PROMOTING AGRICULTURAL SYSTEM SUSTAINABILITY IN THE SOUTHEASTERN PIEDMONT

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Characteristics of the Piedmont

The region has tremendous potential for agricultural production.

- Subtropical Climate with hot and humid summers and mild winters.
- The coldest month averages above 0 °C and the warmest month above 22 °C.
- Annual rainfall exceeds 1 meter and is fairly uniformly distributed throughout the year. Droughts are typically manageable.
- The combinations of cool and warm season species result in a grazing season that is longer then regions to the north or south.
Characteristics of the Piedmont – Native Peoples

• Cropping in select areas with fallowing practiced to restore productivity (2 yr on and 8 yr off).

• Mixed forest with open rangeland for large grazers such as bison.

• Significant use of fire to limit forested lands and improve grazing.

• Landscape was at least the result of centuries and likely millennia of frequent fires.

• The landscape was modified by humans and yet was a relatively stable (sustainable) niche for human habitation.

1) Econ., 2) Soc., 3) Tech., and 4) Env.
Characteristics of the Piedmont – Immigration

• A shift in economics, society, and technology brought with the Europeans, the Piedmont was gradually deforested and converted to tilled crops.

• The productivity was better in the Piedmont than in the Coastal Plain because of the environment and this drove the settlement into the region.

1) Econ., 2) Soc., 3) Tech., and 4) Env.
Characteristics of the Piedmont – Immigration

- Settlement came from east to west down the Piedmont.
- Land was generally degraded rapidly under the tillage methods but land was relatively inexpensive.
- Note the hesitation in Georgia at a treaty line.
- Slavery had become an institution by this time and required a large capital investment.

1) Econ., 2) Soc., 3) Tech., and 4) Env.
Characteristics of the Piedmont – Immigration

• Capital was tied up in people and not in land. Land was cheap relative to people.

• Economic pressures overcame social/political, technological limitations, and environmental concerns.

• 1845 Virginia – “…the soils on the hills are poor and usually worn … and it has generally much deteriorated from it’s original fertility owing to the injudicious modes of cultivation pursued by early settlers.” (Quoted by S.W. Trimble)

1) Econ., 2) Soc., 3) Tech., and 4) Env.
Characteristics of the Piedmont – Immigration

- 1853 Georgia – “…nearly all the lands have been out down and appropriated to tillage: a large maximum of which have been worn out, leaving a desolate picture for the traveler to behold. Decaying tenements, red, old hills, stripped of their native growth and virgin soil, and washed into deep gullies, with here and there patches of Bermuda grass and stunted pine shrubs, struggling for subsistence on what was once one of the richest soils in America.” (Quoted by S.W. Trimble)

- Economics continued to drive the process.

1) Econ., 2) Soc., 3) Tech., and 4) Env.
Characteristics of the Piedmont – Immigration

• The peak and transition.
• Tenant farming after the Civil War increased land mismanagement.
• Peak cropping in 1910 to 1920
• Peak tenant farming in 1930
• Collapse in cropping from 1930 to 1980.
• Cotton collapsed a little faster (1960) accelerated by poor prices and the introduction of the boll weevil.

1) Econ., 2) Soc., 3) Tech., and 4) Env.
Characteristics of the Piedmont – Recent History

• Transition from predominantly cropping to predominantly grazing systems on land no longer suitable for cropping.

• Infrastructure for cropping weakened and/or collapsed.

• Mixed landscape of pasture and woodland began to dominate again as prior to immigration.

• Legacy sediments will clear in 6 to 10 thousand years (Jackson et al., JSWC 60:298-310).

• Improvement in the environment is striking over the last 50+ years.
Characteristics of the Piedmont – Recent History

• Piedmont cattle are typically in calf production systems.

• Many small operations supported with off farm income.

• Feedlots are located in the Midwest near grain production.

• Infrastructure for the system is multistate and depends on transportation of millions of animals.

• As a research organization we have received little support from this group of producers … why? Differing long term vision for the land?

1) Econ., 2) Soc., 3) Tech., and 4) Env.
The Future of Agriculture

1) Econ., 2) Soc., 3) Tech., and 4) Env.

- Land prices in the Piedmont are over $5k/acre.
- Many current systems are not stable in the long term.
- Another transition is occurring and some pastureland is over $7k/acre.
Characteristics of the Piedmont – Current Situation

• Just in GA the estimated number of horses and ponies is 120,000 and is up by 50% from 1997.

• Pasture at $7 to $8 k/acre is reasonable for horse production (by definition).

• Many small herds and estimating the numbers of animals is difficult.

• Economics drives the process with a high social value placed on horses.

• The value of pasture is also high for a non-agricultural reason.

1) Econ., 2) Soc., 3) Tech., and 4) Env.
Piedmont pastureland is also valued because it makes building easy.
Percent Change in Population, 2000-2007

Richmond (DC impact)

Charlotte Triad – WSalem, HPoint, GBoro
Triangle – Raleigh, CHill, Durham
• Technology and the environment are adequate for a sustainable agriculture in the Piedmont.

• Unprecedented disconnect between population and their food supply.

• Remaining pastureland will likely primarily support equines (natural resource management issue).

• Turf will become an important land use (natural resource management issue).

• Niche production of animal and plant products for organic/locally produced food movement.

• Water quantity and quality will be a central issue.

“Hitler’s taunt that no democracy uses its land decently, while true of our past must be proven untrue in the years to come.” – Aldo Leopold in a seminar during World War II
Aggressive economic intervention via government programs and regulation is an unlikely option.

The radical disconnect of the population from their “niche” may make the social/political driver problematic for sustainable agricultural systems.

Corn for mazes and pumpkins for cannons may keep a “farm” in the landscape but not as a real part feeding us in our niche in the environment.

Without a sense of loss or need why would society find it politically desirable to set aside large tracts in the Piedmont for crop or livestock production?

1) Econ., 2) Soc., 3) Tech., and 4) Env.