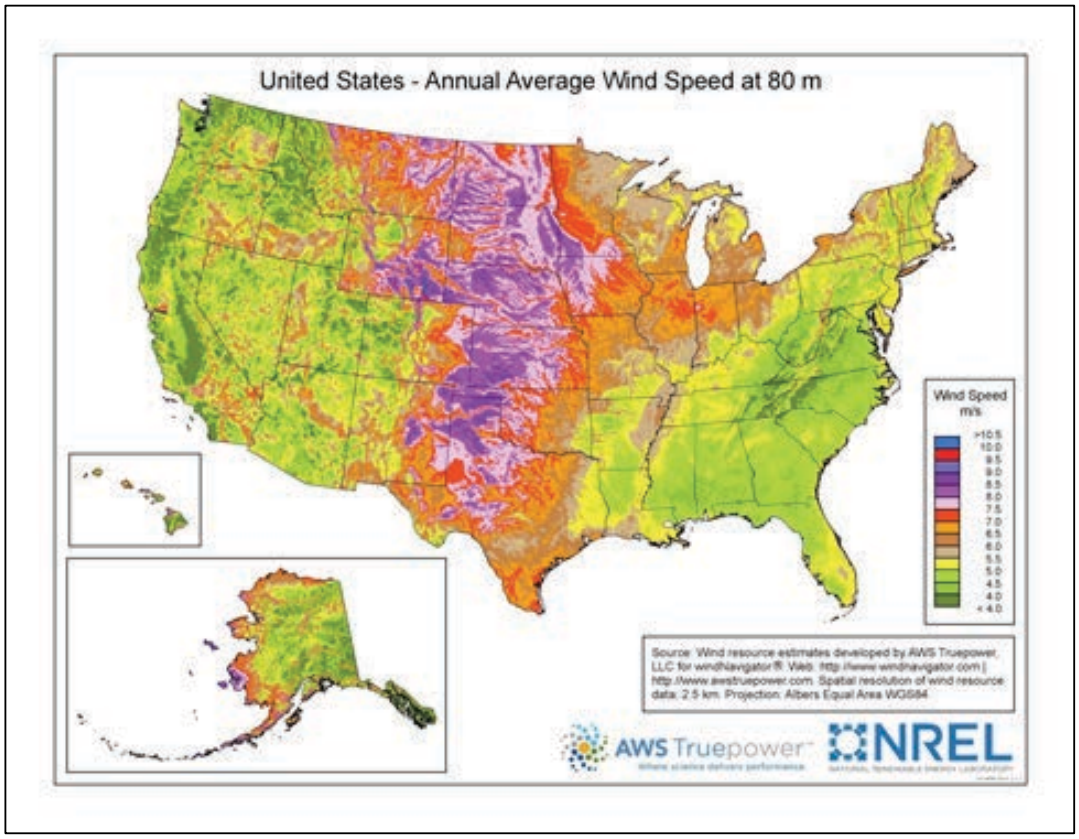
SOLAR

Solar production seems especially unviable in the ESF. Because of the northerly latitude and overcast skies of the Coast Range of Oregon, solar resources are limited, thus making solar panels or other means of solar energy production inefficient and uneconomical. The map below shows the low solar productivity rate in western Oregon (National Renewable Energy Laboratory, 2008).



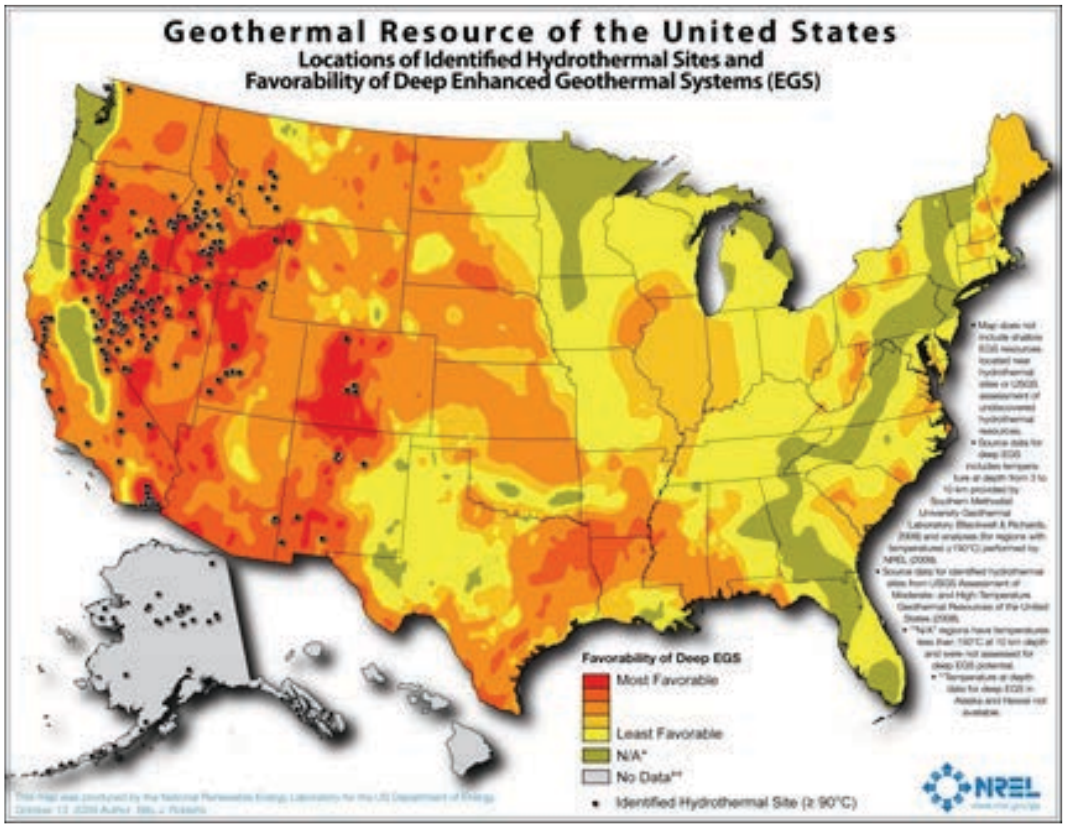
WIND

With regard to wind power, the area around the ESF does not appear to contain sufficient wind resources to warrant expensive installations of wind turbines. As seen in the map below, the average annual wind speeds in the southern Coast Range of Oregon are some of the lowest in the continental United States (National Renewable Energy Laboratory, 2011).



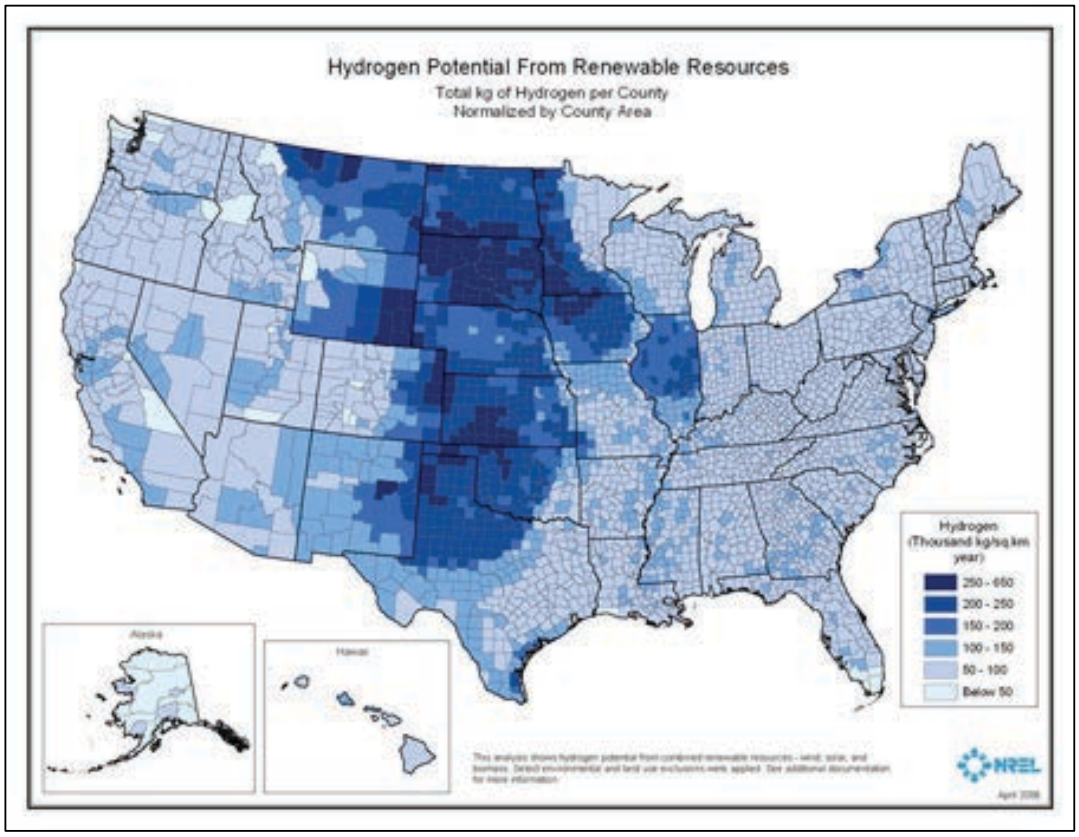
GEOTHERMAL

The Coast Range of Oregon where the ESF is located does not appear to have any significant geothermal resources to be tapped for energy production. The nearby Cascade Range is highly volcanic and has a large potential for geothermal resources, but the Coast Range has no identified locations of hydrothermal sites and there is very low favorability for Deep Enhanced Geothermal Systems (National Renewable Energy Laboratory, 2009(a)).



HYDROGEN

The Coast Range of Oregon has a low potential for producing hydrogen from renewable resources. The map below shows the potential for producing hydrogen from renewable resources such as onshore wind, solar photovoltaic, and biomass through electrolysis, gasification, and stream methane reforming (National Renewable Energy Laboratory, 2006).



HYDROELECTRIC

Developing hydroelectric facilities in the ESF as a means of monetization seems unfeasible for several reasons. First, because of the persistent salmon-related issues in and around the ESF, building dams on streams and rivers in the ESF is going to be highly controversial and politically difficult to initiate due to the constraints of the ESA and environmental interest groups.

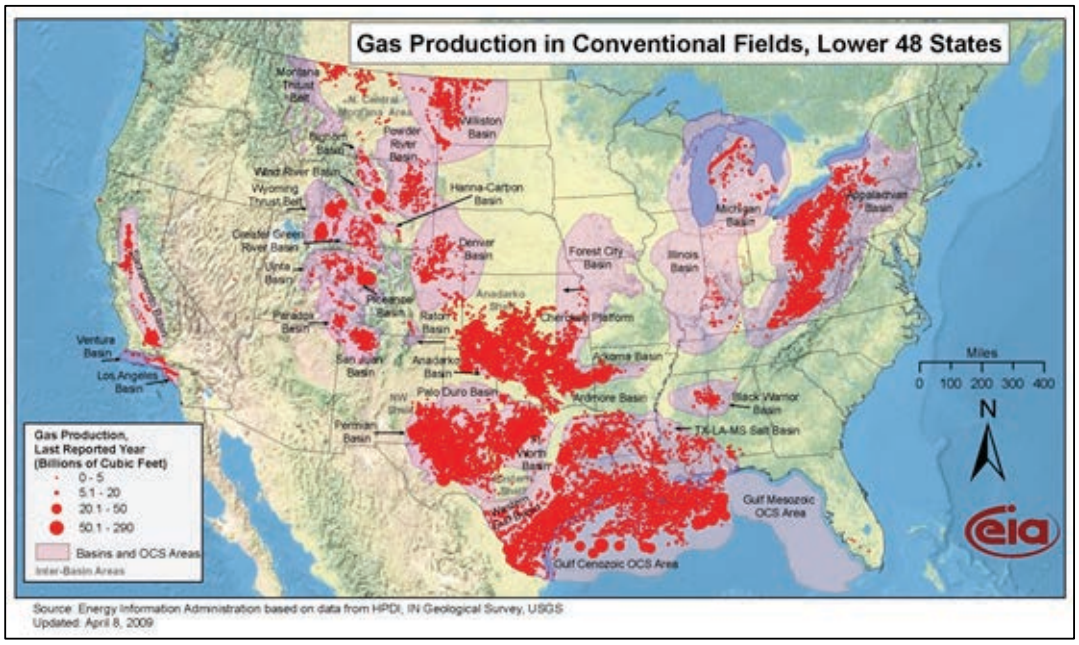
Second, the ESF does not have large enough streams to warrant the construction of a large hydroelectric facility. The ESF has a high density of streams, and despite the fact that the ESF receives abundant precipitation, there are no major rivers within the forest boundaries. Smaller rivers and creeks include the West Fork Millicoma River, Palouse Creek, Larson Creek, Marlow Creek, Elk Creek, Glenn Creek, Mill Creek, and Lake Creek.

Third, area geology is not conducive to long-term dam building. The geology of the ESF is composed of relatively weak sedimentary rock and is historically prone to landslides. If dams were built on the largest rivers and creeks available and were built facilitate salmon migration, the reservoirs would be filled in with sediment relatively quickly. This sedimentation of the reservoir negates the long-term interest that the State of

Oregon would have in building a dam for hydroelectric power (Oregon Department of Forestry, 2003).

NATURAL GAS

Natural gas production or significant natural gas fields do not exist anywhere in the vicinity of the ESF, making natural gas exploration and extraction highly unlikely. Oregon as a whole does not have any substantial natural gas fields. Any exploration or development for natural gas on the ESF would be ineffective (Energy Information Administration, 2009).

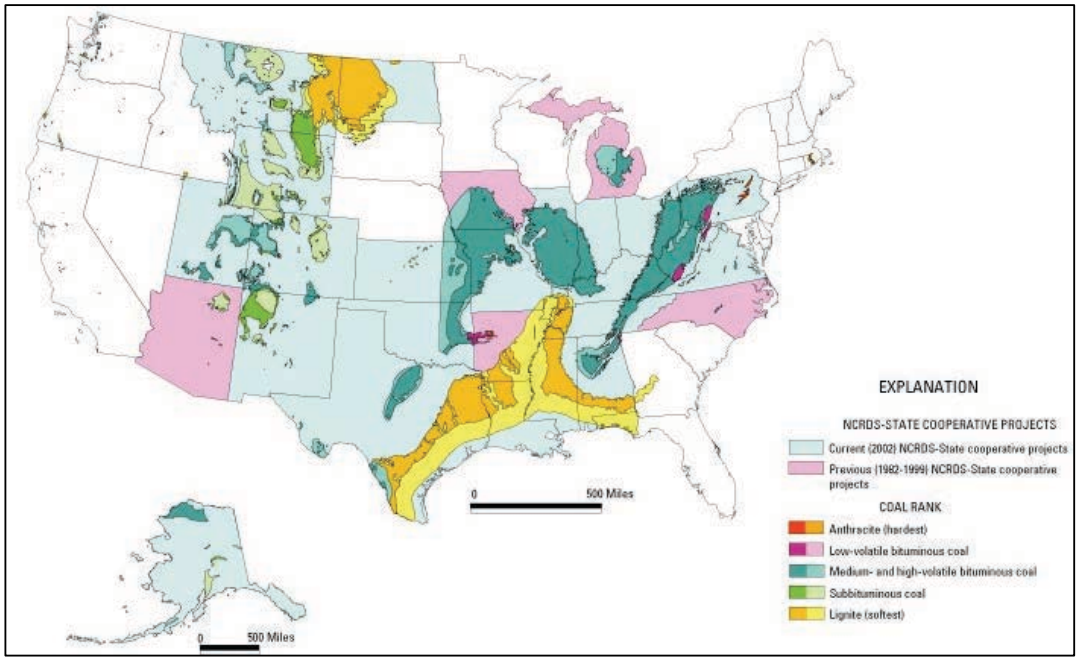


COAL

Coal is also a highly unviable option for monetizing the area of the ESF. There are virtually no major coal deposits in the entire State of Oregon. Oregon contains one of the smallest estimated recoverable reserves of any state, as seen in the U.S. Coal Reserves chart below. (U.S. Geological Survey, 2013).

There are no substantial coal deposits within the ESF. According to the Energy Information Administration, there is a small bed of coal to the south of Coos Bay, near the ESF. However, there does not appear to be any coal deposits anywhere between Coos Bay, Roseburg, and Reedsport where the ESF is located. It is highly unlikely that there is any recoverable coal within the boundaries of the ESF, making any exploration or coal development meaningless.

The gray areas show coal reserves in southwestern Oregon near Coos Bay. While there may be small coal deposits near the ESF, there are none within its boundaries (Energy Information Administration).

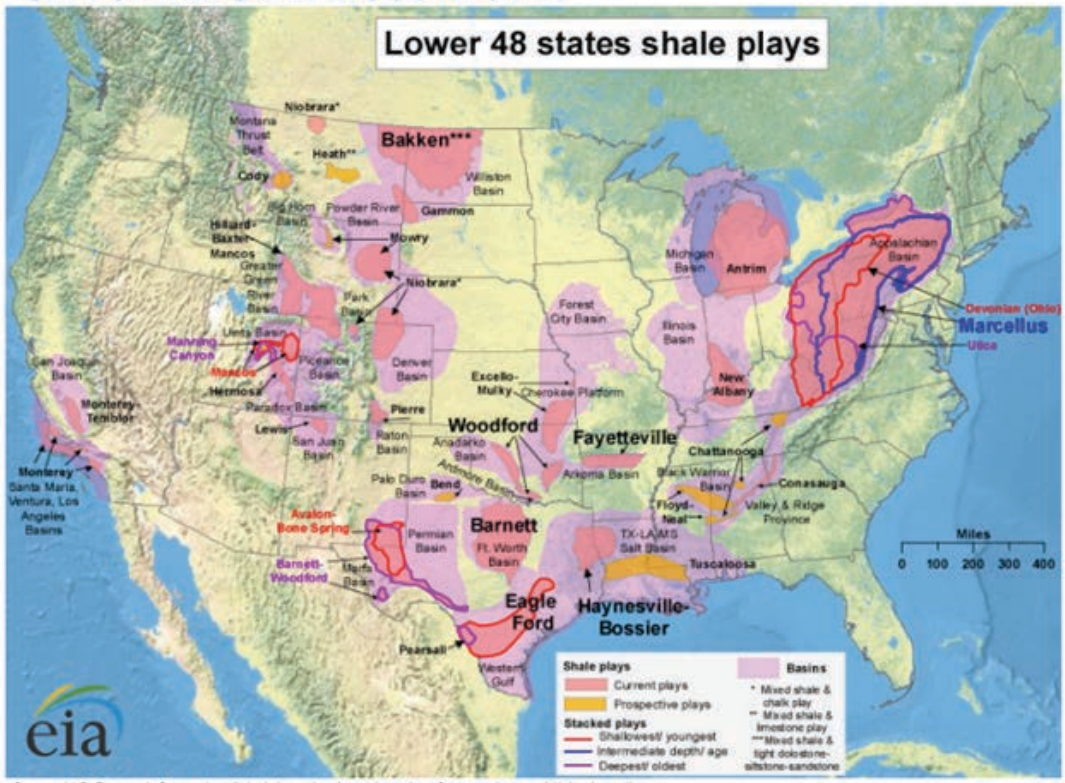


PETROLEUM/OIL

There are no known shale oil deposits in Oregon, making exploration and development for oil drilling in or around the ESF ineffective. Based on the fact that there are no natural gas, coal, or shale oil reserves in the vicinity of the ESF, it is highly likely that there are no means for extracting any type or form of fossil fuel resource from the ESF (Energy Information Administration, 2011).

The gray areas show coal reserves in southwestern Oregon near Coos Bay. While there may be small coal deposits near the ESF, there are none within its boundaries (Energy Information Administration).

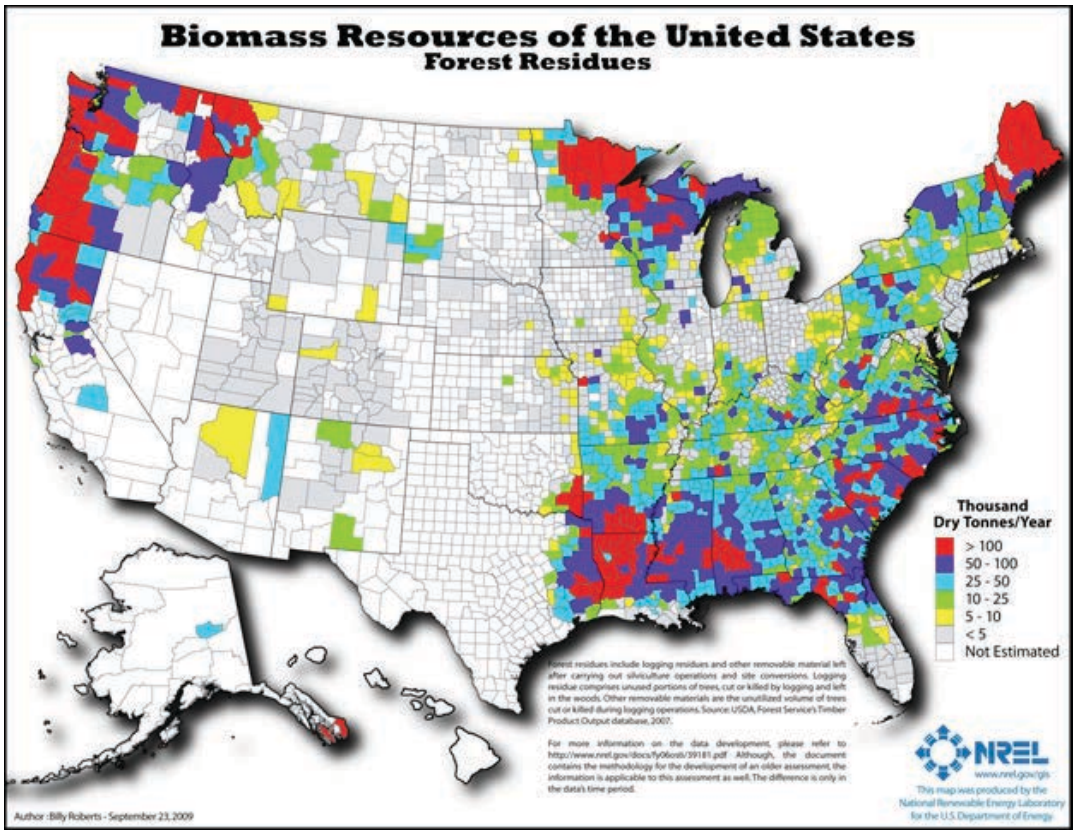
Figure 1. Map of U.S. shale gas and shale oil plays (as of May 9, 2011)



Source U.S. Energy Information Administration based on data from various published studies.
Upeate: May 9, 2011

BIOMASS

If energy development were to take place on the ESF, biomass seems like it would be the most viable option to explore and develop. The map below shows the amount of forest residues that includes logging residues and other removable from silviculture operations and site conversions. Logging residue is defined as unused portions of trees, cut or killed by logging and left in the woods. Other removable materials are the unutilized volume of trees cut or killed during logging operations (National Renewable Energy Laboratory, 2014). Because logging is taking place in the ESF under the current management regime, the forest could gain additional revenue if the forest residue biomass were extracted for energy production (National Renewable Energy Laboratory, 2009(b)).



CARBON OFFSETS

Carbon offsets are investments in environmental development or green energy projects intended to "offset" CO2 emissions produced by the purchaser. Typically, an individual or corporation will purchase a certain amount of "carbon credits" from a carbon offset company, which then invests the money in projects intended to reduce the amount of CO2 in the atmosphere. In order to be certified by industry standards, carbon offsets must fund a project that wouldn't have happened otherwise (The Carbon Neutral Company). The projects range from building wind farms to reforestation. Companies buy carbon offsets to fulfill emissions requirements as well as to create an environmentally friendly image.

While carbon offset projects are typically pursued on private land, some states and carbon offset companies have explored the possibility of using public lands for projects. In 2010 California sold carbon offsets to pay for the reforestation of Cuyamaca Rancho State Park after much of it was burned by a wildfire (American Forests, 2012), and a 2012 report by Climate Action Reserve explored the feasibility of projects on federal forest lands. While the report found that federal environmental regulations led to prohibitively expensive administrative costs, it outlined several types of projects that could potentially meet certification standards. These proposals could be adopted for state lands, and include increasing growth through better management and protecting logging areas from logging (Smith, 2012).

Oregon itself has taken steps toward selling its own carbon offsets. In 2001, Oregon House Bill 2200 authorized the State Forester to "enter into agreements with nonfederal forest landowners as a means to market, register, transfer or sell forestry carbon offsets on behalf of the landowners," essentially allowing the state to serve the same function as a carbon offset seller (Oregon Legislative Assembly, 2001).

While this approach remains a possibility for the ESF, it is not without problems. The biggest issue is that carbon offsets cannot be used to protect something that is already protected. Because many of the areas are already closed to logging revenue due to endangered species, an offset could not be used to protect that area. While it could be used to pay for additional management in protected areas, that money would be going to the ESF itself, and would not generate state public school funds. Carbon offsets could be used to generate funds in areas where logging is currently taking place, but this would only be economical if the revenue generated from the offset exceeds that generated from logging. Ultimately, carbon offsets are a marginal solution, at best, but most likely will not provide the needed funds.

SALES TO CONSERVATION GROUPS

Selling the land of the ESF to conservation groups does not seem like a feasible option for generating money for the Common School Fund. Selling or privatizing public land, even if it is to conservation-minded organizations, is often controversial. Sales of public land, even for conservation purposes, have been contested in states much less conservation-minded than Oregon. One example in Florida shows the controversy that land sales for conservation can generate.

FLORIDA CASE STUDY

In 2013, the Florida state legislature began a surplus land-sale in order to grow the Florida Forever Fund, a fund set aside in the budget for future conservation land purchases. The goal of this program was to acquire $50 million to purchase land for the purpose of protecting springs, improving water quality, or creating buffers for military bases.

The state government looked at the roughly 3 million acres of publicly owned conservation land in the state and inventoried land that could be sold without damaging environmentally sensitive sites. The initial list contained 169 sites that included portions from some state parks. Conservationists were distressed over the proposed sale of ecologically important wetlands and wildlife habitat. An updated list by October 2013 had limited the proposed sales to 77 parcels that totaled 3,405 acres, but conservationists were still troubled with the proposed sales.

The potential sale of conservation land became especially controversial in PolkCounty, where the state proposed selling part of an area known as Green Swamp. Because of the controversy, the Department of Environmental Protection stated that the new focus would be on selling unused prison, hospital, and state buildings, rather than conservation land (Turner, 2014).

CONSERVATION EASEMENTS AND CONSERVATION GROUPS

Even if Oregon's public did not oppose the sale of public land in the ESF, conservation groups may not have the monetary resources to purchase the land of the ESF or have the means to manage large tracts of land if they could purchase them. Most conservation groups do not purchase land to be held by their organizations, especially not land that is already owned and managed by government entities. The tools that groups use most often to protect land are conservation easements. However, conservation easements are typically used on privately owned land, and there are very few precedents for selling government-owned land to conservancies or land trusts.

The USFWS defines a conservation easement as a legal agreement voluntarily entered into by a property owner and a qualified conservation organization such as a land trust or government agency. Easements usually mandate permanent restrictions on the use or development of land in order to protect its conservation values. Restrictions under conservation easements can vary significantly for each agency or organization. Landowners who enter into conservation easements contracts not only for their appreciation for nature, but also for the economic advantages, including tax benefits. The easement contracts can be written to meet a landowner's needs while still protecting wildlife resources (U.S. Fish and Wildlife Service).

One benefit of conservation easements is that they can offer a wide array of options for landowners and conservationists. An easement on property that has rare wildlife habitat may prohibit development, but an easement on a farm may allow continued farming and related farming structures. The Land Trust Alliance (LTA) explains that an easement can

apply to all of a property, or just a portion. Conservation easements are not required to have public access (Land Trust Alliance, 2014).

Conservation easements can be voluntarily donated or sold by a landowner. Easements form a legal agreement that limits certain types of uses and development on the land while the land remains in private hands. Another benefit of conservation easements is the fact that land is protected while allowing owners to retain many private property rights and to live on their land. Owning land in conservation easements may potentially provide an owner with tax benefits (U.S. Fish and Wildlife Service).

The Nature Conservancy is one of the leading conservation groups that use conservation easements to protect land. They argue that these easements keep land in private hands while generating public benefits. The Nature Conservancy protects approximately 15 million acres in the United States.

The Nature Conservancy works with conservation-minded private citizens who are interested in protecting certain lands. The organization works to buy target properties within priority conservation areas, which it then works to market the property for a buyer who will protect the property in the long-term conservation (The Nature Conservancy, 2014).

The LTA also uses conservation easements as a means of protecting land that the organization values. After donating a conservation easement to a land trust, a landowner forfeits some rights associated with the land. One example is that a landowner might give up the right to build more structures on their land, but still retains the right to grow crops. Future owners of a piece of land under an easement will be bound by the legal terms of the easement. If easements are put under the stewardship of a land trust, the trust is responsible for ensuring that the terms of the easement are upheld (Land Trust Alliance, 2014).

The Trust for Public Land (TLP) is a nonprofit organization that works to protect land exclusively within the United States. The Trust identifies and helps to raise funds for protecting land through charitable campaigns and voter initiatives. The trust often purchases land temporarily until it can be permanently protected by a government or community land trust (Trust for Public Lands, 2014(a)).

The TPL helps to purchase land from willing landowners and then transfers it to public agencies, land trusts, or other groups for permanent protection. Often the TPL will protect land through conservation easements (Trust for Public Lands, 2014(b)).

Ecotrust, based in Portland, Oregon, is not a true conservancy, but it is an organization in the Northwest that promotes ideas that merge economic growth with environmental conservation. The organization does not usually buy land itself, but it has purchased small amounts of land in the past. Ecotrust is not a typical eco-organization because it prefers public land to remain a public working landscape, not held for private purposes or left undeveloped. The organization is not necessarily opposed to buying land, but they would rather keep public areas publically owned and managed so that local communities can benefit. Ecotrust's goal is to use public forest lands as a working landscape that enhances the environment while also promoting forest growth (Davies, 2014).

In conclusion, it is unlikely that the ESF could be sold to conservation groups because of the controversy surrounding the removal of land from the public domain. Conservation organizations like The Nature Conservancy, The LTA, and The TPL most often buy or help to buy private land and transfer it to a government agency or a community land trust.

It is uncertain whether conservation groups would be willing or able to raise funds to buy land from a state government and hold it in a private or community land trust for conservation purposes. Because the ESF is seeking to make money for the Common School Fund, the ODF will have to sell tracts of land at a competitive market value, which conservation groups may not be able to afford.

CONCLUSIONS

There are no easy fixes for the continued monetization of the ESF. Many of the potential solutions will come at the expense of various interest groups. Using a variety of the potential solutions proposed in this paper may provide the best strategy for moving forward as required by law. This is particularly true in light of the fact that different portions of the forest have different value to different groups.

For example, portions of the ESF could be swapped, portions could be sold, and portions could be managed under a new HCP. By utilizing multiple tools simultaneously, managers may be better able to maximize forest products and benefits while minimizing impacts to endangered species and sensitive lands.

The recommendations in this report have been researched and designed to fit within the current constitutional framework of Oregon. One alternative consideration is to amend the Oregon Constitution to remove the ESF from the Common School Trust Land portfolio completely, thereby negating the fiduciary responsibilities of the forest. Another amendment could remove the Common School Trust Land portfolio from the jurisdiction of the SLB through the creation of a new management board. This new board would create a structure similar to those used to manage public pension funds, such as the Oregon PERS, in which most trustees are appointed and not subject to the political influences of elected offices. A new board, however, would not solve the problems of the ESF alone, but it could be part of a system of reforms that could increase the revenue from the Common School Trust Lands over a longer period of time. Constitutional amendments are very difficult to enact, and the political atmosphere of Oregon may not facilitate any constitutional changes, which is why this report was designed to find solutions within the existing law structure.

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