2005
Program Proceedings

Research Center
Administrators Society

February 6-9, 2005

Little Rock, Arkansas

The 2005 Winter Program Proceedings
of the
Research Center Administrators Society
Little Rock, Arkansas
February 6-9, 2005

This Society is affiliated with the Southern Association of Agricultural Scientists and has membership from each of the member states. The Executive Committee is composed of one representative from each state, the current officers and the immediate past President. These are the voting members although any participant can attend meetings.

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2005-2006

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ARKANSAS Mike Phillips	MISSISSIPPI James Smith
ARIZONA Bob Roth	MISSOURI Jake Fisher
CALIFORNIA Fred Swanson	NORTH CAROLINA Sandy Maddox
FLORIDA Findley Pate	NORTH DAKOTA Paul Nyren
GEORGIA George Granade	OKLAHOMA Merritt Taylor
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Membership
Pete Schultz, Virginia, Co-Chairman
Paul Nyren, North Dakota, Co-Chairman

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Introduction to Arkansas Agriculture and the Division of Agriculture

Gregory J. Weidemann
Associate Vice President for Research and Dean of the Dale Bumpers College of Agricultural Food and Life Sciences

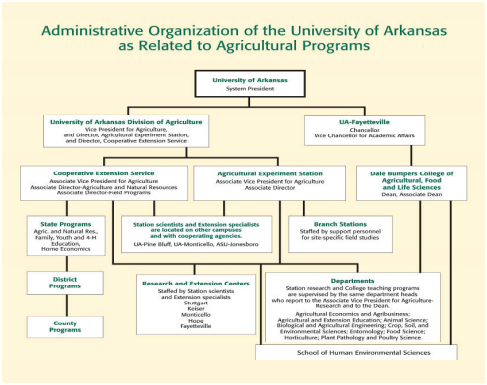
The Division of Agriculture is one of 13 major units of the University of Arkansas system and is composed of the Arkansas Agricultural Experiment Station and the Cooperative Extension Service. With over 1400 faculty and staff, the Division is a statewide campus with faculty located on four campuses, five research and extension centers and in every Arkansas county. The system administration and Cooperative Extension Service are headquartered in Little Rock and the Agricultural Experiment Station is headquartered on the land grant campus in Fayetteville. In addition to the research and extension centers, the experiment station maintains seven branch stations or substations to support field research.

Agriculture remains a major contributor to the Arkansas economy. One out of every five jobs is attributed to agriculture and One out of every five dollars of value added is generated from agriculture. Nearly 11% of the gross state product is attributed to agriculture and related industries contrasted to 4% nationally. The total impact of agriculture exceeds $13 billion annually. Arkansas is ranked number one in rice production, number two in broilers, and number three in turkeys and catfish. Overall Arkansas produces 15 commodities in the top 15 nationally.

INTRODUCTION TO ARKANSAS AGRICULTURE AND THE DIVISION OF AGRICULTURE

RCAS MEETING

UofA
UNIVERSITY OF ARKANSAS
DIVISION OF AGRICULTURE



DEPARTMENTS

- Agricultural Economics and Agribusiness
- Agricultural and Extension Education
- Animal Science
- Biological and Agricultural Engineering
- Crop, Soil and Environmental Sciences
- Entomology
- Food Science
- Horticulture
- Plant Pathology
- Poultry Science
- Human Environmental Sciences

COOPERATING CAMPUSES

- University of Arkansas – Fayetteville
- University of Arkansas – Monticello
- University of Arkansas – Little Rock
- University of Arkansas – Pine Bluff
- Arkansas State University

RESEARCH AND EXTENSION CENTERS

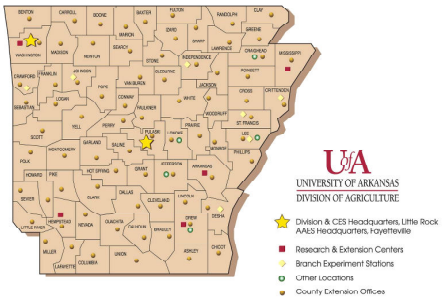
- Arkansas Agricultural Research and Extension Center – Fayetteville
- Northeast Research and Extension Center
- Southeast Research and Extension Center
- Southwest Research and Extension Center
- Rice Research and Extension Center

BRANCH STATIONS

- Cotton Branch Station
- Delta Branch Station
- SEREC Rohwer Division
- Pine Tree Branch station
- Fruit Substation
- Vegetable Substation
- Livestock and Forestry Substation

OTHER UNITS

- Arkansas Forest Resources Center
- Soil testing and Research Laboratory
- UA/ASU Cooperative Research Unit
- CES Agricultural Center

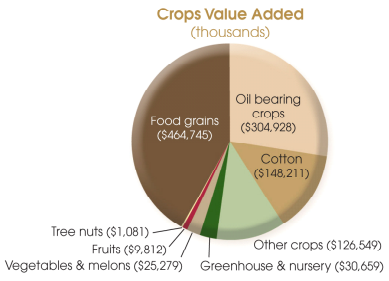


NATIONAL RANKING

- Rice – 1
- Broilers – 2
- Turkeys – 3
- Catfish – 3
- Sorghum – 4
- Cotton – 5
- Soybeans – 9
- Peaches – 10
- Pecans - 10

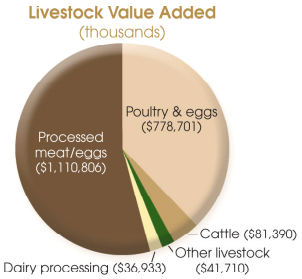
ROW CROPS

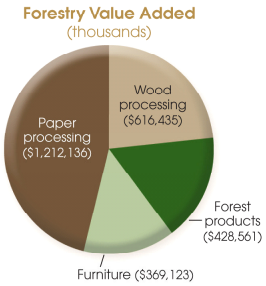
• Soybeans	• 3 million A
• Rice	• 1.5 million A
• Cotton	• 1 million A
• Wheat	• 1 million A
• Corn	• 300,000 A
• Sorghum	• 150,000 A
• Hay	• 1.2 million A

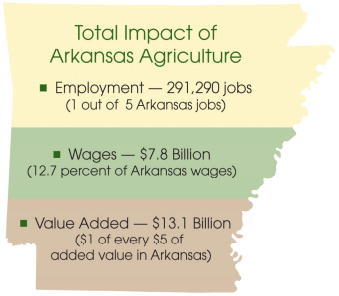


ANIMAL AGRICULTURE

• Beef Cattle	• 1.8 million
• Swine	• 300,000
• Dairy Cattle	• 30,000
• Broilers	• 1 billion
• Turkeys	• 30 million

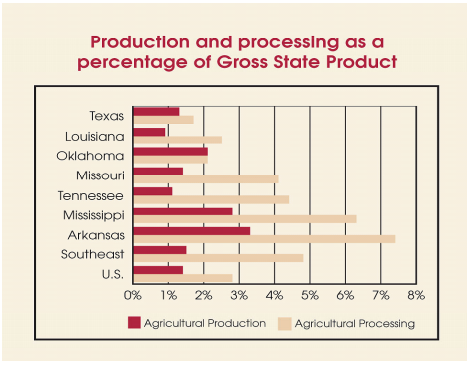






Impact of agriculture on state economy

	Employment (thousands)	Labor Income (billion $)	Value Added (billion$)
Ag Production	75.4	1.3	2.6
Ag Processing	98.4	3.2	4.7
Ag Indirects	54.0	1.8	3.1
Ag Induced	63.5	1.5	2.7
Total Ag Related	**291.3**	**7.8**	**13.1**



Water Quality Research in Forest Watersheds

Dr. Hal O. Liechty, Associate Professor
UA Monticello School of Forestry
University of Arkansas, Monticello

There are several current water resource issues that are relevant to forest management and its impact on water quality in Arkansas. First, it is expected that the intensity of forest management will increase during the next three decades to meet the rapidly growing timber demands on Arkansas's forests. Methods to increase forest yields such as the application of fertilizer or herbicides, as well as the utilization of heavy equipment for site preparation and harvesting can increase the risks to water quality in forested landscapes. Research at the Arkansas Forest Resources Center (AFRC) has focused on evaluating and developing improved Best Management Practices related to fertilization and harvesting of intensively managed forests. The disposal of litter produced by the 2.5 billion dollar poultry industry in the state, also poses a risk to Arkansas's water resources. In many portions of Arkansas, pasture soils are saturated with phosphorus after years of litter application to increase forage production. This has led to elevated P concentrations in surface water and regulations to reduce poultry litter applications in order to protect water quality. Scientists in the AFRC are evaluating whether disposal of poultry litter to pine forest is a viable alternative to that of disposal in pastures. Concentrations of nutrients and metals in surface runoff and soil water are being monitored in both pine plantations and pastures following poultry litter application to determine the ability of these two land uses to mitigate nutrient amendments by poultry litter.

Water Quality Research in Forest Watersheds

Dr. Hal O. Liechty
Arkansas Forest Resource Center
School of Forest Resources
University of Arkansas, Monticello

UAM
UNIVERSITY OF ARKANSAS DIVISION OF AGRICULTURE

Current and Future Water Issues In Arkansas: Forest Management Perspectives

- Escalation of Forest Production on a Relatively Stable Land Base
- Impacts of Confined Animal Production on Water Quality

Escalation of Forest Production in Arkansas

- The Southern US Produces the Majority of Timber in US

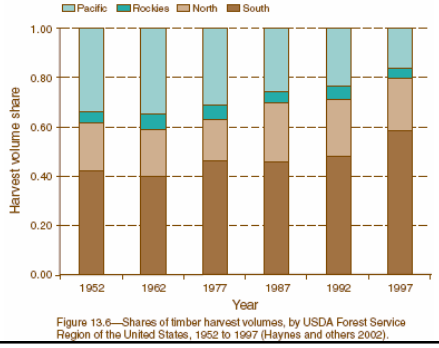
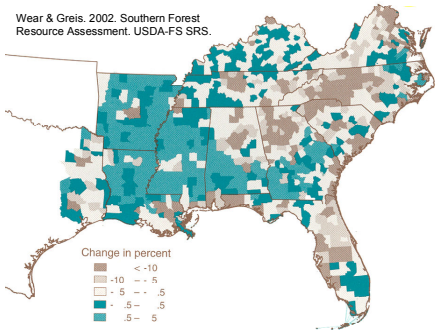


Figure 13.6—Shares of timber harvest volumes, by USDA Forest Service Region of the United States, 1952 to 1997 (Haynes and others 2002).

Escalation of Forest Production in Arkansas

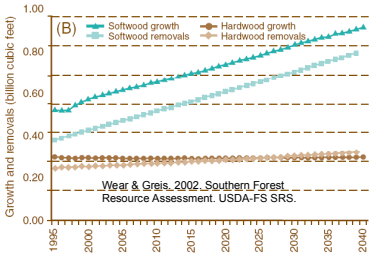
- Forest Land Base in the Southeast US is decreasing
- Forest Land Base in the Arkansas and Surrounding States are Expected to Remain Stable or Have Modest Increases

Forecast Changes in Forest Land Base- Urbanization/Crop-Forest Prices



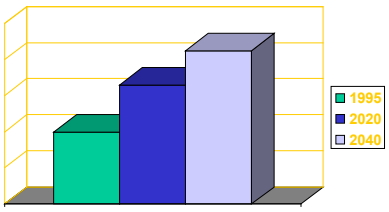
Forecast of Increased Production and Harvesting of Timber

- Forest Growth and Harvests Will Increase in Arkansas-
  (Softwood Harvests 60-70%)
  (Hardwood Harvests 5-10%)



Forecast of Increased Production and Harvesting of Timber

- Where Does the Increase in Production & Harvests Come From?



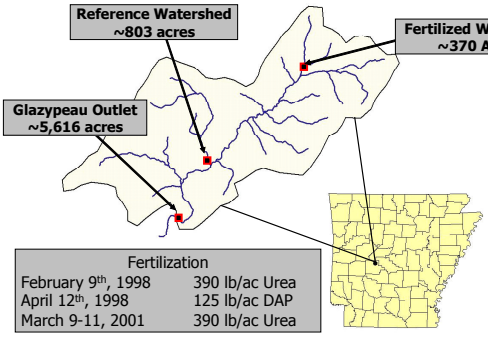
Wear & Greis. 2002. Southern Forest Resource Assessment. USDA-FS SRS.

Intensive Forest Management Practices

Increase Use of Intensive Management May Increase Risk to Water Resources

Research and Best Management Practices (Forest Fertilization)

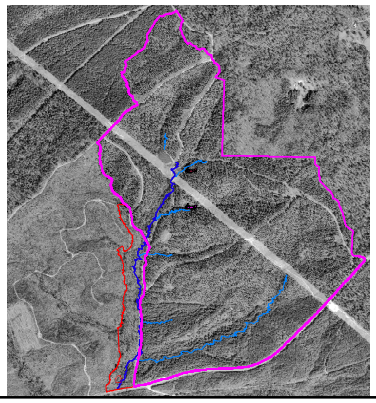
Weyerhaeuser



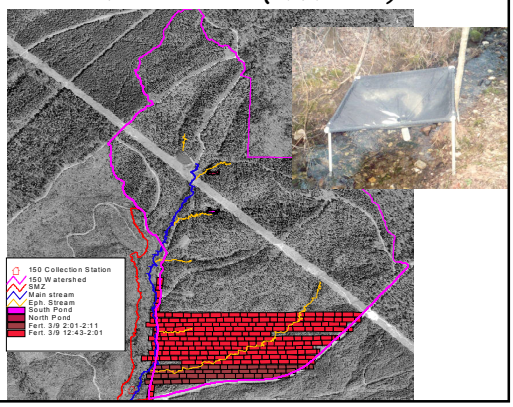
Fertilization	
February 9th, 1998	390 lb/ac Urea
April 12th, 1998	125 lb/ac DAP
March 9-11, 2001	390 lb/ac Urea

Water Monitoring Stations

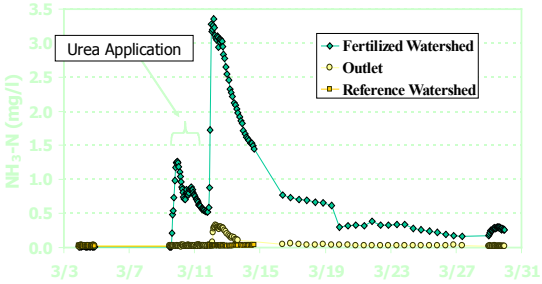
Fertilized Watershed



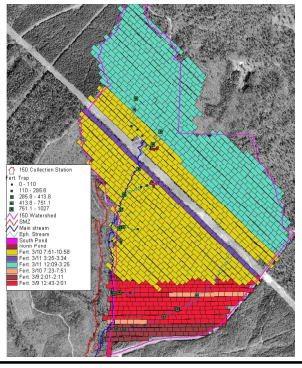
Urea Fertilization (3/9/2001)



NH_3-N Concentrations After Urea Fertilization (3/9/2001)

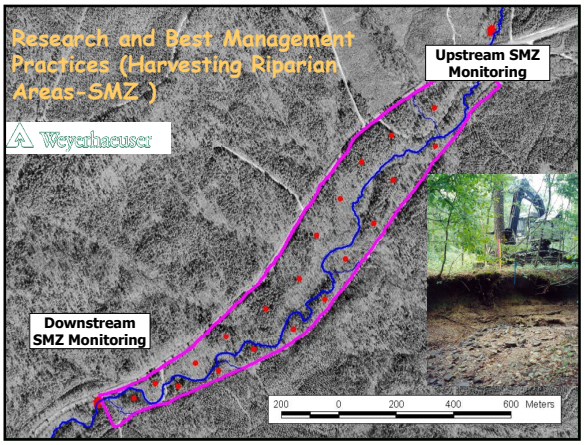


NH_3-N Concentrations After Urea Fertilization (3/9/2001)



Research and Best Management Practices (Forest Harvesting)

- **Alter Flight Paths to Eliminate Fertilizer Drift in Streams**
- **We May Need to Avoid Ephemeral Streams**
- **Careful Planning and Spatial Dispersal of Fertilizer in Watersheds**



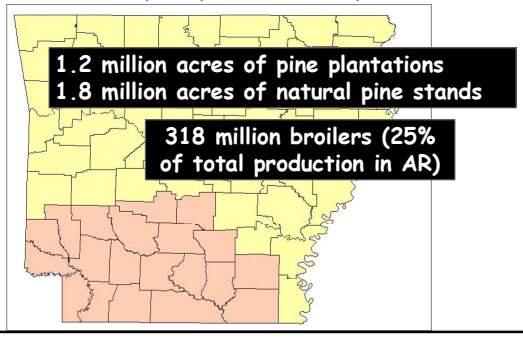
Research and Best Management Practices (Harvesting in Riparian Areas)

- **Harvesting in Riparian Areas had Little Impact when:**
  - **Follow BMP Guidelines Concerning Tree Retention**
  - **Harvesting Occurred During the Dry Season**
  - **Limit Stream Crossings**

Poultry Production in Arkansas

- Arkansas annually produces:
  - 1.2 billion broilers
  - 3.3 billion eggs from 15 million laying hens
- Poultry sales directly contributes 2.5 billion to Arkansas economy
- Poultry litter accumulates at ~1.2-1.7 tons per 1,000 birds
- Poultry litter is applied to pastures, pollutants accumulates, and then pollutes surface water

New Regulations Will Reduce the Amount of Poultry Litter Applied to Pastures: Where can We Economically Dispose of Poultry Litter?



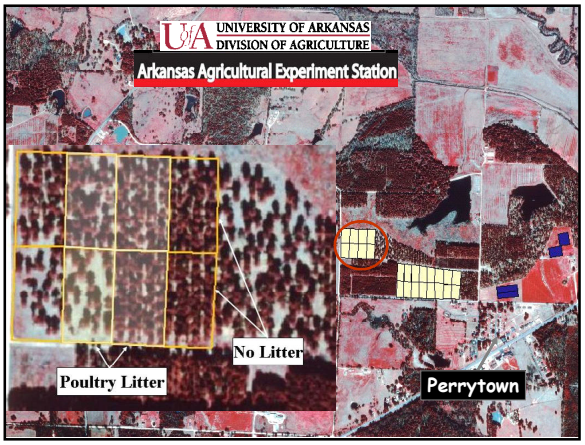
Forests Have Been Used to Mitigate Impacts of Wastes & Effluents

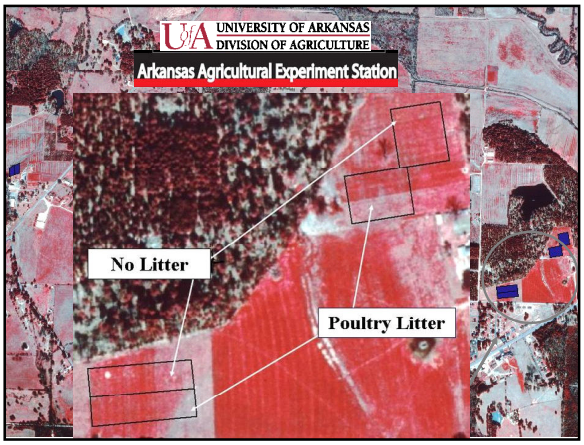
- **Wastes, biosolids, sludges, and effluents are commonly applied to forests**
- **Forests have a large capacity to absorb and retain N, P, and heavy metals for long periods of time**
- **Forests have high infiltration rates**
- **There is minimal risks to the food chain when wastes are applied to forests**
- **Additions of N and P increases forest growth**

Research & Policy Question

- Is application of poultry litter to pine plantations a viable alternative to application in pastures?

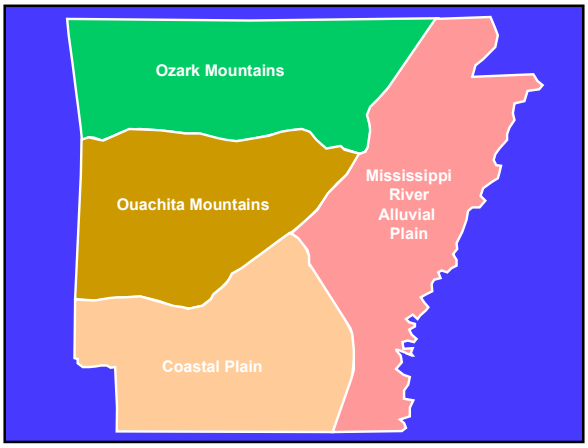
  - Impact on water and soil quality
  - Effects of nutrient addition on tree growth and pine straw production
  - Costs of poultry litter application





Silviculture Research in Arkansas Forests

Eric Heitzman, Assistant Professor
UA Monticello School of Forestry
University of Arkansas

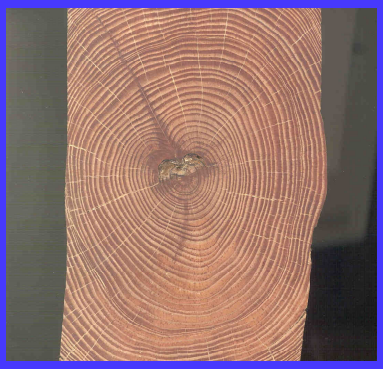


Oak forests in the Ozark Mountains

-- disturbance

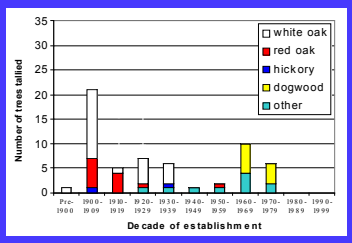
-- dynamic

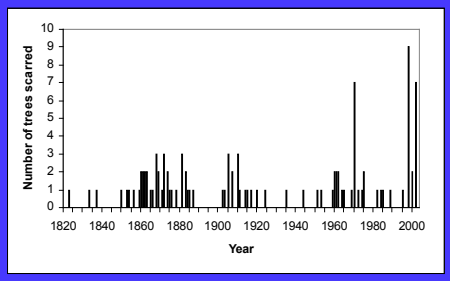
-- decline



Dendrochronology

Stand #4





Sylamore Experimental Forest
Stone County, AR

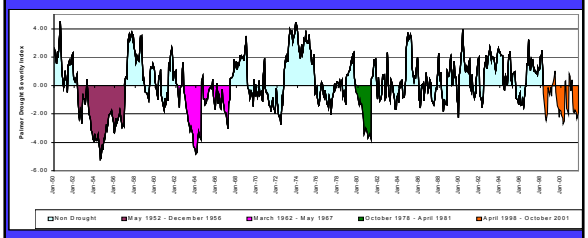
	Trees/ac	
Strata	1934	2002
Overstory	30	61
Midstory	21	79
Understory	105	278
Total	156	418

Current oak decline

- *Predisposing* factors (initial stress)

Current oak decline

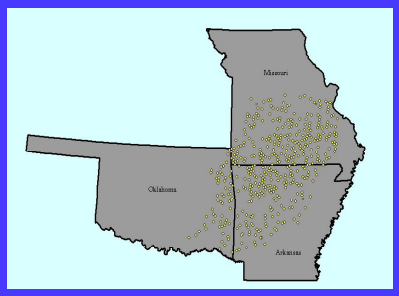
- *Inciting* factors (additional stress event)

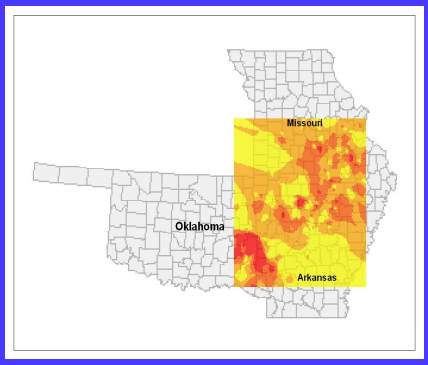


Current oak decline

- *Contributing* factors ("finish trees off")





Trees/acre

Arkansas

Species	Healthy	Dead/Dying	Percent
Red oaks	27	11	30
White oaks	57	5	8

Missouri

Red oaks	41	24	36
White oaks	95	15	13

Oklahoma

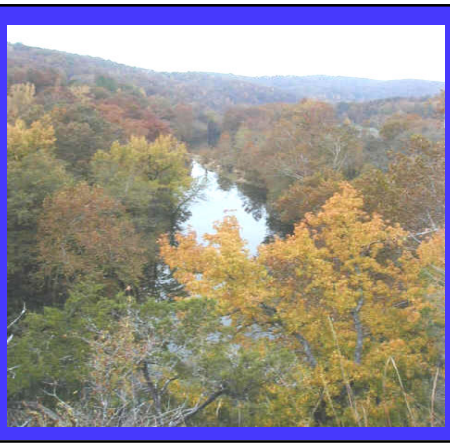
Red oaks	33	10	23
White oaks	38	4	9

Oak forests in the Ozarks

long history of disturbance

are/will be different

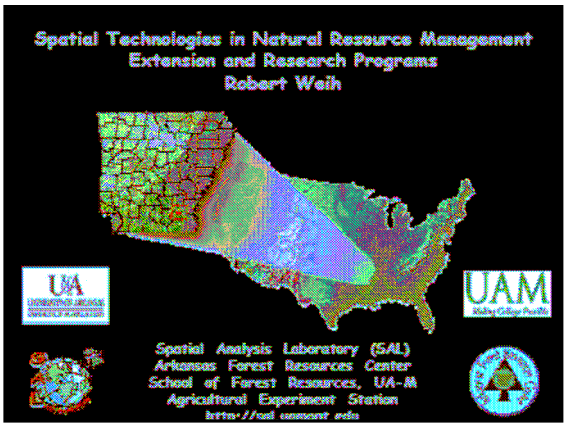
portions are declining

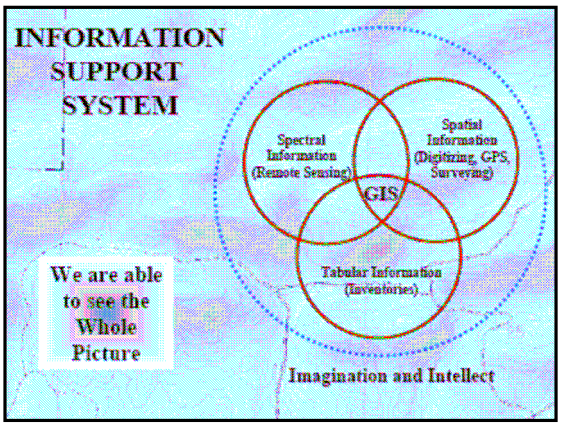


GIS/GPS Technology in Natural Resource Management

Bob Weih, Professor
UA Monticello School of Forestry
University of Arkansas

Geographic Information Systems (GIS) offer a cost-effective way to analyze and inventory land and environmental resources. As a result, GIS has become very popular with resource managers. The GIS allows you to combine many data types from many data sources so you can see the whole picture. The Spatial Analysis Laboratory (SAL) at the University of Arkansas at Monticello (UA-M) has a K-12 Extension, Continuing Education, and Research Programs in four key areas. The key areas are GIS (Database accuracy and modeling), Remote Sensing (Airborne Digital Sensors and modeling), Global Positioning Systems (Accuracy assessment and new applications), and Decision Support Systems (Incorporating GIS and Internet technologies). Some of the research topics presented will be historic modeling using GIS, using Remote Sensing to predict biomass, evaluating slope model accuracy, and the development of the Fire Program.





Spatial Technologies in Natural Resource Management
Extension and Research Programs

Educating the Spatial Technology Drivers of the Future

Our K-12 Program

Hosted Environmental and Spatial Technology (EAST) GPS training
Taught more than 250 6th and 7th graders GPS (Students teaching Students)
Teaching teachers about GIS and GPS
ESRI Authorized K-12 Instructor

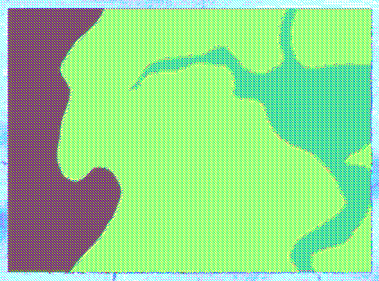
Spatial Technologies in Natural Resource Management
Extension and Research Programs

Natural State Digital Database

http://sal.uamont.edu/

Spatial Technologies in Natural Resource Management
Extension and Research Programs

- County Highway Maps
- 1:24,000 DRGs
- 1:100,000 DRGs
- 1:24,000 Hillshaded DRGs
- Black and White DOQs
- Color Infrared DOQs
- Lakes
- Cities
- Roads
- Streams
- Sections
- Census Blocks
- Landcover
- Population Stats
- Soils



Continuously Operating Reference Station (CORS) GPS Base Station

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Spatial Technologies in Natural Resource Management
Extension and Research Programs

ESRI Technology
AUTHORIZED LEARNING CENTER

- In the last five years more than seventy workshops in GIS, GPS, and remote sensing were taught. More than seven hundred professionals have attended these workshops from more than fifteen states. People have come from as far away as Kansas, Florida, Michigan, Georgia, and Maryland to our workshops.

Spatial Technologies in Natural Resource Management
Extension and Research Programs

The Spatial Analysis Laboratory (SAL) and GIS/RS Research

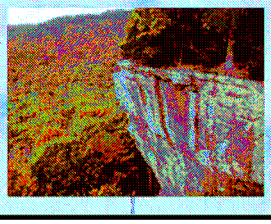
Research topic areas at the SAL

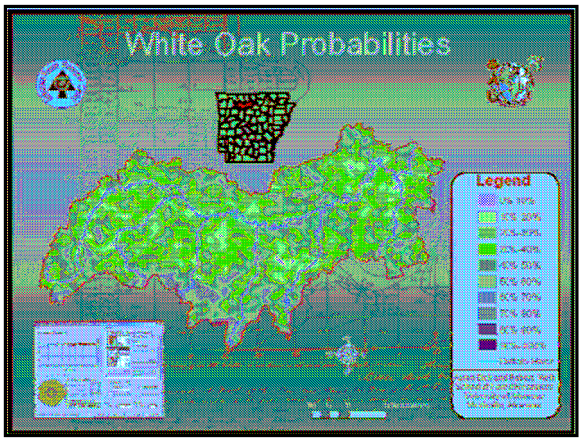
- Geographic Information Systems (GIS)
  (Database accuracy and modeling)
- Remote Sensing
  (Airborne Digital Sensors and modeling)
- Global Positioning Systems (GPS)
  (Accuracy and new applications)
- Expert and Decision Support Systems
  (Incorporating GIS and Internet technologies)

Spatial Technologies in Natural Resource Management
Extension and Research Programs

Question:

Can past forests be modeled from historic (1800's) Government Land Office (GLO) Notes?

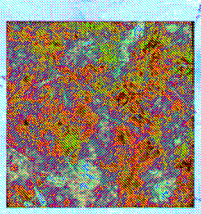




Spatial Technologies in Natural Resource Management
Extension and Research Programs

Question:

Can Remote Sensing be used to predict biomass at small and large scales?

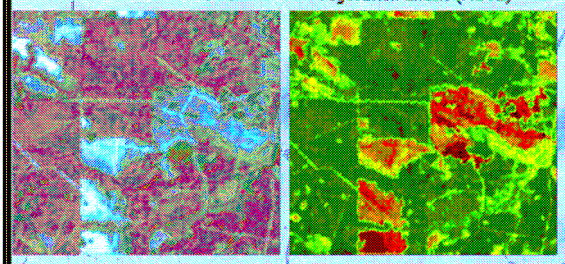


Spatial Technologies in Natural Resource Management Extension and Research Programs

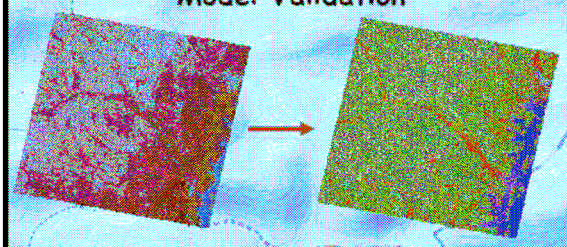
Small Scale

Landsat TM Bands 4, 3, 2

Normalized Difference Vegetation Index (NDVI)



Model Validation



✓Difference Percentage: 5.10%

Conclusion

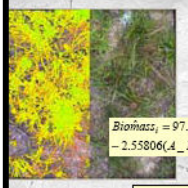
The model was successful for the date of the satellite imagery

Spatial Technologies in Natural Resource Management Extension and Research Programs

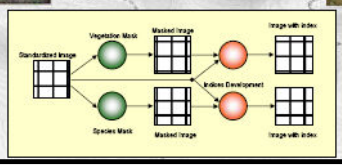
Large Scale

Green Biomass:

$R^2 = 65.82\%$



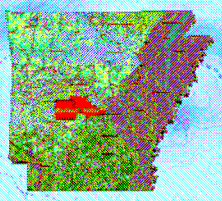
$$Biomass_i = 97.87780 + 0.13384(A\_NDVI_i) + 4.94563(A\_AVR_i) - 2.55806(A\_NIR420_i) + 2.49036(A\_G420_i) - 2.04272(A\_R760_i)$$



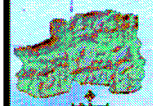
Spatial Information Systems (SIS) Extension and Research Programs

Question:

Are all slope methods used in a GIS the same?



Spatial Information Systems (SIS) Extension and Research Programs



Comparisons of Slope Methods for the 10m, 30m, and 100m DEMs

Mean (Min,Max) Variance p-value	Method 1	Method 2	Method 3	Method 4	Method 5	Method 6	Method 7	Method 8
10m DEM	1.52 (-24.50, 63.00) 74.87 < 0.0001	0.71 (-32.00, 68.00) 91.92 0.0147	-1.55 (-32.00, 58.00) 75.88 < 0.0001	-2.03 (-33.23, 58.00) 82.45 < 0.0001	-2.01 (-28.02, 61.88) 83.05 < 0.0001	1.99 (-25.04, 63.00) 71.72 < 0.0001	1.52 (-29.92, 62.73) 70.56 < 0.0001	1.71 (-22.57, 63.00) 71.41 < 0.0001
30m DEM	4.01 (-32.95, 64.01) 95.85 < 0.0001	3.28 (-40.31, 63.37) 124.85 < 0.0001	0.90 (-60.21, 62.96) 108.70 0.0048	0.21 (-60.31, 62.96) 111.88 0.5128	1.06 (-34.10, 62.65) 109.01 0.0007	4.142 (-32.95, 63.54) 94.76 < 0.0001	4.18 (-32.95, 63.36) 94.53 < 0.0001	4.18 (-32.94, 63.36) 94.53 < 0.0001
100m DEM	11.01 (-26.20, 67.82) 145.66 < 0.0001	10.75 (-26.67, 67.11) 155.81 < 0.0001	9.44 (-33.70, 64.78) 154.87 < 0.0001	9.25 (-34.22, 66.65) 162.72 < 0.0001	9.57 (-32.99, 66.03) 158.85 < 0.0001	11.07 (-23.15, 67.03) 145.89 < 0.0001	11.08 (-22.15, 66.83) 145.28 < 0.0001	11.08 (-22.15, 66.83) 145.28 < 0.0001

N = 1,125 for the 10m DEM
N = 1,115 for the 30m DEM
N = 995 for the 100m DEM

Difference = Measured Slope - Calculated Slope
Units = Percent Slope
Not statistically different

Spatial Technologies in Natural Resource Management Extension and Research Programs

Question:

Can GIS be used to help protect the State of Arkansas' Forests and Citizens?

Fighting Wildfires in the 21st Century

Customizing ArcView GIS to speed up fire dispatch

Forest Fires in Arkansas

Year	Number of Fires	Acres
2004	1,356	22,145
2003	1,620	23,279
2002	1,199	14,351
2001	1,374	14,681
2000	2,705	34,717
1999	2,317	21,865

The Old Way

- Most forest fires in Arkansas are either, radioed in by an aircraft, or called in by general public.
- Aircraft pilot radios in the Latitude and Longitude of the Fire. The dispatcher then converts the lat/long into township, range, and section with the use of a t-square and USGS topographic map.
- The dispatcher then relays the township, range, and section of the fire to the firefighters.
- Process could take up to ten minutes.
- Over 2,000 forest fires over a 3 month time period (June, July, and August 2000).

Bringing the Arkansas Forestry Commission up to date!

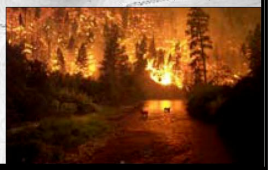
Avenue

ArcView 3.X

ALIICS
(The Fire Program)

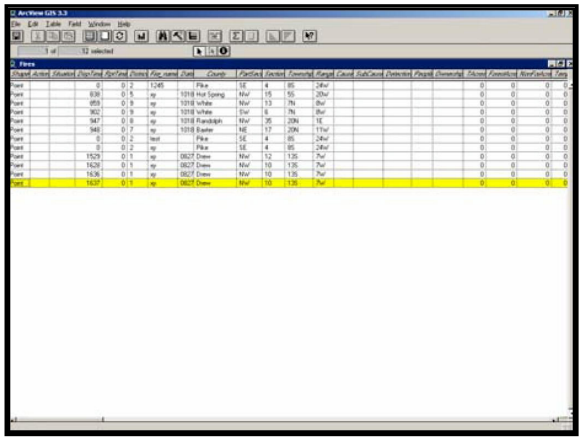
Arkansas Location Information Coordination System

Environmental Systems Research Institute Software Application Award 3rd Place (8/04)



Who is using the Fire Program?

Training
AFC
Game & Fish
USFS
State Police



Arkansas Forester Commission (AFC) comments on ALIICS (The Fire Program)

"The Fire Program is the greatest thing to happen for forest protection in Arkansas in a long time. Our Dispatchers love it. With a few mouse clicks, the Dispatchers can accurately locate a wildfire on a topographic map or an aerial photo. The Fire Program identifies the nearby highways and airports, and can predict and map the wildfire's smoke plume. And the Dispatchers can email the maps directly to the firefighters. What an upgrade from quad maps and T squares!"

John T. Shannon
State Forester, Director AFC
Arkansas Forestry Commission

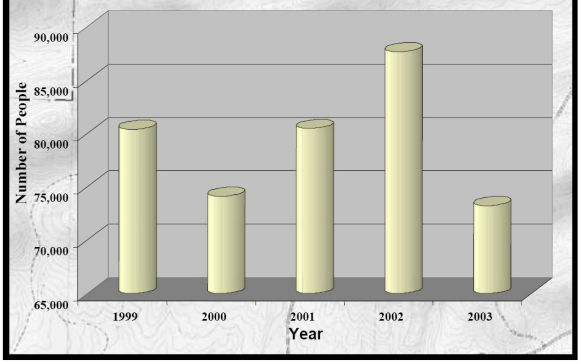
"This system has evolved into a state-of-the-art computer-aided system. This system is responsible for diminished firefighter response times, which has directly saved property and resources in the State of Arkansas."

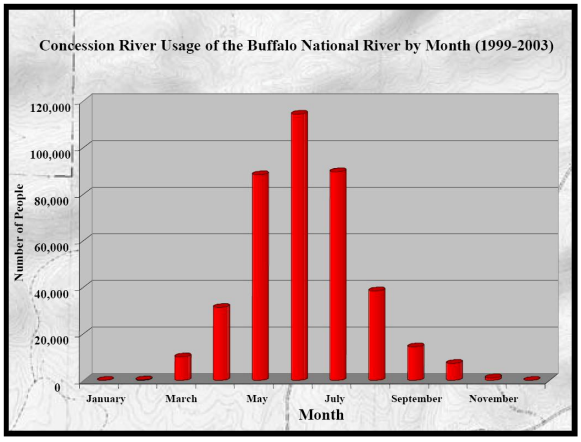
Bruce Lantz
Communications Systems Manager
Arkansas Forestry Commission

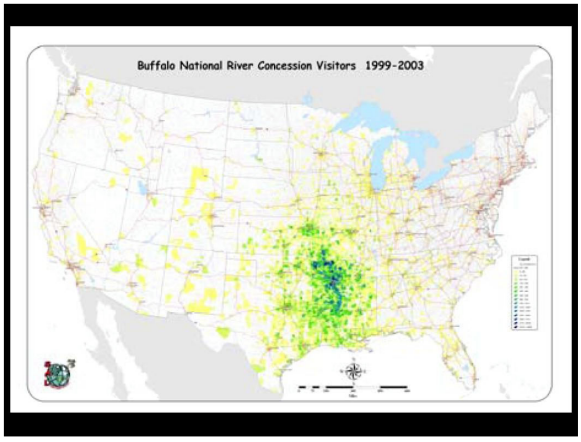
Spatial Technologies in Natural Resource Management Extension and Research Programs

Question:
Can GIS be used to identify the factors that guide visitor use in the Buffalo National River (BNR)?

Concession River Usage of the Buffalo National River by Year (1999-2003)




Concession River Usage of the Buffalo National River by Month (1999-2003)
120,000
100,000
80,000
60,000
40,000
20,000
0
Number of People
January
March
May
July
September
November
Month


Buffalo National River Concession Visitors 1999-2003


Questions
May
July

The Ecology of Bull Elk in Arkansas.

Don White, Jr, Associate Professor
UA Monticello School of Forestry
University of Arkansas, Monticello

Michael E. Cartwright
The Arkansas Game and Fish Commission
Calico Rock, AR

Nicole D. Peterson
The Arkansas Game and Fish Commission
Perrytown, AR

The distribution of North American elk (*Cervus elaphus*) has been dramatically reduced since the arrival of Europeans. In particular, the Eastern elk (*C. e. canadensis*) is now extinct and the Manitoba elk (*C. e. manitobensis*) is distributed into only a few populations in central Canada. Prior to the 1840's, Eastern elk were common in Arkansas and throughout the Interior Highlands. Over-harvesting, however, led to local extinctions beginning in the late 1700's. Because of increasing extinction rates and concomitant reductions in biodiversity worldwide, translocation of rare species has become an important conservation technique.

In cooperation with private citizens, the Arkansas Game and Fish Commission introduced 112 Rocky Mountain elk from Nebraska and Colorado into the Buffalo River area of the Ozark Mountains in northwestern Arkansas during 1981-1985. Approximately 400 elk currently reside within the 315,000-acre (127,575 ha) release area. Most of these animals occur along 67 miles (108 km) of the Buffalo River, located primarily within the Buffalo National River, a 95,000-acre (38,475 ha) park administered by the National Park Service.

Even though elk have expanded their numbers and distribution in Arkansas since 1985, fewer bulls >1.5 years old have been sighted and harvested than expected. Additionally, survival rates and causes of non-hunting mortality for bull elk in Arkansas are unknown. In order to maximize success of the elk repatriation program and to increase recreational opportunities in Arkansas, managers need data on age-class specific survival rates, causes of bull elk mortality, movement and dispersal patterns and rates, and seasonal home range sizes.

Radiotelemetry has been used extensively to obtain data on movements, behavior, habitat use, survival, and productivity from free-ranging elk. Capturing bull elk to attach radiocollars in northern Arkansas, however, is challenging because of the mountainous terrain and near contiguous forest cover. Additionally, elk in general and bulls in particular are difficult to attract to traps with bait because there are no prolonged periods of severe food shortage in Arkansas as occurs in the western United States.

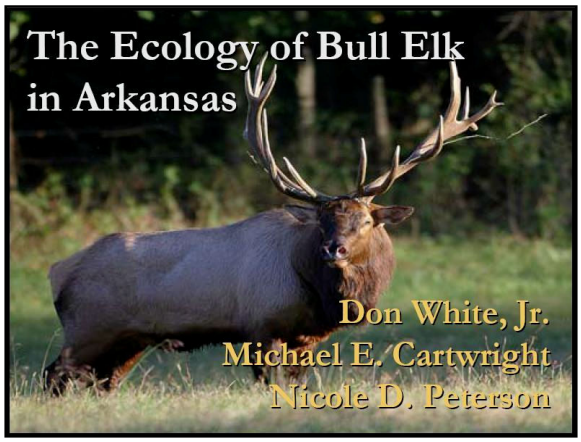
During 18-20 February 2003 and 16-18 March 2004, a MDHC 500D helicopter and wildlife capture crew from Hawkins and Powers Aviation, Greybull, Wyoming was used to capture elk within and areas adjacent to the Buffalo National River located in north-central Arkansas. The strategy was to locate elk, primarily bulls, and either net gun or dart them from the air.

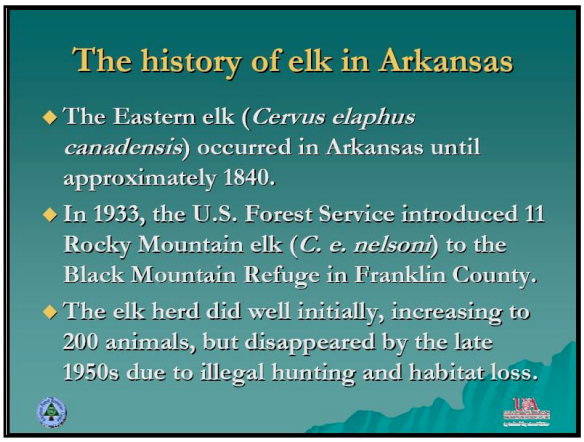
If an animal was located within forest cover, which was likely given the amount of forest cover in the study area and the behavior of bulls, attempts were made to drive the animal to the nearest opening for net gunning or darting. If driving failed or the distance to an opening was considered inconvenient, darting the animal down through the forest canopy was attempted.

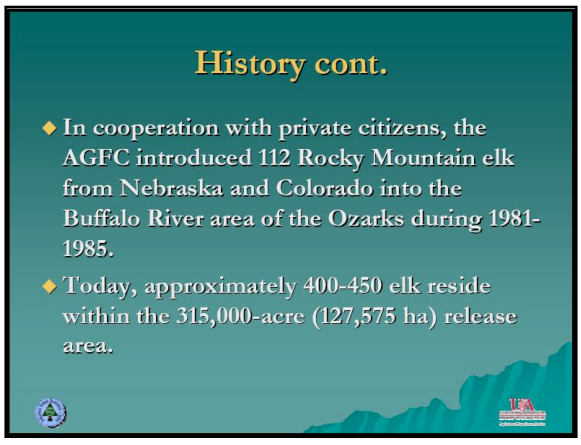
In 2003 35 bull elk (11 yearlings and 24 adults) were captured by net gunning (24 bulls) or darting (11 bulls) in approximately 25 hours. Ten of 11 yearlings (91%) and 14 of 24 (58%) adults were netted. On 5 occasions 5 bulls were driven ≤1 mile to a field or forest opening. With 1 exception, each of these animals was then captured with the net gun. Six bulls were successfully darted bulls down through the forest canopy. In 2004, 19 bulls and 7 cows were captured by net gunning (7 bulls and 5 cows) or darting (12 bulls and 2 cows) in approximately 20 hours.

Elk locations are obtained from rotor-wing aircraft biweekly during daylight hours beginning April 2003. As of 1 January 2005, we have collected >6,000 locations. Most of these locations have come from collars containing GPS units, which were programmed to obtain a location every 6 hours.

Causes of mortality are determined via necropsy and biological sample collection. From February 2003 through January 2005 15 collared bull elk have died. Five of these animals were legally harvested and 5 were killed illegally. Capture myopathy (2), vehicle collision (1), natural accident (1), and meningeal worm infection (1) are other causes of bull elk mortality in Arkansas. This project will extend through 2005.





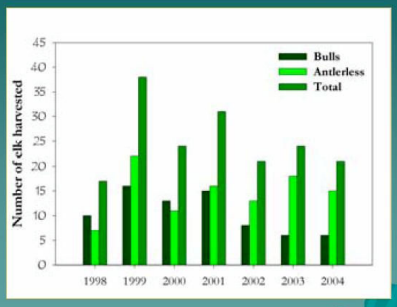


Legally harvested bulls in Arkansas

State record taken in 2002 by Cheryl Haralson

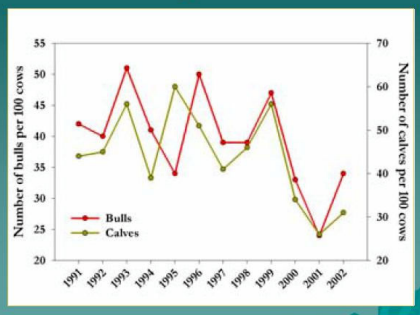
340 6/8 inches

Harvest summary



The Buffalo River

The problem



Objectives

- Determine age-class specific survival rates and causes of mortality;
- Determine age-class specific movement patterns and rates, seasonal home range sizes, and habitat use;

Objectives

- Develop GIS models to predict seasonal habitat use of bull elk;
- Develop management recommendations for maximizing bull elk survival;
- Develop a landcover map for the Buffalo River watershed.

Another problem

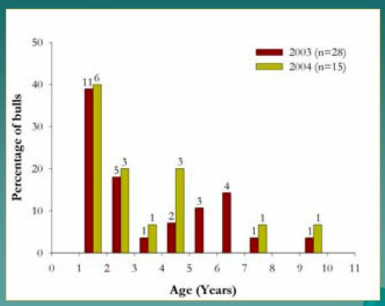
How are we going to capture bull elk in a predominately forested environment?

Darting through the canopy

Capture results

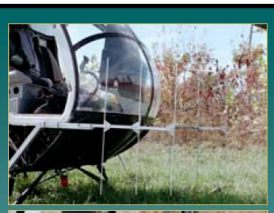
	Bulls	Cows	Total
2003	35	0	35
2004	19	7	26
Total	54	7	61

Age distribution

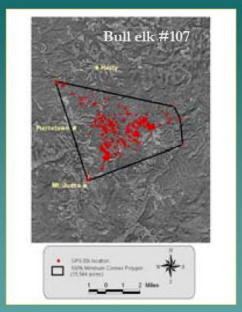


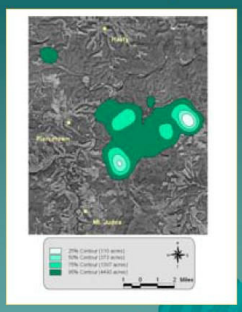
Collar attachment

A Hughes 300 helicopter is utilized to locate radio-collared bull elk biweekly from February 2003 to January 2006.



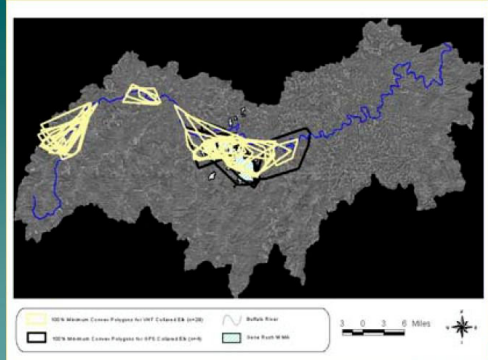
MCP and Fixed Kernal Analysis



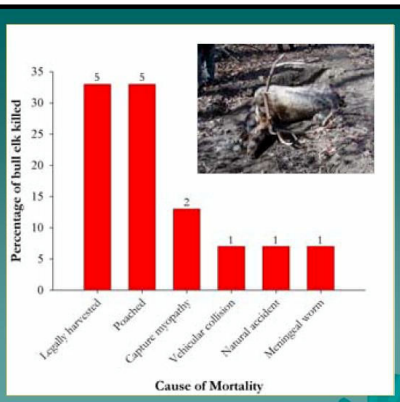


Home range areas

Elk #	MCP (acres)	50% Kernal (acres)
107	15,544	373
143	21,092	1,185
158	24,107	467
168	14,940	1,539

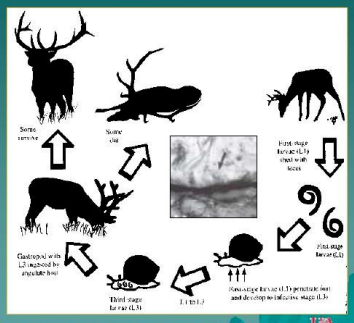


Field necropsy



Meningeal worm

Parelaphostrongylus tenuis



Figures from Thorne, E.T. et al. (2002). Worm photo from Samuel (1994).

Landcover map

The Buffalo River Watershed (orange area at left) spans over 11 counties (blue lines are county boundaries) and covers 4,000 square miles.

An example of a finished dataset: blue=water, yellow=roads, red=agriculture, green=coniferous forest, brown=deciduous forest, urban class not shown.

Impacts of research

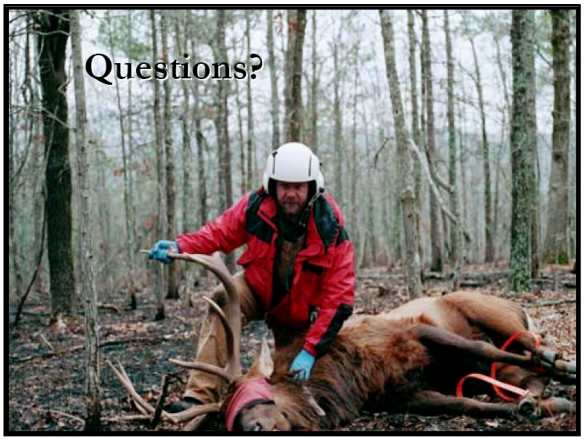
- Increase recreational opportunities for Arkansans.
- Advance our knowledge and understanding of the ecology of bull elk.
- Advance our knowledge and understanding of the sociological and ecological challenges of restoring large mammal populations in the 21st century.

Cooperators

National Park Service

National Park Service
U.S. Department of the Interior

Questions?



The Role of Superintendents in NC – Past, Present and Future

Dr. Sandra J. Maddox, Director
Research Stations Division
NC Department of Agriculture & Consumer Services/NC State University

Walker "Mac" MacNeill, Director
University Field Laboratories
College of Agriculture and Life Sciences
North Carolina State University

The Research Stations Division in North Carolina functions as a unique partnership between the NC Department of Agriculture and Consumer Services (NCDA&CS) and the Agricultural Research Service (ARS) in the College of Agriculture and Life Sciences at NC State. These two institutions provide funding for twelve and six outlying research stations (ORS) respectively. The managerial component of the ORS is through the NCDA&CS. There are additionally five University Field Laboratories that originated as support operations for academic departments with funding originating from these respective departments. These have transformed into administrative units managed through the ARS with funding supplied through state, federal, and revenue generated income. The UFL and ORS provide the teaching and applied research platforms for the land grant university mission.

The role of the superintendent of these facilities has changed over time transitioning from a "Plantation Boss" to a "Resource Manager" to "Research Station Program Manager; "Public Relations Manager" and "Partnership Manger". The role of the superintendent has shifted as a result of many factors including but not limited to budget, technology, research project focus, and necessity. The role of the station superintendent includes station management, research focus and project involvement, outreach, and educational requirements and expertise.

Numerous factors have resulted in a very different role for superintendents from the inception of this organizational structure to the present. These role changes are the result of trying to adapt to shifting economic, social, technological, educational and legislative relationships while providing the necessary tools to facilitate productive and consequential research.

As we recruit personnel to fill the role of superintendent in the future we may wish to use this example as our job description for future employees. This was written by one of our current superintendents:

"Future Job Description: A person of highly technical skills, multi-disciplined background and experiences, great people skills and a good communicator; highly motivated and a self starter; very flexible and adjusts easily to constant change; must be visionary and practical at the same time; is able to interact with people at all levels of the organization, able to build strong working relationships with the University and other cooperating agencies; must attend local, state and national commodity meetings to stay abreast of current and future trends and research, and be a person of strong character and integrity"

THE ROLE OF SUPERINTENDENTS IN NC PAST, PRESENT AND FUTURE

Dr. Sandra J. Maddox
Director, Outlying Research Stations
NCDA&CS/NCSU

Mac McNeill
Director, University Field Laboratories
NCSU- College of Ag. & Life Sciences

AGRICULTURAL RESEARCH PROGRAM

Unique Organizational Structure

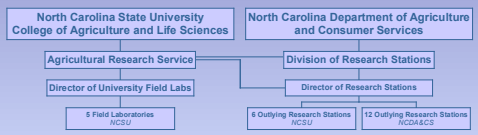
- Outlying Research Stations
- University Field Laboratories

AGRICULTURAL RESEARCH PROGRAM

Dual Funding Structure

- Outlying Research Stations
- University Field Laboratories

MANAGERIAL AND SUPERVISORY STRUCTURE



BENEFITS

- Provides statewide visibility and input of the Dean and Commissioner
- Broader base of budget support
- Partnership allows regulatory status of the Department to work with researchers
- Partnership provides edge to researchers in grant matches

CHALLENGES

- Unbalanced Funding
- Varying budget constraints within institutions
- Difficulty in sharing of resources
- Resource management by superintendents

THE ROLE OF THE SUPERINTENDENT – PAST

Station Management

- Superintendent viewed the farm as his own – "Plantation Boss"
- Superintendents primary duty was farm manager
- Qualified labor force from which to select employees
- Revenue production never as important as research
- Superintendent functioned independently of other stations – very little intra-divisional cooperation
- Little if any partnering with other agencies – NRCS, Soil and Water, Wildlife etc

THE ROLE OF THE SUPERINTENDENT – PAST

Research Focus And Project Involvement

- Research facilities focused on commodities important to the economic development and producers of the state
- Resources were delegated to projects based on the rapport of PI and Superintendent
- Resources were delegated to projects based on Superintendent's belief in validity of research problem
- Superintendent controlled who did work on the station by the interpersonal relationship fostered by the interested researcher

THE ROLE OF THE SUPERINTENDENT – PAST

Outreach Efforts

- Superintendent viewed as agricultural expert by agricultural producers and community
- Superintendents instrumental in acquiring land for facility expansion - neighbors
- Superintendents invited into civic and local agricultural groups
- Superintendents had personal relationships with local legislators
- Superintendents hosted Field Days and interacted with growers throughout the growing season

THE ROLE OF THE SUPERINTENDENT – PAST

Educational Requirements And Expertise

- Few superintendents possessed advanced degrees
- Education and experience was in production agriculture with little or no research design/implementation training
- Additional training in non-agricultural areas uncommon – HR, supervisory skills

THE ROLE OF THE SUPERINTENDENT – PRESENT

Station Management

- Superintendents viewed as project facilitators
- Primary role of superintendent is resource manager
- Qualifications of current employee pools do not match needs
- Revenue production is required to supply operational resources
- Cooperation between stations for equipment more prevalent
- Budget constraints require development of commodity production and utilization plans.
- Interagency partnering where cost share and budget benefits available

THE ROLE OF THE SUPERINTENDENT – PRESENT

Research Focus And Project Involvement

- Budget constraints have resulted in program review and unit closures.
- Superintendents fear station closures due to budget constraints
- Project solicitation by superintendents is common with diversification or specialization the largest research focus question.
- Fewer options for research expansion as fewer applied researchers
- Fewer locations for researchers to select to conduct projects
- Provision of technical expertise and involvement in research viewed favorably by researchers

THE ROLE OF THE SUPERINTENDENT – PRESENT

Outreach Efforts

- Reduced utility of station by agricultural producers on a consistent basis
- Community unaware of station function, purpose, and importance
- Superintendents in competition with development and others for assets for facility expansion - neighbors
- Superintendents invited to speak at civic and local agricultural groups, but not readily invited to join
- Superintendents rarely cultivate personal relationships with local legislators
- Superintendents host Field Days annually and interact with growers on a limited basis throughout the growing season.

THE ROLE OF THE SUPERINTENDENT – PRESENT

Educational Requirements And Expertise

- More superintendents possess advanced degrees
- Education and experience in production agriculture necessary to a lesser degree
- Advanced degrees include research design/implementation training
- Additional training in non-agricultural areas more common – HR, supervision, Public Mangers course.

THE ROLE OF THE SUPERINTENDENT – FUTURE

Station Management

- Superintendents viewed as Research Program Managers
- Primary role: evaluate resources, projects and commodities advocating input from diverse stakeholders to formulate a viable research impetus.
- Technical expertise - staff delegation to insure technical/husbandry expertise
- Revenue production: traditional markets-for revenue sustainability shift to companies and commodity factions.
- Superintendents must become regional cooperators focused on synergistic distribution of resources and minimization of resource duplication
- Function as leader in interagency partnering role – "Partner Management"

THE ROLE OF THE SUPERINTENDENT – FUTURE

Research Focus And Project Involvement

- Conduct Reviews and Strategically Plan for research emphasis.
- Superintendents must be active participants matching resources to research development
- Superintendents must determine station strengths and actively promote
- Superintendent must determine their stations role in the future of agriculture. Specific research solicitation and communication must occur
- Superintendents must delineate a means to work with changing industry interests
- Cooperate and co-author with Extension field faculty to conduct applied research projects.
- Recognize vulnerabilities of the station and devise prevention and recovery plans.

THE ROLE OF THE SUPERINTENDENT – FUTURE

Outreach Efforts

- Possibly the most important role of superintendents in the future will be "Public Relations Manager"
- Expectation to develop Community Outreach Programs
- Expectation to function as demonstration sites for not only agricultural, but environmental, safety, land use, energy issues etc.
- Expectation to develop strong relationships with civic, educational groups, community colleges all possible venues to cultivate empowering relationships.
- Superintendents expected to cultivate personal relationships with local and state legislators
- Superintendents expected to engage all opportunities for interaction and exposure of agriculture to school aged children

THE ROLE OF THE SUPERINTENDENT – FUTURE

Educational Requirements And Expertise

- Employment trends continue to raise the bar of educational requirements for superintendents
- Discussions to embrace the concept of superintendent as a researcher
- Broad agricultural knowledge base and an ability coordinate, motivate, and educate diverse groups

CONCLUSION

⇒ Dictatorial Leadership role of past superintendents has transitioned to a role of Accommodation at present.

⇒ To sustain and evolve in the future Accommodation must transition to Orchestration and Education

"Future Job Description

(as written by one of our present superintendents)

"A person of highly technical skills, multi-disciplined background and experiences, great people skills and a good communicator; highly motivated and a self starter; very flexible and adjusts easily to constant change; must be visionary and practical at the same time; is able to interact with people at all levels of the organization, able to build strong working relationships with the University and other cooperating agencies; must attend local, state and national commodity meetings to stay abreast of current and future trends and research, and be a person of strong character and integrity"

Agricultural BioTerriorism Protection Act of 2002

Lee Ann Thomas, Director, Select Agent, Organisms, Vectors and Animals
APHIS, United State Department of Agriculture

Agricultural Bioterrorism Protection Act of 2002; Possession, Use, and Transfer of Biological Agents and Toxins (9 CFR 121)

Lee Ann Thomas, D.V.M., M. S
Director, Select Agent, Organisms and Vectors, and Animals
Research Center Administrators Society
February 8, 2005

Public Health Security and Bioterrorism Preparedness Response Act of 2002

- Signed into law June 12, 2002
- Subtitle B cited as the "**Agricultural Bioterrorism Protection Act of 2002**"
- Requirements:
  - List of select agents and toxins
  - Notification of Possession
  - Registration for Possession, Use, and Transfer
  - Exemptions

USA Patriot Act

(Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism
Act of 2001)

- Public Law 107-56 Signed: 10/23/2001
- Sec. 175b. Possession by Restricted Persons
  - No restricted person shall ship, possess, or receive a select agent.

Types of Select Agents and Toxins

- HHS-only Agents (HHS has sole authority and responsibility to regulate)
  - Select agents and toxins that may affect public health and safety
- USDA-only Agents (USDA has sole authority and responsibility to regulate)
  - Select agents and toxins that may affect animal and plant health and animal and plant products
- "Overlap Agents"
  - Select agents and toxins subject to regulation by both agencies

The Act provides for interagency coordination between the two departments regarding overlap select agents and toxins

List of Biological Agents and Toxins (VS)

Criteria:

- Effect of exposure to the agent or toxin on animal health, and on the production and marketability of animal products
- Pathogenicity of the agent or the toxicity of the toxin
- Methods of transmission
- Availability/effectiveness of pharmacotherapies and prophylaxis
- Economic impact
- Inclusion on OIE A and B or Australian Group lists

List of Biological Agents and Toxins (VS)

African horse sickness virus
African swine fever virus
Akabane virus
Avian influenza virus (highly pathogenic)
Bluetongue virus (exotic)
Bovine spongiform encephalopathy agent
Camel pox virus
Classical swine fever virus
Cowdria ruminantium (Heartwater)
Foot-and-mouth disease virus
Goat pox virus
Japanese encephalitis virus
Lumpy skin disease virus
Malignant catarrhal fever virus (exotic)
Menangle virus
Mycoplasma capricolum /*M.* F38/*M. mycoides capri* (contagious caprine pleuropneumonia)
Mycoplasma mycoides mycoides (contagious bovine pleuropneumonia)
Newcastle disease virus (VVND)
Peste des petits ruminants virus
Rinderpest virus
Sheep pox virus
Swine vesicular disease virus
Vesicular stomatitis virus (exotic)

List of Biological Agents and Toxins (Overlap USDA/HHS)

Bacillus anthracis
Botulinum neurotoxins
Botulinum neurotoxin producing species of *Clostridium*
Brucella abortus
Brucella melitensis
Brucella suis
Burkholderia mallei
Burkholderia pseudomallei
Clostridium botulinum
Clostridium perfringens epsilon toxin
Coccidioides immitis
Coxiella burnetii
Eastern equine encephalitis virus
Francisella tularensis
Hendra virus
Nipah virus
Rift Valley fever virus
Shigatoxin
Staphylococcal enterotoxins
T-2 toxin
Venezuelan equine encephalitis virus

List of Biological Agents (PPQ)

Liberobacter africanus, Liberobacter asiaticus
Peronosclerospora philippiensis
Phakospora pacyrhizi
Plum pox potyvirus
Ralstonia solanacearum, race *3,* biovar *2*
Sclerophthora rayssiae var. *zeae*
Synchytrium endobioticum
Xanthomonas oryzae pv. *Oryzicola*
*Xylella fastidiosa (*citrus variegated chlorosis strain*)*

Exemptions from Registration

- Possession, use, or transfer of products that are, bear, contain select agents or toxins licensed under:
  - Federal Food, Drug, and Cosmetic Act
  - The Virus Serum Toxin Act
  - The Federal Insecticide, Fungicide, and Rodenticide Act
  - Public Health Service Act pertaining to biological products (42 U.S.C. 262)
  - Investigational products authorized any Federal laws above
    - Administrator determines no additional regulation is required
    - Requires exemption request

Exemptions from Registration

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  - The Federal Insecticide, Fungicide, and Rodenticide Act
  - Public Health Service Act pertaining to biological products (42 U.S.C. 262)
  - Investigational products authorized any Federal laws above
    - Administrator determines no additional regulation is required
    - Requires exemption request

Exemptions from Registration

- Toxins (aggregate per principal investigator):
  - 0.5 mg of Botulinum neurotoxin
  - 5 mg of Staphylococcal enterotoxin
  - 100 mg of *Clostridium perfringens* epsilon toxin
  - 100 mg of Shigatoxin
  - 1,000 mg of T-2 toxin

Registration for Possession, Use, and Transfer

- Entities that possess, use, or transfer* VS or PPQ only select agents must register with USDA/APHIS.
- Entities that possess, use, or transfer* overlap agents or toxins must register with either USDA/APHIS or HHS/CDC, but not both.
- Registrations will be valid for a maximum of 3 years and may be renewed.
- Registration package and other forms are the same for both agencies

Possession, Use, and Transfer of Select Agent or Toxin

Registration:

1. Application (CDC Form 0.1319/APHIS Form 2040)
   - Responsible Official and Alternate Responsible Official
   - List of Agents/Toxins
   - Biosafety and Laboratory Information
   - Personnel to be authorized access
   - Specific laboratory information
- Security Risk Assessment (SRA) individuals, entity, and corporate officers
- Security and Biosafety Plans
- Laboratory Inspection

SECURITY RISK ASSESSMENT (SRA)

- All individuals needing access to select agents or toxins and owners of entities seeking to register must have a security risk assessment (database and fingerprint check) conducted by the Attorney General.
- The Attorney General has designated the Federal Bureau of Investigation (FBI), Criminal Justice Information Services Division (CJIS), to conduct the security risk assessments.
- CJIS sends results to lead agency (CDC or APHIS)

Laboratory Inspection

- Coordination efforts between CDC and USDA (**one inspection**)
- Inspection covers:
  - Biosafety (laboratory and animal)
  - Security
  - Records
  - Training
  - Emergency Response

Contact Information

Agriculture Select Agent Program
4700 River Road - Unit 2
Mailstop 22, Cubicle 1A07
Riverdale, MD 20737-1231

Phone (301) 734-5960 Fax (301)734-3652

Additional requirements

Notification:

- Theft, Loss, Release (CDC Form 0.1316/APHIS Form 2043)
- Identification (CDC Form 0.1318/APHIS Form 2044)
- Transfer (CDC EA101 Form/APHIS Form 2041)
- Request for Exemption of Select Biological Agents and Toxins – Investigational products, public health or agricultural emergency (CDC Form 0.1317/APHIS Form 2042)

Web Sites: http://www.aphis.usda.gov/vs/ncie/bta.html
http://www.cdc.gov/od/sap/appinfo.htm

SECURITY RISK ASSESSMENT (SRA) – Restricted Individuals

- Under indictment for a crime punishable by imprisonment for a term exceeding 1 year
- Convicted of any crime punishable by imprisonment for a term exceeding 1 year
- A fugitive from justice
- Unlawful user of any controlled substance
- Alien illegally or unlawfully in the US
- Adjudicated as a mental defective or committed to a mental institution
- Alien who is a national of a country to which the Secretary of State has determined that that country has repeatedly provided support for acts of international terrorism
- Discharged under dishonorable conditions

Web Information

USDA
http://www.aphis.usda.gov/programs/ag_selectagent/index.html

HHS/CDC
http://www.cdc.gov/od/sap/

DOJ/FBI
http://www.fbi.gov/terrorinfo/bioterrorfd961.htm

Security Plans

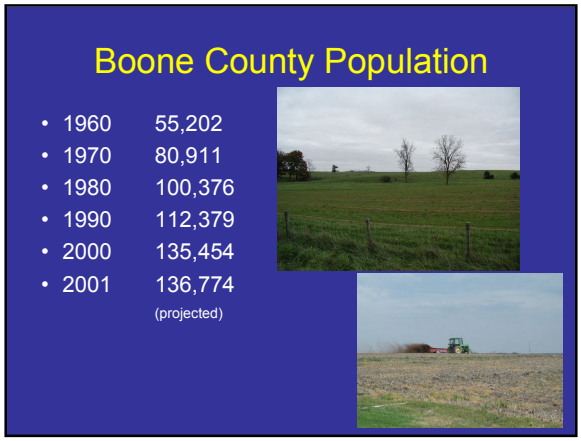
- Plans address:
  - Procedures for loss or compromise of keys, passwords, combinations, etc
  - Procedures for reporting suspicious persons or activities
  - Loss or theft of listed agents or toxins
  - Release of listed agents or toxins or alteration of inventory records
  - Provisions for the control of access to containers where listed agents or toxins are stored
  - Provisions for routine cleaning maintenance and repairs
  - Procedures for removing unauthorized persons

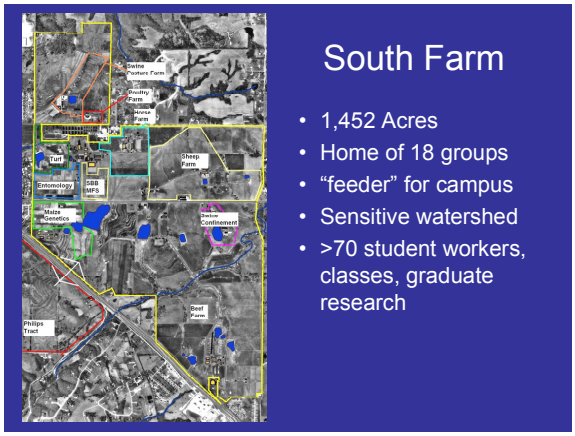
QUESTIONS?

Developing a Master Plan for the University of Missouri South Farm

C. John Poehlmann, Director of Field Operations
College of Agriculture, Food and Natural Resources
University of Missouri

With the increasing pressure of urbanization around the MU South Farm comes the desire to modify operations to best fit in a more populated setting. A consultant was hired to prepare a master plan and began by asking all the project leaders on the 1,452 acre farm to describe their research, needs for future building and land, then detail why it is important that what they are doing at this location can't be done at any other location. The initial response was for teaching and education for undergraduate and graduate students, which in turn promises economic growth possibilities for the area. Four sessions were held to 1) listen to the groups of scientists who work with crops, livestock and others who interact at this location; 2) confirm the needs expressed; 3) determine adjustments within the operation and begin coordination for a future implementation and 4) present the master plan and host initial feedback to it with implementation phases roughed out. In the process of the meetings, neighboring agencies were invited and talks were held with city and state officials. Planned road improvements in the community would require significant changes in operations. Final plans meshed a new overpass and road with a new entrance to South Farm to increase public appeal.





Options for MU South Farm

Sell

Defend

Promote

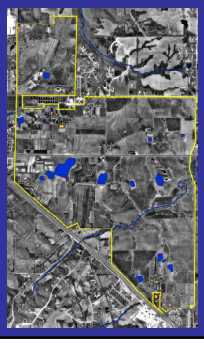
What's at Stake?

- Hands-on experience for students
- Implications of moving:
  - Student involvement
    - +5 miles = -5%
    - +15 miles = -20%
    - +25 miles = -80%
- Research costs increase
  - Travel time & part-time labor
- Education is jeopardized
  - Access of faculty
  - Area provisions

Step 1: Hire a consultant

Sasaki, Inc. (also campus master planner)

Define Scope:
Study focused on South Farm



Step 2: Compile existing data

Survey of South Farm project leaders

- What they do
- Area used & location
- Future programming needs

What do you do here that can't be done anywhere else?

First two rounds of Listening Sessions

3 Groups – animal, plant, users

Findings

Animal and Plant groups required program planning at the Unit Level

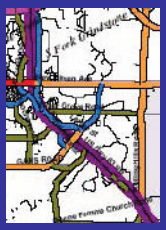
User (non-CAFNR) groups appreciated being involved

Consultants opposed a planned intersection

2nd round of Listening Sessions

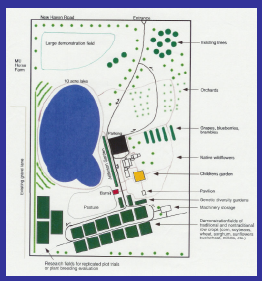
City planners and traffic engineer were invited to discuss plans for roads

South Farm looked like a logical place



3rd Round – Internal Discussions

- Plant group field rotations can accommodate needs
- Animal group can extend areas of shared land use
- Inclusion of a new program – Jefferson Institute



4th series of meetings

Proposed land use map

Overpass would dead end and never enter

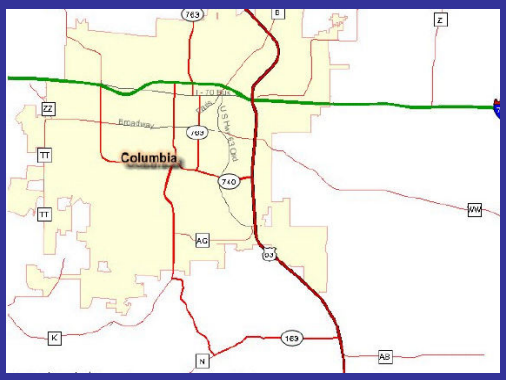
Steps needed to develop and stabilize South Farm as an ag' laboratory

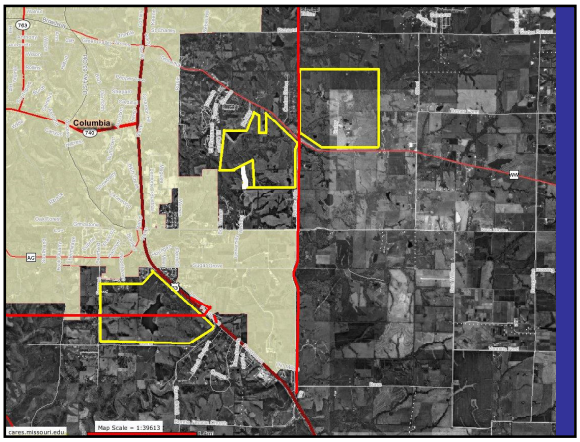
Was the Master Plan Worthwhile? YES!

- Uncovered critical details and led to integrated planning
- Helped us understand other viewpoints and their strength
- Defined obstacles ahead and directed us to begin developing strategies

Is the South Farm Master Plan complete? Not yet

- We are part of the community
- South Farm serves campus in increasing ways
- Long-range plans require defendable goals with enough flexibility to take advantage of opportunities





South Farm is one of many issues under discussion

Technology Park
Incubator
Chamber of Commerce
Regional Economic Development Inc.
Supporters
Town & Gown Issues

Components under Refinement

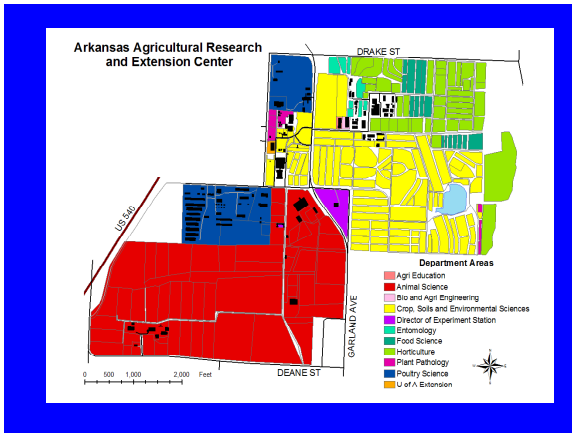
- Provide a new entrance to South Farm
- Work with developers
- Work with City Planners
- Promote South Farm to neighbors
- Promote South Farm as an agent for economic growth in our region
- Promote South Farm as valued *"Green Space"*

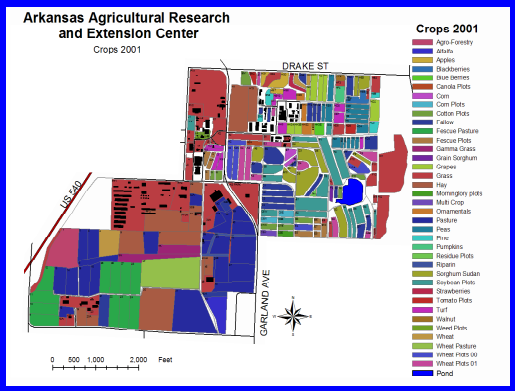
Using Site Specific Soil Sampling to Evaluate Land Areas for Research

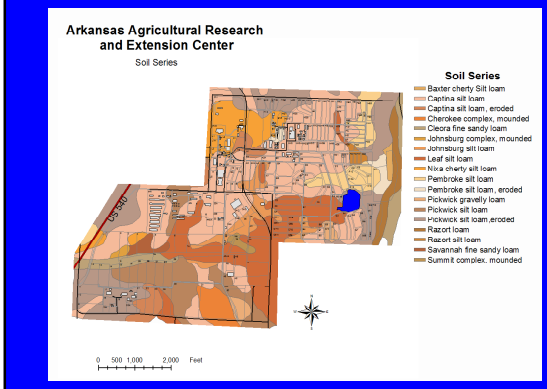
J. V. Skinner Jr. , Resident Director
Arkansas Agricultural Research & Extension Center
University of Arkansas, Fayetteville, AR

A Geographic Information System (GIS) for the University of Arkansas Agricultural Research and Extension Center at Fayetteville (AAREC) is used to provide more efficient access to spatial information about the Center. Data on 250 field, 150 buildings, road, utilities, land use, and soil characteristics is contained in the GIS. A desktop computer with ArcGIS 8.3 software and a Hewlett-Packard pocket PC Ipaq h5555 is used with GIS, GPS, data log, spreadsheet, soil sampling and farm management software to collect, process and manage the large amount of information that is needed and produced for the station GIS. Several applications of the GIS will be discussed with emphasis on the station site specific soil sampling project. Sample data is collected using the pocket PC, Trimble EZ-guide GPS and Farm Works Site-mate software. Information from sampling is used to evaluate field nutrient uniformity, create amendment application maps, to study the effects of land leveling, station land use and previous amendment applications.

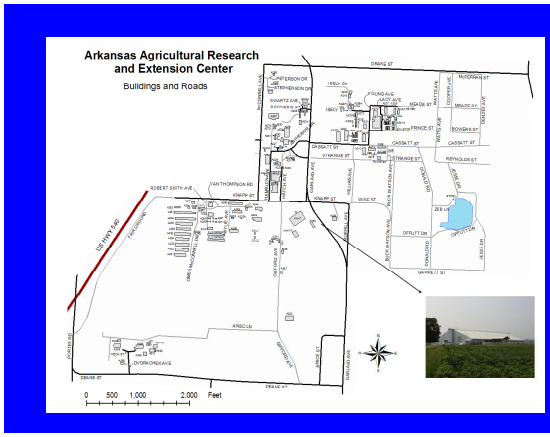
J. V. Skinner Jr., (479) 575-5479, jskinner@uark.edu







Methods



Objective

To develop a database of field soil information to evaluate land areas used in research.

Factors Influencing yield

Soil	Biological	Cultural, History	Weather
Drainage	Crop	Irrigation	Rainfall Amount
pH	Weeds	Tillage	Rainfall timing
Plant available water	Insects	Past Crops, Rotation	Hail
Soil Series	Bacteria	Compaction	Heat & Cold
Topography	Virus	Erosion	Sunlight
Organic matter	Fungus	Seed rate	Growing season length
N-P-K	Nematodes	Planting date	Wind
Micro-nutrients	Large animals	Row Spacing	
Salinity	Rodents	Chem. Carry-over	
Shading		Fence Lines	
Clay pan Depth		Manure piles	
Texture		Farmsteads	

Important Factors Influencing yield

1. Water control - drainage and irrigation
2. Use the best varieties
3. Control pests at proper time - weed, insect, disease etc.
4. Proper tillage
5. Crop rotation
6. Soil pH
7. Soil N-P-K
8. Micro nutrients

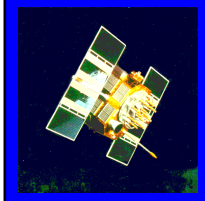
These are management decisions that require proper use of resources in a timely manner.

Methods

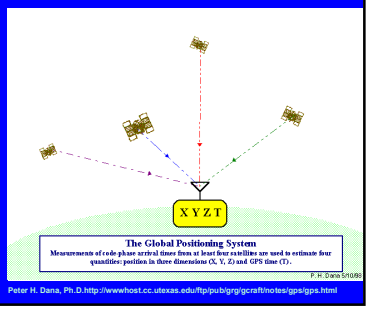
Four Wheeler – Kawasaki 300
GPS -Trimble EZ-Guide
Pocket PC - HP Ipaq 5555
Software - Farm Works Site Mate
and ESRI ArcPad 6.0

Global Positioning System (GPS)

Consists of 24 satellites orbiting about 12,000 miles above the Earth, and five ground stations to monitor and manage the satellite constellation.
Cost: 12 billion Dollars

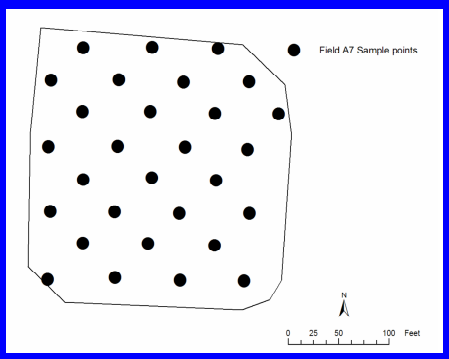


GPS

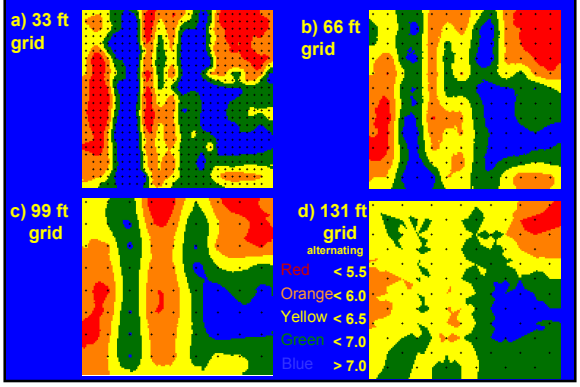


Peter H. Dana, Ph.D.http://wwwhost.cc.utexas.edu/ftp/pub/grg/gcraft/notes/gps/gps.html

GPS Light bar uses

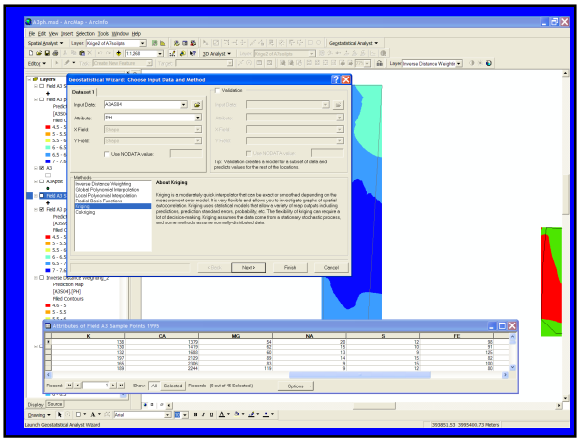


Soil Sample pH

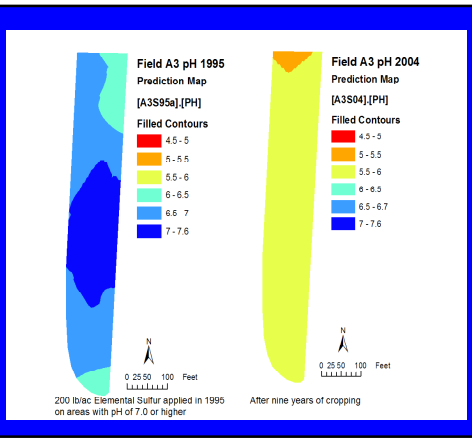


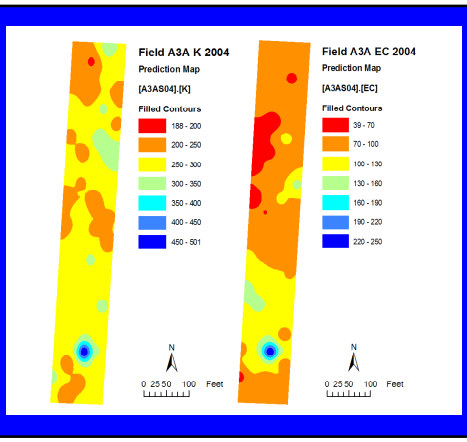
Soil Samples

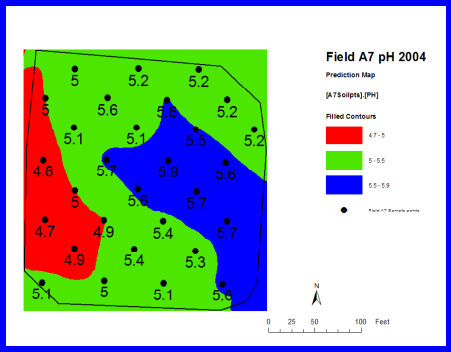
- Eight 2.5 x 15 cm cores are taken from a 0.5 meter radius around each sample point.
- Samples were sent to the U of A Soil Testing Lab in Marianna for routine soil analysis.
- Soil pH, phosphorus, potassium, calcium, magnesium, sodium, sulfur, iron, manganese, copper, zinc. nitrate nitrogen, boron, EC and CEC were tested.
- Some sample locations have soil physical characteristic data taken. Such as percent sand, silt, clay, water holding capacity, bulk density.
- Data are downloaded into Microsoft Excel from the Lab web site or from spreadsheets.
- Data are imported into ESRI ArcGIS 8.3 and matched to sample points.

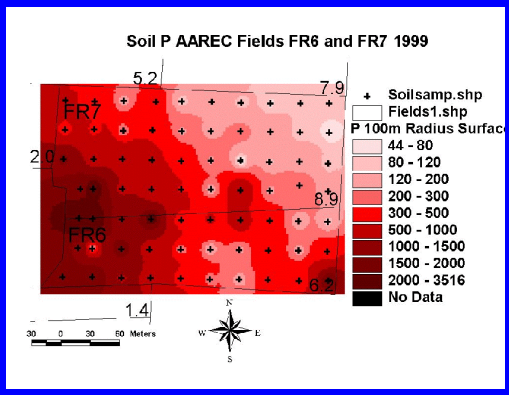


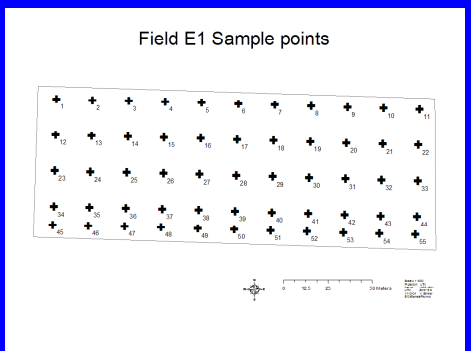
Results and Discussion

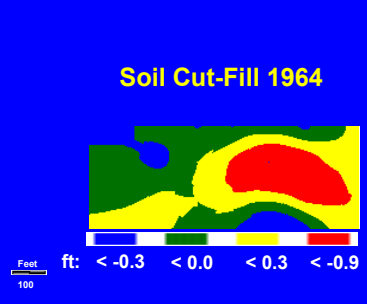


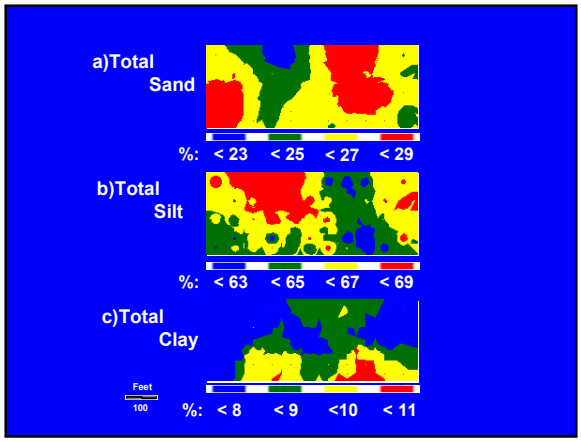


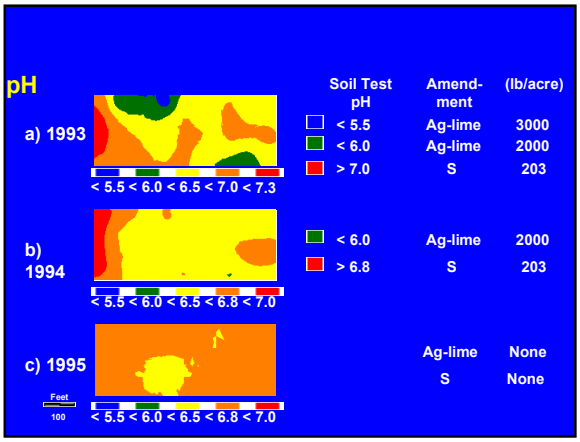


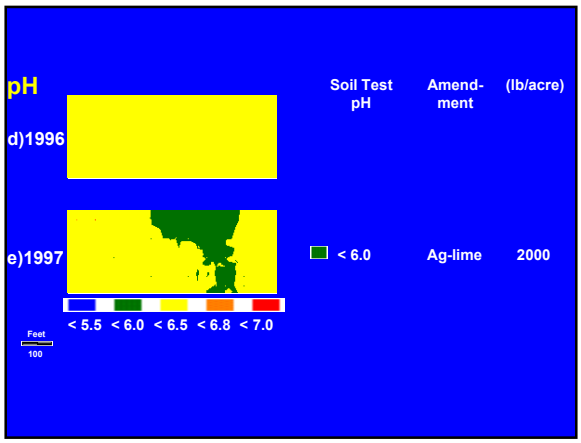


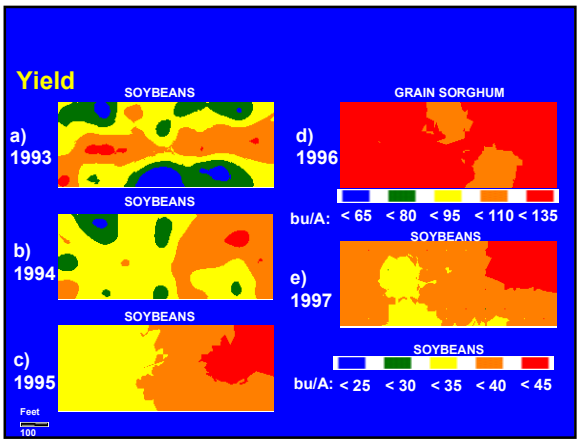










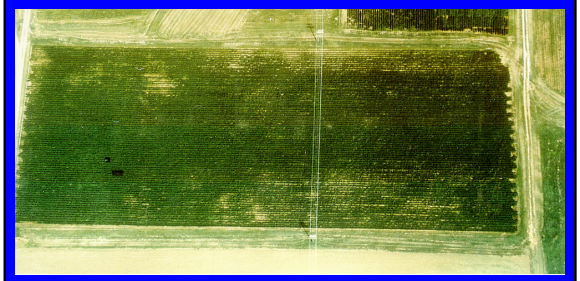


Variability of yields on a Taloka silt Loam for five years.

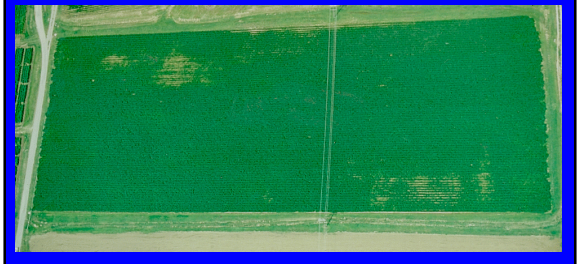
Yield (bu/acre)

	Range	Mean	CV(%)
1993	8 - 42	32	20.4
1994	20 - 44	34	16.5
1995	27 - 47	36	12.5
1996*	89 - 133	114	8.2
1997	28 - 49	37	11.3

Field E1 1993



Field E1 1994



Field E1 1995

Future Work

Continue to add past and current field information.

Look at soil apparent electrical conductivity ECa with soil penitrometer, soil water content and remote sensing data.

References

CTN Data Services, Farm Works Site Mate Software. Ver 7.0

Environmental Systems Research Institute (ESRI). 2001. ArcGIS 8.3. Redlands, CA. www.esri.com.

Hewlett-Packard Inc. Ipaq Pocket PC h5555. welcome.hp.com

Skinner, J.V.,JR. ,H.D. Scott, and W.E. Sabbe, 1998. Assessment of Sampling Intensity for Application of Soil Amendments. Agronomy Abstr.. p. 288

Trimble Inc., 2002. Sunnyvale, California. www.trimble.com

What Is a GIS?

•A geographic information system (GIS) is a computer-based tool for mapping and analyzing things that exist and events that happen on the earth. GIS technology integrates common database operations such as query and statistical analysis with the unique visualization and geographic analysis benefits offered by maps.

Comparison of an Australian AREC to its US Counterparts

Peter B. Schultz, Director,
Hampton Roads Agricultural Research & Extension Center
Virginia Polytechnic Institute and State University

The Southedge Research Station is located near Mareeba, Queensland, Australia, 45 km west of Cairns, at 145°E, 16°S, and at an elevation of 457 m. The Station has an area of 125 hectares. Soil type is coarse grained and of granitic origin ranging in depth from 75-150 cm. The station can be irrigated by either overhead and under tree sprinklers or mobile irrigators, and has a water allocation. The station is well equipped for row cropping with a good range of tractors and implements, a well equipped workshop, a small cold room, 3 ovens and 6 experimental tobacco drying facilities, 1 glasshouse, and 5 bush houses. The administration building has 1 laboratory, 1 library and 7 large offices.

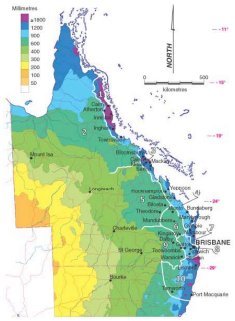
Southedge is the principal research site for the Department of Primary Industries Agency for Food and Fibre Sciences Farming Systems Institute and Queensland Horticulture Institute. The research staff is based in Mareeba a short distance from the research station.

Southedge Research Station was established as a tobacco research station in the 1969, and planted its first tobacco trials in the 1969/70 growing season. Tobacco was the primary focus of research in the 1970's and into the 1980's. Interest in horticultural crops in the mid-1980's led to additional projects. Research projects include evaluation of sugar beets, sweetpotato weevil trials, pumpkin, pawpaw breeding trials, grapefruit variety trials, mango improvement, cashew variety trials, and sugarcane variety trials for disease resistance. Trials on forest species, acacia and eucalyptus, for use in third world countries are also conducted at the research station. Trials on fiber crops are also conducted.The station staff also conducts on-farm plant breeding tobacco trials in the nearby agricultural areas. Each year there are at least 4 field days held on the station for sweet potatoes, navy beans, mangoes and tobacco trials. The station is regularly used as a venue for local tobacco industry meetings and tobacco research and development committee meetings.Southedge continues to respond to the demands of local industries for research into a wide variety of crops grown in the region. The station and staff are well placed to be an integral part of the supply of research excellence.

An Australian AREC Visit

Peter B. Schultz
Hampton Roads AREC
Virginia Beach, VA

Australia-Geography, Rainfall



Queensland

- Queensland-approx one quarter the size of the United States
- Climate ranging from tropical in the north to subtropical and temperate in the south.
- Queensland enjoys significant diversity of horticultural production regions, extended harvest periods and the ability to produce a wide range of tropical, subtropical, temperate and exotic horticultural products.
- Close to Asian markets, and during the northern hemisphere's off-season, Queensland offers real opportunities for businesses looking at sourcing first class products reliably for world markets.
- Queensland producers work in harmony with the environment to produce wholesome, clean and healthy fresh fruit and vegetables.

Tablelands

Southedge Research Centre

- Southedge Research Centre 125 ha., 145°E, 16°S
- All of the station can be irrigated by either overhead and under tree sprinklers or mobile irrigators. The property has a 245 megalitre water allocation.
- The station is well equipped for row cropping with a good range of tractors and implements.
- Workshop, cold room, 3 ovens and 6 experimental tobacco drying facilities, 1 glasshouse, 5 bush houses. The admin. building has 1 laboratory, 1 library and 7 offices.

Southedge Research Centre

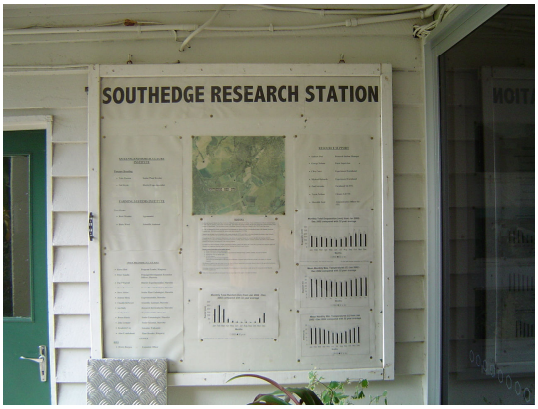
- Located near Mareeba, QL; operated by Dept. of Primary Industries (=State Dept. of Agric.)
- All scientist offices are in Mareeba government offices.
- Perform "extension" with farm visits; plots at other locations.
- Focus on tobacco and alternative crops.

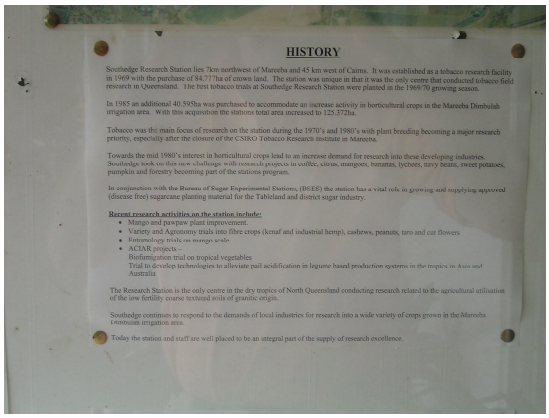
Familiar on-farm transport

Southedge Station Staff

On-station housing

Southedge Research Centre Administrative Building





HISTORY

Southedge Research Station lies 7km northwest of Mareeba and 45 km west of Cairns. It was established as a tobacco research facility in 1969 with the purchase of 84.77 ha of crown land. The station was unique in that it was the only centre that conducted tobacco field research in Queensland. The first tobacco trials at Southedge Research Station were planted in the 1969/70 growing season.

In 1985 an additional 40.595ha was purchased to accommodate an increase activity in horticultural crops in the Mareeba Dimbulah irrigation area. With this acquisition the stations total area increased to 125.372ha.

Tobacco was the main focus of research on the station during the 1970's and 1980's with plant breeding becoming a major research priority, especially after the closure of the CSIRO Tobacco Research institute in Mareeba.

Towards the mid 1980's interest in horticultural crops lead to an increase demand for research into these developing industries. Southedge took on this new challenge with research projects in coffee, citrus, mangoes, bananas, lychees, navy beans, sweet potatoes, pumpkin and forestry becoming part of the stations program.

In conjunction with the Bureau of Sugar Experimental Stations, (BSES) the station has a vital role in growing and supplying approved (disease free) sugarcane planting material for the Tableland and district sugar industry.

Recent research activities on the station include:

- Mango and pawpaw plant improvement.
- Variety and Agronomy trials into fibre crops (kenaf and industrial hemp), cashews, peanuts, taro and cut flowers
- Entomology trials on mango scale
- ACIAR projects –
  Biofumigation trial on tropical vegetables
  Trial to develop technologies to alleviate pail acidification in legume based production systems in the tropics in Asia and Australia

The Research Station is the only centre in the dry tropics of North Queensland conducting research related to the agricultural utilisation of the low fertility coarse textured soils of granitic origin.

Southedge continues to respond to the demands of local industries for research into a wide variety of crops grown in the Mareeba Dimbulah irrigation area.

Today the station and staff are well placed to be an integral part of the supply of research excellence.

Familiar Crops- Sugarcane variety trials

Peanuts

Unfamiliar Crops- Cashew (poisonous until roasted)

Lychee tree

Papaya (pawpaw) disease trial

Elephant grass (windbreak)

Mango orchard

Familiar Signage

Unfamiliar Signage

Bulletin Board Material

- Southedge continues to respond to the demands of local industries for research into a wide variety of crops grown in the region. The station and staff are well placed to be an integral part of the supply of research excellence.

Science At Work In Agriculture: An Innovative Method To Reach Potential Students.

R. B. Westerman Research Scientist & Coordinator of Research Operations
Department of Plant and Soil Sciences
Oklahoma State University, Stillwater, OK

The Science at Work in Agriculture Workshop was created in 2003 to give junior and senior high school students a "hands on" opportunity to participate and experience how the Division of Agriculture and Natural Resources and more the specifically the Department of Plant and Soil Sciences contributes to agriculture. Our purpose and scope was to educate high school students from across the state of Oklahoma on the scientific and technological advances in agriculture generated by Oklahoma State University and hopefully increase enrollment in the Division. During 2003, only high school science and agriculture students from north central Oklahoma were invited to participate in the workshop. In 2004 interest was generated from neighboring schools that were not invited the previous year and the enrollment for the workshop increased 100% with over 250 registered participants attending. Our goal for 2005 is to increase the number of participants attending the workshop and eventually reach 500 students from across the state.

The workshop topics every year were very broad and diversified and included topics related to Genetic Engineering, Oklahoma Mesonet, Fire Ecology and Prescribed Burning, Controlling Water Erosion, Seed Quality, Soil Nutrient Chemistry, High Tech Solutions in Agriculture, Use of Global Positioning Equipment, The World of Soil: A View Underground, and Putting Pesticide Toxicities in Perspective. During all of the workshops the students were challenged to conduct a brief experiment or operate a piece of lab or field equipment for scientific data collection. Some of the equipment operated by the students includes a "gene gun", global positioning equipment, rainfall simulation equipment, and hand held remote sensors that determine the amount nitrogen fertilization required to obtain a yield goal in wheat. In 2003, the students were randomly selected to attend either the Orange or Black tour and then participate in 3 workshops before lunch and 2 after. In order to give the students more time for the "hands on" experience the number of tour stops was decreased to a total of 4 for each student during 2004 and 2005.

At the conclusion of the workshops, the students were required to complete a survey and rank the tour stops that he or she attended, list the strengths and weaknesses of the event, list any improvements for the workshop, and make a recommendation on whether or not this should be annual event, and finally give an overall rating for the activity. Surprisingly, 100% of the students surveyed unanimously recommended that the Science at Work in Agriculture workshop become an annual event. The academic requirements to complete a Bachelor of Science degree in Plant and Soil Sciences are very stringent and require a student with a strong science based background. It is our hope that we can generate interest in the Division of Agriculture and more specifically the Department of Plant and Soil Sciences at Oklahoma State University by targeting strong science based students through annual "hands on" workshops.

Research stations conducting a "hands on" workshop will benefit from the increased exposure and knowledge of station activities by the general public. Increased visibility for the station will also be gained from University published magazines, news press articles in local and statewide papers, articles in regional farm journals, and even television appearances.

Science at Work in Agriculture


R. B. Westerman* and E. N. Wehrenberg,
Oklahoma State University

Science at Work in AG

- **SCOPE:**
  - **To educate high school students from across the state of Oklahoma on the scientific and technological advances utilized in today's AG and the role of DASNR at Oklahoma State University**

Science at Work in AG

- **PURPOSE:**
  - **B.S. degrees in the Plant and Soil Sciences Department require a strong science based student.**
  - **Student retention.**

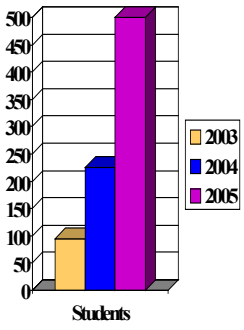
Science at Work in AG

- **PURPOSE cont:**
  - **To give high school students a "hands-on" opportunity to learn how the PaSS Department and DASNR contribute to agriculture.**

WORKSHOP SPECIFICS

- **AUDIENCE**:
  - High Schools NC Oklahoma 2003, N 1/2 OK 2004
- **All day event:** Refresh., Lunch, Sponsors
- **Two Tours:**
  - Orange & Black
  - 4-5 workshops, 45 min. each.


Student Participation



- **100% growth in #'s**
- **23 schools in 2004**
  - **Increase of 100%**
- **Distance Traveled**
  - **1 > 50 miles in 2003**
  - **7 > 50 miles in 2004**
    - **175 miles farthest**
- **80% increase in sponsorship ($) 2004**

ORANGE TOUR

- **Seed Quality**
- **Controlling Water Erosion**
- **Fire Ecology & Prescribed Burning**
- **Oklahoma Mesonet**
- **Genetic Engin. of Plants**

BLACK TOUR

- Soil Nutrient Chemistry
- High Tech Solutions in AG
- Use of GPS Equipment
- The World of Soil
- Pest. Tox. In Perspective

WORKSHOP SURVEY

- Student survey.
- Questions:
  - Workshops?
  - Strengths?
  - Weaknesses?
  - Annual event?
  - Improvements?

Most interesting workshops?

Orange Tour: Fire Ecology

Black Tour: GPS Equipment

Strengths:

- Informative
- Interesting
- "Hands-on"
- Very Prof.

Weaknesses

- None!

Survey Questions

- Annual Event?
  - 100% yes!
- Improvements?
  - #1 – Nothing
  - #2 – More "Hands-on"
- Rated 9.5!

SUMMARY

- Event is a huge success!
- By the 2nd year reached 250 science based students.
- Exposed Sci. students to PaSS and DASNR

Additional Benefits

Increased exposure & knowledge of experiment station

- University
- Agriculture Industry
- Community/State

Planning for the Future

- Make each stop available
- Inc. growth and participation
- Build on Science ba concepts (other dep
- Clearly define professional opportunities associated with PaS and DASNR

This is the FUTURE!

RESEARCH CENTER ADMINISTRATORS SOCIETY
EXECUTIVE COMMITTEE MEETING
September 12, 2004
Doublewood Best Western Hotel
Bismarck, North Dakota

The Executive Committee of the Research Center Administrators Society held their annual summer meeting in the Doublewood Best Western Hotel in Bismarck, North Dakota on September 12, 2004. Present at the meeting representing their respective states were: Lee J. Clark, University of Arizona; Ty Marshall, North Carolina Department of Agriculture (NCDA); Debbie Robertson, NCDA&CS; Phillip Winslow, NCDA&CS; Jeff Chandler, North Carolina State University (NCSU); Floyd Wiggins, NCSU; Jeff Anderson, NCSU; Donnie Davis, University of Kentucky; Allen Nipper, Louisiana State University; Pete Schultz, Virginia Tech University; Paul Nyren, North Dakota State University; Kelly Bryant, University of Arkansas; Mike Phillips, University of Arkansas; Larry Earnest, University of Arkansas; Bob Roth, University of Arizona; Dennis Onks, University of Tennessee; John Hodges III, University of Tennessee; Tony Dawkins, Auburn University; Ray Cartee, Utah State University; Mac McNeill, NCSU; Lyle Paul, University of Illinois. Officers present were: Paul Sebesta, President; Robert Dunker, Vice President; Denny Thompson, Executive Treasurer; Randall Rawls, Secretary.

President Paul Sebesta called the meeting to order at 1:00 p.m. Paul Nyren welcomed the group to North Dakota and reviewed the agenda for the three day meeting. President Sebesta announced his retirement from University of California and subsequent employment by The Audubon Society. He stated that he had been asked by his new employer to remain active in RCAS and asked for a vote of support from those present for him to continue in his office as president. Unanimous support was given by voice vote.

Minutes from the last meeting in Chandler, Arizona were presented to the group for review. Motion for acceptance was made by Dennis Onks and seconded by Ray Cartee. Motion was approved by voice vote of the membership. Dennis Onks then stated that it had been customary in the past for the individuals present at the business meeting of the executive committee to be recognized by name in the minutes.

The list of State Reps was reviewed by President Sebesta and corrections made where people had changed responsibilities and/or left employment of their respective universities.

President Sebesta moved into standing committee reports. They were:

Treasurer's Report by Denny Thompson.

- Bank Account balance as of September 12, 2004. $12,902.72
- Lee Clark asked about the possibility of some of this money being placed in a money market account or Bank CD for revenue generation.
- Denny led a discussion about type of account best suited for easy access and how much money needed to be available to conduct the business of the society.

- Motion was made by Paul Nyren that Denny check into different accounts available to the society and returns on our money.
- Motion seconded by Allen Nipper and approved by voice vote of the membership.

Finance Committee:
- No report given due to the absence of the Committee chairman.

Membership:
- No report given due to the absence of the Committee chairman.

Proceedings Committee report given by Dennis Onks.
- Reported that the format for recording the proceedings was changing more to power point presentations and fewer abstracts. It has been difficult to get abstracts from presenters in the past but much easier to get copies of the slides in the power point presentations.
- North Carolina Department of Agriculture has been paying the printing cost for the past several years and has done most of the actual printing.

Awards report given by John Hodges, III.
- The person who was chosen to receive the Distinguished Service Award would not be disclosed at this time but had been confirmed by the officers of the society.
- Motion to accept this report and not name the individual receiving the award until the Banquet at the Little Rock Meeting was made by Bob Roth and seconded by Paul Nyren. Approval was by voice vote of the membership.

Nominations:
- No report given due to the absence of the committee chairman.

Local Arrangements Committee for fall 2005 report given by Dennis Onks.
- Meeting to be held in the Nashville/Middle Tennessee area.
- Dates will be the week of September 25, 2004.
- Asked for hotel price range and quality recommendations.
- Executive Committee meeting and possible touring points in Middle Tennessee.
- Motion made by Bob Dunker and seconded by Paul Nyren to accept the proposed agenda with the local arrangements committee having the flexibility to decide on tour stops. Approved by voice vote of the membership.

Old Business continued from previous meetings included

Directory on CD format:

Bob Dunker presented to the membership in Arizona the idea of a CD version of the society directory. President Bill Peterson appointed a committee to persue the idea and present their findings at this meeting. Bob Dunker presented a version of the Society Directory that had been put on a CD. He demonstrated how it would function similar to a web page as he went through information for some of the states. Bob stated that he felt

he could have the CD ready for distribution at the winter 2005 meeting in Little Rock. Motion was made by Paul Nyren and seconded by Donnie Davis to use the CD format and acknowledge Bob's tremendous effort and excellent job on putting the CD together. Approval was given by voice vote of the membership.

New Business brought before the group by President Sebesta included:

Legal Structure:

Bob Dunker led the discussion on the legal structure of the society. He reported on the committee meeting in Memphis on June 7, 2004, consisting of Bob Dunker, Chairman, Ray Cartee, Denny Thompson, Brent Westerman, and Butch Withers, The purpose of the meeting was to review the legal status of the society. It was determined that we had been using the LSU tax ID number and that RCAS needed to obtain its own IRS non-profit tax exempt status. To accomplish this there would need to be some changes in the wording of the society by-laws to meet IRS regulations. Advantages and disadvantages of different IRS tax-exemptions were discussed and it was decided that tax-exempt status under IRS 501 (c)(3) regulations would be most appropriate for the society. President Sebesta asked for the group's recommendation on course of action to take. Motion was made by Dennis Onks that the committee work on the documents and to present these documents to the Executive Committee at the winter meeting for a vote. Comments were to be sent to Bob Dunker by November 1, 2004 on the wording changes needing to be made to the by-laws and Articles of Association so that these changes could be submitted to the membership prior to the winter meeting as specified in the by-laws of the society. The Executive Committee would then decide at the winter committee meeting on action to be presented to the membership for their vote at the winter business meeting. State representatives were to send out this information to their respective members by December 1, 2004 to meet the deadline sent forth in the bylaws for the proposed changes to be voted on by the society at the winter business meeting. Alan Nipper seconded the motion and approval was given by voice vote.

IAMFE.

Lee Clark reported on the IAMFE meeting in St. Petersburg, Russia in 2004. He reviewed the program and highlights of the meeting. Lee made a motion that RCAS pay annual membership dues to IAMFE. Bob Dunker proposed that a decision on paying these dues be deferred to a later date. The motion was tabled until a later date.

Local Arrangement for Little Rock.

Mike Phillips reported that all was going well with the preparation for the meeting in Little Rock on Feb 6-9, 2005. The two hotels to be used are the Peabody and the Doubletree with the meetings to be held in the Convention Center. Mike asked about registration fee amounts and the break down of meeting cost and tour/banquet cost on the registration form. The meeting format would be Sunday p.m.- Executive Committee meeting, Monday a.m.- Group meeting, Monday p.m.- Tour and Banquet, Tuesday a.m. and p.m.- Group meetings. The tour would be in the Hot Springs area.

Meeting Site Selection Committee.

President Sebesta proposed to the group the formation of a committee to receive input from the membership on future meeting locations and to choose meeting site locations to be presented to the membership for final approval. This committee would be titled "Meeting Site Selection Committee" and would be made up of four people chosen from four different geographical regions of the U.S. Motion was made by Allen Nipper and seconded by Ray Cartee for the president to establish such a committee and appoint the members to serve. Approval was given by voice vote of the membership.

Winter meeting Planning Session.

Several topics were discussed as possible program topics at the winter meeting. These included; future of branch stations, outsourcing to industry, service center concepts, non-traditional uses of REC's, public promotion of research stations, resource management (people, land, money, etc.). Program chair Bob Dunker thanked all for their input and asked for help in finding presenters and resource people.

President Sebesta adjourned the meeting at 4:35 p.m.

Recorded by Randall Rawls, Secretary
September 12, 2004

RESEARCH CENTER ADMINISTRATORS SOCIETY
EXECUTIVE COMMITTEE MEETING
February 6, 2005
Peabody Hotel
Little Rock Arkansas

The Executive Committee of the Research Center Administrators Society held their winter 2005 meeting in the Peabody Hotel in Little Rock, Arkansas on February 6, 2005. Representing their respective state were: Fred Perry, California; Jim Beaty, Indiana; Allen Nipper, Louisiana; Lyle Paul, Illinois; Craig Thompson, Utah; Ray Cartee, Utah; Lyle Lomas, Kansas; Donnie Davis, Kentucky; R. Brent Westerman, Oklahoma; Paul Nyren, North Dakota: Donald Hubbell, Arkansas; Mike Phillips, Arkansas; Jim Bannon, Alabama; Walt Hitch, Tennessee; Dennis Onks, Tennessee; Findlay Pate, Florida; Larry Earnest, Arkansas; Pete Schultz, Virginia; F.T. Withers, Mississippi. Officers present were Paul Sebesta, President; Robert Dunker, Vice President; Denny Thompson, Executive Treasurer; Randall Rawls, Secretary.

President Sebesta called the meeting to order at 2:20 p.m. Mike Phillips was called on to welcome the group to Arkansas and reviewed the plans for the tour and banquet to be held Monday afternoon and evening.

Minutes from the Executive Committee Meeting in Bismarck North Dakota were reviewed and approved with few changes. Motion for acceptance was made by Allen Nipper and seconded by Ray Cartee. Approval of the membership was by voice vote.

Committee Reports:

Finance Committee reported by Denny Thompson.

- Bank balance as of February 2, 2005 was $11,522.81
- $1,163.88 income from meetings for the past year.
- $1,187 net income from Arizona meeting.
- $822 loss on the meeting in North Dakota.

Discussion was presented concerning an audit of financial records. Allen Nipper had completed the previous audit that was done 3 years ago. Allen was again asked to audit the financial records for the Society. There also were some questions about IRS regulations and the accounting of money for the North Dakota meeting. There was concern expressed that having a separate bank account for the local arrangements committee use was in opposition to existing IRS regulations for tax exempt status. Motion to accept the financial committee report was made by Paul Nyren and seconded by Allen Nipper. Membership approval was by voice vote.

Denny Thompson then asked for discussion on what to do with the money on hand in the bank account. He stated that some options were: (1) regular savings account that paid 0.25% interest; (2) money market accounts that usually required minimums that exceeded the amount the society had available; (3) Certificate of Deposit that paid 2 ¼% on short

term holdings and 3 ½% on long term holdings. Denny had consulted a financial planner for advice and other options. No load mutual funds were suggested that would return moderate grow with smaller risks involved. President Sebesta asked the Financial Committee to meet and recommend action for use on the society money that would be over and above normal operating expenses.

Awards Committee.

No report given.

Proceedings reported by Dennis Onks.

The use of power point slides and abstracts had worked very well in getting presentation information from the speakers of the last couple of meetings. Through the efforts of Carl Tart, North Carolina Department of Agriculture continues to pay the printing cost for the Proceedings. The Proceedings will also be posted on the RCAS website.

Nominations reported by Paul Sebesta.

Mike Phillips was chosen by the nomination committee to fill the position of Secretary. Additionally, Randall Rawls would rotate up to Vice President and Robert Dunker to President.

Membership.

No report given.

Meeting locations reported by Allen Nipper.

The committee submitted to the group that the 2006 winter meeting would be in Orlando Florida. Findlay Pate will coordinate the local arrangement efforts. The 2006 summer meeting will be held in Kansas with Lyle Lomas heading up the local arrangements. The south Texas area was proposed as the location for the 2007 winter meeting. Merritt Taylor offered to serve as local arrangement coordinator for this area. McAllen and South Padre Island were the two possible host cities discussed. President Sebesta delayed any discussion on the Texas location until the business meeting with the entire group the next day.

Old Business.

Bylaws:

L Robert Dunker addressed changes to the bylaws as presented to the executive committee in North Dakota and via e-mail later in the year. These changes are needed to qualify RCAS as a tax-exempt organization under IRS rules. Articles of Association explaining organizational structure and purpose are also needed for IRS approval. Bylaws changes are needed to be more specific on detail on RCAS purpose and function as it relates to money collection and usage. A discussion of the different types of IRS classifications outlined the differences between 501(c)(3) and 501(c)(6) exempt status declarations. Motion was made to accept Robert's recommendation of filing for 5019(c)(3) status and approved by voice vote of the membership. Motion to pay the $500 filing fee to IRS was made by Jim Beaty and seconded by Merritt Taylor. President Sebesta then expressed his appreciation for all his hard work to get all this information together and presenting it to the group.

IAMFE

Lee Clark reported that RCAS and Agronomy had been sharing the cost of membership dues to IAMFE. Agronomy had elected not to pay any this year and the entire amount had fallen to RCAS to pay. Jim Beaty questioned why we paid dues and was told that it resulted in lower registration fees for our members to attend the annual convention. Dennis Onks then moved to not pay IAMFE dues and was seconded by Pete Schultz. Approval by the membership was by voice vote.

CAST

President Sebesta reported that ED Hanlon had been the RCAS representative to CAST and that Ed was no longer a part of RCAS. Discussion points raised then were: (a) Have we been paying CAST dues?, (b) Can we have a voice on the CAST board?, (c) Will questions arise that will be addressed to Research Center Administrators?, (d) Do we have a person willing to serve as our representative on the CAST board? It was decided to ask the general membership for input on participation and representation at the CAST meetings.

New Business.

Directory CD:

Robert Dunker presented questions about the directory CD to the group for discussion. He stated that the CD had been created to use as an informational tool much the same way as the printed directory with many added features that are also found on the website. He then asked the group to consider whether or not there was a need to hire an outside webmaster or to maintain status quo with the web situation handled by Elizabeth Cook and Jim Smith and whether or not we would like to have an interactive website? The decision was made to discuss this with the general membership at the general business meeting on Tuesday.

With no other business to be discussed, President Sebesta adjourned the meeting at 4:10 p.m.

Recorded by Randall Rawls, Secretary.
February 6, 2005

RESEARCH CENTER ADMINISTRATORS SOCIETY
ANNUAL BUSINESS MEETING
February 8, 2005
Peabody Hotel
Little Rock Arkansas

The annual business meeting of the Research Center Administrators Society was held in the Peabody Hotel, Little Rock, Arkansas on February 8, 2005. The meeting was called to order by President Paul Sebesta at 10:50 a.m. There were 54 members present.

President Sebesta asked for comments on the minutes of the previous business meeting. Allen Nipper moved to approve the minutes as written and was seconded by Lyle Lomas. Membership approval was by voice vote.

Executive Treasurer Denny Thompson reported there were 57 members who had paid registration fees. Donations were received from Pennington Seed Company and The Wax Company, LLC, to help cover the cost of break refreshments. Total receipts for the meeting were $9460.00. Expenses for the meeting were approximately $6635.00, leaving a positive balance for the meeting of approximately $2800.00.

Committee Reports.

Finance Committee:

The finance committee, made up of Lyle Lomas, Lyle Paul, Allen Nipper, Bob Dunker, R. Brent Westerman, F.T. Withers, and Larry Earnest, had reviewed the recommendation for investing money held by the Society above normal operational expenses. Their recommendations were to put 1/3 of the available money in a 6 month Certificate of Deposit, 1/3 of the money in a12 month Certificate of Deposit, and keep 1/3 of the money in an interest bearing checking account. Renewal of the CD's should be on a 6-month basis at maturity so that no money is held any longer than 6 months. Motion to accept this recommendation and to authorize the Executive Treasurer to act accordingly was made by Fred Perry and seconded by Allen Nipper. Approval of the membership was by voice vote.

Auditing of the financial records of the Society was again discussed. Allen Nipper was asked by President Sebesta to audit the records and report to the group at the next meeting.

Proceedings.

Proceedings editor, Dennis Onks reported that the 2004 Proceedings were printed and will be e-mailed to state reps. The current format of power point presentation slides and abstracts is working well. The North Carolina Department of Agriculture continues to absorb the cost for printing which has helped the Society with the financial burden. Dennis stated that the years of 2001 and 2002 have been combined under a joint publication while due to uncontrollable difficulties, the proceedings for 2003 have not been published. 2004 proceeding will once again be printed by North Carolina Department of Agriculture.

Nomination.

Report was deferred to later in the meeting.

Membership.

Robert Dunker reported that Jim Smith had expressed a desire to be replaced on the membership committee.

Meeting Location.

Allen Nipper, Chairman, reported that the meeting location committee proposed the following meeting schedule:

Summer 2005-Nashville, Tennessee, Walt Hitch will serve as local arrangement coordinator. Dates are September 25, through Wednesday, September 28. Monday will include a tour of the Highland Rim Research and Extension Center. Tuesday will include the dairy research center at Lewisburg, the horse industry and possibly the Jack Daniel distillery at Lynchburg. Wednesday will conclude with a tour of the Nashville speedway.

Winter 2006- Meet with SAAS in Orlando, Florida. Findlay Pate will serve as local arrangement coordinator.

Summer 2006-Meet in Kansas. Lyle Lomas will serve as local arrangement coordinator.

Winter 2007- Meet in South Texas. Merritt Taylor will serve as local arrangement coordinator. Motion was made by Ray Cartee and seconded by Clyde Boggle to accept the Kansas and south Texas locations. Approval of the membership was by voice vote. The two possible south Texas locations are McAllen and South Padre Island. Motion was made by John Hodges, III and seconded by Dennis Onks to go to McAllen. Approval of the membership was by voice vote.

Winter 2008- Discussion was presented as to meeting with SAAS or other options. It was pointed out that SAAS requires a commitment two years prior to the meeting for their planning purposes and that the decision needed to be made before the winter meeting in Orlando as to whether we would meet with SAAS in Dallas in 2008 or on our own. Motion was made by Pete Schultz and seconded by Merritt Taylor to meet with SAAS in Dallas. Approval by the membership was by voice vote.

Bylaws:

Robert Dunker reported that the executive committee had met on Sunday, February 6, 2005, and recommended approval of the proposed changes to the Bylaws. A time line for the changes was needed to meet IRS filing deadlines for the current year. Motion to accept the changes to the Bylaws was made by Jim Beaty and seconded by Fred Perry. Motion to accept the Articles of Association was made by Fred Perry. Membership approval was by voice vote. It was noted that even though the Articles of Association listed the current slate of officers as the initial officers of the Society, there is a rich and illustrious history of RCAS

prior to these changes to enable the acquisition of tax-exempt status under current IRS rules. This, in turn brought up discussion as to RCAS archives and history. Motion was made by John Hodges, III and seconded by Robert Dunker that R. Brent Westerman by appointed "Official Historian" and archives person for the Society. Approval was given by voice vote by the membership.

IAMFE:

No report given.

CAST:

President Sebesta asked if anyone would like to represent RCAS at CAST meetings. It was made known that anyone attending the CAST meetings, as RCAS representative would be expected to pay his/her own expenses.

New Business

Information Technology:

- Discussion was brought forth concerning the directory CD and the website. Robert reported that he and Jim Smith had discussed needs that should be addressed by the membership. Topics that were brought up were:
- Identify what we want to do with the website.
- Do we want an interactive website?
- What do we have on the website vs. what we would like on the website?
- Who will be responsible who maintaining the website?

Jim has stated that he is willing to continue in his current capacity as the person responsible for the website and as chairman of the web development committee. Motion was made by Robert Dunker to recognize Jim and Elizabeth Cook for your service to RCAS in maintaining the website. Ray Cartee added that added that the Society should offer a gift of $100 annually to Ms. Cook for her service and seconded the motion made by Robert. After discussion, the motion was amended to provide an annual gift to Ms. Cook as determined by the executive committee. Approval by the membership was by voice vote.

Brent Westerman asked if anyone had items of historical significance about RCAS to please forward them to him for placement in the RCAS Archives.

Retirements:

Retirements of people within our organization and supporters closely associated with the RCAS membership are as follows:

Pat Jenson	Vice President and Dean, North Dakota State University
Fred Cholick	Dean, Kansas State University
Rueben Moore	Accepted associate Director position, Mississippi State University
Mike Connors	University of California
Louis	University of California
Jimmy Ross	University of California

Paul Sebesta	University of California
John Hynne	Dean, North Carolina State University

New Members:

New members are:

Joe Street	North Mississippi Research and Extension Center
Les Miller	North Carolina
Tommy Corbett	North Carolina

Nominations Committee:

Ray Cartee reported that the nominations committee was submitting the following slate of officers for the coming year;

President	Robert Dunker
Vice President	Randall Rawls
Secretary	Mike Phillips

Motion to accept the nominations by acclimation was made by John Hodges, III and seconded by Paul Nyren. Approval by the membership was by voice vote.

With no other business to be brought before the membership, President Sebesta adjourned the meeting at 12:00 noon.

Recorded by Randall Rawls, Secretary.
February 8, 2005

RESEARCH CENTER ADMINISTRATORS SOCIETY
Bylaws

Article I. Name

The name of this organization shall be the Research Center Administrators Society, otherwise referred to as RCAS.

Article II. Objectives

The objectives of the society shall be those of an educational and scientific unincorporated association qualified for exemption under Section 501(c)(3) of the Internal Revenue Code of 1986 as amended or a comparable section of subsequent legislation.

Specifically, the society shall strive to advance the acquisition and dissemination of scientific knowledge concerning the nature, use, improvement, and interrelationships of research center administration scientific research, and new technology. To this end, the society shall 1) promote effective research, 2) disseminate scientific information, 3) facilitate technology transfer, 4) foster high standards of education, 5) strive to maintain high standards of ethics, 6) promote advancements in this profession, and 7) cooperate with other organizations having similar objectives.

Article III. Composition of the Society

SECTION 1. The society shall be composed of members as described in Article IV.
SECTION 2. The society shall have an executive committee, other committees, and such officers as are necessary to fulfill its objectives.

Article IV. Membership

SECTION 1. The membership shall include superintendents, resident directors, center directors, and other individuals with various titles having administrative responsibilities involving a field station, branch station, research station, research and educational centers, or other branch research facility of a state agricultural experiment station or any other governmental, public or private agricultural research organization.

SECTION 2 The membership shall be composed of regular and active members. Anyone as described in Section 1 shall be designated a regular member and shall be eligible for active membership**.** Any individual, as described in Section 1 who attends a meeting and pays the designated registration fees shall be designated an active member for three years with all rights and privileges afforded by the Society.

Article V. Officers

SECTION 1. The officers of the Society shall be a President, a Vice-President, a Secretary, an Executive Business Manager, a Society Proceedings Editor, a Communications Officer, and a Newsletter Editor**.** These officers shall perform the duties prescribed by these bylaws and by the parliamentary authority adopted by the Society as described in Article IX.

SECTION 2. The officers shall be elected by the membership to serve for one year or until their successors are elected, and their term of office shall begin at the close of the meeting at which they are elected. The Executive Business Manager, the Society Proceedings Editor, the Communications Officer, and the Newsletter Editor shall serve at the pleasure of the Executive Committee and the Society for a specified term announced upon the election of the officer. Additional terms may be served if deemed in the best interest of the Society.

SECTION 3. No member shall hold more than one office at a time, and no member shall be eligible to serve consecutive terms in the same office. An officer may move into an office through the departure of another officer, completing the existing term and then be elected to serve a full term in that office. The Executive Business Manager, the Society Proceeding Editor, the Communications Officer, and the Newsletter Editor may serve more than one term upon recommendation of the Executive Committee and approval of the Society.

SECTION 4. Duties of the President are to serve as overall coordinator of RCAS activities; preside at all society meetings**; a**ppoint nominating committee in accordance with Article VIII, Section 1; appoint local arrangements committee chair for scheduled meetings; and appoint all other committees as needed.

SECTION 5. Duties of the Vice-President are to serve as Chair of the Program Committee; coordinate program costs with the Executive Business Officer in order to establish appropriate registration fees; provide copy of program to all RCAS officers and state representatives; provide Communications Officer with copy of program to place on the website; and serve as member of the Executive Committee.

SECTION 6. Duties of the Secretary are to be responsible for registration at all meetings and provide President and Executive Business Manager with final registration list; collect fees at all meetings and turn the monies over to the Executive Business Manager for deposit in the society's bank account; prepare minutes of all meetings and business sessions; provide Communications Officer with unofficial copy of the minutes for each meeting for the website for membership review; provide the Proceedings Editor and Communications Officer with official approved copy of minutes for publication in the Proceedings and on the website; provide program agenda of all meetings and other appropriate information to membership; serve as a member of the Executive Committee; serve as recording secretary for Executive Committee meetings as appropriate.

SECTION 7. Duties of the Executive Business Manager are to maintain the societies' banking accounts, fiscal records, prepare financial statements and provide such statements to

the Executive Committee and the membership at scheduled meetings; issue checks for payment of invoices as submitted by the Executive Committee or program committee chair of any Society sponsored event; work with local arrangement committee in establishing appropriate registration fees for all meetings, to establish credit accounts, and other business matters related to any RCAS sponsored meeting; represent the society when designated by the President; maintain current membership list; revise as appropriate and maintain official copy of bylaws; provide Society Proceedings Editor with official copy of bylaws for publication in the proceedings; serve as a member of the Executive Committee; maintain past and current copies of society proceedings and provide copies to libraries, new members, and other individuals as requested.

SECTION 8. Duties of the Society Proceedings Editor are to assemble all program presentations of the annual meeting and edit for publication with input from Vice-President; publish approved minutes of annual meeting and Executive Committee Meeting as provided by the Secretary; procure all needed publishing materials and report cost to the Executive Committee for approval; Serve as a member of the Executive Committee.

SECTION 9. Duties of the Communications Officer are to be responsible for maintaining the Society website.

SECTION 10. Duties of the Newsletter Editor are to be responsible for publishing and distribution of the Societies' newsletter; to place the newsletter on the website at designated times as required by the Executive Committee; and serve as a member of the Executive Committee. Mechanism and dates of distribution of the newsletter to be determined by the Executive Committee.

SECTION 11. : A Local Arrangements Representative will be appointed for each scheduled meeting. Duties of the Local Arrangements Representative are to visit the meeting site in advance of the meeting to determine if the meeting room and other facilities are adequate; meet with hotel sales person or other appropriate businesses to make arrangements for meetings, including, coffee breaks, tour buses, food functions, visual aid equipment and other related needs; coordinate business arrangements with the Executive Business Manager to establish charge accounts if appropriate; coordinate budget matters with program chairman and Executive Business Officer to establish appropriate registration fees, coordinate all program arrangements and planned activities with other Program Committee members; shall have the option to solicit additional assistance from the membership as needed; attend the Executive Committee meeting prior to their assigned meeting.

Article VI. Meetings

SECTION 1. The Executive Committee will recommend sites for the winter and summer meetings two years in advance. The Active members will approve Executive Committee site recommendations at the business meeting of the winter meeting. Nominations of potential winter and summer meeting locations will also be accepted from the membership during the business meeting.

SECTION 2. Special interim meetings can only be called by the President in conjunction with the Executive Committee.

SECTION 3. Active members in attendance at any winter, summer, or special meeting shall constitute a quorum.

Article VII. Executive Committee

SECTION 1. The Executive Committee shall consist of current officers, the immediate past President, and one representative from each participating state.

SECTION 2. The Executive Committee shall have general supervision of the affairs of the society between annual business meetings, make recommendations to the Society, and shall perform such other duties as are specified in these bylaws. The Executive Committee shall be subject to the orders of the society.

SECTION 3. State Representatives shall be selected by the membership of their respective states.

SECTION 4. The Executive Committee shall meet at least twice annually. A meeting will be held during each of the semi-annual meetings.

Article VIII. Committees

SECTION1. The President shall appoint a Nominating Committee consisting of three immediate past Presidents that are still active in the Society. The Nominating Committee shall be appointed during the annual meeting. It shall be the duty of this committee to nominate candidates for the offices to be filled except for the office of Executive Business Manager and Society Proceedings Editor, and a Communications Officer. The Nominating Committee shall report during the business session of the annual meeting and prior to the election of officers. Before the election, additional nominations from the floor shall be permitted. An Executive Business Manager candidate and a Society Proceedings Editor, and Communications Officer Candidate shall be selected by the Executive Committee prior to the annual meeting, and the appointment shall be recommended to the Society for approval. The Society membership may also make nominations from the floor.

SECTION 2. Special committees shall be appointed by the President as the Society or the Executive Committee shall from time to time deem necessary to carry on the work of the Society. The President shall be ex-officio member of all committees except the Nominating Committee.

Article IX. Parliamentary Authority

The rules contained in the current edition of "Robert's Rules of Order Newly Revised" shall govern the Society in all cases to which they are applicable and in which they are not inconsistent with these Bylaws and any special rules of order the Society might adopt.

Article X. Amendment of Bylaws

SECTION 1 - Amendment by Active Membership. The Bylaws can be amended by a two-thirds vote of a quorum as described in Article VI, Section 3 during the business session of the annual meeting. Notice of the proposed change must be given to the Society President one week prior to the annual meeting. The notice shall include the full text of the amendment and the President will make such amendment available to the entire membership at least 24 hours prior to the winter business session.

SECTION 2 - Amendment by Executive Committee. In an emergency, the bylaws can be amended by action of the Executive Committee provided strict procedures are followed. A member proposing the amendment shall provide the Executive Committee Chair with the full text of the proposed change. The Chair shall distribute copies and/or place the full text on the website for committee members 45 days prior to the voting deadline. Voting may be by letter, telephone with confirming letter, or by roll call if taken during an Executive Committee meeting. State Representatives of the Executive Committee are to review the amendment with their respective delegation and cast one vote reflecting the delegation's view. A two-thirds vote of the Executive Committee members voting is required for adoption of an amendment. The Chair shall announce the voting results, and should the proposed amendment pass, the Executive Business Manager shall revise the bylaws to include the amendment(s) and place the full text of the revision on the web site for review by the Society membership. Amendments to the bylaws are to be ratified by the active membership at the winter meeting.

Article XI. Non-liability

SECTION 1. Non-liability. An officer, member, or other volunteer of the society is not liable for the society's debts or obligations and an officer,, member, or other volunteer is not personally liable in that capacity, for a claim based upon an act or omission of the person performed in the discharge of the person's duties, except for a breach of the duty of loyalty to the society, for acts or omissions not in good faith or which involve intentional misconduct or knowing violation of the law, or for a transaction from which the person derives an improper personal benefit. The officers, members, or other volunteers of this society have agreed to serve in their respective capacities in reliance upon the provisions of this Article.

Article XII. Dissolution

Upon dissolution of the corporation, the Executive Committee, after paying or making provisions for the payment of all liabilities of the society, will dispose of all assets of the society exclusively for the purposes of the society in such a manner, or to such an organization or organizations organized and operated exclusively for charitable, educational, or scientific purposes as shall at the time qualify as an exempt organization or organizations under section 501(c)(3) of the Internal Revenue Code of 1986 (or the corresponding provision of any future United States Internal Revenue Law), as the Executive Committee shall determine.

Revision Dates:

Revised 10-01-85
Revised 02-05-88
Revised 02-06-92
Revised 01-29-95
Revised 02-05-01
Current Revision 02-06-2005

RCAS Committee Assignments 2004-2005

Local Arrangements

Allen Nipper, Louisana Chairman
Findley Pate, Florida

Awards
John Hodges, Tennessee, Chairman
Randall Rawls, Alabama
Bill Peterson, Kentucky

Nominations
Lyle Lomas Kansas, Chairman
Bill Peterson, Kentucky
Paul Sebesta, Texas

Membership and Internet Services
Mike Phillips, Arkansas, Chairman
Merritt Taylor, Oklahoma
Jim Smith, Mississippi
Paul Sebesta, California
Ray Cartee, Utah

Proceedings
Dennis Onks, Tennessee, Chairman
Debbie Robertson, North Carolina
Sandy Maddox, North Carolina

Finance
Denny Thompson, Executive Treasurer, North Carolina
Malcomb Pegues, Alabama
Jim Smith, Mississippi
Bob Roth, Arizona
Ed Hanlon, Florida

RCAS Expansion
Ray Cartee, Utah, Chairman
Paul Sebesta, California
Butch Withers, Mississippi
John Hodges, Tennessee
Lyle Lomas, Kansas
Chuck Reid, Michigan
Paul Nyren, North Dakota
Jim Beaty, Indiana
Robert Dunker, Illinois

2005 Distinguished Service Award Recipient

Denny Thompson
Superintendent, Mountain Horticultural Crops Research Station
North Carolina State University
College of Agriculture and Life Sciences
Fletcher, North Carolina

Mr. Denny Thompson is recognized this year by the RCAS membership for his distinguished service and support of the Society's mission of improving the administration of the represented agricultural research units. Denny began active participation with the Society with his membership in 1985. During his 19 years of service to RCAS, he has served on 10 committees and held numerous offices including interim Secretary in 1995 and President in 2000. He currently serves as the Business Manager, a position he has held since 2002.

Denny is a native of North Carolina growing up in Durham. He received a BS degree in Agricultural Production from Montana State University in 1977. In 1983 he earned an MA degree in Horticulture from Clemson University.

Since 1978 he has worked in agricultural research in four states. At Montana State University Agriculture Experiment Station in Bozeman he was involved in winter wheat breeding research. While in South Carolina he was a Graduate student worker at Clemson University Research Station in peach breeding research. Continuing his involvement in peach research he worked as an Agricultural Research Technician at the Sandhills Research Station in Columbia, SC for the Departments of Horticulture and Plant Pathology. Denny worked at the Mountain Branch Station in Georgia as Agricultural Research Specialist and Superintendent. In 1999, he moved back to North Carolina as Superintendent of the Mountain Horticultural Crops Research Station at |Fletcher, North Carolina.

Past Recipients of the Distinguished Service Award for service, leadership, and outstanding contributions to RCAS over an extended period of time.

YEAR AWARDED	RECIPIENT
1987	John Ewing
1988	Robert "Bobby" Moss
1989	Joe High, Jr.
1990	Wallace Griffey & Bill Webb
1991	Norman Justus
1992	Gene Morrison & Jere McBride
1993	William Loe & Howard Malstrom
1994	James Riley Hill
1995	Edward Worley
1996	Robert Freeland & Will Waters
1997	Joe Musick
1998	Dennis Onks
1999	John “Ike” Sewell
2000	F.T. “Butch” Withers, Jr.
2001	Joe McFarland
2002	John Hodges III & John Robinson
2003	Ben Kittrell & Jim Jones
2004	Findlay Pate & Carl Tart
2005	Denny Thompson

PAST PRESIDENTS, RCAS

YEAR	PRESIDENT
1969 – 1970	Robert Moss
1970 – 1971	Preston Reed
1971 – 1972	Charles Douglas
1972 – 1973	Charles Douglas
1973 – 1974	D. M. Gossett
1974 – 1975	Henry Marshall
1975 – 1976	Tom Corley
1976 – 1977	H. Rouse Caffey
1977 – 1978	E. G. Morrison
1978 – 1979	Robert Moss
1979 – 1980	Joe High, Jr.
1980 – 1981	Julian Craigmiles
1981 – 1982	Freddy Peterson
1982 – 1983	Wallace Griffey
1983 – 1984	Bill Webb
1984 – 1985	Gary Elmstrom
1985 – 1986	Norman Justus
1986 – 1987	Robert Freeland
1987 – 1988	Jere McBride
1988 – 1989	Howard Malstrom
1989 – 1990	Bill Loe
1990 – 1991	Edward Worley
1991 – 1992	Will Waters
1992 – 1993	James R. Hill, Jr.
1993 – 1994	Joe Musick
1994 – 1995	Dennis Onks
1995 – 1996	Jim Pitts
1996 – 1997	F. T.(Butch)Withers
1997 – 1998	Ben Kittrell
1998 – 1999	Findlay Pate
1999 – 2000	John Robinson
2000 - 2001	Denny Thompson
2001 -2002	Carl Tart
2003- 2004	Bill Peterson
2004-2005	Paul Sebesta