



STATE OF WASHINGTON

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March 27, 2006

TO: SRFB Members and Designees
FROM: Laura E. Johnson, Director 
PREPARED BY: Bruce Crawford, Associate Director, MMT Division 
SUBJECT: Evaluation of SRFB Funded Assessments

In the last six years, the Salmon Recovery Funding Board (SRFB) as funded approximately 281 assessment studies at a cost of \$97.6 million. Each year proposals for new assessments are presented to the SRFB for funding. Although it is recognized that assessments provide important information to fill various habitat restoration project planning and project selection functions, the SRFB cannot currently understand the extent of assessments and what data gaps may be present across the state. As salmon habitat restoration funds are becoming increasingly limited, the more that is spent on assessments, the less will be available to conduct direct activities to restore and protect habitat.

An evaluation of the extent of coverage and data gaps of previously funded assessments is recommended prior to SRFB actions in Round 7 and prior to entertaining any new assessment requests. We propose to delineate between project feasibility studies and overall broad assessments. Project feasibility studies are usually site specific and result in future project funding requests. Broad assessments are designed to identify habitat restoration needs across a larger geographic area such as a watershed. For example, an assessment of culverts blocking fish passage in Clark County (02-1518) is a regional assessment.

Request For Proposals

We propose to issue an RFP as soon as possible for a consultant to examine the current status of salmon habitat assessments for each WRIA by habitat category. This includes reviewing the salmonid habitat assessments completed or funded to-date, and demonstrating the following.

- For each habitat category, which WRIAs have completed the necessary assessments? Habitat categories include access, acquisition, floodplain,



riparian, sedimentation, instream, water quality, hydrology/flows, estuarine/nearshore, lakes, and biological processes. The importance of different categories will vary from WRIA to WRIA depending upon the listing and limiting factors identified at the time of listing under the federal Endangered Species Act, and this information will be included so that high priority assessments can be delineated from others.

- Have these assessments led to projects, improved strategies, or recovery plans?
- Which data gaps still exist, and which of these are a high priority?
- At what stage is each WRIA in terms of assessments (following the descriptions in Joint Natural Resources Cabinet 2001).
- How much has the SRFB spent on assessments and recovery planning by WRIA?
- What other assessments have been made that were not funded by the SRFB.

A sample proposal, which would be used as the basis for the RFP, is attached in A.

Deliverables

Deliverable products to the SRFB at the September 14, 2006 meeting will include:

- A report that analyzes which types of salmon habitat assessments that address limiting and listing factors have been done by WRIA across the state, and which ones are still needed. It will also determine the current assessment stage for each WRIA as defined by Joint Natural Resources Cabinet (2001).
- A spreadsheet of data regarding salmon habitat assessment projects. This spreadsheet will support the report and associated maps.
- Maps that display the extent of assessment work across the state, remaining data gaps, and SRFB costs of assessments and recovery planning.
- An oral presentation to the Board
- Recommendations

It is anticipated that the report would be the basis for further discussions with Lead Entities, Regions and others regarding future criteria for SRFB funded assessments and future reporting to NOAA Fisheries regarding the state's progress in addressing listing factors.

Cost

Total contract cost not to exceed \$100,000

For additional information or comments contact Bruce Crawford at brucec@iac.wa.gov or telephone him at 360-902-2956.



Project Funding By Program Projects in Funded Status Group(s)

			This Program Amt	Other Program Amt	Sponsor Amt	Total Amt
Program:	SALMON FED ACT					
	SALMON FED ACT Total:	31 Projects	47,196,728	1,625,000		48,821,728
Program:	SALMON FED PROJ					
	SALMON FED PROJ Total:	192 Projects	21,473,576		5,411,420	26,884,996
Program:	SALMON ST ACT					
	SALMON ST ACT Total:	31 Projects	24,005,207	1,625,000	2,458,961	28,089,168
Program:	SALMON ST PROJ					
	SALMON ST PROJ Total:	27 Projects	4,951,241		1,261,797	6,213,038
	Grand Total:	281 Projects	97,626,751	3,250,000	9,132,178	110,008,929

CRITERIA: Managing Agency - IAC; Funding Board - All; Fiscal Year - All; Fed Fiscal Year - All; Program - SAL/ACTIV, SAL/PROJ; Sponsor - All; Child org projects? Yes; Project Name - All; Project Type - Non-Capital; Project Manager - All; Project Status Group - Funded;

Analyzing the Current Status of Salmon Habitat Assessments

A Proposal Developed for the Interagency Committee for Outdoor
Recreation

August 2005

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Analyzing the Current Status of Salmon Habitat Assessments

A Proposal Developed for the Interagency Committee for Outdoor Recreation

Executive Summary

This is a proposal for a project to summarize and analyze the current status of salmonid habitat assessment projects across the state on a WRIA scale. In the last six years, approximately 150 studies have been funded by the Salmon Recovery Funding Board (SRFB) in addition to many more assessments from other sources, and each year proposals for new assessments are presented to the SRFB for funding. Although it is recognized that assessments provide important information to fill various habitat restoration and projection planning and project selection functions, the SRFB is in its sixth funding cycle without the opportunity to analyze the extent of assessments and data gaps across the state. Compounding the need to determine the current status of assessments, is the recognition that salmon habitat restoration funds are becoming increasingly limited, and the more funds that are spent on assessments, the less that will be available to conduct direct activities to restore and protect habitat.

This project will examine the current status of salmon habitat assessments for each WRIA by habitat category. This includes reviewing the salmonid habitat assessments completed or funded to-date, and demonstrating the following.

- For each habitat category, which WRIsAs have completed the necessary assessments? Habitat categories include access, acquisition, floodplain, riparian, sedimentation, instream, water quality, hydrology/flows, estuarine/nearshore, lakes, and biological processes. The importance of different categories will vary from WRIA to WRIA, and this information will be included so that high priority assessments can be delineated from others.
- Have these assessments led to projects, improved strategies, or recovery plans?
- Which data gaps still exist, and which of these are high priorities a described in recovery plans, Lead Entity strategies, or limiting factors analyses?
- At what stage is each WRIA in terms of assessments, following the descriptions in Joint Natural Resources Cabinet (2001)?
- How much has the SRFB spent on assessments by WRIA?

The scope of this project includes all assessments, not just those funded by the SRFB.

The final product will include:

- A report that examines assessments from limiting factors analyses, PRISM, recovery plans, and others provided by Lead Entities. The report will analyze which types of salmon habitat assessments have been done by WRIA across the state, and which ones are still needed. It will also determine the current assessment stage for each WRIA as defined by Joint Natural Resources Cabinet (2001).
- A spreadsheet of data regarding salmon habitat assessment projects. This spreadsheet will support the report and associated maps.
- 14 different maps that display the extent of assessment work across the state, remaining data gaps, and SRFB costs of assessments.
- Recommendations regarding the direction of future assessment needs can be developed with cooperation from Lead Entities.

Background

In 1999, the Washington State Legislature created the Salmon Recovery Funding Board (SRFB) to oversee the funding of salmon restoration and protection projects in Washington State. Since then, 592 projects have been funded through the year 2004 (SRFB 2005). Of these projects, 9% have been assessments or studies that compile and/or analyze salmon habitat data with an additional 3% of projects focusing on monitoring.

Assessing and collecting technical information is often the first step towards developing a recovery plan or salmon habitat strategy (Joint Natural Resources Cabinet 2001). Ideally these assessments should be able to describe how a watershed works, how it has been changed by humans, how these changes have altered salmon production, and what needs to be done to improve salmon habitat (Joint Natural Resources Cabinet 2001). Knowing the key problems and their causes, locations, and extent is vital for increased certainty of success- a major criterion used to decide the funding fate of projects submitted to the SRFB.

Assessments not only improve the knowledge about salmon and their habitat, increasing the certainty of success for projects, but they can also increase efficiency and effectiveness, and improve the accountability to the public for wise expenditure of funds. Assessments can be used for tracking progress towards salmon recovery goals, and can show what works and what doesn't for salmon habitat restoration projects so that better choices can be made in the future.

However with limited funds, the more money that is spent on assessments, the less money there is available to spend on projects that directly benefit salmonids. This creates a tension between the need to have more information for better projects in the future and funding habitat restoration and protection projects immediately that can directly benefit salmonids. This tension gives rise to several questions regarding the current status of salmonid habitat assessments. Have enough assessments have been done in each Water Resource Inventory

Area (WRIA) or basin to make wise choices about salmonid habitat projects in the near future? Which assessments are still necessary for each basin? Which assessments are considered high priority needs for each WRIA? Have the assessments that have been funded in the past by the SRFB produced results that have led to better projects, strategies, or recovery plans?

Purpose

The purpose of this project is to assess the current status of salmon habitat assessments for each WRIA by habitat category. This includes reviewing the salmonid habitat assessments completed or funded to-date for each WRIA, and demonstrating the following.

- For each habitat category, which WRIsAs have completed the necessary assessments? Habitat categories include access, acquisition, floodplain, riparian, sedimentation, instream, water quality, hydrology/flows, estuarine/nearshore, lakes, and biological processes. The importance of different categories will vary from WRIA to WRIA, and this information will be included so that high priority assessments can be delineated from others.
- Have these assessments led to projects, improved strategies, or recovery plans?
- Which data gaps still exist, and which of these are a high priority?
- What stage is the WRIA at in terms of assessments following the descriptions in Joint Natural Resources Cabinet (2001) and described in the methodology section of this proposal?
- How much has the SRFB spent on assessments by WRIA?

The scope of this project includes all assessments, not just those funded by the SRFB. The project manager will work with Lead Entities to include non-SRFB funded assessments and to develop recommendations regarding assessments in their area.

Sequence of Steps and Timeline for Completion

Outlined below is the general process that will occur to complete this project. Methodology details for each of these steps are described in the following section.

- 1) Develop a database that shows the current status of assessments. This should include salmon habitat assessments from all sources, not just SRFB funded studies, for each WRIA that produces salmonids. The estimated timeline for completion of this step is 3.5 months.
- 2) After the draft database is developed, it will be reviewed with each Lead Entity or regional recovery group to determine the following.

- Insure accuracy and add missing components such as assessments that have been funded through other mechanisms.
- Which categories are most important for each WRIA or can be surrogates for others (for example, San Juan and Island counties will likely have very different assessment needs from freshwater dominated WRIAs).

The estimated timeline for completion of this step is 2 months.

3) The data will be analyzed and summarized so that maps and figures can be developed. The timeframe to complete this step is estimated at 2 months.

4) Summarized data will be mapped. At least 14 different maps will be produced and these are listed in the products section. A draft document with recommendations will be produced. This step will take approximately 1.5 months to complete.

5) Final review of the draft document with maps will encompass 2 months. The draft will be reviewed by each Lead Entity or recovery planning group. During this step, review will occur, edits will be made, and the report will be finalized.

Methodology

Database development. A database will be developed in Excel to include the data fields listed below for salmon habitat assessments and monitoring projects. The spreadsheet template has been developed and is included on the CD with this report. Baseline data will be obtained from limiting factors analysis reports, and data from PRISM and recovery plans will be added to the baseline data. The baseline data will not have entries in some of these data fields, such as costs, original purpose, and possibly others due to the age of the data and lack of access to older, original reports. The data fields that will be included in the assessment spreadsheet are as follows.

a) Habitat Category. Eleven habitat categories will be used, and each assessment project will be examined to determine which categories the study encompasses. The eleven categories are: access, protection (acquisition), instream, sedimentation, riparian, floodplain, water quality, flows/hydrology, lakes, estuarine/nearshore, and biological processes/nutrients. An assessment can have entries in multiple categories.

b) Geographic Extent. Because many assessments do not encompass the entire WRIA, an estimate will be made to determine the approximate percentage of the basin that was assessed for each habitat category. GIS analysis will be needed to accomplish part of this task. Geographic extent will not be entered for estuarine/nearshore projects because numerous types of these projects can be done, each with their own geographic extent. Instead, the

type of estuarine/nearshore project that has been completed will be listed for each WRIA.

c) Age of Assessment. The year(s) the data were collected will be entered so that data age can be tracked. Older data will need updates over time.

d) Assessment Stage. Each WRIA will be assigned a stage of 1 through 3 according to the extent of assessments as they compare to descriptions in Joint Natural Resources Cabinet (2001). These stages are: Stage 1- low existing information with wide use of best professional judgment; Stage 2- moderate existing information combined with modeling to show cause and effect relationships; and Stage 3- high existing information with multiple models using parameters based upon measured relationships observed in that basin.

e) Priority of habitat category. As recovery plans, strategies, and limiting factors analysis are reviewed, prioritization of data needs will be noted.

f) Purpose of data. The original purpose of the assessment will be documented. Examples include implementation monitoring, effectiveness monitoring, validation monitoring, status and trends monitoring, inventory for project selection, strategic planning, or other.

g) Compatibility. Are the data within this assessment compatible with EMAP protocols?

h) Costs. The total costs for assessments for each habitat category and WRIA will be included, where such data are available. It is likely that only SRFB-funded projects may have cost data readily available.

i) Use of Assessment for Projects. Did the assessment lead to a project?

j) Use of Assessment for Planning. Did the assessment lead to an improved strategy or to a recovery plan?

Map Development. Fourteen maps will be developed for this project, and are described below.

a) The extent of assessments in each WRIA will be mapped for each of the eleven habitat categories. This would result in eleven different maps with different colors to denote the following sorts:

- no assessments,
- 1-33% of the area has assessments in that category,
- 34-66% has assessments,
- 67-99% has assessments, and
- 100% of the area has been assessed.

An alternate way to display these data would be to produce a color gradient map instead of using categories. The color transparency would be set as the same percentage of geographic coverage so that a color density in a WRIA would be proportional to the extent of assessment coverage. The darker the color, the better geographical coverage of assessments exists in that WRIA and habitat category. See Appendix 1 for sample maps of each alternative.

b) A map will be developed to show the total number of assessments by WRIA for all categories.

c) A map will be made to provide an overall picture of data gaps remaining by WRIA.

d) A map showing the SRFB funded costs of assessments by WRIA.

List of Products

- A final report that includes assessments from limiting factors analyses, PRISM, recovery plans, and others provided by Lead Entities. This report will analyze which types of salmon habitat assessments have been done by WRIA across the state, and which ones are still needed. It will also determine the current assessment stage for each WRIA.
- A spreadsheet of data regarding salmon habitat assessment projects. This spreadsheet will support the report and associated maps.
- 14 different maps that display the extent of assessment work across the state, remaining data gaps, and SRFB costs of assessments.
- Recommendations regarding the direction of future assessment needs can be developed with cooperation from Lead Entities.

Summary of Timeline and Costs

Database development 3.5 months
 Lead Entity review of database 2 months
 Data analysis 2 months
 Map Development 1.5 months
 Final Review 2 months
 Total Project Completion Time: 11 months

Project costs

Salary	\$56253.
Benefits	\$14063.
Supplies and misc. expenses \$150 month X 11 months	\$1650.
GIS costs (rough estimate)	\$7000.
Travel (Meet with Lead Entities), assuming that at least half will be able to supply the information via email. 2 overnights plus 2000 miles.	\$1010.
Total Costs	\$79,976.

Literature Cited

Joint Natural Resources Cabinet. 2001. Guidance on watershed assessment for salmon. Governor's Salmon Recovery Office Olympia, Washington. 59 pp.

Salmon Recovery Funding Board. 2005. Investing in salmon recovery. A report by the Washington Salmon Recovery Funding Board 2000-2004. Salmon Recovery Funding Board Olympia, Washington. 12 pp.

Appendix 1 Alternative Map Designs

There are two alternatives to displaying the quantity of assessments for each WRIA on a map. Alternative 1 creates categories based upon the percent of geographic coverage the assessment encompasses. Different colors are assigned to each of these categories to build a multi-colored map. The advantage is that the difference between categories is obvious, but the disadvantage is that differences between percentages that are in the same category will not be shown. The data table that creates these categories can be included in the final report so that if this alternative is chosen, the reader can find the actual percentages in the data table. On the next page is an example of the Alternative 1 category map (Figure 1). The colors can be changed, if desired, but six different colors are needed.

Alternative 2 creates a map that uses one basic color, but sets the color transparency to be proportional to the amount of geographic coverage provided by the assessments. Deeper colors represent areas with a greater coverage by assessments. The advantage is that different percentages will appear different, and the representation of data will be more accurate. The disadvantage is that the reader will need to read the data table to find the percentages. An example of this type of map is shown in Figure 2. The color can be different from this example, if desired.

Figure 1. A sample map to show the percent of assessment coverage per WRIA by categorizing the percentages. Mock data were used.

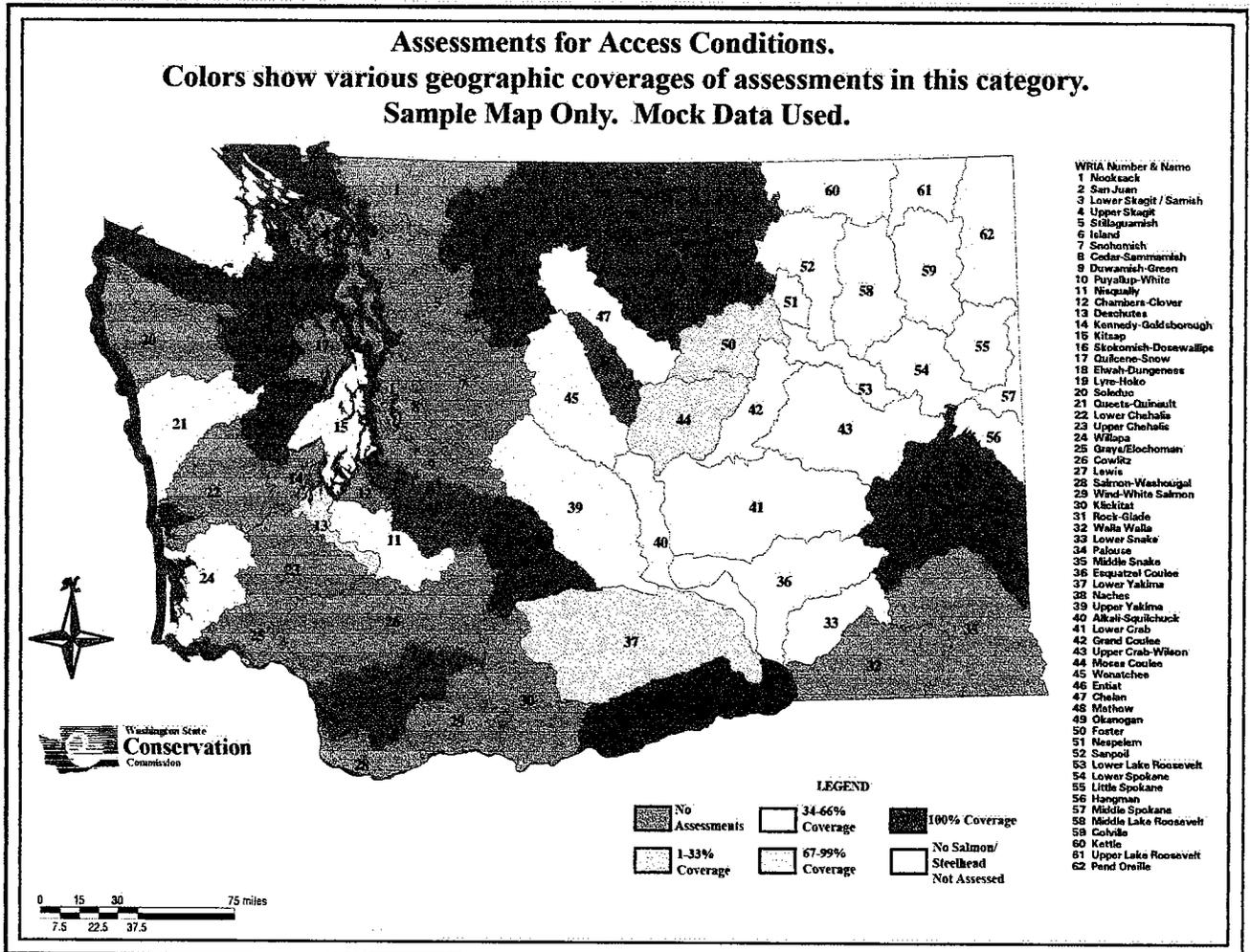
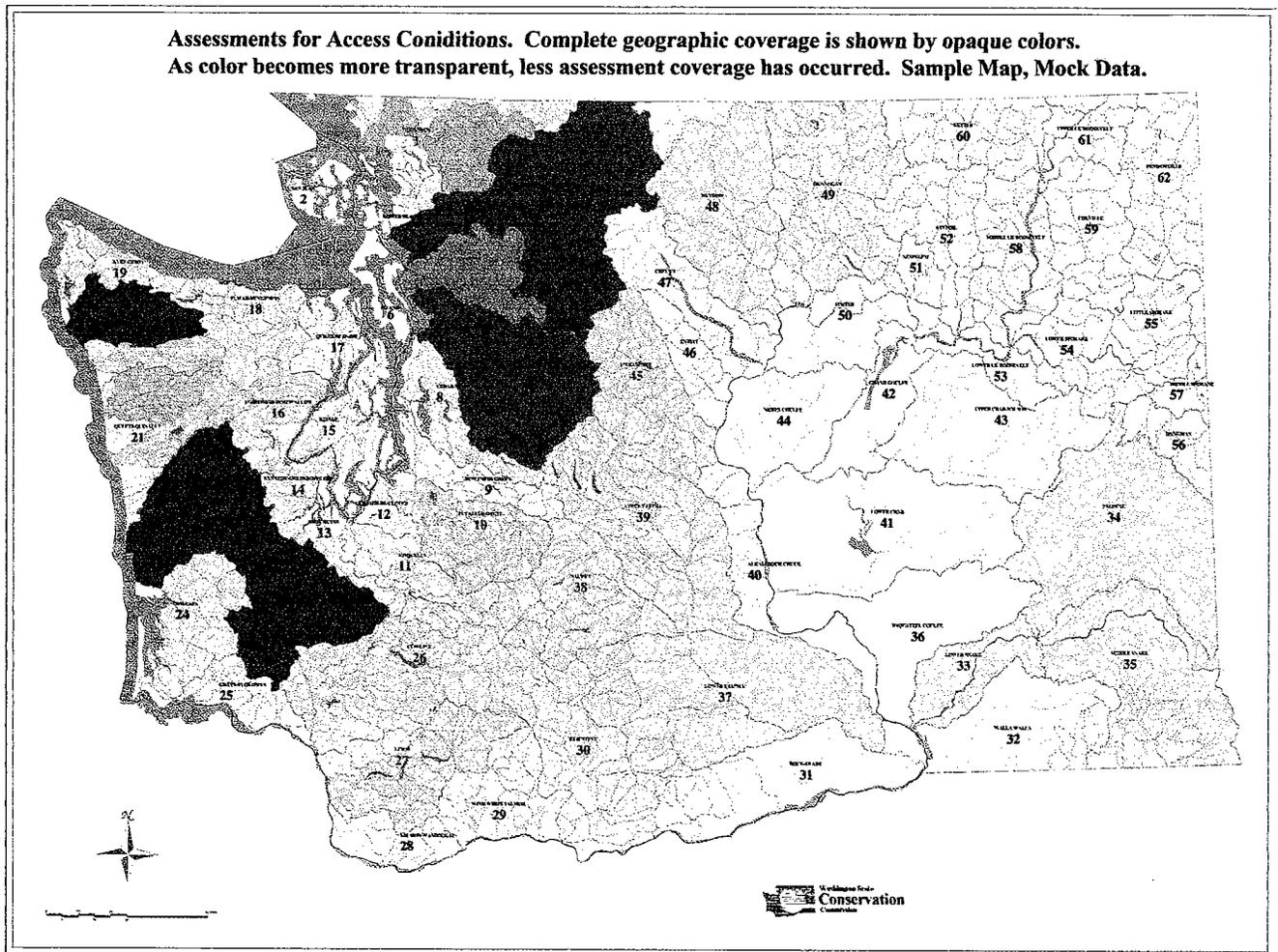


Figure 2. An alternative sample map that sets the transparency of one color to be proportional to the geographic coverage of assessments in a WRIA. Mock data were used.



Appendix 2: The Spreadsheet Template

Included in the CD is a spreadsheet template to be used for this analysis.