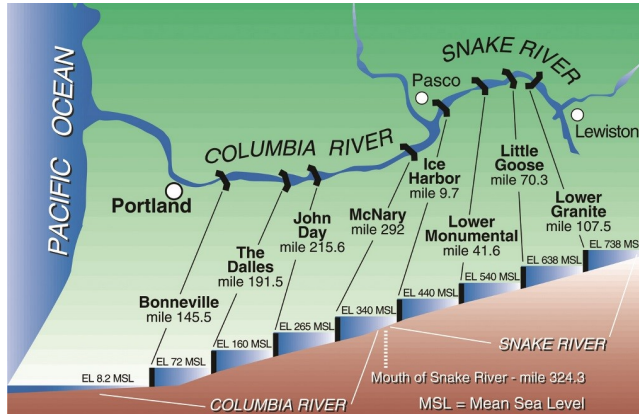


SNAKE RIVER DAMS - BENEFITS TO THE REGION & NATION



The Snake River dams are a critical component of the Columbia Snake River System, a 465-mile federal waterway that provides access to international markets for farmers as far as the Midwest.



River System Highlights

- #1 U.S. wheat exports
- #2 U.S. corn and soy exports
- #1 West Coast wood exports
- #1 West Coast mineral exports
- #1 West Coast auto exports

In 2020, 4.2 million tons of cargo moved by barge on the Snake River.

Barging is the most efficient and environmentally friendly mode of cargo transportation.

Freight Comparison of Barges, Trains and Trucks

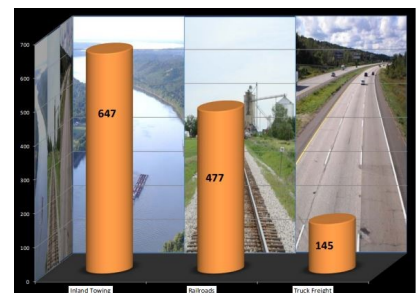
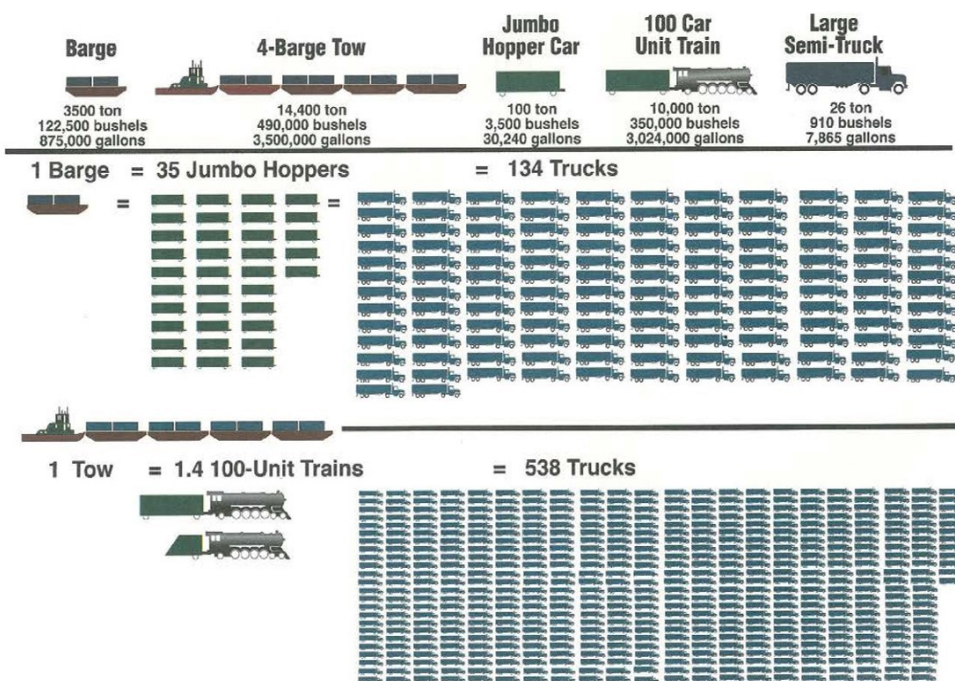
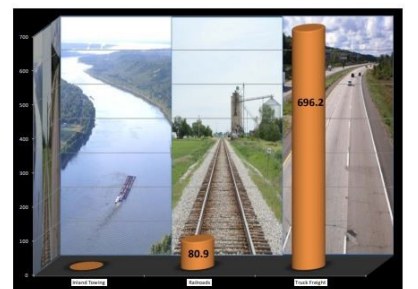


Figure ES-4. Comparison of Fuel Efficiency—2014.

Barging is the safest method of moving cargo, with a lower number of injuries, fatalities and spill rates than both rail and trucks. It is also the most fuel efficient and has the lowest emissions.



Ratio of Injuries per Million Ton-Miles versus Inland Marine

In 2020, it would have taken 42,160 rail cars or 162,153 semi-trucks to move the cargo that was barged on the Snake River.

Snake River Dams - Transportation & Salmon



Wheat barge on the inland river system



Wheat Barging plays a key role in this transportation system, and fed over 5.055 million tons of wheat to the deep draft Lower Columbia River in 2020. Each year, nearly 10% of all U.S. wheat exports move by barge just on the Snake River alone.

Wood products Each year, around 250,000 tons of wood chips are barged between locations on the Lower Columbia River and Lewiston, ID, and turned into pulp for paper production at mills in our region. This barge service supports the just-in-time delivery service needs of the various mills on the Columbia & Snake Rivers.

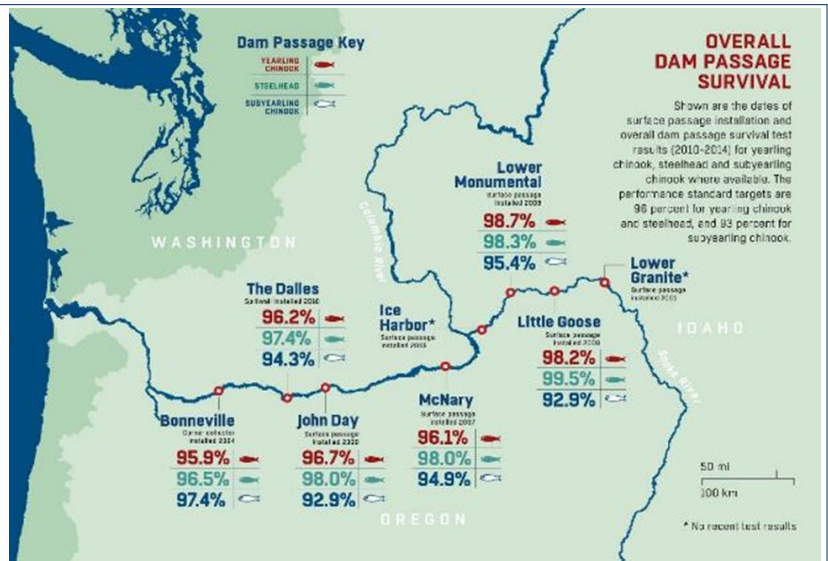
Containers All of Clark County, WA's solid waste is transported by barge from the Vancouver, WA area to Boardman, OR. This provides steady, dependable, low cost and low emission transportation for these products.

Petroleum Tidewater Barge Lines transports refined petroleum products, ethanol, biodiesel, and renewable fuels in its fleet of eight double-hulled barges with a capacity of 440,000 barrels. Tidewater operates under a comprehensive safety management system that ensures the health and safety of our employees, the public, and the environment.

Cruise Cruise boat demand has steadily increased over the last ten years and represents a growing market in the region. Each summer, thousands of passengers enjoy the Columbia & Snake Rivers on cruise vessels which travel the 325 river miles between Vancouver and Clarkston/Lewiston. We anticipate nearly 24,000 passengers in 2022, and 29,000 passengers in 2023, with more plans to grow in the future.

Salmon & dams can (and do!) co-exist

- Juvenile survival at the dams now averages 95-97%
- According to NOAA, survival rates through the hydro system are approaching levels seen in rivers without dams
- 2020 saw the best SOCKEYE returns on record at Bonneville Dam and the second highest returns at Lower Granite
- In 2020, Adult CHINOOK SALMON returns were 120% of the 10-year average at Bonneville Dam



Transportation Impacts of Dam Breaching

- Highway, rail, grain elevators and local infrastructure networks will need over \$1 billion capital investment
- Dam breaching is expected to require at least 201 additional unit trains
- Increased truck and rail traffic will result in more fatalities and related costs
- Increased reliance on truck-to-rail or truck-to-barge terminal shipping is expected to result in an increase of 23.8 million miles of travel per year on county, state and federal highways
- The increased trucking activity will increase fuel costs, highway maintenance costs, terminal facility maintenance cost, driver time, and vehicle maintenance costs by over \$69 million per year
- Diesel fuel consumption will increase by nearly 5 million gallons per year
- Shifting commodity flows from barge to truck and rail will result in increases in CO2 and other harmful emissions by over 1,251,000 tons per year.