3rd Natural Resource Extension Professionals Conference

Revolutionizing or Evolutionizing Extension Programming?

June 2-5, 2002

Naples Beach Hotel and Golf Club
Naples, Florida

Cover photo courtesy of University of Florida, IFAS Communication Services
Welcome to the 3rd Natural Resource Extension Professionals Conference!

The program committee has prepared an exciting, informative, engaging, challenging and fun agenda for you.

This wonderful location was chosen as the venue for this conference to provide participants a first-hand view of natural resource management and educational programs in unique subtropical ecosystems. Also, please take time to enjoy one of North America’s best beach environments just outside of your hotel.

During this Conference, you will be exposed to 72 oral and over 50 poster presentations and their abstracts. The first plenary session will challenge you to help the Cooperative Extension System to develop a stronger focus on natural resource programming. The Association of Natural Resource Extension Professionals will give you updates on some exciting new activities in which you can become involved. Conference participants with whom you will have many opportunities to interact come from 50 different universities, and several other agencies and organizations that address natural resource issues.

We are grateful for the support provided by the USDA Cooperative State Research, Education and Extension Service (CSREES), Natural Resource & Environment Division and the Association of Natural Resource Extension Professionals. Our thanks also go out to the committee members, invited speakers and panel participants, moderators, oral and poster presenters, and AV operators. We especially appreciate the professional, thorough and timely performance of the Conference Coordinator, Mandy Padgett, and her staff at the UF/IFAS Office of Conferences and Institutes.

Your active engagement is essential to the outcomes of this Conference. Thank you getting involved. Please let us know how we can make this Conference most meaningful to you. Enjoy!!!

Joe Schaefer, Conference Organizer
District Extension Director & Liaison for Natural Resource and Environmental Programs - South Florida
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CONFERENCE SPONSORS

We gratefully acknowledge the support, involvement and interest of our sponsors and participating organizations:

- Association of Natural Resource Extension Professionals (ANREP)

- USDA Cooperative State Research, Education and Extension Service (CSREES) (Natural Resource & Environment Division)

- University of Florida, Extension Institute of Food and Agricultural Sciences, Center for Natural Resources

- Florida Agricultural and Mechanical University

- Alabama Agricultural and Mechanical University

- Auburn University

- University of the Virgin Islands

- The University of Georgia
PROGRAM COMMITTEE

Jim Armstrong, Auburn University, Auburn, AL
Larry Biles, USDA-CSREES, Washington, DC
Robert Bradford, Florida Agricultural and Mechanical University, Tallahassee, FL
George Brown, Alabama Agricultural and Mechanical University, Normal, AL
Janean Creighton, Washington State University, Pullman, WA
Charles Gay, Utah State University, Logan, UT
Mindy Habecker, University of Wisconsin, Madison, WI
Deborah B. Hill, University of Kentucky, Lexington, KY
Bill Hubbard, The University of Georgia, Athens, GA
Ben Jackson, The University of Georgia, Athens, GA
Jonathan S. Kays, University of Maryland, Keedysville, MD
Mike Kroenke, University of Wisconsin, Ashland, WI
Alan Long, University of Florida/IFAS, Gainesville, FL
Odemari Mbuya, Florida Agricultural and Mechanical University, Tallahassee, FL
Carlos Robles, University of the Virgin Islands, St. Thomas, VI
Joe Schaefer, University of Florida/IFAS, Belle Glade, FL
Viviane Simon-Brown, Oregon State University, Corvallis, OR
Bob Williamson, North Carolina Agricultural and Technical State University, Greensboro, NC

TOUR ORGANIZER

Martin Main, University of Florida/IFAS, Immokalee, FL

CONFERENCE ORGANIZERS

Conference Organizer:
Joe Schaefer, University of Florida/IFAS, Belle Glade, FL

Conference Coordinator:
Mandy Padgett, University of Florida/IFAS, Office of Conferences and Institutes, Gainesville, FL
CONFERENCE THEME
The Cooperative Extension Service was established to provide a non-traditional approach of applying research knowledge to help resolve community issues. Extension has developed a strong tradition and an excellent reputation for serving the same clientele base extremely well. However, this tradition is now preventing Extension from effectively addressing many other issues that have emerged during the past century. The theme to be explored during this conference is whether another rapid (revolutionary) or a more gradual (evolutionary) rate of change should occur to make Extension more relevant in today’s communities and the role of natural resource extension programming in this revision.

CONFERENCE PURPOSE
The purpose is to discuss the rate at which Extension is moving toward becoming recognized as a leading organization in natural resource education and to facilitate communication, cooperation and networking among natural resource educators. This interaction will strengthen innovative and contemporary natural resource educational programs by improving needs assessment, development, delivery and impact evaluation skills, thus empowering participants to better address emerging issues important to a diverse clientele. The format of sharing information and experiences will also foster multi-state, multi-institutional and global collaborations. Other important outcomes include building a cohesive, structured, multi-disciplinary support base for Extension natural resource programs in the future, and enhancing the visibility, credibility, and relevance of natural resource programs in the context of Extension’s overall mission.

CONFERENCE STRUCTURE
The initial plenary session will include invited speakers who will provide an overview of issues affecting the Everglades, a national treasure. The keynote speaker will address the conference theme, Revolutionary or Evolutionary Change in Extension. His comments will be followed by responses from invited panelists. Seventy-two oral presentations will occur during concurrent sessions. More than 50 poster presentations will be available to view and discuss during two poster sessions. The Wednesday morning ANREP meeting will include updates of Association activities and discussions of efforts that are influencing the future of natural resource Extension programming. Field trips will offer opportunities to experience natural resource management and education in unique southwest Florida ecosystems.
THE ASSOCIATION OF NATURAL RESOURCE EXTENSION PROFESSIONALS (ANREP)

The Association of Natural Resource Extension Professionals (ANREP) was created in 1996 to:

- Bring together forest, wildlife, fisheries, water, range, and recreation resource extension professionals to discuss natural resource issues, needs and opportunities of mutual interest; and to facilitate information sharing.
- Promote cooperation on natural resource issues and educational and training efforts between the various states and regions, as well as between governmental agencies, private natural resources groups, related industries and other natural resource professionals.
- Discuss, develop, sponsor, and promote educational and training programs and activities, which will advance the practice of natural resource management.
- Provide support and promote activities and programs at the national level that advance natural resource management, education, training, and diversity in the work force.
- Advance the professional status of natural resource extension professionals (NREPs) by encouraging professional self-improvement.
- Strengthen communication with Extension Administration.

For more information about ANREP contact:

**Chris Schnepf**, Membership Co-chair
Phone: 208-667-6426
Email: cschnepf@uidaho.edu

**Don Hanley**, Membership Co-chair
Phone: 206-685-4960
Email: dhanley@u.washington.edu

Also more information can be found on the ANREP website: [www.anrep.org](http://www.anrep.org)
PROGRAM AGENDA

Sunday, June 2, 2002

4:00PM–7:00PM Registration Open (SOLARIUM NORTH)
Poster room open to set-up displays for Poster Session I (MANGROVE BALLROOM)

7:00PM–9:00PM Welcome Reception and New ANREP Member Recognition (WATKINS LAWN)

Monday, June 3, 2002

7:00AM–5:00PM Registration Open (SOLARIUM NORTH)
Poster room open to set-up displays for Poster Session I (MANGROVE BALLROOM)

7:00AM–7:45AM Morning Refreshments (SOLARIUM NORTH AND SOLARIUM SOUTH)

8:00AM Plenary Session and Welcome (RIVER OF GRASS BALLROOM – SALONS DEGH - LEVEL ONE)
- Joe Schaefer, Conference Organizer and District Extension Director-South Florida, University of Florida, Institute of Food and Agricultural Sciences, Belle Glade, FL
- Elan Miavitz-Brown, Urban Horticulture Agent, Collier County Extension, University of Florida, Institute of Food and Agricultural Sciences, Naples, FL
- Chris Waddill, Dean and Director, Florida Cooperative Extension Service, University of Florida, Institute of Food and Agricultural Sciences, Gainesville, FL
- Mike Kroenke, ANREP President, University of Wisconsin - Extension, Ashland, WI
- Chris Kniep, Joint Council of Extension Professionals (Board of Directors) and President, National Extension Association of Family and Consumer Sciences, University of Wisconsin, Oshkosh, WI

8:30 AM History of South Florida Ecosystems - Stan Bronson (as Henry Flagler), Natural Resource Agent, Palm Beach County Extension, University of Florida, Institute of Food and Agricultural Sciences, West Palm Beach, FL

9:00 AM Moderator: Rodney Brown, Deputy Under Secretary of Research, Education and Economics, USDA, Washington, DC

9:15 AM Keynote Speaker: Revolutionizing or Evolutionizing Extension Programming - Mike Martin, Vice President for Agriculture and Natural Resources, University of Florida, Institute of Food and Agricultural Sciences, Gainesville, FL
- Dr. Martin will review the purpose and mission of the Cooperative Extension Service, discuss trends and changes that have occurred during the past century, and provide a vision of how a greater focus on natural resource programming can enhance Extension’s role in resolving important community issues.

10:00 AM Break (SOLARIUM NORTH AND SOLARIUM SOUTH)

10:15 AM Moderator: Dan Kugler, Deputy Administrator for Natural Resources and the Environment, USDA CSREES, Washington, DC

10:20 AM Response to Keynote Speaker’s Presentation
Response Panel Members:
- Nancy Bull, Associate Director, Cooperative Extension System, University of Connecticut, College of Agriculture and Natural Resources, Storrs, CT
- Patrick Walsh, State Program Leader for Community, Natural Resources and Economic Development, University of Wisconsin - Extension, Madison, WI
- Daniel Fagerlie, Chair - Ferry County Cooperative Extension, Washington State University, Republic, WA

10:45 AM Audience Interaction with Keynote and Panel

11:15 AM Comprehensive Everglades Restoration Plan - Frank Mazzotti, Extension Specialist, Wildlife Ecology and Conservation, University of Florida, Institute of Food and Agricultural Sciences, Ft. Lauderdale, FL

12:00PM Lunch on Your Own
Monday, June 3, 2002 (continued)

1:25 PM Four Concurrent Sessions (p. xiii)

I. High Tech Teaching - Part I
   (CHOKOLOSKEE ROOM - LEVEL TWO)

II. Extension at the Wildland/Urb an Interface - Part I
   (RIVER OF GRASS BALLROOM – SALONS FI - LEVEL ONE)

III. Knowledge: Discovery, Transfer, and Use
   (RIVER OF GRASS BALLROOM – SALONS DEGH - LEVEL ONE)

IV. Marketing Natural Resource Extension Programs
   (IMMOKALEE ROOM – SECTIONS LM - LEVEL THREE)

3:00 PM Break (SOLARIUM NORTH AND SOLARIUM SOUTH)

3:25 PM Four Concurrent Sessions (p. xiv)

I. High Tech Teaching - Part II
   (CHOKOLOSKEE ROOM - LEVEL TWO)

II. Extension at the Wildland/Urb an Interface - Part II
   (RIVER OF GRASS BALLROOM – SALONS FI - LEVEL ONE)

III. Landowner Education - Part I
   (RIVER OF GRASS BALLROOM – SALONS DEGH - LEVEL ONE)

IV. Water Quality Programs with Non-traditional Audiences
   (IMMOKALEE ROOM – SECTIONS LM - LEVEL THREE)

5:00 PM – 7:00 PM Formal Poster Session I and Reception
   (Topics and Presenters are listed on pp. xix-xx)
   (MANGROVE BALLROOM)

6:00 PM – 7:00 PM Poster Presenters Stationed by Display for Discussion

7:00 PM – 9:00 PM Poster Presenters Remove Presentations

Tuesday, June 4, 2002

6:15 AM – 5:00 PM Registration Open (SOLARIUM NORTH)
Poster room open to set-up displays for Poster Session II (MANGROVE BALLROOM)

6:15 AM – 7:45 AM Morning Refreshments (SOLARIUM NORTH AND SOLARIUM SOUTH)

Field Trips - Field trips depart from the Port Cochére in front of the Club House and Spa
(Conference Center). Departure times are indicated by each field trip. All field trips will return to
the hotel by 12:30 PM. Boxed lunches will be provided.

DEPARTURE

1) Corkscrew Swamp Sanctuary – Old Growth Cypress Swamp

2) Corkscrew Regional Ecosystem Watershed (CREW) – Sawgrass Marsh

3) Everglades National Park Boat Tour – Coastal Mangrove

1:25 PM Four Concurrent Sessions (pp. xv-xvi)

I. Youth Involved in Community Service
   (CHOKOLOSKEE ROOM - LEVEL TWO)

II. Landowner Education - Part II
   (IMMOKALEE ROOM – SECTIONS LM - LEVEL THREE)

III. Building Capacity to Address Diverse Natural Resources Issues
   (RIVER OF GRASS BALLROOM – SALONS DEGH - LEVEL ONE)

IV. Watershed Management
   (RIVER OF GRASS BALLROOM – SALONS FI - LEVEL ONE)
Tuesday, June 4, 2002 (continued)

3:30 PM Break (Solarium North and Solarium South)
3:55 PM Four Concurrent Sessions (pp. xvi-xvii)

I. Critical Thinking Skills Development for Youth
   (Immokalee Room – Sections LM - Level Three)

II. A New "View" of Natural Resources
   (River of Grass Ballroom – Salons DEGH - Level One)

III. Responsible Land Use Education
   (River of Grass Ballroom – Salons FI - Level One)

IV. Leveraging Resources by Training Volunteers
   (Chokooskee Room - Level Two)

6:00 PM – 8:00 PM Formal Poster Session II and Reception
   (Topics and Presenters are listed on pp. xxi-xxii)
   (Mangrove Ballroom)

7:00 PM – 8:00 PM Poster Presenters Stationed by Display for Discussion

8:00 PM – 10:00 PM Poster Presenters Remove Presentations

Wednesday, June 5, 2002

7:00 AM – 12:00 PM Registration Open (Solarium North)
7:00 AM – 7:45 AM Morning Refreshments (Solarium North and Solarium South)

Plenary Session and ANREP Business Meeting (River of Grass Ballroom – Salons DEGH (Level One)

Moderator: Joe Schaefer, District Extension Director-South Florida, University of Florida, Institute of Food and Agricultural Sciences, Belle Glade, FL

8:00 AM President’s Report and Discussion
   4H Centennial Proclamation
   2004 Conference Announcement
   - Mike Kroenke, ANREP President, University of Wisconsin - Extension, Ashland, WI

8:15 AM Galaxy Report - Chuck Gay, ANREP Past President, Utah State University, Logan, UT

8:20 AM Committee Reports and Discussions

8:35 AM Establishing an ANREP State Chapter in Florida - Ken Gioeli, FANREP President, University of Florida, Gainesville, FL (p. 3)

8:45 AM Proposal of Community Resource Development/ANREP Partnership

9:05 AM Acknowledgement of ANREP and NREM Award Winners

9:30 AM Break (Solarium North and Solarium South)

9:55 AM Four Concurrent Sessions (pp. xvii-xviii)

I. Capacity Building for Youth
   (Immokalee Room – Sections LM - Level Three)

II. The Evolving Extension Professional
   (River of Grass Ballroom – Salons FI - Level One)

III. Developing and Sustaining Collaborations
   (Chokooskee Room - Level Two)

IV. Continuing Education for Professionals
   (River of Grass Ballroom – Salons DEGH - Level One)

12:00 PM Conference Concludes
CONCURRENT SESSIONS

NOTE: Presenting authors appear in Bold.
Abstract page numbers are in parenthesis at end of listing. (p.)

Monday, June 3, 2002 — Concurrent Sessions: 1:25pm–3:00pm

I. High Tech Teaching - Part I (Chokoloskee Room - Level Two)

1:25PM  Introduction - Moderator: **Chris Schnepf**, University of Idaho, Kootenai, ID

1:30PM  **Comparing Virtual and Traditional Forestry Field Tours** - **Elissa Easley**, **Rick Fletcher**, **Ed Jensen** and **Mark Rickenbach**, Oregon State University, Corvallis, OR (p. 3)

2:00PM  **Woodland Options** Web-based Course for Private Forest Landowners - **Dylan Jenkins** and **Jim Johnson**, Virginia Tech College of Natural Resources, Blacksburg, VA; **Jim Starr**, Virginia Department of Forestry, Charlottesville, VA (p. 4)

2:30PM  **Satellite Delivery of Water Resources Programs in Pennsylvania** - **Bryan Swistock**, **William Sharpe** and **John Dickison**, The Pennsylvania State University, University Park, PA (p. 4)

II. Extension at the Wildland/Urban Interface - Part I (RIVER OF GRASS BALLROOM – SALONS FI - LEVEL ONE)

1:25PM  Introduction - Moderator: **Deborah Hill**, University of Kentucky, Lexington, KY

1:30PM  **Understanding the Issues and Challenges Facing Small-scale Nonindustrial Forest Landowners in Washington State** - **Janean Creighton**, **David Baumgartner**, and **Keith Blatner**, Department of Natural Resource Sciences, Washington State University, Pullman, WA (p. 5)

2:00PM  **Oregon’s Backyard Woodland Program: Educating Landowners in the Rural-Urban Interface** - **Stephen Fitzgerald**, Oregon State University Extension Service, Redmond, OR (p. 5)

2:30PM  **An Extension Program To Protect Natural Resources at the Urban/Rural Interface** - **Brian Miller** and **Bob McCormick**, Purdue University, West Lafayette, IN (p. 6)

III. Knowledge: Discovery, Transfer, and Use (RIVER OF GRASS BALLROOM – SALONS DEGH - LEVEL ONE)

1:25PM  Introduction - Moderator: **Sandy Smith**, The Penn State University, University Park, PA


2:00PM  **Loggers Making a Difference in Achieving Sustainable Forestry** - **Jim Finley**, **Tim Pierson**, and **Mike Jacobson**, Penn State University, University Park, PA; **Matt Keefer**, Pennsylvania Bureau of Forestry, Harrisburg, PA (p. 7)

2:30PM  **The Tennessee Forestry Academy: Training Non-Degree Forestry Personnel** - **Wayne Clatterbuck**, The University of Tennessee Agricultural Extension Service, Knoxville, TN (p. 7)

IV. Marketing Natural Resource Extension Programs (IMMIKALEE ROOM – SECTIONS LM - LEVEL THREE)

1:25PM  Introduction - Moderator: **Catalino Blanche**, USDA CSREES, Washington, DC

1:30PM  **Sleeping with the Enemy: Using Market Research in Extension** - **Geoff Kaine** and **Denise Bewsell**, University of New England, Armidale, Australia (p. 8)

2:00PM  **Stakeholder Social Values and Landscape Preferences: Implications for Conserving Biodiversity in Agricultural Landscapes** - **Jean Sandall**, **Geoff Kaine** and **Ray Cooksey**, School of Marketing and Management, University of New England, Armidale, NSW, Australia (p. 8)

2:30PM  **Building Relationships with Journalists through Fellowships** - **Martin Moen**, University of Minnesota, St. Paul, MN (p. 9)
Monday, June 3, 2002 — Concurrent Sessions: 3:25pm–5:00pm

I. High Tech Teaching - Part II (Chokoloskee Room - Level Two)

3:25PM Introduction - Moderator: Don Hanley, University of Washington, Seattle, WA

3:30PM Internet-based Forestry Extension - Jonathan High and Michael Jacobson, Pennsylvania State University, State College, PA (p. 9)

4:00PM Oh Brother Where Art Thou? Distance Education – Panacea or Problem... - Bill Hubbard, Cooperative Extension Service - Southern Region, University of Georgia, Athens, GA; George Kessler, Clemson University, Clemson, SC (p. 10)

4:30PM Land and Water Links: High School Students Host a Local Natural Resource Cable Television Series - Annie Jones and Rose Skora, Kenosha County University of Wisconsin-Extension, Bristol, WI (p. 10)

II. Extension at the Wildland/Urban Interface - Part II (River of Grass Ballroom – Salons Fi - Level One)

3:25PM Introduction - Moderator: Neal Wilkins, Texas A&M University, College Station, TX

3:30PM Wildland Fire Education Toolkit - Martha Monroe, School of Forest Resources and Conservation, University of Florida, Gainesville, FL (p. 11)

4:00PM Property Rights Education Program Reduces Conflict - Jefferson Edgens, Morehead State University at Jackson, Jackson, KY (p. 11)

4:30PM Central Florida Extension Agents Deliver Programs Supporting Sustainable Resource Use - Alice Kersey, Polk County Extension Service, University of Florida, Bartow, FL (p. 12)

III. Landowner Education - Part I (River of Grass Ballroom – Salons DEGH - Level One)

3:25PM Introduction - Moderator: Gary Goff, Cornell University, Ithaca, NY

3:30PM Natural Resources in Your Backyard - Mike Reichenbach and Eli Sagor, University of Minnesota, Cloquet, MN; Mike Demchik, University of Minnesota, Staples, MN (p. 12)

4:00PM Underserved Forest Landowner Program: Integrating Research with Extension Programs - Glenn Hughes, Marcus Measells, Thomas Monaghan, and Stephen Grado, Mississippi State University, Mississippi State, MS (p. 13)

4:30PM The Treeman - Steve Bowers, Oregon State University/Lane County Extension Service, Eugene, OR (p. 13)

IV. Water Quality Programs with Non-traditional Audiences

(Imokalee Room – Sections LM - Level Three)


3:30PM Providing Basic Water Education to Underserved Clientele - William Thom, Linda Heaton, Kimberly Henken and Jennifer Cocanougher, University of Kentucky, Lexington, KY (p. 14)

4:00PM Alaska Native American Water Quality Training and Monitoring Program - Raymond RaLonde, Marine Advisory Program, University of Alaska, Anchorage, AK (p. 14)

4:30PM Navajo Watershed Research Project - James K. Matlock, Diné College, Tsaille, AZ (Navajo Nation); Barron J. Orr and Laura E. Baker, University of Arizona, Tucson, AZ (p. 15)
Tuesday, June 4, 2002 — Concurrent Sessions: 1:25pm–3:30pm

I. Youth Involved in Community Service (Chokoloskee Room - Level Two)

1:25PM Introduction - Moderator: Jim Armstrong, Auburn University, Auburn University, AL

1:30PM Beyond the Boundaries: Extension Forms Partnerships for Environmental Community Stewardship to Control Purple Loosestrife - Douglas Jensen and Marie Zhuikov, University of Minnesota Sea Grant Extension Program, Duluth, MN; Shari McCorison, University of Minnesota Extension Service, St. Louis County 4-H Program, Duluth, MN (p. 15)

2:00PM Teaching Youth to Investigate Natural Resource Issues - Jerry Culen, University of Florida, Gainesville, FL (p. 16)

2:30PM The 4-H American Chestnut Project - Charles Lytton, Giles County Cooperative Extension, Pearisburg, VA; Jeff Kirwan, Virginia Tech Department of Forestry, Blacksburg, VA (p. 16)

3:00PM Getting W.E.T. (Water Education and Training) in Ferry County and the Colville Reservation - Daniel Fagerlie and Carolyn Blake, Washington State University/Ferry County Cooperative Extension, Republic, WA (p. 17)

II. Landowner Education - Part II (IMMOKALEE ROOM – SECTIONS LM - LEVEL THREE)

1:25PM Introduction - Moderator: Val Slack, Purdue University, West Lafayette, IN

1:30PM Enhancing Meat Goat Production and Woodlot Management through Controlled Woodland Browsing in Eastern Hardwood Forests - Peter Smallidge, Dan Brown, Tatiana Stanton, and Colleen Parsons, Cornell University, Ithaca, NY; Jim Finley and Mike Jacobson, Penn State University, State College, PA (p. 17)

2:00PM Facilitating Agroforestry Learning Communities to Advance Forest Farming Practice in the Northeast - Louise Buck, Marianne Krasny and Peter Smallidge, Cornell University, Ithaca, NY; Michael Jacobson, Penn State University, University Park, PA; Robert Beyfuss, Greene County Extension Association, Cairo, NY; Jim Finley, Penn State University, University Park, PA (p. 18)

2:30PM Marketing Forest Stewardship: Developing a Stronger Educational Message - Michael Jacobson, Jim Finley and Rance Harmon, Penn State School of Forest Resources, University Park, PA (p. 18)

3:00PM Living on the Land: Educating Small Acreage Owners About Resource Management - Susan Donaldson, University of Nevada Cooperative Extension, Reno, NV (p. 19)

III. Building Capacity to Address Diverse Natural Resources Issues (RIVER OF GRASS BALLROOM – SALONS DEGH - LEVEL ONE)

1:25PM Introduction - Moderator: Mike Spranger, University of Florida, Gainesville, FL

1:30PM Wisconsin woodland Leaders Institute – A Leadership Program That Could Be Replicated in Any State - Lowell Klessig, University of Wisconsin - Extension, Stevens Point, WI; Mike Kroenke, University of Wisconsin - Extension, Ashland, WI (p. 19)

2:00PM “State-Sponsored Open Space Protection Programs in the United States”—Inventory and Analysis - Mark Hilliker, Mike Koles, and Tom Wilson, University of Wisconsin - Portage, Winnebago and Waupaca Counties, WI (p. 20)

2:30PM Natural Resource Policy Debates on Public Television as an Extension Tool - the Alaska Resource Issues Forum Television Series Example - Rick Steiner, University of Alaska Marine Advisory Program, Anchorage, AK (p. 20)

3:00PM Conservation Easements: A New Option for Landowners, A Programming Opportunity for Extension - Deborah A. Gaddis, Mississippi State University, Mississippi State, MS (p. 21)
Tuesday, June 4, 2002 — Concurrent Sessions: 1:25pm–3:30pm (continued)

IV. Watershed Management (River of Grass Ballroom – Salons FI - Level One)

1:25PM  Introduction - Moderator: Charles Barden, Kansas State University, Manhattan, KS

1:30PM  Lake Access: Water Quality Information to Help Change Behavior - Barb Liukkonen, Barb Peichel, and Cindy Hagley, Minnesota Sea Grant Program, St. Paul, MN (p. 21)

2:00PM  Groundwater Education for Local Government Decision Makers - Cindy Hagley, University of Minnesota Sea Grant Program, University of Minnesota Extension Service, Duluth, MN; Diane Desotelle, Desotelle Consulting, PLC, Duluth, MN (p. 22)

2:30PM  Extension-Based Environmental Management Systems Programming - Gary W. Jackson, Elizabeth Ann R. Bird, Karl Hakanson, Mril Ingram and Lyn Kirschner, Farm & Home Environmental Management Programs, University of Wisconsin, Madison, WI (p. 22)

3:00PM  Western Lake Superior Basin Nonpoint Education for Municipal Officials – Pilot Project Results for Duluth Township, Minnesota and Sioux River Watershed, Wisconsin - Diane Desotelle, Desotelle Consulting, PLC, Duluth, MN; Sue O’Halloran, Lake Superior Research Institute – UWS; Gerald Sjerven, Natural Resources Research Institute, Duluth, MN; Cindy Hagley, University of Minnesota Sea Grant Program, University of Minnesota Extension Service, Duluth, MN; Nathan Hudson, Lake Superior Research Institute – UWS (p. 23)

Tuesday, June 4, 2002 — Concurrent Sessions: 3:55pm–6:00pm

I. Critical Thinking Skills Development for Youth (Imokalee Room – Sections LM - Level Three)

3:55PM  Introduction - Moderator: Mark LaSalle, Mississippi State University, Biloxi, MS

4:00PM  Curriculum Resources for Environmental and Natural Resource Education - Barry Fox, Virginia State University, Petersburg, VA (p. 23)

4:30PM  Ethics Curriculum for Sportsman Education - Gary Goff and Jody Enck, Cornell University, Ithaca, NY (p. 24)

5:00PM  Creating Tomorrow’s Skilled Workforce: Arboriculture Training & Internship Program - Nicholas Polanin, Rutgers Cooperative Extension of Somerset County, Rutgers University, Bridgewater, NJ (p. 24)

5:30PM  Integrating GPS Technology into the 4-H Program - Mike Clifford, Nottoway County Cooperative Extension, Nottoway, VA; Jeff Kirwan, Virginia Tech Department of Forestry, Blacksburg, VA (p. 25)

II. A New “View” of Natural Resources (River of Grass Ballroom – Salons DEGH - Level One)

3:55PM  Introduction - Moderator: Paul McCawley, University of Idaho, Moscow, ID

4:00PM  Lake Issues Education Through the Arts - Beverly Stencel, University of Wisconsin-Extension, Spooner, WI; Robert Korth, University of Wisconsin-Extension, Stevens Point, WI (p. 25)

4:30PM  Engaging the Public in Dialogue: Seeing the Forest: Art about Forests & Forestry - Scott Reed, Viviane Simon-Brown, and Brad Withrow-Robinson, Oregon State University Forestry Extension, Corvallis, OR; Shorna Broussard, Purdue University Forestry Extension, West Lafayette, IN; Molly Engle, Oregon State University Extension Development, Corvallis, OR (p. 26)

5:00PM  What Is Forestry as a Family Issue: Including Homemakers/Seniors in the Delivery and Making of Forestry Information - Marcella Szymanski, Gwenda Adkins and William Thomas, University of Kentucky, Lexington, KY (p. 26)

5:30PM  Personal Responsibility: Engaging Individuals in Sustainable Living - Viviane Simon-Brown, Oregon State University Forestry Extension, Corvallis, OR (p. 27)
Tuesday, June 4, 2002 — Concurrent Sessions: 3:55pm–6:00pm

III. Responsible Land Use Education (River of Grass Ballroom – Salons F1 - Level One)

3:55 PM Introduction - Moderator: Stephanie Larson, University of California, Santa Rosa, CA

4:00 PM 
Award Winning Natural Resource Extension Program for Responsible Land Development and Use - Phil Davis and Michael Thomas, Victor Institute for Responsible Land Development and Use, Michigan State University, East Lansing, MI (p. 27)

4:30 PM 
Michigan’s Citizen Planner Program: Enhancing Local Land Use Decisions - Pat Norris, Chris Grobbel, Dean Solomon and Jim Wiesing, Michigan State University, East Lansing, MI (p. 28)

5:00 PM “Lay of the Land” - Local Land Use Educational Program - Tom Wilson and Greg Blonde, University of Wisconsin Extension - Waupaca County - Waupaca, WI (p. 28)

5:30 PM “The Missing Fires” A Video Designed to Promote Understanding of Prescribed Fire Use - Darren McAvoy, Utah State University Extension’s Forest Landowner Education Program, Logan, UT (p. 29)

IV. Leveraging Resources by Training Volunteers (Chokoloskee Room - Level Two)

3:55 PM Introduction - Moderator: Elaine Andrews, University of Wisconsin, Madison, WI

4:00 PM The Wild Side of Conflict Resolution - William Andelt and Shelley Stanley, Colorado State University, Fort Collins, CO; Presentation by Daniel Einarsen, Colorado State University, Fort Collins, CO (p. 29)

4:30 PM Developing a Volunteer Base for Natural Resources Education and Outreach: The Texas Master Naturalist™ Program - Michelle Haggerty, Neal Wilkins, Patricia Morton and Elizabeth Gregory, Texas Master Naturalist Program, Department of Wildlife and Fisheries Sciences, Texas A&M University, College Station, TX (p. 30)

5:00 PM Innovative Plant Education Program Protects Native Ecosystems - Barbara Fahey, Colorado State University Cooperative Extension, Golden, CO (p. 30)

5:30 PM Volunteer Stream Monitoring: Involving Citizens in Collecting Quality Data - Barbara Liukkonen and Mary Gullickson, University of Minnesota Water Resources Center, St. Paul, MN (p. 31)

Wednesday, June 5, 2002 — Concurrent Sessions: 9:55am–12:00pm

I. Capacity Building for Youth (Immokalee Room – Sections LM - Level Three)

9:55 AM Introduction - Moderator: Natalie Carroll, Purdue University, West Lafayette, IN

10:00 AM CES YES-Building Capacity of Youth and Youth Leaders - Elaine Andrews and Kate Reilly, University of Wisconsin, Madison, WI; Martha Monroe, University of Florida, Gainesville, FL (p. 31)

10:30 AM The Engaged University -- From the Land and Sea, Making a Difference in Rural Alaska - Peter Stortz, Alaska Cooperative Extension Service, University of Alaska-Fairbanks, Palmer, AK (p. 32)

11:00 AM Putting the Pieces Together in Natural Resource Education - Nancy Mesner, Barbara Middleton, Andrea Fisher, Kristin Gilbert, Olivia Lester, Andrea Sline and Andree Walker, College of Natural Resources, Utah State University, Logan, UT (p. 32)

11:30 AM Adult Volunteerism in Pennsylvania 4-H Natural Resources Programs for Youth - Sanford Smith and James Finley, The Penn State University, University Park, PA (p. 33)
Wednesday, June 5, 2002 — Concurrent Sessions: 9:55am–12:00pm (continued)

II. The Evolving Extension Professional (River of Grass Ballroom – Salons FI - Level One)

9:55AM Introduction - Moderator: Bob Brown, Texas A&M University, College Station, TX

10:00AM Forestry: Area Specialty Advanced Training (FASAT) A Research-based, Service Education Program - Coleman Dangerfield Jr., David Moorhead, Kim Coder, Bob Izlar, Ben D. Jackson, and William G. Hubbard, Daniel B. Warnell School of Forest Resources, The University of Georgia, Athens, GA (p. 33)

10:30AM Lessons Learned from a Short-Term Professional Development Assignment at USDA- Cooperative State Research, Education and Extension Service (CSREES) - Eric Norland, Ohio State University Extension, Columbus, OH, (Temporary assignment to USDA-CSREES, Washington, DC); Larry Biles, USDA - Cooperative State Research, Education and Extension Service, Washington, DC (p. 34)

11:00AM Establishing Professional Standards and Continuing Education Requirements for Environmental Education Providers - Richard Osorio, The University of Georgia, Athens, GA (p. 34)

11:30AM Policy, Plans and Programs: How NREM Will Change Your Life Forever! - Bruce Wilkins, Department of Natural Resources, Cornell University, Ithaca, NY; Bill Hubbard, Cooperative Extension Service - Southern Region, University of Georgia, Athens, GA (p. 35)

III. Developing and Sustaining Collaborations (Chokoloskee Room - Level Two)

9:55AM Introduction - Moderator: James P. Dobrowolski, Washington State University, Pullman, WA

10:00AM Addressing Community Capacity: The Collaboration Framework - Viviane Simon-Brown, Oregon State University Forestry Extension, Corvallis, OR (p. 35)

10:30AM Extension at the Cutting Edge: Conflicts of the Water - Mindy Habecker, Dane County University of Wisconsin-Extension, Madison, WI (p. 36)

11:00AM Approaches for Resolving Land Use Issues at the Local Level - Cathy Seyler and Michael Jacobson, Penn State School of Forest Resources, University Park, PA (p. 36)

11:30AM The Spatial Dimensions of Minority Forestland Ownership - Rory Fraser and Yong Wang, Alabama A&M University, Normal AL; Jim Gan, Texas A&M University, College Station, TX (p. 37)

IV. Continuing Education for Professionals (River of Grass Ballroom – Salons DEGH - Level One)

9:55AM Introduction - Moderator: Bob Pierce, University of Missouri, Columbia, MO

10:00AM Learning on the Job: A Distance-Based, In-Service Education Course for Natural Resource Professionals - Joe Bonnell, Anne Baird, and Gina Zwerling, Ohio State University Extension, Columbus, OH (p. 37)

10:30AM Information Needs for Natural Resource Income Opportunities for Agricultural Extension Agents and Professional Foresters in the Mid-Atlantic Region - Jonathan Kays, Maryland Cooperative Extension, Keedysville, MD (p. 38)

11:00AM Delivery of Agricultural Water Quality Programs using a Regional Format - Lloyd Walker, Colorado State University, Fort Collins, CO (p. 38)

11:30AM Combining History with Ecology to Teach Wildlife Habitat Conservation - Will Sheftall and Stan Rosenthal, University of Florida Extension, Tallahassee, FL; Geoff Brown, Florida Fish and Wildlife Conservation Commission, Tallahassee, FL (p. 39)
Poster Sessions

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2. Team Building Results From Timber Tax Seminars - David Miller and Edward Smith, Ohio State University Extension, Caldwell, OH (p. 43)

Leveraging Resources by Training Volunteers

3. Gardeners to Neighbors - Norman Moll, Ohio State University-Lucas County, Toledo, OH (p. 44)

4. Gypsy Moth Specialization for Extension Master Gardener Volunteers - Amy Stone, Ohio State University Extension - Lucas County, Toledo, OH; Joe Boggs, Ohio State University Extension - Hamilton County and SW District, Cincinnati, OH (p. 44)

5. Adapting the Master Gardener Concept for Urban/Community Forestry - Michael Kuhns and Jerry Goodspeed, Utah State University Cooperative Extension, Logan, UT; Steve Rasmussen, Nebraska Forest Service, Norfolk, NE; Chris Carlson and Scott Josiah, University of Nebraska Cooperative Extension, Norfolk and Lincoln, NE (p. 45)

6. The Florida Master Naturalist Program - A New Model for Environmental Education - Martin Main and Ginger Allen, University of Florida, Immokalee, FL (p. 45)

7. Volunteers Teach Youth about Local Natural Resource Concerns - Natalie Carroll, Purdue University, West Lafayette, IN (p. 46)

Capacity Building for Youth

8. New 4-H Wildlife Manuals - Natalie Carroll, Purdue University, West Lafayette, IN (p. 46)

9. Water Wizard Van - A Traveling Water Resources Education Program - Barry Fox, Virginia State University, Petersburg, VA (p. 47)

10. Demonstrating Stream Processes - Duane Friend, University of Illinois Extension, Springfield, IL (p. 47)

11. South Carolina’s Natural Resource Career Camp: Enhancing the Appreciation of Forestry and Wood Products Industry by the Minority Youth - James Hill, Robin Glenn, and Suresh Londhe, South Carolina State University, Orangeburg, SC; Michelle Alford, South Carolina Department of Health and Environmental Control, Columbia, SC (p. 48)

12. Florida’s Environmental Education Institute - Martha Monroe, School of Forest Resources and Conservation, University of Florida, Gainesville, FL (p. 48)

13. Michigan’s Experience with the National 4-H Sportfishing Program and Its Effectiveness as a Volunteer Training Model in Natural Resources Youth Education - Heather Van Den Berg and Shari Dann, Michigan State University Department of Fisheries and Wildlife, East Lansing, MI (p. 49)

High Tech Teaching

14. Distance Education-A Case Study in Practical Application - Kyle Cecil and Dave Feltis, University of Illinois Extension, Urbana, IL (p. 49)

15. Connecting People to Their Environment: An Online Bird Monitoring Program - Mark Hostetler, Martin Main, and Jiannong Xin, University of Florida, Gainesville, FL (p. 50)
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16 .... RangeSpace: A Precision Approach for Natural Resource Management on Southwestern Rangelands - **Barron J. Orr**, University of Arizona, Tucson, AZ; **M. Susan Moran**, USDA-ARS Southwest Watershed Research Center, Tucson, AZ; **V. Philip Rasmussen**, Utah State University, Logan, UT; **Jiaguo Qi**, Michigan State University, East Lansing, MI; **Marc R. Horney**, University of California Cooperative Extension, Orland, CA; **Terrell T. Baker III**, New Mexico State University, Las Cruces, NM; **Loretta Singletary**, University of Nevada Cooperative Extension, Yerington, NV (p. 50)


18 .... Extension Programming via Distance Education Technology: Perceptions and Cost Savings - **Robert E. Bardon**, **Scott Payne**, **Rick Hamilton**, **Chris Moorman**, and **Susan Moore**, North Carolina State University, Raleigh, NC (p. 51)


20 .... Using “Coached Planning for Landhelp” and “Understanding the Landscape” to Elevate Natural Resources Education and Management – **Delwin E. Benson**, Department of Fishery and Wildlife Biology, Colorado State University, Fort Collins, CO (p. 52)

**Landowner Education**

21 .... Stand Table Projection Techniques -- from Simple to Complex - **Quang V. Cao**, School of Forestry, Wildlife, and Fisheries, Louisiana State University, Baton Rouge, LA (p. 53)

22 .... Assessment of Non-appurtenant Woodlot Owners’ Forest Management Activities in New Jersey Relative to Farmland Assessment and Deer Densities - **David Drake** and **Mark Vodak**, Rutgers Cooperative Extension, New Brunswick, NJ (p. 53)

23 .... Financing Reforestation: The Landowner’s Dilemma and Extension Assistance - **Deborah A. Gaddis** and **Donald Grebner**, Mississippi State University, Mississippi State, MS (p. 54)

24 .... Old Approaches to New Forestry Programming - **Gary Graham**, Ohio State University Extension, Northeast District, Wooster, OH; **Kathy Smith** and **Randy Heiligmann**, Ohio State University Extension, Main Campus, Columbus, OH; **Dave Apsley**, Ohio State University Extension, South District, Jackson, OH; **Kate Wiltz**, Ohio State University Extension, Main Campus, Columbus, OH (p. 54)

25 .... Reforestation Of Shoals Of The Lake Hartwell Area - **Charles Rice**, University of Georgia - Hart County - Hartwell, GA (p. 55)

**Extension at the Wildland/Urban Interface**

26 .... Improving Water Quality In Golf Course Management - **Charles Rice**, University of Georgia - Hart County Extension Office, Hartwell, GA (p. 55)

27 .... Ticked of in Mississippi: Extension Forestry Teaches Mississippians About the Symptoms of Lyme Disease and Preventative Measures - **Robert E. Carter** and **George M. McCullars**, Mississippi State University, Mississippi State, MS (p. 56)

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5. **Ohio State University Extension Community - Based Watershed Management Program** - Jerry Iles, Anne Baird, Robert McCall, J. P. Lieser and Dana Oleskiewicz, Ohio State University Extension, Columbus, OH (p. 61)

6. **Restoring Blackberry-Dominated Riparian Zones: A Thorny Issue** - Max Bennett, Randy White, and Hudson Minshew, Oregon State University Extension Service, Central Point, OR (p. 61)

7. **Assessing Riparian Buffer Effectiveness** - Charles J. Barden, Kyle Mankin, Daniel Devlin and Wayne Geyer, Forestry Division, Biological and Agricultural Engineering Department, and Agronomy Department, Kansas State University, Manhattan, KS (p. 62)

8. **GRASS ROOTS, A Residential Water Quality/Lawn Care Program** - Suzan E. Craik, Virginia Cooperative Extension, Chesterfield, VA (p. 62)

9. **Communication Enhancement Among Mississippi Watershed Stakeholders** - Larry Oldham, Mississippi State University, Starkville, MS; Mark LaSalle, Mississippi State University, Biloxi, MS; Christine Olsenius, Southeast Watershed Forum, Chattanooga, TN (p. 63)

**Knowledge: Discovery, Transfer, and Use**

10. **Mississippi Poultry Litter-Based Nutrient Management Programming - The Newton Experience** - Larry Oldham, Mississippi State University, Starkville, MS (p. 63)

11. **Economic Consequences and Public Awareness of Red Tide Events in Coastal Florida Communities** - Chuck Adams, Food and Resource Economics Department / Florida Sea Grant Program, University of Florida, Gainesville, FL (p. 64)

12. **Oysters, Vibrio vulnificus, “Public” Health and Extension’s Role in Education** - William T. Mahan Jr., FL Sea Grant Extension Program, University of Florida, Apalachicola, FL (p. 64)

13. **CampUShed, Stormwater Management and Education** - Tim Lawrence, Martin Quigley, Tricia Petras, Laura Shinn, Kevin Wagner, and Larry C. Brown, The Ohio State University, Columbus, OH; Presenter: Joe Bonnell, Ohio State University, School of Natural Resources, Columbus, OH (p. 65)

14. **A Working Forest that Integrates Teaching, Research and Extension** - Peter Smallidge, Gary Goff, Steve Morreale, and Don Schaufler, Cornell University, Ithaca, NY (p. 65)

**Water Quality Programs with Non-traditional Audiences**

15. **VI*A*Syst - Voluntary Pollution Prevention in the Virgin Islands** - Julie Wright and Dale Morton, Cooperative Extension Service, University of the Virgin Islands, St. Thomas, VI (p. 66)

16. **Innovative Ways to Bring Marine Stewardship to Diverse Audiences** - Marella Crane, University of Florida Sea Grant Extension Program, Miami, FL (p. 66)

17. **Paralytic Shellfish Poisoning: The Alaska Problem** - Raymond RaLonde, Marine Advisory Program Extension Effort, Marine Advisory Program, University of Alaska, Anchorage, AK (p. 67)
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18 .... Amish Water Quality and Nutrient Management Education - James J. Hoorman, Ohio State University Extension, Kenton, OH; Robert McCall, Ohio State University Extension, Findlay, OH (p. 67)

19 .... Encuentro Con El Mar - Carmen González-Toro, Juan González Lagoa, and Saul Wiscovich, Puerto Rico Agricultural Extension Service, University of Puerto Rico-Mayagüez Campus, Mayagüez, PR (p. 68)

20 .... Plot-Level Determinants of Adoption of Soil and Water Conservation (SWC) Measures by Subsistence Farmers in Ethiopia - Lars Drake and Wagayehu Bekele, Swedish University of Agricultural Sciences, Department of Economics, Uppsala, Sweden (p. 68)

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21 .... The Natural Areas Training Academy, An Innovative Partnership - Peter Colverson, The Nature Conservancy, Gainesville, FL (p. 69)

22 .... How to Grow a National Program: Lessons Learned from the Land-Grant - CSREES Forestry Team - Eric R. Norland, Ohio State University Extension, Columbus, OH, (temporary assignment to USDA-CSREES, Washington, DC); Nancy H. Bull, University of Connecticut - Cooperative Extension System, Storrs, CT; Larry E. Biles, USDA - Cooperative State Research, Education and Extension Service, Washington, DC (p. 69)

23 .... Graduate Education in Forestry and Natural Resources Extension - Results of a Survey - James E. Johnson and Franklin A. Bruce, Virginia Tech, Blacksburg, VA (p. 70)

24 .... Focus Groups as a Tool for Needs Assessment in Extension Programs - Marcus K. Measells and Stephen C. Grado, Mississippi State University, Mississippi State, MS (p. 70)

25 .... Involving Stakeholders in Extension Curriculum Design: A Case Study of Developing the Michigan Salmon in the Classroom Program for Fisheries and Watershed Education - Laura Granack and Shari L. Dann, Michigan State University, East Lansing, MI (p. 71)

A New “View” of Natural Resources

26 .... Municipality Collaboration to Protect and Manage Our Urban Forest against Gypsy Moth and Other Tree Pests - Amy Stone, Ohio State University Extension - Lucas County, Toledo, OH (p. 71)

27 .... Building Eco-Friendly Walkways and Trails in the Virgin Islands - Dale Morton, Toni Thomas and Olasee Davis, University of the Virgin Islands, St. Thomas and St. Croix, VI (p. 72)

28 .... The Rural Technology Initiative: A Pilot Program for Technology Transfer to Rural Forest Communities in Washington State - Bruce Lippke and Larry Mason, University of Washington, College of Forest Resources, Seattle, WA; Donald P. Hanley, Washington State University, Department of Natural Resource Sciences, Pullman WA (p. 72)
SPEAKER ABSTRACTS

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Presenting authors appear in **bold**.

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**Example**: (M, 1:30, I) refers to Monday, 1:30PM, Session I
Comparing Virtual and Traditional Forestry Field Tours

Elissa Easley, Rick Fletcher, Ed Jensen and Mark Rickenbach
Oregon State University, Corvallis, OR

Virtual (web-based) tours are among the many new educational tools, available through Internet technology, with Extension applications. While technology exists to create virtual tour web pages, little is understood about how well they meet educational objectives and whether they can be effective substitutes for traditional field tours. The Sustainable Forestry Partnership at Oregon State University created virtual and field tours to illustrate the Montreal Criteria and Indicators for sustainable forestry. The two tours were evaluated using responses from local members of the Society of American Foresters, family forestland owners, and OSU faculty, staff and students. This presentation will explore results of the comparison and discuss implications for Extension natural resource education.

Elissa Easley, Oregon State University, 280 Peavy Hall, Corvallis, OR 97331, USA, Phone: 541-737-4991, Fax: 541-737-3049, Email: elissa.easley@orst.edu
Woodland Options Web-based Course for Private Forest Landowners (M, 2:00, I)

Dylan Jenkins and Jim Johnson
Virginia Tech College of Natural Resources, Blacksburg, VA

Jim Starr
Virginia Department of Forestry, Charlottesville, VA

The internet provides a potentially effective and efficient means for transferring natural resource management information to an increasingly urban, absentee, computer-literate private forest landowner demographic. In addition, many “veteran,” e.g., older, resident, landowners now use the internet regularly to obtain natural resource management information. While surveys of forest landowners indicate that these two groups differ in many regards, both face similar challenges in gaining access to timely and relevant natural resource management information and relating that information to their own goals and on-the-ground management options.

To meet this challenge, Virginia Tech’s Department of Forestry and the Virginia Department of Forestry developed and implemented an internet-based course for forest landowners entitled Woodland Options. Woodland Options was designed to familiarize absentee and resident landowners with their forests, and to help landowners develop specific options for their woodland. Conducted in a “mentored” learning environment, participants were assigned a mentor team consisting of a local forester and outstanding forest landowner. Participants interacted weekly via email discussion groups with their mentor team and with their working group consisting of other landowners enrolled in the course from their region.

Course modules consist of a basic and advanced assignment. Absentee landowners who could not visit their property during the course completed the basic assignment entirely online consisting of online readings, virtual tours, short video clips and a review quiz. Landowners who could visit their property completed the advanced assignment consisting of the basic assignment plus hand-on activities such as a deed search, orienteering exercise, boundary line identification, tree species ID, and forest stand delineation. Participation by all family members was encouraged throughout the course activities.

Dylan Jenkins, Virginia Tech Department of Forestry, 216-B Cheatham Hall (0324), Blacksburg, VA 24061, USA, Phone: 540-231-6391, Fax: 540-231-6391, Email: dylan@vt.edu

Satellite Delivery of Water Resources Programs in Pennsylvania (M, 2:30, I)

Bryan R. Swistock, William E. Sharpe and John Dickison
The Pennsylvania State University, University Park, PA

Water resources programs have traditionally been delivered by specialists at county meetings. These programs allow for audience interaction but are time consuming and expensive for specialists. In 1998 we experimented with satellite delivery of water resources programs to determine if we could reach the target audiences more efficiently while maintaining the same educational effectiveness present in the traditional programs. A pond management program was delivered to 1,100 people and a drinking water program was delivered to 535 attendees. Evaluations were sent to attendees six months after the programs to gauge viewer opinions and actions taken. Both programs were well received by attendees with nearly all ranking them as good or excellent. Nearly 90% also indicated that they were likely to attend future satellite programs offered by Extension and about two-thirds preferred a local program delivered by satellite to a traditional program at a regional location. Over half of the attendees took some action within six months after the program and 20% indicated that they had saved money. Results from the satellite drinking water program were compared to previous surveys of the traditional drinking water program. The satellite program met the same educational objectives and was cheaper and less time consuming for specialists compared to the traditional program. However, the satellite program attracted fewer attendees per county and allowed for limited audience interaction. Many attendees also suggested that satellite programs be shorter than two hours. Given these results, satellite delivery will continue to be used to deliver shorter water resources programs.

Bryan Swistock, The Pennsylvania State University, 132 Land and Water Research Building, University Park, PA 16802, USA, Phone: 814-863-0194, Fax: 814-865-3378, Email: brs@psu.edu
Understanding the Issues and Challenges Facing Small-Scale Nonindustrial Forest Landowners in Washington State
(M, 1:30, II)

Janean H. Creighton, David M. Baumgartner and Keith A. Blatner
Department of Natural Resource Sciences, Washington State University, Pullman, WA

Washington State University Natural Resources Extension faces the increasing challenge of meeting the needs of a changing clientele, as more people move from the cities into the urban/rural interface. Rural communities are growing, resulting in an increase in forest landowners with smaller-sized forest parcels. In 1999, a survey was mailed to NIPF landowners in Washington State. Of those landowners owning less than 20 acres (median size = 7 acres), 13% had requested assistance from a WSU forestry extension agent, as opposed to 26% of landowners owning more than 20 acres (median size = 52 acres). Eighty-six percent (86%) of landowners in both size groups rated the extension advice received as good to excellent. Of those respondents who indicated that they had used WSU extension educational materials and programs, 65% of small acreage landowners and 40% of landowners with over 20 acres, had used extension forestry and wildlife publications. However, less than 2% of small acreage owners had attended a forestry class or tour as opposed to 12% of landowners with larger holdings.

The management challenges facing small-scale forest landowners are unique. Forest fire, fragmentation, and conflicts with wildlife are a few of the issues facing forest landowners at the urban-rural interface. Many of these landowners are new to forest ownership, and although they may have small individual holdings, collectively they control a substantial amount of resources. This shift in forest landowner demographics, along with the significant political influence this group enjoys, underscores the importance of the small-scale forest landowner in Washington State.

Janean Creighton, Department of Natural Resource Sciences, Washington State University, Pullman, WA 99164-6410, USA, Phone: 509-335-2877, Fax: 509-335-2878, Email: creighton@wsu.edu

Oregon’s Backyard Woodland Program: Educating Landowners in the Rural-Urban Interface
(M, 2:00, II)

Stephen A. Fitzgerald
Oregon State University Extension Service, Redmond, OR

More and more people are living on small forested parcels in Oregon and across the Pacific Northwest. In Oregon alone, there are over 114,000 landowners owning 10 acres of forestland or less. We call this segment of landowners, “Backyard Woodland” owners.

These landowners have a variety of objectives but lack knowledge and experience in applying on-the-ground stewardship practices. In addition, many of them do not know where to turn for help when they have questions about insects, disease, fire, or other land ownership questions.

This segment of woodland owners represents a potentially significant new audience for Extension Forestry. To reach this audience, we designed, developed and delivered a new program called, “Backyard Woodlands.” Our objectives were to 1) make landowners aware of the benefits of active stewardship; 2) get landowners connected to resources that can help them better manage their property.

The Backyard Woodland Education Program involved designing and developing a resource notebook and conducting workshops around the state to pilot test the materials. The notebook provided the “educational foundation” around which workshops were developed and delivered.

In 2001, three workshops were held across Oregon. Approximately 62 landowners participated. Of these, over 60 percent were new to Extension Forestry programs. Each workshop was evaluated with participants asked to rate the quality and content of the workshop, notebook materials, and field trip. A 6-month impact survey has been designed and will be mailed to each participant in December 2001. Results of workshop evaluations and the 6-month impact survey will be presented.

Stephen Fitzgerald, Oregon State University Extension Service, 1421 South Hwy 97, Redmond, OR 97756, USA, Phone: 541-548-6088, Fax: 541-548-8919, Email: stephen.fitzgerald@orst.edu
An Extension Program to Protect Natural Resources at the Urban/Rural Interface (M, 2:30, II)

Brian K. Miller and Bob McCormick
Purdue University - West Lafayette, IN

The 2000 census shows that Indiana’s population increased 9.7% in the last ten years with some counties increasing by as much as 67%. Most of this growth is occurring through sprawl onto agricultural lands. This increased development and resulting land use changes has a significant impact on natural resources. As communities grow, local officials generally concentrate on the economic implications of growth and pay little attention to the natural resource implications of this growth. This presentation will describe a statewide extension program designed to assist communities protect their water and environmental resources as they plan their community’s future.

Planning With POWER (Protecting Our Water and Environmental Resources) is a statewide educational program linking local land use decision-making to watershed planning. Once linked together, the community can guide growth and development while still protecting the critical natural resources vital to the community’s future. This project builds upon the NEMO model and provides a mechanism by which local communities can seek education and technical assistance in developing land use plans in concert with watershed plans.

The Planning With POWER Project is coordinated by the Illinois-Indiana Sea Grant College Program and the Purdue University Cooperative Extension Service. This project forms the link between professionals and agencies involved in watershed planning and those involved with land use planning at the local level so that both issues are considered as local policy decisions are made. This presentation will describe the partnerships, technical resources, research, and user input required to make this statewide program effective at the local level.

Brian Miller, Purdue University, 1200 Forest Products Building, West Lafayette, IN 47907-1200, USA, Phone: 765-494-3586, Fax: 765-494-6026, Email: bmiller@fnr.purdue.edu

RangeView: Geospatial Tools for Natural Resource Management (M, 1:30, III)

Barron J. Orr, Stuart E. Marsh, Barbara S. Hutchinson, George B. Ruyle, Larry D. Howery and Paul R. Krausman
University of Arizona, Tucson, AZ

R. Mark Enns
Colorado State University, Fort Collins, CO

RangeView “Geospatial Tools for Natural Resource Management” (http://rangeview.arizona.edu ) is a “Synergy” Infomart for rangeland natural resource managers and decision-makers. The Infomart includes interactive tools that provide assistance in understanding vegetation dynamics across large areas and over time. These tools incorporate satellite imagery and digital maps in a way that compliment traditional rangeland management tools such as field-based inventory and monitoring techniques (i.e. the Parker 3-Step). The Infomart offers documentation and a tutorial to aid new users in their efforts to interpret geospatial information and understand the underlying technology. It also reports the status of research on cattle-wildlife-forage interactions-research that is based on the spatial and temporal analysis of vegetation dynamics. This Infomart is integrated into practical tools available on the Arizona “Managing Ranglands” (http://ag.arizona.edu/agnic/ ) segment of the Agriculture Network Information Center

Within the larger Synergy initiative, prototype Infomarts are being implemented to demonstrate how Earth Observing System (EOS) satellite imagery and other commercial data can be used to address real-world problems confronting users, particularly in State, local and tribal government agencies. The EOS Data and Information System (EOSDIS) Synergy project is intended to enhance the efforts of NASA and universities around the United States who have been investigating potential applications of remote sensing data. NASA sponsors these efforts under a contract with Raytheon, who is the prime contractor for the development of the EOSDIS Core System.

Barron J. Orr, University of Arizona Cooperative Extension, 1955 E. 6th Street, Suite 205, Tucson, AZ 85719, USA, Phone: 520-626-8063, Fax: 520-621-3816, Email: barron@ag.arizona.edu
Loggers Making a Difference in Achieving Sustainable Forestry (M, 2:00, III)

Jim Finley, Tim Pierson and Mike Jacobson
Penn State University, University Park, PA

Matt Keefer
Pennsylvania Bureau of Forestry, Harrisburg, PA

Loggers are a recognized force in sustaining forests, and education programs have in the past few decades strive to reach these often highly skilled technicians to affect their potential impacts on forest sustainability. Across the nation, individual state Sustainable Forestry Initiative SM (SFI) Programs often in partnership with cooperative extension have increased outreach efforts to reach loggers. Recent research at Penn State has shown that SFI training in Pennsylvania is making a difference in logger attitudes that are likely to translate into on the ground practice change. This paper will present the essential findings from this research and present components of two education programs designed cooperatively by SFI, cooperative extension, and the US Forest Service for loggers, foresters, and private forest landowners, which focus on forest sustainability.

The courses introduce ecology and silviculture in the first level and then use data collection and dichotomous decision trees in the second course to demonstrate how cutting affects forest sustainability. Users learn to simply and rapidly measure regeneration, interfering plants, assess deer density, and evaluate overstory species composition and stand structure. They then summarize this data and use a dichotomous decision tree to characterize the impacts of various cutting approaches and learn to seek assistance when they may use practices that adversely affect sustainability. Users have found the method useful and practical and have commented that it will change their practices. Evolving course changes include incorporating stand visualization and growth models to demonstrate existing and future conditions from data collected during the one-day workshop.

Jim Finley, School of Forest Resources, Penn State University, 7 Ferguson Building, University Park, PA 16802, USA, Phone: 814-863-0401, Fax 814-865-6275, Email: fj4@psu.edu

The Tennessee Forestry Academy: Training Non-Degree Forestry Personnel (M, 2:30, III)

Wayne K. Clatterbuck
The University of Tennessee Agricultural Extension Service, Knoxville, TN

The Tennessee Forestry Academy is a 3-week training program for non-degree forestry personnel (forestry technicians and aides) of the Tennessee Division of Forestry conducted by Forestry and Wildlife faculty at The University of Tennessee. The objective is to provide training in the science, economics and application of forestry so that these technicians and aides can assist service foresters in working with private landowners. With 30 service foresters providing technical assistance for 450,000 private landowners in Tennessee, this training is essential to meet the demand for technical assistance from landowners.

Subjects covered include dendrology, ecology and silviculture, urban forestry, mensuration, tree improvement, nursery practices, wood products utilization, wildlife management, herbicides, best management practices, timber sales, taxes, and recreation. Twelve teaching, research and extension faculty members assist with various aspects of the Academy. Students are fairly uncomfortable with classroom lectures and prefer to learn by hands-on applications. Most of the instruction is field-oriented with numerous labs and trips. The culmination of the Academy is the formulation by students of a landowner management plan utilizing information received from Academy classes.

The Academy has been conducted for 6 years for 154 students. Funding from the Forestry Division provides per diem for each student at the University of Tennessee campus and faculty instruction. To our knowledge, the Academy is the only formal, intensive instruction program conducted for non-degree state forestry personnel in the United States. The set-up, obstacles and benefits of the Academy are discussed in the presentation including surveys about the Academy from the students and how Division foresters are utilizing these students.

Wayne Clatterbuck, The University of Tennessee, Agricultural Extension Service, Dept. of Forestry, Wildlife & Fisheries, P.O. Box 1071, Knoxville, TN 37901-1071, USA, Phone: 865-974-7346, Fax: 865-974-4714, Email: wclatterbuck@utk.edu
Sleeping with the Enemy: Using Market Research in Extension  
(M, 1:30, IV)

Geoff Kaine and Denise Bewsell  
University of New England, Armidale, Australia

Consumer behaviour theory and market research techniques have the potential to offer unique insights into the complexity of managing change in natural resources. Consumer behaviour theory provides a model of the decision making process for change. This model highlights the importance of understanding the needs of the decision maker.

We have used market research to identify information needs of landholders for natural resource issues in two agricultural industries - dairy and horticulture. By identifying the information needs of target audiences in these industries our approach provided a framework for assessing the contribution that extension can make to accelerating change.

Case study one: In the dairy industry research on soil management revealed obstacles to the adoption of new management practices were insufficient information about appropriate practices and limited awareness of the information that was already available. As a result of the research, dairy extension and research programs were redesigned to overcome these obstacles.

Case study two: In horticulture we were unable to identify any information needs for water resource management. Instead we found external factors such as infrastructure development were the major obstacles to change. This suggests that the role for extension is limited in this instance and that policy initiatives are required to accelerate change in this industry.

Denise Bewsell, University of New England, School of Marketing and Management University of New England, ARMIDALE, NSW AUSTRALIA, 2351, Phone: +61 2 6773 2946, Fax: +61 2 6773 3914, Email: dbewsell@metz.une.edu.au

Stakeholder Social Values and Landscape Preferences: Implications for Conserving Biodiversity in Agricultural Landscapes  
(M, 2:00, IV)

Jean Sandall, Geoff Kaine and Ray Cooksey  
School of Marketing and Management, University of New England, Armidale, NSW, Australia

Continuing loss and degradation of native vegetation in agricultural landscapes are internationally recognised as major threats to biological diversity and sustainable agricultural production. Despite a growing awareness of the benefits of conserving native vegetation in agricultural landscapes, conservation efforts to date have met with limited success. On one hand there are long term public benefits to be gained from conserving native vegetation. On the other hand, the costs of conserving native vegetation, both in terms of potential losses in production and direct management costs, are largely borne by individual land holders. Progress in ensuring an equitable distribution of the benefits and costs of conserving native vegetation in agricultural landscapes has been impeded by stakeholder conflict over how native vegetation should be managed and appropriate mechanisms for its conservation.

In this Australian case study we aimed to provide an understanding of the social values and landscape preferences underpinning the different views that stakeholders have on native vegetation and its management. The implications of this understanding for the design of programs aimed at conserving native vegetation and biodiversity were also explored. 202 interviews were conducted with primary producers, scientists, extension professionals, government policy makers and conservationists. Five social value orientations were identified, which formed a continuum with respondents orientated towards individual good at one end and respondents orientated towards social and environmental good at the other end. Respondents’ social value orientations were related to their stakeholder group membership, their approach to conservation and the characteristics that appealed to them in agricultural landscapes.

Jean Sandall, School of Marketing and Management, University of New England, Armidale, NSW, 2351, Australia, Phone: +61 2 67733479, Fax: +61 2 6773 3419, Email: jsandall@pobox.une.edu.au
Building Relationships with Journalists through Fellowships (M, 2:30, IV)

Martin H. Moen
University of Minnesota, St. Paul, MN

If you use the news media to help educate the public about your work, hosting a multi-day fellowship for journalists will help you increase your visibility. The author recently hosted a successful fellowship in northern Minnesota’s Boundary Waters Canoe Area Wilderness.

A fellowship is a continuing education opportunity for journalists that puts them in direct contact with University experts for an extended period. A fellowship gives you the opportunity to showcase your work, and that of your partners, at a depth and breadth that typical interactions with journalists don’t allow.

There are several useful strategies for promoting a journalism fellowship with a natural resources theme. First, monitor which local journalists cover the topics you’ll be covering. Second, identify additional interested journalists in your region by using either the Bacon’s or Burrelle’s database directory of media organizations. Third, purchase mailing lists from the National Association of Science Writers and the Society of Environmental Journalists.

A successful natural resources journalism fellowship will minimize the time spent in a classroom and focus on outdoor, hands-on experiences. Providing background readings in advance will enable the journalists to ask more informed questions, and minimize the time spent absorbing the technical details of your program.

Providing opportunities for social interaction between journalists and experts is another critical factor. The goal is to build a long-lasting relationship that flowers into a beneficial exchange for both parties. Consistent and timely follow-up with the journalists will help solidify the relationship.

Martin H. Moen, College of Natural Resources, University of Minnesota, 2003 Upper Buford Cir., #235, St. Paul, MN 55108, USA, Phone: 612-624-0793, Fax: 612-624-8701, Email: mmoen@umn.edu

Internet-based Forestry Extension (M, 3:30, I)

Jonathan High and Michael Jacobson
Pennsylvania State University, State College, PA

The Internet Forestry Explorer is a website designed to present information about forest and watershed management. The target audience is extension agents working in the natural resource field, citizens of the featured forests and watersheds, and to a lesser extent anyone who is interested in learning more about their state’s natural resources.

Features of the website include an interactive GIS that allows the creation of tailored maps, virtual “walking tours” where users can view photos, pages of forest management examples, and links to organizations and other pages of interest. One site was created as part of a three-university virtual forest project. Penn State chose a private, award-winning tree farm to discuss and highlight forest sustainability according to the Montreal Protocol. This site includes pages describing the 7 criteria and 67 indicators of the Montreal Protocol, as well as a walking tour of the tree farm.

A survey was conducted to analyze the effectiveness of the Internet Forestry Explorer in educating citizens in the selected watersheds, Pennsylvania extension agents, and other users.

The technical construction of the website, the results of the survey, and how extension agents can use the site will be discussed.

Jonathan High, Pennsylvania State University, 111 Ferguson Bldg., State College, PA 16802, USA, Phone: 814-865-1441, Email: jlh169@psu.edu
**Oh Brother Where Art Thou? Distance Education — Panacea or Problem...**

*(M, 4:00, I)*

**Bill Hubbard**  
Cooperative Extension Service - Southern Region, University of Georgia, Athens, GA  

**George Kessler**  
Clemson University, Clemson, SC

Two major distance education initiatives were launched in the Southern region of the United States in the year 2000. The first was a satellite videoconference short course for forest landowners (The Master Tree Farmer 2000 and 2001 series) and the second was a virtual library of internet resources and publications (www.forestryindex.net). Both efforts involved regional (multistate) steering committees composed of federal, state and private stakeholders. Close to 4,000 landowners and 300 natural resource and extension professionals participated in the 21-hour conference videoconference live and more than 1,000 have viewed the videos. The results have been extremely positive and plans are underway for advanced courses, a wildlife management course and special series or topics such as forest taxation, disaster management and preparedness, etc. The virtual library contains more than one thousand forestry and natural resource related links and is organized by major category and topic. Costs and impacts of these efforts will be discussed along with issues and comments from those participating in the event.

A general review of where distance education and other distance outreach technologies will also be presented along with the opportunity to discuss what place these opportunities have in assisting forest owners, farmers and stakeholders with decision making. The presentation will also present the results of surveys and interviews that get at why Extension isn’t taking more of a leadership role in distance learning technologies.

Bill Hubbard, Cooperative Extension Service - Southern Region, University of Georgia, 4-402 Forest Resources Building, Athens, GA 30602, USA, Phone: 706-542-7813, Fax: 706-542-3342, Email: whubbard@uga.edu  

George Kessler, Department of Forest Resources, 272 Lehotsky Hall, Clemson University, Clemson, SC 29634-1003, USA, Phone: 864-656-4836 Fax: 864-656-4786, Email: gksslr@clemson.edu

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**Land and Water Links: High School Students Host a Local Natural Resource Cable Television Series** *(M, 4:30, I)*

**Annie Jones and Rose Skora**  
Kenosha County University of Wisconsin-Extension, Bristol, WI

Kenosha County is undergoing significant urban growth and development, and faces the challenge of balancing this growth in conjunction with protecting and maintaining its natural resources. “Land and Water Links”, a feature segment on the County of Kenosha cable television program, “County Connections”, is a small part of a larger implementation plan intended to increase general awareness of natural resource issues in Kenosha County. This project helps spread awareness of local natural resource concerns among educators, students, public officials, and the general public. By using strategies like experiential learning and cable television, high school students and public officials can work together to deliver information about Kenosha County’s natural resource concerns to the general public.

Land and Water Links represents an integrated multi-agency approach to promoting the Kenosha County Land and Water Resource Management Plan (LWRMP) and features a collaboration with area high schools and their students including Westosha Central, Indian Trail Academy, and Wilmot high schools. Each ten-minute segment highlights one important natural resource topic. The high school students act as “on-air experts” for the segments that include a local, on-site visit to a place that corresponds with the topic and interviews with public officials. Program partners including Kenosha County Department of Planning and Development, USDA Natural Resource Conservation Service, and Kenosha County Division of Personnel work together with cooperating classroom teachers to prepare students in both topic content and the video production process.

Annie Jones, Rose Skora, Kenosha County UW-Extension, student presenters, PO Box 550, Bristol, WI 53104, USA, Phone: 262-857-1945, Fax: 262-857-1998, Email: annie.jones@ces.uwex.edu
Wildland Fire Education Toolkit  (M, 3:30, II)

Martha C. Monroe
School of Forest Resources and Conservation, University of Florida, Gainesville, FL

In 1999-2000 Florida’s Cooperative Extension Service partnered with the Division of Forestry (DOF) and The Nature Conservancy to develop a toolkit of materials to enable DOF and County Extension staff to deliver public programs on wildland fire. Surveys of experts and residents helped define the content of the materials, which was designed to provide information, quell fears, and prompt residents to take appropriate actions around high-risk homes.

The kits included 5 videos, a CD of 80 slides and PowerPoint presentation, press kit, roadside sign, teacher guide, and multiple copies of fact sheets, brochures, and door hangers. The kits were distributed in 3 in-service workshops in January 2000 and used to increase press coverage and develop public programs during the 2000 and 2001 wildfire seasons.

Since the initial program development and implementation, several evaluation tools have ascertained the degree to which the program succeeded. Response forms from the agents and DOF staff reported that 41 programs were conducted reaching about 2000 people. Work with local newspapers and TV stations to delivered information to 2.1 million residents about wildland fire. Toolkit materials have been used for displays at county fairs, malls, and conferences reaching an estimated 23,700 people.

One year later, surveys were sent to agents who attended the training to document what elements of the kit they used, what motivated them to conduct wildland fire programs, and what barriers prevented them from using the kit. Phone surveys were conducted with selected program participants to explore how the extension program helped them reduce their risk of wildland fire.

Martha Monroe, University of Florida, PO Box 110410, Gainesville, FL 32611-0410, USA, Phone: 352-846-0878, Fax: 352-846-1277, Email: mcmonroe@ufl.edu

Property Rights Education Program Reduces Conflict  (M, 4:00, II)

Jefferson G. Edgens
Morehead State University at Jackson, Jackson, KY

Agricultural lands are facing major threats from development. For many rural areas planning and zoning is absent and landowners are concerned about property rights. Property owners fear a loss of control and a threat to their livelihood.

Local governments want to manage growth in a way that is compatible and consistent with the needs of the community. Farmers are characteristically seen as “land rich but cash poor.” Consequently landowners feel threatened if they perceive a diminution in value of their property rights.

Usually lost in the discussion of new parks, greenways, rails-to-trails and planning and zoning is a sufficient and exhaustive discussion of property rights and landowner responsibilities. Research indicates that property right concerns are given short shrift and sublimated to the overall planning and zoning process. All questions need to be fully answered before beginning design charettes, or other planning ideas. Property rights are ignored to the community and landowners peril.

By placing property rights front and center in discussions of growth management, extension programs can defuse the potential for conflict and explosive public hearings. Educational material that is geared toward rural landowners and new residents that explains the nature of farming, right-to-farm laws and techniques to protect farmland also reinforces property rights. Kentucky Extension has tried to anticipate the questions and pitfalls related to discussion of growth management through the airing of rich discussions in property rights and responsibilities.

Jeff Edgens, Director, Morehead State University at Jackson, 1170 Main St., P.O. Box 602, Jackson, KY 41339, USA, Phone: 606-666-2800; Fax: 606-666-8496, Email: j.edgens@moreheadstate.edu
Central Florida Extension Agents Deliver Programs Supporting Sustainable Resource Use  
(M, 4:30, II)

Alice Kersey  
Polk County Extension Service, University of Florida, Bartow, FL

The author analyzed the 2000 Reports of Accomplishments of county Extension faculty in a 12-county Extension district in central Florida. The purpose of the review was to determine the nature and extent of programming for adult audiences that could be classified as making significant contributions to sustainable resource use. The counties involved in this analysis are home to more than 4 million people and a mix of urban and rural counties.

The types of county major programs selected for analysis were based on providing appropriate audiences with information related to the use and management of economically relevant natural resources such as: surface and ground water, energy; soils, recyclable materials, forests, etc. The types of audiences reached indicated that many Extension programs serve professional audiences working in local communities. Examples included: building contractors, hotel managers, pest control workers, urban planners, utility company managers, teachers and architects. Other common audiences were: homeowners, property managers, agricultural managers, and fishermen.

Seventy percent of the agents with adult audiences were involved in one or more county major programs directed toward best management practices that will assist Florida achieve a sustainable future. The extent of natural resource programming across this Extension district illustrates that natural resource management has now become the focal point of Extension programming in a rapidly developing area of our nation.

Alice Kersey, Polk County Extension Service, P.O. Box 9005, Drawer HS03, Bartow, FL 33831, USA, Phone 863-533-0765, FAX: 863-534-0001, Email: apke@gnv.ifas.ufl.edu

Natural Resources in Your Backyard  
(M, 3:30, III)

Mike Reichenbach and Eli Sagor  
University of Minnesota, Cloquet, MN

Mike Demchik  
University of Minnesota, Staples, MN

Creating a leading extension and outreach organization depends on how well we assess needs, implement programs, and evaluate impacts. The University of Minnesota has recently made major additions to its capacity for natural resources programming, leading to the creation of the Natural Resources in Your Backyard Program. This program incorporates a broad variety of educational approaches and project types under an umbrella program aimed primarily at small woodland owners. It makes use of the strengths of the extension system by reaching across county lines, building county-to-campus connections and including extension educators from several disciplines. The project builds partnerships with interested persons and organizations creating and strengthening connections and keeping extension relevant in today’s society.

The objectives of the Natural Resources in Your Backyard Program are to:

1. Create awareness about management options.
2. Increase the number of landowners that have and implement management plans.
3. Increase involvement in state and local land use policy development.
4. Create more and stronger relationships between the University community and private citizens, particularly forest landowners.
5. Create awareness about the potential economic and ecological impacts of forest management.

The program’s five primary evaluation tools will be discussed: individual interviews, focus group interviews, participant evaluations, log entry and expert or peer review. Program assessment, implementation, evaluation, and impacts to date will also be presented.

Mike Demchik, University of Minnesota, 1830 Airport Rd, Staples, MN 56479, USA, Phone: 218-894-5167, Fax: 218-894-5197, Email: demch001@umn.edu

Mike Reichenbach and Eli Sagor, University of Minnesota, Cloquet Forestry Center, 175 University Rd, Cloquet, MN 55720 USA, Phone: 218-879-0850 ext 123, FAX: 218-879-0855, Emails: reich027@umn.edu and esagor@umn.edu
Underserved Forest Landowner Program: Integrating Research with Extension Programs (M, 4:00, III)

Glenn Hughes, Marcus K. Measells, Thomas Monaghan and Stephen Grado
Mississippi State University, Mississippi State, MS

Forest ownership in the South is a significant family asset. Unfortunately, many private, non-industrial forest landowners, particularly minority and/or female landowners, are not realizing the full benefit of their land ownership.

Twenty-nine county-level Underserved Forest Landowner Workshops were conducted from 1998-2001 in Mississippi to address the needs of minority, female, and other underserved landowners. The MSU Extension Service, local County Forestry Associations, state and federal agencies, and others (e.g., forest industry, consultants) sponsored these workshops. Each workshop required a diverse local planning committee to plan, promote, and conduct the workshop. Speakers included tree farmers, foresters, and attorneys. The speakers addressed topics such as legal and ownership issues, marketing and environmental issues, forestry economics, and sources of assistance. The workshops concluded with a 30-minute question-and-answer session, a brief written evaluation, and a meal.

The workshops effectively reached many individuals who are “new” to extension. County Agents regularly felt that 50-70% of participants were new contacts. Landowners valued the information obtained at these workshops at $21.5 million.

This project has been expanded to a regional research and education effort involving the states of Alabama, Arkansas, Louisiana, Mississippi, and Tennessee. This effort involves 1862 and 1890 land grant institutions, landowners, and state and federal agencies. The ultimate goal is to enhance the management of forestland owned by underserved forest landowners in the South Central United States. Coordinated multi-state, multi-institutional efforts, based on proven state-based efforts, will become increasingly important due to stable or shrinking budgets.

Marcus Measells, Mississippi State University, Box 9881, Mississippi State, MS 39762, USA, Phone: 662-325-3550, Fax: 662-325-0027, Email: marcm@ext.msstate.edu

The Treeman (M, 4:30, III)

Steve Bowers
Oregon State University/Lane County Extension Service, Eugene, OR

Oregon’s rapidly changing demographics are placing an increasing emphasis on Forest Extension to offer information on non-timber issues. Forest Extension has successfully served industry and woodland owners, but an emphasis needs to be placed towards reaching new audiences utilizing non-traditional techniques to deliver non-traditional forest related issues.

Extension is in the business of contacting and educating clientele for their respective programs, and effective marketing is an integral part of any successful endeavor. The Treeman incorporates a non-traditional delivery technique to convey traditional and non-traditional forestry information. Workshops include Treeman T-shirt drawings. Magnets with a fax and phone number for response to a “Forestry questions: Ask The Treeman” label are available at Forest Extension activities and the Lane County Extension Service office.

Tips from The Treeman, the “Dear Abbey” of forestry related issues, entertains letters, phone calls and email questions about forestry issues. It is an entertaining and informative method of delivery utilizing whatever method best conveys the message, whether it be in discussing how woodpeckers avoid brain damage or explaining mitotic indexing.

Tips from The Treeman is a regular article in the quarterly newsletter Lane Woodland News, Northwest Woodlands and a component of the quarterly Lane County Extension newspaper insert in the Register Guard. The preceding outlets comprise a reader audience of nearly 70,000 individuals.

The presentation will discuss the value of new, non-traditional delivery methods, the importance of promotional tools, how topics are chosen for Tips from The Treeman and the method employed in delivering those topics.

Steve Bowers, Oregon State University/Lane County Extension Service, 950 West 13th Avenue, Eugene, OR 97402, USA
Phone: 541-682-7311, Fax: 541-682-2377, Email: steve.bowers@orst.edu
Providing Basic Water Education to Underserved Clientele (M, 3:30, IV)

William Thom, Linda Heaton, Kimberly Henken and Jennifer Cocanougher
University of Kentucky, Lexington, KY

A ready supply of safe drinking water is key for human health and economic development. Through basic water education, individuals can understand how their individual actions impact well and cistern water quality, risks for waterborne illnesses and the health and safety of their families. Educational programs of this nature often fail to target audiences such as small, limited resource farms and low economic groups.

Through a joint effort with Kentucky State University, the Environmental and Natural Resource Issues Task Force of the University of Kentucky Cooperative Extension Service developed a basic water education program. Low-literacy fact sheets, teaching guides, display easels, exhibit graphics, and a video program provided agents with tools to approach a variety of audiences. The program was implemented in 21 counties during 1999 and 2000 through the Small Farm, Family Development & Management, and Expanded Foods & Nutrition Education Programs. More than 330 educational presentations were made, reaching more than twenty-one hundred people. Topics addressed included waterborne illnesses, cistern care, drinking water well care, septic system use, agriculture best management practices, and water conservation. Agents and para-professionals documented practice changes, including the implementation of best management practices, having drinking water tested, cleaning cisterns, disinfecting wells, and inspecting septic systems. Counties experienced success in offering new programs to existing clientele groups and in reaching out to new clientele groups within their communities. The program was selected as a national award winner by the National Support Team for the Extension Natural Resources and Environmental Management Base Program in 2001.

Kimberly Henken, University of Kentucky, 233 Scovell Hall, Lexington, KY 40546, USA, Phone: 859-257-7775, Fax: 859-257-4352, Email: khenken@ca.uky.edu

Alaska Native American Water Quality Training and Monitoring Program (M, 4:00, IV)

Raymond RaLonde
University of Alaska, Marine Advisory Program, Anchorage, AK

In cooperation with the Alaska Native American Fish and Wildlife Society, the University of Alaska Marine Advisory Program plays an important role in training technicians and developing water quality monitoring programs for Native villages throughout Alaska. Initiated in the spring of 2000, over 110 technicians have been trained and monitoring programs established in 62 communities. Fears about contamination of traditional water supplies and the effects that surface water quality and habitat degradation may have on the survival of Pacific salmon, are the primary incentives for Native villages to participate in the program. The training program includes the effects of water quality on salmon physiology and survival, habitat evaluation and monitoring, water quality measurement, and designing a monitoring program. This presentation describes the training program, example village monitoring projects, and the significant results to date.

Raymond RaLonde, University of Alaska Marine Advisory Program, 2221 E. Northern Lights Blvd. #110, Anchorage, AK 99508, USA, Phone: 907-274-9691, FAX: 907-27-5242, Email: afrlr@uaa.alaska.edu
Navajo Watershed Research Project (M, 4:30, IV)

James K. Matlock
Diné College, Tsaille, AZ (Navajo Nation)

Barron J. Orr and Laura E. Baker
University of Arizona, Tucson, AZ

The primary objective of the project is to conduct applied, participatory research to characterize the condition of the Canyon de Chelly watershed, identify the primary processes involved in land cover change, and develop mitigation strategies with the participation of local stakeholders. The approach is designed to involve the ultimate constituents of any mitigation effort in research design, interpretation of results, and informing the intervention process. It is anchored at the primary data collection phase where local inhabitants will initially be asked to help define the problems associated with watershed degradation and suggest potential contributing factors, all within their own cultural framework. The information gathered in these initial discussions will serve as the framework for a land cover change detection using Landsat MSS, TM, and ETM+ imagery from 1973 to 2000, as well as a landscape-scale soil loss analysis based on an erosion model. Follow-on discussions at the community level will then dictate the substance of watershed characterization methodologies, and help identify model relationships between change factors and watershed deterioration. Through the institutional structure provided by local chapter livestock and natural resource committees, results will be brought back to the same communities so that local inhabitants can then participate directly in defining the design of mitigation strategies. The underlying goal is to use a participatory approach throughout the project, focusing local knowledge on the problems at hand and empowering stakeholders from the start to improve the potential of mitigation strategies to actually reduce or prevent further erosion.

Barron J. Orr, University of Arizona Cooperative Extension, 1955 E. 6th Street, Suite 205, Tucson, AZ 85719, USA, Phone: 520-626-8063, Fax: 520-621-3816, Email: barron@ag.arizona.edu

Beyond the Boundaries: Extension Forms Partnerships for Environmental Community Stewardship to Control Purple Loosestrife (T, 1:30, I)

Douglas A. Jensen and Marie E. Zhuikov
University of Minnesota Sea Grant Extension Program, Duluth, MN

Shari L. McCorison
University of Minnesota Extension Service, St. Louis County 4-H Program, Duluth, MN

Purple loosestrife biocontrol offers an opportunity for Sea Grant, Extension, agencies, and area organizations to partner to sponsor community stewardship projects aimed at curbing the spread. An invasive plant from Europe, purple loosestrife can quickly spread to wetlands, shorelines, and roadsides where it crowds out native vegetation and reduces wildlife biodiversity. Traditional control methods like cutting, burning, and herbicide treatment have met limited success. However, biocontrol releases of loosestrife-eating beetles can significantly reduce abundance allowing native plant re-colonization. In the Great Lakes, Sea Grant has collaborated with agencies conducting releases and led public outreach. Originally funded to develop a 4-H youth project, Minnesota Sea Grant and the University of Minnesota Extension Service South St. Louis County Extension 4-H Program partnered with the Minnesota Department of Natural Resources to offer a successful pilot release with 4-H clubs in summer 2000. Through the experience, young people got excited about science and learned to appreciate wetlands. Most importantly, they learned about the threats of purple loosestrife and ways that they could help. Last summer, the project expanded its original scope when local environmental and recreational organizations got involved in a “Beetlemania” event. Two dozen 4-H families, Cub Scout members, treatment facility youth, and the beetles they raised (estimated at 440,000) were transported to remote sites on the St. Louis River. A pre-event media advisory resulted in significant media coverage reaching an estimated 1/2 million people. Outcomes of this project are a testimonial on how Extension partnerships can lead to outcomes beyond boundaries.

Douglas Jensen, University of Minnesota Sea Grant Extension Program, 2305 E. 5th Street, Duluth, MN 55812-1445, USA, Phone: 218/726-8712, Fax: 218/726-6556, Email: djensen1@d.umn.edu
Teaching Youth to Investigate Natural Resource Issues (T, 2:00, I)

Jerry Culen
University of Florida, Gainesville, FL

Innovative curricula introduce 6-12th grade learners to community based issues focused on various natural resource topics including: endangered species, organic wastes and coastal/marine issues. Learners begin with an overview of basic ecological concepts relevant to the natural resource topic. Phase two introduces several issues that are "dissected" to examine the players in the issue, the player's beliefs and associated values. This phase presents a method by which the various sides in an issue can be critically reviewed for a more comprehensive understanding of the issue perspectives within a community. Next, the learners are given the opportunity to explore issues in their communities, and to develop investigation techniques, which provide data that is evaluated and applied to an issue under investigation. The last step in the curriculum provides training in skills necessary for learners to take appropriate citizenship actions. The intent here is to provide an opportunity for learners to develop citizenship action skills that can then be applied to decisions applicable to the remediation of local issues or other environmental problems.

In short, these curricula focus on helping citizens to become informed and involved in the decision making process relative to natural resource issues and other environmental problems in their community. These curricula follow a nationally recognized model that has been well researched and provides strong evidence that supports an increase in positive citizenship behavior when implemented.

Jerry Culen, University of Florida, Box 110225, Gainesville, FL 32611, USA, Phone: 352-846-0996, Fax: 352-846-0999, Email: grculen@mail.ifas.ufl.edu

The 4-H American Chestnut Project (T, 2:30, I)

Charles Lytton
Giles County Cooperative Extension, Pearisburg, VA

Jeff Kirwan
Virginia Tech Department of Forestry, Blacksburg, VA

The 4-H American Chestnut Project is an old subject that is revolutionizing the way 4-H projects are conducted in Virginia, and is opening the way to reach new audiences. The project began in Giles County, VA where the Virginia Tech Department of Plant Pathology maintains a seed orchard of trees propagated from survivors of the chestnut blight. A 4-H project was designed to address the need of youth to make a positive contribution to their environment, and the need of researchers for volunteers to plant and monitor blight-resistant seedlings. As word of the project spread to other counties, and throughout the Appalachian region, the demands for educational information, technical assistance and supplies exceeded traditional delivery methods. To meet these growing demands an Internet-based, comprehensive 4-H American Chestnut project developed. In addition to growing and monitoring seedlings, youth discuss relevant issues of science, make hypotheses, design experiments, collect data and report results over the Internet. As a result of the project we have learned that most children under 10 years have never heard of the chestnut, indicating a near complete loss of knowledge about the classic example of exotic/invasive species in North America. We have also learned that blight resistant chestnut seedlings survive best at intermediate elevations, and that biodiversity has increased at one location since the demise of the chestnut.

Jeff Kirwan, Virginia Tech Department of Forestry, Mail Code 0324, Blacksburg, VA 24061, USA, Phone: 540-231-7265, Fax: 540-231-3330, Email: jkirwan@vt.edu
Getting W.E.T. (Water Education and Training) in Ferry County and the Colville Reservation

Daniel L. Fagerlie and Carolyn S. Blake
WSU/Ferry County Cooperative Extension, Republic, WA

How can a county’s disadvantages work to its advantage? Ferry County is challenged both economically and by geographic isolation. The development and delivery of an extensive Water Quality Education program required collaborative efforts among citizen groups, Tribal agencies, and the County Commissioners. In response to needs expressed by these groups, Ferry County Extension Chair, Dan Fagerlie, built partnerships to design a “hands on” educational program to meet priority needs. These educational components were combined in applying for USDA Cooperative Extension Water Quality Funding. Upon successful completion of the one-year project, funding was applied for and awarded to continue and expand the program for an additional three years through USDA 406 project monies.

The W.E.T. program was conceived and designed for Cooperative Extension to establish and offer cutting edge technology, curricula and program delivery to the community, staff and volunteers for an extensive water quality education program. Grant funding provided a projection microscope for classes and adult participants to view and discuss microscopic aquatic worlds. DiscoveryScopes and field microscopes were purchased to provide microscopes for youth to use individually in conjunction with programs such as aquatic macroinvertebrate sampling. A class from each school builds a scale model of a "local terrain" watershed that becomes school property for future watershed education activities. Increasing the capacity for community involvement, effective partnering and cutting edge technology have been a winning combination for the W.E.T. Project in Ferry County Washington and for putting Extension in the forefront of water quality education!

Daniel Fagerlie, WSU/Ferry County Cooperative Extension Chair and Carolyn Blake, Project Coordinator, 350 E. Delaware #9, Republic, WA 99166, USA, Phone: 509-775-5235, Fax: 509-775-5218, Emails: fagerlie@wsu.edu and blakec@coopext.cahe.wsu.edu

Enhancing Meat Goat Production and Woodlot Management through Controlled Woodland Browsing in Eastern Hardwood Forests

Peter Smallidge, Dan Brown, Tatiana Stanton and Colleen Parsons
Cornell University, Ithaca, NY

Jim Finley and Mike Jacobson
Penn State University, State College, PA

Wisely-controlled browsing of Northeast woodlands by goat herds may increase incomes and reduce costs to goat producers, decrease woody plant control costs to woodlot owners and reduce the forest area treated with herbicides. Many meat goat producers need options and land to retain juvenile livestock beyond the profitable Spring markets. Many woodlot owners, especially on smaller land holdings, need economically feasible options to control dense woody understories that result from stand improvement activities. "Goats in the Woods" is attempting to find mutually beneficial solutions to the production needs of woodlot owners and goat producers.

This three-year project will identify forest and herd management protocols and facilitate the dispersal of information related to wise browsing in woodlands by meat goats. The project will involve research and demonstration in the twin tiers region of New York - Pennsylvania to assess operational protocols that optimize meat goat weight gain (and profitability) while controlling interfering woody vegetation in forests. Goat weight gains, the quantity and quality of woodland browse available to goats, and mortality of undesirable vegetation will be the primary variables contrasted among different feeding systems. Discussions with goat producers, cooperative extension agents, woodlot owners, and professional foresters helped pinpoint those information needs. This interactive process would continue as the research and demonstration areas will host field days each year to expose other possible users to the practice, and to learn from them. The target audience includes goat producers, woodlot owners, foresters, cooperative extension educator, and other natural resource agency personnel.

Peter Smallidge, Cornell University, 116 Fernow Hall, Ithaca, NY 14850, USA, Phone: 607-255-4696, Fax: 607-255-2815, Email: pjs23@cornell.edu
Facilitating Agroforestry Learning Communities to Advance Forest Farming Practice in the Northeast (T, 2:00, II)

Louise Buck, Marianne Krasny and Peter Smallidge
Cornell University, Ithaca, NY

Michael Jacobson
Penn State University, University Park, PA

Robert Beyfuss
Greene County Extension Association, Cairo, NY

Jim Finley
Penn State University, University Park, PA

To address problems of natural resources degradation and rural decline, land use practices are needed in the Northeast that link producer interests in livelihood security with consumer interests in product quality, community vitality and environmental health and that optimize the sustainable use of the expanding forest cover in the region. Forest farming is an emergent area of practice that may satisfy these requirements. It is an agroforestry approach to natural resource management that deliberately integrates tree and understory cropping into woodland environments. A key challenge in advancing the potential of forest farming is in overcoming significant knowledge and information limitations.

Cornell and Penn State universities secured a professional development grant from the Northeast SARE program in 2000 to create an agroforestry learning community in the region. Comprised of university and county based educators representing various specialties, small farm operators and private forest owners from seven states, the initiative aims to generate and evaluate promising practices through a variety of learning activities and forums. Conferences, workshops, listserves, a website and site visits have served the expanding community of over two hundred members to share visions, participate in instruction, trial innovations, document experience and evaluate prospects for success under a variety of site conditions. The key coordination mechanism is facilitation.

Practical knowledge and information is being gained about cultivating American ginseng golden seal and mushrooms in the forest understory, establishing improved maple plantations, and crop tree management. A current challenge concerns how to maintain momentum as SARE project resources are withdrawn.

Louise Buck, Cornell University, Department of Natural Resources, Fernow Hall, Ithaca, NY 14853, USA, Phone: 607-255-5994, Fax: 607-255-0349, Email: leb3@cornell.edu

Marketing Forest Stewardship: Developing a Stronger Educational Message (T, 2:30, II)

Michael Jacobson, Jim Finley and Rance Harmon
Penn State School of Forest Resources, University Park, PA

The large number of private forest landowners and the relatively short tenure of ownership make forest education a formidable task in Pennsylvania. The Forest Stewardship Program, jointly run by the Pennsylvania Bureau of Forestry and the Cooperative Extension Service, is an important means of reaching private landowners. Pennsylvania has written over 3,500 stewardship plans but only about 15% are ever implemented. Although Pennsylvania’s Forest Stewardship Program has always had a strong educational component it is shifting course from a focus on the number of stewardship plans written to an even stronger focus on educating landowners to “do the right thing.” The rationale for this shift in focus is the belief that we can do more to reach a larger set of landowners through a concerted education campaign, than by providing financial incentives. A national study of the Forest Stewardship Program suggests that 20% of those interviewed would have developed stewardship plans without cost-share funds. This implies that in Pennsylvania there are 60,000-100,000 landowners who are potential clients waiting for information and help in setting their direction.

One critical problem is multiple, often conflicting messages. This talk will discuss the process of developing a clear, yet simple message broadly shared by those working closely with private forest landowners across the state. It has evolved from the dialogue between Cooperative Extension foresters and Bureau service foresters about communicating a clear “stewardship” message. The initial question was what we wanted to see happen on the land and what activities we would like to have landowners carry out. This led to a series of action statements that were further refined into stewardship messages.

Michael Jacobson, The Pennsylvania State University, 7 Ferguson Building, University Park, PA 16802, USA, Phone: 814-863-0401, Fax: 814-865-6275, Email: mj2@psu.edu
Living on the Land: Educating Small Acreage Owners about Resource Management (T, 3:00, II)

Susan Donaldson
University of Nevada Cooperative Extension, Reno, NV

Throughout the west, population dynamics are changing. As communities grow, land at urban fringes is being rezoned from large, agricultural enterprises to smaller, 1 to 40+ acre parcels. This growing audience of small acreage owners often is not well versed in land management practices. Many are professionals working in urban areas without prior experience in agricultural land and resource management who are hungry for information that will allow them to maintain their rural quality of life. We are challenged as professionals to develop programs that effectively target the specific needs and resource issues important to small acreage owners.

With funding from the Sustainable Agriculture Research and Education Professional Development Program, professionals from eight western states including CA, OR, WA, UT, ID, NV, MT and CO teamed together to create a curriculum specifically aimed at the small acreage “lifestyler”: the property owner who has purchased a small acreage property not as a source of annual income, but as a way of life. The team developed a series of five modules plus an instructor’s guide. The modules address: 1) goal setting and property inventory; 2) soil properties and management and irrigation water management; 3) an introduction to water quality, protecting household drinking water, and evaluating and protecting watersheds, streams, and riparian areas; 4) forage production, weed control, and pasture renovation; and 5) animal management, avoiding animal impacts, and grazing system design. This presentation will provide an introduction to using the “Living on the Land” curriculum for small acreage programming.

Susan Donaldson, University of Nevada Cooperative Extension, PO Box 11130, Reno, NV 89520, USA, Phone: 775-784-4848, Fax: 775-784-4881, Email: donaldsons@unce.unr.edu

Wisconsin Woodland Leaders Institute — A Leadership Program That Could Be Replicated in Any State (T, 1:30, III)

Lowell Klessig
University of Wisconsin - Extension, Stevens Point, WI

Mike Kroenke
University of Wisconsin - Extension, Ashland, WI

The Wisconsin Woodland Leaders institute (WWLI) was developed by UW-Extension in response to identified needs for increased leadership in forestland health issues throughout Wisconsin. Issues such as forest fragmentation and increased parcelization, spreading of exotic species and lack of stewardship planning by landowners were becoming more pronounced and needed to be addressed more fully by community leaders.

The WWLI was organized by UW-Extension with feedback from an advisory committee consisting of representatives of the WI Department of Natural Resources, Wisconsin Woodland Owners Association, The Hiawatha Wood Cooperative and Wisconsin Family Forests.

WWLI was developed in the fall of 2000 and conducted in May, August and November of 2001. The seminar consisted of a total of seven days and included classroom and field day components. Graduation for the 29 participants took place at the Aldo Leopold Shack in Sauk County, Wisconsin on November 2, 2001.

Evaluations and reflections of participants for each course component were recorded. Participants were asked to write a personal action plan to identify and implement actions they hoped to accomplish as a result of involvement in the Institute. A follow-up survey of course participants will take place one year after graduation in November 2002.

Results show 29 graduates with greater knowledge and commitments to take on forestland issues in expanded leadership capacities. Participants showed greater leadership in woodland owners associations, county and town boards, and working with state and federal agencies and legislators. Participants expressed greater awareness and understanding of forestland issues and a greater confidence in addressing these issues.

Mike Kroenke, University of Wisconsin - Extension, 29270 County Hwy G, Ashland, WI 54806, USA, Phone: 715-685-2674, FAX: 715-685-0036, Email: mike.kroenke@ces.uwex.edu
“State-Sponsored Open Space Protection Programs in the United States”
- Inventory and Analysis (T, 2:00, III)

Mark Hilliker, Mike Koles and Tom Wilson
University of Wisconsin Extension - Portage, Winnebago and Waupaca Counties - Wisconsin

Communities across the United States are experiencing unprecedented land use changes that result from a host of factors, including population and economic growth, social behavioral changes, and lack of comprehensive planning and related use of regulatory and non-regulatory implementation tools. In the wake of increasingly rapid change, some states have chosen to address land use issues in a variety of innovative manners. Others have failed to enact policies or programs to curb the onslaught of low-density development, loss of unique landscapes, and negative social, environmental, and fiscal externalities that can be a result of unplanned change.

This research inventoried current state sponsored open space acquisition and farmland protection tools across the United States. Acquisition programs have most often been in the form of fee simple or conservation easement purchase, however, several other successful approaches have been taken (e.g., lease purchase). Farmland preservation programs studied included: purchase of agricultural easements, transfer of development rights, agricultural districts, circuit breaker tax relief credits, and differential assessment tax programs.

A comparative analysis of protection programs was completed and a series of performance ratios were developed related to: population, population density, land mass, funding, and acreage preserved for each state. Research findings provide an important evaluation mechanism for natural resource and land management policy makers.

Nationwide, state sponsored open space acquisition programs have funded the protection of over 9.6 million acres of open space lands at a cost of nearly 8 billion dollars.

Michael Koles, University of Wisconsin Extension - Winnebago County, 625 E. County Road Y, Oshkosh, WI 54901-8131, USA, Email: michael.koles@ces.uwex.edu

Natural Resource Policy Debates on Public Television as an Extension Tool – the Alaska Resource Issues Forum Television Series Example (T, 2:30, III)

Rick Steiner
University of Alaska Marine Advisory Program, Anchorage, AK

Developing informed citizen opinion on natural resource policy issues is perhaps the single most important challenge to the sustainable use and conservation of America's natural resources. To address this challenge in Alaska, the Alaska Resource Issues Forum Television Series was launched in 1986 by the University of Alaska Marine Advisory Program to provide the general public with a more in-depth understanding of contemporary natural resource issues. The programs generally consist of a 1-hour moderated debate by the principal spokespeople for various sides of important resource issues before the public, including forestry, fisheries, oil, mining, marine mammals, climate change, subsistence, resource ballot measures, and so forth. They are broadcast statewide on the state's Public Television network.

Through face-to-face interaction of leading proponents and opponents of particular resource policies, and the broad dissemination of that interaction through statewide television broadcast, citizens with the most at stake get a more in-depth understanding of the issues from which to formulate informed opinions. These public television debates have the advantage over newspaper, radio, and commercial television in their ability to explore issues in considerably more depth, to convey more information, and to facilitate direct interaction of opposing constituencies. The program has provided a public forum for the highest levels of government, industry, and non-governmental organizations - U.S. Senators, Governors, legislative leaders, agency heads, corporate presidents and directors, scientists, Native leaders, and environmental leaders. The program is described and recommended as a model for establishment by other resource extension programs throughout the nation.

Rick Steiner, University of Alaska Marine Advisory Program, 2221 E. Northern Lights Blvd, Suite #110, Anchorage, AK 99508, USA, Phone: 907-274-9691 (x6), Fax: 907-277-5242, Email: afgs@uaa.alaska.edu
Conservation Easements: A New Option for Landowners, A Programming Opportunity for Extension  
(T, 3:00, III)  
**Deborah A. Gaddis**  
Mississippi State University, Mississippi State, MS

Conservation easements are a significant tool used by landowners to control property use and generate tax benefits. Demand for information is high—in Mississippi, a non-profit organization has held 2 well-attended workshops in 2001 and is scheduling additional sessions. A Preceda workshop is also scheduled for Mississippi in 2001. The NRCS reports waiting lists for application into the Wetlands Reserve Program, their primary easement program.

Declines in the profitability of farming have encouraged many farmers to sign conservation easements. Hunting clubs are signing conservation easements for the tax benefits and for land conservation. Rural landowners seeking control over the long-term use of their property are signing easements. Conservation easements can be used by forest landowners to protect required stream-side management zones.

There is limited programming in this area other than that provided by the agencies seeking easements. A need exists for unbiased education on conservation easements—which should be addressed by Extension. A multi-disciplinary approach to programming would meet the demands of a broad audience including farm, recreational, and forest landowners. Landowners need to understand the costs and benefits of such easements. Short-term costs include appraisal costs, legal fees, baseline documentation, and donations to grantee agencies. Long-term costs include reduced management options and lost opportunities. Short-term benefits include governmental program payments, habitat restoration cost-share, and income tax benefits. Long-term benefits include conservation values, property use control, and estate tax benefits. Extension programming via publications, short courses, and programs can help fill the demand for unbiased information about conservation easements.

Deborah Gaddis, Mississippi State University, Box 9681, Mississippi State, MS 39762, USA, Phone: 662-325-8002, Fax: 662-325-0027, Email: dgaddis@ext.msstate.edu

Lake Access: Water Quality Information to Help Change Behavior  
(T, 1:30, IV)  
**Barb Liukkonen, Barb Peichel and Cindy Hagley**  
Minnesota Sea Grant Program, St. Paul, MN

The Lake Access project connects people with water quality data and technical information to improve landuse decision-making in the Medicine Lake watershed, Plymouth, Minnesota. Urban water quality is a significant issue in the Twin Cities metropolitan area and many regulatory and outreach efforts are directed at increasing public awareness and stewardship. Partners in the Lake Access project include educators and researchers from the University of Minnesota, local government units, state agencies, the private sector, high school teachers and students, and citizen advocacy groups.

Medicine Lake is a 936-acre urban lake, classified as an impaired resource because of high nutrient levels and poor water quality. In 1999, the City of Plymouth enacted a ban on phosphorus-containing fertilizer. Several other communities in the Twin Cities area have proposed similar ordinances, and legislation to prohibit the use of phosphorus-containing fertilizer in the entire metropolitan area was introduced, but not passed, at the state legislature.

Lake Access project research will evaluate the effectiveness of a ban on phosphorus-containing fertilizer through homeowner surveys, stormwater and stream sampling, and in-lake monitoring. Outreach components include coordinating locally-led education, distributing phosphorus-free fertilizer, and involving citizens in action and stewardship. The Lake Access website (www.lakeaccess.org) offers water quality data, lawn care BMPs, and community highlights.

Results from the initial homeowner survey demonstrated that, despite an ordinance, homeowners need targeted information to adopt lawn care practices that will protect water quality. Followup surveys (spring 2002) will provide feedback on the effectiveness of Lake Access outreach and changes in lawn care practices.

Barbara Liukkonen, Minnesota Sea Grant Program, 173 McNeal Hall, 1985 Buford Avenue, St. Paul, MN 55108, USA, Phone: 612-625-9256, Fax: 612-625-1263, Email: liukk001@umn.edu
Groundwater Education for Local Government Decision Makers (T, 2:00, IV)

*Cindy Hagley*
University of Minnesota Sea Grant Program, Duluth, MN, U of MN Extension Service

*Diane Desotelle*
Desotelle Consulting, PLC, Duluth, MN

More than 60% of Minnesotans obtain their drinking water from groundwater, but the general public has little knowledge of this critical and threatened resource. Increasingly, groundwater is relied on for new drinking water supplies, irrigation, and industries. Localized groundwater quality and quantity problems are becoming more frequent within aquifers. With these issues in mind, there is an unmet need to educate local resource managers, local government officials and staff, and property owners about how groundwater is stored, how and where it moves into and out of the ground, and how it relates to water quality and quantity issues facing local land use decision-makers. The Arrowhead Water Quality Team (AWQT), which represents 7 counties in NE Minnesota and includes staff from county water planning, soil and water conservation districts, University Extension Service, Sea Grant, county health departments, and state agencies, identified groundwater education as a critical need and obtained funding from the Minnesota Board of Water and Soil Resources to develop a package of educational materials on CD-ROM. The CD contains a PowerPoint presentation about groundwater, resource materials (i.e., brochures, hand-outs) in PDF format, a glossary, and guidance for groundwater demonstrations. The materials are targeted to local resource managers, county staff, and educators and contain information about issues critical to each of the counties covered by the AWQT. An initial needs assessment, meetings with future users of the CD, demonstrations of the finished product, and a follow-up evaluation have helped ensure the product’s value to the target audience.

Cindy Hagley, University of Minnesota Sea Grant Program, 2305 E. 5th St., Duluth, MN 55812, USA, Phone: 218-726-8713, Fax: 218-726-6556, Email: chagley@d.umn.edu

Extension-Based Environmental Management Systems Programming (T, 2:30, IV)

*Gary W. Jackson, Elizabeth Ann R. Bird, Karl Hakanson, Mrrill Ingram and Lyn Kirschner*
Farm & Home Environmental Management Programs, University of Wisconsin, Madison, WI

This presentation will describe a multi-state project among extension educators to develop and test tools that help livestock producers generate Environmental Management Systems for their operations. The project uses the ISO 14001 model of Environmental Management Systems. The presentation will explain the EMS concept, demonstrate materials designed to encourage and support a producer-led EMS, and discuss lessons learned to date through the collaboration.

An EMS under International Standards Organization guidelines requires setting an environmental policy, evaluating the environmental aspects and impacts of an enterprise, prioritizing and planning actions to address detrimental impacts, monitoring and tracking changes through a systematic record-keeping system, and reevaluating to re-plan. The EMS is a process for continual improvement and it is results-oriented. It does not prescribe a particular set of “Best Practices.” Implemented appropriately, an EMS can help a producer improve environmental quality, operational effectiveness, relations with the surrounding community, and open up niche marketing opportunities.

The project, “Partnerships for Livestock Environmental Management Assessment Systems” involves agricultural and natural resource educators from Wisconsin, Iowa, Nebraska, Montana, Idaho, Texas, Georgia, Virginia, Pennsylvania and New York. The project was funded by a four-year grant from the USDA Initiative for Future Agriculture and Food Systems program, beginning in fall of 2000, with additional support from U.S. EPA. Each state’s partners are pilot-testing EMS support materials in order to evaluate tools and approaches for advancing this natural resource management innovation. Website based information is being made available to support agricultural environmental management activities in any interested state or area.

Gary W. Jackson, National Office of Farm*A*Syst/Home*A*Syst, Rm 303 Hiram Smith Hall, 1545 Observatory Drive, Madison, WI 53706, USA, Phone: 608-265-2773, Fax: 608-265-2775, Email: gwjacks@facstaff.wisc.edu
Western Lake Superior Basin Nonpoint Education for Municipal Officials - Pilot Project
Results for Duluth Township, Minnesota and Sioux River Watershed, Wisconsin (T, 3:00, IV)

Diane Desotelle
Desotelle Consulting, PLC, Duluth, MN
Sue O’Halloran
Lake Superior Research Institute – UWS
Gerald Sjerven
Natural Resources Research Institute, Duluth, MN
Cynthia Hagley
University of Minnesota Sea Grant Program, Duluth, MN, U of MN Extension Service
Nathan Hudson
Lake Superior Research Institute – UWS

Citizens and local decision-makers in the Western Lake Superior Basin, including the North Shore’s Duluth Township and the South Shore’s Sioux River Watershed, are striving to improve land use planning and stewardship. Duluth Township is improving the typical process of updating their land use plan and zoning ordinance by seeking education about the potential impacts of land use on water quality. Their goal is to use this educational process to help them adopt better land use tools to protect their natural resources. The Sioux River, classified as an outstanding resource water, supports a diverse trout population and has a large coastal wetland along Lake Superior. Minnesota Sea Grant and University of Wisconsin Extension are working with both communities using Nonpoint Education for Municipal Officials (NEMO) to provide educational and technical assistance. Our goal is to help them protect water quality by more closely linking land use decisions to nonpoint source pollution. NEMO, developed by Connecticut Extension, has successfully demonstrated that education of local officials, supported by computer and GIS technology, catalyzes natural resource protection at the local level.

Both Duluth Township and Sioux River Watershed have low population densities, largely forested landscapes, and economies dominated by tourism and forestry. Forest fragmentation, road building, and management are major considerations in determining watershed health. We are adapting NEMO to make it relevant to decision-makers in these environments, where total imperviousness is relatively low, but the existence of high quality trout streams, erosive sediments, and flashy hydrology makes these systems sensitive to modest disturbance.

Curriculum Resources for Environmental and Natural Resource Education (T, 4:00, I)

Barry W. Fox
Virginia State University, Petersburg, VA

You have to develop a training session on urban wildlife. In addition, a high school class is interested in learning about invasive species. Knowing what educational resources are available and where to access them is extremely important in developing effective natural resource and environmental education (NREE) programs.

The objectives of this seminar are to provide participants with:
- An overview of quality NREE curricula and how to access them,
- Examples of NREE curriculum bibliographies and directories,
- Description of effective NREE activities that address current issues, and
- A listing of important electronic information sources and regional/national NREE organizations.

Natural resource and environmental (NR&E) issues are rapidly evolving and it’s important for educators to stay current with emerging educational programs. Curricula, such as Projects WILD, WET and Learning Tree, are excellent program resources. However, there are many important topics they do not address. Fortunately, there are a wide variety of resources available that cover such topics as urban sprawl, genetic diversity, forest fragmentation and many others. In addition, global issues in NR&E management (i.e.: global warming) are becoming more important with the expanding world population. Participants will gain information regarding a variety of instructional curricula that incorporate several different teaching/learning methodologies and address emerging issues (i.e., air quality, global fisheries). Participants will be able to secure instructional resources that will allow them to develop an idea into an effective educational program.

Barry Fox, Virginia State University, Box 9081, Petersburg, VA 23806, USA, Phone: 804-524-5848, Fax: 804-524-5057, Email: bfox@vsu.edu
Ethics Curriculum for Sportsman Education (T, 4:30, I)

Gary Goff and Jody Enck
Cornell University, Ithaca, NY

Cornell’s Dept. of Natural Resources (DNR) was contracted by The NYS Dept. of Environmental Conservation (DEC) to revise and update the ethics curriculum of DEC’s sportsman education course. The project has involved DNR’s Human Dimension Research and Cooperative Extension units to research advancements in ethics instruction theory and delivery.

The multi-year project started with a survey of all of 3000 volunteer instructors to determine current perceptions regarding the importance of ethics instruction, the amount of time devoted to ethics instruction, and instructional methods used. A follow-up survey was conducted to solicit specific, detailed methods used by the instructors. Analysis of survey results revealed that ethics instruction was highly valued by the instructors, but there was little consistency across the state regarding instructional methods, and a shift in methods probably would result in better student comprehension of the topic.

The newly developed curriculum is largely based on Lawrence Kohlberg’s theory and research of “hierarchy of moral development”. Part I of the completed pilot manual explains how Kohlberg’s theory applies well to the developing ethical behavior of inexperienced sportsmen. Part II of the manual is a guide to using specific lesson plans as part of the 10-hour course used by most states for firearms sportman’s license certification. All NYS Master Instructors have been instructed on the use of the curriculum through workshops conducted by the senior author and they in turn, have introduced it to their county Instructors. The pilot manual will be used by Instructors through 2001-2 and will be evaluated and revised in 2003.

Gary Goff, Cornell University, 104 Fernow Hall, Ithaca, NY 14853, USA, Phone: 607-255-2824, Fax: 607-255-2815, Email: grg3@cornell.edu

Creating Tomorrow’s Skilled Workforce: Arboriculture Training & Internship Program (T, 5:00, I)

Nicholas Polanin
Agriculture & Resource Management Agent, Rutgers Cooperative Extension of Somerset County, Bridgewater, NJ

There has been a prolonged decline in entry level, career-track individuals to the field of arboriculture. The State of New Jersey, in its assessment of community tree health and maintenance needs, pointed out the need for qualified managers, an infusion of labor, and a renewed desire for preserving, maintaining and enhancing our tree resource. Rutgers Cooperative Extension launched the first Arboriculture Training & Internship Program in late spring of 2000. Aimed at serving older, at-risk youth, the 3-week pilot program was a workforce preparation component for New Jersey’s Children, Youth, and Families at Risk grant. Youth from two New Jersey Youth Corps offices received a one-week indoor and hands-on training from Rutgers University faculty and professional industry experts, followed by a two-week paid internship with commercial tree care companies. The class included many aspects of basic arboriculture as well as financial management, business ethics, and Character Counts™. Six of the original class of eighteen youth went on as paid interns with commercial tree care crews, four of whom received and accepted full-time employment offers. Evaluations on knowledge and skills gained, employee / employer relations, future host participation, training curriculum, and arboriculture as an intern’s job choice were completed. The 2001 class was made available statewide, with fifty participants from all twelve New Jersey Youth Corps offices. External funding was secured for an overnight camp, with greater emphasis placed on experiential learning. The class was scheduled to coincide with the seasonal demand for labor in New Jersey’s green industry.

Nicholas Polanin, Agriculture & Resource Management Agent, Rutgers Cooperative Extension of Somerset County, 310 Milltown Road, Bridgewater, NJ 08807 USA, Email: polanin@aesop.rutgers.edu
Integrating GPS Technology into the 4-H Program (T, 5:30, I)

Mike Clifford
Nottoway County Cooperative Extension, Nottoway, VA

Jeff Kirwan
Virginia Tech Department of Forestry, Blacksburg, VA

The Virginia 4-H Natural Resources and Environmental Education Curriculum Committee is rapidly adopting GPS technology into its programs. Five GPS units were purchased in 2000, allowing committee members (mostly County Extension Agents) to learn the technology and experiment with educational activities and applications. Since that time, agents have successfully used GPS to teach latitude/longitude, earth/space relationships, search and rescue techniques and the implications of technology for natural resource management. Agents have also conducted two staff development training sessions attended by 40 additional Agents and 4-H volunteers and have purchased four kits of 20 GPS units (80 total) that are housed in four of six Extension Districts. We feel the rapid adoption of GPS technology has stimulated new interest in natural resources, and will increase our ability to manage natural resources in a rapidly urbanizing state. Future plans call for the integration of GPS and GIS to increase awareness of and appreciation for the urban/community forest and to identify wildlife corridors. Training materials and possible collaborative projects between states will also be discussed.

Jeff Kirwan, Virginia Tech Department of Forestry, Mail Code 0324, Blacksburg, VA 24061, USA, Phone: 540-231-7265, Fax: 540-231-3330, Email: jkirwan@vt.edu

Lake Issues Education through the Arts (T, 4:00, II)

Beverly Stencel
University of Wisconsin-Extension, Spooner, WI

Robert Korth
University of Wisconsin-Extension, Stevens Point, WI

To address a growing concern about the impacts of the rapid development of shore lands, Extension educators in Wisconsin have used many of the traditional outreach tools: lectures, workshops, conferences, videos, publications, surveys and focus groups, to educate lake users and lakeshore owners about actions they can take to mitigate shore land development and lake use impacts.

Yet, the inability to reach outside “the choir” with our educational message is a common complaint among Extension faculty conducting lake issue education. How do we interest a public that is not aware of human impacts on lakes, or who don’t seem to care? How do we address this often controversial issue in a non-threatening way?

Theatre has provided a format for Extension educators to make connections with people they have been trying for years to reach on issues critical to lakeshore preservation. Education through the arts forges new connections between university and outreach educators, art, environmental and lake organizations, youth and adults, local and seasonal residents.

Results point to the effectiveness of this unique outreach approach. Attendance at performances was substantially higher than attendance at past traditional educational offerings such as meetings, workshops and open houses. We reached an audience that otherwise had not been exposed to this information. The audiences in attendance were more diverse in age, race, gender, and residency than participants in previous traditional lake educational offerings. Post-play discussions revealed people enjoyed the entertainment aspect while connecting with the educational message.

Beverly Stencel, University of Wisconsin-Extension, 850 W. Beaverbrook Avenue, Spooner, WI 54801, USA, Phone: 715-635-4444, Fax: 715-635-4450, Email: beverly.stencel@ces.uwex.edu
Engaging the Public in Dialogue: Seeing the Forest: Art about Forests & Forestry (T, 4:30, II)

Scott Reed, Viviane Simon-Brown and Brad Withrow-Robinson
Oregon State University Forestry Extension, Corvallis, OR
Shorna Broussard
Purdue University Forestry Extension, West Lafayette, IN
Molly Engle
Oregon State University Forestry Extension, Corvallis, OR

Recognizing the expanding disconnection between urbanizing societies and the natural resources upon which they depend, Oregon State University Extension Foresters designed a traveling art exhibit to elicit values and beliefs about forests and forestry from the general public. Since 1999, Seeing the Forest: Art about Forests & Forestry has reached new audiences, increased awareness of the complexity of forest issues, and provided a conducive environment for dialogue with 133,000 viewers in 10 communities.

Through a juried process, 88 art images (valued at $45,000) from 37 artists, were selected. Issues illustrated included harvest methods, recreation, fire, jobs, water and wildlife resources, and aesthetic beauty. Many media were featured: Photography, oils, watercolor, ceramic bas relief and tiles, as well as Native American-style wood carvings, furniture and folk art painted saws. Other art exhibit components included supporting text, questionnaires, evaluation and selection criteria, a poster and brochures.

Measures of success include: In addition to meeting all program objectives, 86% of the questionnaire respondents indicate that Seeing the Forest succeeded in illustrating the diversity of forest issues in Oregon; 75% indicate it increased their understanding of the complexity of forestry issues; and 55% accurately identify the forestry issues represented in the exhibit.

Less tangible but equally important outcomes are: Seeing the Forest encourages a sharing of values and beliefs about forests, forestry and natural resource issues; it challenges existing beliefs and perspectives; and stimulates consideration of other viewpoints. These outcomes facilitate better natural resource decision-making by the public, stakeholders and landholders.

What Is Forestry as a Family Issue: Including Homemakers/Seniors in the Delivery and Making of Forestry Information (T, 5:00, II)

Marcella Szymanski, Gwenda Adkins and William Thomas
University of Kentucky, Lexington, KY

Traditionally in forestry, Family and Consumer Science Agents have not been asked to work on forest issues. However, many women and widows have had to make or help make timber-harvesting decisions that directly impact the lives of their families. Seniors, widows, or people with little interest in accessing current information resources are often faced with decisions about their forestlands at difficult times, such as the death of a spouse or at a time of financial crisis. Often, having to make a decision about their forest at this time, leaves people feeling more like victims rather than having power, and has over the past 100 years, been detrimental to forest stewardship. Simple key issues, such as, selling timber in a way to claim capital gains, having a contract, open bidding their timber sales, knowing the future economic impact of arson to a hardwood forest, and/or deciding what is desired from the forest (income, hiking trails, wildlife, etc…) could save and generate thousands for landowners (often $5000-$90,000/landowner) empowering them and enhancing stewardship. To accomplish this a unique program was developed working with Family and Consumer Science Agents and homemakers to reach this often overlooked but powerful resource in forest management education: homemakers/women. The objective of the program is to reach forestland owners that are usually not included in the making of stewardship information but have nevertheless been responsible for decisions and impacts on the forest their children and grandchildren inherit.

Marcella Szymanski, University of Kentucky, 11605 Regency Drive, Potomac, MD 20854, USA, Phone: 301-765-3378, Fax: 301-765-3378, Email: mszymans@ca.uky.edu
Personal Responsibility: Engaging Individuals in Sustainable Living (T, 5:30, II)

**Viviane Simon-Brown**
Oregon State University Forestry Extension, Corvallis, OR

Collectively, individuals create global change. What national trends are encouraging thought about quality of life values? What steps can individuals take to lead fulfilling, appealing, and environmentally-responsible lives? And what tools and methods can Extension professionals use to engage the public in this dialogue?

The Sustainable Living Project at Oregon State University has been exploring the answers to these questions. Designed for mainstream adults, the project’s mission is to reduce environmental degradation and improve the quality of life in the Pacific Northwest by fostering new consumption patterns and promoting sustainable lifestyles.

Since 1998, over 5000 adults have participated in presentations and workshops. Since mid-1999, more than 18,800 browsers have used the project’s website. The program offers a safe intellectual environment for thoughtful dialogue about quality of life issues. It also provides research-based educational information, and acts as a conduit to other programs.

Viviane Simon-Brown, OSU Forestry Extension, 106 Richardson Hall, Corvallis, OR 97331-5750, USA, Phone 541-737-3197, Fax 541-737-3008, Email: viviane.simon-brown@orst.edu

Award Winning Natural Resource Extension Program for Responsible Land Development and Use (T, 4:00, III)

**Phil Davis and Michael Thomas**
Victor Institute for Responsible Land Development and Use, Michigan State University, East Lansing, MI

The complexity of land use and development issues makes these issues particularly difficult for local decision makers. When communities face the challenges of balancing several competing interests-private, environmental, regulatory, institutional, and policy-all at the same time the solutions can be elusive. If Extension is to remain relevant in today's communities, Natural Resource Programming addressing changing land use must be developed and implemented rapidly. Michigan State University Extension recognizing this need established the Victor Institute for Responsible Land Development and Use.

The Jackson County Multi-Jurisdictional Master Planning Project will be highlighted. This project was given an Innovative Initiatives Award by the U.S. Department of Housing and Urban Development. For the first time in Michigan, all local units of government within an individual county have agreed to participate in the development of a comprehensive master plan that will coordinate with and provide guidelines for future local planning efforts. The unique living plan is based on new decision-support tools that are relevant to local conditions, that encourage cooperation and multi-stakeholder participation, that evaluate the effects of alternative development proposals, and that reduce conflict between competing interests.

Findings from this and other Victor Institute work will demonstrate the need and value of Natural Resource Extension programs that provide decision makers with research-based information and tools to assist in making difficult land use choices.

Phil Davis, Victor Institute for Responsible Land Development and Use, Michigan State University, 11 Agriculture Hall, East Lansing, MI 48824-1039, USA, Phone: 517-355-0108, Fax: 517-432-2048, Email: davisp@msue.msu.edu
Michigan’s Citizen Planner Program: Enhancing Local Land Use Decisions (T, 4:30, III)

Pat Norris, Chris Grobbel, Dean Solomon and Jim Wiesing
Michigan State University, East Lansing, MI

Over 1,800 Michigan governmental units have independent planning and zoning authority. Thousands of volunteer citizens serve on local planning and zoning commissions, zoning boards of appeals and local elective office. This fragmented land use decision-making system contributes to sprawl, straining natural resources-based industries and water quality.

Michigan State University Extension’s Citizen Planner program was created in northwest Michigan in 1999 in partnership with the Traverse City Area Chamber of Commerce and Michigan Society of Planning. It is now expanding statewide to address the on-going training needs of citizens appointed to local land use planning bodies and equip these leaders with the technical knowledge and leadership skills to address key issues. Citizen Planner strengthens local land use decision-making ability by capitalizing on the rich resource represented by motivated local leaders and citizens.

This program offers over 20 hours of high-quality training and resource materials. Participants receive a certificate of competency by completing the six core training sessions and contributing 30 hours of community-oriented service in land use planning or related activities.

Core topics include:

- Planning commission/zoning board of appeals powers and duties
- Planning and land use decision making process
- Planning and zoning - legal foundations
- Land use planning tools and techniques
- Innovative planning and zoning techniques
- Public participation and effective meetings

Following the core course, participants may choose additional training on such topics as conflict management, land use techniques to protect water quality, environmental regulation and others. Over 150 individuals have completed the program.

Dean Solomon, Michigan State University Extension, W.K. Kellogg Biological Station 3700 E. Gull Lake Drive, Hickory Corners, MI 49060, USA, Phone: 616-671-2412 x221, Fax: 616-671-4485, Email: solomon@msue.msu.edu

“Lay of the Land” - Local Land Use Educational Program (T, 5:00, III)

Tom Wilson and Greg Blonde
University of Wisconsin Extension - Waupaca County - Waupaca, WI

“Land Use” was identified as the highest priority educational need by the Waupaca County UWEX Strategic Planning Committee. “Land Use” later became one of the top educational foci for UWEX statewide. To address this local educational need, we developed the “Lay of the Land” land use education program.

Our “Land Use” programmatic objectives are: to build townspeople’s and local public officials capacity to identify, understand, and resolve local land use issues and to have local townspeople establish policies, develop, and implement plans relating to land use issues and activities. “Lay of the Land” teaching objectives are to increase participant knowledge and change practices in both attitudes and actions regarding land use issues and land use planning activities.

The “Lay of the Land” program is composed of four sessions. The first session includes a pre-test of participants to determine their current knowledge and understanding of land use issues; current and projected local, county, and state demographics such as population, housing, farming, croplands, forestry, etc.; and participant interaction. The second session includes a participant discussion on private property rights verses community interest - “personal values and beliefs” about land and land use. The third session focuses on Wisconsin’s comprehensive planning and smart growth law as well as potential implementations tools. The last session focuses on what the local townspeople wish to do with regard to future local land use issues.

One year after conducting the educational program, follow-up surveys determine participants’ knowledge gained, practices changes, committees established, etc. to address land use issues.

Thomas Wilson, University of Wisconsin Extension - Waupaca County, 811 Harding Street, Waupaca, WI 54981, USA, Phone: 715-258-6230, Fax: 715-258-6232, Email: thomas.wilson@ces.uwes.edu
“The Missing Fires”
-- A Video Designed to Promote Understanding of Prescribed Fire Use (T, 5:30, III)

Darren McAvoy
Utah State University Extension’s Forest Landowner Education Program, Logan, UT

Wildland managers across the United States are currently returning fire to the landscape in an effort to restore an ecosystem process and to reduce the escalating costs and impacts of wildfires. The American public however, has a poor understanding of the policy of fire use, and without public support managers will have an increasingly difficult time using fire. This 22-minute video presentation attempts to address this problem by increasing public awareness and acceptance of wildland fire as a management tool and an ecosystem process. By blending interviews with natural resource scientists and professionals from several states and agencies with dramatic fire footage and nationally recognized music, an appealing and effective message was created.

The Missing Fires video received the Silver Medal in the ANREP Educational Materials Awards, and an Outstanding Achievement Award from the Spirit of the Land Competition, hosted by the Salt Lake Olympic Organizing Committee and the USDA Forest Service. Resource managers and educators from 25 states have purchased it for use in classrooms and in-house training programs and businesses have made bulk purchases of the product for catalog and internet sales. The National Park Service has distributed The Missing Fires video to 210 national parks and monuments across the country. This move followed a one-year moratorium on prescribed fire communication motivated by the Cerro Grande fire. Two weeks prior to that residential fire disaster The Missing Fires was shown to managers at the Los Alamos National Laboratory to demonstrate the uses of prescribed fire and its value.

Darren McAvoy, Department of Forest Resources, 5215 Old Main Hill, Logan, UT 84322-5215, USA, Phone: 435-797-0560, Fax: 435-797-4040, Email: darrenm@cnr.usu.edu

The Wild Side of Conflict Resolution (T, 4:00, IV)

William Andelt and Shelley Stanley
Colorado State University, Fort Collins, CO

The building boom along Colorado’s Front Range has forced wildlife to flee or to adapt to urban living. The resulting human-animal conflicts are the source of a multitude of questions from the general public. Some want to rid themselves of the problem, others want to learn how to co-habitat.

The Wildlife Master Program, developed by Kurt Cunningham in 1987, was designed to prevent or overcome conflicts. Modeled after the Master Gardener Program, Wildlife Master Volunteers are trained to answer wildlife nuisance/conflict questions on a wide variety of species. Since its inception, volunteers have answered thousands of questions from the public.

Volunteers are selected for their willingness to be unbiased and provide all the research-based options to their callers. They receive a minimum of 20 hours annual training and in return, they agree to answer calls for two weeks. Training is provided by a variety of public and private entities including: the Colorado Division of Wildlife, USDA Wildlife Service and Research Center, Jefferson County Parks and Open Space, Colorado Department of Public Health and Environment, Beavers 2000, Urban Wildlife Rescue, and Colorado State University Extension Specialists.

Post contact survey indicates clients are highly satisfied with the service, ranking it in the 90th percentile, with an equal percentage implementing the advice they received from the volunteers. The Wildlife Master program not only fills a niche, it supports other wildlife agencies, and most importantly, helps the public make informed decisions that will hopefully benefit wildlife.

Note: Shelley Stanley is no longer with extension. For questions, contact presenter Daniel Einarsen.

Daniel Einarsen, Colorado State University Cooperative Extension in Arapahoe Count, Arapahoe County Extension, 5804 S Datura St, Littleton, CO 80120, USA, Phone: 303-738-7946, Fax: 303-730-1920, Email: deinarsen@co.arapahoe.co.us
Developing a Volunteer Base for Natural Resources Education and Outreach:
The Texas Master Naturalist™ Program (T, 4:30, IV)
Michelle M. Haggerty, Neal Wilkins, Patricia Morton and Elizabeth Gregory
Texas Master Naturalist Program, Department of Wildlife and Fisheries Sciences, Texas A&M University, College Station, TX

Extension is continually faced with addressing new landowners in rapidly developing areas who do not respond to traditional methods of outreach and education for making informed natural resource management decisions. Through a partnership, the Texas Cooperative Extension, Texas Parks & Wildlife, and some 175+ local partners have developed a unique master volunteer organization that has become a most effective tool in reaching these clientele with objective, research-based natural resource information.

The Master Naturalist™ program aims to develop local corps of “master volunteers” to provide education, outreach, and service dedicated to the beneficial management of natural resources within their communities.

To gain designation as a Certified Master Naturalist, volunteers participate in approved training and advanced training programs offering field and classroom instruction on natural resource management, interpretation and function. In return for their training, volunteers complete an element of service within their first year of program involvement. Annual re-certification thereafter, requires additional advanced training and volunteer service hours.

The Texas Master Naturalist model currently supports over 1,200 volunteers in fifteen chapters. Volunteer efforts have provided over 50,000 hours of service valued at more than $700,000. This service has resulted in enhancing 5,000 acres habitat; reaching over 115,000 citizens; a volunteer's discovery of a new plant species, and numerous international, national and state awards.

This presentation will provide a highly successful template of how Extension agencies and state agencies can jointly fulfill their like missions through developing a master volunteer program that extends the promotion of natural resource outreach, education and management.

Neal Wilkins, Texas A&M University, Department of Wildlife and Fisheries Sciences, 2258 TAMU, 111 Nagle Hall, 2258, College Station, TX 77843-2258, USA, Phone: 979-845-7726, Fax: 979-845-7103, Email: nwilkins@tamu.edu
Michelle Haggerty, Texas Master Naturalist Program, Texas Parks & Wildlife Department, 111 Nagle Hall, 2258 TAMU, College Station, TX 77843-2258, USA, Phone: 979-458-2034, Fax: 979-845-7103, Email: mhaggerty@wfsc.tamu.edu

Innovative Plant Education Program Protects Native Ecosystems (T, 5:00, IV)
Barbara Fahey
Colorado State University Cooperative Extension, Golden, CO

For the past five summers, professionals and volunteers from 21 natural resource agencies have walked the trails of Colorado wildland parks to learn about native plants and the noxious weeds that threaten them. These field seminars are part of the Colorado Plant Education Program sponsored by Colorado State University Cooperative Extension.

Created in 1997, the program’s mission is to educate the public about the biological and human values of Colorado plants. After successfully completing three field courses, participants are certified as Native Plant Masters, a title that recognizes their advanced knowledge about Colorado’s wild plants. The program is a collaborative effort cosponsored by Colorado State Parks, Lookout Mountain Nature Center and Colorado Mountain Club, with participants from 21 different natural resource agencies.

A major program focus is the interrelationship between native plants and invasive alien plants that negatively impact indigenous wildlife by interrupting native ecosystems. Noxious weeds are an increasing problem in the United States. According to the U. S. Department of Agriculture, weeds already have displaced 10 percent of native plant populations.

The Colorado Plant Education Program has had a far-reaching effect. The 200 program graduates have multiplied the impact of knowledge they gained by educating 20,822 Colorado citizens. A sample of those educated in 2000 showed that 96 percent were more aware of what weeds are and why it is important to control them. A total of 90 percent planned to control noxious weeds on their property as a result of their participation in the program.

Barbara Fahey, Colorado State University Cooperative Extension, 15200 West 6th Avenue, Suite C, Golden, CO 80401, USA, Phone: 303-271-6620, Fax: 303-271-6644, Email: bfahey@co.jefferson.co.us
Volunteer Stream Monitoring: Involving Citizens in Collecting Quality Data (T, 5:30, IV)

Barbara Liukkonen and Mary Gullickson
University of Minnesota Water Resources Center, St. Paul, MN

Coordinated by Extension and determined to involve volunteers in a meaningful way in decision-making about Minnesota’s water resources, the Volunteer Stream Monitoring Partnership (VSMP) is a collaboration between citizens, local government units, educators, state agencies, nonprofits, and the private sector. Based on a strategic plan, grants totaling $500,000 were secured to coordinate a volunteer monitoring program in the Twin Cities metropolitan area.

VSMP recognized that many volunteers were involved in monitoring the health of urban streams, but there was little communication between groups. Data collection was rarely translated into action, and agencies were reluctant to use data collected by volunteers. To make sure that the volunteer-collected data are high quality and accessible, VSMP emphasizes QA/QC requirements, teaches consistent protocols, and compiles data into a centralized data base. Two coordinators and a steering committee work with local partners to assist volunteer groups at all levels, from sampling to advocacy and local decision-making. A directory of volunteers and an annual River Summit bring together the individuals, citizen groups, and high school students (over 1000) who monitor more than 50 stream sites.

Many new volunteers are attracted to stream monitoring and we needed to respond promptly and efficiently to queries. A matrix summarizes monitoring options for educational enhancement, problem identification, and building a continuous water quality record. The matrix identifies biological, chemical, and physical monitoring that can be accomplished by volunteers with beginning to advanced skills. Protocols, necessary time and equipment, QA/QC requirements, and additional resources are detailed for each box in the matrix.

Barbara Liukkonen, University of Minnesota Water Resources Center, 173 McNeal Hall, 1985 Buford Avenue, St. Paul, MN 55108, USA, Phone: 612-625-9256, Fax: 612-625-1263, Email: liukk001@umn.edu

CES YES — Building Capacity of Youth and Youth Leaders (W, 10:00, I)

Elaine Andrews and Kate Reilly
University of Wisconsin, Madison, WI

Martha Monroe
University of Florida, Gainesville, FL

Cooperative Extension Supports Youth Environmental Stewardship, or CES YES, highlights resources identified through a national strategic planning activity involving Extension leaders from around the country, and partners from federal agencies and non-government organizations. This effort strengthens the abilities of Extension educators, 4-H county and state faculty, and professionals from other natural resources agencies to serve communities, youth leaders and youth.

CES YES began in the mid 1980’s as a collaboration between the US Fish and Wildlife Service (US FWS) and USDA Cooperative Extension Service (CSREES) to fund and coordinate regional volunteer leader training on wildlife and natural resources education. Emphases on watersheds, biodiversity, ecosystem management, and service-learning strategies pointed to the need to improve knowledge and skills of youth leaders.

In more recent years the national CES YES Design Team has focused on the following strategic goals:

- Identify, develop and support partnership models that help meet environmental education needs of Extension educators, leaders and youth
- Improve access to quality education resources
- Improve access to local natural resources expertise

The 2002 ANREP Conference offers us an opportunity to showcase CES YES resources that were designed to support the role of the Extension/4-H leader in providing natural resource education and promoting youth environmental stewardship.

Elaine Andrews, Environmental Resources Center, University of Wisconsin, Agriculture Hall, Room 216, 1450 Linden Drive, Madison, WI 53706-1562, USA, Phone: 608-265-0142, Fax: 608-265-9203, Email: eandrews@facstaff.wisc.edu

Kate Reilly, Environmental Resources Center, University of Wisconsin, Agriculture Hall, Room 216, 1450 Linden Drive, Madison, WI 53706-1562, USA, Phone: 608-265-5496, Fax: 608-265-9203, Email: kireilly@facstaff.wisc.edu

Martha Monroe, School of Forest Resources and Conservation, University of Florida, P.O. Box 110410, Gainesville, FL, 32611-0410, USA, Phone: 352-846-0878, Fax: 352-846-1277, Email: mcmo@gnv.ifas.ufl.edu
The Engaged University -- From the Land and Sea, Making a Difference in Rural Alaska (W, 10:30, I)

Peter J. Stortz
Cooperative Extension Service, University of Alaska Fairbanks, AK

University of Alaska-Fairbanks, an Alaska Native-Serving Institution, received funding from US Department of Agriculture to carry out a higher education program directed at preparing under-represented students at the high school level for advanced study and for careers related to food, agricultural, and natural resource systems. A collaboration between the College of Rural Alaska Extended Campuses and the Alaska Cooperative Extension Service was created to connect the resources of the land-grant university to address the needs of rural communities. The new project has two major Goals:

Goal #1 - 'The Engaged University.' Demonstrate viability of the UAF’s College of Rural Alaska Extended Campus and Cooperative Extension Service network to partner with rural secondary schools in the integration of math and science into selected natural resource curriculum modules. This effort sets out to enhance learning and to increase course content relevance to Alaska rural communities and Alaska economy; and

Goal #2 -Unified Community Education Collaborations. At the regional level, be a catalyst to bring together all segments of the community to begin a focused discussion on the comprehensive educational needs K-12 and including the role of higher education (including credit and non-credit, and vocational and Extension) for respective project CRA Extended Campus regions. The approach to life and challenges used by Alaska's Native people for millennia can be transferred to accessing and achieving success in higher education. The Chuckchi campus in Kotzebue and Northwest campus in Nome were the first two regional extended campuses this project has impacted in rural Alaska.

Peter J. Stortz, Alaska Cooperative Extension Service, University of Alaska-Fairbanks, Palmer Research Center, 533 E. Fireweed Ave., Palmer, AK 99645, USA, Phone: 907-746-9459, Fax: 907-746-2677, Email: ffpjs@uaf.edu

Putting the Pieces Together in Natural Resource Education (W, 11:00, I)

Nancy Mesner, Barbara Middleton, Andrea Fisher, Kristin Gilbert, Olivia Lester, Andrea Sline and Andree Walker
College of Natural Resources, Utah State University, Logan, UT

Effective environmental education contains the following elements: strong partnerships and capacity building, effective integration of curriculum subject areas, good distribution across age groups, inquiry based learning, diversity of financial support, and appropriate assessment techniques. Utah State University’s environmental education program incorporates a diverse set of formats and styles to reach adults and children. These are designed to meet the needs of different audience levels, and to span a range of delivery methods, learning styles and training techniques. This talk will highlight how these elements are incorporated into several of our programs, including watershed education through stream monitoring, integration of native gardens in a school curriculum, fisheries and meteorology exhibits and interpreter training, and use of wildland areas to teach scientific techniques.

Nancy Mesner, Department of Geography and Earth Resources, 5240 Old Main Hill, Utah State University, Logan, UT 84322-5240, USA, Phone: 435-797-2465, Email: nancym@ext.usu.edu
Adult Volunteerism in Pennsylvania 4-H Natural Resources Programs for Youth (W, 11:30, I)

Sanford S. Smith and James C. Finley
Penn State, University Park, PA

Pennsylvania's 4-H Youth Development Program relies on adult volunteers to reach youth with educational information and opportunities. Finding adults willing to do this volunteer work is challenging. A study was carried out to look at the current status of adult volunteerism with natural resources 4-H projects in Pennsylvania, and to understand the characteristics and motivations of potential volunteers. Findings from semi-structured interviews with current volunteers and phone surveys with extension agents were used to generate an extensive mail survey with three populations of potential volunteers: 1) 4-H Volunteers, 2) 4-H Parents, and 3) Natural Resources Professionals. Confidence with youth, confidence with subject matter, and adult willingness to volunteer were explored for each of the populations in relation to background, demographic characteristics, motivational needs, past and present volunteer activity, personal interests, and program design importance.

Natural resources subject matter confidence was shown to be the most significant variable in predicting willingness to volunteer for all three populations. Other key variables explaining willingness to volunteer included current outdoor activity level, personal interest in natural resources, the need to fulfill feelings of social responsibility, and confidence with youth. Program design features showed little impact on willingness to volunteer among the populations. Normative descriptions of individuals most likely to volunteer from each population were generated. Findings will be useful for targeted recruitment, volunteer job placement, and expanded natural resources programming for youth.

Sanford Smith, Penn State School of Forest Resources, 7 Ferguson Building, University Park, PA 16802, USA, Phone: 814-863-0401, Fax: 814-865-6275, Email: sss5@psu.edu

Forestry: Area Specialty Advanced Training (FASAT) a Research-based, Service Education Program (W, 10:00, II)

Coleman W. Dangerfield Jr., David J. Moorhead, Kim D. Coder, Bob Izlar, Ben D. Jackson and William G. Hubbard,
Daniel B. Warnell School of Forest Resources, The University of Georgia, Athens, GA

The University of Georgia (UGA) service faculty in each of the state’s 159 county Cooperative Extension Service (CES) offices direct significant agricultural and natural resource educational programming and technological response between the University and the people of Georgia. To better serve UGA clientele, the state’s 159 counties have been grouped into fifty-five, two-to-four-county clusters. Each cluster has agents responsible for specific commodities, including forestry. In 1999, the Daniel B. Warnell School of Forest Resources (WSFR) developed Forestry: Area Specialty Advanced Training (FASAT) to strengthen UGA county program delivery system areas of sustainable forest productivity and profitability. The inaugural FASAT 1999 provided training for 36 county Extension agents representing 96 counties. This initial winter session was followed in the summer with five day-long, multi-district trainings held in the major physiographic regions of Georgia. FASAT 2000 and 2001 presented a major expansion to cover all 55 clusters with 67 agents working in areas of forest productivity as well as urban/rural interface forestry. FASAT 2002 will bring all 67 FASAT Agents together for four days of training in water quality. Significant increases in non-industrial private forest (NIPF) landowner educational programming has also resulted. A team approach with School faculty and FASAT Agents prepared a series of seven multi-county (37 counties covered) forestry meetings since 1999 with the theme of “Growing Pines in Trying Times” contacting over 700 NIPF landowners. Over one-million acres of NIPF land was represented at the seven meetings. NIPF landowners received information allowing them to increase net returns to tree crops by a conservative estimate of $10 per acre per year, or for an estimated total of $10 million per year in Georgia.

Ben D. Jackson, Daniel B. Warnell School of Forest Resources, The University of Georgia, Athens, GA 30602-2152, USA, Tel. 706-542-7602, Fax 706-542-3342, Email: dangerfi@smokey.forestry.uga.edu, Web Site: http://www.forestry.uga.edu
Lessons Learned from a Short-Term Professional Development Assignment at USDA-Cooperative State Research, Education and Extension Service (CSREES) (W, 10:30, II)

Eric R. Norland
Ohio State University Extension, Columbus, OH (temporary assignment to USDA-CSREES, Washington, DC)

Larry E. Biles
USDA - Cooperative State Research, Education and Extension Service, Washington, DC

It is entirely true that “where one ‘stands’ depends on where one ‘sits’.” A short-term professional development assignment at USDA-CSREES provides an opportunity for state-based Extension educators to participate in the state-federal partnership from the perspective of the agency as well as to provide state perspectives and issues to the national program leaders and administrators.

State-based Extension educators can gain new perspectives about the factors that influence the agency’s policies, protocols, and procedures. This familiarity can benefit state and local program development through better understanding of available federal resources, national initiatives, and how national policies are developed and implemented to promote change at the community level.

Conversely, CSREES benefits from the contributions of state Extension educators who have unique perspectives and experiences from their county or regional field work. Through involvement on agency and multi-agency work groups and attendance at Congressional briefings and hearings, Extension educators can help policy-makers better understand how national policies are implemented at the local level.

The observations, opportunities, and “lessons learned” from a six-month professional development assignment to CSREES will be presented. The process for planning and executing short-term assignments for state-based Extension educators at CSREES and “reverse” assignments of national program leaders at land-grant universities will also be discussed.

Eric Norland, USDA-CSREES-NRE, 1400 Independence Avenue, SW-Stop 2210, Washington, DC 20250-2210, USA, Phone: 202-401-5971, Fax: 202-401-1706, Email: enorland@intranet.reeusda.gov

Larry Biles USDA-CSREES-NRE, 1400 Independence Avenue, SW-Stop 2210, Washington, DC 20250-2210, USA, Phone: 202-401-4926, Fax: 202-401-1706, Email: lbiles@reeusda.gov

Establishing Professional Standards and Continuing Education Requirements for Environmental Education Providers (W, 11:00, II)

Richard E. Osorio
The University of Georgia, Athens, GA

The University of Georgia (UGA) and the Environmental Education Alliance (EEA) of Georgia [a state affiliate of the North American Association of Environmental Education (NAAEE)] are collaborating on an initiative entitled the Georgia Project for Excellence in Environmental Education. The objectives of the project are to develop professional standards for environmental educators and to establish a certification program that upholds the professional standards. Utilizing the NAAEE ‘Guidelines for the Initial Preparation of Environmental Educators’ as its framework, the project is targeting formal and nonformal educators and volunteers seeking to increase their content knowledge and skill level in environmental education (EE).

Building on a multidisciplinary approach and utilizing a train-the-trainer model, the project enables environmental educators to coordinate and conduct EE training at the community level. To facilitate and support this effort, a large number of state and federal agencies as well as non-governmental organizations are contributing funding, meeting facilities, instructional staff and resources to ensure the project’s success. Partners include the US Environmental Protection Agency, USDA Forest Service, US Fish and Wildlife Service, USDA Natural Resources Conservation Service, National Wildlife Federation, Georgia Department of Education, Georgia Forestry Commission, Georgia Department of Natural Resources, and the Georgia Soil and Water Conservation Commission.

Desired outcomes for the project are to encourage and empower certified EE providers to become lifelong learners and to facilitate learning at the local level; and to recognize and utilize an expanding network of agencies, institutions and organizations that can measurably enhance current and future EE programs and projects.

Richard Osorio, Cooperative Extension Service, Hoke Smith Annex, The University of Georgia, Athens, GA 30602-4356, USA, Phone: 706.542.8905, FAX: 706.542.4373, Email: rosorio@uga.edu
Policy, Plans and Programs: How NREM Will Change Your Life Forever! (W, 11:30, II)

Bruce Wilkins
Department of Natural Resources, Cornell University, Ithaca, NY

Bill Hubbard
Cooperative Extension Service - Southern Region, University of Georgia, Athens, GA

The Natural Resources and Environmental Management (NREM) Base Program is one of seven base programs of the Cooperative Extension System or CES (USDA CSREES and state land grants participating). This base program, along with six other agriculture, family/consumer science, leadership/community development, youth and nutrition base programs are led by a national support team of USDA and land grant specialists. Base Programs are major educational efforts central to the mission of the Cooperative Extension System (CES). Base Programs are a set of dynamic, changing, results-oriented educational activities that receive significant resources throughout the System on the national state and county levels. The programs form the ongoing priority educational efforts of the System, involving much discipline based and multidisciplinary subject matter content.

This paper briefly reviews the history of NREM, how states participate in its regional and national framework, and suggests several ways NREM may aid Extension professionals in enhancing their work. We will also consider ways to effectively use NREM tools and products, (see www.nrem.net), how NREM and ANREP interact currently and how they might interact in the future, who some the key players are at the regional and national levels, and reflect on likely future trends in programs of major importance to this audience.

Bruce Wilkins, Department of Natural Resources, Cornell University, Fernow Hall, Ithaca, NY 14853, USA, Phone: 607-275-0244, Fax: 607-255-0349, Email: btw1@cornell.edu

Bill Hubbard, Cooperative Extension Service - Southern Region, University of Georgia, 4-402 Forest Resources Building, Athens, GA 30602, USA, Phone: 706-542-7813, Fax: 706-542-3342, Email: whubbard@uga.edu

Addressing Community Capacity: The Collaboration Framework (W, 10:00, III)

Viviane Simon-Brown
Oregon State University Forestry Extension, Corvallis, OR

Collaboration is the process of participation through which individuals, groups and organizations work together to achieve desired results. The Collaboration Framework model, developed in 1995 by 11 universities and the National Network for Collaboration (CSREES), is a capacity building tool for developing and sustaining collaborations.

Components include: A grounding in respect for all participants; and a core foundation of shared vision, mission, principles and values, which creates a common ground of understanding, a sense of common purpose, and describes why the collaboration matters. Outcomes are the desired conditions for the community, reflecting success and resulting from the behavior and actions of the group. The contextual and process factors represent elements that can either enhance or inhibit the collaboration and ultimately the desired outcomes. The process factors focus on the “how to” aspects of building effective working relationships. The contextual factors identify external conditions with may affect the success of the collaboration.

The Collaboration Framework model has been used in 15 states, and Guam, Canada and England with community groups addressing complex public issues. While longitudinal studies are not yet complete, practitioners indicate satisfaction with the framework process and most importantly, with the outcomes achieved within their communities.

Viviane Simon-Brown, OSU Forestry Extension, 106 Richardson Hall, Corvallis, OR 97331-5750, USA, Phone 541-737-3197, Fax 541-737-3008, Email: viviane.simon-brown@orst.edu
Extension at the Cutting Edge: Conflicts of the Water (W, 10:30, III)

Mindy Habecker
Dane County University of Wisconsin-Extension, Madison, WI

Dane County, the fastest growing county in the state, is also the center of state government. In the midst of its urban center lies a beautiful chain of glacial lakes. The Yahara River links this chain. Several marinas and restaurants, as well as thousands of boat slips, are located near where it enters the first and largest lake. Eight years ago this section of the river was dredged to provide better access for boats. This million-dollar project was anticipated to have a lifespan of about 50 years. During the dredging project major flooding caused a 1.5-acre wetland located at the mouth of the river to float away. The project was completed as originally designed and paid for by a number of entities including the marinas and boat slip owners. After five years the channel was almost closed in and multiple lawsuits were being formulated.

Dane County UW-Extension was called in to assist with this high profile case. Extension convened and facilitated a stakeholder study group. This diverse group, consisting of local officials, UW researchers, affected marinas, environmental groups, recreational boating groups and others, met to study the navigability, water quality, fiscal responsibility, public interest and public safety issues. The group, under the guidance of Extension, also developed both short and long-term solutions for this situation that could be used for policy development. This and similar high profile, conflict laden projects have propelled Extension forward in addressing timely, cutting edge local issues with research-based information.

Mindy Habecker, Dane County University of Wisconsin Extension, 1 Fen Oak Court Room 138, Madison, WI 53718-8812, USA, Phone: 608-224-3718, Fax: 608-224-3727, Email: habecker@co.dane.wi.us

Approaches for Resolving Land Use Issues at the Local Level (W, 11:00, III)

Cathy Seyler and Michael Jacobson
Penn State School of Forest Resources, University Park, PA

When people have diverse interests and value systems, timber harvesting can spark conflict. Commonly conflict leads to the formation of sides and the lack of communication. Opportunities for a mutually agreeable solution and joint gains are lost. Community leaders cannot avoid conflict and often issues crop up again and again. Extension agents can educate community leaders, interest groups, and the public about different methods of conflict resolution. Agents can help focus on the basic needs of the parties involved to promote mutually acceptable solutions. This presentation will provide extension agents new techniques that help their communities solve problems more efficiently.

This presentation is based on a study comparing two different methods used by Pennsylvanian communities to resolve their timber-harvesting conflicts. One community used a stakeholder based decision-making approach, which promoted agreeable solutions. A second community consulted experts, but made decisions without direct stakeholders involvement. The result of this action was the threat of legal action. Personal interviews and participant observation were conducted and secondary sources were reviewed. These data were analyzed to build a case study for each situation. The case studies were used to evaluate the ability of each method to solve the problem and its effect on relationships among stakeholders.

Cathy Seyler, The Pennsylvania State University, 7 Ferguson Building, University Park, PA 16802, USA, Phone: 814-863-0401, Fax: 814-865-6275, Email: css14@psu.edu
The Spatial Dimensions of Minority Forestland Ownership (W, 11:30, III)

**Rory Fraser** and **Yong Wang**
Alabama A&M University, Normal AL

**Jim Gan**
Texas A&M University, College Station, TX

The spatial distribution of minority owned forestland provides some insight into social, economic and cultural relationships between underserved populations and forests. In this study, the spatial relations between rural minority populations, private and public landholdings, and the participation of minority forestland owners are explored. Population census, farm census, county tax records, and minority landowner survey data for select counties in Alabama are used to establish statistical and spatial clustering/dispersion of minority owned forestland by geography, and ownership and land use patterns. The results of this study provide some guidance for extension personnel working with minority forestland owners.

Rory Fraser, Alabama A&M University, P.O. Box 1208, Normal, AL 35762, USA, Phone: 256-858-4217, Fax: 256-851-5429, Email: rfraser@aamu.edu

Learning on the Job: A Distance-Based, In-Service Education Course for Natural Resource Professionals (W, 10:00, IV)

**Joe Bonnell**, **Anne Baird** and **Gina Zwerling**
Ohio State University Extension, Columbus, OH

OSU Extension is currently offering a learner-centered, distance-based education course for in-service watershed coordinators that provides them an opportunity to develop the skills they need to build and sustain a non-profit organization and facilitate the development of a community-based watershed management plan. The six-month long course, called the Ohio Watershed Academy, targets full-time watershed coordinators around Ohio.

A diverse team of education and natural resource professionals from various state and federal agencies and non-profit organizations assisted the project team in designing the Academy assignments. Assignments were designed to allow students to fulfill course requirements by facilitating planning meetings, collecting and analyzing data, and developing outreach and education strategies with their watershed groups. Students submitted assignments to course instructors who provided feedback and recommendations for improvement.

In addition to Web-based instruction, students also gathered on four occasions for face-to-face training activities that allowed students to network with other coordinators and receive instruction and coaching on skills such as group facilitation and managing the politics of watershed planning. An evaluation of the graduates of the first Academy course indicated that face-to-face meetings were essential to building a learning community and giving watershed coordinators an opportunity to share programming ideas.

This presentation will highlight key program development steps used to create relevant and effective distance-based, in-service courses, including the importance of face-to-face interactions, integration of learning experiences and job responsibilities, evaluation of student performance, and measuring short and long-term impacts on student behavior.

Anne Baird, Ohio State University Extension, 303 Corporate Center Dr. Suite 208, Vandalia, OH 45377, USA, Phone: 937-454-5002, Fax: 937-454-1237, Email: baird.41@osu.edu
Information Needs for Natural Resource Income Opportunities for Agricultural Extension Agents and Professional Foresters in the Mid-Atlantic Region

Jonathan S. Kays
Maryland Cooperative Extension, Keedysville, MD

A survey was initiated by Maryland Cooperative Extension (MCE) of 875 county agricultural agents, state foresters, and consultant and industrial foresters in Maryland, West Virginia, Virginia, and Pennsylvania to determine informational needs regarding natural resource income opportunities. The one-page, front and back survey was limited to 10 questions to encourage participation and it was field-tested prior to mailing. Mailing lists were entered into one large database with each record having an identifying number to register survey receipt. A standard three mailing survey technique was used. The first mailing included a cover letter, numbered survey and postage paid return envelope with 2 weeks to respond. A reminder postcard followed five days after the initial mailing. After responses were tabulated, those who did not return a survey were sent another complete survey packet with cover letter, survey and postage paid envelope. A total of 415 surveys were returned (50% return rate) out of a total of 832 surveys mailed that had deliverable addresses.

Initial questions asked what kind of information did people request; such as, how to get started, selected an enterprise, production information, etc. This was followed by a question on the number of requests over the last year for information on 27 specific income opportunities in four broad areas of forest farming and utilization, recreational activities, alternative agriculture, and forest management. A few questions focused on demographic characteristics of those requesting information. Other questions focused on what type of information professionals need and how they would prefer to receive it.

Overall, foresters received almost twice as many information requests from absentee landowners compared to extension agents. A high percentage of foresters received information requests for selected alternative agriculture enterprises (82% for tree and small fruit enterprises), and more than 40% of extension agents received information requests on marketing forest products. Both foresters and extension agents preferred to acquire new information on income opportunities through printed publications, seminars/workshops, and web-based resources, compared to other options. There were interesting state-to-state differences in these results.

More in-depth results of this survey will be presented and used to suggest needs for professional and landowner education for extension agents and foresters. This should help in efforts to improve the dissemination of information on income opportunities by respective agricultural and natural resource disciplines.

Jonathan S. Kays, Maryland Cooperative Extension, 18330 Keedysville Road, Keedysville, MD 21756, USA, Phone: 301-432-2767 ext. 323; Fax: 301-432-4089, Email: jk87@umail.umd.edu

Delivery of Agricultural Water Quality Programs Using a Regional Format

Lloyd Walker
Colorado State University, Fort Collins, CO

Extension programming addressing agricultural water quality issues began in 1990 with each state receiving funding from USDA (3d funds) based on an acceptable plan of work. The format for providing funding changed with Congressional legislation in 1998 requiring a more competitive process. Additionally, it is acknowledged that both USDA and EPA have a stake in addressing agricultural water quality issues. As a result, USDA developed a competitive grant process focused on multi-state regional agricultural water quality educational programming beginning in FY2001 (with regions coinciding with the EPA regional administrative structure, ie 10 regions across the country).

This paper presents a model being implemented to address coordinated agricultural water quality programming for EPA Region VIII as a result of successfully receiving funding. The project model is a collaborative effort among the 1862 Land Grant institutions of the six states comprising EPA Region VIII - Colorado, North Dakota, South Dakota, Montana, Utah, Wyoming. The host institution is Colorado State University. The emphasis of the project is to facilitate development, delivery and implementation of new and existing practices for the protection and enhancement of water resources throughout the region. The project creates a structure for regional and national coordination and integration of technical and financial resources to reduce program development costs, make research, education and Extension resources of the land grant university system more accessible at Federal, State, and local levels to optimize delivery of appropriate educational programs to agricultural producers and agriculturally-impacted communities across the region. The project is directed by a regional coordination committee composed of Water Quality Research, Education, and Extension Coordinators for the six 1862 Land Grant universities. The paper will describe this innovative delivery technology and provide a progress report based on 1½ years experience.

Lloyd Walker, Colorado State University, Department of Civil Engineering, Fort Collins, CO 80523, USA, Phone: 970-491-6328, Fax: 970-491-7369, Email: Lloyd@engr.colostate.edu
Combining History with Ecology to Teach Wildlife Habitat Conservation  (W, 11:30, IV)

Will Sheftall and Stan Rosenthal
University of Florida Extension, Tallahassee, FL

Geoff Brown
Florida Fish and Wildlife Conservation Commission, Tallahassee, FL

A locally-focused environmental studies curriculum was developed to teach past and present uses of natural resources, conservation and restoration of habitat within five eco-regions. It was published as a series of five 12-page newspaper supplements to the Tallahassee Democrat. Sixty pages of stories were written and illustrated by Extension Master Wildlife Conservationist volunteers, and by professionals with expertise in science and history. 92,500 copies of each insert were printed and distributed to newspaper readers and to elementary, middle and high school students in two counties. A Teacher’s Guide was developed for each supplement. Evaluation instruments were administered to readers, park visitors, assistant principals and teachers.

92.1% of respondents to the Reader Survey reported having become more aware of the local environment. 70.4% of respondents reported having saved at least one of the supplements for future reference. 83.0% of respondents reported having been prompted to do something ranging from outdoor recreation to backyard conservation.

52.6% of the 38 respondents to the Teacher Survey reported using at least a portion of one supplement. 47.6% used the Teacher Guides. 57.1% of the reported utilization was in social studies and history classes as opposed to 38.1% in science classes.

Many readers commented that they liked the combination of history with ecology in describing local natural resource use and conservation. Heavier use of the materials by social studies than science teachers points to an under-exploited avenue for Extension to utilize in helping schools educate students about their local environment, and the role of man in conserving it.

Will Sheftall, University of Florida Extension, 615 Paul Russell Road, Tallahassee, FL 32301-7099, USA, Phone: 850-487-3004, Fax: 850-487-4817, Email: williams@mail.co.leon.fl.us
POSTER ABSTRACTS

MONDAY SESSION

Listed by poster number.
Presenting authors appear in bold.
SARE Professional Development Program and Opportunities for Forming Learning Partnerships – Poster number 1

Deborah Cavanaugh-Grant
University of Illinois, Urbana, IL

Paula Ford
NCR SARE Program, Manhattan, KS

Begun in 1994, the Sustainable Agriculture Research and Education (SARE) Professional Development Program (PDP) provides sustainable agriculture education and outreach strategies for Cooperative Extension System agents, Natural Resources Conservation Service staff and others who work directly with farmers and ranchers. Administered and funded by SARE, the Professional Development Program has received annual congressional allocations of about $3 million to $3.5 million since its inception.

Professional Development Program funds have been used for both state-specific planning and competitive grants for learning opportunities. In the first funding cycle, all 50 states and six island protectorates devised strategic plans that outlines a process for developing sustainable agriculture learning opportunities. In subsequent years, each state will submit an annual update of strategies and activities to achieve sustainability goals. Regional funds also are used for competitive grants to sponsor more than 62 activities such as workshops, educational manuals and videos, and on-farm tours and demonstrations.

Each state has a sustainable agriculture coordinator who directs sustainable agriculture education activities and engages stakeholders. Because each state coordinator works to meet state-specific challenges, educational programs are designed to fit local needs of agricultural educators, farmers, agency personnel and others. Competitive grants are awarded for state and multi-state PDP projects that emphasize cross-agency training, using farmers as educators.

Deborah Cavanaugh-Grant, University of Illinois, P.O. Box 410, Greenview, IL 62642, USA, Phone and Fax: 217-968-5512, Email: cavanaughd@mail.aces.uiuc.edu

Team Building Results from Timber Tax Seminars – Poster number 2

David Miller and Edward Smith
Ohio State University Extension, Caldwell, OH

The reporting and taxation of timber income is a mystery to most people, including some tax and forestry professionals. Most landowners are unfamiliar with the tax consequences of asset allocation for timber property. Having dealt with these issues over time, my co-worker, a natural resources specialist, and I organized and conducted a series of timber tax seminars for tax professionals, consulting foresters, forest landowners and other forestry professionals. The stated objectives were for participants to become more knowledgeable of the tax laws relating to timber investments and to become more knowledgeable of the record keeping required to maximize after-tax income from a timber sale. Nine one-day workshops have been conducted throughout Ohio with approximately 190 persons attending. Resource people have included two out-of-state timber tax specialists, my co-worker and myself. Topics included establishing timber basis, reporting timber income, recovering timber-related costs and other timber tax topics. Evaluations showed the participants increased their over-all knowledge, better understand the importance of establishing timber basis, can properly report timber income and would be able to save tax dollars for themselves or their clients on timber sales. The most important benefit of the program was that forestry and tax professionals learned how each group could benefit the other to develop a more effective team to benefit their respective clients. Follow-up surveys have shown that referrals from forestry professionals to tax professionals and vice versa are indeed happening.

David Miller, Ohio State University Extension, 16714 St. Rt. 215, Caldwell, OH 43724, USA, Phone: 740-732-2381, Fax: 740-732-5992, Email: miller.58@osu.edu
Gardeners to Neighbors – *Poster number 3*

**Norman Moll**  
Ohio State University-Lucas County, Toledo, OH

In 1995 the Lucas County Office of Ohio State University established a working group of leaders to consider community gardening as an enhancement program for urban city of Toledo neighborhoods. This loose-knit group held monthly meetings, coordinated resources and identified several volunteer neighborhood community garden leaders who developed four successful garden sites.

In 1996, a grant from Ohio State University Extension's Urban Garden Program provided funds for a part-time coordinator to expand and enhance the Neighborhood Community Gardening effort in Toledo. A coalition was formed that became Toledo Gardens Revitalize Our World (Toledo GROWs).

In 1998 Toledo GROWs became the outreach program of the Toledo Botanical Garden with a part-time coordinator and the dedicated coalition serving as a working steering committee.

By 2001, over 60 community organizations were involved as participants and/or in funding the program. Toledo GROWs manages the program that now involves 34 garden sites with 160 garden plots and 440 gardeners. Ohio State University Extension partners with Toledo GROWs to provide educational meetings and workshops as well as various leadership development activities with a goal of producing a sustainable community activity for enhancing urban neighborhoods currently at risk or already in a state of and decline.

Norman Moll, Ohio State University Extension-Lucas County, Suite 550, One Government Center, Toledo, OH 43604, USA, Phone: 419-213-4254, Fax: 419-213-4241, Email: moll.1@osu.edu

Gypsy Moth Specialization for Extension Master Gardener Volunteers – *Poster number 4*

**Amy Stone**  
Ohio State University Extension - Lucas County, Toledo, OH

**Joe Boggs**  
Ohio State University Extension - Hamilton County and SW District, Cincinnati, OH

Extension relies heavily on volunteers to disseminate researched-based information in four program areas, including horticulture. The Master Gardener Program has been and continues to be a "growing" program in Ohio. As agents, we strive to provide educational opportunities that will challenge and actively engaged our volunteers. This becomes even more important as the volunteers continue to stay involved with the program for many years.

In Ohio, the concept of Master Gardener "Specialization" has been received very well. Experienced volunteers apply, and participants are chosen according to criteria determined by a committee of agents and district specialists.

We are very excited about opportunities that exist as it relates to gypsy moth. As the insect pest spreads across the state, it is our goal to have trained volunteers ready to work with the local Extension offices, municipalities, and residents. The Gypsy Moth Specialization Program consists of both a lecture-type series, along with field trips to gypsy moth "hot-spots" throughout the year. Topics include: life-cycle and biology; options for control; the Ohio Department of Agriculture Gypsy Moth Program (slow-the-spread and suppression); effective presentations; male moth trapping; egg mass survey; and more!

Master Gardeners chosen to participate in the Gypsy Moth Specialization will also be required to volunteer an additional twenty hours on approved gypsy moth projects.

Amy Stone, Ohio State University Extension, 5403 Elmer Drive, Building #8, Toledo, OH 43615, USA, Phone: 419-578-6783, Fax: 419-578-5367, Email: stonea@postoffice.ag.ohio-state.edu
Adapting the Master Gardener Concept for Urban/Community Forestry – Poster number 5

**Michael Kuhns** and **Jerry Goodspeed**
Utah State University Cooperative Extension, Logan, UT

**Steve Rasmussen**
Nebraska Forest Service, Norfolk, NE

**Chris Carlson** and **Scott Josiah**
University of Nebraska Cooperative Extension, Norfolk and Lincoln, NE

Cooperative Extension's Master Gardener program has an illustrious history, having helped answer horticulture questions and reduced Extension workloads around the country for years. This presentation will highlight adaptations of the Master Gardener program that have taken place in at least two locations - northern Utah and northeastern Nebraska. The Master Gardener concept generally consists of volunteers getting a set amount of specialized horticulture-related training in return for agreeing to volunteer for a set amount of hours fielding phone calls or otherwise helping out with home horticulture-related programs. Participants usually pay a fee as well.

In the adaptations described here, variously named Master Tree Steward, Urban Forestry Master Gardener, or recently the Nebraska Tree Care Advisor Program, the idea is to provide volunteers with specialized training in tree biology and tree care rather than general gardening or horticulture. Volunteers then donate their time with an emphasis on working on tree-related projects in their communities and neighborhoods. Though work can be done in and for the Extension office, participants are encouraged to initiate tree related activities in their own communities to inform and involve citizens about trees and their care. Examples include organizing Arbor Day tree plantings, writing local news articles, conducting pruning workshops, and doing tree inventories. These programs have been popular and effective in Utah and Nebraska for several years. This presentation describes important aspects of these programs and suggests how they could be applied or adapted elsewhere.

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The Florida Master Naturalist Program - A New Model for Environmental Education – Poster number 6

**Martin Main** and **Ginger Allen**
University of Florida, Immokalee, FL

The Florida Master Naturalist Program (FMNP) is a University of Florida Extension Program that utilizes a new model of providing environmental education to adults. Objectives of the FMNP are to create a more environmentally aware citizenry and to prepare persons to assist in environmental education programs as interpretive naturalists. FMNP students include interested persons, ecotour operators, teachers obtaining CEUs, etc. Three 40-hr. modules are being developed: Freshwater Wetlands, Coastal Systems, and Upland Systems. Each module includes classroom, field, and practical interpretive experience and includes ecological, cultural, and interpretive training. Emphasis is placed on understanding ecosystem processes, the role of humans in shaping Florida’s landscape, and conservation issues affecting the future of Florida’s environment. The FMNP adopts a “train the trainer” approach. FMNP Instructors receive training in administering the program and are provided videos, slide presentations, and course workbooks. Instructors contribute their own personal experiences and expertise, particularly during field trips and practical experience, which constitutes 50% of the course. Instructors include representatives from natural resource agencies, nature centers, and county extension agents with expertise in natural resource issues. Incentives are incorporated in the FMNP both for Instructors to implement the program and for students to provide volunteer service, although volunteer service is not a requirement.

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Michael Kuhns, Utah State University Extension, 5215 Old Main Hill, Logan, UT 84322-5215, USA, Phone: 435-797-4056, Fax: 435-797-4040, Email: mikek@cnr.usu.edu

Martin Main, Dept. of Wildlife Ecology & Conservation, University of Florida, Southwest Florida Research & Education Center, 2686 State Road 29 North, Immokalee, FL 34142, USA, Phone: 941-658-3400, Fax: 941-658-3409, Email: mbma@gv.ifas.ufl.edu
Volunteers Teach Youth about Local Natural Resource Concerns – Poster number 7

Natalie Carroll
Purdue University, West Lafayette, IN

Purdue University faculty have developed materials that assist local volunteers to work with youth on local natural resource problems. These materials fall under different subject categories.

**Home environment** - Two publications, *Watershed Connections - Youth Activities* and *Drinking Water Quality Reports - Your Right to Know*, were created to help high school youth research, inquire, study, and affect local water resources. The *Watershed Connections* guide focuses on watersheds, pollution sources, and drinking water. *Drinking Water Quality Reports - Your Right to Know* explains the new Consumer Confidence Reports (CCRs) that public water suppliers must provide the public: where to get a CCR, the information contained, and how to interpret it.

**Exotic species** - Curriculum was developed to teach high school youth to raise and release *Galerucella* beetles in wetlands infested with purple loosestrife. The curriculum was written, pilot-tested, evaluated, and revised by a collaborative effort of Extension and SeaGrant professionals in four states (IN, IL, MI, and MN). The curriculum is interdisciplinary, involving the study of the invasive purple loosestrife plant, the beetles used for biological control, and the economic impacts of uncontrolled invasive species.

**Water quality** - A CD-ROM, *Great Lakes Adventure*, was created by a collaborative effort between Purdue University, the Environmental Protection Agency (EPA), and the Great Lakes National Program Office (GLNPO). This CD teaches students about the Great Lakes basin and the Lake Guardian, an EPA owned and maintained 180 foot, self-contained, non-polluting research ship that travels the five Great Lakes to monitor and research potential environmental problems.

New 4-H Wildlife Manuals – Poster number 8

Natalie Carroll
Purdue University, West Lafayette, IN

A collaboration of county Extension staff and state specialists (youth development and wildlife biologists) have created new 4-H Wildlife project manuals. General wildlife concepts are presented using age-appropriate activities. The degree of complexity and reference to outside materials increases as the age level increases. The goal of these manuals is encourage youth to learn about wildlife needs and how to create wildlife habitat, wherever they live - in cities, town, and rural areas.

The first step in the new 4-H wildlife curriculum development process was to identify interested people to work on the effort. County staff from across Indiana, with a variety of experience (years and topic expertise) volunteered their time. The next step was to determine the focus and scope of the manuals. This included decisions about what topics would be covered, how to present the material, the logical sequencing of the manuals, and how many manuals were needed for the intended audience (3rd - 12th grade 4-Hers). It was decided that four manuals with an emphasis on “learn by doing,” inquiry activities would be developed. Draft materials were pilot tested with 4-Hers in 10 counties across the state. Both formal (written) and informal feedback was compiled from volunteer leaders, extension educators, fair exhibit judges, youth, and wildlife biologists. This feedback was used to make improvements to the curriculum (content, artwork, readability, age-appropriateness, etc.). The development committee reviewed the revised manuals and then the text was professionally designed and laid out. These new manuals will be used state-wide in 2002.

Natalie Carroll, Purdue University, 1161 Agricultural Administration Building, West Lafayette, IN 47907-1161, USA; Phone: 765-494-8433, Fax: 765-496-1152, Email: ncarroll@purdue.edu
Water Wizard Van – A Traveling Water Resources Education Program – *Poster number 9*

**Barry Fox**
Virginia State University, Petersburg, VA

Water is a limiting resource and is of primary importance for all aspects of life. Maintaining a high quality of life, in part, means having adequate, clean water for personal use and in the environment. Therefore, teaching people how to protect and conserve their water resources is a major goal of many local, state and national organizations and agencies.

For this purpose, the Virginia office of the Natural Resources and Conservation Service (NRCS) dedicated a cargo van to the Virginia 4-H Program that serves as a traveling, water resource education vehicle. A committee of state environmental agencies and organizations developed the educational design and secured funding for the Van. The Van is designed to operate as an interactive, educational exhibit that can be used at any public event or gathering. Through a memorandum of understanding, it is housed at Virginia’s six 4-H Educational Centers on a rotating basis. It is available for off-Center use through arrangements made with local 4-H Extension Agents and the 4-H Centers.

The goal of the program is to empower youth and families to take care of water. A variety of water resource concepts and processes are presented including the hydrologic cycle, watershed function, individual water use, water quality monitoring, best management practices, groundwater processes and issues, and stewardship. To date more than 23,000 educational contacts have been made through nearly 130 programs across Virginia since the program began in 1999.

This session will present a summary of the Water Wizard Van’s program content and impact.

Barry W. Fox, Virginia State University, Box 9081, Petersburg, VA, 23806, USA, Phone: 804-524-5848, Fax: 804-524-5057, Email: bfox@vsu.edu

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Demonstrating Stream Processes – *Poster number 10*

**Duane Friend**
University of Illinois Extension, Springfield, IL

The popularity of outdoor field days has grown dramatically in Illinois, particularly for the 3-6 grade level. County and multi county “Conservation Days” provides students the opportunity to learn about natural resource topics, and participate in hands on activities at several stations during the event. Staff from Extension, Illinois Department of Natural Resources, Illinois EPA, Farm Bureau, Natural Resources Conservation Service, Soil and Water Conservation Districts, and several other public and private organizations, make presentations.

A very popular station developed by Extension personnel is a stream bank table. The table, measuring 4 feet by 8 feet, was built onto a small boat trailer, and pulled by a car or truck. Containing plastic sand and a recirculating water system, the trailer provides an excellent demonstration of how streams function in real life.

Demonstrations include how streams are formed, the development of river deltas and flood plains, consequences of stream channelization, how oxbow lakes are formed, and how excessive stream bank erosion increases sedimentation in rivers and lakes. These demonstrations provide excellent visual representations of processes studied in class.

A hands on demonstration has students determine how to control stream bank erosion. Classes are divided into two (usually boys and girls), with each receiving a set of toothpick “trees” and “roots” of polyester filler material. Groups must decide where and how to place the trees and roots to provide the most stream bank protection.

Duane Friend, University of Illinois Extension, P.O. Box 8199, Springfield, IL 62791, USA; Phone 217-782-6515, Fax 217-782-8886, Email: friend@mail.aces.uiuc.edu
South Carolina’s Natural Resource Career Camp: Enhancing the Appreciation of Forestry and Wood Products Industry by the Minority Youth – Poster number 11

James Hill, Robin Glenn and Suresh Londhe
South Carolina State University, Orangeburg, SC

Michelle Alford
South Carolina Department of Health and Environmental Control, Columbia, SC

The number of African Americans and other minorities enrolling in natural resource related fields has historically been low and has steadily declined over the past two decades. This is due partly to negative perceptions about natural resource careers as viable career options. Also the lack of awareness of job diversity that exists within natural resource career fields contributes to low enrollment. This project is designed to increase awareness and student interest in the area of natural resources emphasizing forestry and the forest products industry.

Minorities are underrepresented at the professional levels in science-related disciplines. Surveys show the enrollment of minority students in forestry programs to be just sixteen percent, with that of African-Americans at only one percent of total enrollment. Based on this data, it is obvious that the number of African Americans and other minorities available for employment in natural resource management fields is extremely limited. If employers of natural resource professionals are to meet the challenge of having a workforce that reflects that of America, changes must begin now. The main objectives of this project are to enhance interest of rural minority youth in the fields of forestry and forest products through school projects and educational camps, to devise strategies to replicate these activities to other counties, and to incorporate elements into 1890 Extension activities. The educational camps provide first hand experience and enhance students’ understanding of the interdependence between the environment, the economy, and the community.

Florida’s Environmental Education Institute – Poster number 12

Martha C. Monroe
School of Forest Resources and Conservation, University of Florida, Gainesville, FL

Extension agents know how important it is to provide youth with solid information, engaging experiences, and opportunities for success. Agents also know that youth are motivated to explore the natural world and invest time in activities that help the environment. Many agents, however, need more information, more program ideas, and more resources to implement successful environmental education programs in their counties.

Florida’s Cooperative Extension Service is improving youth environmental education programming with a multi-departmental inservice training for agents. The Environmental Education Institute provided an introduction to natural resource and environmental issues in Florida, experience with youth curriculum materials, and a set of program resources for agents.

Specialists from seven departments helped plan and deliver the training, under the leadership of the School of Forest Resources and Conservation: Fisheries and Aquatic Sciences, Wildlife Ecology and Conservation, Entomology and Nemotology, Youth and Consumer Science, Soil and Water Sciences, Sea Grant, and Forest Resources and Conservation. The three-day program included sessions on new 4-H programs, 4-H contests in natural resources, education reform efforts, a field trip with National Forest resource managers, and a facilitator training for Project Learning Tree and Project WET. Agents received new fact sheets on environmental education programming, 4-H project books, a box of resources to facilitate forest explorations, field guides, and curriculum materials.

Martha Monroe, University of Florida, PO Box 110410, Gainesville, FL 32611-0410, USA, Phone: 352-846-0878, Fax: 352-846-1277, Email: mcmorone@ufl.edu
Michigan’s Experience with the National 4-H Sportfishing Program and Its Effectiveness as a Volunteer Training Model in Natural Resources Youth Education – Poster number 13

Heather A. Van Den Berg and Shari L. Dann
Michigan State University Department of Fisheries and Wildlife, East Lansing, MI

Michigan first participated in the National 4-H Sportfishing Program in 1996. Several attendees of the national volunteer workshops have designed Michigan’s youth sportfishing and aquatic resource education program called Project F.I.S.H. (Friends Involved in Sportfishing Heritage). Project F.I.S.H. emphasizes such sportfishing and resource stewardship topics as aquatic ecology, tackle crafting, “people and fish” (ethics, management, cultural importance of fisheries), and angling skills. The program is designed to get youth involved in natural resources appreciation and use through non-threatening activities, so that they will gain confidence, broad understanding about natural resources, and leadership skills. To accomplish this, state Extension staff members offer training workshops to help volunteer mentors learn natural resources content as well as how to foster positive youth development. Mentors who have attended these workshops include 4-H teen and adult leaders, and others who work with youth, including teachers, fishing organization leaders, and community leaders. These workshops have trained more than 260 mentors. Nearly all have completed a pre-workshop survey, and most have completed both pre- and post-workshop surveys of knowledge and confidence in teaching fisheries and youth development. All participant groups show statistically significant gains in knowledge and confidence, even in the teaching of complex topics such as angler ethics and aquatic ecology. Follow-up phone surveys three months after each cohort’s participation include questions to determine what the trainees’ activity levels were with youth. The majority of workshop participants had already used their training with youth in clubs, school settings, and at events within only a short time.

Heather A. Van Den Berg, c/o Shari L. Dann, Michigan State University, 13 Natural Resources Building, East Lansing, MI 48824 USA, Phone: 517-353-0675, Fax: 517-432-1699, Email: vanden64@msu.edu

Distance Education-A Case Study in Practical Application – Poster number 14

Kyle Cecil and Dave Feltes
University of Illinois Extension, Urbana, IL

In March 2001, University of Illinois Extension conducted a series of continuing education short courses on the topic of insect identification in urban and agricultural environments. The series was one of the initial educational offerings from Extension delivered for clientele at host sites by means of distance delivery utilizing the Internet and teleconferencing.

Means of information and knowledge transfer are rapidly changing within society. No longer can Extension rely solely on face to face contacts with clientele to accomplish the objectives of the organization. Learning opportunities must exist for clientele when, where, how and in what form that is most expeditious for our customers. The value of science-based objectivity has dropped in relative importance lately, with access and timeliness moving up as higher priorities for outreach audiences. Objectivity will reemerge as a high priority when access and timeliness are offered by everyone. Objectivity has been a fundamental advantage of Extension programs in the past and will continue to be an advantage if we are proactive educators in the outreach education marketplace. Clients must have access to and interaction with Extension in a manner they prefer or objectivity will only be “something nice to have” and result in no practical application by our clients.

The Insect Identification Series was an attempt to provide practical information on integrated pest management topics while assessing acceptance by Extension clientele to an alternative form of instruction.

Kyle Cecil, University of Illinois Extension, 180 South Soangetaha Road, Suite 108, Galesburg, IL 61401, USA, Phone: 309-342-5108, Fax: 309-342-1768, Email: cecilk@mail.aces.uiuc.edu
Connecting People to Their Environment: An Online Bird Monitoring Program

– Poster number 15

Mark Hostetler, Martin Main and Jiannong Xin

University of Florida, Gainesville, FL

Communities and individual homeowners enjoy watching birds and designing landscapes to attract them. We developed a bird-monitoring program that includes an interactive database and Web site (http://bird.ifas.ufl.edu) where homeowners and participants from various natural resource, extension and state environmental education programs can enter and view collected bird survey data. This Web site functions as a centralized place for schools; private and public state agencies; casual birdwatchers; and others who want to compare bird populations in different areas, or look for changes over time.

Participants obtain a User ID and site registration code to enter data, and the database is searchable by species or site location. Several fact sheets on standardized, bird survey methodology can be printed from the Web site. This bird-monitoring program can be used in conjunction with a wide variety of county extension programs. For example, the Master Gardener and Florida Yards & Neighborhoods programs teach people ways to ecologically and environmentally improve the design and maintenance of their yards. A bird collection component, where data are displayed on a Web site, can promote interest and excitement among the participants because people can track the effectiveness of landscape changes in attracting birds to their yards. During the first few months since the program was initiated, over 50 people have registered more than 70 bird-survey sites in neighborhoods, parks, and rural areas throughout Florida. The bird-monitoring program is being expanded into school-based educational activities and future plans include a similar interactive Web site for a butterfly-monitoring program.

Mark Hostetler, University of Florida, PO Box 110430, Department of Wildlife Ecology & Conservation, Gainesville, FL 32611-0430, USA, Phone: 352-846-0568, Fax: 352-392-6984, Email: hostetlerm@wec.ufl.edu

RangeSpace: A Precision Approach for Natural Resource Management on Southwestern Rangelands – Poster number 16

Barron J. Orr

University of Arizona, Tucson, AZ

M. Susan Moran

USDA-ARS Southwest Watershed Research Center, Tucson, AZ

V. Philip Rasmussen

Utah State University, Logan, UT

Jiaguo Qi

Michigan State University, East Lansing, MI

Marc R. Horney

University of California Cooperative Extension

Terrell T. Baker III

New Mexico State University, Las Cruces, NM

Loretta Singletary

University of Nevada Cooperative Extension, Yerington, NV

The purpose of “RangeSpace” is to assemble, develop, generate and disseminate new tools derived from emerging remote sensing technologies that will help livestock producers manage rangelands for more efficient and sustainable use of forage resources and better conservation of soil, water and habitat for native plants and wildlife. These same tools will also supply valuable information to other rural landowners and community-based organizations to assist them in better managing rangelands for conservation and rural economic development goals. The proposed “RangeSpace” Consortium will coordinate 1) research scientists in a user-driven program to provide relevant products and tools for natural resource management, and 2) geospatial and range extension scientists in six Southwestern States to ensure relevance, diffusion and use. The RangeSpace adaptive research model allows midstream adjustment in research plans through responsiveness to continual evaluation and user feedback. Consortium research synthesizes three emerging technologies -- remote sensing, simulation modeling and decision support systems -- to develop a product line suited to the needs of range managers. The user-identified products include regional land cover, grassland forage and fuel load, grassland phenology, range erosion potential and a vegetation forecasting tool. The information exchange is centered on a Stakeholder Advisory Committee in each state that includes “early adopter” extension agents and producers who will verify operational products and expose the general producer community to their potential. By focusing attention on problem areas and reducing uncertainties for rangeland managers, this project could make the difference for economically stressed ranchers, many of whom are only breaking even.

Barron J. Orr, University of Arizona Cooperative Extension, 1955 E. 6th Street, Suite 205, Tucson, AZ 85719, USA, Phone: 520-626-8063, Fax: 520-621-3816, Email: barron@ag.arizona.edu

Cindy Hagley
University of Minnesota Sea Grant Program, Duluth, MN

Barb Liukkonen
Water Resources Center, University of Minnesota Extension Service, St. Paul, MN

The award-winning Minnesota Shoreland Management Resource Guide, available on the Web (www.shorelandmanagement.org) or on CD, contains educational materials designed to foster shoreland stewardship at the local level by anyone who owns, manages, teaches about, or cares for lakes and streams. The Guide contains a wealth of information, useful for educators and managers in water-rich areas throughout the country, including a range of publications, from general to technical, on a variety of shoreland management subjects. A multi-disciplinary steering committee guided the project to meet state and local needs. The Web format lets us enhance/update the Guide and makes it an especially useful tool for lake associations, local government, and student groups. We burn up-to-date CDs from the current Web site on request for users without Internet access. The Guide was funded by the Minnesota State Legislature, through the Board of Water and Soil Resources, to Minnesota Sea Grant and the Water Resources Center. The Guide is divided into six main sections. Quick and easy answers contains over 25 brochures and fact sheets that answer frequently-asked questions about lakes, rivers, and shoreland management. In-depth information has detailed technical documents, including several recognized by the State Legislature as important for shoreland management. The citizen pages section highlights citizen-led stewardship projects. In who to contact viewers click on an interactive Minnesota map for county contact information. Additional resources includes hot links to other Web sites containing helpful water resource information. Finally, the glossary defines technical terms, agencies, and acronyms often found in shoreland publications.

Cindy Hagley, University of Minnesota Sea Grant Program, 2305 E. 5th St., Duluth, MN 55812, USA, Phone: 218-726-8713, Fax: 218-726-6556, Email: chagley@d.umn.edu

Extension Programming via Distance Education Technology: Perceptions and Cost Savings – Poster number 18

Robert E. Bardon, Scott Payne, Rick Hamilton, Chris Moorman and Susan Moore
North Carolina State University, Raleigh, NC.

Information transfer technologies, like multi-point video teleconferencing, offer a new paradigm for outreach and extension, but little is known about its success in delivering information to an Extension client. North Carolina State University Extension Forestry used a post-evaluation to evaluated the use of multi-point video teleconferencing to deliver eight workshops to eight remote locations in North Carolina, targeting foresters and other natural resource professionals. Study results indicate that the participants perceived a high level of satisfaction with the information received and that video teleconference technology does not appear to lessen the level of satisfaction for those participating through remote site. Evaluations also reveal for every dollar invested, participants perceive a savings between $12.87 (based on assumptions) and $25.03 (based on reported values) in the cost of time, travel and per diem expenses.

Robert Bardon, Campus Box 8003, Department of Forestry, North Carolina State University, Raleigh, NC 27695-8003, USA, Phone: 919.515.5575, fax: 919-515-6883, Email: robert_bardon@ncsu.edu
Incorporating Spatial Technology into Extension Programming – Poster number 19

Mike B. Daniels, Lanny Ashlock, Suzanne Wiley, Becky McPeake, Bill Kinkaid and Tom Riley
University of Arkansas Coop. Ext. Service, Little Rock, AR

Spatial technology such as Geographic Information Systems (GIS), Global Positioning Systems (GPS), and remote sensing has rapidly emerged as tools that can enhance management of natural resources. The University of Arkansas Cooperative Extension Service has developed a variety of educational programs aimed at assisting clientele with the adoption of this technology. Spatial technology has been incorporated into three general programming categories: youth education, natural resource management, and production agriculture.

Through a forestry and wildlife grant, we were able to obtain 44 hand held GPS units that are used primarily for 4-H and youth education. Youth are trained to operate the units to accomplish such tasks as geo-referencing waypoints, navigating to waypoints, and collecting GPS data for mapping with GIS. Various training exercises will be highlighted.

Spatial technology has also been incorporated into crop production programs such as Soybean Research Verification Program (SRVP). In this program, Extension works with individual soybean farmers on their farms to demonstrate and implement precision agriculture techniques such as yield monitoring, crop scouting with remote sensing, variable rate application of inputs, and soil and water conservation practices. Extension specialists have also incorporated this technology into applied research and field demonstrations.

This technology has also been used as platform for enhancing existing educational products related to natural resource management including nutrient management of land applied animal manure, fire ant eradication, wildlife habitat, and watershed education. Highlights of these educational efforts related to spatial technology will be presented.

Mike Daniels, University of Arkansas Coop. Ext. Service, 2301 S. University, Little Rock, AR 72203, USA, Phone: 501-671-2281, Fax: 501-671-2110, Email: mdaniels@uaex.edu

Using “Coached Planning for Landhelp” and “Understanding the Landscape” to Elevate Natural Resources Education and Management – Poster number 20

Delwin E. Benson
Department of Fishery and Wildlife Biology, Colorado State University, Fort Collins CO

Coached Planning for Landhelp is a cooperative stewardship and planning philosophy coined for individuals and groups at local and community levels to manage landscape resources wisely: including soil, water, air, plants, animals and people. The Internet site (www.Landhelp.org) guides planning, suggests training programs and locates useful information from around the country on a variety of topics. Workshops will be taught in the West. Professionals from all states could contribute to and use the Internet site for their programs. Cooperative Extension, State Forest Service and Natural Resources Conservation Service (NRCS) are cooperating.

A video-training course called Understanding the Landscape was developed to help resource planners, conservationists and land managers understand the connectivity of ecological processes. It was designed and produced by NRCS, Oregon State and Colorado State Universities to apply resource management principles to conservation planning and application in a holistic and sustainable manner. Ecological and social components of landscapes are introduced through 12 lectures and 5 case studies. A workbook of references, glossary, and interactive classroom exercises reinforce student insights and knowledge gained from lectures and help to synthesize complex themes to solve land management challenges. Participants are encouraged to implement natural resource principles and concepts, build proficiency and share what they have learned.

Understanding the Landscape and Coached Planning for Landhelp fit well together and contents are valuable to anyone interested in natural resources. Extension personnel benefit from interacting with NRCS and personnel from other agencies to effect one-stop-shopping and to avoid duplicating efforts.

Delwin E. Benson, Department of Fishery and Wildlife Biology, Colorado State University, Fort Collins CO 80523, USA, Phone: 970-491-6411, Fax 970-491-5091, delben@cnr.colostate.edu
Stand Table Projection Techniques -- from Simple to Complex – Poster number 21
Quang V. Cao
School of Forestry, Wildlife, and Fisheries, Louisiana State University, Baton Rouge, LA

A stand table gives number of trees in each diameter class. Stand table projection methods predict diameter growth and mortality in each diameter class, and finally compute a new stand table at the end of a growth period. Diameter growth data can be from either increment cores or remeasured trees. The simplest stand table projection method assumes a uniform distribution of trees in each diameter class and no mortality throughout the growth period. At the other extreme, complicated stand table projection models include equations for diameter growth and mortality, assume non-uniform distribution in each diameter class, and place constraints (in terms of stand basal area and/or average diameter) on predicted stand tables.

Examples of typical methods to project stand tables will be shown. The objectives are to (1) illustrate to forest managers or extension specialists the simple and useful techniques that can be employed in stand growth prediction, and (2) inform these professionals of the current state-of-the-art stand table projection systems.

Quang Cao, LSU, School of Renewable Natural Resources, Baton Rouge, LA 70803, USA, Phone: 225-578-4218, Fax: 225-578-4227, Email: qcao@lsu.edu

Assessment of Non-Appurtenant Woodlot Owners’ Forest Management Activities in New Jersey Relative to Farmland Assessment and Deer Densities – Poster number 22
David Drake and Mark Vodak
Rutgers Cooperative Extension, New Brunswick, NJ

For New Jersey property tax assessment purposes, ‘non-appurtenant forestland’ is forestland not ‘attached’ to agricultural land. Landowners in New Jersey can qualify for Farmland Assessment, a state use-valuation tax, on their non-appurtenant forest property by meeting standard income requirements as well as the additional requirement of developing and implementing a forest management plan. To meet the annual income requirement, most forestland owners’ management plans include recommendations for various types of harvesting and tree removals. Many management plans also include recommendations for managing various species of wildlife, which may involve manipulating vegetation. Whether harvesting or improving wildlife habitat, deer densities can determine the success of these activities. High deer densities can prevent regeneration of the forest, totally alter forest diversity, and prevent sustainable management of the forest resource. The objective of our study is to determine if management activities instituted by landowners anxious to meet Farmland Assessment requirements are positively or negatively affecting New Jersey’s forest resources in areas of deer over-abundance. To examine this question and gather stakeholder input, a survey instrument will be used to assess the forestry and wildlife management activities of farmland-assessed versus non-farmland-assessed non-appurtenant forestland owners. We will discuss wildlife and forestry management issues facing non-appurtenant forestland owners in New Jersey, the survey instrument that will be used to collect data, and extension’s role in assisting private landowners with tax relief while simultaneously achieving wildlife and forestry management objectives.

David Drake, Rutgers Cooperative Extension, 80 Nichol Ave., New Brunswick, NJ, 08901-2882, Phone: 732-932-1509 X12, Fax: 732-932-3222, Email: drake@aesop.rutgers.edu
Financing Reforestation: The Landowner’s Dilemma and Extension Assistance
– Poster number 23

Deborah A. Gaddis and Donald Grebner
Mississippi State University, Mississippi State, MS

Increasing numbers of farmers and other rural landowners are reforesting or afforesting their lands. These landowners are faced with several options for recovering their reforestation costs: federal and state tax incentives, the Forestry Incentives Program, state cost-share programs, and the Conservation Reserve Program. Evaluating the cost to the landowner for each program requires knowledge of current tax laws and basic economic theory as well as specific program limits and requirements.

Most of Extension’s educational efforts in this area have been limited to teaching landowners about tax provisions used to recover forest investments. Most forest economics education is focused on determining expected return on the investment—which is not applicable to many older landowners since they will not live to see liquidation of the investment. These landowners are primarily interested in analysis of their short-term cash flows.

Mississippi State University Extension Forestry has created several prototype Excel Spreadsheets that can be used for a cash flow analysis on reforestation costs. These spreadsheets can be modified for local program limitations and details. The inputs required are the expected practices and costs, an appropriate rate of investment, and the marginal tax rate. Preparing and comparing spreadsheets for each available recovery option will allow landowners to compare the cash flows of cost-share programs and tax programs. The spreadsheet also generates an amortization schedule for the federal income tax. This presentation explains the spreadsheets and explores how they can be used in conjunction with Extension programming efforts, both on a statewide and county level.

Deborah Gaddis, Mississippi State University, Box 9681, Mississippi State, MS 39762, USA, Phone: 662-325-8002, Fax: 662-325-0027, Email: dgaddis@ext.msstate.edu

Old Approaches to New Forestry Programming – Poster number 24

Gary Graham
Ohio State University Extension, Northeast District, Wooster, OH

Kathy Smith and Randy Heiligmann
Ohio State University Extension, Main Campus, Columbus, OH

Dave Apsley
Ohio State University Extension, South District, Jackson, OH

Kate Wiltz
Ohio State University Extension, Main Campus, Columbus, OH

Ohio State University Extension Forestry Team has expanded an old approach in extending new forestry programming to its clientele. Forestry programming long conducted and successful is now reaching out to the less “Forestry Familiar” audiences. Ohio has transformed from 15% forest cover in 1940 to 30% today. Of the almost 8 million forested acres today 94% is controlled by private landowners. With so much land in private control there is a need for outreach and engagement to these landowners.

The “Ohio Woodland Stewards Program” offers an integrated set of learning opportunities that address forestry, wildlife, water quality issues and other information needs of these private woodland owners. Six new and updated programs along with a biannual newsletter form an educational menu from which forest landowners can create a comprehensive learning experience. The programs will be taught in each of the state’s five districts every year starting with the spring of 2001. The pilot programs have received enthusiastic response, and participants have taken active roles in promoting upcoming programs. Room capacity caused registration for a basic dendrology program called “Name That Tree” to be stopped at 100 people who attended from all over the state. The programs utilize hands-on learning in both classroom and field portions of the training. A broad evaluation of the design, implementation and potential impact of this new programming is being conducted as well. We will be sharing concepts, approaches, materials and evaluation data from the “Ohio Woodland Stewards Program” with conference participants.

Gary Graham, Ohio State University Extension, 1680 Madison Avenue, Wooster, OH 44691, USA, Phone: 330-263-3831, Fax: 330-263-3667, Email: graham.124@osu.edu
Reforestation of Shoals of the Lake Hartwell Area – Poster number 25

Charles D. Rice
The University of Georgia, Hart County Extension Office, Hartwell, GA

The U. S. Army Corps of Engineers contacted the University of Georgia Extension Service with a need to reduce erosion on the shoal areas as well as have a visual vegetative marker for the safety of boaters. Lake Hartwell is the largest reservoir East of the Mississippi and the shoals are barren of any vegetation or wildlife. The bald cypress tree was selected because of its ability to survive under extreme conditions to be planted on these sights. All soil is removed from the root ball along with a hole size just large enough for roots. The original clay is packed around trees along with large rocks added at the base of the trees as a wave barrier. Beaver guards are place around the young trees for animal control. The livability of these trees has increased from 50% to more than 90% due to educational efforts by the University of Georgia. The Northeast Georgia Master gardeners were instrumental in planting the bald cypress on fifteen shoals. The reforestation project is a success as three year old bald cypress trees are surviving in an extremely harsh environment. As more areas are reforested, animals and plants will inhabit these sites boat traffic will be safer and soil erosion will be reduced. This project has achieved a high degree of national media attention over a three year period. Through extensive national television and newsprint coverage other reservoirs are adopting this practice.

Charles Rice, The University of Georgia Cooperative Extension Service, 200 Arthur Street, Hartwell, GA 30643, USA, Phone: 706-376-3134, Fax: 706-376-3702, Email: chrice@uga.edu

Improving Water Quality in Golf Course Management – Poster number 26

Charles D. Rice
The University of Georgia, Hart County Extension Office, Hartwell, GA

Cateechee Golf Club is a symbol in Georgia of what can be accomplished through teamwork of various agencies searching for a better environment. Cateechee Golf Club is a unique course that uses a 460 acre tract of land with only 67 acres of well maintained turf areas. It has the distinction of being the only Audubon Signature course in Georgia and one of three in the Southeast. This course was designed from the beginning with nature in mind. Cateechee is a discharge site for two to five million gallons of waste water per day from a municipality on the greens, trees, rough, natural areas and forests. Stringent detail is given to protecting ground and all surface water from waste affluent and pesticide residues. Large vegetative buffers around waterways, pesticide and residue retention areas, and innovative energy conservation measures are just a few of the pieces of a puzzle that sets Cateechee apart as a pioneer in environmental golf course management. Dead trees, birdhouses and a 150 year old chimney adorn the landscape along with a theme that guides a golfer though a lesson in nature as they play a very challenging 18 holes of golf. The Georgia Extension Service was an integral part of this project from it’s design, choice of turf, grasses for natural areas, stream bank protection, water monitoring sites, and volunteers from the Northeast Georgia Master Gardeners for building wildlife habitat and wildlife studies. The water quality leaving this site is actually better than the quality of water coming to this area as evidenced by testing and increases in aquatic populations.

Charles Rice, The University of Georgia Cooperative Extension Service, 200 Arthur Street, Hartwell, GA 30643, USA, Phone: 706-376-3134, Fax: 706-376-3702, Email: chrice@uga.edu
Ticked Off in Mississippi: Extension Forestry Teaches Mississippians about the Symptoms of Lyme Disease and Preventative Measures – *Poster number 27*

**Robert E. Carter** and **George M. McCullars**

Department of Forestry, Mississippi State University, Mississippi State, MS

In the past 20 years, the number of Lyme Disease (LD) cases has risen rapidly with most cases in the Northeastern US. However, LD is present in Mississippi with 104 cases reported (Center for Disease Control). These numbers do not include patients who never test positive, but respond to treatment and are cured. The number of cases is most likely much greater. To address the increasing number of cases of LD, Extension Forestry has a publication and program on the symptoms and prevention of LD. Many Mississippians assume that LD is a concern primarily in the Northeastern US, but there are many people and some entire families have the disease. Another important fallacy the program dispels reliability of LD tests. The current tests are unreliable leaving many people untreated due to a negative test result. These people end up very ill with possible permanent damage and death. It is better to be cautious and treat for LD if it is suspected. Also, included are discussions on the vectors (ticks) and reservoirs (white-tailed deer and white-footed mouse) of the bacterium. Guidelines for proper clothing and insect repellents are included as well as information on checking for ticks after outdoor activities. The symptoms of the different stages of LD are included along with phone numbers and websites for information on finding a Lyme literate doctor. This program is extremely important in rural states where many people live in forested areas and outdoor activities are popular. It has been presented at professional forestry meetings, County Forestry Association meetings, workshops, and high school classes throughout Mississippi. Other states are encourage to develop similar programs to educate not only those who work in the forest but also those who live in and participate in outdoor activities.

Robert E. Carter, Department of Forestry, Box 9681, Mississippi State University, Mississippi State, MS 39762-9681, USA, Phone: 662-566-2201, FAX: 662-566-2257, Email: robertc@ext.msstate.edu

FireWise: Information and Education for Critical Change – *Poster number 28*

**Judy Serby**, **Scott Woods** and **Ann Randall**

Colorado State Forest Service, Colorado State University, Fort Collins, CO

In recent years, the Western United States has experienced numerous catastrophic wildfires. Forestry professionals have been predicting the occurrence of these devastating fires for many years, but public opinion and legislation have prevented broad treatment of forested lands. In addition, increasing numbers of urban transplants are building homes in the newly designated “interface.”

The 2000 fire season captured both media and public attention. This motivated positive changes in political response to existing wildfire hazards and persuaded legislators to invest $1.8 billion to implement the National Fire Plan.

During this session, Colorado State Forest Service (CSFS) representatives will discuss how their agency is educational aspects the call for dramatic changes in the arena of wildfire interface mitigation. Educational efforts include: 1) informing the public about the risks associated with unmanaged forests; 2) helping landowners create defensible space and reduce wildfire hazards on their properties; 3) CSFS Volunteer Forest Stewards accomplishing on-the-ground hazard fuels reduction; 4) educating youth about fire ecology and the effects of fire in the environment; 5) providing tools for public officials and land managers to effectively reduce wildfire hazards; and 6) nurturing critical collaborations among stakeholders.

Judy Serby, Colorado State Forest Service, Colorado State University, 212 Forestry, Fort Collins, CO 80523-5060, USA, Phone: 970-491-7559, Fax: 970-491-7736, Email: jserby@lamar.colostate.edu
POSTER ABSTRACTS
TUESDAY SESSION
Listed by poster number.
Presenting authors appear in bold.
Monitoring for Ranchers in New Mexico: Range, Riparian, Erosion and Water Quality, and Wildlife – Poster number 1
New Mexico State University, Las Cruces, NM

Livestock producers in New Mexico are increasingly being called upon to describe and document the condition of their rangelands. Most often, this request is being made of producers who hold public land grazing permits. However, as regulatory vehicles such as the Endangered Species Act (ESA) and Clean Water Act (CWA) become more widely implemented, we predict that documenting rangeland condition even on private lands will be important.

There are countless techniques described in the scientific and professional literature for monitoring rangeland resources. However, the majority of these have never gained broad appeal or implementation simply because they are too technical or too time consuming. Our objective was to develop a stepwise approach, from simple to complex, for rangeland monitoring. We take a three-level approach that is designed to encourage ranchers to start monitoring now, beginning with a straightforward Level-One approach. As a rancher becomes more comfortable with monitoring in general, additional information can be gathered using a Level-Two approach. For those operations that are faced with particularly sensitive or controversial issues or for the most ambitious resource managers, a Level-Three approach may be appropriate. Our monitoring program is designed to provide resource managers with guidelines for determining what needs to be monitored, where to focus efforts, and how to most effectively get the best information for the time invested. In taking this approach, we are also emphasizing our belief that a single, “cookbook” approach to monitoring is not appropriate or efficient for New Mexico rangelands.

Chris Allison, New Mexico State University, Box 30003 MSC 3AE, Las Cruces, NM 88003-8003, USA, Phone: 505-646-1944, Fax: 505-646-5441, Email: callison@nmsu.edu

Soil Phosphorus Variability: Implications for Soil Sampling and Nutrient Management Strategies – Poster number 2
Mike B. Daniels, John Langston, Karl VanDevender and Tom Riley
University of Arkansas Coop. Ext. Service, Little Rock, AR

Phosphorus (P) in runoff from pastures fertilized with animal manure can contribute to off-site water quality degradation. To address this concern, conservation agencies have proposed new nutrient management strategies whereby application rates are determined using soil P as the decision criterion rather than forage nitrogen requirements. One such strategy is utilizing “soil P thresholds” that invoke P-based application rates or limits any additional P applications altogether.

Using proper soil sampling is critical to obtaining trustworthy estimates of soil P for comparison to an environmental threshold since soil P can vary considerably within pastures. We used grid soil sampling with a differential Global Positioning System (DGPS) and a geographic information system (GIS) to construct soil P variability maps. Several zig-zag sampling patterns were constructed from selected grid points and overlain on the soil P maps to illustrate how sampling patterns and the number of samples influence the estimate of soil P. This information was used to deliver an educational package to livestock and poultry producers on proper soil sampling for manure management.

In conjunction with educational efforts, we also conducted a study to determine the effect of soil P variability on sampling recommendations and on using soil P threshold strategies as it relates to nutrient management decisions. An overview of the educational package as well as results from the study will be presented.

Mike Daniels, University of Arkansas Coop. Ext. Service, 2301 S. University, Little Rock, AR 72203, USA, Phone: 501-671-2281, Fax: 501-671-2110, Email: mdaniels@uaex.edu
Lessons Learned from Watershed Education in Arkansas – Poster number 3

Mike B. Daniels, Tom Riley, Mike Hamilton and Quentin Hornsby
University of Arkansas Coop. Ext. Service, Little Rock, AR

The University of Arkansas Cooperative Extension Service has conducted ten watershed education programs since 1990. Four of these programs have been funded by the United States Department of Agriculture (USDA) and conducted in partnership with other USDA agencies (Natural Resources Conservation Service and Farm Service Agency). The other six have been funded with the United States Environmental Protection Agency (EPA) 319h program, which is administered by the Arkansas Soil and Water Conservation Commission.

Six of these programs addressed nonpoint source, water quality issues related to confined animal agriculture. Another program was focused on nonpoint source issues associated with row-crop agriculture. These programs have encouraged watershed protection and restoration through landowner education and demonstration of agricultural best management practices.

Two programs have been geared toward the public at large to generate awareness for protecting drinking water supplies. The remaining program has addressed urban nonpoint source issues with homeowner education and partnership development with municipal entities.

Due to the diverse nature of the different watersheds as well as program goals, a variety of educational strategies have been employed. These educational programs have been conducted in various combinations with other watershed program elements and with varying degrees of partnerships with other organizations. Experiences resulting from these efforts are helping us develop more effective educational programs that address water quality issues. Lessons learned from these programs as they relate to Extension education and water quality impacts will be discussed.

Mike Daniels, University of Arkansas Coop. Ext. Service, 2301 S. University, Little Rock, AR 72203, USA, Phone: 501-671-2281, Fax: 501-671-2110, Email: mdaniels@uaex.edu

MSU-WATER: Watershed Action Through Education and Research – Poster number 4

Scott Witter and Ruth Kline-Robach
Michigan State University, East Lansing, MI

As stressors on surface and groundwater continue to mount and resources for generating solutions dwindle, it is critical that practical, cost-effective water management alternatives be developed and effectively disseminated. MSU-WATER (Watershed Action Through Education and Research) is a comprehensive watershed management initiative that aims to generate new solutions that can be adopted by communities that are faced with developing plans to manage their water resources.

Led by faculty, staff and students representing six colleges, 16 departments and several support units within Michigan State University, MSU-WATER integrates research, teaching and outreach activities within the Red Cedar River Watershed. In cooperation with public and private external partners, multi-disciplinary teams will develop and evaluate a variety of management practices, and share results with communities across Michigan.

Multi-faceted education and outreach activities are an integral aspect of the project. The goal of the outreach component will be to increase awareness, knowledge, and concern about water quality, with the hope of changing behaviors. In-service training, campus tours, interpretive signage and web-based training applications are examples of outreach projects that will be developed for the project.

Ruth Kline-Robach, Institute of Water Research, Michigan State University, 115 Manly Miles Building, 1405 South Harrison, East Lansing, MI 48823, USA, Phone: 517-355-0224, Fax: 517-353-1812, Email: klineror@msue.msu.edu
Ohio State University Extension Community - Based Watershed Management Program

– Poster number 5

Jerry Iles, Anne Baird, Robert McCall, J. P. Lieser and Dana Oleskiewicz
Ohio State University Extension, Columbus, OH

The Ohio State University Extension Community Based Watershed Management Program is comprised of five agents that work with over 100 local watershed groups throughout Ohio. Watershed management agents work areas are determined by using watershed boundaries as opposed to traditional county and district political boundaries. Watershed management agents assist with watershed planning, meeting facilitation, serve on steering committees and provide leadership in education and outreach activities.

In addition, a program leader based on the main OSU campus administers The Ohio Watershed Academy which is a distance based learning program for watershed coordinators. Agents assist local coordinators with assignments and assist the academy program leader with statewide meetings that allow local watershed leaders to network several times a year with other watershed coordinators. The program leader with the help of campus support staff also administers the Ohio Watershed Network (OWN). The network contains a website with links to community watershed group home pages and relevant state and federal agencies and a heavily used listserv ohwatersheds@ag.ohio-state.edu which serves as an excellent communication forum that allows subscribers to post information such as position announcements, technical questions, upcoming conferences / meetings and research needs.

Watershed agents also help link graduate students and other campus researchers to real world projects that assist local watershed groups with their monitoring, restoration and protection efforts. In addition agents serve on area assistance teams that assist local watershed groups with 319 grant writing and review.

Jerry Iles, Ohio State University Extension, P.O. Box 958, Jackson, OH 45640, USA, Phone 740-286-177, Fax 740-286-1578, Email: iles.9@osu.edu

Restoring Blackberry-Dominated Riparian Zones: A Thorny Issue – Poster number 6

Max Bennett, Randy White and Hudson Minshew
Oregon State University Extension Service, Central Point, OR

Successful restoration of degraded riparian areas in western Oregon is often hindered by the presence of exotic, invasive vegetation, particularly Himalaya blackberry (Rubus discolor). This shrub rapidly occupies disturbed areas and smothers existing vegetation. Its ability to persist in partial shade and resprout from root crowns and rhizomes makes it exceptionally difficult to eradicate. Consequently, it has significantly reduced natural regeneration and has displaced native vegetation along many streams. The problem is most acute in lowland riparian zones in agricultural and suburban settings. Restoration of these areas is increasingly recognized as critical to improving fish habitat and water quality, but until recently has received little attention from extension.

We are investigating methods of blackberry eradication and tree establishment along riparian terraces in low elevation agricultural areas of southwestern Oregon. Our on-going, interdisciplinary work (representing extension forestry, livestock/range, and watersheds program areas) includes 1) a trial and case study comparing goats and a combination of chemical and mechanical methods for blackberry control; 2) a trial comparing chemical and mechanical control methods; and 3) a multi-species riparian planting and irrigation trial. Results to date suggest that repeated, correctly timed mechanical treatments can significantly reduce blackberry cover but are expensive compared to herbicides. Goats may be able to control blackberry effectively with season-long browsing and can offset costs but require intensive management. Irrigation significantly increases survival for some but not all species; use of larger stock types may be a more cost-effective strategy. Updated results from the trials will be presented.

Max Bennett, Oregon State University Extension Service, 569 Hanley Road, Central Point, OR 97502, USA, Phone: 541-776-7371, Fax: 541-776-7373, Email: max.bennett@orst.edu
Assessing Riparian Buffer Effectiveness – Poster number 7

Charles J. Barden, Kyle Mankin, Daniel Devlin and Wayne Geyer
Forestry Division, Biological and Agricultural Engineering Department, and Agronomy Department, Kansas State University, Manhattan, KS

A number of riparian buffer research and demonstration sites have been developed across the state of Kansas. The objective is to evaluate the water quality-improving effectiveness of young, planted riparian buffers, and compare them to nearby native, mature riparian woodlands, and grass-only filter strips. Both surface runoff and subsurface flow are being sampled at the edge of the crop field and as water passes through the riparian buffers. Water samples are being analyzed for various pollutants, including nitrogen, phosphorous, and suspended solids. The sites are also used as demonstration and training sites for county agents, other agency personnel, and agricultural producers.

Initial results show a steep decline in the concentration of pollutants as water flows through the buffers. With the locally collected data, this project is demonstrating the usefulness of riparian buffers to Kansas landowners and agency personnel.

Kansas state agencies have a comprehensive surface water sampling network, and several large-scale projects are studying stream bank stability and sediment loading, and riparian habitat characteristics. This project is complementing these efforts by demonstrating the effectiveness of vegetated riparian buffers on water quality. In combination, these projects will provide a more complete picture of the benefits of riparian areas for providing stream structure, habitat, and water quality improvement.

GRASS ROOTS, A Residential Water Quality/Lawn Care Program – Poster number 8

Suzan E. Craik
Virginia Cooperative Extension, Chesterfield, VA

Teaching environmentally sound lawn care practices to suburban homeowners was the objective of this program. Close to 300 acres of residential land was tested and nutrient management plans were written and followed to prevent overuse/misuse of fertilizers and other chemicals. Using volunteer Master Gardeners, this program was able to reach homeowners on their own property to demonstrate recommended lawn care practices that contribute to protecting and preserving water quality. Annual funding level was $9,000 but it is feasible to conduct this program totally with volunteers.

The Master Gardener volunteers were provided with training devoted to soil testing, nutrient management of turf, aeration of soils, irrigation, and other cultural needs of turf. The Master Gardener made contact with the participant and arranged a site visit. During this visit, the volunteer measured the lawn area, took a soil sample, and evaluated the site noting slope, exposure, soil conditions and vegetation. The volunteer explained the impact lawn care practices have on water quality and discussed any problems or questions the homeowner had about lawn care.

A personalized “Nutrient Management Plan” was then written based on measurements and soil test results. The “Plan” is a one-page outline of exactly how much, when, and what kind of fertilizer and lime the individual site needs. Along with the plan, fact sheets on establishing or maintaining lawns were sent depending on the needs of the individual. Additional printed information on lawn care that was requested by the participant was also sent at this time.

Suzan E. Craik, Virginia Cooperative Extension, P.O. Box 146, Chesterfield, VA 23832, USA, Phone: 804-751-4424, Fax: 804-751-0515, Email: scraik@vt.edu
Communication Enhancement Among Mississippi Watershed Stakeholders
– Poster number 9

Larry Oldham
Mississippi State University, Starkville, MS

Mark LaSalle
Mississippi State University, Biloxi, MS

Christine Olsenius
Southeast Watershed Forum, Chattanooga, TN

Watershed Forums are cooperative efforts among agencies, industries, and organizations to enhance local watershed initiatives, communicate watershed news, programs, and resources; facilitate cooperation between the public and private sectors, and champion water quality and quantity issues in government agencies. One mechanism for achieving these goals is through Roundtables which assemble disparate watershed stakeholders for dialogue, networking, and education.

Stakeholders representing various interests convened the Mississippi Watershed Forum Roundtable in September, 2001 with over eighty participants. Education was provided on watershed topics and various watershed protection success stories from around the state were presented. An issues panel from industry, local government, environmental organizations, agriculture, and state regulatory agencies discussed water quality and quantity issues from their perspectives. Five watershed based breakout sessions considered protection efforts working, or not working at the local level, needed improvements to current efforts, and future directions for the state.

The participants stressed more interagency coordination and cooperation, increased funding for initiatives, increased local government and industrial awareness, and increased education on watershed issues. Most participants thought the Roundtable had potential to change the way they operate, and appreciated the opportunity to network with other stakeholders. Over two thirds of the participants felt the training workshops and breakout discussions were beneficial. Ninety-six percent of the evaluations suggested the Roundtable be repeated either annually or biannually. Regional Roundtables will be convened in 2002, and another statewide Roundtable is planned for February, 2003.

Larry Oldham, Mississippi State University Extension Service, 117 Dorman Hall, Mail Stop 9555, Mississippi State, MS 39762, USA, Phone: 662-325-2311, Fax: 662-325-8742

Mississippi Poultry Litter-Based Nutrient Management Programming
- The Newton Experience – Poster number 10

Larry Oldham
Mississippi State University, Starkville, MS

Poultry provides more farm level income in Mississippi than any other enterprise. Poultry litter (bedding, wastes, and other material periodically removed from the growing houses) is an excellent fertilizer that increases soil organic matter and improves soil health. Most Mississippi poultry producers land apply it pastures and forages on the farm of origin, considering poultry litter the foundation of their nutrient management plan. However applying this material to meet crop nitrogen requirements often increases soil test phosphorus levels. In the mid 1990's, these increases resulted in regulatory, farmer, and public concerns about potential environmental impacts, particularly in adjacent surface waters. A multi-disciplinary research, Extension, and education program was initiated that utilizes the facilities of the Coastal Plain Experiment Station in Newton, MS. Agronomists, environmental economists, soil scientists, poultry scientists, microbiologists, and animal scientists are involved in field and laboratory research, and economic modeling activities. An advisory council consisting of farmers, state agency representatives, and farmer organizations' staffs assists in keeping focus on issues most germane to Mississippi stakeholders. Research results are almost immediately incorporated into Extension and education programs targeted to multiple client groups including university students, farmers, businesses, technical assistance providers, governmental environmental agencies, and non-governmental organizations. These programs have used several outreach methods to perform the Extension and education function.

Larry Oldham, Mississippi State University Extension Service, 117 Dorman Hall, Mail Stop 9555, Mississippi State, MS 39762, USA, Phone: 662-325-2311, Fax: 662-325-8742
Economic Consequences and Public Awareness of Red Tide Events in Coastal Florida Communities – Poster number 11

Chuck Adams
Food and Resource Economics Department / Florida Sea Grant Program, University of Florida, Gainesville, FL

Recent studies funded by the Florida Fish and Wildlife Conservation Commission have attempted to measure the economic impact of red tide events on the economies of coastal communities in the panhandle and southwest regions of Florida. Reoccurring red tide events have reportedly created a negative impact on local businesses, particularly those located on or immediately adjacent to the Gulf of Mexico or bayside waterfront. No previous studies exist that provide a defensible measure of these purported economic impacts. Studies conducted in 1999 and 2000 examined the changes in monthly gross sales data as collected by the Florida Department of Revenue. The 1999 study focused on the Manatee County and Sarasota County regions of southwest Florida, whereas the 2000 study focused on Okaloosa County in the Florida panhandle. Changes in sales data during months when red tide events occurred were examined for several different types of businesses, including restaurants and lodging establishments. The analyses took into consideration other factors that may have affected changes in business activity, such as weather and trend changes in the general economy. Also during 2000, a survey of Manatee County and Sarasota County residents solicited information on respondents’ general awareness of red tide, the causes of red tide, impact of a red tide on the environment, health risks associated with a red tide, etc. In addition, respondents were asked to what extent red tide events have affected their participation in water-related activities and their patronage in water-proximate businesses. The findings indicate that the economic consequences of red tide events may be extremely short term and hidden by the economic activity that occurs within a large, economically diverse coastal economy such as southwest Florida, but more easily observed within a smaller coastal community, such as found in the panhandle of Florida. In addition, the general awareness and response to red tide events are related to respondents’ participation avidity in water-related activities, distance of residence from coast, and length of time residing in a coastal community. Finally, significant misperceptions exist among coastal residents regarding the cause and effect of red tides. Florida Sea Grant Extension is currently working with local community groups and resource management agencies to design and implement a data gathering program for the purpose of better documenting the economic consequences of red tide events and increase local residence awareness and understanding of red tides in Florida.

Chuck Adams, Food and Resource Economics Department / Florida Sea Grant Program, University of Florida, PO Box 110240, Gainesville, FL 32611, USA, Phone: 352-392-1826 (ext. 223), Fax: 352-392-3646, Email: CMAdams@mail.ifas.ufl.edu

Oysters, *Vibrio vulnificus*, “Public” Health and Extension’s Role in Education – Poster number 12

William T. Mahan Jr.
FL Sea Grant Extension Program, Apalachicola, FL

Extension faculty with the University of Florida’s Institute of Food and Agriculture Sciences (UF-IFAS) are currently working with oyster processors, fishermen and regulators to implement a statewide educational program focusing on an illness caused by *Vibrio vulnificus* (Vv.), a naturally-occurring bacterium found in coastal shellfish harvesting waters and oysters throughout the Gulf of Mexico.

Each year, approximately 30 individuals become infected with Vv. after consuming raw oysters from the Gulf of Mexico. Despite the small number of cases annually, these illnesses have received national media coverage resulting in economic hardships for the Gulf’s oyster industry.

During its annual conference in July 2000, the Interstate Shellfish Sanitation Conference (ISSC), which regulates the interstate shipment of molluscan shellfish, began developing new handling guidelines and regulations aimed at reducing the number of Vv. illnesses.

In response to the ISSC’s Vv. illnesses reduction effort, the Florida oyster industry and the Florida Department of Agriculture and Consumer Services (FDACS) decided to develop a Vv. illness reduction plan for Florida. A small workgroup representing the state’s oyster industry, regulatory agencies and UF-IFAS was then appointed by the FDACS to develop a “FL Vv. Illness Reduction Plan.”

Epidemiological data collected from patients infected with Vv., indicated that they were high-risk individuals already suffering from preexisting medical conditions, primarily liver-diseases that greatly reduced the individuals’ ability to “fight-off” bacterial infections. This resulted in a mortality rate of approximately 50%.

In response to these findings, the workgroup finalized, adopted and began implementing an illness reduction plan in early 2001 that relies heavily on educating at-risk individuals, their families, medical care providers and support agencies about Vv.

William T. Mahan Jr., Franklin County/UF-IFAS Extension Program, 28 Airport Road, Apalachicola, FL 32320, USA, Phone: 850-653-9337, Fax: 850-653-3643, Email: wtm@mail.ifas.ufl.edu
CampUShed, Stormwater Management and Education – Poster number 13
Tim Lawrence, Martin Quigley, Tricia Petras, Laura Shinn, Kevin Wagner and Larry C. Brown
The Ohio State University, Columbus, OH

Nonpoint source (NPS) pollution from both agricultural and urban landscapes is a major problem in Ohio and the United States in general. Significant resources are being expended to increase the understanding and awareness of this issue in Ohio. However, there are few examples to assist decision makers determine suitability of alternative approaches to stormwater management. Furthermore, students at the university level have few opportunities to explore the applicability of fundamental principles in meeting the career challenges they will face with regard to NPS pollution. To address these shortcomings The Ohio State University has implemented an integrated program of Research, Education, and Extension coined CampUShed. The program is a collaboration between the academic and service sectors of the University community, whose purpose is to reduce the impact of stormwater runoff and drainage from the urban and agricultural sectors of the OSU campus. The CampUShed program will also conduct research to verify the efficacy, feasibility, and cost/benefit of onsite alternative stormwater treatment systems. Students and faculty work directly with the design and development of alternative systems for various capital improvement projects on campus. These include: control and treatment from cropland and animal confinement facilities from the university farm; runoff from parking lots and other impervious surface areas; and onsite treatment through landscape and rooftop garden areas. Projects are open for demonstration and all data collected from onsite monitoring stations will be available via the Internet. This presentation will explore the development, implementation, and future of the CampUShed program at OSU.

Tim Lawrence, Ohio NEMO, Ohio State University Extension, 590 Woody Hayes Drive, Columbus, OH 43210, USA, Phone: 614-292-6538, Fax: 614-292-9448, Email: Lawrence.53@osu.edu, Oral
Presenter: Joe Bonnell, Ohio State University, School of Natural Resources, 210 Kottman Hall, Columbus, OH 43210, USA, Phone: 614-292-9383, Fax: 614-292-7432, Email: bonnell.8@osu.edu

A Working Forest that Integrates Teaching, Research and Extension – Poster number 14
Peter Smallidge, Gary Goff, Steve Morreale and Don Schaufler
Cornell University, Ithaca, NY

The Arnot Forest is a private 4000-acre working forest owned by Cornell University and managed through the Department of Natural Resources. The Arnot supports the university mission of teaching, research and extension by providing infrastructure and coordinated programs. The Arnot Forest embraces a conservation ethic by focusing on the balance between sustainable production and the maintenance of ecological function. As such, the Arnot is well suited to a mission to “document and disseminate the ecological and economic functions of a managed hardwood forest that support societal benefits and conservation values”.

The benefits of sustainable management practices that complement conservation needs are often unrecognized. Multiple audiences can begin to gain this recognition through access of a working forest landscape that is integrated with a field campus. Facilities and programs that support the integrated mission include a four season field campus, road network, multiple clusters of demonstration projects, a summer field research and extension intern program, and logistical support of mission-targeted forest and conservation research. Use during the previous five years has included: extension activity for youth, landowners, and extension educators; academic course activities in forest ecology, woodlot management, forest pathology, field biology, and agricultural economics; and research including forest dynamics, deer impacts on forest vegetation, conservation ecology of amphibians and reptiles, earthworm ecology, breeding bird habitat use, and a variety of agroforestry projects. Timber management, maple syrup production, and field campus use provide the financial basis for the Arnot's annual operating budget.

Peter Smallidge, Cornell University, 116 Fernow Hall, Ithaca, NY 14850, USA, Phone: 607-255-4696, Fax: 607-255-2815, Email: pjs23@cornell.edu
VI*A*Syst – Voluntary Pollution Prevention in the Virgin Islands – Poster number 15

Julie Wright and Dale Morton
Cooperative Extension Service, University of the Virgin Islands, St. Thomas, VI

The UVI Cooperative Extension Service has developed the VI*A*Syst program to target under-served and non-traditional clients in the Virgin Islands by adapting existing materials to local conditions (i.e. focus on cistern water systems and coastal water quality), diversifying these materials to varying education levels, and developing innovative outreach approaches to overcome barriers to program delivery.

It is important to present pollution prevention information to the public in a clear, understandable and non-threatening manner in order to increase voluntary practice adoption rates. VI*A*Syst’s pollution prevention message is delivered through Train-the-Trainer and community workshops, presentations to schools, youth and community groups, at fairs and conferences, on radio and television talk shows, via publications, and through radio public service announcements and newspaper articles. VI*A*Syst offers Virgin Islanders a simple and effective way to protect water quality, public health and quality of life by helping residents change behaviors or implement practices to reduce pollution risks in and around their homes, yards and/or farms.

EPA Environmental Education and 319 grant funds are being used to develop and print risk assessments, fact sheets, posters and other materials for use in education and outreach forums and in conducting site assessments in homes and farms across the Territory; to develop and distribute television public service announcements; and to advertise the program in the print media. Grant funds are also being used to distribute home water test kits to clients to allow residents to easily and inexpensively test their cistern water for bacteria, lead, copper, nitrate and nitrite.

Julie Wright, Cooperative Extension Service, University of the Virgin Islands, #2 John Brewers Bay, St. Thomas, VI 00802-9990, Phone: (340) 693-1082, Fax: (340) 693-1085, Email: jwright@uvi.edu

Innovative Ways to Bring Marine Stewardship to Diverse Audiences – Poster number 16

Marella Crane
University of Florida Sea Grant Extension Program, Miami, FL

Florida Sea Grant has developed a variety of tools focused on marine environmental stewardship. These innovative methods and techniques heighten awareness on the significance of protecting the environment while sustaining its economic value. Miami has a strong 57% Hispanic population with over 70 languages or dialects spoken. Material developed in different languages captivates diverse ethnicities. Miami also represents a high emigrant and transient community and must be taken into consideration when planning and delivery of environmental education. Producing multi-purposes resources with public/private partners amplifies value and interest to user groups. Collaborating with public/private entities is ideal for extensive support and financial assistance. Five gallon buckets produced with messages to remind people to discard trash properly is an excellent and useful tool to implement marine stewardship. Buckets are disseminated at fishing tournaments for fishermen to use on their boats. The posting of signs attracts awareness and signifies actions or behaviors needed to become stewards of the environment. Writing newspaper articles on the local marine environment helps influence the community to make appropriate decisions to protect fragile habitats. Developing presentations and exhibits for schools, clubs, and other educational events that involve hands-on activities and visual aids are excellent opportunities to increase awareness and interests. To achieve successful results for developing marine stewardship, methods and resources must be advantageous, innovative, and applicable and appeal to all ages, ethnicities, and genders.

Marella Crane, University of Florida Sea Grant Extension Program, 4600 Rickenbacker Causeway, Key Biscayne, FL 33149, USA, Phone: 305-361-4617, Fax: 305-361-4674, Email: mcrane@mail.ifas.ufl.edu
Paralytic Shellfish Poisoning: The Alaska Problem -- The Alaska Sea Grant Marine Advisory Program Extension Effort – Poster number 17

Raymond RaLonde
Marine Advisory Program, University of Alaska, Anchorage, AK

The University of Alaska Marine Advisory Program (MAP) is intensely involved in providing information, public education, conference organization, applied research, and facilitating cooperative efforts to address the paralytic shellfish poison (PSP) problem along the west coast of the United States as well as Alaska. With over 150 outbreaks since 1973, two recent fatalities, and a multimillion dollar loss to the commercial fishery and aquaculture industries, the PSP problem requires a multifaceted approach to protect public health and to improve economic opportunities for coastal communities. This presentation will describe the diversity of roles, and the unique techniques used by MAP to address Alaska’s PSP problem.

Raymond RaLonde, University of Alaska Marine Advisory Program, 2221 E. Northern Lights Blvd. #110, Anchorage, AK 99508, USA, Phone: 907-274-9691, FAX: 907-27-5242, Email: afrlr@uaa.alaska.edu

Amish Water Quality and Nutrient Management Education – Poster number 18

James J. Hoorman
Ohio State University Extension, Kenton, OH

Robert McCall
Ohio State University Extension, Findlay, OH

The Amish are a religious group who live primarily on 80-100 acre diversified livestock farms. In Northwest Central Ohio, 240 Amish farms were targeted. Water quality problems include misapplication of manure, fertilizer and pesticides, over-grazing pastures, livestock in streams, stream bank erosion, and contaminated wells.

With a USDA-CSREES grant, the Ohio State University (OSU) Extension is educating Amish on Best Management Practices (BMP’s). The five major objectives were: 1) to use soil and manure testing to develop nutrient management plans, 2) show efficient manure utilization with demonstration plots, 3) to educate 240 Amish families on BMP’s, 4) test for contaminated wells, and 5) conduct stream monitoring.

The results were that 100 Amish nutrient management plans (1000 soil samples, 6600 acres sampled) were completed. Twenty-three replicated manure test plots were used to teach efficient manure management. Three calibration clinics resulted in ten sprayers, nineteen planters, and seven manure spreader being calibrated. Management Intensive Grazing (MIG) concepts were taught with 17 of 18 dairy farmers (94%) using MIG in one community and 10,000 feet of fencing being constructed to exclude livestock from local streams. Well water testing was conducted on 185 Amish wells with 75 (40.5%) testing positive for total coliform bacteria and 17 (7.3%) positive for E.Coli. Stream monitoring was conducted on 6 streams at 14 sites with high phosphorous levels and low biological activity found in streams without livestock exclusion. Outcomes included gain in knowledge, change in attitudes, and adoption rates of 75 to 90 percent for selected BMP’s.

Robert McCall, Ohio State University Extension, 1219 W. Main Cross Street, Findlay, OH 45840-2420, USA, Phone: 419-422-6106, FAX: 419-422-7595, Email: mccall@postoffice.ag.ohio-state.edu

James Hoorman, Ohio State University Extension, One Courthouse Square, Suite 40, Kenton, OH 43326, USA, Phone: 419-674-2297, FAX: 419-674-2268, jhoorman@postoffice.ag.ohio-state.edu
“Encuentro Con El Mar” – Poster number 19

Carmen González-Toro, Juan González Lagoa and Saul Wiscovich,
Agricultural Extension Service, UPR-Mayaguez Campus, Mayagüez, PR

This special project between the Puerto Rico Agricultural Extension Service (PRAES) and the Space Grant Consortium-Mayaguez Affiliate promotes youth education regarding planet Earth and its marine resources. The goal is to teach youth about marine ecosystems, how they benefit us, and how to manage them wisely.

A booklet covering Mangroves, Marine grasses, Bioluminescent bays, Coral reefs, Soil erosion, and Regulations for the management of marine resources was published as a result of this effort. The topics include color photographs and simple explanations to facilitate the identification of each ecosystem and its organismal composition. For instance, in Mangroves there is a detailed description of the trees, flowers, fruit, leaves, and the successional organization of the system of the four species in our area.

The project’s implementation plan called for a 2-day training of PRAES personnel through intensive classroom and field work. In turn, PRAES personnel trained volunteer leaders and other young people. The effort started in May 2001, on time for a wide implementation during the summer vacations. The attendees received a promotional poster, a copy of the booklet, a copy of the EPA publication “La Marea de Basura”, in Spanish, a CD ROM with the publication and color illustrations, SEA-GRANT posters on mangrove and marine grasses, and a CD ROM with Soil conservation practices.

We want to present these materials, particularly, because they are in Spanish and the subject is of utmost interest to young people to teach them about these ecosystems, how they interact and, how they benefit humankind.

Carmen González-Toro and Saul Wiscovich, Agricultural Extension Service, UPR-Mayaguez Campus PO Box 9031, Mayagüez, PR 00681-9031 USA, Phone: 787 832-4040 x2206, x2198, Fax: 787 265-4130, Emails: c_gonzalez@seam.upr.clu.edu and s_wiscovich@seam.upr.clu.edu

Plot-Level Determinants of Adoption of Soil and Water Conservation (SWC) Measures by Subsistence Farmers in Ethiopia – Poster number 20

Lars Drake and Wagayehu Bekele
Swedish University of Agricultural Sciences, Department of Economics, Uppsala, Sweden

Agriculture in Ethiopia is the dominant economic sector upon which the vast majority of the population directly or indirectly depends. This sector is characterized by small-scale subsistence farming based on traditional techniques and implements incapable of preventing soil losses due to erosion to any tolerable level. SWC is, therefore, among the top priority areas for extension intervention to insure food security and improve living conditions of the rural population. Methods of intervention should, however, depend upon knowledge of various personal, physical, economic and institutional factors that influence farmers’ decisions. This understanding could prove useful in the formulation and implementation of policy programs needed to support the extension effort.

This paper is based on a survey conducted in the Western Hararghe Zone of Eastern Ethiopian Highlands. Within this study area 145 farm households managing 265 plots were randomly selected and individual interviews were conducted using a semi-structured questionnaire. The comparison of the pay-off distribution of soil and water conservation measures in terms of return and risks showed that use of conservation method yields unambiguously higher return and is less risky than traditional methods. However, about 60% of the plots surveyed were found to be without conservation structure. Multinomial logit analysis of the survey data shows that plot-level adoption of conservation measures is positively related to access to information, support programs for initial investment, access to credit, topography and area of the plot. Family size, per economically active landholding and age of farmers are negatively correlated to conservation decisions.

Wagayehu Bekele, Swedish University of Agricultural Sciences, Department of Economics, Box 7013, 750 07 Uppsala, Sweden, Tel: +46 (0)18 67 17 52, Fax: +46(0)18 67 35 02, Email: wagayehu.bekele@ekon.slu.se
The Natural Areas Training Academy, An Innovative Partnership – *Poster number 21*

**Peter Colverson**
The Nature Conservancy, Gainesville, FL

The Natural Areas Training Academy is a partnership of The Nature Conservancy, University of Florida, IFAS and Valencia Community College. It was formed to address multiple challenges created by state acquisition of natural areas, the need for well-qualified managers and rapidly changing field of natural-areas management. An advisory team composed of representatives from the state’s major land management agencies guided the development of a series of five workshops that leads to the Certificate in Natural Areas Management. Each workshop lasts 3 - 5 days and provides up-to-date training using hands-on methodologies. After one year of operation, 79 professionals from state and county agencies, non-profits and private firms have completed at least one workshop with 8 people completing the entire certificate. The second year has begun with the first 2 workshops reaching maximum enrollment 1 month prior to the beginning of each workshop.

This power point presentation will provide information on the academy and its workshops. The rationale for the academy, the formation of the partnership and its maintenance, the content of each workshop and the audience served will be included. Future plans for program expansion will also be presented.

Peter Colverson, The Nature Conservancy, Center for Natural Resources, The University of Florida, 1051 McCarty Hall, PO Box 110230, Gainesville, FL 32611-0203, USA, Phone: 352-392-3210, Fax: 352-846-2856, Email: pcolverson@tnc.org

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How to Grow a National Program: Lessons Learned from the Land-Grant - CSREES Forestry Team – *Poster number 22*

**Eric R. Norland**
Ohio State University Extension, Columbus, OH (temporary assignment to USDA-CSREES, Washington, DC)

**Nancy H. Bull**
University of Connecticut - Cooperative Extension System, Storrs, CT

**Larry E. Biles**
USDA - Cooperative State Research, Education and Extension Service, Washington, DC

With the pending renewal of national farm policy and programs in 2002 (Farm Bill), the National Extension Committee on Organization and Policy (ECOP) organized a Forestry Liaison Team comprised of State Extension Directors, university forestry program leaders, representatives from USDA-CSREES and USDA-Forest Service, and the National Association of State Foresters. The tasks assigned to this team were: 1) to develop a “2002 Farm Bill Issue Paper” on forestry, and 2) to develop internal and external support for the “white paper” recommendations. Over the course of nine months (December 2000-August 2001):

- A 2002 Farm Bill Issue Paper, “A National Initiative to Enhance Forest Resource Management on Private Lands” was developed.
- Stakeholders from the public and private sectors were consulted.
- Verbal testimony before a House Agriculture Subcommittee was provided.
- A forestry field tour for Administration and Agency officials was conducted in Virginia.
- A national coalition of forestry organizations promoted the white paper recommendations during Congressional visits.
- House Resolution 2646 was introduced with a 10-year re-authorization for the Renewable Resources Extension Act (RREA) and endorsement of the value of the Cooperative Forest Research (McIntire-Stennis) Program.

This paper describes the necessary components for a national team to be successful in expanding an effective but under-funded program (RREA), including: formulation of appropriate recommendations, proper timing of activities, consideration of national political realities, and engagement with influential public and private policy experts. How this land-grant - CSREES partnership could serve as a model for future funding initiatives will also be discussed.

Eric Norland, USDA-CSREES-NRE, 1400 Independence Avenue, SW-Stop 2210, Washington, DC 20250-2210, USA, Phone: 202-401-5971, Fax: 202-401-1706, Email: enorland@intranet.reeusda.gov
Graduate Education in Forestry and Natural Resources Extension – Results of a Survey – Poster number 23

James E. Johnson and Franklin A. Bruce
Virginia Tech, Blacksburg, VA

As the concept of sustainable natural resources management builds around the world, the need for more trained professionals in extension is increasing. Although graduate degree programs in agricultural extension have been around for many years, there are few programs which feature forestry and natural resources extension. To assess the need for such a degree program, and the possible mode of delivery and content, a survey was constructed and mailed, via surface mail and email, to the membership of the Extension Forestry Working Party of the International Union of Forestry Research Organizations. This membership is made up of about 500 individuals, representing colleges and universities, research institutes, non-governmental organizations, private consultants, and private industry from about 70 countries. The four-page survey included questions about the need for trained professionals in forestry and natural resources extension, barriers to pursuing such a degree, potential for internet-based degree programs, past and future hiring trends for natural resource extension professionals, possible core and elective courses, thesis and non-thesis options, and demographic information.

Survey results will be shared, and data compared between responses from the U.S. and foreign countries. From this survey, a graduate degree program will be proposed and discussed.

James E. Johnson, College of Natural Resources, 324 Cheatham Hall, Virginia Tech, Blacksburg, VA 24061, USA, Phone: 540-231-7679, Fax: 450-231-7684, Email: jej@vt.edu

Focus Groups as a Tool for Needs Assessment in Extension Programs – Poster number 24

Marcus K. Measells and Stephen C. Grado
Mississippi State University, Mississippi State, MS

Gaining an understanding and knowledge about Extension clientele is necessary for the success of outreach programs. One way to gain insights about clientele is by using focus groups. Originally used as a technique in group therapy, focus groups have been adapted for use in marketing and recently recognized as a valuable tool for investigating natural resource-related topics. Focus groups are methods of collecting qualitative data using moderated group discussion generally requiring 6 to 12 individuals from the population of interest. The use of the same moderator for multiple sessions is important. Focus groups produce useful information through open-ended questions developed by the researchers. Open-ended questions allow individuals, in a group of their peers, to discuss their opinions and ideas on a variety of issues more fully and freely than they might normally when given a structured, written survey. Currently, many Extension professionals implement outreach programs and activities based on what they believe intended audiences need. However, focus group methodology can be used to gain further knowledge on what intended audiences desire from Extension programs. The use of focus groups can improve needs assessment by providing Extension professionals with insights of intended audiences.

Recently, focus groups were used in Mississippi to determine values, attitudes, and perceptions of groups (e.g., environmental organizations, landowners, teachers) relative to forestry. Based on this research, the MSU Extension Service realized the importance of conducting focus groups for needs assessment and is subsequently using focus groups in a project to develop educational strategies for underserved forest landowners.

Marcus Measells, Mississippi State University, Box 9681, Mississippi State, MS 39762, USA, Phone: 662-325-3550, Fax: 662-325-0027, Email: marcm@ext.msstate.edu
Involving Stakeholders in Extension Curriculum Design: A Case Study of Developing the Michigan Salmon in the Classroom Program for Fisheries and Watershed Education – *Poster number 25*

Laura Granack and **Shari L. Dann**
Michigan State University, East Lansing, MI

“Salmon in the Classroom” (SIC) is a program offered by several state fisheries agencies. This curriculum-based K-12 program combines the hands-on activity of raising salmon in aquaria with activities that teach various natural resources topics, such as fisheries management and public stewardship of watersheds. The purpose of this poster is to describe the research basis for the commonly-used Extension practice of direct involvement of stakeholders in curriculum and program design. We first reviewed the education and resource management research literature that provides strong support to this approach. Next, we conducted a study to investigate specific stakeholder perspectives and apply these in the development of a Michigan SIC curriculum. We developed and administered a mail survey to SIC teachers, other educators, Fisheries Division personnel, and opinion leaders of sportfishing groups and watershed coalitions (N=503). An overall 77% survey response rate was achieved. Finally, we conducted a curriculum writing retreat with stakeholders to discuss concepts and activities for a Michigan-specific SIC curriculum. Fisheries stakeholders believed that it was most important to teach resource management topics, whereas education stakeholders believed that the SIC curriculum should address state K-12 education standards. Additional results of this in-depth approach to curriculum design lead us to recommend mandatory in-service training, specific administrative roles for Extension natural resources staff, and local-level community involvement in SIC through partnerships to enhance the success of the Michigan SIC program.

Shari Dann, Michigan State University, 13 Natural Resources Bldg., East Lansing, MI 48824, USA, Phone: 517-353-0675, Fax: 517-432-1699, Email: sldann@msu.edu

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Municipality Collaboration to Protect and Manage Our Urban Forest against Gypsy Moth and Other Tree Pests – *Poster number 26*

Amy Stone
Ohio State University Extension - Lucas County, Toledo, OH

In 1997, gypsy moth populations reached peak populations and residents were in a panic mode in Lucas County. Constituents were on the telephone to their elected officials at the local, county, state, and federal levels. A task force was developed through the Toledo Metropolitan Area Counsel of Governments (TMACOG), and a recommendation was presented at its conclusion. The recommendation included: hiring a full-time gypsy moth coordinator for Lucas County; developing at gypsy moth hotline (419-243-MOTH); coordinating the suppression activities at a county level, rather than each local municipality working separately; and finally to provide an unbiased source of educational information related to the insect pest. Based upon these points, Extension was the obvious choice!

Since that time, the program has been expanded from gypsy moth to gypsy moth and urban and consumer horticulture. The purpose of the program is to manage and protect the urban forest in Lucas County. The program is funded by local municipalities including: 3 cities, 2 villages, 2 townships, and the county commissioners. An additional city and township are considering support for the 2002-2003 funding cycle.

This unique funding situation has allowed the Extension program in Lucas County to expand, and become more involved with educational issues related to the urban tree cover (ie: gypsy moth; oak wilt; planting and maintenance; and pruning). It has been so successful that it is being explored for other Extension program areas.

Amy Stone, Ohio State University Extension, 5403 Elmer Drive, Building #8, Toledo, OH 43615, USA, Phone: 419-578-6783, Fax: 419-578-5367, Email: stonea@postoffice.ag.ohio-state.edu
Building Eco-Friendly Walkways and Trails in the Virgin Islands – Poster number 27

Dale Morton, Toni Thomas and Olasee Davis
University of the Virgin Islands, St. Thomas and St. Croix, V.I.

The University of the Virgin Islands Cooperative Extension Service (UVI-CES) Natural Resources & Environmental Management Program (NREM) educates the Virgin Islands (VI) community about ecosystem degradation resulting from poor land clearing and landscaping practices that negatively impact flora, wildlife, soil, and water resources. The VI is rapidly urbanizing, as evidenced by the dramatic and rapid pace of housing and road construction throughout the remaining natural areas of the island. Therefore, an increasingly important program goal is to educate the public about beneficial land use and landscaping practices to protect and conserve native forest remnants, reduce erosion, and protect water quality.

UVI-CES promotes construction of trails and walkways that minimally impact native forest remnants, preserve the natural landscape, and prevent soil erosion in public areas and on private properties. UVI-CES staff are also partnering with government agencies, the local eco-tourism industry, and conservation groups such as The Nature Conservancy to plan construction of low impact trail systems for some of the remaining natural areas in the VI. UVI-CES also sponsors “Environmental Landscaping” workshops, funded through the VI Urban and Community Forestry Program, that promote beneficial traditional and innovative trail and walkway designs. UVI-CES education and outreach activities have been enriched by the technical assistance of local architects and landscape architects who have shared information and ideas about how trails and walkways should be built to complement and protect VI natural resources.

Dale Morton, University of the Virgin Islands, #2 Brewers Bay, St. Thomas, U.S.V.I. 00802, Phone: 340-693-1086, Fax: 340-693-1085, Email: dmorton@uvi.edu
Toni Thomas, University of the Virgin Islands, #2 Brewers Bay, St. Thomas, U.S.V.I. 00802, Phone: 340-693-1084, Fax: 340-693-1085, Email: tthomas2@uvi.edu

The Rural Technology Initiative: A Pilot Program for Technology Transfer to Rural Forest Communities in Washington State – Poster number 28

Bruce Lippke and Larry Mason
University of Washington, College of Forest Resources, Seattle, WA

Donald P. Hanley
Washington State University, Department of Natural Resource Sciences, Pullman WA

Personal income disparity between urban areas and rural timber communities in Washington State increased by 66% in less than two decades. While urban areas are growing with new technologies, rural areas are not. The ability to manage forests for increasingly complex wood product and environmental values is dependent upon new technologies. Without a system to transfer emerging technologies to rural forestry professionals and other stakeholders, financial and educational gaps between our cities and towns can be expected to widen further.

During the 1999 Congressional session, the state’s elected officials responded to requests from rural constituents for help. In January of 2000, the Rural Technology Initiative (RTI) was established as a partnership between the University of Washington College of Forest Resources and Washington State University Department of Natural Resource Sciences and Cooperative Extension with the mission: to aid in the transfer of technology for managing forests for increased forest products and environmental values in support of rural forest-resource based communities. Funding continues today through a partnership with USDA-Forest Service, Pacific Northwest Region Cooperative Programs.

A network and service system of trainers and users with a focus on access and communication between technologies and rural people has been created. Solutions to problems created by salmon listings in the Pacific northwest, for example, are being supported with intensive training in managing riparian areas and use of forestry equipment in those areas, including specialized logging machinery, remote sensing devices, use of computer inventory tools, along with landscape management plans, financial analysis, planning packages and product marketing.

Bruce Lippke and Larry Mason, University of Washington, College of Forest Resources, Box 352100, Seattle, WA, 98195-2100, Phone: 206-616-3218, Fax: 206-685-0790, Emails: blippke@u.washington.edu and larrym@u.washington.edu
Donald P. Hanley, PhD., CF, Washington State University, Department of Natural Resource Sciences, College of Agriculture and Home Economics, Pullman WA 99164-6410, Phone: 206-685 4960, Email: dhanley@u.washington.edu
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