Independent Multidisciplinary Science Team (IMST)

State of Oregon

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April 28, 2005

The Honorable Ted Kulongoski
Governor of Oregon
State Capital Building
Salem, OR 97301

The Honorable Peter Courtney
Oregon Senate Presidnet
State Capital Building
Salem, OR 97301

The Honorable Karen Minnis
Oregon House Speaker
State Capital Building
Salem, OR 97301

Please find enclosed the 2004 Annual Report of the Independent Multidisciplinary Science Team (IMST) for the Oregon Plan for Salmon and Watersheds and the 2005 Administrative Report compiling responses to recommendations made by the IMST from October 2000 through December 2004. The IMST is sending these reports to you, the appointing authority for the IMST, and copies to the House Committee on Water, the Governor's Natural Resources Office, and the Oregon Watershed Enhancement Board.

The Annual Report summarizes the activities of the IMST for 2004, including technical and letter reports to state agencies, and briefings and presentations made to the IMST and by IMST members. During 2004, the IMST completed a major report on Oregon's water temperature standards, the effects elevated water temperatures may have on salmonids, and how land uses may affect water temperatures. The IMST also continued work on two major land use reports: Urban and Rural Residential Land Use, and Eastern Oregon Resources. In addition, the IMST has continued to provide an independent, unbiased review of science issues related to the Oregon Plan to state agencies and the people of Oregon.

During 2004, the IMST also devoted a considerable amount of time working with new and long-term IMST members and the House of Representative's Interim Agriculture and Natural Resources Subcommittee on Water to better clarify how the Team operates and the State's expectations for the IMST. The IMST also discussed the 2004 technical report on the Oregon's water temperature standards with the Interim Subcommittee and the Oregon Plan's Core Team to address legislative and special interest groups' concerns about the content and scope of the report.

The 2005 Administrative Report compiles responses received to recommendations made by the IMST since October 2000. The IMST has reviewed and evaluated responses received before January 1, 2005. The evaluation of responses were done over the past four years as responses were received by the IMST. In general, agency responses have been positive and adequate. The interactions between the IMST and agency staff about these recommendations have also been good.

We believe that people and the State of Oregon, its citizens and agencies, have made great progress toward recognizing the importance of watershed restoration and of recovery of depressed stocks of salmonids. The challenge of the Oregon Plan is to persist over the long term, even though the State is faced with new and important challenges. We believe this long-term effort is essential to ensure that freshwater habitats improve so that they will sustain viable populations of salmonids when ocean conditions, which have been very favorable during the last several years, again become unproductive. The quality and availability of fresh water in Oregon are also critical to meet the needs of society.

We will be glad to discuss these reports and any related issues with you, if that would be helpful.

Sincerely,

Nancy Molina
IMST Co-Chairs

Carl Schreck

cc:
Mike Carrier, GNRO
Jim Myron, GNRO
Rep. Bob Jenson
Tom Byler, OWEB
IMST

Independent Multidisciplinary Science Team, Oregon Plan for Salmon and Watersheds

2004 Annual Report

April 28, 2005

2004 Members of IMST
Wayne Elmore, Retired, Bureau of Land Management, US Department of Interior
Stan Gregory, Department of Fisheries and Wildlife, Oregon State University
Robert M. Hughes, Department of Fisheries and Wildlife, Oregon State University
Nancy Molina, Bureau of Land Management, US Department of Interior
William Pearcy, College of Oceanic and Atmospheric Sciences, Oregon State University
Carl Schreck, Biological Resources Division, USGS, US Department of Interior
Richard Shepard, Applied Ecosystem Services, Inc.
Carlton Yee, Yee Forestry Associates

Citation: Independent Multidisciplinary Science Team. 2005. Independent Multidisciplinary Science Team, Oregon Plan for Salmon and Watersheds: 2004 Annual Report. Oregon Watershed Enhancement Board. Salem, OR.

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The Independent Multidisciplinary Science Team (IMST) was established by the Oregon Legislature as part of Senate Bill 924, which was signed into law by then Governor John Kitzhaber on March 25, 1997 as part of Oregon Revised Statute (ORS) 541.409. The establishment of the Team also reflected an agreement between the State of Oregon and the National Marine Fisheries Service (now NOAA Fisheries) in the memorandum of agreement concerning coho salmon, signed by the State on April 22, 1997. This agreement has been terminated and Executive Order 99-01 issued by then Governor Kitzhaber in 1999 specified the continuing role of the Team in recovery of wild salmonids in Oregon. Section 5 of ORS 541.409 provides for a 7-member team with "recognized expertise in fisheries, artificial propagation, stream ecology, forestry, range, watershed, and agricultural management" whose general mission is to advise the State on matters of science related to the Oregon Plan for Salmon and Watersheds. Team members are jointly appointed by the Governor, Senate President, and Speaker of the House.

The intent of the IMST is to work in good faith and to focus on science, maintain its independence, operate by consensus (with minority positions identified), and report its findings and conclusions in writing to the State. It is also the Team's intent to conduct its work within applicable Public Records and Meeting laws. This is a report of the Team's activities and accomplishments for the period January 1– December 31, 2004. The report also briefly outlines the plans and direction of the Team for 2005. The Appendix includes a listing of Team public meetings.

Members of the Team in 2004

Wayne Elmore, Retired as Leader of the National Riparian Service Team, BLM, USFS, NRCS, Washington Office, Prineville, Oregon in May 2003. Wayne Elmore graduated from Oklahoma State University in 1968 with a BS in Forest Management. He has completed additional Post Graduate Studies in Fisheries and Wildlife Management. He began work for the Bureau of Land Management (BLM) as a resource area forester in Spokane, Washington in 1968. He has since held various positions with BLM including: District Wildlife Biologist, District Wildlife and Fisheries Biologist, Oregon and Washington State Riparian Specialist, and the BLM National Riparian Field Manager. He has worked on over 2,500 miles of riverine riparian systems, including coastal, forested and rangeland areas in eleven western states and other countries. Mr. Elmore's experience has focused primarily on the natural functions and processes of riparian systems and the incorporation of compatible management techniques. He has numerous publications dealing primarily with riparian ecosystem function and management, including riparian management chapters for two textbooks, one sponsored by the Society of Range Management and one by the University of Washington. He has given numerous speeches, lectures, and talks on riparian function, potential, and management. Mr. Elmore's appointment ended December 31, 2004.

Stan Gregory, Ph.D., Professor, Department of Fisheries and Wildlife, Oregon State University, Corvallis. Dr. Gregory has a B.S. in Zoology from the University of Tennessee and a M.S. and Ph.D. in Fisheries and Wildlife from OSU. Dr. Gregory was leader of the Northwest Field Research Laboratory for the U.S. Fish & Wildlife Service from 1977-1981 and a professor in the Department of Fisheries & Wildlife at OSU since 1981. He has conducted research in stream ecology in the McKenzie River basin and the Pacific Northwest for the last 30 years. His research program has investigated many aspects of stream ecology, including algal ecology; invertebrate ecology; fish-habitat relationships; dynamics of large wood; stream chemistry; principles and methods for stream ecosystem restoration; riparian ecology and management; and patterns and processes of river networks in landscape ecology.

Robert M. Hughes, Ph.D., Research Associate Professor, Department of Fisheries and Wildlife, Oregon State University, Corvallis joined the IMST February 2004. Dr. Hughes received a B.A. in Psychology/Biology and an M.S. in Resource Planning and Conservation from the University of Michigan. In 1979, he received his Ph.D. in Fisheries and Wildlife from Oregon State University. Dr Hughes has over 25 years of experience in sampling and analyzing data for fish assemblages in various parts of the US, including previously serving as the indicator coordinator for the Environmental Monitoring and Assessment Program (EMAP) - - Surface Waters. He developed monitoring techniques and indicators for bird, fish, macrobenthos, and algae assemblages in northeastern US lakes, Appalachian streams and rivers, and western US streams and rivers. He has also developed fish assemblage indicators for Indian, French, and Brazilian rivers. Dr. Hughes has published 78 peer-reviewed manuscripts, is currently co-editing three books, and has served as associate editor for two professional journals. He was recently elected vice-president of the Western Division of the American Fisheries Society (AFS), and was elected president of the AFS Water Quality Section in 1999-2001, and the AFS Oregon Chapter in 1994-1995.

Nancy (Diaz) Molina, Bureau of Land Management, US Department of Interior, Portland, OR joined the IMST July 1, 2004. Ms. Molina currently serves as the chief of the branch of physical sciences and resource data management for the OR/WA State Office of the USDI Bureau of Land Management. Her education includes an M.S. in theology from the University of Dallas (TX) in 1997; an M.S. in botany from Washington State University in 1979; and a B.S. in geography from Portland State University in 1972. Ms. Molina has over 30 years' experience in natural resources management and science, including serving as the Northwest Forest Plan Issue Coordinator for the USDA Forest Service/PNW Research Station from 1999 to 2001 and the area ecologist for the Mt. Hood and Gifford Pinchot National Forests from 1983 to 1999.

William Pearcy, Ph.D., Professor Emeritus of Oceanography, Oregon State University, Corvallis. Dr. Pearcy is a zoologist, with a current research emphasis in fishery oceanography and the ocean ecology of salmon. His education includes B.S. and M.S. in zoology from Iowa State University, and the Ph.D. in marine zoology from Yale University. Originally hired to OSU in 1960, he now serves as an emeritus faculty member in the College of Oceanographic and Atmospheric Sciences at OSU. He is very active in providing leadership and service to the scientific and fisheries management community. Dr. Pearcy received the 1998 Outstanding Achievement Award of the American Institute of Fishery Research Biologists, and the 1996 Oscar E. Sette Outstanding Marine Fishery Biologist Award of the American Fisheries Society. He has numerous publications focusing on fish ecology in the marine environment. Dr. Pearcy's term ended June 30, 2004.

Carl Schreck, Ph.D., Leader, Oregon Cooperative Fish and Wildlife Research Unit, Biological Resources Division, U.S. Geological Survey, Corvallis, Oregon. Dr. Schreck has been researching the biology of fishes for nearly 30 years. He has an A.B. in Zoology from the University of California, Berkeley, a M.S. in Fisheries Science and a Ph.D. in Physiology and Biophysics and Fisheries Science from Colorado State University. He currently serves as Leader of the Oregon Cooperative Fish and Wildlife Research Unit and is senior scientist in the Biological Resources Division, U.S. Geological Survey and as a Professor in the Department of Fisheries and Wildlife at OSU. His research has focused primarily on salmonids. He applies environmental physiology to address environmentally relevant questions; this research has lead to over 200 published papers. Dr. Schreck is a member of several scientific and management teams, organizations and committees. He is currently serving a second four-year term as President of the International Federation of Fish Endocrinologists. He has won numerous national teaching, research, and publication awards.

Richard Shepard, Ph.D., President, Applied Ecosystem Services, Inc., Troutdale, Oregon joined the IMST in February 2004. Dr. Shepard has a B.A. in Biology from Quinnipiac College, Connecticut, an M.S. in Limnology from the University of Illinois, and a Ph.D. in Lotic Ecosystem Ecology/Fluvial Geomorphology from Idaho State University. Dr. Shepard has taught at the university level, worked for a state agency and has been a consultant for the past 16 years. He has conducted research on stream energetics, was the aquatic ecologist at the Center for Biological Control of Mosquitoes at Ben-Gurion University of the Negev, the Technical Program Manager for the restoration of the Lower St. Johns River (Florida) and a consultant to the natural resource industry for more than 15 years. He started his own consulting company more than a decade ago and provides environmental risk management and environmental assessment to industry and business. Dr. Shepard has published research in peer-reviewed scientific journals, articles on environmental issues in the general trade press and the book, *Quantifying Environmental Impact Assessments Using Fuzzy Logic* published by Springer-Verlag in their Environmental Management Monograph series.

Carlton Yee, Ph.D., Consulting Forester and Hydrologist, Yee Forest Associates, Bend, Oregon joined the IMST in February 2004. Dr. Yee received a B.S. in Forest Management from Humboldt State University, an M.F. in Industrial Forest Administration from Yale University and his Ph.D. in Forest Engineering from Oregon State University. Dr. Yee has been a consultant for over 25 years with expertise in forest operations, logging systems, watershed effects from logging and the mitigation of those effects. He has participated in a dozen forest practice compliance audits on western U.S. industrial forest ownerships in the last four years. He is an Emeritus Professor of Forest Engineering and Watershed Management, Humboldt State University, with 30 years in education and research at the university. Yee served on the California State Board of Forestry from 1983 to 1991. Yee also served on the Oregon Soil and Water Conservation Commission and was Chair of the Deschutes Soil and Water Conservation District until November 2004.

Analysis of the Current Status of the Team

Major Issues Faced by IMST in 2004

The IMST produced several key documents in 2004, added four new Team members, and addressed major questions on budget and operations. These issues required large amounts of time both in our regular meeting schedule and meetings with the Governor's Natural Resource Office (GNRO) and Legislature[1]. Attention to the education of new Team members and issues raised about IMST operations required far more time than was required in previous years. We hope to resolve these issues and focus on responses to the State and completion of long-term projects in 2005.

New Reports

The IMST produced two major reports in late 2003 and spring 2004---the Klamath Basin Report and the Temperature Report. Both of these reports attracted attention from agencies and the public. We participated in two workshops on future science needs in the Klamath River basin---one in Klamath Falls, OR and one in Arcata, CA. At these workshops we explained the findings of the IMST and how they compared to other assessments of Klamath Basin issues. Several critiques of our Temperature Report were submitted to the Interim House Subcommittee on Water. We met with the Subcommittee twice to explain our findings and recommendations and twice with the Subcommittee Chair, Representative Bob Jenson. Following those meetings, we met with the Oregon Plan Core Team to answer any questions or concerns. We submitted a letter to the Interim Subcommittee on Water and GNRO offering to answer any questions they may have about these reports.

New Team Members

The replacement process for new Team members had been delayed for several reasons. In late 2003, four new Team members---Carl Yee, Rich Shepard, Bob Hughes, Nancy Molina---were recruited for the IMST. Their appointments began in 2004 for varying lengths of time. The new staff in the GNRO was not familiar with the recruitment process. As a result, the IMST Co-Chairs and their staff were required to inform new members of the terms of service, develop contracts, inform the new members of our operating procedures, and bring them up to speed on ongoing projects. This required substantial amounts of time and subsequently led to extensive discussions about Team operations. Future Team appointments could be more effective if the GNRO, House Committee on Water (2005 Legislative Assembly), and IMST collectively develop specific processes and documented guidance for timely recruitment of new members, explanation of the terms of service to the State, negotiation of contract details, and expectations and participation of new members in Team decisions. We will work with the Committee on Water and the GNRO over the next year to improve this aspect of the operation of IMST.

Budget and Operations

Budget reductions for this biennium forced the IMST to eliminate two technical staff assistants and severely diminished our budget for travel and workshop support. The IMST strives to maintain a high level of productivity, but the budget reductions and lack of a full Team in 2003 and the addition of four new members in 2004 substantially slowed production of IMST reports

[1] The House of Representative's Interim Agriculture and Natural Resources Subcommittee on Water provided legislative oversight to the Oregon Plan and the IMST during 2004. During the 2005 Legislative Assembly the House Committee on Water was directed to provide the oversight for the House, however, the Senate President has not directed a Senate Committee to provide oversight.

and responses to the State. The IMST also asks for guidance from the Legislature and GNRO regarding procedural issues outlined below. Without resolution of both budgetary and operational issues, detrimental impacts on IMST's productivity will continue.

Several external groups asked the Interim House Subcommittee on Water to modify the IMST's Charter and operating procedures. The IMST met with the Subcommittee on several occasions to discuss these suggestions. In addition, the IMST has discussed our Charter and operating procedures during public monthly meetings throughout the fall of 2004. We have asked for guidance from the Department of Justice on several legal interpretations. We will resolve these questions about our operating procedures and work with the Subcommittee on Water and the GNRO to finalize these clarifications or potential modifications to our Charter in 2005[2]. Additionally, a new Team member questioned whether or not the IMST has the authority to undertake work on projects or write reports and/or parts of reports that were not solicited by the State. Given that the IMST has done this from its inception and has never been informed that this is contrary to legislated intent or Governor's directive as an independent body, we will continue with such reports unless instructed otherwise.

In previous Annual Reports, the IMST has asked the GNRO and the Legislature to review our operations, policies, and productivity and work collaboratively to make the IMST more effective in serving the State of Oregon. We renewed this request with the Interim House Subcommittee on Water and GNRO in August and September 2004. We plan to develop a process for such a review or evaluation during the coming 2005 Legislative Session.

Team Management

The Team members were funded to work 12.5 to 25% of full time through June 30, 2005. The funds are paid directly to Oregon State University (OSU) for the services and expenses of Team members and support staff from OSU, and four Team members are under single-source personal services contracts through OSU. The funds to OSU were used by OSU to purchase services in various ways to compensate for the reassignment of faculty time. In no case were the funds added to existing 1.0 FTE academic salary. There was no charge for Dr. Schreck and Ms. Molina, both federal employees.

Personnel on our administrative and technical support staff are an essential part of the team and have been instrumental in the Team's ability to complete its work. Funding in the 2001-2003 Biennium included one administrative and technical support person, two technical support persons, one literature specialist, and one part-time clerical specialist. Budget cuts for the 2003-2005 Biennium forced IMST to terminate two support positions, the literature specialist and one technical support position. The support staff personnel are OSU employees with the technical support personnel serving as faculty members at OSU. The technical support staff has a broad range of knowledge, research experience, and technical expertise in terrestrial and aquatic ecosystems in the Pacific Northwest. The support staff is a critical component to the continuity of the Team as it undergoes transitions with new members and a new Team Chair (or Co-Chairs) each year.

[2] The IMST discussed and adopted some changes to the Team's Charter in January 2005 including opening subcommittee meetings open to the public and added more clarification on Team operations. The revised Charter is available at: http://www.fsl.orst.edu/imst/charter.pdf

Major Activities of the Team

Meetings

Team meetings were usually monthly (Appendix 1), and open to the public, consistent with the Oregon Public Meetings Law. Each meeting had a published agenda, minutes, and was audio recorded. Numerous Team subcommittee meetings were held throughout the year but were not open to the public. OWEB is the repository of records for the Team and meeting minutes are posted on the IMST web site (http://www.fsl.orst.edu/imst/meetings.html). The Team Chair is the custodian of the records and authorizes their release.

Representatives from several state agencies briefed the Team on current agency programs and proposed policy changes including:

- Kelly Moore, OWEB, several briefings on the Oregon Plan Monitoring Program
- Mark Chilcote, ODFW, briefing on ODFW's provisional Species Management Units for steelhead, coho, chinook, and chum salmon.
- Mary Buckman, ODFW, Reviewed ODFW's draft report of the 2003 scientific workshop on the Hatchery Research Center.
- Geoff Huntington, OWEB, briefing on land acquisitions as a conservation tool under the Oregon Plan.
- Bruce Taylor, Defenders of Wildlife, briefing on recent attempts for conservation land acquisitions in the state.
- Bruce McIntosh, ODFW, briefed the Team several times on the current federal status of coastal coho and its potential effects on state recovery efforts under the Oregon Plan.
- Marvin Brown, Director of ODF, Steve Hobbs, Chair of Board of Forestry, and Ted Lorensen and Gregg Cline, ODF discussed with the Team current Oregon Plan efforts being conducted by ODF.
- Charlie Corrarino, ODFW, briefing on ODFW's draft stock status report.
- Mario Solazzi, ODFW, updated the Team on progress made on the new Hatchery Research Center.
- Eric Metz, DSL, discussed DSL's draft responses to IMST recommendations made in the 2002 instream aggregate mining letter report.

Several presentations and briefings were made to the Team regarding the State's coastal coho assessment including:

- Ed Bowles, ODFW, several briefings on the State's efforts during the assessment.
- Tom Byler, GNRO, briefing on the State's intention of the assessment.
- Bruce McIntosh, several briefings on the State's progress of the assessment.
- Mark Lewis, ODFW, briefing on hatchery effects on coastal coho salmon.
- Curt Melcher, ODFW, briefing on commercial harvest management effects on coastal coho.
- Tony Amandi, ODFW, briefing on the effects of disease on coastal coho.
- Mike Gray, ODFW, briefing on the effects on introduced fishes on coastal coho.
- State representatives including Tom Byler, GNRO, Ed Bowles and Bruce McIntosh, ODFW, and Jay Nicholas, OWEB, presented the near final biological assessment to the Team in preparation of the Team's review.

IMST Presentations and Briefings

The Team made numerous oral presentations and briefings including:

- January 22, 2004 Eastside subcommittee met in Salem with representatives of OWRD to discuss allocation of flows and instream water rights in eastern Oregon.
- April 29, 2004 Co-Chairs briefed the House Subcommittee on Water regarding general IMST activities and operations.
- June 8, 2004 Co-Chair presented finding from IMST's 2002 Klamath Basin report at the Lower Klamath Basin Science Conference in Arcata, California.
- August 9, 2004 Co-Chair briefed the House Subcommittee on Water on the IMST's 2004 temperature standards report.
- August 26, 2004 Co-Chairs meet with workgroup from the House Subcommittee on Water to discuss Team operations and special interest groups' concerns.
- September 7, 2004 Team members presented scientific background on the interrelationships and limiting factors of water temperature in small forested streams to the Board of Forestry at their Salem workshop.
- September 9, 2004 Co-Chair briefed the House Subcommittee on Water on IMST's operations.
- October 5, 2004 Co-Chairs and team members briefed the Oregon Plan Core Team on the IMST's 2004 temperature standards report.

Team Independent Projects

Major reports of the team are based on comprehensive reviews of the scientific literature, as well as input from State agencies and technical reviewers. We invite experts from state agencies and other organizations to make presentations at our monthly meetings during preparation of reports. Before the reports are finalized, we request detailed technical peer reviews by national experts and State agencies. This same lengthy procedure is also followed for some of our letter reports.

Major Reports

The Team worked on the following major reports during 2004.

- Temperature Standards. The US Environmental Protection Agency and the State of Oregon continued to negotiate temperature standards during 2003 and new standards were approved in March 2004. In 2000, the Team held a scientific workshop for experts in stream water temperature and fish ecology to discuss the importance of vegetation and other physical changes to stream temperature and how cold-water fishes respond to elevated temperatures. The report was reviewed by regional university and agency scientists. The IMST released Technical Report 2004-1 titled "Oregon's Water Temperature Standard and its Application: Causes, consequences, and controversies associated with stream temperature" on May 7, 2004.

- Urban and Rural Residential. The IMST urban land use project focuses on populated areas within the state. Four focus areas are water quality, water quantity, aquatic and riparian habitat structure, and fish passage. The goal of this project is to define the scientific basis by which urban lands can be managed to help accomplish the goals of the Oregon Plan. We expect to finalize this report in 2005.

  In support of work on the Team's urban and rural residential project several agency personnel briefed and provided materials to the Team and provide materials including:

- Jeff Weber, DLCD, briefing on land use patterns and state land use goals that affect salmonid recovery.
- Nancy Munn, NOAA Fisheries, briefing on NOAA Fisheries' programs and approaches to ESA-listed salmonids and interactions with urban areas.
- Paul Ketchum and Lori Hennings, Metro, briefing on Metro's natural resources programs.
- Jim Middaugh, City of Portland, briefing on Portland's watershed planning efforts.

- Eastern Oregon Resources. The geographic scope of this project is the region east of the Cascades, primarily in the mid-Columbia and Snake River systems. The scientific basis for this project employs a conceptual model that incorporates biological (i.e. vegetation) and physical (i.e. hydrology) ecosystem components. Scientific research indicates that when these components are largely intact, high quality salmon habitat is sustained or eventually rehabilitated. Land and water uses that degrade these components perturb landscape processes, diminish habitat capacity and site potential, and ultimately impede salmon recovery. We expect to complete the project in early of 2006.

  In support of work on the Team's project on eastern Oregon resources, several researchers discussed the ecology and management of natural resources in eastern Oregon including:
  - Rick Miller and Paul Doescher, OSU, and Dave Pyke, USGS FRESC, discussed upland ecology and issues the Team may want to consider in the development of the project.
  - Bill Krueger and Mike Borman, OSU, discussed rangeland management concerns affecting riparian and watershed functions that the Team may want to consider in the development of the eastside project. They also provided copies of papers for the Team to consider for this report.

Catalog of IMST Recommendations and Responses

The primary means of communicating results of the Team's work is through written reports. IMST recommendations are based on our assessment of the best available science as it pertains to salmonid and watershed recovery and the management of natural resources. Recommendations are directed to one or more agencies or entities that have the ability to implement, or to affect changes in management or regulation that are needed for implementation. The IMST looks beyond an agency's *current* ability to implement the recommendations because current legal, regulatory, or funding situations often require change. The IMST believes that if an agency agrees that a recommendation is technically sound and would aid the recovery of salmonid stocks and watersheds, the agency would then determine what impediments might exist to prevent or delay implementation and work toward eliminating those impediments. The Team also assumes that each agency has the knowledge and expertise to determine how best to identify and eliminate impediments to implementation, and to determine appropriate time frames and goals needed to meet the intent of the recommendation. In addition, the IMST recognizes that an agency may already have ongoing activities that address a recommendation. Our inclusion of such an "overlapping" recommendation should be seen as reinforcement for needed actions.

ORS 541.409, which created the IMST, specifies that agencies are to respond to the recommendations of the IMST, stating "(3) If the Independent Multidisciplinary Science Team submits suggestions to an agency responsible for implementing a portion of the Oregon Plan, the

agency shall respond to the Team explaining how the agency intends to implement the suggestion or why the agency does not implement the suggestion. The Team shall include any agency responses in its report to the Joint Committee on Salmon and Stream Enhancement". Once agency responses are received, the IMST reviews the scientific adequacy of each response and whether further action or consideration by the agency is warranted. IMST reviews of responses are forwarded to the Governor and the State Legislature. State agencies are expected to respond to IMST recommendations within six months after a report is issued. In past years, the Oregon Plan Manager has worked with agencies to ensure that responses were received in a timely matter.

The Team established a catalog of recommendations and the status of responses to these recommendations to simplify tracking compliance with ORS 541.409. The catalog is available to the State upon request. In 2001, The Team issued an Administrative Report and addendum compiling responses to recommendations made from 1998 through September 2000 and the Team's evaluations of those responses. The 2001 report and addendum is available at: http://www.fsl.orst.edu/imst/reports/evaluation.html. From October 2000 through 2004, the IMST has made 86 recommendations in 7 technical and letter reports. The Team has received responses to 94% of recommendations. These responses and Team evaluations have been assembled for a 2005 Administrative Report and will be made available at the same web page listed above in May 2005.

Accountability to the Oregon Plan

The Catalog of Recommendations and Responses established by the Team shows the status of responses to IMST recommendations, but does not evaluate the adequacy or appropriateness of the responses in terms of accomplishing the mission of the Oregon Plan. The characteristics of a good response are:

- It includes a clear statement that the agency (a) accepts or agrees with the recommendation or (b) that it rejects or disagrees with it. There should be no middle ground between the two positions. In some cases, agencies may be reluctant to agree or accept a recommendation because they see significant difficulties in implementing it. The Team feels that if a recommendation is sound, the agency should indicate what impediments may exist to prevent or delay implementation and then work towards eliminating those impediments.
- It makes clear what the agency intends to do to work towards implementation of recommendations they accept, or (as required by Senate Bill 924) that they explain why the agency rejects the recommendation.

At Team meetings, the Team has evaluated the responses received from agencies. Four general categories were used to evaluate responses: adequate, intermediate, inadequate, and indeterminate.

- Adequate means that the IMST supports the decision reached by the agency.
- Intermediate means that the decision will decrease the likelihood of accomplishing the goals of the Oregon Plan in a timely manner, but not doom it to failure. We note our concerns but stop short of suggesting the recommendation be reconsidered.
- Inadequate means that the IMST feels the decision by the agency will seriously detract from achieving the goals of the Oregon Plan, and the IMST strongly suggests that the decision be reconsidered.

- Indeterminate means that we can not tell what the agency decided to do with the recommendation, or that we do not have enough information to fully evaluate their response. As a secondary conclusion, indeterminate is used to indicate that while the initial actions are positive the long-term effectiveness of the actions is unknown.

In general, the responses received to 80 recommendations and evaluated were positive and found to be adequate (40%), however, a large number of responses have been indeterminate (28%), in that they did not provide the Team with sufficient information to determine what the agency decided to do with the recommendation or how the decision may affect the success of the Oregon Plan. Inadequate responses accounted for 17% of the responses. Another 15% of the responses received by the IMST are in the process of being evaluated. The 2005 Administrative Report compiling the responses and evaluations will be made at http://www.fsl.orst.edu/imst/reports/evaluation.html in May 2005.

Team Web Page

The IMST continued to maintain a web page to facilitate public access to information about the IMST, including the Team's Charter, products, and calendar of activities. Our support staff worked closely with OSU College of Forestry's Communications Group to revise and update the website to make information on the IMST and our reports more accessible to the public. The web address for the IMST web page is http://www.fsl.orst.edu/imst. The revised version became live in January 2005.

IMST Literature Database

Accomplishing the mission of the IMST requires ready access to scientific literature relevant to various projects and reports of the Team. As a direct result, a central IMST literature database has been established and is maintained by technical support staff. The primary purpose of the literature database is to support the work of the Team and currently has over 4,500 records. We feel that it may also be a useful tool to Oregon Plan partners. The goal of a distributed database is to provide a functional product containing accurate citations of scientific and technical literature related to the recovery of salmonid populations and habitats. The primary audience is technically oriented individuals, who read and utilize information from IMST Technical Reports, and who are involved in management, research, and monitoring of salmonid recovery efforts.

The termination of the Team's Literature Specialist position in 2003 because of budget constraints prevented progress on making the database publicly available. Our remaining technical support staff worked through 2004 to make the database available to the public. The on-line searchable database includes information on over 4,750 scientific and technical references. The database became publicly available in January 2005 and can be found at: http://www.fsl.orst.edu/imst/database.html.

IMST's Future Workload

Each year, the Team develops a work plan for completing some projects that are underway (see above) or that we anticipate initiating in the current biennium, and for providing scientific review of ongoing or proposed programs or policies that relate to the Oregon Plan. We anticipate this review function to be a significantly larger component of the work of the Team through the 2003-2005 Biennium. A more detailed Scope of Work for the 2005-2007 Biennium is in Appendix 2.

During its first seven years, the IMST worked on several independent projects presumed beneficial to the Oregon Plan. These independent projects have included a review and compilation of available scientific and technical information on how major land uses, commercial harvest management, predation on salmonids, and management of hatcheries affect salmonid recovery. The last of the major land use projects (urban and rural residential, and eastern Oregon resources) are in progress and expect to be completed in the current biennium. Additionally the Team has agreed to conduct reviews of two major documents:

- The draft Oregon Coho Assessment Project report that the State will submit to NOAA Fisheries to use in their considerations of whether or not to list coastal coho as threatened under the federal endangered species act, and
- ODFW's draft stock status report prepared as part of the Native Fish Conservation Policy.

In the second half of 2005, the IMST in conjunction with OWEB and the Oregon Plan Monitoring Team will conduct a scientific workshop regarding the effectiveness monitoring with the purpose of developing specific guidance for determining the ecological effectiveness of different restoration activities used under the Oregon Plan. The OWEB Board approved such a workshop at their September 2004 meeting.

In 2002, the Team considered new project topics that could be undertaken during the 2003-2005 and 2005-2007 biennia. During public meetings the Team discussed what additional technical areas could aid the work of the Oregon Plan but for which there has been no technical review on how they affect salmonid recovery. The Team came up with 43 topics at its June 2002 meeting. This list was forwarded to OWEB and the GNRO for their input. Based on that input, at its July 2003 meeting, the Team chose the following three topics as possible projects to begin work on during the next couple of biennia:

- Ecological interactions among co-occurring species in the ecosystem (salmonid/non-salmonid, native/non-native, fish/non-fish);
- Effectiveness of salmonid conservation and restoration activities; and
- Historical framework for fish/vegetation distributions and densities, qualities of data, and technical limitations.

In fall 2005, the Team will review these potential topics and consider if there are other topics of concern to the Oregon Plan that may take precedence in the near future.

The Independent Multidisciplinary Science Team remains committed to providing the scientific oversight for the Oregon Plan called for in ORS 541.409 and former Executive Order 99-01, consistent with the resources provided for the Team.

Appendix 1. Public Meetings Held by the IMST in 2004

February 10–11, Team meeting, Corvallis, OR

March 9–10, Team meeting, Corvallis, OR

April 29–30, Team meeting, Corvallis, OR

May 20, Team meeting, Corvallis, OR

June 18, Team meeting, Corvallis, OR

July 7, Team meeting, Corvallis, OR

September 23, Team meeting, Corvallis, OR

October 25, Scientific workshop, Corvallis, OR

November 22–23, Team meeting, Corvallis, OR

December 14–15, Team meeting, Corvallis, OR

Appendix 2. 2005-2007 Scope of Work

Independent Multidisciplinary Science Team (IMST)
Scope of Work
July 1, 2005 – June 30, 2007

Nancy Molina and Carl Schreck, Co-Chairs

The IMST has two broad areas of work.

- **Review projects** in which the Team is reviewing ongoing or proposed programs and activities that could influence accomplishing the mission of the Oregon Plan. Most future reviews, including the time and resources required to conduct them, are unknown at this time as these factors are dependent upon the needs of the requesting entity (entities). These are projects that are brought to the Team for our consideration to conduct a scientific review and evaluation. Before accepting or denying a review request, the IMST considers the merit of the review as it pertains to the Oregon Plan. Examples include water temperature standards, monitoring programs, Native Fish Conservation Policy, Coastal Coho Assessment etc.
- **Independent projects** dealing with the scientific basis for management of resources and settings relative to the Oregon Plan for Salmon and Watersheds (Oregon Plan). These are areas of work identified by the Team as crucial to the programs of the state that influence the outcome of the Oregon Plan. Examples include land uses such as west-side forestry, hatchery management, fish harvest management, etc. The land use projects examine watershed and salmonid recovery concerns from a landscape level perspective.

The IMST believes that the independent projects should be helpful in shaping the programs of the State and for that reason we have given them high priority. As State programs are developed, initiated or modified there will be greater need for the Team to emphasize its review function. The independent projects lay the groundwork and background information on which the Team is able to base their reviews. Below we have listed potential projects that the IMST may address during the 2005-2007 Biennium.

- Eastern Oregon Resources: The geographic scope of this project is the region east of the Cascades, primarily in the mid-Columbia and Snake River systems. The scientific basis for this project employs a conceptual model that incorporates biological (i.e. vegetation) and physical (i.e. hydrology) ecosystem components. Scientific research indicates that when these components are largely intact, high quality salmon habitat is sustained or eventually rehabilitated. Land and water uses that degrade these components perturb landscape processes, diminish habitat capacity and site potential, and ultimately impede salmon recovery. This report is already under development and we expect to complete the project during the 2005-2007 Biennium.

- Urban and Rural Residential: The IMST urban land use project focuses on populated areas within the state. Four focus areas are water quality, water quantity, aquatic and riparian habitat structure, and fish passage. The goal of this project is to define the scientific basis by which urban lands can be managed to help accomplish the goals of the

Oregon Plan. This report is already under development and we expect to finalize this report in by the end of 2005.

- Ecological interactions among co-occurring species in the ecosystem (salmonid/non-salmonid, native/non-native, fish/non-fish);
- Effectiveness of Oregon Plan salmonid conservation and restoration activities and policies; and
- Historical framework for fish/vegetation distributions and densities, qualities of data, and technical limitations.

The last three topics have not yet been started or out lined. During 2005, the IMST will review the last three potential topics and consider if there are other topics of concern to the Oregon Plan that may take precedence in the near future.

The IMST is currently reviewing the first portions of the State's Coastal Coho Assessment Projects and anticipates reviewing other products of the Coho Assessment during the Biennium as the State completes them. The IMST has also agreed to review Oregon Department of Fish and Wildlife's upcoming 2005 draft stock status assessment that is being drafted as part of the Native Fish Conservation Policy.

In addition to independent and review projects, the IMST conducts technical workshops to either support a project under development or to assist the work of an agency under the Oregon Plan. At this point, the IMST will be co-organizing a workshop with the Oregon Watershed Enhancement Board (OWEB) and the Oregon Plan Monitoring Team regarding the effectiveness monitoring with the purpose of developing specific guidance for determining the ecological effectiveness of different restoration activities used under the Oregon Plan. The OWEB Board approved such a workshop at their September 2004 meeting. This workshop is expected to take place early on in the 2005-2007 Biennium.