

ADVISOR ANNUAL EVALUATION TEMPLATE
January 1 – September 30, 2008
Due: November 17, 2008

SECTION A & B. Advisor Review: Annual Evaluation

Name: John R. Shelly

Title: Advisor – Forest Products and Biomass Utilization

County or Unit: Contra Costa

POSITION DESCRIPTION -- *current position description was uploaded.*

SECTION A: NARRATIVE

General Performance and Accomplishments:

I. STATEMENT OF ASSIGNMENT

Programmatic Assignment of FTE (ANR Issue/Knowledge Area/FTE).

ANR Issue	Knowledge Area	FTE
Community Development	Community Resource Planning and Development	0.10
Community Development	Natural Resource and Environmental Economics	0.10
Sustainable Use of Natural Resources	Engineering Systems and Equipment	0.05
Sustainable Use of Natural Resources	Management and sustainability of Forest Resources	0.10
Sustainable Use of Natural Resources	Natural Resource and Environmental Economics	0.05
Sustainable Use of Natural Resources	New and Improved Non-Food Products and Processes	0.30
Sustainable Use of Natural Resources	Waste Disposal, Recycling and Reuse	0.10
Waste Management	Waste Disposal, Recycling and Reuse	0.10
Wildland Fire	Management and Control of Forest and Range Fires	0.10
Total FTE		1.00

II. RESEARCH, EXTENSION AND CREATIVE ACTIVITY

As the only Cooperative Extension academic with a responsibility in woody biomass utilization my goal is to effectively and efficiently develop and deliver information to a wide variety of state-wide clientele interested in the sustainable use of woody biomass as a resource. My research and extension program addresses the Natural Resource medium priority Core Issues of Land Use, Sustainable Use of Natural Resources, and Wildland Fire. I define the objectives of my research and extension program as follows.

- Increase the knowledge base through research and collaborative discussions on key issues and technology related to woody biomass utilization,
- Establish effective knowledge dissemination methods,
- Provide leadership in cooperative efforts with experts, key state agency officials, and other key partners to develop strategies for increasing woody biomass utilization opportunities,
- Develop reliable, science-based information that will improve hardwood manufacturing efficiency and economic viability, and
- Transfer knowledge and technology information to those individuals and groups interested in the development of a native hardwood industry.

A. Theme 1. Biomass Utilization Reduces Fire Hazard

UC-ANR Core Values – This theme address the medium-priority core issue of Wildland Fire

Background – Densely packed stands of small diameter trees, underbrush, and chaparral have become common in much of California's timberlands. This accumulation of biomass has created a serious fire hazard in wildland areas and wildland/urban interface areas. Many landowners, land managers, and wildland/urban interface communities are faced with the task of lowering this risk. If value-added products can be produced from this woody biomass material then some of the costs of wildfire fuel management could be reduced. This would encourage good forest management practices, provide economic opportunities for some rural communities, and help to manage the wildfire hazard.

Objectives – The objectives of this project are:

- Characterize the material properties of the wide range of wildland and urban biomass materials,
- Compile information concerning biomass properties, utilization potential, and processing challenges,
- Evaluate viable technologies and products that can be manufactured from biomass, and
- Develop guidelines for assessing solutions, and educate decisions makers and community leaders to the opportunities and challenges of biomass utilization.

Theme 1 Research Activities – The research portion during this review period was minimal. Test specimens continue to be prepared for testing in the X-ray densitometer. Testing is expected to be completed in 2009.

Theme 1 Extension Activities – During this review period the following activities were conducted.

- Workshops – I was responsible for the organization and implementation of four Biomass Utilization and Bioenergy workshops. These workshops exposed clientele audiences totaling 135 to a basic understanding of how biomass can be effectively utilized.
- Woody Biomass Website (ucanr.org/woodybiomass) – I was responsible for the development of this website which acts as a gateway to resources for clients and as a tool for information dissemination. The website is also used for planning, advertising, and evaluating workshops. Presentations from all workshops are uploaded to the site. Over the past year the site received about 115,000 hits and 10,000 in depth visits.

Theme 1 Outcomes/Impacts – The efforts of this project have heightened the awareness of clientele groups to the importance of finding uses for woody biomass materials, the challenges that must be addressed, and provided a baseline of basic properties. The theme area continues to provide a vehicle for interagency cooperation in this critical issue. Presentations to forest product representatives, small business, and entrepreneur clientele have sparked interest in new ventures that cut across my target affirmative action profile.

Theme 1 Multi-state extension activities – I was a participant in a national Cooperative Extension panel to plan and develop criteria for forest- and rangeland-based bioenergy extension programs: National Extension Program Development and Planning for Forest- and Rangeland-Based Bioenergy Extension Programs, June 16 – 18, 2008, Zion, Illinois.

Theme 1 Collaborators –

- Gareth Mayhead – Academic Coordinator in Forest Products, UC Berkeley Center for Forestry
- Bruce Goines, USDA Forest Service, Region 5
- Larry Akin, California Association of Resource Conservation and Development Councils
- Tad Mason, TSS Consultants, Rancho Cordova, CA

B. Theme 2 – Opportunities for Undervalued Wood Resources

UC-ANR Core Values – This theme addresses the medium-priority core issues of Land Use and Sustainable Use of Natural Resources.

Theme 2 Background – The western US forests, and especially California forests, are well known for the vast acreage of highly valued commercial wood resources. In addition, a large component of these forests also include many non-commercial species, native hardwood trees, commercial species trees smaller than acceptable commercial size (classified as “Small Diameter” trees), dead and dying trees, and other

low value wood resources. Sustainable management of these forests on both industrial and non-industrial forestlands often requires the removal of a portion of this low value wood to achieve the desired management outcomes of a productive forest, ecosystem health, or to lower the wildfire hazard. Three examples of these low value wood resources target for sustainable management removal are: 1/ dense stands of drought-induced, beetle-killed conifer trees in the Southern Sierra; 2/ overpopulated hardwood trees in commercial conifer forests; and, 3/ non-indigenous trees encroaching on native habitat areas. There is currently little economic incentive for use of these materials because of the perceived poor quality and the high total processing costs. When such low-value trees are found in actively managed commercial forests, options exist for using or disposing of the wood and the costs can often be offset by the value of the commercial harvests. However, when the low value wood is not part of a commercial harvest, or is a long distance from a potential market, the options are very limited. If utilization of these low value resources can be successful then it will provide the opportunity for many benefits such as: reducing wildfire risk and the need for prescribed fire thus reducing emissions and improving air quality, improving ecosystem health, reducing landfill disposal, and providing new industry and job opportunities.

Theme 2 Objectives – The specific objectives include:

- Identify key players in utilization activities
- Assess near term resource availability
- Assess market opportunities
- Identify the range of value-added products that can use low-value wood resources
- Evaluate the long-term potential for biomass resources.

Theme 2 Research Activities during this Review Period

1. Wood fuel pellets produced from low-value wood resources was identified as a potential market opportunity for southern California. A market survey was completed to evaluate the opportunities for growth in wood fuel pellets consumption. Equipment costs, production costs, wholesale and retail values, and projected market demands were evaluated. This project was initiated last year and completed during the current review period.

2. Evaluation of the value-added potential of Hawaii's underutilized wood resources – The objectives of this study are to determine basic wood properties of non-native trees growing in Hawaii that may have commercial potential, to analyze potential markets for the wood, and to train workers how to effectively process the wood. Work continues on two research projects carried over from previous years. This is a multi-state extension activity conducted in cooperation with the Hawaii Division of Forestry and Wildlife.

- A. Project 1. Evaluating the feasibility of using albizia, a low-density, invasive hardwood tree species. Finding acceptable uses for this wood will provide a tool for long-term management. The performance of three exterior test decks exposed to three different environments continue to be evaluated. The performance of the decks are monitored by measuring the wood moisture content of the exposed wood, documenting wood toughness, and creating a photo record of the physical condition. Data was collected and analyzed during February and March of this review period.
- B. Project 2. Developing reliable wood property data for plantation-grown, exotic eucalyptus species needed to develop utilization markets. During previous review periods, specimen material from four species was collected, dried, and equalized to a constant moisture content of 12 percent. During this review period the material was machined into test specimen sizes and the standard mechanical bending tests were completed. The average values for strength and stiffness of the species tested was calculated from these tests and a report of the wood properties was delivered to the project collaborators.

Theme 2 Extension Activities – Extension activities during this period were limited to client email and phone discussions (12 contacts). The primary focus of the projects in this theme was on research during this review period.

Theme 2 Multi-state extension activities – This project was initiated to assist the state of Hawaii to develop a basic forest products infrastructure to provide rural communities with an economic development opportunity based on the sustainable growth of tropical timber.

Theme 2 Collaborators –

- Bruce Goines – Biomass Specialist, USDA Forest Service, Pacific Southwest Region (Region 5)
- Michael Constantinides – Hawaii Division of Forestry and Wildlife
- James Quinn – Hawaii Hardwoods, LLC.

Theme 2 Outcomes/Impacts – This project continues to expand the knowledge base of Hawaii Division of Forestry staff and provided skills needed to encourage small business development using Hawaii grown wood to manufacture value-added products. The primary impact to date is an increase in the awareness of forest products opportunities with state forestry staff and local entrepreneurs.

III. AFFIRMATIVE ACTION

Because of the statewide responsibilities of this extension position and nature of the clientele to be located primarily in rural pockets in selected portions of the state, I have used three strategies to address affirmative action responsibilities. Because of the unique nature of this position, CASA reporting is not required.

First, I developed collaborative partnerships with local organizations to assist in my outreach efforts. In particular, I have worked closely with rural organizations to ensure

that information about my program reaches all segments of the clientele within their geographic areas. Each of these organizations has indicated an interest in affirmative action outreach, particularly to the Native American community. In addition to relying on our cooperative outreach efforts, I obtained the mailing lists used by these organizations and added those names to my master mailing list.

Second, in order to ensure that my programs are accessible to all of my clientele, including those who cannot travel long distances (for financial, personal, or other reasons) or be away from their businesses for an extended time, I travel extensively to present my programs in the local communities. For example, I regularly travel to rural and remote locations throughout the state to present workshops, hold meetings with groups, or advise individual clients. In addition, I am cognizant of the need to hold my programs in facilities that are accessible to all of my clientele, including those with mobility handicaps.

Third, my program is aimed, to a great extent, at the small business community in the state. Small business owners are one of the most diverse groups within the state and all ethnic groups, low-income individuals, and women are involved. The success of my program is a reflection of my ability to relate to this diverse group and to offer information that is viewed by small business owners as relevant to their individual business ventures.

SECTION B- I-V TABLES AND APPENDICES

I. PROFESSIONAL COMPETENCE AND ACTIVITY

a. Professional Development

Begin Date-End Date	Location	Duration (hours)	Name and/or Description of Activity
June 22-24, 2008	St. Louis, MO	20	Forest Products Society International Convention and Technical Conference

b. Disciplinary Society / Prof. Association

Disciplinary Society / Prof. Association Name and Your Role
Forest Products Society - International Professional Organization (member and Elected Officer) <ol style="list-style-type: none"> 1. President Elect – term is July 2008 to June 2009 2. Chair – Budget and Finance Committee 3. Peer reviewer for society's scientific journal - "Forest Products Journal" 4. Trustee, Pacific Southwest Section of the Forest Products Society
Society of Wood Science and Technology (member) Peer reviewer for society's scientific journal -- "Wood and Fiber Science"

c. Evidence of Professional Competence

Begin Date-End Date	Location	Category	Name and/or Description of Award, Recognition, Office or Activity
----------------------------	-----------------	-----------------	--

Begin Date-End Date	Location	Category	Name and/or Description of Award, Recognition, Office or Activity
January 22 – April 30, 2008	Various US locations	National	Invitation from The Brookings Institution to serve on a nationwide panel, the Large Fire Panel, to evaluate suppression costs of large wildfires
January 21, 2008		National	Conducted a peer review of a manuscript titled “Evaluating Wood Energy Users in North Carolina...” for the Forest Products Journal
February 12, 2008		National	Conducted a peer review of a manuscript titled “A Comparison of Sampling Methods for a Standing Tree Acoustic Device” for the Southern Journal of Applied Forestry
May 12 – 15, 2008		National	Invitation to serve on the Society of Wood Science and Technology, Bioenergy whitepaper working group. I crafted 90% of the paper.
June 11, 2008		National	Conducted a peer review of a manuscript titled “Is Bioenergy the Savior of Forestry” for the Journal of Forestry
June 25, 2008		National	Conducted a peer review of a manuscript titled “The Wildland-Urban Interface: Evaluating the Definition Effect” for the Journal of Forestry

II. UNIVERSITY AND PUBLIC SERVICE (county, regional, state, national)

a. University Service

Begin Date-End Date	Activity	Level of Significance	Your Contribution and Leadership Role
March 1 – 31, 2008	ANR Ad Hoc Review Committee	State	Chair of a committee of 3, reviewed dossiers of two merit candidates and one advanced promotion candidate. Facilitated discussions and wrote reports.
June 16 – 18, 2008	National Extension Program Development and Planning for Forest- and Rangeland – Based Bioenergy Extension Programs	National	Workshop participant (1 of 21), led two breakout sessions, reviewed final draft of report.

b. Public Service

Begin Date-End Date	Activity	Level of Significance	Your Contribution and Leadership Role
January 22 – April 30, 2008	Brookings Institution 2008 Large Fire Panel	National	Senior member of committee, analyzed data, conducted interviews, second author on final report (wrote 1 chapter), assisted committee chair in the presentation to the USDA Secretary of Agriculture and the USDA Forest Service Chief
March 31 –	Forest Conservation Days,	Regional	Coordinate the forest products exhibit at

Begin Date-End Date	Activity	Level of Significance	Your Contribution and Leadership Role
April 6, 2008	Saratoga, CA		the week long program targeting elementary age school children.
January 1 – September 30, 2008	California Biomass Collaborative	State	Member of the Executive Board of this California Energy Commission funded, statewide working group
January 1 – September 30, 2008	Review grants	State	Participate in reviewing the USDA Forest Service, Region 5 sponsored Biomass Utilization grant proposals. Four proposals reviewed.

III. GRANT AND PROGRAM SUPPORT SUMMARY LIST (optional)

Project Title	Your Role	Funding Source	Duration	Amount
Forest Products Utilization and Marketing Shared Services	Principal Investigator	USDA Forest Service, State and Private Forestry	5 years (end July 2009)	\$311,944
Evaluation of Value-Added Potential of Underutilized Wood Resources in the Pacific Southwest Region	Principal Investigator	USDA Forest Service, Region 5	6 years (end Sept. 2009)	\$35,978
Exploring Woody Biomass and Marketing Opportunities	Principal Investigator	USDA Forest Service, Region 5	2 years (end Sept. 2010)	\$199,994
Woody Biomass Utilization Program	Principal Investigator	California Association of Resource Conservation and Development Councils	2 years (end Dec. 2009)	\$21,000

IV. EXTENSION ACTIVITIES

a. Meetings Organized (Classes/Short Courses/Demonstrations/Field Days/Other)

Begin Date-End Date	Event	Presentation Topic/no. of repetitions	Location(s)	Tot. No. Attendees
February 23, 2008	Woody Biomass Utilization Workshop Series	Various topics by various presenters. My role was in coordinating, organizing and planning the	Willow Creek, CA	30
May 20-21, 2008	“		Auburn, CA	39
May 22 -23, 2008	“		Sonora, CA	42

Begin Date-End Date	Event	Presentation Topic/no. of repetitions	Location(s)	Tot. No. Attendees
May 28, 2008	“	workshops.	Bishop, CA	24

b. Educational Presentations (including oral presentations and posters)

Begin Date-End Date	Event	Presentation Topic/no. of repetitions	Location(s)	Tot. No. Attendees
June 23, 2008	Forest Products Society International Convention – Wood to Energy Technical Session	Densified Wood Fuel Manufacturing Opportunities in the Western United States	St. Louis, MO	40

c. Other (including news media interviews- in DANRIS-X “Other”)

Begin Date-End Date	Description (include presentation topic and location)	Tot. No. Instances
	None this review period	

V. BIBLIOGRAPHY

Publication Type Code	Bibliographic Citation
C	Shelly, John R. 2008. Biomass Utilization Reduces the Wildfire Fuel Hazard in Southern California. in proceedings: Woody Biomass Utilization, Challenges and Opportunities. Energy and Environmental Issues Technical Interest Group. Publication 7223. Forest Products Society. Madison, WI. pp 85-87.
C	Shelly, John R.; M. Puettmann; K. Skog; H-S Han. 2008. Editors. Technical Session Proceedings. Woody Biomass Utilization, Challenges and Opportunities. Energy and Environmental Issues Technical Interest Group. Publication 7223. Forest Products Society. Madison, WI. 98 p.
C	Tubajika, K. M.; Ramnik Singh; and John R. Shelly. 2008. The Efficacy of Heat Treatment to Control <i>Phytophthora ramorum</i> in Infected Wood Species. Poster presentation. Proceedings of the Sudden Oak Death Third Science Symposium. USDA Forest Service General Technical Report PSW-GTR-214. Albany, CA. pp 477-480.
A	Shelly, John R. 2008. Renewable Energy from Woody Biomass: A California Perspective. Rural Connections. November 2008. Western Rural Development Center. pp. 14-15.
D	Shelly, John R. 2008. Evaluation of Value-Added Potential of Underutilized Wood Resources in the Pacific Southwest Region. Progress Report 07-2. January 31, 2008. Wood Resource Group, University of California Richmond Field Station. Richmond, CA. 10p.

Publication Type Code	Bibliographic Citation
D	Shelly, John R. 2008. Evaluation of Value-Added Potential of Underutilized Wood Resources in the Pacific Southwest Region. Progress Report 08-1. August 30, 2008. Wood Resource Group, University of California Richmond Field Station. Richmond, CA. 6p.
D	Shelly, John R. 2008. Wood Property Analysis of Select Hawaii Woods. Technical Report 08-1. August 1, 2008. Wood Resource Group, University of California Richmond Field Station. Richmond, CA. 9p.
D	Mayhead, Gareth J. and John R. Shelly. 2008. Forest Products Marketing and Utilization Position at the University of California, Progress Report 6. January 22, 2008. Wood Resource Group, University of California Richmond Field Station. Richmond, CA. 49p.
D	Mayhead, Gareth J. and John R. Shelly. 2008. Forest Products Marketing and Utilization Position at the University of California, Progress Report 7. August 1, 2008. Wood Resource Group, University of California Richmond Field Station. Richmond, CA. 62p.
D	Hyde, A.C.; Shelly, J.R.; Caudle, S.; Szayna, T.; Clevette, R.; Blazer, B. 2008. 2007 U. S. Forest Service & Department of Interior Large Wildfire Cost Review: Assessing Progress Towards an Integrated Risk and Cost Fire Management Strategy. Chartered by the U. S. Secretary of Agriculture. April 24, 2008. The Brookings Institution. 70p.

VI. SABBATICAL LEAVE PLAN AND REPORT

No sabbatical leaves were completed during the review period.