

Climate Change Impacts on Natural Resources in South Carolina

Preliminary Findings of the
South Carolina Department
of Natural Resources



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Climate Change Impacts on Natural Resources in South Carolina

Prepared for South Carolina's Changing
Shoreline: Implications for the Future
A Coastal Information Network Workshop
USC – Beaufort North Campus
October 28, 2009



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Climate Change Impacts on Natural Resources in South Carolina

Objective 1:

To Introduce Workshop Participants to the Effort Underway to Document Climate Change Impacts to Natural Resources and Develop an Adaptive Response Strategy



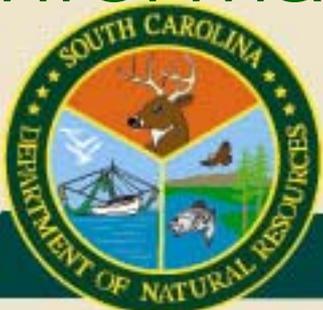
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Objective 2:
To Interface with
Workshop Participants

In Order to Obtain Additional
Information that Will Improve the DNR
Understanding of Climate Change
Impacts and Incorporate New
Information into an Adaptive Response
Strategy



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DRAFT

CLIMATE CHANGE IMPACTS ON
NATURAL RESOURCES IN
SOUTH CAROLINA

December, 2009

<http://www.dnr.sc.gov>



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Climate Change Impacts on Natural Resources in South Carolina

Who Is Involved?

Representatives of all DNR Divisions:

Land & Water Conservation

Law Enforcement

Marine Resources

Outreach and Support Services

Wildlife & Freshwater Fisheries



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Climate Change Impacts on Natural Resources in South Carolina

Mission Statement:

The mission of DNR in response to potential challenges of climate change to our state is two-fold:

1. Identify issues and assess potential impacts of climate change on the natural resources of SC, and
2. Develop an adaptive response strategy.



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Goals:

1. Gather factual information and data on how climate change may affect wildlife, fisheries, water supply and other natural resources within SC.
2. Identify research monitoring and modeling needs required to assess impacts of climate change in SC.



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Goals (continued):

3. Use factual information, data, research and modeling to determine what actions need to be taken to address climate change in SC.
4. Identify opportunities to partner with other agencies and institutions where needed to accomplish the mission.



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Goals (continued):

5. Identify ways for officials and citizens to assist in mitigation of or adaptation to natural resource impacts related to climate change.
6. Position DNR to obtain available funding to assist in meeting the mission and goals related to climate change.



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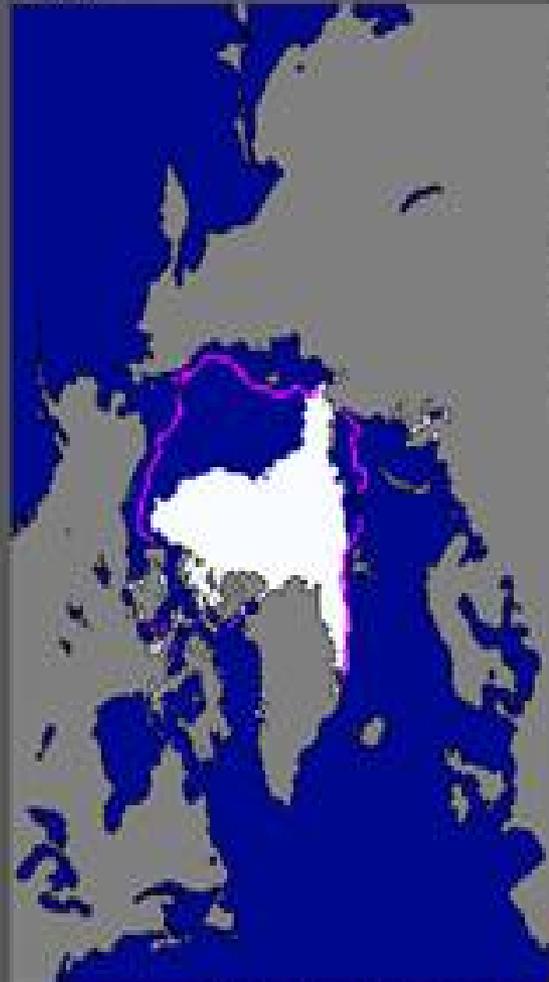


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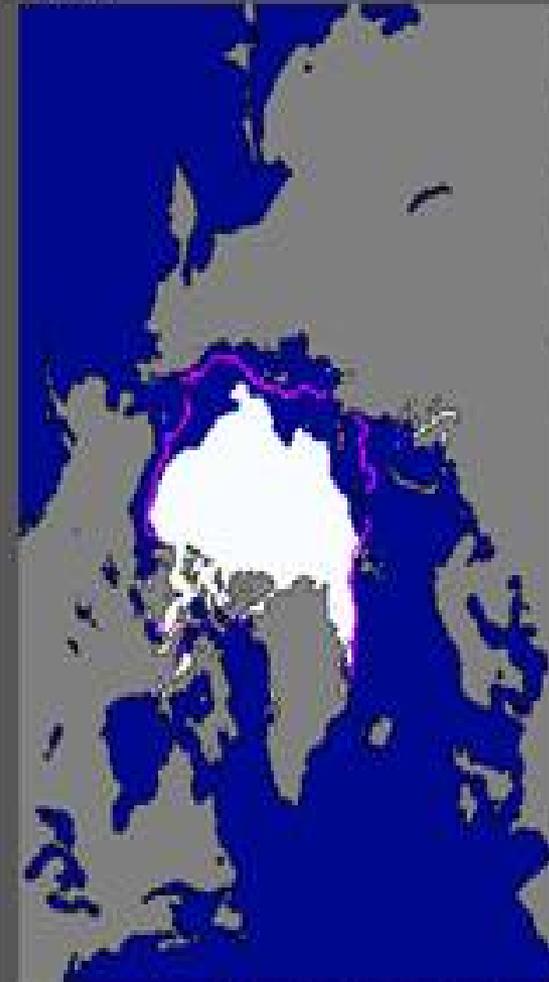
Current Ice Extent
09/16/2007



Total extent - 4.1 million sq km

median
ice edge

Current Ice Extent
09/21/2008



Total extent - 5.3 million sq km

median
ice edge

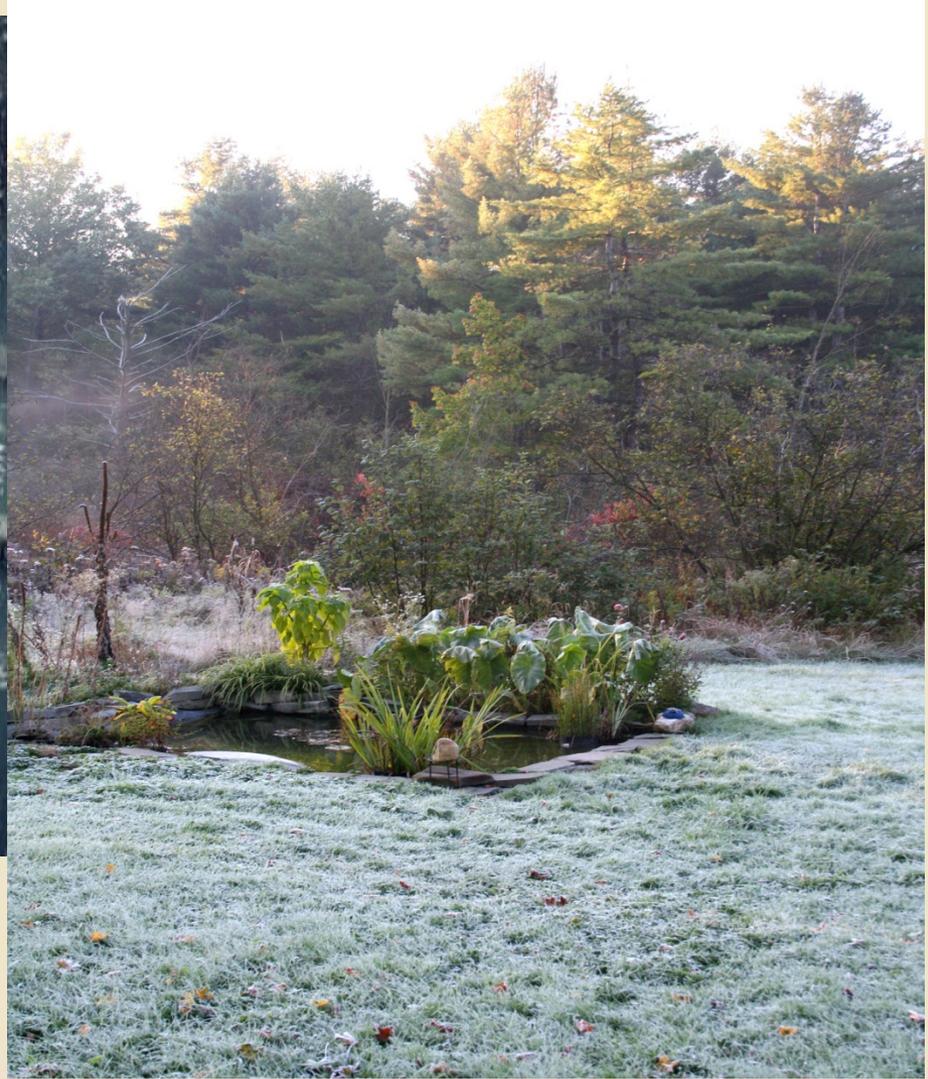


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What Do Climate Models Predict for SC?



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Problem is that we probably won't get the rain and temperatures this region and state has enjoyed for many generations if for not many centuries.

More
Heat
Waves!



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Problem is that we probably won't get the rain and temperatures this region and state has enjoyed for many generations if for not many centuries.

More
Floods!



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Problem is that we probably won't get the rain and temperatures this region and state has enjoyed for many generations if for not many centuries.

More
Droughts!



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Problem is that we probably won't get the rain and temperatures this region and state has enjoyed for many generations if for not many centuries.

More
Low
Stream
Flow!



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Problem is that we probably won't get the rain and temperatures this region and state has enjoyed for many generations if for not many centuries.

More Extremes!



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Water Issues

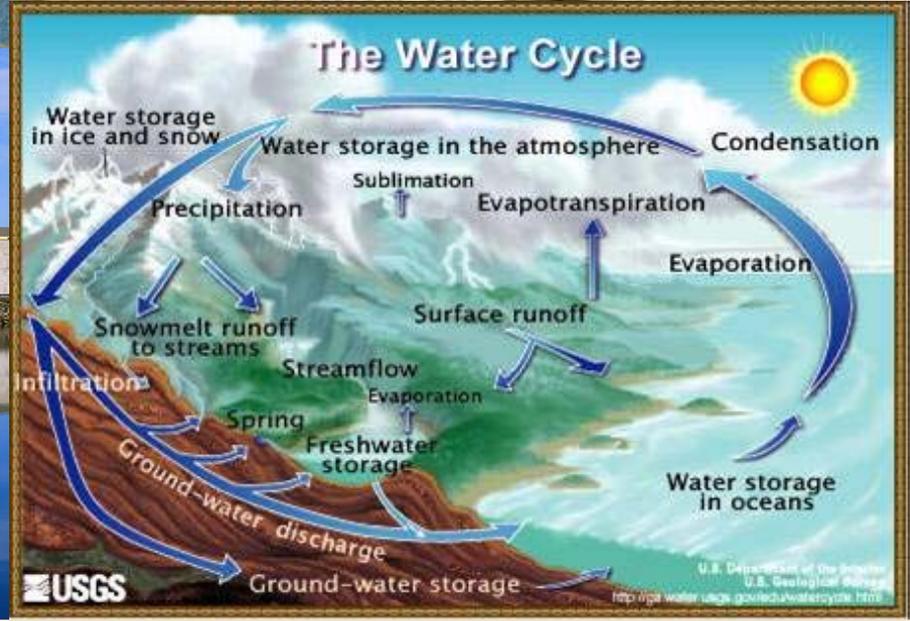


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Water Issues

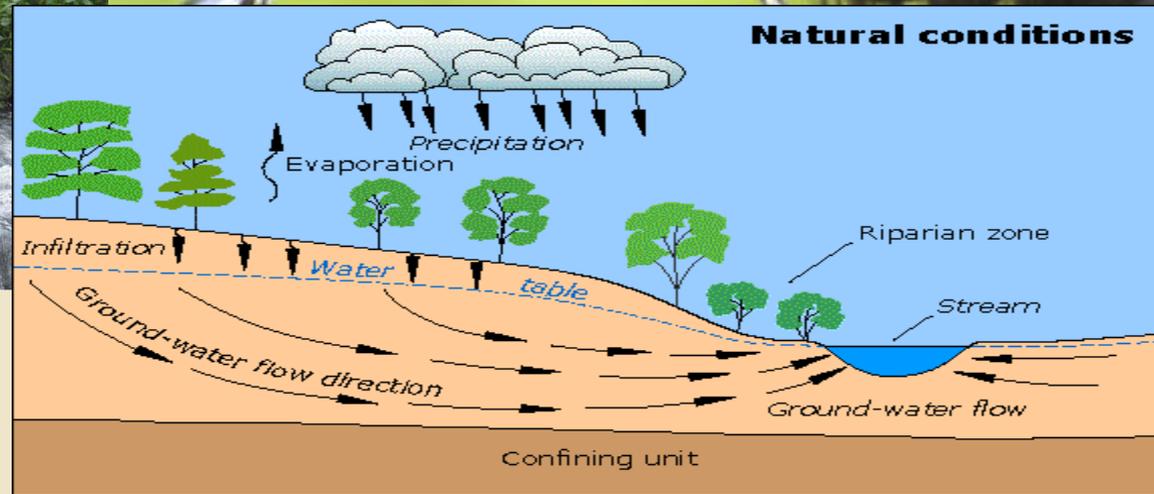


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Water Issues

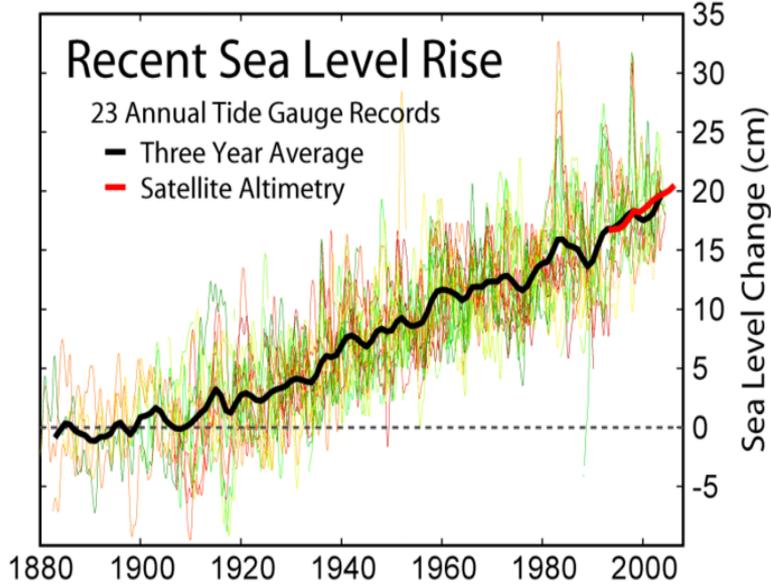


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Sea Level Rise



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Sea Level Rise



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Species Impacts

There will be:

1. Winners – those that can adapt, mostly by having a wider range or tolerance or by having the ability to move.
2. Losers – those that cannot adapt, with low tolerance for temp and pH change or those that cannot move.
3. Some species may be relatively unimpacted.



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Species Impacts

Winners



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Species Impacts

Losers



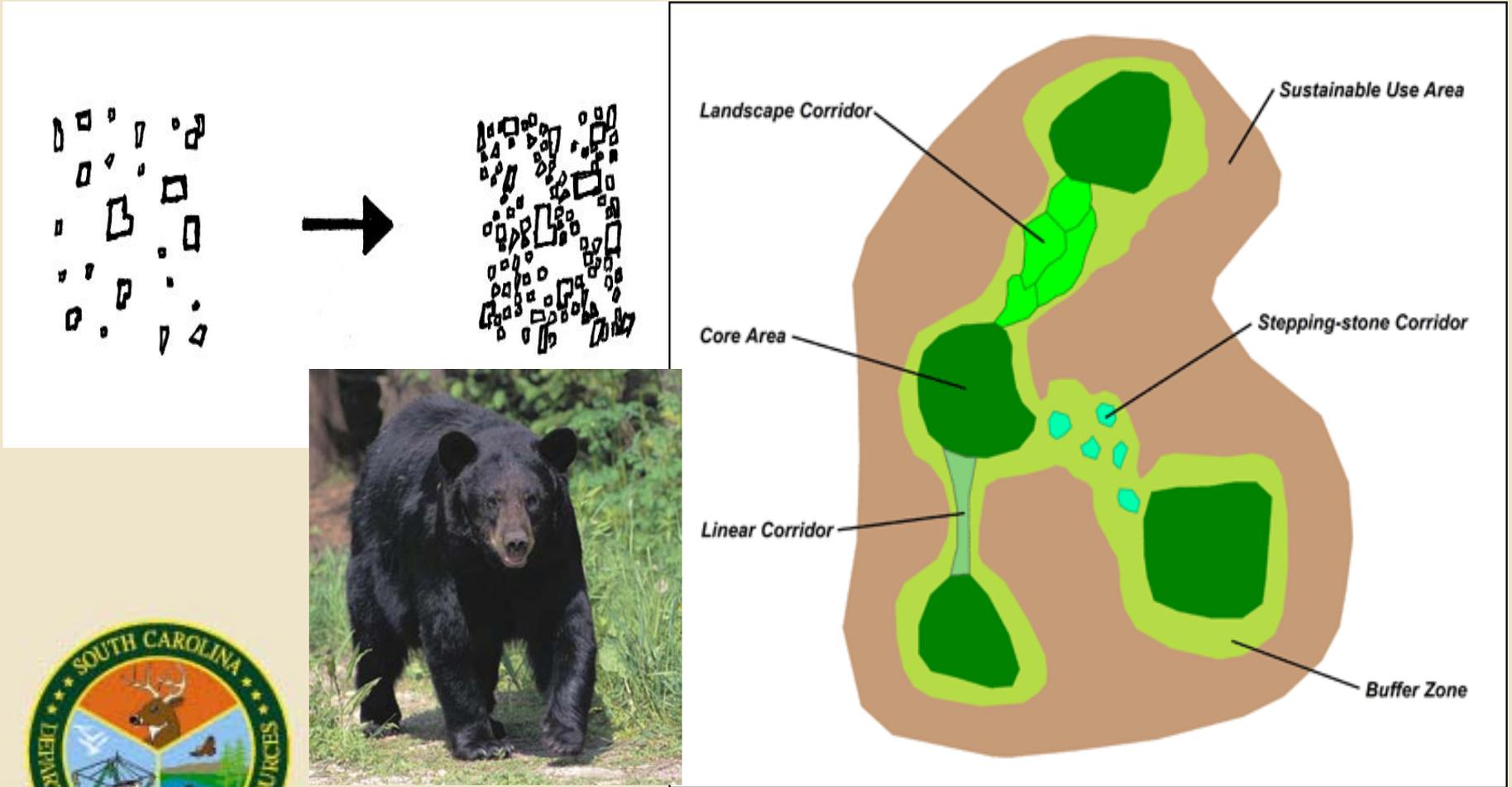
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Habitat Impacts

Habitat Fragmentation



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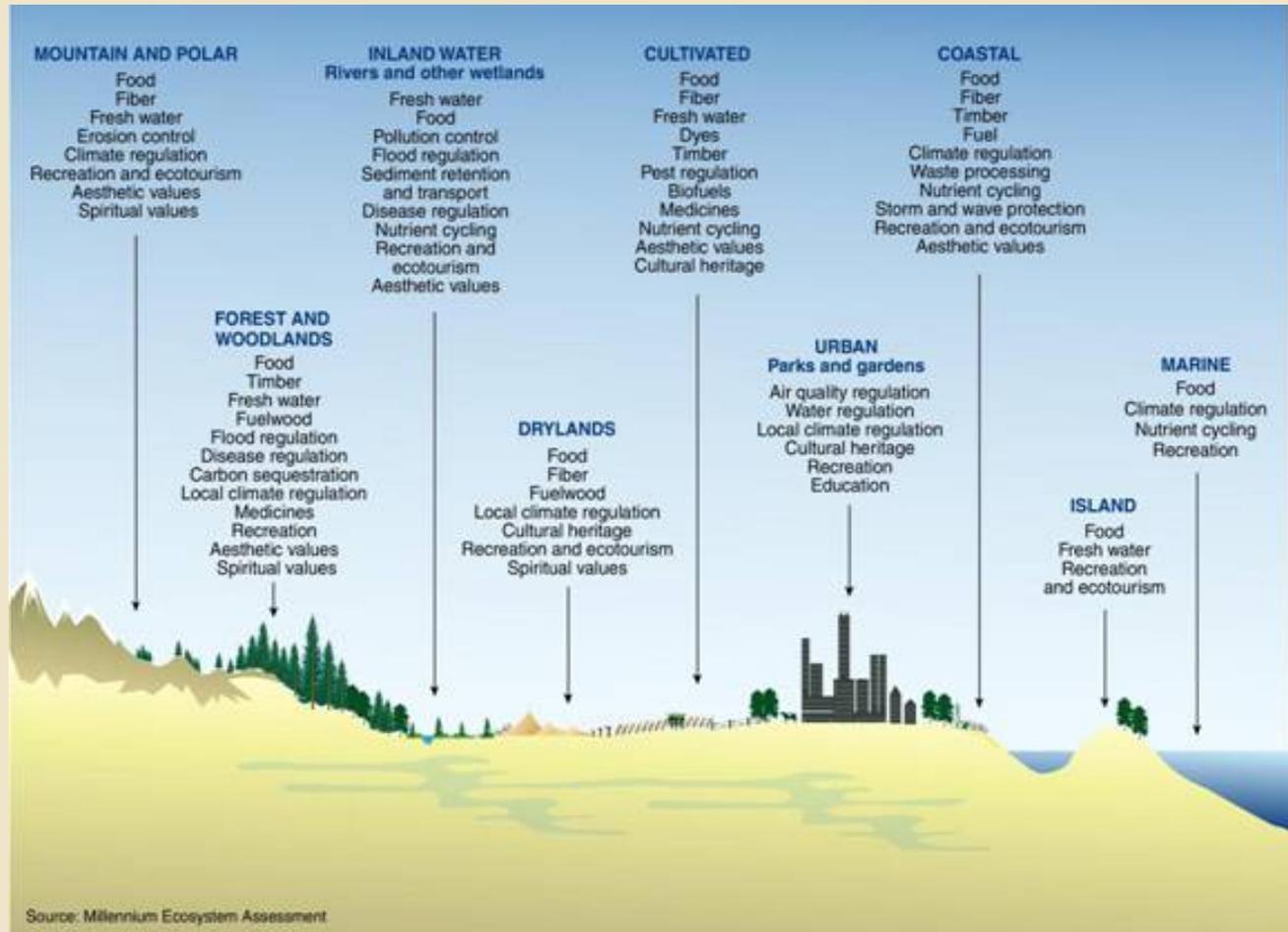
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Habitat Impacts

Ecosystem Services – It Is Worth Billions!

Food & Water
Cleans the Air
Flood Attenuation
Beach Re-nourishment
Pollution Assimilation
Pest Regulation
Nutrient Recycling
Carbon Recycling
Draws Tourists
Provides Recreation
Provides Jobs
More!!!



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Climate Change Impacts to Natural Resources

Where Do We Go From Here?

- Seek Funding
- Document What the Science Says
- Embrace the Uncertainty of Not Ever Knowing Enough
- Focus on Water Rather than Politics
- Triage and Press On



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Climate Change Impacts to Natural Resources For Additional Information:

Bob Perry, Director Office of
Environmental Programs SC Dept.
of Natural Resources

perryb@dnr.sc.gov

803.734.3766

See: <http://www.dnr.sc.gov>



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