

# University of Washington

## School of Aquatic & Fishery Sciences

### Columbia Basin Research

**Salmon Insider**  
 Columbia Basin Research Newsletter  
 Winter 2006

Columbia Basin Research (CBR) is a scientific research group at the University of Washington, School of Aquatic & Fishery Sciences. We investigate salmon biology and survival in the Columbia and Snake river basins. We provide user-friendly data analysis and modeling tools, and maintain DART, an interactive secondary database, for the fisheries community and the general public.

### Inside . . .

#### CBR Status & Trends Overview

Location Code	Species	Run	Data Type	Status
Asotin Creek	Steelhead	Summer	Spawners	H graph
Bear Valley Creek/Elk Creek Index Area	Chinook	Spring/Summer	Redd Counts	VH graph
Deschutes River	Steelhead	Summer	Spawners	VH graph
Entiat River	Chinook	Spring	Spawners	H graph
Grande Ronde River	Chinook	Spring/Summer	Spawners	VL graph
Imnaha River	Chinook	Spring	Redd Counts	NA graph
Imnaha River	Chinook	Spring/Summer	Spawners	VH graph
John Day River Upper	Steelhead	Summer	Spawners	H graph
Johnson Creek	Chinook	Summer	Spawners	H graph
Joseph Creek	Steelhead	Summer	Spawners	H graph
Lemhi River	Chinook	Spring/Summer	Spawners	VH graph
Marsh Creek	Chinook	Spring/Summer	Redd Counts	VH graph
Methow River	Chinook	Spring	Spawners	H graph
Methow River	Steelhead	Summer	Spawners	VH graph
Main Fork Salmon River	Chinook	Spring/Summer	Spawners	VH graph
Minam River	Chinook	Spring/Summer	Spawners	VH graph
Pahsimeroi River	Chinook	Spring/Summer	Spawners	VH graph
South Fork Salmon River	Chinook	Spring/Summer	Spawners	H graph
Satus Creek and Tributaries	Steelhead	Summer	Spawners	H graph
Snake River	Chinook	Fall	Spawners	VH graph
Redfish Lake	Sockeye	Summer	Spawners	NA graph
Tucannon River	Chinook	Spring/Summer	Spawners	H graph
Tucannon River	Steelhead	Summer	Spawners	VL graph
Umatilla River	Steelhead	Summer	Spawners	VH graph
Upper Salmon River	Chinook	Spring/Summer	Spawners	VH graph
Walla Walla River	Steelhead	Summer	Spawners	VL graph
Wenatchee River	Chinook	Spring	Spawners	VH graph
Entiat and Wenatchee Rivers combined	Steelhead	Summer	Spawners	VH graph

#### Habitat Restoration and Harvest Databases

WASHINGTON IAC/SRFB COLUMBIA BASIN SALMON HABITAT RESTORATION PROJECTS

START YEAR	FISH PASSAGE			RIPARIAN			INSTREAM			ROAD	AGRICULTURAL		WATER
	Stream Length Made Accessible	Additional Rearing Habitat	Additional Spawning Habitat	Fenced	Planted	Length Stream Bank Treated	Instream Miles Treated (not stabil.)	Structures Installed (Barbs, Rock Weirs)	Bank Stabilization	Roads Decomm.	Water Supply Units	No Till Farming	Water Manag Units
Units	miles	miles	miles	miles	acres	miles	miles	number	miles	miles	number	acres	number
1999	24	17.0	11.2	9.0	10.5	41.4	8.6	4.73	0	1.71	10.3	0	0
2000	59	81.3	66.5	43.3	22.1	348.2	34.6	27.64	689	2.24	0.8	33	7847
2001	16	25.7	16.1	7.2	2.8	8.1	12.0	4.70	21	0.20	20.0	0	935
2002	19	3.0	3.0	2.0	3.2	46.2	5.8	7.44	40	1.41	0	1	0
2004	22	139.7	100.9	102.2	0.0	7.2	9.1	7.13	16	0.00	0	0	0
<b>TOTALS</b>	<b>140</b>	<b>266.6</b>	<b>197.7</b>	<b>163.6</b>	<b>38.7</b>	<b>451.2</b>	<b>70.0</b>	<b>51.64</b>	<b>766</b>	<b>5.56</b>	<b>31.09</b>	<b>34</b>	<b>8782</b>



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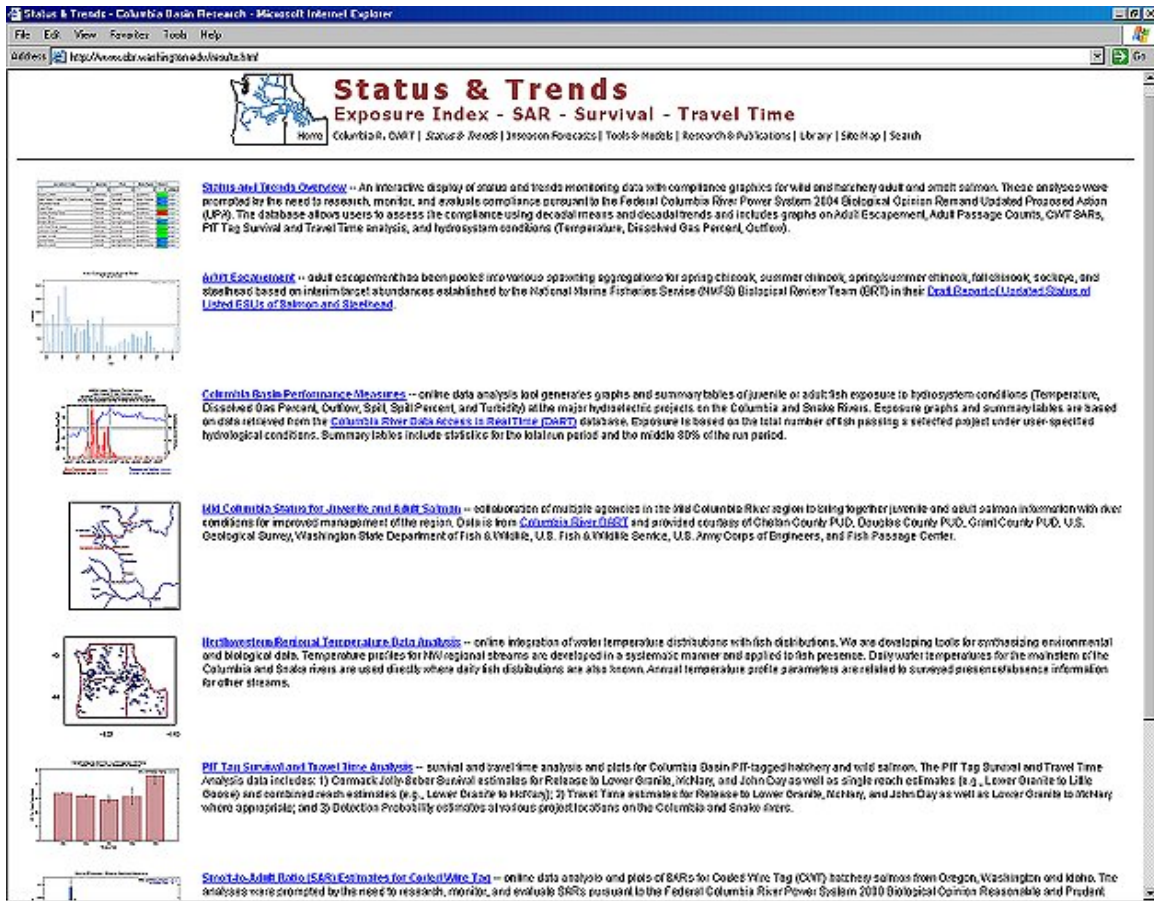
newsletter@cbr.washington.edu  
 www.cbr.washington.edu

## Columbia Basin Research: Status & Trends Overview

The newest addition to the [Status & Trends](#) website is the [Status & Trends Overview](#) web application, which offers internet users quick and convenient access to pertinent biological, chemical, and physical response variables associated with salmonid recovery in the Columbia Basin. This web site provides ready access to the status and trends of a variety of mainstem hydrosystem performance measures, including adult counts at dams, stream escapement, smolt-to-adult ratios, juvenile passage survival, juvenile travel time, and compliance in meeting temperature, dissolved gas, and flow targets. Web users can search the records by stock, location, and/or

performance measure to construct graphical and tabular summaries. Graphical displays permit users to compare decadal mean as wells as assess short-term and long-term trajectories.

In situations where users wish to examine multiple performance measures at once, the web site also provides summary reports. These reports indicate the status of each performance measure relative to the BiOp/Remand targets in a concise tabular format. Users can then examine each performance measure in detail at their convenience. Information on harvest and habitat improvement will soon be added to this site.



## Status & Trends Overview

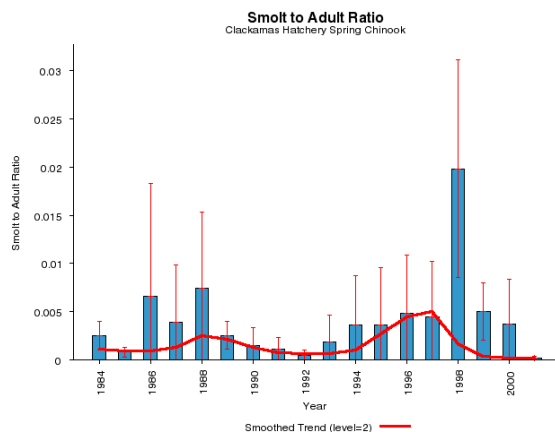
The [Status & Trends Overview](#) web application features interactive displays of analysis results based on monitoring data, hydrologic data, and compliance targets for wild and hatchery adult and smolt salmon.

Summaries are compiled from the more detailed annual analyses that are accessible from the [Status & Trends](#) website. The goal of these summaries is to assist in the monitoring and evaluation of compliance pursuant to the Proposed Actions (PAs) and Reasonable and Prudent Actions (RPAs) yet to be determined in the current collaborative process between the Action Agencies in the Federal Columbia River Power System 2004 Biological Opinion Remand.

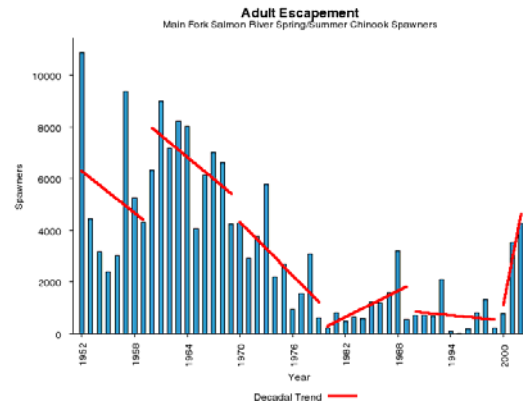
Summaries can be accessed by:

- *Measure* — Adult Escapement, Adult Passage, Smolt to Adult Ratio, Flow, Smolt Survival, Travel Time, Total Dissolved Gas, and Temperature.
- *Observation Site* — 14 dams.
- *Release Site* — 146 hatcheries, traps, ponds, rivers, creeks, and lakes.
- *Species* — 5 salmonid species.

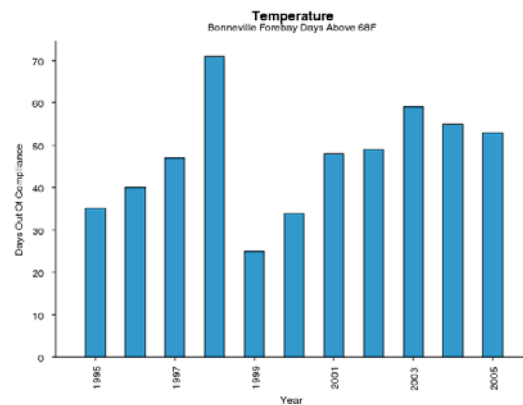
**Fig. 1. The Measure is smolt-to-adult ratio of Clackamas Hatchery Spring Chinook with a Smoothed Trend and Smoothing Level 2 selected.**



**Fig. 2. The Measure is Adult Escapement for the Main Fork Salmon River Spring/Summer Chinook spawners with a Decadal Trend and a Smoothing Level 3.**



**Fig. 3. The Measure shown is the days temperature at Bonneville forebay exceeded 68F with the Trend Statistics off.**



Visit the website at:  
<http://www.cbr.washington.edu/trends/index.php>

For more information, please contact Peter Westhagen at (206) 616-7448 or pnw@u.washington.edu.

## Habitat Restoration and Harvest Databases

Columbia Basin Research is developing two new 2<sup>nd</sup> tier web-based databases: one on habitat restoration projects and another on historical salmon/steelhead harvest. We expect these databases to be useful to the fisheries community, interested landowners, environmentalists, and power authority managers, by providing easily understandable summary statistics, graphs, and trend analyses.

Interested users will be able to query the restoration database to access a variety of statistics assessing restoration projects by location, target species, funding source, type of activity, and/or implementing agency, tribe, state, or citizen enhancement group. Some of the quantitative measures to be provided are: the number of miles of riparian revegetation, cattle exclusionary fencing, instream structures created, fish screens or fish ladders constructed, acres of noxious weeds removed, square yards of spawning gravel added, along with estimates of miles of spawning habitat/rearing habitat made accessible by the removal or modification of fish passage blockages.

Historical data as early as 1985 will be provided, enabling analyses of up to two decades of trends and cumulative statistics. User-defined summary tables and graphics, as well as an interface with other databases in Columbia River DART, are some of the web tools expected to be made available (see example, Table 1).

The other new 2<sup>nd</sup> tier database will include information on salmon harvest. An annual harvest database that includes commercial and sport freshwater fishery catch data for sections of the mainstem Columbia River and selected tributaries for Washington and Oregon is currently in development. Limited ocean fisheries catch data will be included. Users will be able to analyze harvest trends by fishery, stock, and/or location.

We are presently coordinating with other regional organizations developing 1<sup>st</sup> tier databases to avoid duplication of effort and to better provide value-added analytical capabilities.

For more information, please contact Jim Griswold at (206) 616-7445 or [jimg@cbr.washington.edu](mailto:jimg@cbr.washington.edu).

**Table 1. Example of summaries for habitat restoration activities from Washington IAC/SRFB Columbia Basin salmon habitat restoration projects.**

WASHINGTON IAC/SRFB COLUMBIA BASIN SALMON HABITAT RESTORATION PROJECTS

START YEAR	FISH PASSAGE			RIPARIAN			INSTREAM			ROAD	AGRICULTURAL		WATER	
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\* Number of Washington IAC/SRFB projects completed or still active