Environmental Policy
(Protecting the Kitimat Fjord System)

Eric Keen

Abstract
This brief Backgrounder outlines the involvement of North American governments in the protection of species and habitats in the Pacific Northwest, with an emphasis on the Kitimat Fjord System. This Backgrounder does not yet incorporate the land and marine management plans of the Gitga’at First Nation, part of which includes protective measures.

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Habitat Protection
Federal
Critical habitat
Provincial
Environmental Assessment

In the Study Area

1 Bangarang Backgrounders are imperfect but rigorous reviews – written in haste, not peer-reviewed – in an effort to organize and memorize the key information for every aspect of the project. They will be updated regularly as new learnin’ is incorporated.
Dominion of Canada & the Ocean

Oceans border eight of Canada’s ten provinces and the three territories\(^2\).

**Role in the Ocean & Environment\(^3\):**

2. Economic Development, Trade and Overseas Aid
   a. **National Research Council of Canada** operates oceans-related research facilities and assists industries under its science and technology activities.
   b. **Natural Sciences and Engineering Research Council** supports university-based research in oceanography and marine sciences.
   c. **Natural Resources Canada** has an array of policies and programs to assist development in the oceans sector related to offshore oil and gas, offshore mineral assessments, marine geoscience services and energy research and development.
   d. The **National Energy Board** (NEB) has a regulatory role to promote safety, environmental protection and efficient petroleum resource extraction in the development of offshore oil and gas.
   e. **Department of Fisheries & Oceans** (DFO) has the primary responsibility for the fishing industry and also has a number of programs that contribute to the development of marine-based industries and the market potential for their products and services.
3. Health and the Environment
   a. **Environment Canada** (EC) has the lead federal role for issues pertaining to the environment. It is a major player in the oceans sector with services and programs related to atmospheric matters, environmental protection and environmental conservation.
   b. The **Canadian Environmental Assessment Agency** is responsible for federal environmental assessment activities.
4. Transportation
   a. **DFO** also contributes to the marine transportation objective, largely through services provided by the Canadian Coast Guard.
5. Real Property and Supply Services

**Relevant Branches**

**Parks Canada Agency (PCA)**\(^4\). Charged with establishing and managing a system of national marine conservation areas (NMCAs)\(^5\). As of 2008 not NMCAs have yet been designated\(^6\).

**Environment Canada (EC)** [www.ec.gc.ca](http://www.ec.gc.ca)
EC regulates industry sectors under Fisheries Act and CEPA\(^7\). EC is responsible for Section 36 of Fisheries Act (rest is responsibility of DFO), which is used to manage and regulate the introduction of any deleterious substances into marine environments\(^8\).

**Department of Fisheries & Oceans (DFO)**
*Under the authority of the Oceans Act, DFO has the lead oceans role and is responsible for coordinating federal policies and programs related to the oceans*\(^9\). DFO has three strategic goals\(^10\):

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\(^2\) DFO 2008fed.
\(^3\) DFO 2008fed.
\(^4\) DFO 2008fed.
\(^5\) DFO 2008fed.
\(^6\) DFO 2008fed.
\(^7\) DFO 2008fed.
\(^8\) DFO 2008fed.
\(^9\) DFO 2008fed.
\(^10\) DFO 2008fed.
1. Safe and Accessible Waterways
   a. Canadian Coast Guard
   b. Small Craft Harbor (SCH)
   c. Canadian Hydrographic Service
2. Sustainable Fisheries and Aquaculture
   a. Fisheries and Aquaculture Management
      i. Resource management
      ii. Aboriginal Policy and Governance
      iii. International Fisheries
      iv. Aquaculture
      v. Licensing
      vi. Conservation and Protection
   b. Science
      i. Fisheries Resources
      ii. Aquatic Invasive Species
      iii. Aquatic Animal Health
      iv. Sustainable Aquaculture
      v. Genomics and Biotechnology
   c. Policy
      i. International and Trade Policy
      ii. Legislative and Interdepartmental Affairs
      iii. Economics and Statistics
3. Healthy and Productive Aquatic Ecosystems
   a. Oceans Habitat and Species
      i. Oceans Program
      ii. Species at Risk
         1. Environment Canada is the lead for SARA, but DFO and Parks Canada share responsibilities for implementation.
      iii. Habitat Management Program
         1. Responsible for conducting assessments under Canadian Environmental Assessment Act.
   b. Science
      i. Fish Habitat Science
      ii. Aquatic Ecosystems
      iii. Ocean Climate

DFO also administers commercial fishery quotas and closures\textsuperscript{11}. DFO’s regional research facilities include:
   Pacific
   iv. Centre for Aquaculture and Environment Research (CAER) in West Vancouver
   v. Pacific Biological Station
   vi. Institute for Ocean Sciences

Others, but they are not listed here.

\textsuperscript{10} DFO 2008fed.
\textsuperscript{11} Enbridge 2010.
Legislation

Aboriginal Fisheries Strategy (AFS): Established by DFO in 1992- affirmed the right of Aboriginal fish for food, social and ceremonial (FSC) purposes was secondary only to resource conservation and other “valid legislative objectives”) (DFO 2008a, 2008b, 2008c, Internet site).12


Canada National Parks Act
Canada Water Act
Canada Shipping Act

Canadian Environmental Protection Act 1999 (CEPA) aims to prevent pollution and to protect the environment, including the marine environment and human health by preventing and managing risks posed by toxic and other harmful substances14.

Canadian Wildlife Act also provides for the coordination of wildlife program and policies that involve birds not protected under the MBCA15.

Coastal Fisheries Protection Act


International 1973 Agreement on the Conservation of Polar Bears: EC is the federal lead ensuring Canada’s obligations are met22.

Migratory Birds Convention Act (MBCA). Migratory birds (including marine birds) are federally protected under the MBCA. MBCA and Canada Wildlife Act give the Minister of Environment the authority to establish Migratory Bird Sanctuaries and National Wildlife Areas along coasts and in marine environments23. MBCA protects from unlawful exploitation and destruction of birds and their eggs and nests. Hunting seasons are regulated under MBCA24.

Oceans Act
Species At Risk Act (SARA) is Canada’s federal commitment to prevent wildlife species at risk from becoming extinct and to secure the necessary25 actions for their recovery26. This act provides legal protection to species and biological diversity27. See more below.

12 Watson et al. 2010
13 DFO 2008fed.
14 DFO 2008fed.
15 Enbridge 2010.
16 Enbridge 2010.
17 Enbridge 2010.
18 Enbridge 2010.
19 Enbridge 2010.
20 Enbridge 2010.
21 Enbridge 2010.
22 DFO 2008fed.
23 DFO 2008fed.
24 DFO 2008fed.
26 Enbridge 2010.
27 Enbridge 2010.
British Columbia & the Ocean

Relevant Branches

Ministry of Agriculture and Lands (MAL)

Aquaculture Branch

- Finfish Aquaculture
  - Regulated by Aquaculture Regulations
    - Govern cage structures, containment netting, net inspections and record keeping, boat operations, best management practices, predator avoidance and escape response.

- Shellfish Aquaculture
  - A Land Act tenure and a Fisheries Act aquaculture License must be obtained from the Shellfish Unit.

- Shellfish Development Initiative
  - Introduced in 1998
  - Objective was to double the amount of Crown land available for shellfish aquaculture within ten years.
  - As of 2008, pilot projects were underway at 15 sites on the North Coast and Queen Charlotte Islands.

- Commercial Harvest of Marine Plants

Fisheries and Aquaculture Licensing and Compliance Branch

Introductions and Transfers (of aquatic organisms) Committee (ITC)

Integrated Land Management Bureau (IMLB)

- Coast and Marine Planning Branch
  - Coastal planning and policy coordination.
  - Two levels of planning: local coastal planning and strategic coastal planning.

- FrontCounter BC
  - Provides clients of natural resources ministries and agencies with the information authorizations they need to start or expand a business.

- Coast Sustainability Strategy
  - Committed to developing three coastal land-use plans.

Ministry of Environment

- Oceans and Marine Fisheries Division
  - Core Business Area Goals: Ocean Resources, Marine Fisheries, Seafood Industry Development.

- Environmental Protection Division
  - Manages the Environmental emergency Management Program to protect the public in the event of an environmental emergency or disaster.
  - Developed the British Columbia Marine Oil Spill Response Plan (2007).
  - Administers the Environmental Management Act, Spill Reporting Regulation and Spill Cost Recovery Regulation.
  - Integrated Flood Hazard Management Program

- Water Stewardship Division
- Fraser River Estuary Management Program

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28 DFO 2008prov.
29 DFO 2008prov.
30 DFO 2008prov.
31 DFO 2008prov.
32 DFO 2008prov.
33 DFO 2008prov.
Environmental Stewardship Division
- Ecosystems Branch
- Parks and Protected Areas Branch

Environmental Assessment Office
- Ensures that project assessments are comprehensive and technically sound, involve all potentially interested parties, adhere to the legislation and are conducted in an open, timely and efficient manner.

Ministry of Forests and Range
- Research Branch
- Coast Forest Region

Legislation

British Columbia Wildlife Act assigns species to a red, blue or yellow list based on their provincial conservation status rank (SRANK). Colour rank is assigned by British Columbia Conservation Data Centre (CDC). The red list is for extirpated, endangered or threatened species. Blue list is for species of special concern (formerly vulnerable), and the yellow list is for species and communities that are secure. Migratory birds (including marine birds) are federally protected under the Migratory Birds Convention Act (MBCA 1994) and provincially under the BC Wildlife Act.

Ecological Reserve Act
Environmental Assessment Act
Environment and Land Use Act
Fish Protection Act
Land Act
Park Act
Protected Areas of British Columbia Act

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34 DFO 2008prov.
35 DFO 2008prov.
36 DFO 2008prov.
37 Enbridge 2010.
38 Enbridge 2010.
Species Protection

Together, the US Endangered Species Act (ESA, 1973) and the Canadian Species At Risk Act (SARA, 2002) claim responsibility for approximately 13% of the world’s land and 10 million square kilometers of ocean\textsuperscript{39}. These two countries are one of the few do federally protect endangered species. Others include the Biodiversity Law of Costa Rica (1992) \textsuperscript{40}, Australia’s Endangered Species Protection Act (2002) \textsuperscript{41}, and South Africa’s National Environmental Management Biodiversity Act (2004) \textsuperscript{42}. The two acts share common strengths and shortcomings, and each have features unique unto themselves. Both acts are focused on the protection and recovery of individual species or populations\textsuperscript{43}. Both acts mandate the use of the best available science, but in neither case is science the only factor involved in listing decisions\textsuperscript{44}. ESA explicitly prohibits consideration of factors other than science in listing determinations, while SARA provides a mechanism by which socioeconomic reasons can decline a listing\textsuperscript{45}. Canada has adopted a rule-based approach to risk assessment, modeled after the IUCN criteria. The United States has not\textsuperscript{46}.

SARA

Content

Canada’s Species At Risk Act (2002)\textsuperscript{47} prevents wildlife species at risk from becoming extinct and secures the necessary\textsuperscript{48} actions for their recovery\textsuperscript{49}. This act provides legal protection to species and biological diversity\textsuperscript{50}.

SARA provides legal protection of any wildlife species, defined as “a species, subspecies, variety, or geographically or genetically distinct population of animal, plant, or other organism, other than a bacterium or virus, that is wild by nature and is either native to Canada or has extended its range into Canada without human intervention and has been present in Canada for at least 50 years (Section 2.1)\textsuperscript{51}. SARA also considers biological entities below the subspecies level, termed Designatable Units (DUs) but does not define what that constitutes. After the US DPS policy, COSEWIC uses discreteness and evolutionary significance as the criteria for DU recognition\textsuperscript{52}. SARA allows the listing of populations of any taxon (whereas population-level listing in the ESA is limited to vertebrates)\textsuperscript{53}.

Schedule 1 of SARA, the official list of wildlife species in Canada, includes species that are extirpated, endangered, threatened and of special concern\textsuperscript{54}. Upon becoming listed under Schedule 1, protection and recovery measures are developed and implements and critical habitats are afforded legal protection\textsuperscript{55}. The only automatic protection that directly follows from a SARA listing is a prohibition on direct harm to a species or its residence. Critical habitat decisions are postponed until the recovery planning stage\textsuperscript{56}.

History

Three decades separated the legislation of ESA and SARA, during which public attitudes toward environmental issues evolved dramatically (Czech and Krausma 2001, Illical and Harrison 2007)\textsuperscript{57}. The ESA’s amendment history forewarned Canada about the costs and benefits of such law, prolonging the debate and writing of

\textsuperscript{39} Waples et al. 2013.
\textsuperscript{40} Waples et al. 2013.
\textsuperscript{41} Waples et al. 2013.
\textsuperscript{42} Waples et al. 2013.
\textsuperscript{43} Waples et al. 2013.
\textsuperscript{44} Waples et al. 2013.
\textsuperscript{45} Waples et al. 2013.
\textsuperscript{46} Waples et al. 2013.
\textsuperscript{47} Waples et al. 2013.
\textsuperscript{48} Waples et al. 2013.
\textsuperscript{49} Enbridge 2010.
\textsuperscript{50} Enbridge 2010.
\textsuperscript{51} Waples et al. 2013.
\textsuperscript{52} Waples et al. 2013.
\textsuperscript{53} Waples et al. 2013.
\textsuperscript{54} Enbridge 2010.
\textsuperscript{55} Enbridge 2010.
\textsuperscript{56} Findlay et al. 2009.
\textsuperscript{57} Waples et al. 2013.
SARA\textsuperscript{58}. SARA has not been revised since its original legislation\textsuperscript{59}. By 2013, 668 species have been listed as at-risk, 456 of which were deemed endangered or threatened\textsuperscript{60}.

![Table 1a. The numbers of species assessed by the Committee on the Status of Endangered Wildlife in Canada as endangered, threatened, and special concern as of January 2013.](image)

**Table 1a.** The numbers of species assessed by the Committee on the Status of Endangered Wildlife in Canada as endangered, threatened, and special concern as of January 2013.

<table>
<thead>
<tr>
<th>Taxon</th>
<th>Endangered</th>
<th>Threatened</th>
<th>Combined endangered and threatened</th>
<th>Special concern</th>
<th>Combined endangered, threatened, and special concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amphibians</td>
<td>10</td>
<td>5</td>
<td>15</td>
<td>8</td>
<td>23</td>
</tr>
<tr>
<td>Arthropods</td>
<td>34</td>
<td>6</td>
<td>40</td>
<td>8</td>
<td>48</td>
</tr>
<tr>
<td>Birds</td>
<td>29</td>
<td>28</td>
<td>57</td>
<td>21</td>
<td>78</td>
</tr>
<tr>
<td>Corals</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Fishes</td>
<td>54</td>
<td>40</td>
<td>94</td>
<td>52</td>
<td>146</td>
</tr>
<tr>
<td>Lichens</td>
<td>5</td>
<td>3</td>
<td>8</td>
<td>6</td>
<td>14</td>
</tr>
<tr>
<td>Mammals</td>
<td>24</td>
<td>17</td>
<td>41</td>
<td>30</td>
<td>71</td>
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<td>3</td>
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<td>7</td>
<td>28</td>
</tr>
<tr>
<td>Mooses</td>
<td>8</td>
<td>3</td>
<td>11</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>Plants</td>
<td>96</td>
<td>44</td>
<td>140</td>
<td>44</td>
<td>184</td>
</tr>
<tr>
<td>Reptiles</td>
<td>19</td>
<td>10</td>
<td>29</td>
<td>10</td>
<td>39</td>
</tr>
<tr>
<td>Total</td>
<td>297</td>
<td>159</td>
<td>456</td>
<td>190</td>
<td>646</td>
</tr>
</tbody>
</table>

*Note: For a current list, see www.cosewic.gc.ca/rpts/Full_List_Species.html.*

**Implementation**

Species At Risk Act is jointly administered by DFO, EC and Parks Canada Agency\textsuperscript{62}. Minister of DFO is responsible for aquatic species at risk. EC is the federal lead for coastal migratory bird species at risk\textsuperscript{63}. The Minister of Fisheries and Oceans is responsible for the management and protection of marine mammals\textsuperscript{64}.

SARA listing determinations are made by an independent advisory body, COSEWIC (Committee On the Status of Endangered Wildlife In Canada), who take both scientific and socioeconomic factors into account\textsuperscript{65}.

COSEWIC is not a conservation organization or a federal agency\textsuperscript{66}. The ~60-member\textsuperscript{67} committee is inclusive of government (jurisdictions are given representation) but status assessments are made independently of government (members are biologists who convey knowledge but do not represent their jurisdictions)\textsuperscript{68}. COSEWIC is unique in breadth of mandated responsibilities, incorporation of aboriginal traditional knowledge, and its representation from both inside and outside government\textsuperscript{69}. There are 10 Species Specialist Subcommittees (SSCs), which are each composed of specialists of a taxonomic group\textsuperscript{70}.

COSEWIC was originally convened in 1977 because numerous lists of threatened species were being created by both governmental and non-governmental organizations, which brought about considerable confusion (Shank 1999)\textsuperscript{71}. Its original focus was birds and terrestrial mammals, but by 1997 its taxonomic breadth expanded to the full range of animals and plants (Hutchings and Festa-Bianchet 2009a)\textsuperscript{72}. In 2002 when SARA was ratified, the new act charged COSEWIC with the responsibility of assessing species status\textsuperscript{73}. By the time SARA came

\textsuperscript{58} Waples et al. 2013.  
\textsuperscript{59} Waples et al. 2013.  
\textsuperscript{60} Waples et al. 2013.  
\textsuperscript{61} Waples et al. 2013.  
\textsuperscript{62} DFO 2008fed.  
\textsuperscript{63} DFO 2008fed.  
\textsuperscript{64} Enbridge 2010.  
\textsuperscript{65} Waples et al. 2013.  
\textsuperscript{66} Waples et al. 2013.  
\textsuperscript{67} Waples et al. 2013.  
\textsuperscript{68} Waples et al. 2013.  
\textsuperscript{69} Waples et al. 2013.  
\textsuperscript{70} Waples et al. 2013.  
\textsuperscript{71} Waples et al. 2013.  
\textsuperscript{72} Waples et al. 2013.  
\textsuperscript{73} Waples et al. 2013.
into legal force in 2003, COSEWIC had already listed 233 species as at-risk since the 1970s. These were automatically added to the SARA lists.\textsuperscript{74}

COSEWIC systematically commissions status reports from a list of candidate species. The list is prioritized on the basis of apparent risk of extinction, taxonomic distinctiveness, and the importance of Canadian territory to its overall range.\textsuperscript{75} This candidate list is different from those “listed” on the Schedules of SARA that describe the conservation status of its species. Because COSEWIC prioritizes and decides which species will be considered for listing, the whole process is conducted by independent scientists.\textsuperscript{76} COSEWIC meets twice yearly, and assesses the status of about 40 species at each meeting.\textsuperscript{77} COSEWIC assessments are based only on status reports that summarize the best available information (including western science, aboriginal traditional knowledge, and community or industry knowledge).\textsuperscript{78} SSC members are directed to consider only scientific evidence in the assembly of reports for COSEWIC. Their reports undergo extensive and open external review (typically lasting 1 to 2 years) by government jurisdictions, experts, university scientists, and industry-employed biologists.\textsuperscript{79}

COSEWIC assessments are passed to the Minister of Environment who forwards them either to the federal Governor in Council (Canada’s cabinet) for a listing decision or sends the assessments for an extended consultation process (thus postponing the listing).\textsuperscript{80}

**Shortcomings**

- If a species is considered for listing but is not listed, no protective measures are given at all and their likelihood of listing later may go down, thus posing a greater risk of extinction or extirpation (Findlay et al. 2009).\textsuperscript{81} As of 2006, 434 species were recommended by COSEWIC listing (including the 232 automatically added when SARA became enforced). Of the 202 new species recommended, 156 were listed and 20 were rejected outright. 10 were referred back to COSEWIC and 16 were sent to extended consultation.\textsuperscript{82}
- Mooers et al. (2007) demonstrated an apparent bias against marine and northern species.\textsuperscript{83} Species are less likely to be listed if they are harvested or have commercial or subsistence harvesting as an explicitly identified threat.\textsuperscript{84}
- SARA does not allow for permits to authorize any aboriginal harvest of Schedule 1 species, which has led to the “Nunavut Effect” – culturally important species for First Nations are less successful in the listing process.\textsuperscript{85} Canada’s Supreme Court has explicitly stated that wildlife conservation can take precedence over aboriginal use rights (Regina v Sparrow 1990).\textsuperscript{86}
- Final listing decisions are left to politicians.\textsuperscript{87} COSEWIC makes scientific determinations about status but the Canadian government can and has declined to list species for nonscientific reasons. This has obvious downfalls, but at least the scientific and political processes are distinct and transparent.\textsuperscript{88} Negative socioeconomic impacts were cited as reasons for not listing in 50% of the rejections.\textsuperscript{89} Commercial harvests were also a significant predictor of not listing.\textsuperscript{90}

To improve SARA, Waples et al. (2013) recommend the following:

1. Increasing transparency in ministerial discretion under SARA, and
2. Including and enforcing hard deadlines for listing under SARA.\textsuperscript{91}

\textsuperscript{74} Waples et al. 2013.
\textsuperscript{75} Waples et al. 2013.
\textsuperscript{76} Waples et al. 2013.
\textsuperscript{77} Waples et al. 2013.
\textsuperscript{78} Waples et al. 2013.
\textsuperscript{79} Waples et al. 2013.
\textsuperscript{80} Findlay et al. 2009.
\textsuperscript{81} Findlay et al. 2009.
\textsuperscript{82} Findlay et al. 2009.
\textsuperscript{83} Findlay et al. 2009.
\textsuperscript{84} Findlay et al. 2009.
\textsuperscript{85} Findlay et al. 2009.
\textsuperscript{86} Findlay et al. 2009.
\textsuperscript{87} Findlay et al. 2009.
\textsuperscript{88} Waples et al. 2013.
\textsuperscript{89} Findlay et al. 2009.
\textsuperscript{90} Findlay et al. 2009.
\textsuperscript{91} Waples et al. 2013.
Findlay et al. (2009) recommend that Canada considers revising SARA so that socioeconomic analysis occurs during decisions about protecting species and their habitats rather than at the listing stage.\textsuperscript{92}

**ESA**

**Content**

The Endangered Species Act (1973)\textsuperscript{93} "directs federal land managers and other federal agencies to insure that their activities do not jeopardize the continued existence of listed species or adversely modify habitat critical to those species". Its Section 7 contains the Act's principle substantive protections.\textsuperscript{94}

The ESA's definition of species includes not only formally recognized species and subspecies but also any Distinct Population Segment (DSP; which has no accepted biological interpretation). USFWS and NMFS issued a joint-policy for defining DSPs using a two-part test (discreteness and significance).\textsuperscript{95}

The law recognizes that adequate habitat must exist to sustain so-called recovered population levels.\textsuperscript{96}

\begin{table}
<table>
<thead>
<tr>
<th>Taxon</th>
<th>Endangered</th>
<th>Threatened</th>
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</thead>
<tbody>
<tr>
<td>Amphibians</td>
<td>16</td>
<td>10</td>
<td>26</td>
</tr>
<tr>
<td>Arthropods</td>
<td>88</td>
<td>13</td>
<td>101</td>
</tr>
<tr>
<td>Birds</td>
<td>78</td>
<td>15</td>
<td>93</td>
</tr>
<tr>
<td>Corals</td>
<td>0</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Fishes</td>
<td>83</td>
<td>70</td>
<td>153</td>
</tr>
<tr>
<td>Lichens</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Mammals</td>
<td>70</td>
<td>15</td>
<td>85</td>
</tr>
<tr>
<td>Molluscs</td>
<td>99</td>
<td>24</td>
<td>123</td>
</tr>
<tr>
<td>Mosses</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Plants</td>
<td>665</td>
<td>150</td>
<td>815</td>
</tr>
<tr>
<td>Reptiles</td>
<td>14</td>
<td>22</td>
<td>36</td>
</tr>
<tr>
<td>Total</td>
<td>1115</td>
<td>321</td>
<td>1438</td>
</tr>
</tbody>
</table>

Note: Although the Endangered Species Act (ESA) allows the listing of species occurring entirely outside the United States’s national boundaries, to be comparable with the Canadian data in table 1a, this table includes only those ESA species that occur in the United States or its territories. For a current list, see [http://ecos.fws.gov/txt_public/pub/Bluecore.do#](http://ecos.fws.gov/txt_public/pub/Bluecore.do#).

**History**

Endangered Species Preservation Act of 1966 was the predecessor of ESA.\textsuperscript{97} The ESA was amended regularly in its early years, once affected parties began to understand the implications of the original legislation (Yaffee 1982, Peterson 2002).\textsuperscript{98} Congress amended section 7 in 1978 after the famous snail darter case to allow a committee composed of Cabinet-level officials to grant exemptions to the absolute protections of this section. Rarely convene, the so-called “God Committee” has granted only one exemption in its history.\textsuperscript{99}

By 2013, 1436 species were listed as endangered or threatened under ESA (57% plants, the rest animals).\textsuperscript{100}

\textsuperscript{92} Findlay et al. 2009.  
\textsuperscript{93} Waples et al. 2013.  
\textsuperscript{94} Rohlf 1991.  
\textsuperscript{95} Rohlf 1991.  
\textsuperscript{96} Waples et al. 2013.  
\textsuperscript{97} Rohlf 1991.  
\textsuperscript{98} Waples et al. 2013.  
\textsuperscript{99} Waples et al. 2013.  
\textsuperscript{100} Waples et al. 2013.  
\textsuperscript{101} Waples et al. 2013.
Implementation
The act is implemented by the Secretaries of the Interior and Commerce (acting through the USFS and NMFS, respectively). USFWS has primary responsibility for terrestrial and freshwater species. NMFS administers marine and anadromous species.

ESA listing determinations are made by US federal managers who consider scientific information and ignore socioeconomic factors. Initial status assessments are generally assigned to an individual field biologist. NMFS commonly appoints a status review team of federal biologists to compile and analyze the relevant status and threat information. Reviews of species status can be initiated proactively by USFWS or NMFS but most are conducted in response to petitions by private citizens or interest groups. There is a strict timeline in ESA listing (24 months, with the possibility of 6 month extension to work out scientific disagreements in findings). Lawsuits by stakeholders for or against species listing mar the entire listing process and preoccupy a major portion of USFWS budget.

Shortcomings
Many have pointed out shortcomings of the ESA. Some are listed below, but there are two prominent themes:

1. Provisions and regulations of ESA fail to account accurately for ecosystem conservation, patch dynamics, and uncertainty.
2. Ambiguity of language and process.

Specific shortcomings include:

1. In the US, ESA responsibility is split between the two agencies USFWS and NMFS, neither of which has a single national review team or process.
2. Difficult for outside reviewers to evaluate the agency’s scientific findings and methodology.
3. Regulations drawn up by NMFS and USFWS to define some ambiguous terms and outline methodologies end up greatly influencing the scope and implementation of the act’s provisions.
4. ESA has much value-laden language that has not been rigorously defined by USFWS and NMFS. Listing determinations are therefore not repeatable by independent groups confronted with the same data.
5. Implementation bodies tend to discount uncertain and non-immediate factors in decision making process.
6. Use the existence of uncertainty to justify inaction.
7. The interaction of science and policy in ESA listing is less clear.
9. As such, the act does not adequately protect metapopulations. Under FWS policy, an action that jeopardizes or even wipes out a population of a listed species is not considered a section 7 violation of the Act unless the action jeopardizes the entire species. Separate listings for populations are exceptional.
10. The biological determination process is not transparent. Prevents meaningful scrutiny and
11. Act does not protect habitat reserves sufficiently to sustain “recovered” populations.  
12. Act lacks clearly defined thresholds to delineate endangered, threatened and recovered species.

To improve the act, Waples et al. (2013) recommend the following:
1. Resolving ambiguous terminology in the ESA,
2. Increasing the consistency and transparency of risk analysis and ESA listing determinations, and
3. Forming a US status assessment team similar to COSEWIC.

| Table 2. A comparison of key elements of Canada’s Species at Risk Act (SARA) and the US Endangered Species Act (ESA) with respect to the assessment, recovery, and protection of species. |
|---------------------------------|---------------------------------|
| Element                        | SARA                                                                 | ESA                                                                 |
| Purpose                        | “To prevent wildlife species from being extirpated or becoming extinct, to provide for the recovery of wildlife species that are extirpated, endangered or threatened as a result of human activity and to manage species of special concern to prevent them from becoming endangered or threatened” (section 6) | “To provide a means whereby the ecosystems upon which endangered species and threatened species depend may be conserved, and (to) provide a program for the conservation of such species” (section 2)(c) |
| Status categories              | Extirpated, endangered, threatened, special concern                   | Endangered, threatened, warranted but precluded by other actions; agency-specific candidate species and species of concern categories |
| Definition of extirpated       | “No longer exists in the wild in Canada, but exists elsewhere in the wild” (section 2) | Not defined |
| Definition of endangered       | “Facing imminent extirpation or extinction” (section 2)               | “In danger of extinction throughout all or a significant portion of its range” (section 3) |
| Definition of threatened       | “Likely to become an endangered species if nothing is done to reverse the factors leading to its extirpation or extinction” (section 2) | “Likely to become an endangered species throughout all or a significant portion of its range in the foreseeable future” (section 3) |
| Definition of special concern  | “May become a threatened or an endangered species because of a combination of biological characteristics and identified threats” (section 2) | Not in the ESA. If information is insufficient to indicate a need to list but comprises exist regarding status and threats, the National Marine Fisheries Service (NMFS) labels it a species of concern |
| Initiation of an assessment    | Over 95% of listed species originate from decisions made by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC); the others are from unsolicited requests from government and the public | The US Fish and Wildlife Service (USFWS) and the NMFS conduct most status reviews in response to petitions; however, reviews can also be initiated by the services |
| Assessors of species status    | Independent advisory body (COSEWIC)                                    | Staff in the USFWS and the NMFS, following input from government scientists and others |
| Who makes listing decisions    | The governor in council, a subcommittee of ministers of the federal cabinet | The secretary of the interior (USFWS) or of commerce (NMFS) species |
| Protective regulations for listed species | Automatically apply to endangered and threatened species | Automatically apply to endangered species; regulations for threatened species are promulgated as needed |
| Review of status               | By COSEWIC, every 10 years, or sooner if there is reason to believe that status has changed | At least every 5 years by the USFWS and the NMFS |
| Status assessment criteria     | IUCN criteria are used as a guide                                       | No standardized criteria |
| Geographical range of listed species | Limited to the species range within Canadian territory             | Wherever species occur; not limited to US territory |
| Rescue effect                  | Status can be adjusted on the basis of immigration from adjacent, non-Canadian populations | Not explicitly considered, but the unit to be assessed can include adjacent, non-US populations |
| Is preventing scientific advice on status publicly available? | All COSEWIC species status reports and status assessments are publicly available | All listing determinations are published in the Federal Register and supporting information is publicly available; status reports, publicly available science reports are common within the NMFS but not the USFWS |
| Population units eligible for listing consideration | Designatable units of all species can be listed if they are determined to be at risk | Ability to list distinct population segments is restricted to vertebrates |
| Scientific basis of listing decisions | A decision not to list can be based on perceived socioeconomic consequences of listing decisions | Listing decisions are based solely on best scientific and commercial data available |
| Steps and time lines following a proposed listing determination | (a) Issuance of a response statement by the minister of the environment (3 months)  
(b) Preparation of a listing decision recommendation by the minister to federal cabinet  
(c) Listing decision by cabinet following receipt of COSEWIC assessment from the minister of the environment (9 months) | (a) Public review and comment (no less than 60 days)  
(b) Final listing decision by the responsible secretary within 12 months of a proposed listing determination |
| Time lines for preparation of recovery strategy | Endangered: 12 months after listing; extirpated and threatened species: 24 months after listing | No statutory time frame, but the USFWS and the NMFS are required to develop and implement recovery plans unless doing so would promote conservation; a progress report to Congress is required every 2 years |
| Public participation in species assessment process | Anyone can submit a request for observer status at COSEWIC meetings; none has been denied; observers typically include environmental non-government organization representatives, government managers and scientists, university students, and other interested members of the public | Participation by individuals from outside government agencies is generally constrained by provisions of the Federal Advisory Committee Act |


127 Waples et al. 2013.  
Habitat Protection

Federal

At present, there are 13 National Wildlife Areas. There are also 51 Migratory Bird Sanctuaries with marine components that total 150,000 hectares\(^{129}\). In Canada, marine protection can be established under\(^{130}\):

**Oceans Act** requires Fisheries and Oceans Canada to define Marine Protected Areas\(^{131}\).

**Fisheries Act**: No person may carry out any work or undertaking that results in the harmful alteration, disruption or destruction of fish habitat, unless authorized by the Minister of Fisheries and Oceans\(^{132}\).

**National Parks Act**

**National Marine Conservation Areas Act** charges Parks Canada with the delineation of National Marine Conservation Areas\(^{133}\).

**Canadian Wildlife Act** allows Environment Canada to designate Marine Wildlife Areas\(^{134}\).

DFO’s Policy for the Management of Fish Habitat (DFO 1986) also allows for the protection of fish habitat\(^{135}\).

**Pacific North Coast Integrated Management Area (PNCIMA)**.

One of five Large Ocean Management Area (LOMAs), “areas of high ecological, social, and economic importance, that have been identified by Fisheries and Oceans Canada (DFO) as priority regions for marine planning as part of Canada’s Oceans Action Plan.”\(^{136}\) In the 2000s, this area was in the process of being formally instituted. However in September 2011, the federal government withdrew from an agreement that provided funding to support the PCIMA process\(^{137}\) in acquiescence from Calgary (oil) lobbyists.

Provincial

In BC, marine protection can be established under the Park Act and Ecological Reserves Act\(^{138}\).

Critical Habitat

The only automatic protection that directly follows from a SARA listing is a prohibition on direct harm to a species or its residence. Critical habitat decisions are postponed until the recovery planning stage\(^{139}\). Being listed on Schedule 1 of SARA in Canada requires the development of a recovery strategy that includes the identification and protection of “critical habitat”\(^{140}\).

SARA defines residence as: “a dwelling-place, such as a den, nest or other similar area or place, that is occupied or habitually occupied by one or more individuals during all or part of their life cycles, including breeding, rearing, staging, wintering, feeding or hibernating” [SARA S2(1)]\(^{141}\).

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\(^{129}\) DFO 2008fed.

\(^{130}\) http://www.pncima.org/

\(^{131}\) COSEWIC 2005.

\(^{132}\) Enbridge 2010.

\(^{133}\) COSEWIC 2005.

\(^{134}\) COSEWIC 2005.

\(^{135}\) Enbridge 2010.

\(^{136}\) Wikipedia

\(^{137}\) http://www.pncima.org/

\(^{138}\) http://www.pncima.org/

\(^{139}\) Findlay et al. 2009.

\(^{140}\) DFO 2010b

\(^{141}\) Fisheries and Oceans Canada. 2013.
“The Critical Habitat of SARA listed species, defined as ‘habitat necessary for survival and recovery of a listed wildlife species” must be identified, to the extent possible, in a recovery strategy or action plan for extirpated, endangered or threatened SARA-listed species.” SARA defines habitat for aquatic species as areas for rearing, food supply, migration or any other areas on which aquatic species depend directly or indirectly to carry out life processes. Part of identifying Critical Habitat also includes providing examples of the types of anthropogenic activities that would be likely to destroy the habitat.

In the USA, the ESA defines critical habitat, as specific geographical areas that “contain those physical or biological features necessary for recovery of listed species.” The identification of critical habitat can involve political and economic considerations, which has been cited as a weakness of the act. “Though lawmakers required the Services to define – to the extent “prudent” and determinable --- critical habitat for a species at the same time it was added to the protected list, Congress also allowed these agencies to exclude areas from critical habitat status on economic and other grounds.

Environmental Assessment

In July 2012, the Canadian Environmental Assessment Act of 2012 (CEAA 2012) recently superceded the former CEEA. The former CEAA did operate under a “trigger” approach, in which an assessment was automatically required whenever a federal authority intended to participate in the project. The new CEAA 2012, however, uses a “project list” approach: an assessment is only required and automatic for a selection of designated project types. For most of the project types, an assessment will only be undertaken where the federal government exercises its discretion to do so. The new regulations in this act were allegedly written with spurious consultation from the public. The review process under CEAA 2012 is also of a more limited scope than the previous act. With the implementation of these looser review requirements, more than 2,950 assessments have been stopped in their tracks.

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142 Nichol et al. 2009.
143 DF0 2010b
144 DF0 2010b
146 Rohlf 1991.
In the Study Area

Conservation status of marine mammals occurring within the Kitimat Fjord System

Table 1

<table>
<thead>
<tr>
<th>Species</th>
<th>Conservation status by region or agency</th>
<th>COSEWIC</th>
<th>SARA</th>
<th>ESA</th>
<th>MMPA</th>
<th>WA</th>
<th>AK</th>
<th>IUCN</th>
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<tr>
<td>Harbor seal</td>
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<td>Not at risk</td>
<td>Not at risk</td>
<td>Not</td>
<td>Not</td>
<td>Not</td>
<td>Not</td>
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<td>Elephant seal</td>
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<td>Not</td>
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<td>Special concern</td>
<td>Special concern</td>
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<tr>
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<td>Not at risk</td>
<td>Not at risk</td>
<td>Not</td>
<td>Not</td>
<td>Not</td>
<td>Not</td>
<td>Lower risk</td>
</tr>
<tr>
<td>Harbor porpoise</td>
<td>Special concern</td>
<td>Special concern</td>
<td>Special concern</td>
<td>Vulnerable</td>
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<td>Not</td>
<td>Not</td>
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</tr>
<tr>
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<td>Critically</td>
<td>Not</td>
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<td>Depleted</td>
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<td>Not</td>
<td>Not</td>
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</tr>
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<td>Critically</td>
<td>Imperiled</td>
<td>Endangered</td>
<td>Depleted</td>
<td>Endangered</td>
<td>Vulnerable</td>
</tr>
<tr>
<td>Killer whale northern</td>
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<td>Threatened</td>
<td>Critically</td>
<td>Imperiled</td>
<td>Endangered</td>
<td>Depleted</td>
<td>Endangered</td>
<td>Lower risk</td>
</tr>
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<td>resident Pacific white-sided dolphin</td>
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</tr>
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</tr>
</tbody>
</table>

Fin Whale

The species was considered a single unit and designated Special Concern in April 1987. It was split into two populations (Atlantic and Pacific) in May 2005. That Pacific population was designated Threatened in May 2005\textsuperscript{151}. Pacific stock is Threatened, Schedule 1 SARA\textsuperscript{152}. The Atlantic stock is Special Concern\textsuperscript{153}.

“The responsible jurisdiction for blue, fin and sei whales in Pacific Canadian waters is Fisheries and Oceans Canada. The Pacific populations of blue, fin and sei whales occur off the coast of the Province of British Columbia and the proposed National Marine Conservation Area off Gwaii Haanas National Park Reserve. The Province of BC and Parks Canada also cooperated in the development of this recovery strategy.”

The fin whale is protected in the US under the Marine Mammal Protection Act of 1972 and the Endangered Species Act of 1973, listed as Endangered\textsuperscript{155}. The IUCN lists the fin whale as Endangered\textsuperscript{156}. In CITES, the fin whale is listed in Appendix 1, a category that includes species threatened with extinction\textsuperscript{157}. The Convention on the Conservation of Migratory Species of Wild Animals lists the fin whale in Appendix 1 (Endangered) and Appendix II (species that would benefit from international cooperation)\textsuperscript{158}. Fin whales are included in the 1986 IWC whaling moratorium\textsuperscript{159}.

Humpback Whale

In 2005, NP Humpback whales were listed as Threatened under Schedule 1 of SARA\textsuperscript{160}. On the west coast, HWs

\textsuperscript{150} Williams et al. 2011.
\textsuperscript{151} COSEWIC 2005.
\textsuperscript{152} COSEWIC 2005.
\textsuperscript{153} COSEWIC 2005.
\textsuperscript{154} Gregr et al. 2006.
\textsuperscript{155} COSEWIC 2005.
\textsuperscript{156} COSEWIC 2005.
\textsuperscript{157} COSEWIC 2005.
\textsuperscript{158} COSEWIC 2005.
\textsuperscript{159} COSEWIC 2005.
\textsuperscript{160} Nichol et al. 2009.
are considered one population under SARA (www.sararegistry.gc.ca)

“In 2003, North Pacific Humpback Whale population status was assessed as ‘threatened’ by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), and in 2005 the population was listed as ‘threatened’ under Canada’s Species at Risk Act (SARA) affording it legal protection. The population’s status was re-assessed as ‘special concern’ in 2011 by COSEWIC. Following public consultation regarding the re-classification of the species, the Department of Fisheries and Oceans has referred the assessment of ‘special concern’ back to COSEWIC for further consideration and the SARA status of North Pacific Humpback remains unchanged at the publication of this document.” Moving the humpback to the Special Concern list would obviate the requirement for Critical Habitat Designation.

“The Minister of Fisheries and Oceans and the Minister of Environment, responsible for the Parks Canada Agency, are the competent ministers for Humpback Whales in Pacific Canadian waters. The North Pacific population of Humpback Whales occurs off the coast of the Province of British Columbia and within the Pacific Rim National Park Reserve, National Marine Conservation Area Reserve off the Gwaii Haanas National Park Reserve and Haida Heritage Site and to a lesser extent within the Gulf Islands National Park Reserve. Parks Canada Agency cooperated in the development of this recovery strategy.

Under the US MMPA, three HW stocks are recognized in the North Pacific. These US classifications are 1) CA OR WA, the “eastern stock”; 2) Central North Pacific stock (feeds southeast Alaska to Alaska peninsula; and 3) Western Pacific Stock (feeding areas around Aleutian Islands). The US did not formally assign BC humpbacks to any of these stocks.

Killer Whales
Northern resident killer whales are on the BC blue list, threatened under COSEWIC, and listed as threatened on SARA Schedule 1. Under Schedule 1 of SARA, a recovery strategy for NR killer whales has been finalized (DFO 2008b). Southern resident killer whales are Endangered.

Under the Species-At-Risk Act, the Minister of Fisheries and Oceans is the competent party responsible for preparing and finalizing the Recovery Strategy with respect to Northern and Southern Resident Killer Whales. “These populations occur off the coast of the province of British Columbia and within the proposed Gwaii Haanas and Southern Strait of Georgia National Marine Conservation Areas. The Province of British Columbia, Environment Canada and Parks Canada also cooperated in the development of this recovery strategy. In addition, both populations are considered trans-boundary in United States waters. The US National Oceanic and Atmospheric Administrations also participated in its preparation.”

Seabirds
Of marine birds in the study area, the marbled murrelet is listed federally as threatened (SARA Schedule 1) and the surf scoter is blue-listed in British Columbia and not listed by COSEWIC.

162 Fisheries and Oceans Canada. 2013.
163 COSEWIC 2011.
164 Fisheries and Oceans Canada. 2013.
165 Fisheries and Oceans Canada. 2013.
166 Nichol et al. 2009.
168 Enbridge 2010.
169 Fisheries and Oceans Canada. 2008.
170 Fisheries and Oceans Canada. 2008.
171 Fisheries and Oceans Canada. 2008.
172 Fisheries and Oceans Canada. 2008.
173 Enbridge 2010.
174 Enbridge 2010.
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DFO 2010b. Operational Guidelines for the Identification of Critical Habitat for Aquatic Species at Risk, Species at Risk Act (SARA). Fisheries and Oceans Canada. 61pp.


Enbridge 2010. 8B.


Pacific North Coast Integrated Management Area (PNCIMA). http://www.pncima.org/


