Threats to boreal wetlands, and duck population trends

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Western Boreal Forest-Canada

- Boreal / Taiga Plain
- Boreal / Taiga Shield
- Boreal / Taiga Cordillera
- Hudson Plains

*Public Lands*
National Wetland Dataset
The National Wetland Dataset was prepared by Polestar Geomatics for Environment Canada in early 1997. The dataset is a compilation of several sources (approximately 30) including DU's Habitat Inventory. Although it has not had a "scientific review" to confirm the information, it is the best available for such a broad coverage. The wetland classes are percentage of: swamp, marsh, bog, fen, undifferentiated wetlands and total wetlands. The data is available at the Ecoregion and the Ecodistrict levels.
Western Boreal Program
Project Status 2006

LEGEND

- New Project 2006
- 16 Projects
- 160 Million Ac
- 65 Million Ha

WBP Boundary
Prov / Terr Boundary
WBP Ecozone Boundary
Status of Conservation Lands Across the Western Boreal Forest of Alaska and Canada

**LEGEND**
- **WB Boundary**
- **Prov / Terr / State Boundary**
- **Canada**
  - Permanent Protection
  - Areas With Interim Protection
  - Pending Protected Areas
- **Alaska***
  - National Forest
  - National Park
  - National Wildlife Refuge
  - National Wild and Scenic River

*The degree of protection varies under each of the four Alaskan designations listed. In general, Parks maintain the highest level of protection, Wildlife Refuges next highest level, then National Wild and Scenic River, and National Forests having the lowest level of protection.

Ducks Unlimited Canada
Conservation Challenges

- Multiple industrial activities
- Impact on wetland systems and waterfowl populations is not well understood
- Public land with multiple crown and corporate policies
- Multiple managers with different ideas on land use and conservation issues
Hydrology Research on Boreal Plain

• Hydrology is not well understood in WBF
  – Need to understand wetland functions and connectivity
  – Informs us on how development may impact hydrology, wetlands, and waterfowl
  – Informs conservation planning
Threats to Boreal Wetlands

- Agriculture
- Climate Change
- Forestry
- Oil and gas
- Hydro Development
- Mining
- Peat extraction
- Recreation
Climate Change

- Changes in permafrost
  - Increased flows
  - Water chemistry
- Changes in surface water
  - Increased formation of taliks
  - Increased soil water holding capacity
  - Increased evapotranspiration
  - Terrestrialization.

Riordan 2004
Forestry
Agriculture
Oil and Gas Industry

Primary Producing Sedimentary Basins

Arctic

Western Canada Sedimentary Basin

Offshore
All Energy Dispositions
(oilsands in gray)
Duck Trends, 1955 - 2003

Breeding Season Population

Year

Source USFWS/CWS
WBF: 12-15 Million Breeding Season Ducks

- 23 Different Species
- 6 spp. >50% annual BPOP in WBF

<table>
<thead>
<tr>
<th>Common Species</th>
<th>% BPOP in TSA</th>
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<tbody>
<tr>
<td>Mallard</td>
<td>24-34%</td>
</tr>
<tr>
<td>American Wigeon</td>
<td>56-61%</td>
</tr>
<tr>
<td>Green-winged Teal</td>
<td>53-65%</td>
</tr>
<tr>
<td>Scaup</td>
<td>61-69%</td>
</tr>
<tr>
<td>Goldeneye</td>
<td>78-80%</td>
</tr>
<tr>
<td>Scoters</td>
<td>76-82%</td>
</tr>
<tr>
<td>Ring-necked Duck</td>
<td>78-85%</td>
</tr>
</tbody>
</table>
Scaup Population Trend

Breeding Population Est. (x 1000)

NAWMP Goal
Scaup Trends by Biome
Scoter Population Trend

Scoter Population (x 1000)

Year

Scoter Distribution and Trends Among Biomes

Scoter Population

Year


Tundra  Boreal  Prairies  East

East = strata 51 - 69
Opportunities for Conservation

- Increased awareness of the importance of water and need for conservation
- Growing demand for sustainable land-use practices and protected landscapes
- DUC is a leading proactive conservation organization