

ANNUAL REPORT

FY 2010

(October 1, 2009 - September 30, 2010)

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MEMBERSHIP LIST

November 2010

Full Members:

Federal/State

United States Forest Service

Forest Industry

Hancock Forest Management

Plum Creek Timber Company

Rayonier

Resource Management Services

The Westervelt Company

Weyerhaeuser

Associate Members:

Forest Industry

Delaney Development

Molpus Timber Management

Scotch Lumber Company

Non-Industrial – Private

ArborGen, LLC

Sustaining Members:

State

Alabama Forestry Commission

Non-Industrial – Private

Alabama Farmers Federation

F&W Forestry Services

IPaper

Sizemore & Sizemore

Individual Foresters

Glenn Leuenberger

Beth Richardson

AUBURN UNIVERSITY - FOREST HEALTH COOPERATIVE

Advisory Board Chairman

Service Rotation[‡]

November 2009

<u>FISCAL YEAR</u> [‡]	<u>Chairman</u> *
2011	Westervelt
2012	Weyerhaeuser
2013	US Forest Service
2014	Hancock Forestry
2015	Plum Creek
2016	Rayonier
2017	Resource Management Service
2018	Westervelt
2019	Weyerhaeuser
2020	US Forest Service
2021	Hancock Forestry
2022	Plum Creek
2023	Rayonier
2024	Resource Management Service

[‡]Member will conduct the Coop business meeting held in that fiscal year.

*First Chairman randomly chosen for FY2011, subsequent Chairman will be alphabetical by company name.

AUBURN UNIVERSITY - FOREST HEALTH COOPERATIVE

Due to the nature of the members and the appearance of possible impropriety these rules are in place.

THE EIGHT FUNDAMENTAL RULES OF ANTI-TRUST COMPLIANCE

1. Competitors may not agree on prices they charge for goods they sell.
2. Competitors may not agree on the prices they charge for services.
3. Competitors may not agree on terms of sale.
4. Companies may not use dominant market position to monopolize a market, control prices, or exclude competitors.
5. Competitors may not agree not to compete by allocating customers, territories, or markets.
6. Competitors may not agree not to compete on bids – i.e. bid-rigging.
7. Competitors may not agree on prices for products or services they buy.
8. Competitors may not join in a boycott of suppliers or customers to accomplish anti-competitive ends.

Rules and Policies for the Auburn University Forest Health Cooperative

Approved May 16, 2008

MEMBERSHIP

1. Membership in the Forest Health Cooperative (FHC) is open to anyone in the southeastern region of the United States.
2. Members are required to pay annual dues which are as follows:

Full Member	\$8000
Associate Member	\$4000
Sustaining Member	\$ 500
3. Sustaining Members receive access to FHC Webpage, annual Newsletter, Research and Technical Reports, Priority Email and Telephone Consulting, and participation in Members Only Workshops. Associate Members receive the benefits of the Sustaining Members, Field Consulting and Laboratory Diagnostics, and may participate at the Annual Advisory Meeting, but cannot serve on the Advisory Council. Full members receive all the benefits of Associate and Sustaining Members and serve on the Advisory Council and have full voting powers with respect to research program and budgetary decisions.
4. Membership is for one year beginning October 1. Membership may be terminated by either the member organization or by Auburn University by giving 60 days written notice before October 1.
5. Membership will be contingent on signing a memorandum of agreement with Auburn University.
6. After September 30, 2009, all new members at all levels will be required to contribute 1-3 x their annual membership dues in addition to their annual membership dues. The number of annual contributions will depend upon the year of membership beyond 2008.

Year of Joining	Contributions to Forest Health Cooperative
2008	1 Annual Membership
2009	1 Annual Membership + 1 Annual Membership
2010	1 Annual Membership + 2 Annual Membership
2011 and beyond	1 Annual Membership + 3 Annual Membership

ORGANIZATION

1. The Dean, School of Forestry and Wildlife Sciences, Associate Director Agricultural Experiment Station of Auburn University in consultation with the Forest Health Cooperative Executive Committee, will appoint the Forest Health Cooperative's Director.

The Director will be responsible for:

- A. Directing the activities of the Forest Health Cooperative;
 - B. Employing a competent staff;
 - C. Developing the Forest Health Cooperative's direction in conjunction with the Advisory Council;
 - D. Ensuring each member participates to a threshold level; and
 - E. Reporting research accomplishments to the Advisory Council
2. The Advisory Council will have an annual meeting in the first quarter of each fiscal year.
3. An Advisory Council consisting of one representative from each full member shall be established to:
 - A. Act as a liaison between the organization and the Director;
 - B. Develop Forest Health Cooperative policies;
 - C. Advise the Director on the Forest Health Cooperative's direction;
 - D. Approve the annual budget and membership fee.
4. An Executive Committee consisting of three Advisory Council members and the Director shall have the authority to meet and conduct routine business in the name of the Advisory Council. One Executive Committee member will be appointed annually according to a rotating schedule and will serve for 3 years. The Advisory Council chairman will be the senior member of the Executive Committee and will preside at the Executive Committee and Advisory meetings.
5. Contact representatives will be designated by each cooperating member/organization. This individual may or may not be the same person serving on the Advisory Council. Contact Representatives will be directly involved in research established with each member organization.
6. All information will be available to all members in the Forest Health Cooperative.
7. All members agree to keep confidential the data and information given to them for future publications and limit the spread of information to non-members that would benefit without paying annual FHC dues.

DUES and BUDGET

1. Membership dues will be set by the Advisory Council at its annual meeting. Recommended fees will be computed annually by the Advisory Board.
2. The Cooperative will operate on the fiscal year October 1 to September 30. Invoices for membership fees will be sent to all member organizations on October 1 of each year, or by special arrangement with the individual organization.

RULES CHANGES

1. Changes in, deletions from, and additions to the membership rules may be adopted by a two-thirds vote of advisory members in attendance at regularly scheduled or special sessions of the Advisory Council.

DIVISION OF RESPONSIBILITIES BETWEEN AUBURN UNIVERSITY AND MEMBER ORGANIZATIONS IN THE AUBURN UNIVERSITY FOREST HEALTH DYNAMICS LABORATORY COOPERATIVE

1. Study plans will be developed by Auburn University in conjunction with the Cooperative's Advisory Council. Responsibilities for cooperative research will be delineated in individual study plans.
2. Auburn will do data analysis and processing, as well as manuscript preparation, and will insure timely distribution of results to cooperators.
3. Auburn University graduate students will be utilized to work on specific forest health problems.
4. All cooperators will be responsible for adhering to the study plans.
5. Information will be disseminated at annual Advisory meeting and in an annual Newsletter and Research Reports to members. A web site dedicated to Forest Health with the Cooperatives' research will be maintained by School of Forestry & Wildlife Sciences.
6. Results will also be disseminated at local, regional and national forest related meetings.
7. Site visits for risk assessment and diagnostic evaluations will be conducted by Auburn University staff. Full members get 2 days/yr, Associate Members get 1 day/ yr. Additional days are \$1000 per day for all membership classes.

8. Laboratory diagnostic evaluations will be conducted by Auburn University staff. Full members get 10 sent in samples per year, Associate Members get 5 sent in samples per year. Additional samples are \$100 per sample for all membership classes.

FY11 ADVISORY MEETING AGENDA

Wednesday - November 17, 2010

<u>TIME</u>	<u>EVENT</u>	<u>SPEAKER</u>
11:00 – 1:00	Registration	
1:00 – 1:10	Introduction – Welcome	Graeme Lockaby
1:10 – 1:15	Housekeeping	Lori Eckhardt
1:15 – 1:30	New Personnel and Members	Lori Eckhardt
<i>Forest Health Dynamics Lab Project Updates</i>		
1:30 – 2:00	Thinning and fertilization: effects on bark beetle abundance in a loblolly pine plantation	Lori Eckhardt
2:00 – 2:30	Bark beetle populations related to silviculture disturbances - Eighteen Month Update	Yuan Zeng MS Student
2:30 – 3:00	Population patterns of bark and ambrosia beetles over a two-year period	Jacob Thompson MS Student
3:00 – 3:15	BREAK	
3:15 – 3:45	Cogongrass: Does it affect root-feeding beetle populations and pine decline susceptibility	Ben Brunson MS Student
3:45 – 4:15	Update of possible invasive ophiostomatoid fungi from Nicaragua	Roger Menard FHP - USFS
4:15 – 4:45	Virulence of three ophiostomatoid fungi isolated from Nicaragua on slash, loblolly and longleaf pine seedlings	Jarrold Zelko MS Student
4:45 – 5:15	Other Project Updates	Lori Eckhardt
5:15 – 5:45	Project Question and Answer	All Speakers
5:45	Adjourn for the Day	

Thursday - November 18, 2010

8:00 – 8:30	Timber Dogs and Pine Decline	Terry Fischer
8:30 – 9:00	Pine Beetles and UAV	Henry Brandhorst
9:00 – 10:00	Genetic variation in pines influencing ectomycorrhizal symbiosis: Potential implications for genotype selection in southern forestry	Jason Hoeksema Ole Miss
10:00 – 10:15	BREAK	
10:15 – 10:45	Invasive Species Update	Nancy Loewenstein
10:45 – 11:30	Budget Review	Lori Eckhardt
11:30 – 12:00	Wrap-up	Lori Eckhardt
12:00	Adjourn – Have a Safe Trip Home!	

FY 2011 ADVISORY COMMITTEE MEETING

November 17 & 18, 2010

MINUTES

- 1) The FY 2011 Advisory Committee Meeting was opened at 1:00 p.m., Wednesday, November 17, 2010 by Lori Eckhardt, Director. Welcoming remarks by Associate Dean for Research Graeme Lockaby and staff introductions were made.
- 2) Those in attendance of the FY 2011 Advisory Committee Meeting were as follows:
Jim Bell – Plum Creek Timber
Wayne Brasell – Scotch Land Management
Richard Bryant - ArborGen
Daniel Crawford - Hancock Forest Management
Patrick Cumbrie - ArborGen
Bruce DeHaan – The Westervelt Company
Wilson Edwards – Weyerhaeuser
Terri Galinski - Plum Creek
John Gates - Scotch Plywood Co.
Randy Jarzyniecki - F&W Forestry Services
Philip Johnson - Delaney Development
AL Lyons – Hancock Forest Management
Dana McReynolds - Alabama Forestry Commission
Jim Peeler – Resource Management Service
George Robertson - Scotch Plywood Co.
James Vermillion – Molpus Timberlands Management
Alan Wilson - Rayonier
Elizabeth Bowersock – SFWS
Ben Brunson – SFWS
Director, Lori Eckhardt –SFWS
Rebecca Kidd – SFWS
Nancy Loewentstein – SFWS
Matt Meyerpeter – SFWS
Amritpal Singh – SFWS
Jacob Thompson – SFWS
Jarrod Zelko - SFWS
Yuan Zeng - SFWS
- 3) Please see page 13 for the FY 2011 Advisory Committee Meeting Agenda. The following presentations were made on Wednesday afternoon or Thursday morning as noted in the Agenda:
 - a. Thinning and fertilization: effects on bark beetle abundance in a loblolly pine plantation – Lori Eckhardt, Director
 - b. Bark beetle populations related to silviculture disturbances: Eighteen month update – Yuan Zeng, Masters Student, SFWS

- c. Population patterns of bark and ambrosia beetles over a two-year period – Jacob Thompson, Masters Student, SFWS
 - d. Cogongrass: Does it affect root-feeding beetle populations and pine decline susceptibility – Ben Brunson, Masters Student, SFWS
 - e. Update of possible invasive ophiostomatoid fungi from Nicaragua – Matt Meyerpeter, Masters Student, SFWS
 - f. Virulence of three ophiostomatoid fungi isolated from Nicaragua on slash, loblolly and longleaf pine seedlings – Jarrod Zelko, Masters Student, SFWS
 - g. Other project updates – Lori Eckhardt, Director
 - h. Forest dogs and pine decline – Terry Fischer, Veterinary School
 - i. Pine beetles and the use of UAVs – Henry Brandhorst, Aerospace
 - j. Genetic variation in pines influencing ectomycorrhizal symbiosis: Potential implications for genotype selection in southern forestry – Jason Hoeksema, University of Mississippi
 - k. FY11 Work Plan – Lori Eckhardt, Director
 - l. Budget – Lori Eckhardt, Director
- 4) The FY 2011 Business Meeting of the Auburn University Forest Health Cooperative was called to order at 10:30 a.m. on Thursday, November 18, 2010, by Lori Eckhardt. Cooperative Members as listed on page 15 of this Annual Report were present. All members present concurred unanimously to begin the meeting. Topics of the FY11 Work Plan were discussed and voted upon as follows:

Goal A.

Objective 1.

- a. Hylastes population dynamics and forest health evaluation in association with thinning and fertilization on new RW19 in Louisiana – Funding through FHP and FHC.
Discussion: Roger Menard would collect traps as site is by his home in Leesville.
- b. Forest health evaluation of stand health in association with biomass removal and standard silvicultural practices between two land managers (extension for post-treatment data collection as treatments were delayed due to no market for chips so could not sell contract) – FHP, USFS for all travel, supplies and student worker \$16,810.
Discussion:
- c. Ecology of siricids and fungal associates in southeastern pine forests: potential for biological control and competition – APHIS for travel, supplies and graduate student \$99,493.
Discussion: Alabama has no current research program looking at Sirex in the state.
- d. Exploring soil microbial communities as mediators of complex threats to southern conifers – Agriculture and Food Research Initiative Competitive Grant (3 years).
Discussion: Not funded, will resubmit next year.

- e. Using Forest Dogs to find root fungi (*Leptographium*, *Grosmannia*, *Ophiostoma*, *Heterobasidium*) and help land managers make informed decisions – SFWS for travel and supplies \$1,000.
Discussion:
- f. Sudden Oak Death (*Phytophthora ramorum*) Detection Survey (Stream Sampling) in AL and MS – FHM, USFS for all travel, supplies and laboratory technician \$42,000.
Discussion:
- g. Delineating loblolly pine decline in the Southeast using FHM/FIA data – submitted to FH, USFS for all travel and supplies associated with the project \$34,592.
Discussion:

Unanimous Approval

Objective 2.

No current openings for FY11.

Unanimous Approval

Objective 3.

- h. *Hylastes* population dynamics and forest health evaluation in association with thinning and harvesting.
Discussion:
- i. Cogongrass and ecologically based weed management strategies: Impacts on insect diversity and pine decline in the southeastern United States.
Discussion:
- j. Delineating loblolly pine decline in the southeast using county survey and FHM/FIA data.
Discussion:
- k. Resistance of *Pinus taeda* families under artificial inoculations with native and non-native *Leptographium* species involved in premature mortality.
Discussion:
- l. *Hylastes* population dynamics and forest health evaluation in association with thinning and fertilization.
Discussion:
- m. Forest health evaluation of stand health in association with biomass removal and standard silvicultural practices between two land managers.
Discussion:

- n. Blue-stain fungi associated with feral hogs causing rooting damage in longleaf and loblolly pine stands.

Discussion:

Unanimous Approval

Goal B.

Objective 1.

- a. Maintain and Update Nursery Cooperative Web Site

Discussion:

- b. Leveraging Forest Health Cooperative Web Site

Discussion: Authority letter signed by Advisory Board for VP of Research office to allow FHC to leverage funds toward outside grant proposals.

Unanimous Approval

Objective 2.

- a. Advisory/Contact Meeting

Discussion: Alan Wilson suggested we talk to the Production Cooperative and have a joint Contact Meeting summer of 2011.

- b. Research Reports

Discussion:

- c. Newsletters

Discussion:

Unanimous Approval

Objective 3.

- a. Individual and Organization Contacts

Discussion:

- b. Short Course

Discussion: Need a minimum of 20 participants with a maximum enrollment of 40. Need to limit to 2 days, if need to leave something out of agenda, then omit invasive species. Survey of interest with agenda will be sent out following the holidays.

Unanimous Approval

Goal C.

Objective 1.

- a. Advisory Committee Meeting

- b. Forest Health Cooperative Membership

- c. Update Coop Membership and Directories

Unanimous Approval

Objective 2.

- a. Presentations at Meetings
- b. Publications
- c. Extramural Funding of Nursery Coop Projects

Unanimous Approval

BUDGET

Tabled until Science Meeting being held on February 1, 2011.

- 5) The FY 2011 Business Meeting of the Auburn University Forest Health Cooperative is adjourned as of 12:08 p.m., Thursday, November 18, 2010.

AUBURN UNIVERSITY
FOREST HEALTH COOPERATIVE

FY2010 BUDGET - PROJECTED VERSUS ACTUAL

(thru September 30, 2010)

FISCAL YEAR
(Oct. 1, 2009 - Sept. 30, 2010)

	<u>FY10</u> (Projected)	<u>FY 10</u> (Actual)	<u>Difference</u>
REVENUE			
Carryover from Previous Year	16,128	16,128	0
Current Year's Income	79,500	73,200	(6,300)
Total Revenue	95,628	89,328	(6,300)
EXPENDITURES			
Personnel Costs			
Professional/Non-Faculty	30,700	29,186	1,514
Graduate Assistants	15,540	5,886	9,654
Employee Benefits (ESTIMATED)	10,647	9,860	787
Total Personnel Costs	56,887	44,933	11,954
Operating Costs			
Travel/Vehicle			
Mileage	12,000	8,367	3,633
Supplies/Equipment	8,000	14,276	(6,276)
Total Operating Costs	20,000	22,643	(2,643)
Total Expenditures	76,887	67,575	9,312
CARRYOVER FOR NEXT YEAR	18,741	21,753	3,012

AUBURN UNIVERSITY
FOREST HEALTH COOPERATIVE

THREE YEAR FINANCIAL STATEMENT

(October 2010)

FISCAL YEAR			
October 1 - September 30			
	<u>FY11</u>	<u>FY12</u>	<u>FY13</u>
	(Projected)	(Projected)	(Projected)
REVENUE			
Carryover from Previous Year	21,753	20,786	8,030
Current Year's Income	75,500	75,500	75,500
Total Revenue	96,253	95,286	83,530
EXPENDITURES			
Personnel Costs			
Professional/Faculty	0	4,602	21,615
Professional/Non-Faculty	30,700	33,156	33,156
Graduate Assistants	15,540	15,540	15,540
Professional Benefits (ESTIMATED)	10,745	13,958	19,170
GA Benefits (ESTIMATED)	482	458	458
Total Personnel Costs	57,467	67,256	89,481
Operating Costs			
Travel/Mileage	10,000	12,000	12,000
Supplies/Equipment	8,000	8,000	8,000
Total Operating Costs	18,000	20,000	20,000
Total Expenditures	75,467	87,256	109,481
CARRYOVER FOR NEXT YEAR	20,786	8,030	(25,951)

AUBURN UNIVERSITY
FOREST HEALTH COOPERATIVE

FY 2010 ACCOMPLISHMENTS

**As presented to the Forest Health
Cooperative Advisory Committee
November 17-18, 2010**

AUBURN UNIVERSITY - FOREST HEALTH COOPERATIVE

FY 2010 WORK PLAN

GOAL A: RESEARCH

Objective 1. Identify research projects

Delineating loblolly pine decline in the Southeast using FHM/FIA data – submitted to FHM, USFS for all travel and supplies associated with the project. (Eckhardt)

- *Accomplishments: Funded by USFS Forest Health Monitoring grant and Masters student recruited to work on project.*

Objective 2. Recruit graduate students

There were openings for 3 graduate students in the Coop: 1 provided by the Coop budget and 2 provided by SFWS for projects beginning FY09. Two of these positions have been filled.

1. Bikash Bhandari - Delineating loblolly pine decline in the Southeast using county survey and FHM/FIA data
 - *Accomplishments: Bikash Bhandari left Auburn for personal reasons and was replaced by Matt Meyerpeter who started Fall 2010.*
2. Yuan Zeng - *Hylastes* population dynamics and forest health evaluation in association with thinning and harvesting.
 - *Accomplishments: Has completed the first year of her degree program and data collection.*
3. Open - Resistance of *Pinus taeda* families under artificial inoculations with native and non-native *Leptographium* species involved in premature mortality.
 - *Accomplishments: Position has been filled by Amritpal Singh who started Fall 2010.*

There is a graduate student opening for the AFRI project which has been filled.

1. Yingqian Lin
 - *Accomplishments: This position was actually filled by Ben Brunson who started Fall 2010. Yingqian Lin decided to accept a position at Cornell University.*

Objective 3. Initiate research projects: Determine location, cooperators, and set up research plots dependent upon projects chosen by the membership.

Hylastes population dynamics and forest health evaluation in association with thinning and harvesting. Plots have been installed in Georgia on Rayonier and F&W properties, in Alabama on Weyerhaeuser, Westervelt and Sizemore & Sizemore properties.

- *Accomplishments: Plots have been installed in Georgia on Rayonier and F&W properties and in Alabama on Weyerhaeuser, Westervelt and Sizemore &*

Sizemore (SS) properties. All pre-treatment data has been collected which includes tree measurement and vigor, root infection, resin and insect. All treatments have been completed except for thinning at F&W and SS, and clearcut at SS. SS is currently completing their treatment. We have no timeline for the thinning at F&W. Post-treatment data is currently being collected.

Cogongrass and ecologically based weed management strategies: Impacts on insect diversity and pine decline in the southeastern United States. Data about possible research stands is currently being collected. Stands will be visited in December and plots installed in January. Current members with possible available stands are Rayonier, Delaney Development Inc, Sizemore & Sizemore, Forest Investment Associates, and Westervelt.

- *Accomplishments: Plots were identified December 2009 on Westervelt property in south MS. Plots were installed in January 2010. Insect traps were installed end of February 2010 and insect data collection started March 2010. Plot data currently being collected: tree measurement and vigor, root infection, and resin.*

Delineating loblolly pine decline in the Southeast using county survey and FHM/FIA data. Data retrieval has recently been approved by FIA and an account set up to access all FHM data from FIA database for the southeastern states.

- *Accomplishments: Data retrieval has recently been approved by FIA and an account set up to access all FHM data from FIA database for the southeastern states. Travel and supplies for this project will shift to the funded FHM grant.*

Resistance of *Pinus taeda* families under artificial inoculations with native and non-native *Leptographium* species involved in premature mortality. Working with the Tree Improvement Cooperative to determine families to be tested for tolerance/resistance.

- *Accomplishments: Families were chosen and hand sown at Rayoniers' nursery in Glenville GA.*

GOAL B: TECHNOLOGY TRANSFER

Objective 1. Serve as a clearinghouse of information related to forest health issues.

Maintain and Update Forest Health Cooperative Web Site

The Forest Health Cooperative Staff will continue to update the Forest Health Cooperative website for use by Forest Health Cooperative Members. (Eckhardt)

- *Accomplishments: The website is updated Advisory Agenda's with each speaker's presentation available for Forest Health Cooperative Members. Research Reports and Technical Notes are updated. Changes in Forest Health Cooperative staff updated and current.*

Objective 2. Efficiently and regularly transfer the results of cooperative research to the membership.

Research Reports (Staff)

We plan on producing Research Reports and Technical Notes in FY10 now that research projects are underway.

➤ ***Accomplishments:***

Newletters (Staff)

Newsletter distribution will be planned for March and September FY2010. Members are encouraged to submit articles.

➤ ***Accomplishments: A Spring 2010 and Fall 2010 Newsletter was sent to all Nursery Cooperative Members in March and September, approximately 25 on the mailing list.***

Objective 3. Provide a limited consultancy function to the membership in the area of forest health.

Individual and Organized Contacts

An on-going activity and is handled as individual situations and cases arise. (Staff)

	Eckhardt	Kidd	Matusick
Phone calls	34		2
Letters	2		0
Emails	89		0
Site Visits	2		1
Diagnosis	15		12

Short Courses

Forest Health Short Course will be offered in odd years starting with FY2009. Not enough members signed up for the course in FY2009 and if there is enough interest, a Short Course in Forest Health will be planned for August 2011. (Staff)

➤ ***Accomplishments:***

GOAL C: COOP DEVELOPMENT

Objective 1. Provide for the continual relevancy and efficiency of the Cooperative research and technology transfer programs.

Advisory Committee Meeting

The FY11 Advisory Committee Meeting will be held the third week in November 2010. A 2 day meeting will be planned. If there are any meetings that conflict with this time frame, let us know and we can try and accommodate Advisory Members. (Eckhardt/Kidd/Booker)

➤ ***Forest Health Advisory Meeting held in Auburn on November 17-18, 2010.***

Forest Health Cooperative Membership

The Forest Health Cooperative staff should make an effort to recruit new members. (Staff)

- *One new member joined the Forest Health Cooperative in FY2010 – Rayonier. Two new members joined the Forest Health Cooperative in FY2010 for FY2011 – The Westervelt Company and Arborgen. The Alabama Forestry Commission reduced their membership status due to state budgets, but will return to full status once state budgets are better. Forest Investment Associates ended their membership as of the end of FY10.*

Update the Cooperative Membership Directory

An on-going activity. (Bowersock/Eckhardt)

- *Accomplishments: Membership directory updated and loaded onto website.*

Objective 2. Increase the visibility and effectiveness of the Cooperative as a source of information on issues related to forest health.

Presentations at Meetings

Forest Health Cooperative staff will continue to be encouraged to participate as a speaker or attendee in regional and national meetings. (Staff)

- *Accomplishments: Forest Health Cooperative Staff gave 9 presentations and published 3 articles on the subject of Forest Health.*
- *Eckhardt, L.G., Menard, R.D., Matusick, G., and Zanzot, J.W. 2009. Pine decline: the involvement of bark beetles and ophiostomatoid fungi. Society of American Foresters National Convention in New Trends in Management of Forest Insect and Diseases in the Southeast, Orlando, FL.*
- *Zanzot, J.W. and Eckhardt, L.G. 2009. Seasonal changes in abundance of root-feeding curculionids and ophiostomatoid fungi at Fort Benning, Georgia. Forest Insects and Environmental Change: IUFRO Division 7 – Forest Health, Jackson Hole, WY.*
- *Zanzot, J.W. and Eckhardt, L.G. 2009. Assessment of longleaf pine on high-risk and low-risk loblolly pine decline sites at Fort Benning, Georgia. Expanding the Boundaries: 2009 APS Annual Meeting, Portland, OR.*

Publications

Forest Health Cooperative staff are encouraged to publish research results in scientific journals. (Staff)

- *Matusick, G. and Eckhardt, L.G. 2010. Variation in virulence among four root-inhabiting ophiostomatoid fungi on Pinus taeda L., P. palustris Mill., and P. elliotii Englem. seedlings. Can. J. Plant Path. 32:361-367.*
- *Zanzot, J.W., de Beer, Z.W., Eckhardt, L.G., and Wingfield, M.J. 2010. A new Ophiostoma species from loblolly pine roots in the southeastern United States. Mycol. Progress. 9:447-457.*
- *Matusick, G. and Eckhardt, L.G. 2010. The pathogenicity and virulence of four ophiostomatoid fungi on young longleaf pine trees. Can. J. Plant Path. 32:170-176.*

- Zanzot, J.W., Matusick, G., and Eckhardt, L.G. 2010. Activity of root-feeding insects and their associated fungi on longleaf pine in Georgia. *J. Econ. Entomol.* 39:415-423.
- Eckhardt, L.G., Sword-Sayer, M.A., and Imm, D.W. 2010. State of pine decline in the southern United States: A Technical Note. *J. Appl. For.* 34:138-141.
- Eckhardt, L.G. and Menard, R.D. 2009. Declining loblolly pine stands: symptoms, causes and management options. *AL Treasured Forest Magazine Volume XXVIII*, No. 2, p. 10-12.
- Eckhardt, L.G., Menard, R.D., and Gray, E. 2009. Effects of oleoresins and terpenoids on the fungal growth associated with pine decline in the southeastern United States. *For. Path.* 39:157-167.

Extramural Funding of Forest Health Cooperative Projects

Forest Health Cooperative staff will continue to be encouraged to locate and generate extramural funding opportunities directly related to forest health. (Staff)

- ***Accomplishments: Forest Health Cooperative Staff were awarded the following grants totaling \$276,467.***
- Eckhardt and Menard. 2010. Delineating loblolly pine decline in the southeast using FHM/FIA data. USFS-FHM. \$47,967.
- Enloe, Loewenstein, Eckhardt and Held. 2009. Cogongrass and ecologically based weed management strategies: Impacts on insect diversity and pine decline in the southeastern United States. AFRI-NIFA. \$494,000 (Auburn component: \$181,000). Additional funds from AU-SFWS \$18,100.
- Eckhardt. 2009. Evaluation of virulence and pathogeniity of invasive ophiostomatoid fungi in relation to southern pine. DoD, Fort Benning Military Reservation. \$47,500.

AUBURN UNIVERSITY
FOREST HEALTH COOPERATIVE

FY 2011 WORK PLAN

**As approved by the Forest Health
Cooperative Advisory Committee
November 17-18, 2010**

FY 2011 WORK PLAN

GOAL A: RESEARCH

Objective 1. Identify research projects

Proposed FY2011:

1. Hylastes population dynamics and forest health evaluation in association with thinning and fertilization on new RW19 in Louisiana – Funding through FHP and FHC – *Needs FHC Advisory Board approval*
2. Forest health evaluation of stand health in association with biomass removal and standard silvicultural practices between two land managers (extension for post-treatment data collection as treatments were delayed due to no market for chips so could not sell contract) – FHP, USFS for all travel, supplies and student worker \$16,810 – *Decision pending from USFS*
3. Ecology of siricids and fungal associates in southeastern pine forests: potential for biological control and competition – APHIS for travel, supplies and graduate student \$99,493 - *Decision pending dependent upon continuation of funds*
4. Exploring soil microbial communities as mediators of complex threats to southern conifers – Agriculture and Food Research Initiative Competitive Grant (3 years) \$497,000 - *Not funded, will resubmit next cycle with modifications*

Newly Funded FY2011:

1. Using Fungus/Forest Dogs to find root fungi (*Leptographium*, *Grosmannia*, *Ophiostoma*, *Heterobasidium*) and help land managers make informed decisions – SFWS for travel and supplies \$1,000
2. Sudden Oak Death (*Phytophthora ramorum*) Detection Survey (Stream Sampling) in AL and MS – FHM, USFS for all travel, supplies and laboratory technician \$42,000
3. Delineating loblolly pine decline in the Southeast using FHM/FIA data – submitted to FHM, USFS for all travel and supplies associated with the project – \$34,592

Objective 2. Recruit graduate students

There are currently no openings for FY11.

Objective 3. Initiate and continue research projects: Determine location, cooperators, and set up research plots dependent upon projects chosen by the membership.

Hylastes population dynamics and forest health evaluation in association with thinning and harvesting.

- Post-treatment data is currently being collected.

Cogongrass and ecologically based weed management strategies: Impacts on insect diversity and pine decline in the southeastern United States.

- Plot data currently being collected: tree measurement and vigor, root infection, and resin.

Delineating loblolly pine decline in the Southeast using county survey and FHM/FIA data.

- Data retrieval has initiated.

Resistance of *Pinus taeda* families under artificial inoculations with native and non-native *Leptographium* species involved in premature mortality.

- Need to determine if nutrition portion of project should be implemented for FY11.
- Need to identify families for FY12 screening. Need to identify species to be screened: loblolly and slash or longleaf. Need to determine if nutrition portion of project should be implemented for FY12.

Hylastes population dynamics and forest health evaluation in association with thinning and fertilization.

- Working on manuscripts for publication

Forest health evaluation of stand health in association with biomass removal and standard silvicultural practices between two land managers.

- Treatments were delayed due USFS not being able to contract the cuts. Treatments will hopefully be completed this winter and post-treatment data collected. Put in proposal for extension.

Blue-stain fungi associated with feral hogs causing rooting damage in longleaf and loblolly pine stands.

- Working on manuscripts for publication.

GOAL B: TECHNOLOGY TRANSFER

Objective 1. Serve as a clearinghouse of information related to forest health issues.

Maintain and Update Forest Health Cooperative Web Site

The Forest Health Cooperative Staff will continue to update the Forest Health Cooperative website for use by Forest Health Cooperative Members. (Eckhardt)

Leveraging Forest Health Cooperative Data

The Forest Health Cooperative staff will continue to stress the importance of the Cooperative membership and when possible, leverage Cooperative information for grant proposals. (Staff)

Objective 2. Efficiently and regularly transfer the results of cooperative research to the membership.

Research Reports (Staff)

We plan on producing Research Reports and Technical Notes in FY11.

Newsletters

Newsletter distribution will be planned for March (Spring) and September (Fall). Members are encouraged to submit articles.

Objective 3. Provide a limited consultancy function to the membership in the area of forest health.

Individual and Organized Contacts

An on-going activity and is handled as individual situations and cases arise. (Eckhardt/Kidd)

Short Courses

The Forest Health Cooperative will offer a Forest Health Short Course in Auburn for member personnel in July 2011. We need a minimum of 20 attendees and will survey the membership in January 2011 for interest.

GOAL C: COOP DEVELOPMENT

Objective 1. Provide for the continual relevancy and efficiency of the Cooperative research and technology transfer programs.

Advisory Committee Meeting

The FY12 Advisory Committee Meeting will be held on November 16-17, 2011. A 2 day meeting will be planned. If there are any meetings that conflict with this time frame, let us know and we can try and accommodate Advisory Members. (Eckhardt/Bowersock)

Forest Health Cooperative Membership

The Forest Health Cooperative staff should make an effort to recruit new members. (Staff)

Update the Cooperative Membership Directory

An on-going activity with an updated directory distributed annually. (Bowersock)

Objective 2. Increase the visibility and effectiveness of the Cooperative as a source of information on issues related to forest health.

Presentations at Meetings

Forest Health Cooperative staff will continue to be encouraged to participate as a speaker or attendee in regional and national meetings. (Staff)

Publications

Forest Health Cooperative staff are encouraged to publish research results in scientific journals. (Staff)

Extramural Funding of Forest Health Cooperative Projects

Forest Health Cooperative staff will continue to be encouraged to locate and generate extramural funding opportunities directly related forest health.

Interaction with other Research Cooperatives

The Forest Health Cooperative staff will make efforts to interact, attend, work with other regional and national forest research Cooperatives in an attempt to broaden and strengthen research ties that can benefit forest health.

