Lecture 17 – Biodiversity and Protection Areas

1. The Biodiversity Crisis
2. Valuing Biodiversity
3. Habitat Change
4. Response to Loss of Biodiversity
5. Lack of Progress in Canada

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1. The Biodiversity Crisis

- More species are becoming endangered than what is natural

- Parks:

Key Concepts

- The biodiversity: natural vs human-induced extinctions

- Economic value of biodiversity; examples

- Impacts of habitat changes on biodiversity; examples

- Global and Canadian responses to biodiversity loss; acts, agreements and examples

- The role of National Parks

The Biodiversity Crisis

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• Extinction:

• Occurs at certain rates over time

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2. Valuing Biodiversity: Economic Values

• World's plants never tested for human food potential:

• Of top 150 prescribed drugs in U.S.:

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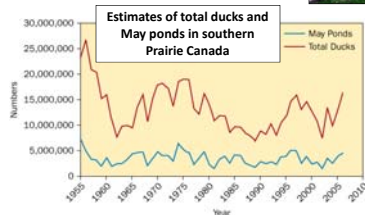_____

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Valuing Biodiversity: Economic Values (2)

• Pollination of plants required for:

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3. Habitat Change

- More than 70% of prairie wetlands drained
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Estimates of total ducks and May ponds in southern Prairie Canada

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Human Activity and Habitat Change

Risk to Biodiversity in Canada

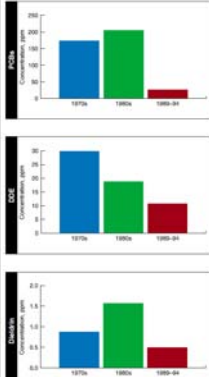## Chemical Changes

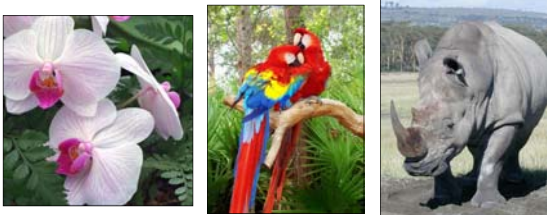- For Freshwater species:

- Raptors:

Concentrations of chemicals found in Bald Eagle eggs on Lake Erie: 1970 to 1994

4. Response to Loss of Biodiversity

- CITES:

Response to Loss of Biodiversity

- CITES: instrumental in restricting trade in certain endangered wildlife species
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Response to Loss of Biodiversity (2)

- 1992 CBD:

- World Summit on Sustainable development, in Rio de Janeiro
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The Species at Risk Act (SARA)

- Passed in 2002; mandates COSEWIC:

- Public lands:

COSEWIC

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- If listed: 1st step in process in protection of proposed species at risk under SARA

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- If less than 1,000 breeding pairs:

SARA and Politics

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- In 2006, 11% of species proposed for listing under SARA based on biological grounds:
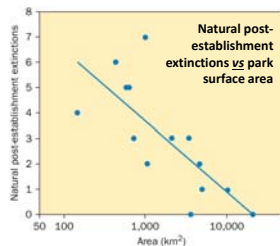

5. Lack of Progress in Canada

- As of 2011, 436 species listed
- Require proposals from relevant ministry for recovery strategies:

- According to Auditor General, 2008:
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- Lack of progress in developing comprehensive inventory

Increasing Commercial Development Within Parks

- Per person, shopping space in Banff is:

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Natural post-establishment extinctions _vs_ park surface area

Conclusion

- More and more species are becoming endangered
- Biodiversity contributes substantially to our economy and our way of life
- A major cause of biodiversity loss is habitat change
- Canada's response to this crisis is lagging behind

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TO DO!

1. Next lecture: *Video: Planet Earth: the Future Part 3: Living Together*

2. Next Monday: Lecture 18 - Environmental Change and Challenges (Chapter 15; no podcasts)

3. Tutorials are over

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