

Ecosystem Vulnerability Profile



NOAA Coastal Services Center
LINKING PEOPLE, INFORMATION, AND TECHNOLOGY

Ecosystem Resources Vulnerability Profile

Objective:

- To identify ecosystem resource concerns and sustainability challenges related to the pre-defined hazards and issues
- Identify needed actions to address these concerns



Ecosystem Resources Vulnerability Profile

- What values and benefits do natural resources provide?
- What natural resources are exposed hazard, land development, and hazardous material threats?
- What vulnerabilities exist?
- Are current management decisions making ecosystem resources vulnerable to future risks/conditions?



Protective Functions



Wetlands

- Storm Buffering
- Flood Protection
- Erosion Control



Forests



*Freshwater Aquatic
Areas*



Economic and Societal Value

- Water Quality
- Wildlife Habitat
- Food Production
- Recreation



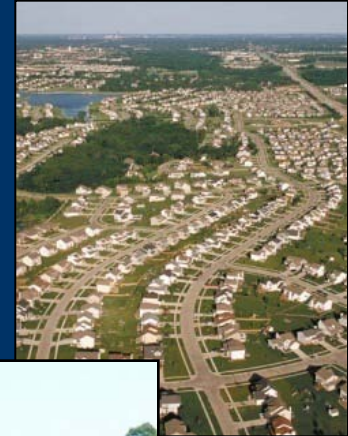
What ecosystem resources are exposed?

- Wetlands
- Habitats
- Water resources
- Resources for subsistence livelihoods



What causes ecosystem vulnerabilities?

- Exposure and sensitivity to land development practices
- Habitat fragmentation
- Human uses
- Exposure to hazards and hazardous materials



Future Vulnerability Considerations

- How are current and future land use decisions impacting natural resources (e.g. water quality)?
- Are techniques being used to lessen the impacts of stormwater?
- Are wetlands and other habitats able to migrate landward when sea level rises?
- Are there enough wetlands to protect against surge and flooding?





Increased stormwater runoff resulting from the land development reduces the amount of rainfall available to recharge shallow groundwater aquifers.



Hazardous materials in the flood zone – what happens to surrounding ecosystems?



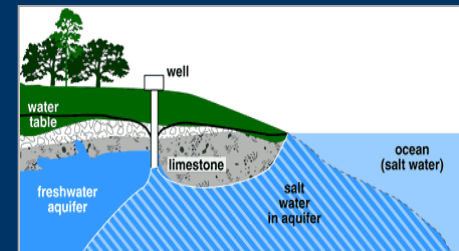
How could ecotourism be affected by rising sea levels, regular floods and changes ecosystems?

Ecosystem Vulnerabilities: Things to consider

As ecosystems change, how are subsistence livelihoods affected?



If sea levels rise, salt water may begin to intrude into freshwater aquifers



Development in sensitive habitats. How will this fare in a flood? How will the surrounding ecosystem be impacted?



Healthy habitats, like marsh and oyster beds, absorb flood waters, reduce the energy of storm surge and wind, and help lessen erosion.



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Your Charge

Considering the identified priority hazards...

- From the perspective of the group, what are the main concerns about ecosystem resource vulnerabilities and related sustainability challenges in a changing hazard environment?
- Identify specific actions to reduce these vulnerabilities.

