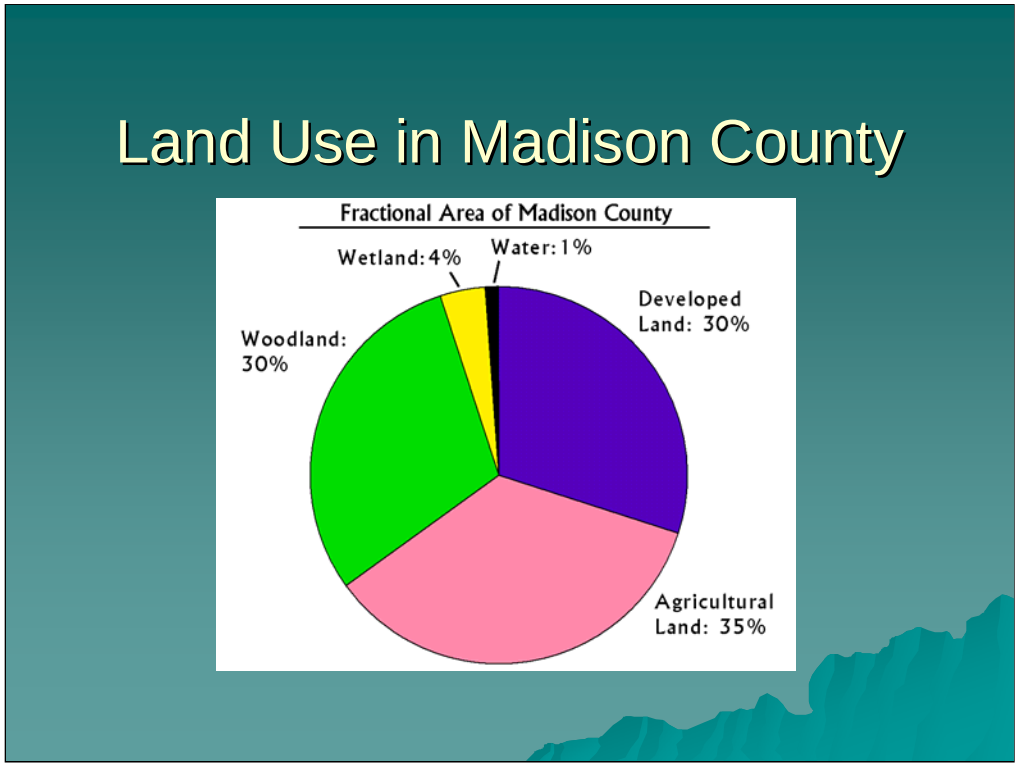

This pie chart represents the categories of land types in percentages for 2000.

Land cover and land use changes can be substantial but are difficult to grasp when changes occur in small increments over a long period.

To quote Dr. Laymon:

“Data from satellites has dramatically illustrated the rates at which these human-induced changes occur. Time-based mapping from satellites has successfully demonstrated the utility of integrating existing historic maps with remotely-sensed data and related geographic information to dynamically map urban characteristics.

These regional databases provide strong visuals of recognized growth patterns, and dramatically convey how the progress of modern urbanization results in profound changes to the landscape.”

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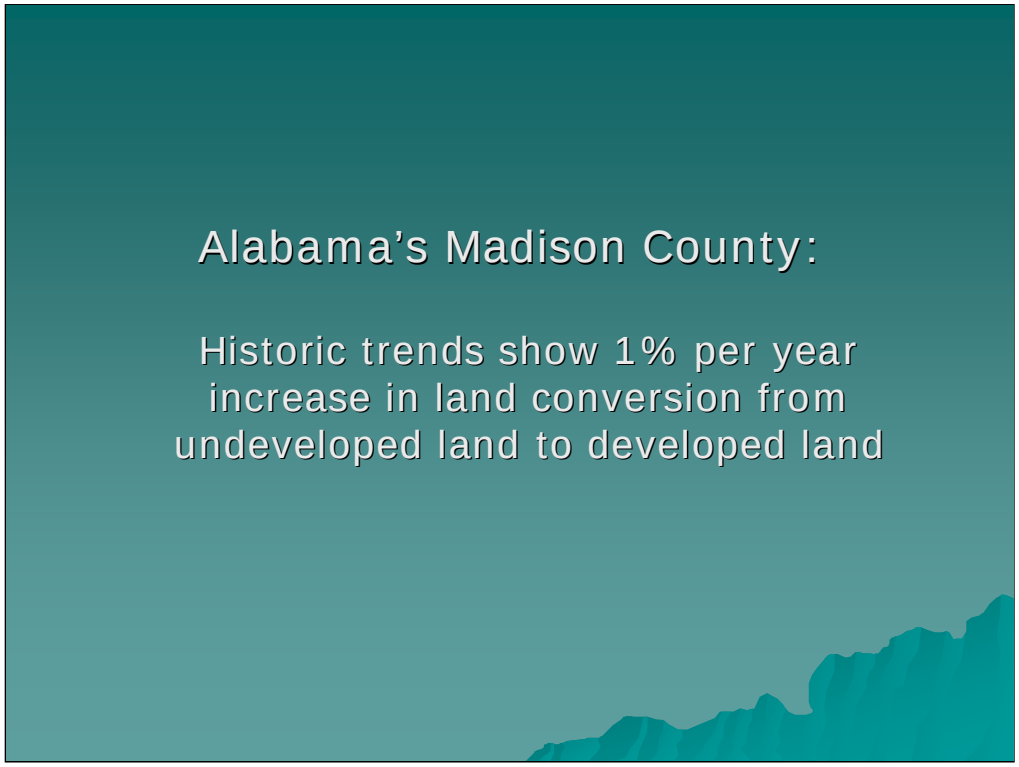
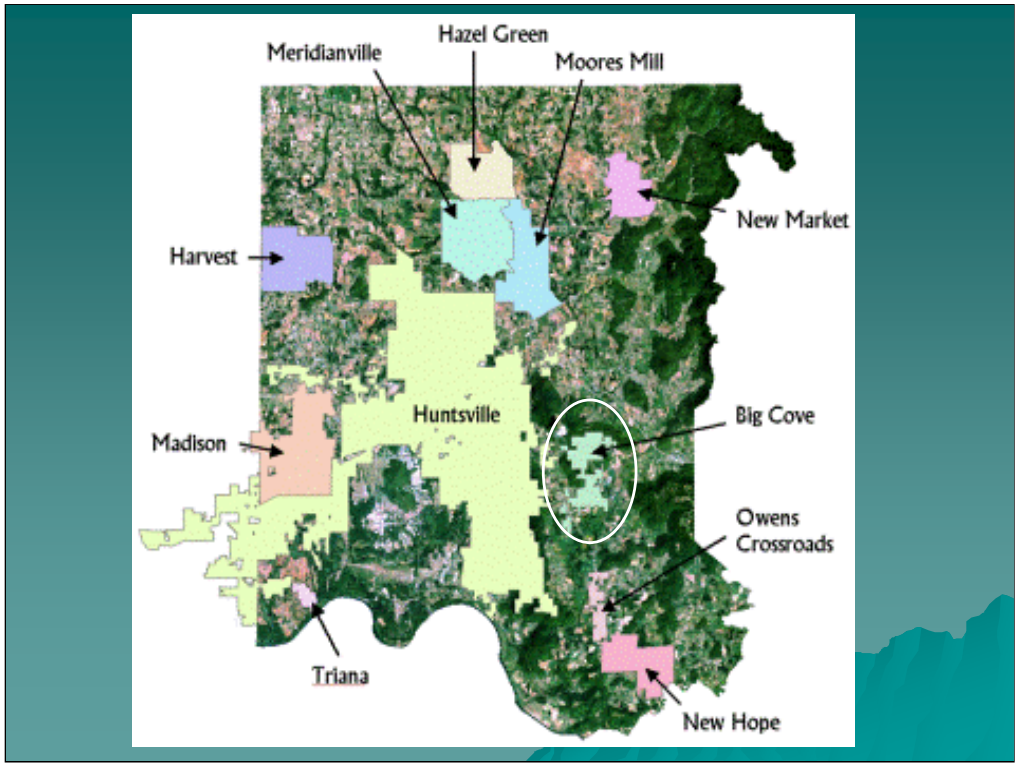


According to the Greenprint results, sixteen percent of Madison County changed from undeveloped to developed land over the 16-year period from 1984 to 2000. This is a rate of 1% per year.

North Alabama is a beautiful area with a growing economy, increasing businesses, low unemployment, and a great quality of life.

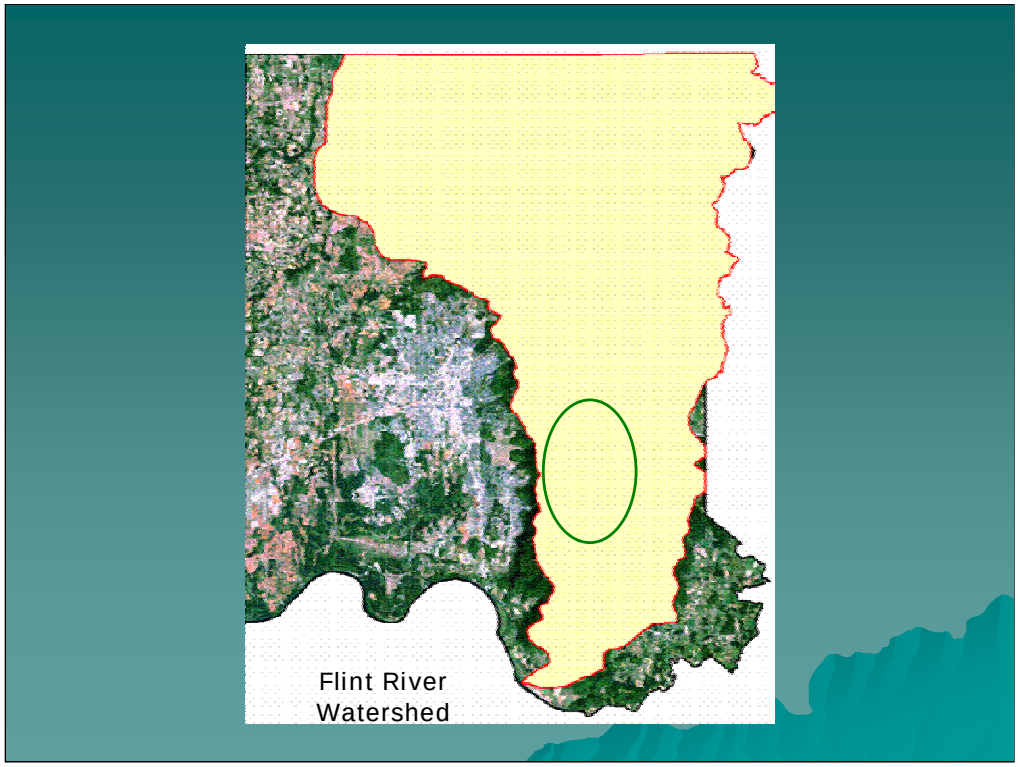
But we are all facing the same challenges of urban sprawl: increased traffic – longer travel time to work; increase in a demand for services: roads, fire & police protection, need for sewers, schools.

Our challenge is smart growth that will enable us to continue living in a growing, economically prosperous community while also preserving natural areas.



From 1984 to 1990 the greatest change in developed land occurred in the city of Madison, Harvest and the Big Cove area as well as New Market. The Big Cove area in particular experienced a 10 fold increase in Developed land. The other cities experienced nearly 150% or greater. (Remember the green spot of Big Cove.)

One area with the greatest rate of change was the city of Madison, a bedroom community of Huntsville. The City of Madison's land changed from from 17% developed in 1984 to 65% developed in 2000. In other words 2/3 of this city has been developed.

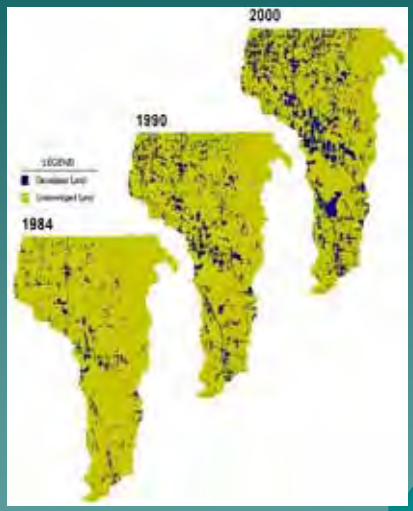


The Flint River watershed, Madison County's largest river basin, is nearly wholly contained within the county. It covers app. 300,000 acres.

The Flint River is the major water way that flows into the Tennessee from where we get our drinking water. Land along creeks and rivers has higher aesthetic value and is more in demand by the public for single family home sites.

The Flint River Watershed is rapidly being "suburbanized". Development along the river corridors in Madison County puts at risk the remaining vegetative cover along the rivers, as well as wetlands associated with these systems. The loss of floodplain forests and wetlands will cause major flooding in the river system, and so protection of these areas is of singular importance.

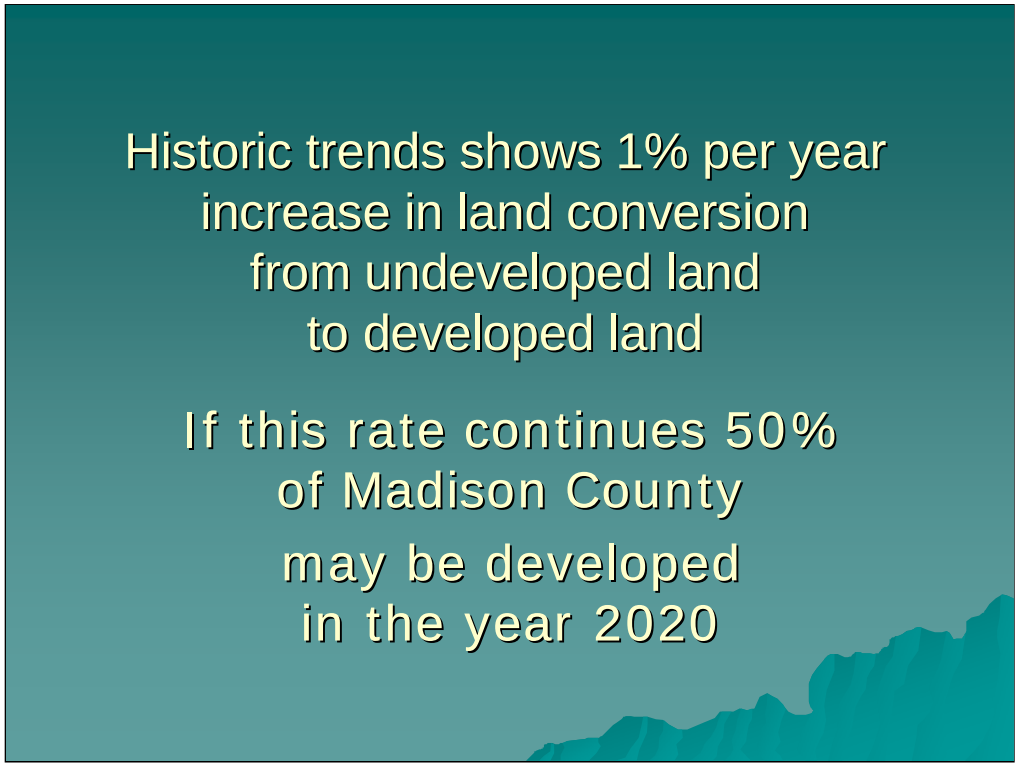
- **Flint River Watershed**
  - 1984 = 5.5% developed
  - 1990 = 12.1% developed
  - 2000 = 20% developed… a four fold increase in 16 years



These maps show where development has occurred.

In 1984, only 5.5% of the watershed was developed. From 1984 to 2000, 12% of the watershed was developed. By 2000, 20% of the watershed area had been developed – a four fold increase in the area of developed land within the watershed over a 16 year period.

These increases are primarily due to development of residential/business areas of Hampton Cove, Moores Mill and New Market.



1984 research showed only 13% developed land

In 2000 research showed that 30% of the land has been developed

Think about…

1. Once land is developed, it rarely goes back to being undeveloped
   (Atlanta is a prime example)

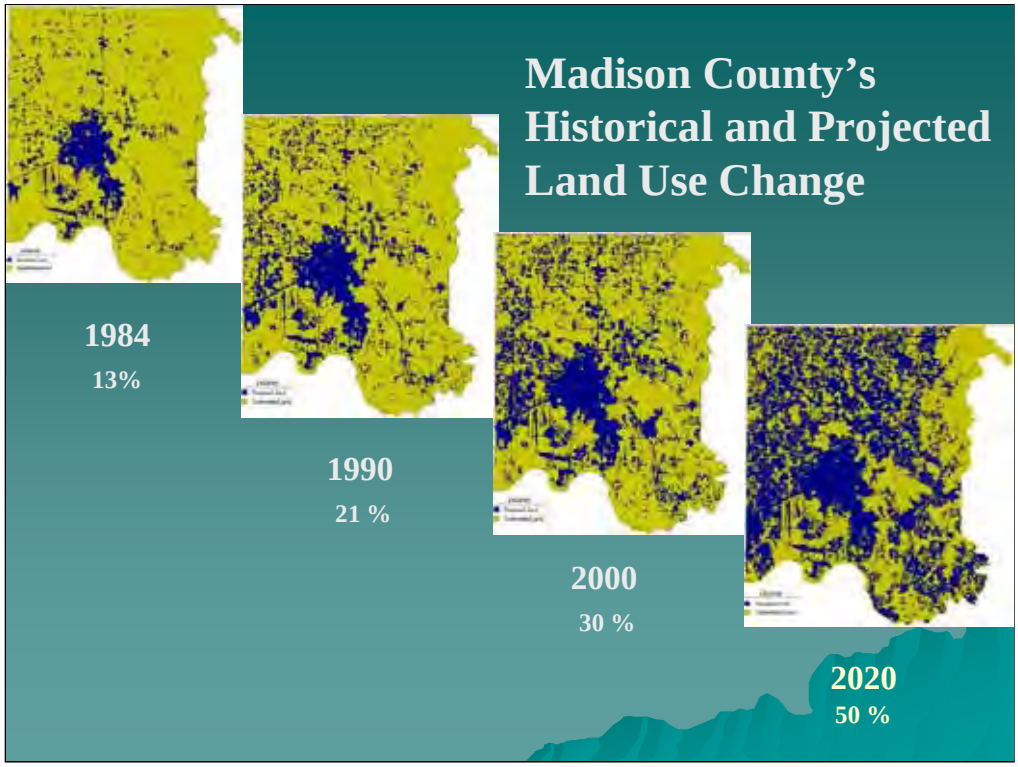
2. What land gets developed first?

The easy stuff– usually flat, treeless, near roads & utilities, i.e., FARMS

-- as of 2000, only 20% of Madison County was farmland. At a rate 1% development per year, if "easy" land is developed first, farms will be in short supply in Madison County.

3. Water features are much sought after – especially if they are natural

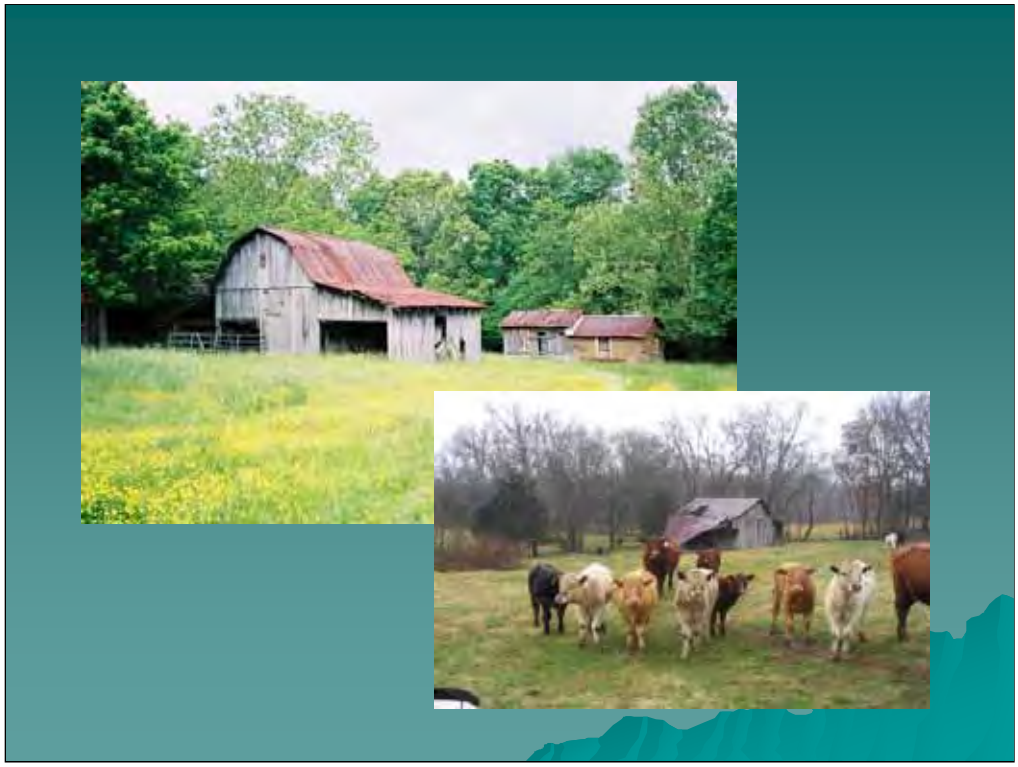
Here is the piece de resistance…



These maps represent the ratio of undeveloped to developed land. You can see the progression from 1984 when the county was 13 % developed to 21% developed in 1990 to 30% developed in 2000.

The projection of what Madison county **may** look like by 2020 was created by changing the agricultural land into developed land. Unfortunately, agricultural land is the easiest to develop. We could be 50% developed by 2020.

Looks rather cancerous, doesn't it. It is these four maps that make help create the lightbulb moment for audiences.

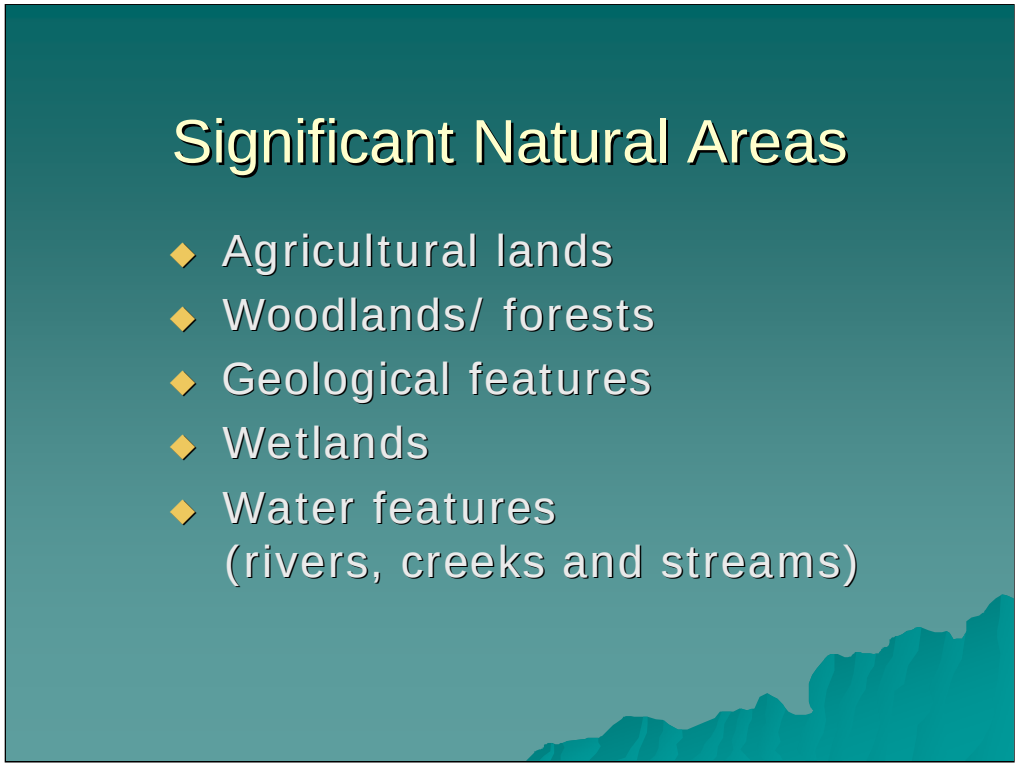


Earlier in this presentation you saw a picture of a barn. These pictures are of one of our life estates that is a working cattle farm. The the primary reason this landowner placed his property in a life estate was to protect it from being developed as a subdivision.

In 1950 farmland in Alabama accounted for 64% of the state's land. In 2002 farmland accounted for 27%.

Farms such as these are very vulnerable. Because farmland is relatively flat it is the easiest to develop.

According to The American Farmland Trust, Alabama holds a high rank among states that are losing prime farmland. Between 1992 and 1997 Alabama lost over 113,800 acres and the rate of loss of farmland was a 127% increase over the previous 5 years.



The Land Trust developed the Greenprint For Growth as a means to provide balance to the urbanization of Madison County by identifying, acquiring and preserving valuable open space.

We used a Natural Areas inventory that was developed by a local biologist for The Land Trust in 1990 and updated it in 2000 to allow for land changes. All of this information together makes up the Greenprint.

The areas we have targeted for preservation are also included in the Greenprint.

These are general North Alabama areas that we plan to target for land acquisition. This list includes mountain vistas, wetlands and agricultural land. Individuals parcels were not included in the Greenprint.

One of our greatest challenges at this point in our history is the challenge to raise funds for land acquisitions. We want to look at a permanent source of funding – perhaps through a bond issue. We currently own our protected acres or manage properties for entities such as Alabama's Forever Wild program which uses funds from oil and gas royalties to purchase land for recreational purposes. One week ago our Board of Directors approved adding Conservation Easements to our protection toolbox.

In 1950, 53 land trusts operated in 26 states. Today, more than 1,600 land trusts operate across the country, serving every state in the nation. We and other preservation groups are building legacies for future generations.

Few would deny that the natural beauty of North Alabama – or of any spot in the Southeast – contributes significantly to the decision process when companies or families are considering relocation.

A healthy economy and quality of life is directly related to a healthy natural environment.

Substitute your local land trust or protection group for our name above.

Those who are preservation savvy are excellent resources for land preservation organizations. You may have major contacts with landowners. You can help recognize opportunities to protect greenspace. You can help landowners decide to donate land or Conservation Easements to help them receive the greatest tax benefits.

A greenprint is a tool – one that may be adapted to your own community or area of concern. A tool for fundraising, touching the hearts and minds of movers & shakers as well as the general public.

From legislators to civic groups to retirees who meet monthly at the country club – a Greenprint or something like it that visually shows recent land development and projections can be very powerful.

Updated Greenprint:

- supposed to be finished early summer of 2007 – Landsat photo problems / sensor glitch in May, 2003…both Landsat V and VII are again projecting data but there are major glitches in correlation between our older data and the more current data – we are currently seeking other alternatives

- BRAC concerns

Thank you very much for your time.

Landsat Program Background

- The Landsat program is the primary and longest running terrestrial observatory for earth remote sensing.
- The Landsat satellite program has launched a succession of seven satellites since 1972.

- Landsat 5, the fifth satellite of the program, was launched March 1, 1984 with an expected 3-year lifespan.
- Landsat 6 was launched October 5, 1993, but failed to reach orbit and presumably burned up on reentry.
- Landsat 7 was launched April 15, 1999 with an enhanced instrument. The Scan Line Corrector failed May 31, 2003 making most of the data unusable.

Today, the science community must rely on data from Landsat 5 which…

- has significantly exceeded its designed life expectancy—it was scheduled to be decommissioned on June 30, 2001.
- is still operational, but has highly degraded data quality

Current Problems with Landsat 5 Data

Communications

In 1993, Landsat 5 lost part of its ability to transmit data. As a result, the satellite can only send information to Earth when it passes over one of the 17 existing ground stations limiting the number of regions it can imaged.

Rectification Inconsistency

Degraded pointing accuracy of the satellite affects automated rectification of the images provided to customers. Rectifying images to the same area on the ground is challenging.

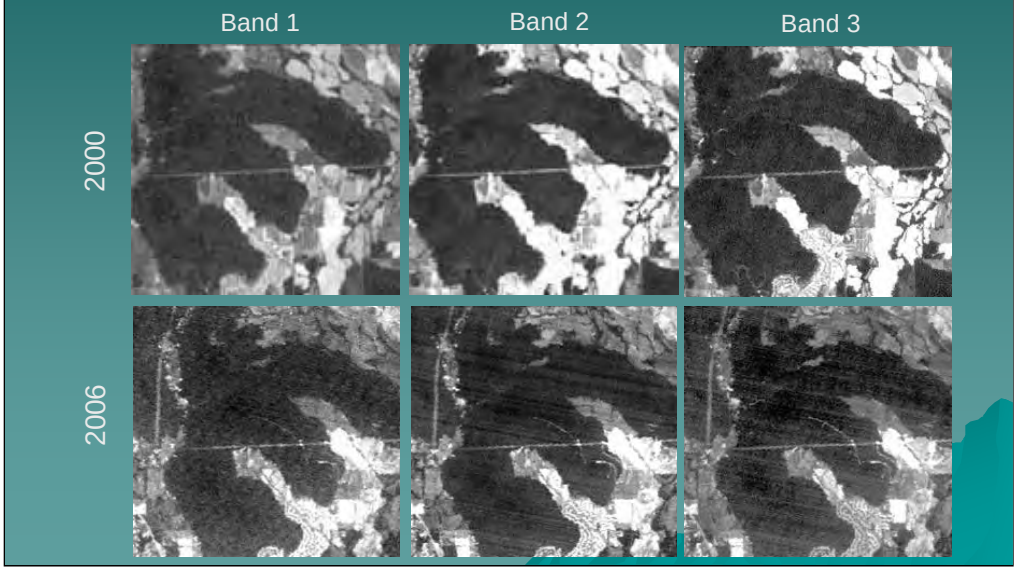
April 5, 2006

June 8, 2006

October 14, 2006

Current Problems with Landsat 5 Data

Comparison between Landsat TM data acquired in 2000 vs. 2006. The degradation in data quality is apparent as “noise” and “striping.” Although these artifacts are best observed in relatively homogeneous areas like forest, they are prevalent throughout the image adding significantly increased challenge to classification and change detection.



Landsat Data Continuity Mission

The Landsat Data Continuity Mission (LDCM) is future of Landsat satellites. It will continue to obtain valuable data and imagery to be used in agriculture, education, business, science, and government.

As stated in the Land Remote Sensing Policy Act of 1992, it is necessary to ensure continuous satellite acquisition coverage. The Landsat Data Continuity Mission (LDCM) was directed to investigate and research options for the most feasible solution.

Jul 16, 2007 - OLI Instrument Development Contract Awarded: *Ball Aerospace and Technologies Corp. of Boulder, Colo. was selected to develop the Operational Land Imager instrument for the Landsat Data Continuity Mission (LDCM).*

LDCM is projected to be launched in July 2011.