River System Overview
What Moves on the River?
Infrastructure Projects
Our Fish
On the Horizon
Protect from flooding

Vanport Flood – June 15, 1948
Rural electrification
Get goods to market
Our future was built ...
Lower Columbia River

- 43’ channel extends 105 miles inland
- Over 50 million tons of cargo in 2017
- $24 billion in cargo value
- 40,000 jobs depend on the channel
Inland Columbia/Snake River

- 14’ channel depth
- Extends 365 miles inland
- Eight locks
Virtual tour - The Dalles navigation lock
Virtual tour - The Dalles navigation lock
The Dalles navigation lock
- downstream gate -

The locks on the Columbia Snake River System have the highest lift in the United States.
Columbia Snake River System

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"There has to be a cultural reorientation of what this region is and wants to be. And that is part of the Pacific Rim. That's hard to sell to people who have spent their lives seeing themselves as the resource providers and breadbasket for the rest of the United States. But we've got to realize that our future lies more in Tokyo than it does in Atlanta or New York."

Denny Pease, Columbia/Snake River Marketing Group
February 1, 1987
Inc. Magazine
What Moves on the Columbia & Snake?

Third largest grain export gateway in the world

WHEAT
#1 in U.S. exports

2017 U.S. Wheat Exports

SOYBEANS
#2 in U.S. exports

2017 U.S. Soy Exports
Arriving by Rail

Seven major grain export facilities

Grain on the River

Arriving by Barge
MINERAL BULKS
#1 on West Coast

AUTO IMPORTS & EXPORTS
Major West Coast gateway

WOOD EXPORTS
#1 on West Coast
Other Columbia/Snake Cargo ...

**INTRARIVER COMMODITIES**

- Petroleum products
  - Containerized municipal solid waste
- Oversized project cargo
  - Wood chips
  - Sand/gravel
Columbia Snake River System

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Columbia River Jetties
MAJOR REHAB – ON SCHEDULE

- Help maintain depth & orientation of the navigation channel
- Provide protection for ships entering and leaving the river
- Jetty breach could lead to a shoaled-in bar
Columbia River Channel Deepening

- 20 year project
- Completed November 2010
- 110 mile channel deepened to 43’
- 6K tons added capacity per ship
- $1-2M worth of cargo added per ship call

RESULT:
Over $1B in new investment
Columbia/Snake River Locks - Major Repairs
2010-2011 // 2016-2017
COMPLETED

- New gates at 3 locks, major repairs at all others in two coordinated closures
- Ensures safety, efficiency, reliability
Columbia Snake River System

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Sharing Our Rivers with Anadramous Fish

- Hatchery management
- Hydro system passage
- Predation management
- Estuary habitat
- Fish grows and matures in the ocean
- Smolt
- Fish migrates to the ocean
- Egg
- Ocean 2-5 years
- Tributary habitat
Fish Survival at the Dams

- Juvenile survival at the dams now averages 97%.
- NOAA: survival rates through the hydro system are approaching levels in rivers without dams.

Combined with refined spill operations, the installation of surface passage has reduced the percentage of fish that go through powerhouses (i.e. turbines), decreased fish travel time through the system and increased overall fish survival.
Regional Effort to Improve Habitat

LEGEND

Columbia River basin

Projects 2007-2015

50 mi
100 km

Tributary and estuary habitat projects benefit salmon and steelhead

The Columbia River Basin habitat program is among the largest and most comprehensive programs in the nation. The B10p identifies specific habitat quality improvement targets for 56 populations of salmon and steelhead focused on alleviating key limiting factors and improving abundance. Habitat projects are implemented in the estuary and tributaries throughout the Columbia Basin. B10p and non-B10p habitat projects depicted here are underway in areas where ESA-listed fish covered by the B10p originate.

Click here for more
Fish Counts at Uppermost Snake River Dam, 1962-2017

Lower Granite: 1975 - present

Figure 6. Combined returns of spring-summer, and fall Chinook salmon returning to the uppermost of the four lower Snake River dams, indicating the total number continuing on to spawning habitat in Idaho. From U.S. Army Corps of Engineers counts, accessed at www.cbr.washington.edu/dart.
Columbia Snake River System

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On the Horizon

Columbia River System Operations EIS Process

- Columbia River Systems Operations (CRSO) Environmental Impact Statement (EIS)
- A draft report for the region to review will be released in February
- This effort is based in science
- Complies with National Environmental Policy Act (NEPA)
- Requires consultation with cooperating agencies – four Northwest states, Northwest Tribes
Columbia River Basin
Columbia River Treaty

- US-Canada Treaty ratified in 1964 for:
  - Coordinate flood control
  - Optimize hydroelectric generation

- Constructed four dams
  - Duncan – 1967 – Canada
  - Arrow/Keenleyside – 1968 – Canada
  - Mica – 1973 – Canada
  - Libby – 1975 – U.S.

- Cost sharing
- Shared energy benefits
- Framework for cooperation
- Some flexibility, with “notes” exchanged
Columbia River Treaty

- New concerns since 1964:
  - Ecosystem health/fish access
  - Costs – Canadian Entitlement
  - Predictability – flood control

- December 2013 regional recommendation

- Ten year “notice”
  - Opened September 2014, for 2024
  - Neither country has issued notice yet
Columbia River Treaty and Navigation

- Changes in flow volume, timing and duration could impact:
  - Sedimentation and shoaling
  - Safe movement of barge tows and deep draft vessels
  - Further degradation of pile dikes
  - Impacts to levees which protect port assets
Formal negotiations began in May 2018

Seven rounds of talks have been held

Navigation & port interests continue to engage with U.S. State Dept. and Corps of Engineers
Opportunities to Stay Informed

Website: www.pnwa.net

Nor’wester newsletter