

Foundational Documents

The following is an annotated bibliography of the documents reviewed for background in preparation of the Strategic Conservation Framework. These documents helped shape the framework and provide a foundation for its direction.

A.L. Haak, J.E. Williams, D. Isaak, A. Todd, C.C. Muhlfeld, J.L. Kershner, R.E. Gresswell, S.W. Hostetler, and H.M. Neville. 2010. *The Potential Influence of Changing Climate on the Persistence of Salmonids of the Inland West*. U.S. Geological Survey, Open-File Report 2010–1236. 84 p.

A broad-scale analysis of climate change risk factors determined by the integration of a changing climate with varying landscape conditions such as elevation and aspect. Existing watershed, riparian, and stream conditions were also considered at local scales in determining risk from climate change. Climate change risk factors were summarized for each of the following species and subspecies: westslope cutthroat trout (*Oncorhynchus clarkii lewisi*), Yellowstone cutthroat trout (*O. clarkii bouvieri*), Lahontan cutthroat trout (*O. clarkii henshawi*), Bonneville cutthroat trout (*O. clarkii utah*), Colorado River cutthroat trout (*O. clarkii pleuriticus*), greenback cutthroat trout (*O. clarkii stomias*), Rio Grande cutthroat trout (*O. clarkii virginalis*), Apache trout (*O. gilae apache*), Gila trout (*O. gilae gilae*), and Montana Arctic grayling (*Thymallus arcticus*).

Association of Fish and Wildlife Agencies. 2010. *Measuring the Effectiveness of State Wildlife Grant Projects: Phase I Report*. 82 p.

The State Wildlife Grants (SWG) Program is the core federal program for preventing future endangered species listings and is a principal source of funding to implement and revise congressionally-mandated State Wildlife Action Plans (SWAPs). The development of SWAPs in every state and territory was a historic milestone which is helping state fish and wildlife agencies along with their partners improve management for the full array of fish and wildlife under their jurisdiction.

The Association of Fish and Wildlife Agencies (AFWA) Teaming with Wildlife (TWW) Committee formed the Effectiveness Measures Working Group (Working Group) in September 2009 to develop and test a framework for identifying effectiveness measures for SWG funded projects. The Working Group included representatives from six state fish and wildlife agencies and six conservation partners. This report describes the framework and the Working Group's recommendations for its voluntary implementation

Association of Fish and Wildlife Agencies, U.S. Fish and Wildlife Service. (not dated) *State Wildlife Action Plans from Vision to On-the-Ground Action: Working together to prevent wildlife from becoming endangered*. 116 p.

A summary of the results from state wildlife action plans and case studies of partnerships and success.

Bonneville Power Administration, Army Corps of Engineers, Bureau of Reclamation. June 2010. *Endangered Species Act Federal Columbia River Power System 2010-2013 Implementation Plan*. 299 p.

The 2010-2013 Implementation Plan summarizes the significant actions that will be implemented by the Action Agencies from 2010 through 2013 to protect ESA-listed salmon and steelhead affected by the operation of the FCRPS. Work to be performed is summarized in this Implementation Plan and supported by a detailed list of projects. The purposes of the Implementation Plan are to:

- Assign agency responsibility and accountability for implementing specific actions.
- Determine and document strategies, priorities, actions, and timetables.
- Facilitate and measure agency progress toward performance standard and targets.
- Provide a basis for agency management and progress reporting.
- Provide a dynamic framework for adapting actions and achieving results over the period of the Implementation Plan.
- Provide an opportunity for the Regional Implementation Oversight Group (RIOG) and other regional parties to review the Action Agencies' plans and actions.

Consistent with the biological opinion (BiOp), the actions described in this plan are focused on: (1) achieving biological performance standards, (2) achieving programmatic performance targets, and (3) addressing factors that limit certain life stages for specific evolutionarily significant units (ESUs) or distinct population segments (DPSs) of salmon and steelhead. The plan is structured around the Reasonable and Prudent Alternative (RPA) table used in the BiOp and for annual BiOp progress reporting. Although the plan covers a four-year time frame (2010-2013), the Action Agencies will hold regional discussions as results and progress are evaluated through the annual progress reports. If needed, mid-course modifications may be made to implementation actions; these modifications will be detailed in the annual progress reports. Adaptive management will continue to be used to make adjustments to actions based on new scientific information and in response to changing circumstances, to meet biological performance objectives effectively and efficiently.

Bracke, Marsha and Maggie McCaffrey. 2010. *Lessons Learned Report: Ecoregional Assessment Processes*. U.S. Institute for Environmental Conflict Resolution.

The Bureau of Land Management (BLM) recognizes that our nation's public lands are facing increasingly complex and widespread environmental challenges that transcend traditional management boundaries. They are developing a landscape-scale management approach to better understand these challenges and support balanced stewardship of these lands and their diverse resources. To inform the development of their landscape-scale approach, the BLM is examining lessons learned from prior efforts at landscape-scale assessment and management. These lessons learned offer important insights for the BLM and their partners in developing an improved and more consistent approach to *ecoregional assessment* and *ecoregional direction* that will serve as a foundation for coordinated management of key resources.

Britten, M., E. W. Schweiger, B. Frakes, D. Manier, and D. Pillmore. 2007. *Rocky Mountain Network Vital Signs Monitoring Plan*. Natural Resource Report NPS/ROMN/NRR-2007/010. National Park Service, Fort Collins, Colorado.

This report identifies priority resources for National Park Service monitoring within the Rocky Mountains, and describes protocols.

Brooks, Thomas. 2010. Chapter 11, Conservation Planning and Priorities. In Sodhi and Ehrlich, eds. *Conservation Biology for All*. Oxford University Press. p. 199-219.

In this chapter, Brooks reviews and evaluates conservation planning and priority-setting across the world and examines the trends and opportunities in landscape-scale conservation planning.

Conservation Measures Partnership. 2007. *Open Standards for the Practice of Conservation*. 40 p.

This document contains an overview of the Conservation Measures Partnerships *Open Standards for the Practice of Conservation, Version 2.0*. These standards are the product of inputs, field tests, discussions, and debates among many CMP members and their partners. This version of the *Open Standards* comes three years after the release of Version 1.0 and reflects how thinking has evolved over time as various conservation organizations within and outside of CMP have tried to operationalize the *Standards*.

Garrett, L. K., T. J. Rodhouse, G. H. Dicus, C. C. Caudill, and M. R. Shardlow. 2007. *Upper Columbia Basin Network vital signs monitoring plan*. National Resource Report NPS/UCBN/NRR—2007/002. National Park Service, Fort Collins, Colorado.

This report identifies priority resources for National Park Service monitoring within the Upper Columbia Basin, and describes protocols.

Glick, P., B.A. Stein, and N.A. Edelson, editors. 2011. *Scanning the Conservation Horizon: A Guide to Climate Change Vulnerability Assessment*. National Wildlife Federation, Washington, D.C.

The ecological impacts associated with climate change do not exist in isolation, but combine with and exacerbate existing stresses on our natural systems. Understanding those interactions will be critical to designing effective conservation measures. Conservation in an era of climate change will require that we not only acknowledge and address the environmental problems of the past but also anticipate and prepare for those of an increasingly uncertain future. Developing and implementing effective adaptation strategies first requires an understanding of the potential impacts of climate change on our natural world. To provide the best possible chance for conserving species and ecosystems in a rapidly changing climate, it is essential that managers have the ability to both identify what we need to do differently in the future, as well as which existing strategies and activities continue to make sense from a climate adaptation perspective. Vulnerability assessments are a key tool for informing adaptation planning and enabling resource managers to make such judgments. *Scanning the Conservation Horizon* is designed to assist fish and wildlife managers and other conservation and resource professionals to better plan, execute, and interpret climate change vulnerability assessments.

Government of Alberta. 2002. *Albertans and Climate Change: Taking Action*. Alberta, Canada. 46 p.

In February 2002, the Alberta government released *Albertans and Climate Change: A Strategy for Managing Environmental and Economic Risks*. This strategy outlined the government's climate change approach of influencing the development of an effective national climate change response, while at the same time, taking action within the province to reduce greenhouse gas emissions. To provide further detail, in May 2002 the province released *Albertans & Climate Change: A Plan for Action*. This draft for discussion outlined how the Alberta government

proposed to make an effective contribution to global greenhouse gas emissions reductions. After integrating input from stakeholders and the public, *Albertans and Climate Change: Taking Action* provides the guideposts and signals that define how Alberta will tackle the climate change challenge. This finalized plan establishes the framework and the specific actions the province will take on its long-term journey towards reduced greenhouse gas emissions.

Government of British Columbia. (not dated) *Climate Action Plan*. British Columbia, Canada. 132 p.

The Climate Action Plan for British Columbia outlines strategies including multi-sector approaches to greenhouse gas emission reductions, measuring progress, and adaptation strategies.

Government of British Columbia. (not dated) *British Columbia: Climate Action for the 21st Century*. British Columbia, Canada. 30 p.

This is a progress report on the 2008 Climate Action Plan for the province of British Columbia, Canada that outlines targets and policies including: reduction of greenhouse gas emissions, revenue-neutral carbon tax, zero-net deforestation, building green communities with LEED certified building and transit, investments in clean energy, and adaptation to climate change.

Government of British Columbia, Ministry of the Environment, Ecosystems Branch Environmental Stewardship Division. November 2009. *Conservation Framework: Conservation Priorities for Species and Ecosystems, Primer*. British Columbia, Canada. 14 p.

Faced with the increasing number of species and ecosystems at risk and escalating threats such as climate change, resource managers and practitioners need a way to prioritize conservation challenges in order to allocate limited resources. The Conservation Framework provides a set of decision support tools to enable collaboration between government and non-government resource managers and practitioners using clearly defined criteria to: (1) prioritize species and ecosystems for conservation; and (2) determine the most appropriate and effective management actions. The Conservation Framework is designed to optimize allocation of resources, including staff time and dollars. In the past, priorities were assigned using lists designed for categorizing the status of species and ecosystems based on extinction risk. To better manage for species and ecosystems of conservation concern, British Columbia developed the Conservation Framework to optimize allocation of resources, including staff time and dollars. This is an approach that:

- is based on specific goals to guide conservation efforts for species and ecosystems of conservation concern;
- addresses the issue of jurisdictional rarity (where a species' range "drifts" across a jurisdictional boundary);
- is proactive for species and ecosystems that are not yet at risk but are experiencing serious downward population trends;
- adequately addresses British Columbia's stewardship responsibility for globally important species and ecosystems;
- is based on the best available scientific information to quickly and transparently prioritize species and ecosystems and assign them to appropriate management actions.

Graumlich, L. and W.L. Francis (Eds.). 2010. *Moving Toward Climate Change Adaptation: The Promise of the Yellowstone to Yukon Conservation Initiative for addressing the Region's Vulnerabilities*. Yellowstone to Yukon Conservation Initiative. Canmore, AB.

This report explores the anticipated impacts of climate change on Rocky Mountain ecosystems and discusses science-based strategies for adaptation.

Gray, S., C. Andersen. 2009. *Assessing the Future of Wyoming's Water Resources: Adding Climate Change to the Equation*. Environment and Natural Resources. University of Wyoming, Laramie, WY, 28 pp. (A pdf version of this publication is available at www.uwyo.edu/enr.)

This report is a summary of current scientific knowledge about the implications of climate change for water resources in Wyoming and the West. This project is the result of many discussions and input by the Ruckelshaus Institute Board, resource managers, stakeholders, legislators, and Governor Freudenthal's office about the need for a summary report on Western water resources, and the concerns about future availability of water.

H. John Heinz III Center for Science, Economics and the Environment. 2009. *Measuring the Results of Wildlife Conservation Activities*. 129 p.

This report has been written to provide state wildlife agencies and their partners in the United States with a suite of tools and approaches that can be used to develop performance measures for the new State Wildlife Action Plans. The recommendations in this report draw from existing bodies of knowledge and practice, including ecosystem monitoring and programmatic evaluation. The tools and approaches contained in this report are broadly applicable to other areas of wildlife management and natural resource conservation.

Idaho Department of Lands (and other partners). June 2010. *Idaho State Assessment of Forest Resources: Issues, Discussion, Data, Methodologies, and Maps*. 75 p.

The Statewide Assessment of Forest Resources was developed by the Idaho Department of Lands in partnership with many other agencies and organizations. This assessment is a key element in the redesign of the USDA Forest Service's State and Private Forestry, and is a requirement within the 2008 Farm Bill for states receiving funding through the US Forest Service for State and Private Forestry programs. Its purpose is to ensure that federal and state resources are focused on landscape areas with the greatest opportunity to address shared priorities and achieve measurable outcomes.

The Statewide Assessment provides a geospatial analysis of conditions and trends for all forested lands in Idaho. It delineates rural and urban forest areas that are the highest priority for projects and investments administered through State and Private Forestry programs. Threats to and benefits from forest resources were identified and form the foundation of the analysis. A companion Statewide Forest Resource Strategy will be developed to address the issues and priority areas identified in this assessment. The Resource Strategy will identify activities and approaches for protection, restoration and enhancement of forest resources in priority landscapes.

Interagency Grizzly Bear Committee, Public Lands Wildlife Linkage Taskforce. June 2004. *Identifying and Managing Wildlife Linkage Approach Areas on Public Lands. A Report to the Interagency Grizzly Bear Committee. 39 p.*

This report potentially serves four functions. First, it provides a useful tool to public land managers for their use in developing and revising land and resource management plans. By using this tool, land managers can ensure that their plans will maintain wildlife linkage so far as public lands are concerned. Second, the report presents the results of wildlife linkage assessments in three specific high priority areas in northern Idaho and western Montana (U.S. Highway 95, Montana Highway 200 and U.S. Interstate 90). Managers in these areas may choose to incorporate the results of these case study assessments into their land management and project-level planning to meet the objective of providing for wildlife linkage. Third, the protocols developed in this report can be used as a template by agencies in other locations throughout the northern Rockies, the United States, and even other countries to assist in maintaining healthy wildlife populations where habitat fragmentation due to human development in fracture zones is a threat. Fourth, this report is complimentary to and will provide supportive information for the IGBC private lands and highways linkage taskforces as they continue to pursue their work with private landowners and highway structures.

Intermountain West Joint Venture. 2005. *Coordinated Bird Conservation Plan. 94 p.*

This Plan presents a summary of the coordinated needs of all priority birds in the Joint Venture. Their planning focal points are key geographies where priority birds and priority habitats come together. Conservation projects will be generated within these areas. Partners used existing data to focus conservation efforts on priority habitats. The challenge is to combine the best information and the best science with conservation opportunity to be most effective and most efficient with conservation expenditures. This Plan is a summary of the eleven State Coordinated Bird Habitat Conservation Plans and includes GIS mapping and analysis products.

Kumar, Praveen, Gary Parker, Jim Best, Marcelo Garcia, Bruce Rhoads, Michelle Wander, Jeff Nittrouer, Robert Darmody, Arthur Schmidt, Murugesu Sivapalan, Jonathan Greenberg (Univ. of California, Davis), Robert Holmes (USGS). 2011. *RAPID: Mississippi Flood of 2011 - Investigation of Initial Impact on the Landscape.*

An example of landscape-level rapid response to address ecosystem emergencies. The flood event presents a unique scientific opportunity to understand how events of extreme magnitude impact the landscape in terms of the morphology and environment. The data collected will allow an assessment of large episodic events, such as the present Mississippi flood, and how they shape the long-term river morphology and the surrounding floodplains and the temporal timescale of the impact on the flow and transport dynamics. The proposed effort will also characterize the impact of large floods on landscapes resulting from controlled (or engineered) breach over spillways and uncontrolled breach of levees. Thus the datasets will serve as a basis of intensive investigations that will have significant scientific, engineering, and policy relevance.

Miller, D.M., Finn, S.P., Woodward, Andrea, Torregrosa, Alicia, Miller, M.E., Bedford, D.R., and Brasher, A.M. 2010. *Conceptual ecological models to guide integrated landscape monitoring of the Great Basin*. U.S. Geological Survey Scientific Investigations Report 2010-5133, 134 p.

The Integrated Landscape Monitoring Pilot Project (ILM) was developed by the U.S. Geological Survey (USGS) in response to the need of its partner agencies for a monitoring and predictive capability that addresses changes in broad landscapes and waterscapes. Human communities and needs are nested within landscapes formed by interactions among the hydrosphere, geosphere, and biosphere. Understanding the complex processes that shape landscapes and deriving ways to manage them sustainably while meeting human needs require sophisticated modeling and monitoring. The long-term goals of the ILM are to

1. Identify, evaluate, and validate system components that are indicators of landscape change;
2. Provide feedback to land managers on the results of management actions in the context of ecosystem change through synthesis of data, models, and other decision support tools;
3. Define the unique ability of USGS to respond to customer needs in the area of landscape monitoring; and
4. Lay out a vision for the future that will make use of USGS' capabilities to design and implement monitoring networks, understand and model ecosystem change, and forecast landscape change.

Montana Department of Fish, Wildlife, and Parks. 2005. *Montana's Comprehensive Fish and Wildlife Conservation Strategy*. 658 p.

This is Montana's contribution to the nationwide effort to take a broad look at America's fish and wildlife. This Comprehensive Fish and Wildlife Conservation Strategy (CFWCS) will bring Montana a step closer to securing long-term federal funding needed to conserve and manage hundreds of species that fall in the conservation gap between the state's major game animals and those that are threatened or endangered. This document identifies Montana's critical wildlife habitats, the animals that need special attention, and it aims to keep fish and wildlife management decisions in the hands of Montana citizens by keeping species from becoming threatened or endangered.

Montana Department of Fish, Wildlife, and Parks. *Montana's Crucial Areas Assessment and Planning Tool*.

The Assessment is building upon the CFWCS approach by analyzing and ranking the landscape for its value to "species and habitats of greatest conservation need" which will now include socioeconomic valued species, habitat integrity and field staff biological interpretation.

1. Data layers identified, ranked and prioritized for Montana's landscape for crucial habitats and connectivity for their biological importance:
 - a. Terrestrial game and sport fish; Species of Concern and Species Richness; habitat metrics for integrity, riparian and wetlands. A Connectivity Assessment including corridors and linkage zones for identified focal species will occur in 2010.
 - b. Recreational use and economic value and designated/protected lands.
2. "Risk" Assessments" data layers were identified for energy including: oil and gas, wind and transmission; land use and residential growth, transportation and climate change

3. Management Guidelines for each risk category were developed to provide clearer guidance on how to avoid or mitigate negative impacts to fish, wildlife and recreation resources.
4. A web-based “Pre-planning tool ” that exposes the results of the Assessment will be publicly available through the FWP Web site <http://fwp.mt.gov>. in the spring 2010.
5. Incorporation and integration of the Assessment products into the planning and management processes of state, local and federal governments; organizations and industry.
6. Update and revise Montana’s CFWCS (State Wildlife Action Plan).

Montana Department of Natural Resources and Conservation. 2010. *Montana Statewide Forest Resource Strategy*. 34 p.

In 2009-2010, Montana Department of Natural Resources and Conservation (DNRC) conducted their Statewide Assessment of Forest Resources. This “Assessment Model” covered all forestland, regardless of ownership type, and was accomplished using geographic information system (GIS) analytic techniques. The Montana Statewide Assessment Working Group, a consortium of over 40 interested stakeholders, developed 11 separate sub-model layers based on the National Guidance objectives. Results of the analysis will direct the future deployment of the 2007 Farm Bill programs as they relate to planning, information and education, technical assistance or financial assistance activities and may be used to demonstrate the value of forests and forestry on the regional economy, environmental health, and quality of life. This analysis provides insight where future S&PF Programming may be most beneficial.

National Ecological Assessment Team. 2006. *Strategic Habitat Conservation: Final Report of the National Ecological Assessment Team*. U.S. Geological Survey, U.S. Fish and Wildlife Service. 45 p.

Across the conservation community, species and habitat conservation increasingly rely on landscape approaches that integrate scientific information with management decisions. The tools and language of conservation are evolving, and using consistent and broadly understood methods will improve our ability to succeed. The National Ecological Assessment team included a mix of USFWS and USGS technical and policy experts focused on identifying how best to prioritize and make trust resource management decisions. This report describes the process for strategic habitat conservation planning.

Oregon Department of Fish and Wildlife. 2006. *Oregon Conservation Strategy*. 291 p.

With the creation of this Oregon Conservation Strategy, Oregon has its first overarching state strategy for conserving fish and wildlife. The Conservation Strategy is an effort to use the best available science to create a broad vision and conceptual framework for long-term conservation of Oregon’s native fish and wildlife, as well as various invertebrates and native plants. As a guide to conserving the species and habitats that have defined the nature of Oregon, this strategy can help ensure that Oregon’s natural treasures are passed on to future generations. The Conservation Strategy emphasizes proactively conserving declining species and habitats to reduce the possibility of future federal or state listings. It is not a regulatory document, but instead presents issues and opportunities, and recommends voluntary actions that will improve the efficiency and effectiveness of conservation in Oregon.

Oregon Department of Forestry. 2010. *Oregon's Forest Resource Strategy Federal Fiscal Years 2011 thru 2015 Coordinated and Strategic Investment of USDA Forest Service State and Private Forestry Programs*. 67 p.

The purpose of Oregon's Forest Resource Strategy is to coordinate the investment of federal USDA Forest Service State and Private Forestry programs with other federal, state and non-governmental programs so as to leverage their combined effectiveness in addressing the following priority forestry issues identified in Oregon's Statewide Forest Assessment.

- Communities at Risk of Wildfire
- Maintaining the Forestland Base
- Diversity of Upland Habitats
- Invasive Species
- Quality of Aquatic Habitats

The USDA Forest Service State and Private Forestry programs that are within the Resource Strategy's scope are: Community Forest, Forest Health Protection, Forest Legacy, Forest Stewardship, National Fire Plan, State Fire Assistance, Tree Improvement, Urban and Community Forestry, Voluntary Fire Assistance, and Wildland-Urban Interface. In addition, the Resource Strategy contains the required components and elements to fully described Oregon's Forest Legacy Program and replaces Oregon's 2001 Assessment of Need. The Resource Strategy proposes specific ideas about how State and Private Forestry programs can be used in coordination with each other over the next 5 years and identifies the funding resources needed for implementation. Strategic program delivery is described with respect to the priority forest areas identified in Oregon's Statewide Forest Assessment.

Prairie Conservation Forum. 2011. *Alberta Prairie Conservation Action Plan: 2011-2015*. Lethbridge, Alberta. 28 p.

This report outlines the conservation strategies and actions for the Alberta portion of the North American Great Plains.

Renner, Cheryl. 2010. *Large Scale Forest Fuels Projects and Collaborative Groups Improvement Study: Analysis of a Survey Conducted for the Western Governors' Association's Forest Health Advisory Committee*. Renner Associates. 37 p.

The Western Governors' Association's Forest Health Advisory Committee (FHAC) sought answers to questions on how large-scale forest treatment collaboratives are doing throughout the West. They were particularly interested in finding out where groups of different stakeholders were finding "zones of agreement," what successes they are having, and what barriers they face. In February, 2010 we undertook a survey of representatives of large scale treatment collaboratives throughout the West. This paper presents the results of the interviews. The paper presents a picture, or a "temperature taking," of how things are going in collaboratives in 2010.

Rich, T. D., C. J. Beardmore, H. Berlanga, P. J. Blancher, M. S. W. Bradstreet, G. S. Butcher, D. W. Demarest, E. H. Dunn, W. C. Hunter, E. E. Iñigo-Elias, J. A. Kennedy, A. M. Martell, A. O. Panjabi, D. N. Pashley, K. V. Rosenberg, C. M. Rustay, J. S. Wendt, T. C. Will. 2004. *Partners in Flight North American Landbird Conservation Plan*. Cornell Lab of Ornithology. Ithaca, NY. 36 p.

This plan constitutes a summary of issues that affect landbirds across large areas of the U.S. and Canada. It illustrates the interconnectedness of all regions of North America and highlights the roles that each portion of the continent has to play in bird conservation.

Rieman, Bruce E.; Isaak, Daniel J. 2010. *Climate change, aquatic ecosystems, and fishes in the Rocky Mountain West: Implications and alternatives for management*. Gen. Tech. Rep. RMRS-GTR-250. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 46 p.

Anthropogenic climate change is rapidly altering aquatic ecosystems across the Rocky Mountain West and may detrimentally impact populations of sensitive species that are often the focus of conservation efforts. The objective of this report is to synthesize a growing literature on these topics to address the following questions: (1) *What is changing* in climate and related physical/hydrological processes that may influence aquatic species and their habitats? (2) *What are the implications* for fish populations, aquatic communities, and related conservation values? (3) *What can we do about it?* In many instances, proactive efforts may help populations adapt to climate change; but elsewhere, transitions of aquatic ecosystems to alternative states may need to be facilitated. The magnitude of the challenges posed by climate change makes collaborative efforts essential among resource disciplines, agencies, and the public.

Rumsey, C., M. Wood, B. Butterfield, P. Comer, D. Hillary, M. Bryer, C. Carroll, G. Kittel, K.J. Torgerson, C. Jean, R. Mullen, P. Iachetti, and J. Lewis. May 2004. *Canadian Rocky Mountains Ecoregional Assessment, Vol. 1*. The Nature Conservancy and the Nature Conservancy of Canada. 88 p.

The ecoregional assessment identifies portfolio sites of conservation priority along with threat assessment, strategies for conservation throughout the ecoregion, strategies for connectivity among portfolio sites, and identified research gaps.

Rumsey, C., M. Wood, B. Butterfield, P. Comer, D. Hillary, M. Bryer, C. Carroll, G. Kittel, K.J. Torgerson, C. Jean, R. Mullen, P. Iachetti, and J. Lewis. 2003. *Canadian Rocky Mountains Ecoregional Assessment, Volume Two: Appendices*. Prepared for The Nature Conservancy and the Nature Conservancy of Canada. 247 p.

This appendix to the ecoregional assessment includes specific descriptions of the portfolio sites, species status, and other analyses.

Rumsey, C., M. Wood, B. Butterfield, P. Comer, D. Hillary, M. Bryer, C. Carroll, G. Kittel, K.J. Torgerson, C. Jean, R. Mullen, P. Iachetti, and J. Lewis. 2003. *Canadian Rocky Mountains Ecoregional Assessment, Volume Three: Conservation Areas Descriptions*. Prepared for The Nature Conservancy and the Nature Conservancy of Canada. 97 p.

This volume more specifically describes each conservation area in the portfolio.

Runge, M.C., J.F. Cochrane, S.J. Converse, J.A. Szymanski, D.R. Smith, J.E. Lyons, M.J. Eaton, A. Matz, P. Barrett, J.D. Nichols, and M..J. Parkin. 2011. An Overview of Structured Decision Making, Revised Edition. U.S. Fish and Wildlife Service, National Conservation Training Center. Shepherstown, WV.

A workbook from the USFWS training program on Structured Decision Making that describes the steps in the process and its applications.

Skidmore, P.B. 2006. *Assessment of Freshwater Systems in Washington State*. The Nature Conservancy, Seattle, WA.

The Nature Conservancy has conducted this assessment of freshwater biodiversity as a planning resource for developing conservation goals, setting priorities and choosing strategies to achieve these goals.

South Saskatchewan Regional Advisory Council. Advice to the Government of Alberta for the South Saskatchewan Regional Plan.

This document describes the South Saskatchewan Regional Advisory Council's (RAC) advice to the Government of Alberta, as a response to the *Terms of Reference for Developing the South Saskatchewan Region*. The creation of the *South Saskatchewan RAC's Advice to the Government of Alberta for the South Saskatchewan Regional Plan* (RAC advice document) completes a key stage of work. Its content will inform the second phase of public, stakeholder and aboriginal consultation and the development of the SSRP. The regional vision statement, principles, outcomes, objectives and recommendations outlined in this report are highly interrelated and intended to be considered together as a complete suite.

Alberta's Land-use Framework sets out a new approach to managing the province's land and natural resources. Released in December 2008, the Land-use Framework provides a decision-making blueprint for sustaining a growing economy while balancing social and environmental goals. It establishes the following three interrelated and equally important provincial outcomes:

- Healthy economy supported by our land and natural resources;
- Healthy ecosystems and environment; and
- People-friendly communities with ample recreational and cultural opportunities.

The Land-use Framework ushered in a new era of regional land use and resource planning. Seven regions were created in the Land-use Framework that are congruent with the province's major watersheds and aligned with municipal boundaries. Each region must develop a regional plan. The South Saskatchewan Regional Plan (SSRP) is the second regional plan to get underway. When completed, the plan will provide the context for land-use decision-making within the region.

The Nature Conservancy. 2001. *The Wyoming Basins Ecoregional Plan*. The Nature Conservancy. 130 p.

Identification of conservation priorities, threat assessment, and portfolio sites for the Wyoming Basins.

The Nature Conservancy. 2000. *Middle Rockies-Blue Mountains Ecoregional Conservation Plan*. The Nature Conservancy. 509 p.

Identification of conservation priorities, threat assessment, and portfolio sites for the Columbia Plateau and Blue Mountains.

The Nature Conservancy. 2000. *Conservation Assessment and Planning Tools*. Arlington, VA: The Nature Conservancy. 29 p.

This document describes The Nature Conservancy's Conservation by Design planning process for setting priorities, developing strategies, assessing threats, and measuring success.

The Nature Conservancy's Columbia Plateau Ecoregional Planning Team. 1999. *The Columbia Plateau Ecoregional Assessment: A Pilot Effort in Ecoregional Conservation*. The Nature Conservancy. 71 p.

Identification of conservation priorities, threat assessment, and portfolio sites for the Columbia Plateau.

United States Department of Agriculture, Forest Service. November 2007. *Open Space Conservation Strategy: Cooperating across boundaries to sustain working and natural landscapes*. 16 p.

This strategy outlines four priority actions: (1) Convene partners to identify and protect priority open space; (2) Promote national policies and markets to help private landowners conserve open space; (3) Provide resources and tools to help communities expand and connect open spaces; and (4) Participate in community growth planning to reduce ecological impacts and wildfire risks. Under each of these priorities, it lists specific actions or recommendations to achieve in partnership and collaboration with other agencies and groups.

United States Department of Agriculture, Natural Resources Conservation Service. 2009. *Great Sage Grouse Habitat Conservation Strategy*. Bozeman, Montana. 20 p.

The U.S. Department of Agriculture—NRCS' primary function is assisting agricultural producers with treating resource concerns on their lands. Because a substantial amount of sagebrush habitat in Montana is privately owned, NRCS is a key partner for sage-grouse conservation. Montana NRCS has developed a *Greater Sage-Grouse Habitat Conservation Strategy* that is specifically designed to maintain and enhance sage-grouse habitat and sage-grouse populations. This document outlines the specific measures that Montana NRCS will pursue for private land sage-grouse conservation. The details of the NRCS *Greater Sage-Grouse Habitat Conservation Strategy* are based largely on the management recommendations outlined in *Guidelines to Manage Sage Grouse Populations and Their Habitats* (Connelly et al. 2000) and *Management Plan and Conservation Strategies for Sage Grouse in Montana* (Montana Sage Grouse Work Group 2004).

United States Department of Interior, Bureau of Reclamation. 2011. *SECURE Water Act Section 9503(c) – Reclamation Climate Change and Water, Report to Congress*. 226 p.

This report is Reclamation's first report under the authorities of the SECURE Water Act and presents the current information available. It addresses: (1) each effect of, and risk resulting from, global climate change with respect to the quantity of water resources located in each major Reclamation river basin; (2) the impact of global climate change with respect to the operations of

the Secretary in each major Reclamation river basin; (3) each mitigation and adaptation strategy considered and implemented by the Secretary of the Interior to address each effect of global climate change; (4) each coordination activity conducted by the Secretary with the Atmospheric Administration (NOAA), U.S. Department of Agriculture (USDA), or any appropriate State water resource agency. Much of this report is based on synthesizing available literature and summarizing key findings from peer-reviewed studies.

United States Department of the Interior, Department of Agriculture, Council on Environmental Quality, and the Environmental Protection Agency. February 2011. *America's Great Outdoors: A Promise to Future Generations*. 173 p.

America's Great Outdoors presents a strategy for a landscape-scale conservation legacy for the 21st century. The main themes include connecting Americans to the great outdoors (with an emphasis on youth), conservation and restoration, and collaboration and coordination of efforts. It outlines goals and recommendations for actions for each of those themes.

Ward, Joni, Vera Agostini, Mark Anderson, Catherine Burns, Patrick Doran, Joe Fargione, Craig Groves, Lise Hanners, Jon Hoekstra, Rob Marshall, Scott Morrison, Sally Palmer, Doug Shaw, and Jo Smith. 2011. *Stepping up to the Challenge: A Concept Paper on Whole System Conservation*. The Nature Conservancy. 7 p.

This concept paper describes The Nature Conservancy's improved methods for landscape-level conservation planning. The scope and magnitude of conservation challenges require a whole system approach that includes a matrix of lands and waters at multiple scales, managing for connectivity and a permeable landscape, and maintaining ecosystem function and services.

Washington Department of Fish and Wildlife. 2005. *Washington's Comprehensive Fish and Wildlife Strategy*. 780 p.

The CWCS provides a solid biological foundation and strategic framework for the Washington Department of Fish and Wildlife, its conservation partners and Washington residents to take action with specific action plans:

- To identify and safeguard wildlife and natural habitats important to many of our family traditions and for future generations.
- To conserve all wildlife and the habitats they live in, starting with the animals and places most in need of help.
- To assure that the natural habitats needed by wildlife are healthy enough to provide clean water and air for both wildlife and people.

Washington State Department of Natural Resources. June 2010. *Statewide Forest Resource Assessment and Strategy for Washington State*. 336 p.

The Washington State Department of Natural Resources and other state forestry agencies across the nation administer an array of federal programs for landowner assistance, forest conservation and management, and fire prevention and suppression. Collectively, many of these fall under the federal Cooperative Forestry Assistance Act (Title 16 U.S. Code, Chapter 41), and are sometimes called U.S. Forest Service "State and Private Forestry" programs. Specifically, these include:

- Private Land Fuels Management & Community Protection (multiple programs)
- Cooperative Forest Health Program

- Forest Stewardship Program
- Urban & Community Forestry Program
- Forest Legacy Program
- State Fire Assistance Program
- Volunteer Fire Assistance Program

Washington Wildlife Habitat Connectivity Working Group. 2010. *Washington Connected Landscapes Project: Statewide Analysis*. Washington Departments of Fish and Wildlife, and Transportation, Olympia, WA. 21 p.

The primary thrusts of the *Washington Connected Landscapes Project* include: (1) scientific analyses of connectivity issues at different spatial scales for current and future landscape conditions, (2) development of suitable analytical methods and tools necessary to support these analyses, (3) coordination with transboundary partners to maintain connectivity across Washington's borders, (4) research and adaptive management to test and improve our models, and (5) outreach and education about connectivity to a broad array of stakeholders. This statewide report of the WHCWG is the first scientific analysis product of the Washington Connected Landscapes Project.

Western Governors' Association. 2010. *Climate Adaptation Priorities for Western States: Scoping Report*. 20 p.

The WGA created a Climate Adaptation Work Group, composed of western state experts in air, forests, water and wildlife to recommend next steps. The enclosed Scoping Report is the result of its work. The report contains important recommendations for building a West that is resilient in the face of challenges posed by a changing climate. The work group's first task was to develop this scoping report in an effort to identify state and regional priorities for planning and adapting to a changing climate. Three specific goals were identified for further discussion:

- foster coordination on adaptation activities, particularly between state and federal efforts;
- identify key science needs for Western states; and
- begin to share smart practices among states.

In this scoping report, Western Governors call for enhanced cooperation around climate adaptation. This will require sharing resources effectively to support climate science and to implement adaptation strategies. The Climate Adaptation Work Group will continue to engage partners to achieve these goals.

Western Governors' Association. 2010. *Water Needs and Strategies for a Sustainable Future: 2010 Progress Report*. 32 p.

This report is a review and synthesis of recommendations made and actions suggested by the WGA Water Reports.

Western Native Trout Initiative. January 2008. *A Plan for Strategic Action*. Western Association of Fish and Wildlife Agencies. 37 p.

A strategic plan for conservation and restoration of native trout in the western United States. Actions are organized by main strategies and by species.

Wyoming Game and Fish Department. 2005. *A Comprehensive Wildlife Conservation Strategy for Wyoming*. 558 p.

The CWCS provides a foundation for Wyoming's future efforts in the conservation of all wildlife. The species and habitats identified here, along with the associated challenges and conservation actions, will define the focus of cooperative efforts to conserve and manage all Wyoming's wildlife. The intent of this CWCS is to serve as a central "hub" for all existing and future management plans and conservation strategies in Wyoming, and to guide the combined efforts of government agencies at all levels, non-profits, academia, non-governmental organizations, tribes and individuals to conserve all Wyoming's wildlife for future generations. Coordination with these stakeholders and partners is vital to the success of the Wyoming CWCS.

Wyoming State Forestry Division, Office of State Lands and Investments. April 2010. *Wyoming Statewide Forest Resource Strategy Providing Long-Term Strategies to Manage Priority Landscapes*. 34 p.

The strategies identified in the Resource Strategy are typically "big picture" ideas regarding how to address the threats/priorities identified by the Assessment. The strategies generally avoid specific on-the-ground recommendations which are better left to local resource managers. The strategies also usually avoid assigning time or accomplishment targets because different land owners/managers operate under different timelines, priorities, and rules. Specific management recommendations, targets, and timelines belong in management plans developed by local resource managers. The Resource Strategy provides strategic guidance, not site-specific management recommendations. In some cases the strategies may not be within the scope of some land management agencies, though the strategies may still be desirable goals for the state as a whole.

Zube, Ervin. 1987 Perceived land use patterns and landscape values. *Landscape Ecology* 1(1): 37-45.

Land use patterns and land form are important sources of information that contribute to the formation of landscape perceptions and values. This paper discusses three concepts of human-landscape relationships: the human as an agent of biological and physical impacts on the landscape; the human as a static receiver and processor of information from the landscape; and the human as an active participant in the landscape-thinking, feeling and acting - a transactional concept. A model of the transactional concept and of human perception and response is presented along with a conjectural example of human-landscape transactions. Three empirical research projects are presented to illustrate varying relationships between and among humans and landscapes. Variations in human experiences, needs and desires, personal utility functions for the use of the landscape, and socio-cultural contexts are suggested as mediating variables on perceived values and human responses. The importance of landscape values information to planning and management activities is discussed.

Summary Table of Foundational Documents

	Sage-Steppe	Columbia Basin	Rocky Mountains	Fish and Wildlife Species	Terrestrial Ecosystems	Aquatic Ecosystems	Cultural Resources	Landscape Initiatives or Priorities	Climate Change	Conservation Planning
<i>Climate Adaptation Priorities for Western States: Scoping Report</i>								X	X	
<i>Scanning the Horizon: A Guide to Climate Change Vulnerability Assessment</i>									X	X
<i>Moving Toward Climate Change Adaptation: The Promise of the Yellowstone to Yukon Conservation Initiative for Addressing the Region's Vulnerabilities</i>			X		X			X	X	X
<i>Albertans and Climate Change: Taking Action</i>									X	
<i>British Columbia Climate Action Plan</i>									X	
<i>Advice to the Government of Alberta for the South Saskatchewan Regional Plan</i>							X	X		X
<i>Climate Change, Aquatic Ecosystems, and Fishes in the Rocky Mountain West: Implications and Alternatives for Management</i>		X		X		X	X	X	X	
<i>The Potential Influence of Changing Climate on the Persistence of Salmonids of the Inland West</i>		X		X		X	X	X	X	
<i>A Plan for Strategic Action (Western Native Trout Initiative)</i>				X		X		X		
<i>Assessing the Future of Wyoming's Water Resources: Adding Climate Change to the Equation</i>						X			X	
<i>SECURE Water Act: Reclamation, Climate Change, and Water</i>		X				X		X	X	
<i>Water Needs and Strategies for a Sustainable Future: 2010 Progress Report</i>						X		X		

	Sage-Steppe	Columbia Basin	Rocky Mountains	Fish and Wildlife Species	Terrestrial Ecosystems	Aquatic Ecosystems	Cultural Resources	Landscape Initiatives or Priorities	Climate Change	Conservation Planning
<i>Measuring the Effectiveness of State Wildlife Grant Projects</i>				X						X
<i>State Wildlife Action Plans from Vision to On-the-Ground Action</i>				X						X
<i>Measuring the Results of Wildlife Conservation Activities</i>				X						X
<i>Oregon Conservation Strategy</i>	X	X		X	X	X		X		
<i>Washington's Comprehensive Fish and Wildlife Strategy</i>	X	X		X	X	X		X		
<i>A Comprehensive Wildlife Conservation Strategy for Wyoming</i>	X			X	X			X		
<i>Montana's Comprehensive Fish and Wildlife Conservation Strategy</i>			X	X	X	X		X		
<i>Montana's Crucial Areas Assessment and Planning Tool</i>			X	X	X	X				X
<i>Montana Statewide Forest Resource Strategy</i>			X	X	X		X	X		
<i>Idaho State Assessment of Forest Resources: Issues, Discussion, Data, Methodologies, and Maps</i>			X	X	X		X	X		
<i>Oregon's Forest Resource Strategy</i>		X		X	X		X	X		
<i>Wyoming Statewide Forest Resource Strategy</i>	X				X		X	X		
<i>Statewide Forest Resource Assessment and Strategy for Washington State</i>	X	X		X	X		X	X		
<i>Washington Connected Landscapes Project: Statewide Analysis</i>								X		X
<i>Alberta Prairie Conservation Action Plan</i>					X			X		
<i>Open Space Conservation Strategy: Cooperating Across Boundaries to Sustain Working and Natural Landscapes</i>					X		X	X		

	Sage-Steppe	Columbia Basin	Rocky Mountains	Fish and Wildlife Species	Terrestrial Ecosystems	Aquatic Ecosystems	Cultural Resources	Landscape Initiatives or Priorities	Climate Change	Conservation Planning
<i>Large-scale Forest Fuels Projects and Collaborative Groups Improvement Study</i>					X			X		
<i>Identifying and Managing Wildlife Linkage Approach Areas on Public Lands</i>			X	X	X			X		X
<i>Coordinated Bird Conservation Plan</i>				X	X			X		
<i>Partners In Flight North American Landbird Conservation Plan</i>				X	X			X		
<i>Greater Sage Grouse Habitat Conservation Plan</i>	X			X	X			X		
<i>Assessment of Freshwater Systems in Washington State</i>		X		X		X		X		X
<i>Endangered Species Act, Federal Columbia River Power System 2010-20-13</i>		X		X		X				
<i>Rocky Mountain Network Vital Signs Monitoring Plan</i>			X					X		
<i>Upper Columbia Basin Network Vital Signs Monitoring Plan</i>		X						X		
<i>Canadian Rocky Mountain Ecoregional Assessment (vols 1-3)</i>			X	X	X	X		X		X
<i>Wyoming Basins Ecoregional Plan</i>	X			X	X	X		X		X
<i>Middle Rockies-Blue Mountains Ecoregional Conservation Plan</i>			X	X	X	X		X		X
<i>The Columbia Plateau Ecoregional Assessment</i>		X		X	X	X		X		X
<i>Conceptual Ecological Models to Guide Integrated Landscape Monitoring in the Great Basin</i>	X						X	X		X
<i>Conservation Framework: Conservation Priorities for Species and Ecosystems</i>				X	X	X		X		X
<i>America's Great Outdoors</i>							X	X		

	Sage-Steppe	Columbia Basin	Rocky Mountains	Fish and Wildlife Species	Terrestrial Ecosystems	Aquatic Ecosystems	Cultural Resources	Landscape Initiatives or Priorities	Climate Change	Conservation Planning
<i>Lessons Learned Report: Ecoregional Assessment Process</i>										X
<i>Conservation Planning and Priorities</i>										X
<i>Open Standards for the Practice of Conservation</i>										X
<i>Strategic Habitat Conservation: Final Report of the National Ecological Assessment Team</i>										X
<i>Structured Decision Making</i>										X
<i>Conservation Assessment and Planning Tools</i>										X
<i>Stepping up to the Challenge: A Concept Paper on Whole System Conservation</i>										X
<i>Perceived Land Use Patterns and Landscape Values</i>							X			X
<i>RAPID: Mississippi Flood of 2011: Investigation of Initial Impact on the Landscape</i>								X		