Ode to the Willamette

Stan Gregory
Oregon State University
Roger Woods
Gail Achterman

Paula Burgess
"I'D TELL FUTURE MEYER TRUSTEES THIS: EMBRACE A SENSE OF CURIOUSITY."

– JOHN EMERICK
Restoration is the design of a more ecologically sound and livable future.
Necessary Elements of Enduring Change

Natural World

Enduring Change

People

Policy
How did we get here?

Where are we going?
Figure 13. Sulite pulp mill wastes entering Willamette River at Salem, Oregon.
Portland Mayor Joseph Carson & Kids

1938
Tom McCall
Robert Straub
Baker et al. 2004
Ecological Applications

1995
Upper Reach

Middle Reach

Lower Reach

Willamette Falls

227 km
Introduction to the SLICES Framework

The Slices Framework is intended for use in making decisions about conservation and restoration in the Willamette River floodplain. It makes use of distinct spatial units for tracking change in the floodplain. The first of these units are 1 kilometer long slices drawn at right angles to the floodplain, first put forward in the Willamette River Basin Planning Atlas (Ch. 8 pp. 131-147 in Hulse, Gregory and Baker 2002). The second of these units are 100m subdivisions of the original 1 km slices, with ten 100m slices in each 1 km slice.

We provide access to three types of information, each of which uses the slices as a reporting unit for processes and patterns that are critical to native ecosystem function. These three types of information are:

PDF Maps
A set of 20 PDF documents showing slice boundaries and slice numbers superimposed on contemporary air photographs;

Tabular Attribute Data
A spreadsheet that reports amounts of key processes and patterns by slice and how they vary over time;

GIS Data
ArcGIS data (provided as a shapefile and as a geodatabase) that contains similar information as the PDFs and spreadsheet, but in one place and with greater analytic capabilities.
Spatially Explicit Framework for River Planning and Actions
Beginning in 2010, the Meyer Memorial Trust and OWEB supported a study of thermal patterns of 200 miles of the mainstem Willamette River and more than 100 sloughs, side channels, and tributary mouths.
Video from 2018 research by Jonny Armstrong and Hannah Barrett, OSU
Willamette Explorer

• Put understandable information into the hands of the community

• https://oregonexplorer.info/places/basins/willamette

https://oregonexplorer.info/places/basins/willamette
Increasing Public Awareness

UPRIVER

A FILM FOR THE WILLAMETTE
UP-RIVER.ORG
Willamette River Report Card 2015

Prepared by Dr. Simon Costanzo, Dr. Heath Kelsey, and Tracey Saxby
Integration & Application Network
University of Maryland Center for Environmental Science
November 2015
Geomorphic and Vegetation Processes of the Willamette River Floodplain, Oregon—Current Understanding and Unanswered Questions

By J. Russ Melnick, Krista L. Jones, Jim E. O'Connor, and Mackenzie K. Keith, U.S. Geological Survey; David Halse, University of Oregon; and Stanley V. Gregory, Oregon State University

Prepared in cooperation with the Benton County Soil and Water Conservation District
Open-File Report 2013-1249

U.S. Department of the Interior
U.S. Geological Survey
2050 Scenario

Baker et al. 2004
Ecological Applications
Cold water refuges are not the only ecological function of river floodplains.
Lateral alcoves make up 3% of the area of river habitat in the mainstem Willamette.
FLOOD CONTROL DAMS AFTER 1950 HAVE REDUCED DELIVERY OF SEDIMENT TO MAINSTEM WILLAMETTE RIVER BY 60-90% 

Jim O’Connor and others, USGS
Genealogy of Guiding Visions

ODFW Comprehensive Wildlife Strategy
OWEB Willamette Watershed Prioritization
BPA Investment
Willamette Biological Opinion
Salmon-Driven Science & Planning

- Oregon Plan for Salmon and Watersheds
- Upper Willamette salmon and steelhead listed as threatened
- Willamette Restoration Strategy
- Willamette Basin Planning Atlas
- Biological Opinion, Recovery Plan