

# Declining Biodiversity

April Anthony



# Introduction



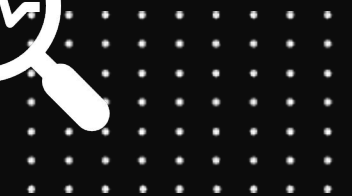
April Anthony

Wildlife Conservation Major  
Public Policy Minor

Sophomore

Leesburg Virginia

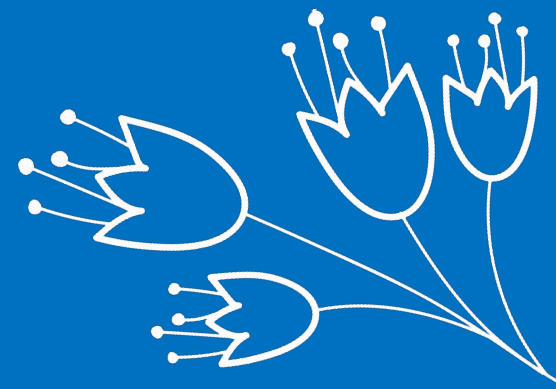
World Scholar, Extern for National Geographic  
and The Nature Conservancy, Blue Hen  
Ambassador, Sigma Alpha





- ✓ **Loss of Biodiversity**
- ✓ **Current Policy**
- ✓ **Limitations**
- ✓ **Proposal**
- ✓ **Conclusion**

# Agenda





**50%**

Of Wetlands lost in  
the United States



**110 Million Acres**

**1,300**

Endangered and  
threatened species in  
the United States



Many of these species are  
endangered due to habitat loss,  
climate change and invasive  
species

**2.6**

**Million**

Acres of  
Grasslands lost



In North America in one  
year

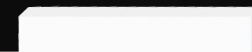
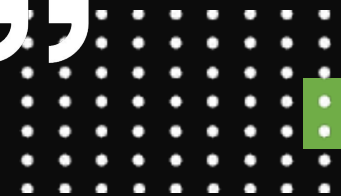






***“our current trajectory of habitat loss and climate change, scientists project that nearly 40% of all species will face extinction by the end of this century.”***

~ National Caucus of  
Environmental Legislators



# What is being done?

- America the Beautiful Initiative
  - Biden Administration pledged 1 billion
- Nature Based solutions roadmap
- Administration has promised to:
  - Incorporating Nature into National Economic Statistics and Accounts to Support Decision-making:
  - Recognizing and Including Indigenous Knowledge
  - Pledging \$600 Million to Combat Global Environmental Threats



Problems	Examples of Nature-based solutions
Greenhouse gas emissions	<ul style="list-style-type: none"> <li>• <b>Conserving or restoring coastal habitats, forests, wetlands, and grasslands</b> - removes carbon dioxide from the atmosphere and stores it, slowing climate change.</li> <li>• <b>Improved agricultural management, including cover crops, no-till, rotational grazing, and sustainable timber management</b> - reduces erosion, stores more carbon in soils, and vegetation, and requires less fuel through reduced tilling, slowing climate change.</li> </ul>
Urban heat island; heat stress; urban air pollution	<ul style="list-style-type: none"> <li>• <b>Green roofs</b> – help to insulate buildings from high temperatures and cool them through evapotranspiration, reducing cooling needs, costs, and emissions.</li> <li>• <b>Urban trees and forests</b> – capture air pollutants and cool the air, reducing urban heat island effects and heat stress on people and infrastructure and reducing cooling costs and emissions.</li> </ul>
Inland flooding; non-point source pollution (e.g., excess nutrients and sediment); and erosion	<ul style="list-style-type: none"> <li>• <b>Floodplain reconnection and restoration</b> – lowers river height and speed during a flood and reduce erosion, sedimentation, and pollution from excess nutrients.</li> <li>• <b>Enhanced water storage in wetlands, forests, or farmland</b> – reduces runoff and flooding, improves groundwater recharge and decreases erosion, sedimentation and pollution</li> <li>• <b>Protecting or restoring riparian buffers</b> – slows water, stabilizes banks, and reduces pollution.</li> <li>• <b>Sustainably managing forests, farms, and grazing lands</b> – including sustainable forest management, agroforestry, silvopastures, planting cover crops, diversifying crops, and rotational grazing - can reduce erosion and excess nutrients that cause water pollution.</li> </ul>
Stormwater and sewer overflow and costs; urban flooding; water pollution from urban settings	<ul style="list-style-type: none"> <li>• <b>Green Roofs</b> – absorb, evaporate, and transpire some water, reducing stormwater runoff and moderating local flooding.</li> <li>• <b>Rain Gardens</b> – in shallow basins in yards and along streets or sidewalks, absorb stormwater runoff.</li> <li>• <b>Bioswales</b> – long, deep channels of plants and grasses along roads and parking lots - absorb runoff and release water slowly.</li> <li>• <b>Urban trees and forests</b> – absorb water, reducing runoff, combined sewer overflow, and urban flooding.</li> <li>• <b>Constructed wetlands</b> – capture stormwater runoff, and treat wastewater, reducing costs and pollution.</li> </ul>
Shoreline erosion; tidal flooding; storm surge	<ul style="list-style-type: none"> <li>• <b>Protecting or restoring coastal habitats</b> – mangroves, coral reefs, oyster reefs, beaches, rock reefs, coastal dunes, freshwater marshes, and salt marshes all help reduce coastal erosion and, depending on their extent, can reduce flooding from storms and high tides.</li> <li>• <b>Living shorelines</b> – native coastal habitats (oyster reefs, salt marsh, mangroves, seagrass beds) alone or in combination with sills and berms, reduce storm surge and coastal erosion and stabilize the shoreline.</li> </ul>
Wildfire	<ul style="list-style-type: none"> <li>• <b>Forest management</b> – carefully managed prescribed burns reduce wildfire severity and risk to communities.</li> <li>• <b>Greenbelts</b> – forests near communities that are managed to be less flammable or irrigated provide a fire break, reducing fire risks.</li> </ul>
Drought	<ul style="list-style-type: none"> <li>• <b>Clearing invasive plants</b> – that use more water than native species increases available water.</li> <li>• <b>Protecting beavers</b> - changes hydrology and increases groundwater recharge and dry season flows.</li> <li>• <b>Water storage on agricultural fields</b> – converting unproductive crop areas to meadow or wetlands enhances groundwater recharge, while reducing flooding and nutrient pollution.</li> </ul>
Crop loss from pests or poor pollination	<ul style="list-style-type: none"> <li>• <b>Planting pollinator habitats</b> – in gardens, along roads, or in other places provides food for pollinators, enhances biodiversity and improves some nearby crop yields.</li> <li>• <b>Integrated pest management</b> – restoring or improving habitat for native pest predators (e.g., bats, birds and snakes) reduces the costs of managing pests on agricultural lands.</li> </ul>



# Is this enough?

- 40% of animals, 34% of plants and 40% of ecosystems nationwide are at risk
- Only 12% of U.S. lands are currently protected
- 3 billion birds lost
- freshwater species such as mollusks, crayfish and amphibians are the most threatened groups because of water pollution and dams
- 37% of U.S. bee species facing extinction





# Limitations:

- Counterproductive policies
  - Willow project
- Local led
  - Education
  - Scaling
  - Cooperation



# Proposal:

- State coalitions and more Federal involvement
  - Need to meet measurable goals
  - Stronger restrictions on developing land
  - Implementing land retirement and agroforestry
  - Rewilding
    - Create species corridors
    - Restore native flora and fauna



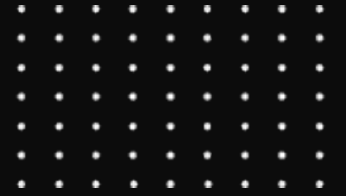


**In Conclusion...**





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