

Title: Community Forest Management to Promote Ecosystem Services and Rural Economies

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Client: Wallowa Resources, 401 NE 1<sup>st</sup> Street, Suite A, Enterprise, OR 97828. [www.wallowaresources.org](http://www.wallowaresources.org) Contact: Nils Christoffersen, Executive Director, [nils@wallowaresources.org](mailto:nils@wallowaresources.org). A letter of support is provided by John Hillock, Wallowa County Commissioner, [jhillock@co.wallowa.or.us](mailto:jhillock@co.wallowa.or.us), (541) 426-4543 Ext. 1131.

Objectives: The main question addressed by this group project is: What role can local ownership and sustainable management of forests play in meeting a community's long-term needs with respect to ecosystem services and resource-based employment? Supporting objectives include answering three sub-questions: a) Relative to the status quo of private forest ownership, what improvements in ecosystem service provision and employment opportunities can be achieved through community forest management? b) What financing mechanisms are available to enable the acquisition of forest lands by a community, and are there creative ways to leverage the provision of ecosystem services? c) How can results from the project contribute to educational, outreach, and equity outcomes in rural communities?

Significance: Throughout the western United States, rural communities face the challenge of how to reinvent themselves for the modern age. Historically, the economies of many western communities were built on extraction of natural resources (timber, water, forage, minerals), particularly resources coming from federal lands to support urban and industrial development. As public priorities elevated non-use values (e.g., species habitat, environmental preservation) from federal lands, many western communities experienced dramatic and long-lasting economic downturns. For forest-dependent communities, the shift in private land ownership from mill-operating companies to timber investment management organizations (TIMOs) poses a further challenge. Traditionally, mill-operating companies managed their forest lands to ensure a steady supply of timber to their mills, which meant relatively stable employment for the local economy. In contrast, TIMOs manage forest lands to serve the objectives of institutional investors, who typically have no connection to the local community.

The broad goal of the client, Wallowa Resources, is to “create natural resource-based jobs, educate the community's youth, and improve the health of our lands.” For this project, the client wants to better understand the feasibility of local ownership and management of forest land. Interestingly, there is a long tradition of community forest management (CFM) in developing countries (see, e.g., Bowler et al. 2012), but little attention has been given to the application of CFM in a developed country context. Yet, in both cases the needs of local communities are similar: the provision of ecosystem services that can provide a foundation for sustainable resource-based employment. For Wallowa County, important ecosystem services include habitat preservation, clean water, recreation, wildfire risk reduction, and timber and non-timber forest products such as Native American first foods. This project aspires to provide a blueprint that other rural communities can use to achieve better outcomes for nature and people.

Background: The project takes place in Wallowa County, located in northeastern Oregon (Figure 1). Wallowa County has a small population (about 7,000 people) and an economy based on agriculture, ranching, timber, and tourism. It has spectacular mountains and pristine rivers providing some of the best salmonid habitat in the Columbia River System. The County includes the Wallowa-Whitman National Forest and over one-half of the land in the county is managed by the U.S. Forest Service. Wallowa County is also part of the ancestral lands of the Nez Perce Tribe, who have strong interests in land preservation and resource management in the region.

Over the past 20 years, there have been dramatic changes in forest ownership in Wallowa County. In 2005, about 130,000 acres of industrial forest land was transferred from a traditional wood products company (Boise Cascade, who once operated mills in the County) to Forest Capital LLC, a TIMO. The land has since been transferred among different TIMOs. This has led to fragmented ownership, accelerated harvest rates, and the resumption of clear cutting. Other large forest parcels under family ownership are currently for sale. The impetus for this group project is the need for stability in forest ownership to ensure the sustainable provision of ecosystem services essential to the community. The client was a partner on the 1,800-acre [East Moraine project](#), which provides a model for successful community land preservation.

Equity: The [State of Oregon's definition](#) of historically and currently underserved communities includes Native Americans, Black Americans, people with disabilities, and rural Oregonians. Wallowa County includes the ancestral lands of the Nez Perce Tribe. Some of the lands under consideration for CFM in the County have particular cultural significance for the Tribe, and the Tribe has strong interests in preserving habitat for salmonids. We expect both of these ecosystem services to be enhanced by CFM. The project will have the participation of Nez Perce Tribal Member Joe McCormack, who serves on the Wallowa Resources board. The project will also explore ways of increasing wildland access, especially to the disabled population, which has been restricted under TIMO ownership. This project will contribute to educational programs operated by the client focused on increasing resource-based employment opportunities for urban black youth (e.g., through their partnership with the [Blueprint Foundation](#)). Finally, the overarching goal of the project is to increase quality of life for rural communities through the provision of ecosystem services.

Approach: Wallowa Resources has already done a preliminary analysis of the opportunities for CFM in Wallowa County. This includes mapping forest ownership and critical salmonid habitat in the County (see Figure 1) and a preliminary assessment of the ecological and community values provided by forest lands in different areas (Table 1). The group project will have three components.

1. *Ecosystem services assessment.* The group will expand on the client's preliminary analysis using the ecosystem services model [InVEST](#) (Daily et al. 2009). InVEST uses GIS layers and other information, to estimate ecosystem service flows from a landscape and, in some cases, monetized values. It has sub-models for many of the services listed in Table 1 as well as carbon, scenic quality, and others. The group will focus the analysis on specific properties that could be purchased and compare ecosystem services under CFM and the status quo of continued TIMO ownership. The key output from this component is an estimate of the increase in ecosystem services, in physical and/or monetary terms, attributable to CFM, together with an assessment of the employment opportunities that this creates.

2. *Potential financing mechanisms.* A central challenge to CFM in Wallowa County is funding to acquire forests currently under private ownership and to manage them over time. The group will explore financing options available from government programs (e.g., the [Forest Legacy Program](#), [Oregon's Clean Water Fund](#)), environmental markets (e.g., voluntary carbon markets), impact investors, and investment funds with environmental objectives. The goal is to produce a list of potential funders and to match program requirements or investment objectives (e.g., financial returns, environmental gains) to the ecosystem services produced by CFM.
3. *Education and outreach.* One of the client's main goals is educating the community's youth. The team will work together with members of Wallowa Resources who run the Youth Stewart Education Program to create curriculum and hands-on activities for grade level students. The curriculum will include the scientific processes of the local area, traditional land management techniques, the history of the land and the Nez Perce Tribe, and environmental safety. This program will help interest students in natural resources and provide them with an introduction to jobs in resource-based sectors.

Data: The ecosystem services assessment requires GIS layers for a variety of landscape attributes. The client has already assembled GIS data on the boundaries of candidate properties, winter and summer ranges of game species, and critical habitat overlays. They also have data on some forest characteristics from field work (e.g., stocking and growth rates) and additional regional data on forest characteristics are available from the [U.S. Forest Service](#). The sub-models in InVEST are designed to be run with widely-available data, and the user guides for each sub-model provide references for much of the required information. Professor Plantinga has experience running a number of the InVEST sub-models, and more generally quantifying ecosystem services from land (e.g., Lawler et al., 2014). In addition, the client and County Commission John Hillock have a large local network of supporting people and agencies (e.g., the Oregon Department of Fish & Wildlife) who can advise on data gathering efforts. Data on potential financing mechanisms will be gathered through internet searches and targeted interviews with individuals knowledgeable about environmental finance and the local area. The group will start with contacts available from the client and John Hillock, and develop the interview list from there.

Deliverables: In addition to the standard outputs from Bren Group Projects, the group will produce materials (e.g., a brochure, slide deck) that can be used in presentations to potential funders. In addition, educational materials on CFM will be produced that can be incorporated into the Youth Stewardship Education Program operated by the client. The main recommendation from this project will be guidance on whether to pursue CFM in Wallowa County and other rural resource-based communities and, if so, how to proceed with financing forest land acquisition.

Internships: The client can provide two paid internships during the summer months in Enterprise, Oregon. The interns will have the opportunity to learn about the region and to interact with the client and stakeholders. The client can provide housing for both interns in either Enterprise or Joseph. The interns will have the opportunity to interact with summer interns from a number of other environmental NGOs, creating opportunities for professional and social engagement.

## References:

Bowler, D. E., Buyung-Ali, L. M., Healey, J. R., Jones, J. P., Knight, T. M., & Pullin, A. S. (2012). Does community forest management provide global environmental benefits and improve local welfare?. *Frontiers in Ecology and the Environment*, 10(1), 29-36.

Daily, G. C., Polasky, S., Goldstein, J., Kareiva, P. M., Mooney, H. A., Pejchar, L., ... & Shallenberger, R. (2009). Ecosystem services in decision making: time to deliver. *Frontiers in Ecology and the Environment*, 7(1), 21-28.

Lawler, J. J., Lewis, D. J., Nelson, E., Plantinga, A. J., Polasky, S., Withey, J. C., ... & Radeloff, V. C. (2014). Projected land-use change impacts on ecosystem services in the United States. *Proceedings of the National Academy of Sciences*, 111(20), 7492-7497.

Budget and Justification: The project will have a budget of \$7,000. Professor Plantinga requests \$3,500 from Yardi funds. Lotus Vermeer, Assistant Dean of Partnerships and Development in the Bren School, has told him that this should be possible. To the extent that these funds are not available, Professor Plantinga will use his own funds to bring the Bren School contribution to \$3,500. Wallowa Resources will provide \$3,500 in addition to housing for the two summer interns.

The following is a rough budget that we expect to be adjusted based on the composition of the GP team and the needs of the project. The main expenses are travel and stipends for interns. Enterprise, Oregon is 1075 miles from Santa Barbara. Assuming that the two interns drive together in a private vehicle, the budget for one month in Enterprise is:

1. Round-trip travel to Enterprise:  $1075 \text{ miles} \times 2 \times \$0.575/\text{mile} = \$1,236$
2. Additional on-site miles:  $250 \text{ miles} \times \$0.575/\text{mile} = \$144$
3. Lodging in transit (1 motel room, 2 nights): \$300
4. Stipend:  $\$750/\text{stipend} \times 2 = \$1,500$
5. Total = \$3,180

We are also budgeting for a separate trip by the other students on the project to Enterprise. Assuming there are two other students, the budget for a week-long trip to Enterprise is:

1. Round-trip flights from Santa Barbara to Pasco, Washington<sup>1</sup>:  $\$500 \times 2 = \$1,000$
2. Rental car for one week<sup>2</sup>: \$500
3. Lodging (1 motel room, 7 nights): \$1,050
4. Meal stipend:  $\$25/\text{day} \times 2 \times 7 \text{ days} = \$350$
5. Total = \$2,900

An additional \$920 is included for miscellaneous expenses and unanticipated travel costs, bringing the total to \$7,000.

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<sup>1</sup> Current pricing for United Airlines Economy

<sup>2</sup> Current pricing for Budget economy car



January 19, 2022

TO: Bren School Group Project Selection Committee

FROM: Nils Christoffersen, Executive Director, Wallowa Resources

With this letter, Wallowa Resources expresses its support for and commitment to participate in the Bren Group Project, “Community Forest Management to Promote Ecosystem Services and Rural Communities,” if selected. As the client for the project, Wallowa Resources agrees to meet regularly with the project team to provide guidance and feedback on its work. In addition, Wallowa Resources will provide:

1. Two summer internships to Bren students on the project. Wallowa Resources will provide housing for the two interns in Wallowa County – either in Enterprise or Joseph. Wallowa Resources is committed to providing mentoring to the summer interns.
2. Wallowa Resources will contribute \$3,500 in direct support as described in the budget section of the project proposal. The funds will help to support travel and stipends for the summer interns.
3. Wallowa Resources will make data in its possession available to the project: GIS data on the boundaries of candidate properties, winter and summer ranges of game species, and critical habitat overlays, as well as field data on forest characteristics for the candidate properties. Wallowa Resources will also assist the project by providing contacts to its network of supporting people and agencies who can help with obtaining additional data and to people knowledgeable about potential financing mechanisms.

Wallowa Resources looks forward to working with the Bren School team.

Sincerely,

Nils D Christoffersen  
Executive Director



**State of Oregon**  
**WALLOWA COUNTY**  
**BOARD of COMMISSIONERS**  
**101 S. River Street #301**  
**Enterprise, Oregon 97828**

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**CHAIRMAN, JOHN HILLOCK**

**COMMISSIONER, TODD NASH**

**COMMISSIONER, SUSAN ROBERTS**

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To: Bren school group project selection committee  
From: John Hillock Wallowa County Commissioner

I have been working on the community forest concept since I took office 3 years ago. Communities across the nation have seen their privately owned forest converted from sustainable sawmill owned forests to TIMO owned forests (Timber investment management organization). Sawmill owned forests were good for the community. The owners created jobs and, in most cases, allowed public access and cooperated with wildlife managers as well as grazers. Their goal was a sustained yield to support the mill for a long period of time.

Most TIMOS have one goal—to make as much money for the investor as possible in as short a time as possible. They move away from sustainable forestry, clear cutting and subdividing to maximize return for the investor. While these practices are good for the investor, they are terrible for the community. Most TIMOS are set up as a ten-year investment, during which time the TIMOS over cut and plant back mono cultural plantations that will take 50 to 70 years to produce timber again. During this time local sawmills shut down, loggers go out of business, youth find jobs out of the community, wildlife migration and grazing patterns change, and there is sedimentation in streams from poor logging practices. Private ownership doesn't allow Native Americans to hunt and gather or have a word in management practices. Public ownership does.

It has been my contention that a properly managed forest is a great investment for rural communities. I have hope that the study in Wallowa County will develop a plan that other rural communities can follow to buy TIMO owned land and manage it sustainably. I would like the plan to address:

- Finance methods to acquire the land with.
- An education program to teach other communities how to use the results of the study.
- Analysis of how to attract corporate finance / climate credits to aid local communities in acquiring forests.

Sincerely,  
Commissioner John Hillock Wallowa County  
(541) 426-4543 Ext. 1131.



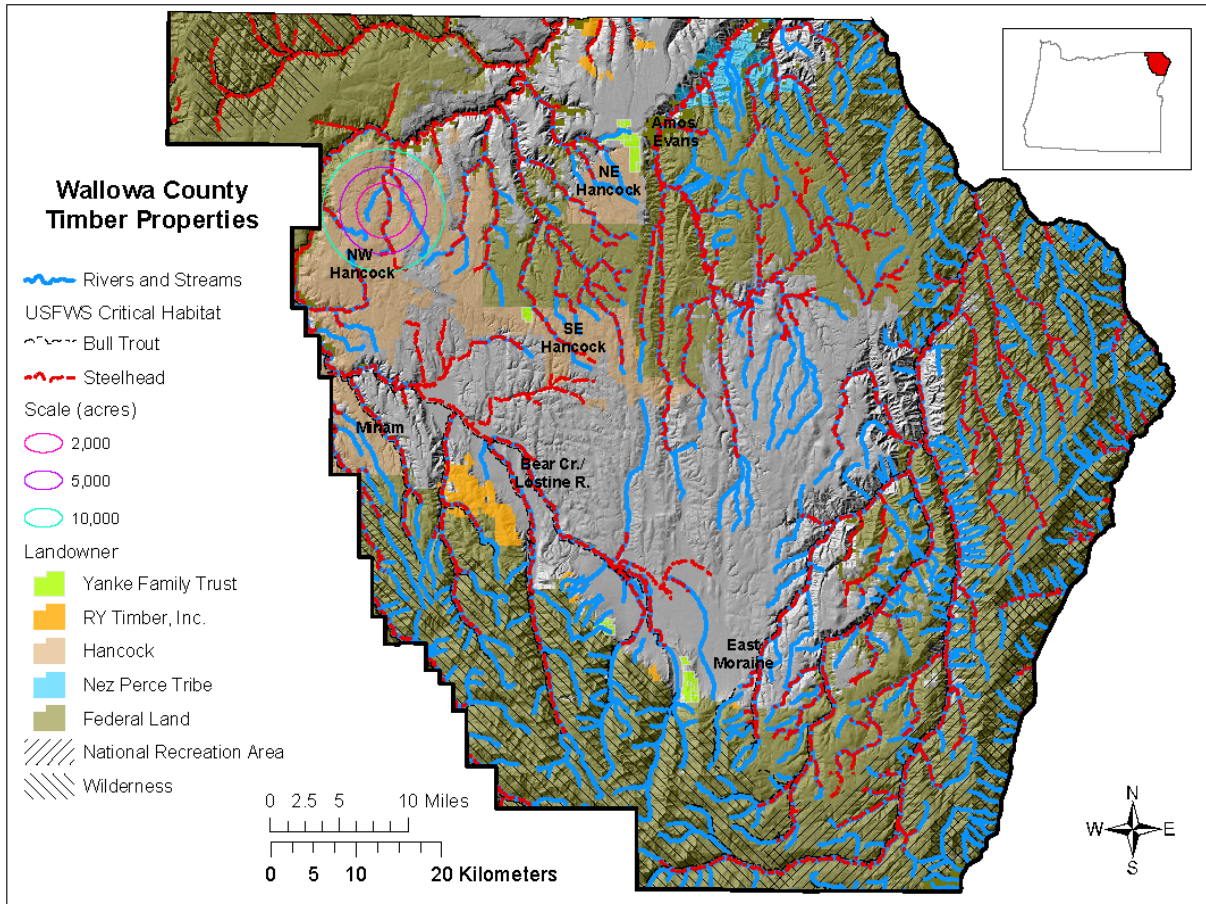


Figure 1. Forest Ownership in Wallowa County, Oregon, and Critical Salmonid Habitat.

	Property/Area					
	Value	Amos/ Evans	Bear Creek/ Lostine River	NE Hancock	NW Hancock	SE Hancock
Ecological	Connectivity				X	
	Steelhead Critical Habitat		X	X	X	X
	Bulltrout Critical Habitat		X			
	ODFW Conservation Opportunity Area				X	
	BPA Atlas Tier I		X			
Community	Important Ag/Drinking Water		X			
	State Scenic/Fed Wild & Scenic Connection		X		X	
	Cultural Values/First Foods	NPT to fill in				
	Slope (logging expense)	Low	High	Med	High	Med
	Distance to Mill (logging expense)	Med	Short	Med	Med	Short
	Grazing	X	X	X	X	X
	Timber Value	Need input from ODF or other forester				
	Rec: Hiking/Skiing	Med	High	High	Med	Med
	Rec: Fishing		High	Low	Low	Low
	Rec: Mtn Biking	High	Med	High	Med	Med
	Rec: Hunting	High	Med	High	Med	High
	Rec: Off-road Vehicle	High	Med	High	Low	High
	Rec: Horse	Med	High	High	Med	Med
	Re: Gathering (mushrooms, etc.)	Med	Med	High	Med	Med

Table 1. Preliminary Assessment of Ecological and Community Values Provided by Private Forests in Wallowa County, Oregon, by Property or Area.