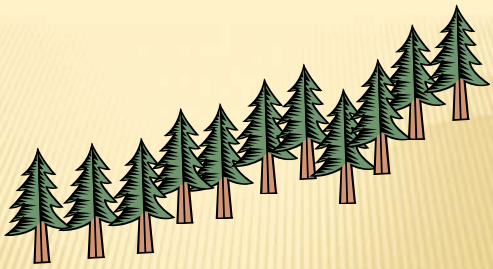


Urban Forestry in the South

TRENDS AND FUTURE OPPORTUNITIES

ED MACIE
US FOREST SERVICE
OCTOBER 29, 2010

PRESENTATION OUTLINE

- Establish baseline
- Discuss mega trends you will address in future

Note:
Focus on the practice and not necessarily the resource

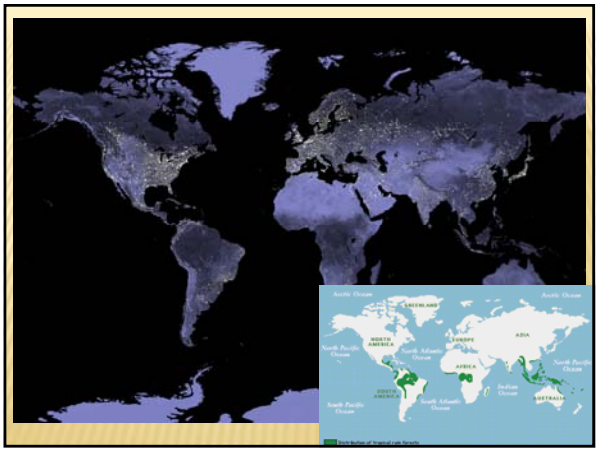
1980 – EMERGENCE OF "URBAN FORESTRY"

- SC population was 3.1 Million People
- 67.4 million in the southern 13 states
- Handful of city foresters/arborist
- Hardly any tree ordinances in south
- Dow Jones high was 1000
- First class stamp .15
- Medium price of new home $77,000
- Gas was $2.16/Gallon (Carter's energy crisis -.86 in '79)

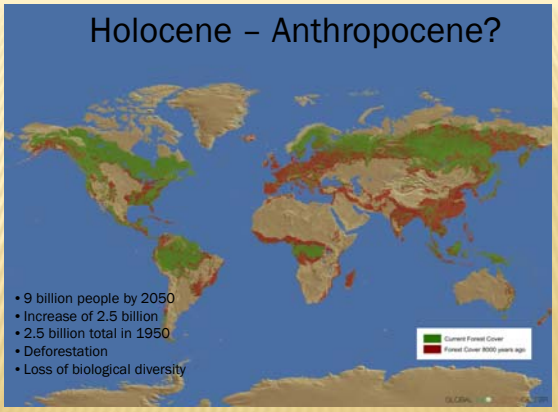
Dallas was most popular TV show, Oakland won the Super Bowl

2010 – 30 YEARS LATER

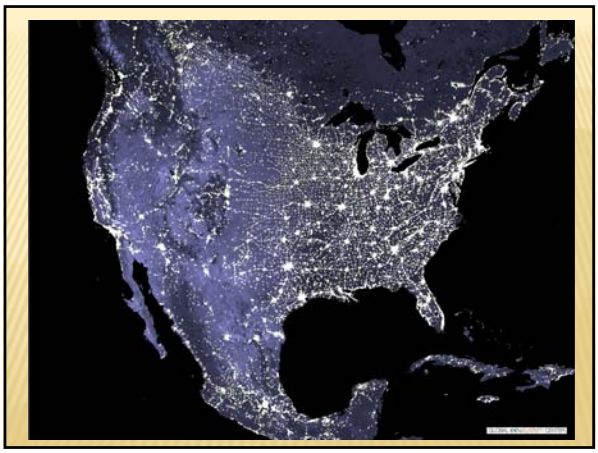
- SC Population 4.7 million people (over 6 by 2050)
- 105 million in the southern 13 states
- Over 825 professional staff (source CARS)
- Over 800 ordinances in south (NADF)
- Dow Jones over 11,000
- First class stamp .44
- Medium home price $180,000 (RealEstateABC.com)
- Gas is $2.83/gallon, average (AAA)



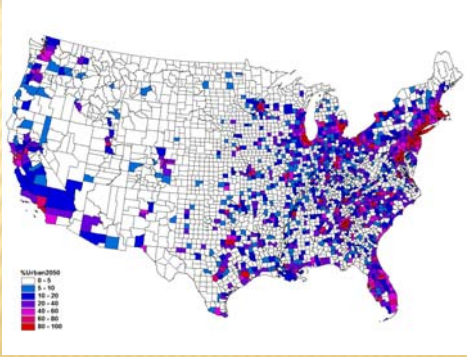
Holocene – Anthropocene?



- 9 billion people by 2050
- Increase of 2.5 billion
- 2.5 billion total in 1950
- Deforestation
- Loss of biological diversity



2050 URBAN LAND



A 60 PERCENT INCREASE IN HOUSING INVENTORY

105 million units in 2000

58.9 million addition units by 2030

WELCOME TO THE FUTURE!

- Not predictions, but ideas to stimulate your imagination
- Imagination can't enable us to see the future, it creates the future.
- The future may look different than imagined.
- The one absolute constant is change.

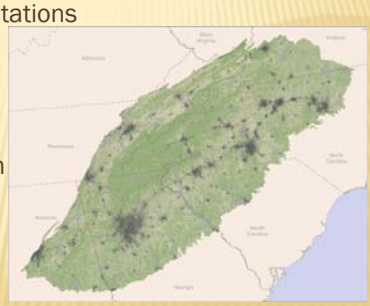
MEGA TRENDS THAT WILL SHAPE URBAN FORESTRY'S FUTURE

The top ten list of trends that will shape the practice of urban forestry over the next 30 years.

1. URBAN GROWTH AND DEMAND ON THE LAND

1. URBAN GROWTH AND DEMAND ON THE LAND

- Resource Limitations
- Pollution
- Depletion
- Erosion
- Fragmentation
- Extinction



2. SCALE

- Extended Networks
- Majority of US population
- Economic engines.
- No political bounds

2. SCALE

- **Global**
  - Provides perspective
- **North America**
  - Places issues in context
- **Mega Region**
  - Utility emerges
  - Enabling prioritization
  - Strong potential for integration
  - Speaks to delivery challenges
- **Sub Regional, Local**
  - On the ground applications

3. TECHNOLOGY AND NATURE

- See the resource and how its changing (**sensing**)
- Understand the changes (**analysis**)
- Decide what's desirable and acceptable (**decision support**)
- Tell and sell the story (**communication, information**)
- Establish targets, and make changes on the ground (**implementation**)
- Measure results (**monitoring, data**)

4. THE POLICY FRONTIER

- Public decision making
- Large scale relevance
- Visual language tools and decision support models
- Science based
- Performance based

5. ECOSYSTEM SERVICES

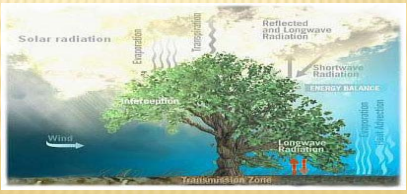
- **Avoided Cost** : Society **avoids costs** that would have been incurred in the absence of those services; flood control from canopied flood plain.
- **Replacement Cost** : Services could be replaced with **man-made systems**; constructed wetlands
- **Factor Income** (FI): services provide for the **enhancement of incomes**; water quality improvements increase commercial fisheries catch and incomes of fishermen.
- **Travel Cost** (TC): recreation areas attract distant visitors whose value placed on that area must be at least what they were **willing to pay to travel** to it.
- **Hedonic Pricing** (HP): service demand may be reflected in the **prices people will pay**.
- **Contingent Valuation** (CV): service demand may be elicited by posing hypothetical scenarios that involve some **valuation of alternatives**; people would be willing to pay for increased fish catch or deer bag.

EDISTO RIVER COASTAL BASIN

- 75,000 acres impervious surface
- $139,224,563 in air pollution removal
- 206,337 tons of sequestered carbon
- $707,916,127 storm water value

6. ENERGY AND CLIMATE CHANGE

- Is there a pro-active role?
- Is urban forestry America's front line defense?
- Are you a spokesperson for the environment with a long view?



6. MITIGATE CLIMATE-CONSERVE ENERGY

- Establish state and local urban **canopy goals** to reduce urban heat islands, increase carbon sequestration, and reduce greenhouse gas production.
- Facilitate development and participation in **carbon markets**.
- Build programs that utilize **trees as a renewable energy source** in urban areas.
- Contribute to national energy security efforts by implementing programs that **plant trees strategically** to reduce energy consumption.
- Increase **policies and plans** that preserve existing **energy conserving tree canopy** during the development and construction process

7. BIOPHILIC URBANISM

- The human bond with nature in cities.
- Localized integration of natural systems
  - Bio-swales and bio-retention
  - LID options
  - Vertical gardens and green roofs
  - Urban agriculture
  - Conversion of derelict land to open space
  - Green infrastructure

8. RESILIENCE, ADAPTATION, MITIGATION

- What are your vulnerabilities, your exposure?
- How do you build resilience?
- What are your adaptive capacities?
- How do you managing disturbance?
- Do you understand systems behavior?
- How do you manage risk?

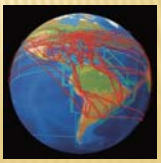
9. CONSILIENCE

- The unity of knowledge, a convergence or overlapping of disciplines…
- Efficiency
- Effectiveness
- Humanizing effect

"light is waves is rhythm is math is structure is life is art is beauty is light"

10. CO-EVOLUTION – A NEW FRAMEWORK

- Move towards high efficiency, low impact systems.
- Manage the human network.
- Restoration of ecosystem functionality.
- Address cultural issues across the landscape.
- Recognize interrelationships and systems.
- Articulate with scenarios.



THANK YOU!

Questions?

Urban & Community Forestry