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United States General Accounting Office
Washington, DC 20548

October 31, 2002

The Honorable Max Baucus
The Honorable Lincoln D. Chafee
United States Senate

Subject: *Transboundary Species: Potential Impact to Species*

The United States/Canada Softwood Lumber Agreement expired in March 2001. As part of the preparation process for renegotiating the agreement, the United States Trade Representative requested public comment on softwood lumber trade issues between the United States and Canada and on Canadian softwood lumbering practices. The comments received included allegations that Canadian lumbering and forestry practices were affecting animal species with U.S./Canadian ranges (transboundary species) that are listed as threatened or endangered in the United States. To consider these comments as well as provide useful information to the U.S. Trade Representative in the renegotiations, the Department of the Interior, with the Department's U.S. Fish and Wildlife Service's (FWS) assistance, prepared a conservation status report on selected species that may be affected by the new agreement. The status report presented summaries of information on eight transboundary species and reached preliminary conclusions of potential impact to four species.

You asked us to review the information and the process that Interior used to develop the January 2001 status report as well as provide you with updated information concerning several specific transboundary species. Accordingly, this report describes the (1) supporting information that FWS used and the process it followed when compiling its information for the Department of the Interior's January 2001 conservation status report on selected threatened or endangered species with U.S./Canadian ranges; and (2) existing U.S. and Canadian efforts aimed at protecting, monitoring, and facilitating the eventual recovery of four transboundary species—the bull trout, grizzly bear, marbled murrelet, and woodland caribou—listed as threatened or endangered in the United States.

On October 4, 2002, we briefed your offices on the results of our work. This report transmits the materials used during that briefing.

Results in Brief

In compiling the information for the Department of the Interior's 2001 conservation status report for the U.S. Trade Representative, the Fish and Wildlife Service relied chiefly on previously published material and internal agency documents, such as

individual species recovery plans, *Federal Register* listing information, other administrative records, and public comments received. According to the FWS official we contacted, FWS headquarters had to compile the report under a tight time frame and did not have time to consult with the regional recovery team coordinators responsible for monitoring the species or seek updated information to supplement the information used from dated species recovery plans. From our analysis of the report and our discussions with U.S. and Canadian wildlife officials, we believe that the report, among other things,

- understates the extent of cooperation between U.S. and Canadian officials to monitor, protect, and recover transboundary populations of species listed as threatened or endangered in the United States. In particular, the report did not fully capture the extent of data exchange or joint initiatives undertaken, and
- gives little attention to certain threats to the species, such as predation, residential and commercial development, and human recreational activities, that, according to governmental wildlife officials, are equal or greater threats to transboundary species recovery than, for example, logging and logging roads.

Whereas the inclusion of such updated information has the potential to change the details presented in the report, we do not believe that the additional information would alter the report's general findings.

The United States and Canada similarly engage in processes—both on their respective side of the border and in collaboration with one another—aimed at protecting, monitoring, and facilitating the eventual recovery of the bull trout, grizzly bear, marbled murrelet, and woodland caribou. Specifically, wildlife officials on each side grant species a special protective status; outline the threats to the species; collect diverse sources of data to monitor the species' habitat and population trends; undertake specific species recovery, protection, and coordination activities; and encounter similar obstacles in their attempts to assess the species and facilitate its recovery. Furthermore, U.S. and Canadian officials often work in tandem by jointly participating in conferences on species recovery issues; consistently sharing species monitoring data and other technical information; and for certain species like the woodland caribou, jointly participate in the development of recovery plans.

Supplemental Information

In addition to the presentation slides used during our briefing, we also are enclosing the other documents discussed during that meeting (see enc. I). Specifically, we are enclosing:

- the timetable for preparing the January 9, 2001 report (enc. II);
- the authorizing legislation and agreements related to the protection of species at risk in the United States and Canada (enc. III);

- the process for listing species in the United States and Canada (enc. IV); and
- an overview of species-specific information (enc. V).

These materials supplement the content in the presentation slides.

Scope and Methodology

To respond to the above objectives, we met with representatives of the Department of the Interior and FWS, the recovery coordinators for the four species, and federal and provincial wildlife officials from Alberta and British Columbia. We reviewed documents associated with managing and recovering the four species. We also contacted and obtained documents from environmental organizations and industry associations.

The maps that we present in enclosure V do not include the historical range or entire current range and may not be drawn to scale. We provided the maps, however, to provide readers with a general geographical reference to the range of habitat for these four transboundary species.

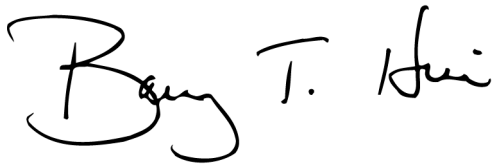
We performed our work on this assignment from March 2002 to September 2002 in accordance with generally accepted government auditing standards. A detailed description of our scope and methodology is included as enclosure VI.

Agency Comments

While we did not receive comments on a draft of this report, we did hold exit conferences with the various U.S. and Canadian officials that we met in the course of our review and obtained oral comments. During the exit conferences we discussed the information used to develop the briefing slides and supplemental enclosures with appropriate U.S. and Canadian officials. Generally, the officials indicated that the information was accurate and provided a good, general overview of their respective species management and recovery programs. The officials also provided some technical clarifications that we have incorporated as appropriate.

As agreed with your office, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, copies of this report will be available at no charge on GAO's Web site at <http://www.gao.gov>.

If you or your staff have any questions on the matters discussed in this report, you may contact me at (202) 512-3841. Major contributors to this report were Linda L. Harmon, Michael J. Rahl, and Jonathan McMurray.

A handwritten signature in black ink that reads "Barry T. Hill". The signature is written in a cursive style with a large, looped initial "B".

Barry T. Hill
Director, Natural Resources
and Environment

Enclosures - 6



Briefing for Congressional Requesters

Report Analysis and Information on Four U.S./Canadian Transboundary Species Listed as Threatened or Endangered in the United States

October 4, 2002

Objectives

- Describe the supporting information that the U.S. Fish and Wildlife Service (FWS) used and the process it followed when compiling information for the Department of the Interior's 2001 conservation status report on selected threatened or endangered species with U.S./Canadian ranges.
- Describe existing U.S. and Canadian efforts aimed at protecting, monitoring, and facilitating the eventual recovery of four transboundary species listed as threatened or endangered in the United States—the bull trout, grizzly bear, marbled murrelet, and woodland caribou.

Scope and Methodology

- Reviewed species recovery plans, *Federal Register* species listings, background materials, and evaluative studies on the four species.
 - Interviewed Department of the Interior officials; FWS officials (in headquarters and the regions) and FWS recovery coordinators for the four species.
 - Interviewed (1) provincial fish and wildlife officials; biologists, wildlife; forestry; and recreational specialists in Alberta and British Columbia and (2) Parks Canada and Canadian Wildlife Service officials responsible for managing the four species.
-

Scope and Methodology (continued)

- Contacted representatives from environmental organizations and industry associations and reviewed documents provided.

Results in Brief

In compiling information for the 2001 conservation status report for the U.S. Trade Representative, FWS

- consulted previously published material, public comments, and internal agency documents and
- did not consult with its regional recovery team coordinators responsible for monitoring the species or seek updated information to supplement the information found in older species recovery plans.

Results in Brief (continued)

Wildlife officials in the United States and Canada similarly engage in processes—both on their respective side of the border and in collaboration with one another—aimed at identifying, listing, protecting, and monitoring the eventual recovery of the bull trout, grizzly bear, marbled murrelet, and woodland caribou.



Compiling the January 2001 Report



Genesis of the January 2001 Report

- The U.S. Trade Representative asked the Department of the Interior to provide information on the potential environmental effects of the U.S./Canada Softwood Lumber Agreement and to review the public comments received on these issues.
 - Interior requests that FWS prepare preliminary write-ups on issues related to transboundary species for its report *Summary of the Conservation Status of Selected Forest-Related Species with U.S./Canada Ranges*.
-

Purpose of January 2001 Report

Department of the Interior officials indicated that the report

- was intended to review the state of knowledge on the status of certain species with transboundary ranges in light of public comments alleging threats to species due to timber harvesting in Canada, much of which is exported to the United States,
- was a brief overview based on immediately available knowledge and was not intended to be a thorough review such as the review of a species' biological status required under section 4 of the Endangered Species Act,



Purpose of January 2001 Report (continued)

- focused on the effects relating to logging and forest management to help government officials consider these public concerns, not because it reached a conclusion that those are the most important threats for any given species even though, in most cases, these effects are significant.

Information Contained in the January 2001 Report

The report summarized the readily available information on the

- biological and legal status of eight species said to be potentially affected by Canadian timber harvesting;
 - threats to these species;
 - transboundary aspects of these species, such as range;
 - effects of Canadian timber practices on these species; and
 - extent of U.S./Canadian cooperation in efforts to study, conserve, or manage these species.
-

Information Consulted in Preparing the January 2001 Report

In compiling its report, FWS used

- published documents (no new research conducted),
- existing recovery plans and listing information,
- *Federal Register* notices and public comments, and
- administrative records and general staff knowledge.

Information Not Considered in Preparing the January 2001 Report

When compiling information for the 2001 report,

- FWS did not review or consider a number of available articles, papers, and other literature on Canadian lumbering practices and their potential impact on transboundary species;
 - concerns raised in these articles and papers generally echoed the concerns raised in the public comments that FWS had reviewed; and
 - further consideration of these sources would not have changed the focus or the content of the January 2001 report, according to FWS.
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GAO Analysis of the January 2001 Report

The report

- understated the extent of cooperation between U.S. and Canadian officials to monitor, protect, and recover threatened or endangered species and
- gave little attention to certain threats to the species, such as predation, residential and commercial development, and human recreational activities, that were equal or greater threats to transboundary species recovery than, for example, logging and logging roads.

U.S. and Canadian Efforts to Protect, Monitor, and Recover Transboundary Species

Efforts to Protect, Monitor, and Recover Four Transboundary Species

Wildlife officials in the United States and Canada similarly engage in identification, listing, protection, and recovery activities and programs for the four species. Specifically, they

- grant the species a special protective status;
- identify the threats to the species;
- collect diverse sources of data to monitor the species' habitat and population trends;
- undertake specific species recovery, protection, and coordination activities; and
- encounter similar obstacles in their attempts to assess the species and facilitate its recovery.

Special Designation of Species

Species	United States	Government of Canada	Alberta	British Columbia
Bull trout	Threatened	(Not assessed)	Special concern	Vulnerable
Grizzly bear	Threatened	Special concern	(Under review)	Special concern
Marbled murrelet	Threatened	Threatened	(Not applicable)	Threatened
Woodland caribou	Endangered	Threatened ^a	Threatened ^b	Threatened

^aThe government of Canada classifies the Southern Mountain population as “threatened” and the Northern Mountain population as “special concern.” The Southern Mountain population includes the herd that is transboundary.

^bAlberta does not share transboundary populations with the United States. The provinces’ populations of concern are shared with British Columbia.

Threats to the Species

- Roads/Highways.
 - Recreation—hunting, fishing, camping, and snowmobiles.
 - Predation.
 - Commercial and residential development.
 - Irrigation projects.
 - Resource extraction/use—lumbering, mining, and grazing.
-

Data Collected to Monitor Species

- Credible species sightings, annual species and nest counts to determine reproductive success, population baselines, census, and trends.
 - Radio telemetry, satellite information, radar information, and DNA analysis for range assessments; uses of, and obstacles to, habitat access; and linkage zones between habitats.
 - Law enforcement, accident reports, hunting and fishing records, and found dead specimens to determine mortality factors.
 - Best scientific data available and peer-reviewed protocols are to be used to better ensure accuracy, consistency, and reliability of data.
-

Recovery and Protection Activities

- Adjust or eliminate land use and resource extraction activities.
- Limit public access to species habitat.
- Restrict commercial recreation enterprises.
- Restore, protect, or enhance species habitat.
- Augment species populations.
- Prohibit or restrict fishing or hunting.
- Manage predators.
- Implement community outreach and educational programs.

Coordination and Cooperative Activities

- Joint participation on recovery teams and development of recovery plans.
 - Joint participation on species technical committees.
 - Joint research and sharing of research data.
 - Joint habitat-mapping efforts.
 - Sharing of aerial monitoring and other technical data.
-

Coordination and Cooperative Activities (continued)

- Augmentation of U.S. species populations.
- Annual and ad hoc workshops on current species issues, monitoring effectiveness, and evaluation methodology.
- Use of scientific data gathering protocols to better ensure the collection of consistent data.
- International agreement on gill netting to minimize the number of birds caught in fish nets and joint oil spill response strategy.
- Land exchanges to protect species habitat.

Obstacles to Recovery Assessment Efforts

- Limited staff and resources.
- Solitary/Secretive species are difficult to track.
- Downsizing and reduced funding have decreased amount of scientific research conducted.
- Seasonal limitations and inclement weather impede data collection.
- Monitoring techniques are difficult, time-consuming, and expensive.

Time Table for Preparation of January 9, 2001 Report

Presented below are the key dates relating the development and issuance of the January 9, 2001 report entitled *Summary of the Conservation Status of Selected Forest-Related Species with U.S./Canada Ranges* prepared by the Department of the Interior, with assistance of the U.S. Fish and Wildlife Service. That report was in response to a request for assistance in assessing the public comments received by the U.S. Trade Representative regarding the environmental concerns as they relate to the renegotiation of the U.S./Canada Softwood Lumber Agreement.

Date	Action/Activity
Mar. 2, 2000	U.S. Trade Representative issues <i>Federal Register</i> notice (65 F.R. 11363) requesting public comment regarding softwood lumber practices in Canada and softwood lumber trade between the United States and Canada.
Aug. 4, 2000	Deputy Secretary of the Interior identifies focal point for coordinating Interior's role in studying the environmental issues relating to U.S./ Canadian softwood lumber trade.
Aug. 28, 2000	Interior seeks information from FWS responding to four questions regarding eight U.S.-listed transboundary species identified as potentially affected by Canadian lumbering practices.
Aug. 28, 2000- Sept. 29, 2000	FWS considers transboundary aspects of eight U.S.-listed species as well as the issues identified in public comments.
Sept. 29, 2000	FWS provides write-ups on the eight species to Interior.
Fall 2000	Interagency coordination/working group discusses issues, and Interior and FWS review FWS' write-ups (informal process).
Oct. 22, 2000	Interior sends outline of proposed report to U.S. Trade Representative.
Oct. 25, 2000	U.S. Trade Representative circulates the outline of the proposed report to the interagency coordinating/working group.
Oct. 25, 2000 – Nov. 2000	Interior consolidates FWS's write-ups into report format. Interior circulates two report iterations internally.

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Date

Action/Activity

Nov. 3, 2000

Interior internally circulates copies of a revised draft and sends it to FWS's Acting Assistant Director for International Activities.

Fall/Winter
2000-2001

Interior shows the draft to the U.S. Trade Representative.

Jan. 9, 2001

Interior finalizes report.

Jan. 18, 2001

Interior delivers final report to the U.S. Trade Representative.

**Authorizing Legislation and Agreements Related to Species at Risk
in the United States and Canada**

Listed below are the key legislation or signed agreements that establish the framework for endangered species protection in the United States, in Canada, and in the provinces of Alberta and British Columbia.

Location	Legislation or Agreement
U.S. Government	<ul style="list-style-type: none"> ● Endangered Species Act ● Migratory Bird Treaty Act ● Magnuson-Stevens Fishery Conservation and Management Act ● National Forest Management Act ● Federal Land Policy and Management Act ● National Environmental Policy Act ● Framework for Cooperation Between the U.S. Department of the Interior and Environment Canada in the Protection and Recovery of Wild Species at Risk.
Government of Canada	<ul style="list-style-type: none"> ● Species At Risk Act (federal law under consideration) ● The Fisheries Act ● Migratory Birds Convention Act ● Canadian Wildlife Act ● National Parks Act ● Accord for the Protection of Species at Risk (agreed to by federal/provincial/territorial agencies) ● United Nations' Convention on Conservation of Biological Diversity ● Framework for Cooperation Between the U.S. Department of the Interior and Environment Canada in the Protection and Recovery of Wild Species at Risk.
Province of Alberta	<ul style="list-style-type: none"> ● Wildlife Act ● Forests Act ● Fisheries Act ● Accord for the Protection of Species at Risk.
Province of British Columbia	<ul style="list-style-type: none"> ● Forest Practices Code of British Columbia Act ● Wildlife Act ● Forest Land Reserve Act ● Accord for the Protection of Species at Risk.

Process for Listing Species

The United States, the government of Canada, and the Provinces of Alberta and British Columbia each follow a process by which individual species are assessed and may be granted a special designation if found to be under threat. Presented below is a brief overview of the process that each governmental organization follows in making the decision to list or not list a species.

U.S. Government

- The Fish and Wildlife Service lists species as a result of initiating an evaluation or as a result of being petitioned by an individual, group, or agency to list a species. If petitioned, established time frames apply.
- Ninety-day finding on sufficiency of petition information to support whether the listing may be warranted. If so, FWS begins detailed biological evaluation.
- Twelve-month finding, on the basis of biological information alone, on whether the petitioned species should be listed. Self-initiated listing based on species priority. Decision to propose listing published in the *Federal Register*.
- Final rule to list or withdraw the proposed listing issued within 12 months after evaluating any additional information and public comments. This period can be extended to a maximum of 18 months if there is a disagreement about the sufficiency or accuracy of the available biological data.
- Risk categories include the following:
 - Endangered—a species that is in danger of extinction throughout all or a significant portion of its range.
 - Threatened—a species that is likely to become endangered in the foreseeable future.
- Recovery plans generally to be completed within 2.5 years of listing and reviewed/revised as information warrants.

Government of Canada

- The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) produces the official list of Canadian species at risk. Species are listed as the result of a four-step process.
 - Eligibility of species is determined on the basis of validity of species or subspecies, Canadian native, regularity of occurrence,

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and whether species require Canadian lands or waters for a key part of their life cycle.

- Species specialist groups develop prioritized lists of candidate species.
- Status reports developed to assess risk of extinction. May be commissioned by COSEWIC or submitted by any person.
- Final status determination published as the public record and provided to the Canadian Endangered Species Conservation Council.
- Risk categories include the following:
 - Extinct—a species that no longer exists.
 - Extirpated—a species that no longer exists in the wild in Canada but occurs elsewhere.
 - Endangered—a species facing imminent extirpation or extinction.
 - Threatened—a species that is likely to become endangered if limiting factors are not reversed.
 - Special concern—a species of special concern because of characteristics that make it particularly sensitive to human activities or natural events.
 - Not at risk—a species that has been evaluated and found to be not at risk.
 - Data deficient—a species for which there is insufficient scientific information to support status designation.
- The Canadian Endangered Species Conservation Council accepts the COSEWIC list and determines the priorities for recovery actions.
- Under the Accord for the Protection of Species at Risk, the jurisdictions agree to prepare recovery strategies within specified timelines and to report annually to the public on the status of recovery actions across Canada.

Province of Alberta

- The Alberta Wildlife Management Division of the Ministry of Sustainable Resource Development ranks the general status of each Alberta species and identifies initial priorities for species assessment, the species for which additional data need to be collected, and potential species needing management efforts.

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- The Alberta Wildlife Management Division works with the Alberta Conservation Association to develop a detailed status report for species determined to potentially need management attention—“at risk” or “may be at risk” species.
- The Scientific Subcommittee of the Endangered Species Conservation Committee receives the detailed status report to perform an independent biological assessment of the level of risk. The subcommittee’s recommendation regarding the level of risk is referred to the full committee.
- The Endangered Species Conservation Committee recommends the legal designation and protections for threatened and endangered species to the Minister of Sustainable Resource Development.
- The Minister of Sustainable Resource Development must decide whether to designate the species under the Wildlife Act. The Endangered Species Conservation Committee prepares and oversees the implementation of an initial conservation action statement for designated species identifying actions to be taken to conserve the species while a recovery plan is being developed.
- Risk categories include the following:
 - Extinct—a species that no longer exists.
 - Extirpated—a species that no longer exists in the wild in Alberta but occur elsewhere in the wild.
 - Endangered—a species facing imminent extirpation or extinction.
 - Threatened—a species that is likely to become endangered if limiting factors are not reversed.
 - Special concern—a species of special concern because of characteristics that make it particularly sensitive to human activities or natural events.
 - Data deficient—a species for which there is insufficient scientific information to support status designation.
- Recovery plans to be completed within 2 years of listing for threatened species, within 1 year for endangered species, and generally reviewed/revised every 5 years.

Province of British Columbia

- The Conservation Data Centre in the Ministry of Sustainable Resource Management annually assesses the degree of conservation risk for species for the purpose of identifying those most at risk, as well as to establish baseline ranks for each species. The Centre uses a standard set of criteria developed over 25 years by the international organization of NatureServe (formerly associated with the U.S. Nature Conservancy).
- Uses a global, national, and subnational rank for the species' range. Ranking assigns a risk of extinction score to each species. The Conservation Data Centre assigns the provincial rank solely on the basis of the status within British Columbia. NatureServe scientists assign the global and national ranks with guidance from various experts in North America.
- Compiles three lists of species—red, blue, and yellow—sorted by conservation risk. The red list includes species that are legally designated as endangered or threatened under the Wildlife Act, are extirpated, or are candidates for such designation. The blue list includes species not immediately threatened but of concern because of sensitivity to human activities or natural events. The yellow list includes all species not included on the red or blue lists.
- Risk categories include the following:
 - Extinct—a species that no longer exists.
 - Extirpated—a species that no longer exists in the wild in British Columbia but occurs elsewhere.
 - Endangered—a species facing imminent extirpation or extinction from British Columbia.
 - Threatened—a species that is likely to become endangered if limiting factors are not reversed.
 - Vulnerable—a species of special concern because of characteristics that make it particularly sensitive to human activities or natural events.
 - Not at Risk—a species that has been evaluated and found to be not at risk.
 - Indeterminate—a species for which there is insufficient scientific information to support a determination of status.

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- Recovery plans are to be completed within 2 years of listing for threatened species, and within 1 year for endangered species, and are generally reviewed/revised every 5 years.

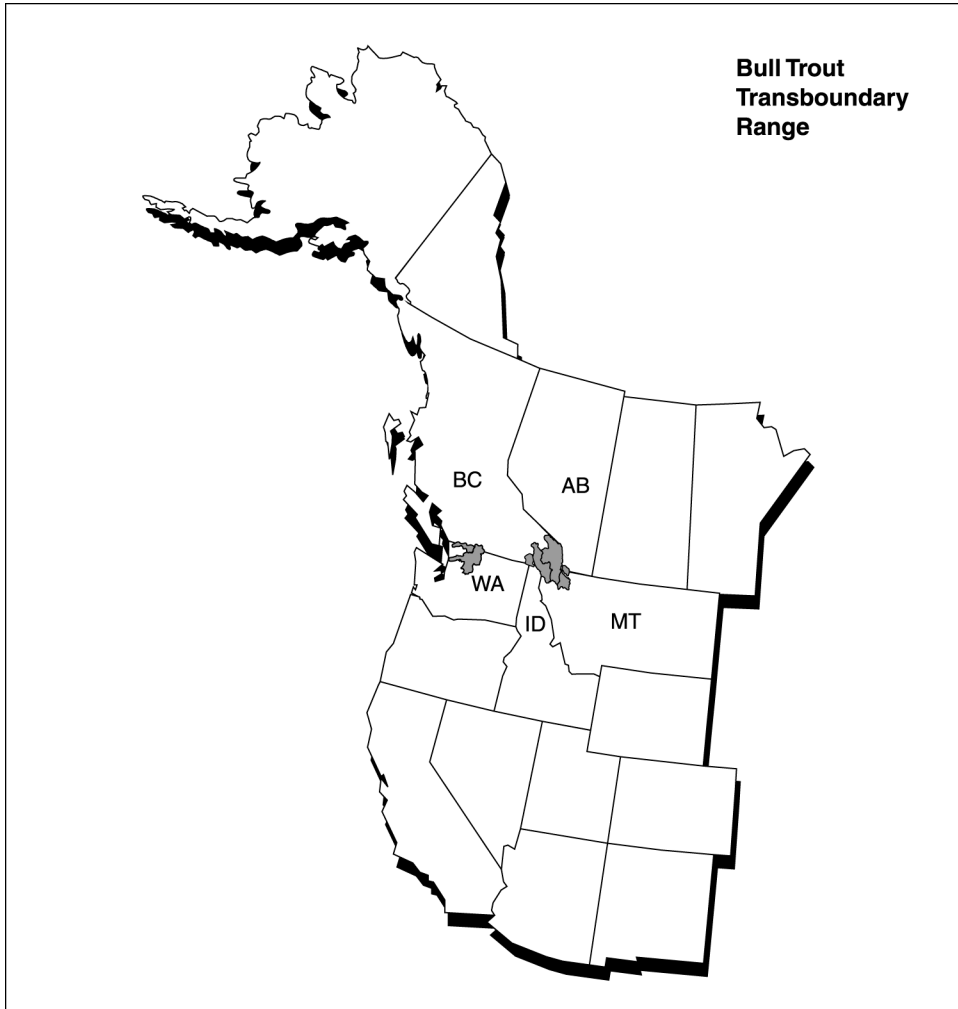
Overview of Species-Specific Information

To identify the United States and Canadian efforts for protecting, monitoring, and facilitating the eventual recovery of four transboundary species listed as threatened or endangered in the United States, we spoke with wildlife officials in the Provinces of Alberta and British Columbia and the four Fish and Wildlife Service recovery coordinators for the bull trout, grizzly bear, marbled murrelet, and woodland caribou. We discussed the transboundary ranges of the species, the special designation afforded the species by these governmental units, the threats to the species, the types of data collected to monitor the impacts on and the population trends of the species, the recovery and protection activities undertaken, and the coordination and cooperative efforts between these entities.

Presented below is an overview of the results of these discussions. In addition, we have included maps to provide the reader with an overview of the general geographical locations that transboundary populations of these species currently inhabit. The maps are intended only to provide the reader with a general reference to the locations we are discussing. The species' historic ranges are not indicated, nor are the maps drawn to scale. Also, while the species-specific information is not intended to be all-inclusive, it serves to demonstrate that wildlife officials in both countries engage in similar activities and programs aimed at the eventual recovery of these four species, and that they face similar obstacles in accomplishing these goals.

Bull Trout

Figure 1: Bull Trout’s Transboundary Range



Source: GAO.

Status Listing

United States	Threatened
Government of Canada	Not assessed
Province of Alberta	Special concern
Province of British Columbia	Vulnerable

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Threats to the Species

- Introduction of nonnative species results in predation, competition, displacement, and interbreeding.
- Habitat fragmentation caused by road building, culverts, dams, and/or weirs potentially resulting in the genetic isolation of the fish population.
- Habitat degradation and effects on water quality caused by dams and hydroelectric operations; dewatering of streams for irrigation purposes; and grazing, mining, legacy effects of lumbering practices, and road development.
- Legal and illegal fishing and increased accessibility to habitat by fishermen using available roads.

Data Collected and Used to Monitor Species Population

- Measuring population census, population trends, and range of habitat—data on redd (nests) counts, counts of fish at fish fences and by electro fishing and snorkeling surveys; monitoring of tagged fish, and tracking of implanted fish with radio telemetry; DNA analysis to assess species identification and genetic classification; and quality and quantity of habitat.
- Mortality factors—number of fish killed by environmental occurrences, number of legal fish harvested (creel counts); and law enforcement data on fish illegally harvested.

Efforts to Manage Species

- Recovery and protection activities—establish zero-take limits and catch-and release requirements; repair or redesign culverts, dams, and weirs; modify dam operations to allow for improved fish passage; redesign irrigation mechanisms; increase stream buffers to reduce siltation and lower water temperature; restrict the placement of forest roads to reduce access by fishermen; establish temporary seasonal road closures, stream closures, and/or adjust open season dates to protect bull trout breeding populations; restrict types of gear or bait used; watershed restoration activities such as restoring physical habitat and nutrient levels; and public outreach and education to foster efforts for protection of the species and the habitat.
- Coordination activities—British Columbia, Alberta, and Parks Canada participate on U.S. recovery teams; joint U.S. and Canadian research such as that being sponsored by Trout Unlimited (a group that focuses on trout conservation), the Bonneville Power Administration, and the Bureau of Reclamation; international symposiums resulting in documents dealing

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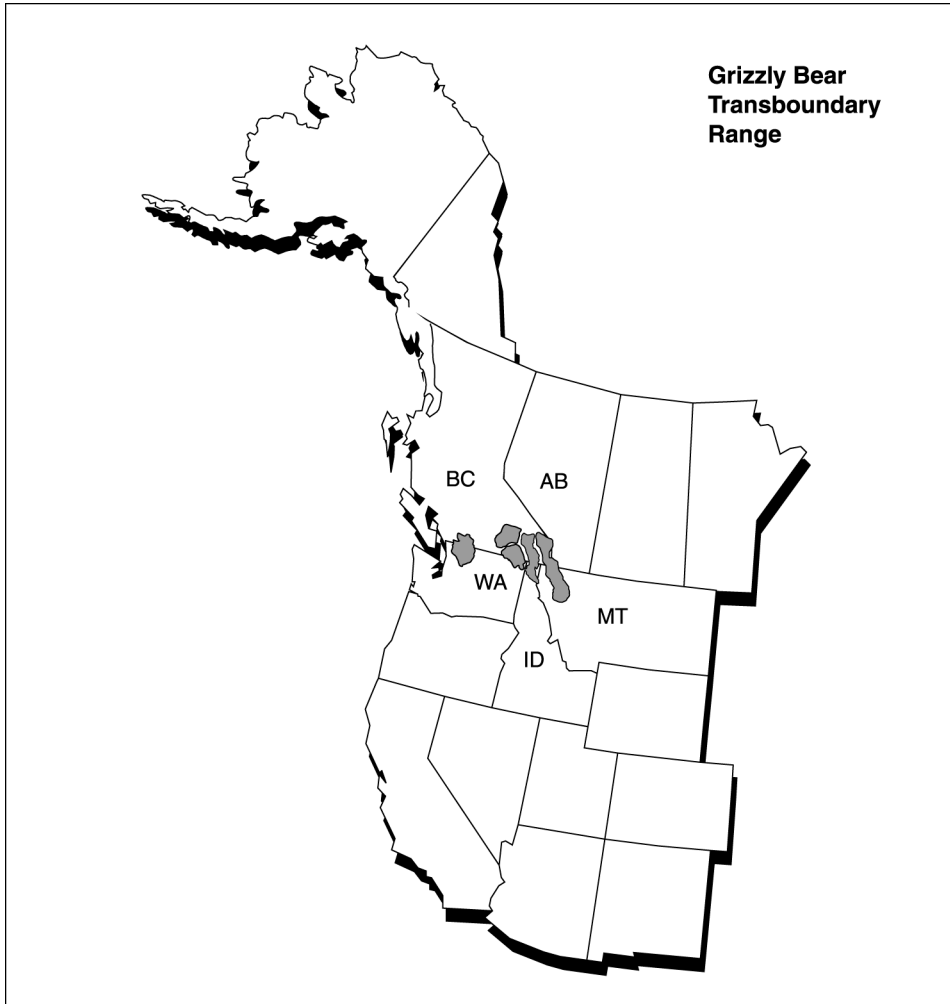
with international ecology and management of the bull trout; cooperative monitoring programs; joint workshops on monitoring and evaluation; and cooperation and communications at the technical level.

Obstacles to Assessment Efforts

- Inclement weather and instream conditions limit year-round data collection.
- Number of staff available to monitor is limited compared to the significant number of streams and number of distinct bull trout populations.
- Funding.

Grizzly Bear

Figure 2: Grizzly Bear's Transboundary Range



Source: GAO.

Status Listing

United States	Threatened
Government of Canada	Special concern
Province of Alberta	Under review
Province of British Columbia	Special concern

Threats to the Species

- Habitat degradation caused by mining, forestry, and agricultural practices.
- Habitat fragmentation caused by residential, commercial, and transportation development.
- Low reproductive rate.

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- Human activities—illegal hunting, recreation.

Data Collected and Used to Monitor Species Population

- Population estimates—credible bear sightings, DNA population inventories and radio-telemetry-based research, and annual sow with cub count.
- Population trends—data from radio-collars looking for survivorship, and reproductive rates.
- Mortality factors—number of bears killed by autos or trains, harvested legally (hunting) or illegally (poaching), destruction of problem bears, specimens found dead.
- Species' response to habitat changes—research on the effects of harvesting and road building, DNA analysis to measure mobility within the species' range, data from radio- and global-positioning satellite collars.

Efforts to Manage Species

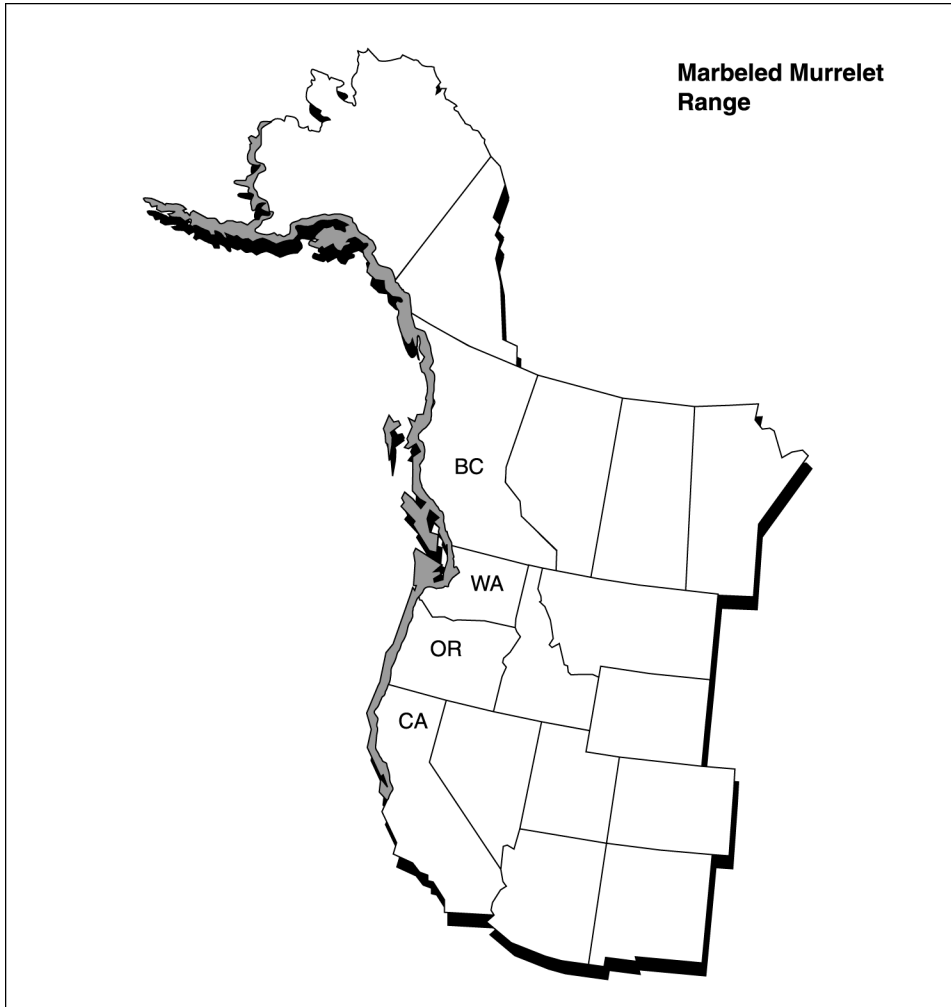
- Recovery and protection activities—community outreach and educational programs; elimination of, or restrictions on, hunting; identification, preservation, and protection of critical habitat; modification of forest plans to protect habitat; and modification of physical barriers.
- Coordination activities—joint participation in both U.S. and British Columbia recovery teams; joint participation in technical committees—such as the Interagency Grizzly Bear Committee, the Rocky Mountain Grizzly Bear Planning Committee, or the Grizzly Bear Scientific Advisory Committee; joint research and shared data; joint habitat management mapping efforts; and the Province of British Columbia's augmenting the U.S. population of grizzlies.

Obstacles to Assessment Efforts

- Limited funding and staff availability within agencies.
- Solitary species make opportunity for sightings difficult.
- Collars and collaring activities are expensive.
- Annual hibernation limits seasonal window for tracking and monitoring.

Marbled Murrelet

Figure 3: Marbled Murrelet’s Range



Source: GAO.

Status Listing

United States	Threatened
Government of Canada	Threatened
Province of Alberta	Not applicable
Province of British Columbia	Threatened

Threats to the Species

- Habitat losses and fragmentation caused by harvesting of old growth timber and fires. Existing trees may take more than 100 years to become old growth (old growth being trees 140 to 250+ years old).

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- Nest predation by crows, jays, ravens, squirrels, and mice.
- Oil spills—major occurrences.
- Entanglement in fishing nets while searching for food.
- Low reproductive rate.

Data Collected and Used to Monitor Species Population

- Population census and trends—“at sea” bird counts; marine radar counts; field surveys to determine habitat usage; capturing and banding to measure adult survival and to track movement; monitoring habitat and nesting use; developing habitat maps from satellite images and forest cover maps; and radio telemetry to monitor habitat use, nesting success, and movement.
- Mortality—observer surveys to determine number of birds caught in fishing nets, number of birds killed in major oil spills, and number of eggs or young found dead on the ground.

Efforts to Manage Species

- Recovery and protection activities—interagency implementation of the Pacific Northwest Forest Plan; establishing wildlife habitat protection measures in known nesting areas; modifying fishing nets to reduce entanglements; outlawing monofilament fishing nets in British Columbia; exchanging lands to protect habitat; Canadian timber purchasers voluntarily deferring the harvesting of old growth timber; encouraging use of habitat conservation plans; excluding net fishing in key murrelet concentration areas in the Puget Sound; and considering habitat in land use planning activities.
- Cooperative activities—joint participation in the Pacific Seabird Group and its Marbled Murrelet Technical Committee; international agreement on gill net fishers to minimize the number of birds caught in fishing nets; joint oil spill strategy to respond to spills; collaborative research efforts; annual and ad hoc workshops; informal communications to share program and research information; interagency teams to assess effectiveness monitoring; changing management actions at national and state parks—for example, changing the timing of operations, and finding better ways to manage garbage; using different silvicultural techniques to accelerate habitat growth; and the use of Pacific Seabird Group protocols for bird counts in forest surveys to better ensure the collection of reliable and consistent data.

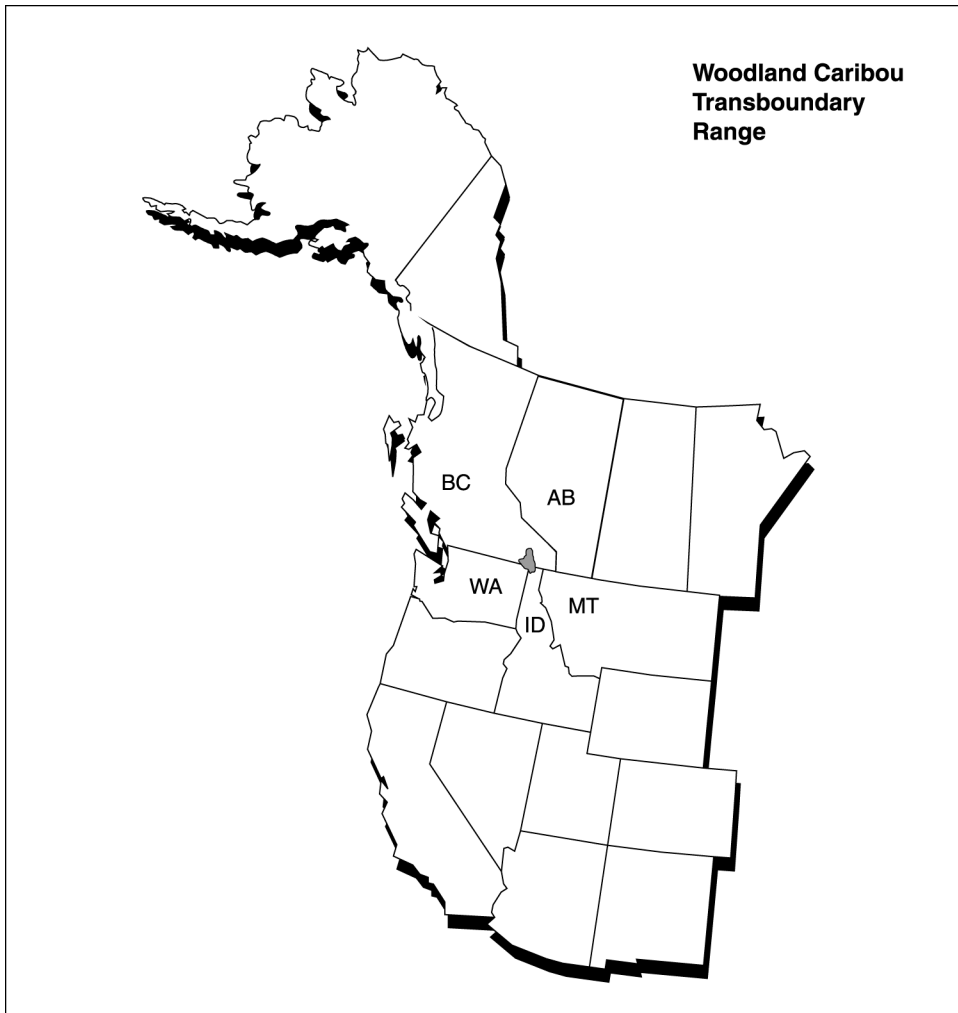
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Obstacles to Assessment Efforts

- Evasive species make it difficult to track because they travel at dawn and dusk.
- Individual nesting places difficult to locate because they are located high on a limb in old growth forests.
- Lack of scientific evidence on the extent of north/south migration and whether the species migrates across the border.
- Tagged birds may not fly inland to nest.
- Downsizing and reduced funding have decreased amount of research and increased the difficulty of obtaining implementation funding and attracting expertise.

Woodland Caribou

Figure 4: Woodland Caribou’s Transboundary Range



Source: GAO.

Status Listing

United States	Endangered
Government of Canada	Threatened ^a
Province of Alberta	Threatened ^b
Province of British Columbia	Threatened

^aThe government of Canada classifies the Southern Mountain population as “threatened” and the Northern Mountain National Ecological Area population as “special concern.” The Southern Mountain National Ecological Area population includes the herd that is transboundary.

^bAlberta does not share transboundary populations with the United States. The province’s populations of concern are shared with British Columbia.

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Threats to the Species

- Predation by cougars, potential threats by bears.
- Winter recreation—snowmobiles and helicopter skiing.
- Habitat degradation—cumulative effects of historical timber harvests and fire, logging on state and private lands, increased recreational access provided by forest road construction.
- Habitat fragmentation—roads and highways/timber harvests/wildfires.
- Poaching/accidental killings.
- Weather conditions potentially reduce food sources.

Data Collected and Used to Monitor Species Population

- Population census and population trends—data from radio collars and aerial sightings.
- Mortality factors—data from radio collars, law enforcement data on poaching, vehicle fatalities, specimens found dead.

Efforts to Manage Species

- Recovery and protection activities—predator management through white tail deer and cougar harvests, guidelines for protecting and managing caribou habitat to be considered in land use planning, hunting of caribou herds prohibited and hunting seasons for other species may be closed in caribou habitat to prevent accidental shootings, establishing park and wildlife management recovery areas in caribou habitat recovery areas, voluntary road closures to limit access to back country recreation and legislative closures implemented where necessary, restrictions on commercial recreation enterprises; reward systems for reporting poachers; and community outreach and hunter education programs.
- Coordination activities—Joint U.S./Canadian representation on the International Woodland Caribou Recovery Team, which meets semiannually and develops and implements recovery actions for the transboundary population; joint U.S./Canadian participation on the International Mountain Caribou Technical Committee which was established as an international multiagency group of researchers, biologists, resource managers, industry representatives, and other concerned parties interested in recovering transboundary and South Purcell populations; the sharing of technical information as needed and at semiannual meetings and the sharing of enforcement information; the

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undertaking of joint recreation management planning and strategies; states conduct aerial monitoring using Endangered Species Act funding and share information with the Fish and Wildlife Service and British Columbia; the exchanging of U.S. Forest Service land to protect caribou habitat; joint predator/prey research and management practices; and transplant efforts by Canada to supplement the U.S. caribou population.

Obstacles to Assessment Efforts

- Weather conditions affect ability to conduct population census by aerial monitoring.
- Differing public opinions on forest management and uses versus protection of the species.
- Funding.

Scope and Methodology

The United States/Canada Softwood Lumber Agreement expired in March 2001. As part of the preparation process for renegotiating the agreement, the U.S. Trade Representative requested public comment on softwood lumber trade issues between the United States and Canada and on Canadian softwood lumbering practices. The comments received included allegations that Canadian lumbering and forestry practices were affecting animal species with U.S./Canadian ranges that are listed as threatened or endangered in the United States. To consider these comments as well as to provide the U.S. Trade Representative with useful information in the renegotiations, the Department of the Interior, with U.S. Fish and Wildlife Service's assistance, prepared a conservation status report on selected species that may be affected by the new agreement. The status report presented summaries of information on eight transboundary species and reached preliminary conclusions of potential impact on four species.

We reviewed the information and the process that Interior used to develop the January 2001 report, and to provide updated information concerning several specific transboundary species. Specifically, we describe (1) the supporting information that the U.S. Fish and Wildlife Service used, and the process it followed when compiling its information for the Department of the Interior's January 2001 conservation status report on selected threatened or endangered species with U.S./Canada ranges; and (2) existing U.S. and Canadian efforts aimed at protecting, monitoring, and facilitating the eventual recovery of four transboundary species—the bull trout, grizzly bear, marbled murrelet, and woodland caribou—listed as threatened or endangered in the United States.

Department of the Interior's January 2001 Report for the U.S. Trade Representative

To determine what information FWS used when assisting the Department of the Interior to prepare the January 2001 report, we spoke with the FWS official who compiled FWS' input for the report and reviewed recovery plans, *Federal Register* species listings, and species background materials. We traced the content of the January report for the four species back to the respective recovery plans or listing documents and discussed the other sources of information not readily identified in the recovery plans or listing documents with the FWS official. To determine whether the content of the January 2001 report generally reflected the current status of the four species, we reviewed the report with the four species recovery coordinators and discussed whether more recent information should have been included.

To determine whether the January 2001 report considered information external to FWS, we reviewed the public comments received by the U.S. Trade Representative relative to the U.S./Canada Softwood Lumber Trade Agreement and discussed whether the FWS official considered these comments in compiling the report. In addition, we contacted representatives from environmental organizations and industry associations to determine whether they were aware of studies that existed

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when the FWS compiled the January 2001 report that assessed the impacts of Canadian lumber practices on the U.S. populations of the four transboundary species. The organizations provided us with some known studies, which we discussed with the FWS official. We discussed with the FWS official whether the information contained in these studies had been considered when compiling the January 2001 report or if the consideration of this information would have changed the report's content or focus.

To determine the process that FWS and Interior followed when compiling the January 2001 conservation status report, we met with the Interior and FWS officials involved in preparing the report, obtained documents relating to the development of the report, and developed a timeline of the tasks and activities involved in producing the report for the U.S. Trade Representative.

U.S./Canadian Efforts to Protect, Monitor, and Recover Four Transboundary Species

To determine the U.S. efforts to protect, monitor, and recover the four transboundary species, we met with FWS regional officials and recovery coordinators responsible for the bull trout, grizzly bear, marbled murrelet, and woodland caribou. To determine the Canadian efforts, we met with federal and provincial fish and wildlife officials in Alberta and British Columbia involved with the four species. Specifically, we met with representatives of the federal Canadian Wildlife Service and Parks Canada; Alberta provincial representatives of the Fish and Wildlife Division, Sustainable Resource Development; and British Columbia provincial representatives of the (1) Biodiversity Branch, Ministry of Water, Land, and Air Protection; (2) Ministry of Forests; and (3) Conservation Data Centre.

From both the U.S. and Canadian officials, we obtained information on the pertinent laws, agreements, and processes affecting their programs undertaken to protect and recover the various species. In addition, we obtained general background on the respective species and obtained evaluative and monitoring data. Specifically, for each species, we determined the

- transboundary range of the U.S./Canadian populations,
- special designation afforded the species,
- threats to the species,
- types of data collected and used to establish and monitor baseline population data and trends,
- types of programs or activities undertaken to protect and recover the species,
- coordination activities between the United States and Canada, and

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- obstacles faced by the governmental units in assessing and monitoring the species.

Data Limitations

While the above information reflects a broad perspective of U.S. and Canadian fish and wildlife operations, we did not undertake a detailed assessment of program implementation on either side of the border.

In addition, in the species-specific information in enclosure V, we included maps to provide the reader with a general geographical reference for the transboundary ranges that these species currently inhabit. The maps are intended only to provide the reader with a general reference to the locations we are discussing. The historic ranges are not included nor are the maps fully drawn to scale.

Finally, we included the marbled murrelet in our assessment despite the fact that scientific evidence is unavailable to support that the species is truly trans migratory. As such, the map for the marbled murrelet depicts its entire range rather than a transboundary range as was done with the other species.

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