



WASHINGTON ASSOCIATION OF WHEAT GROWERS

- Drought impacts
- Riparian Buffers
- Lower Snake River Dams



OVERVIEW OF WA WHEAT GROWING INDUSTRY

History and Development

The WA wheat growing industry has a long history that stretches back to the early days of the state's settlement.

Current State

Today, the WA wheat growing industry is a major contributor to the state's economy and provides essential food products to consumers all over the world. Wheat is a staple food for more than 35% of the human population and provides 20% of the world's nutritional needs. We export approximately 90% of our wheat.

Economic Impact

The WA wheat growing industry generates billions of dollars in economic activity and provides thousands of jobs to people in the state. \$2.27 in economic activity for every dollar of sales from wheat.



IMPACT OF DROUGHT ON WHEAT PRODUCTION

Decreased Yields

Drought can significantly decrease wheat production yields in Washington, leading to economic losses for farmers and supply chain disruptions for the industry.

Lower Quality Grain

Drought-stressed wheat plants produce lower quality grain, affecting the overall profitability and marketability of the crop.

Increased Risk of Pests and Diseases

Drought weakens wheat plants, making them more susceptible to pests and diseases, which can further reduce yields and quality.



LOWER QUALITY GRAIN

Lower Protein Levels

Extended periods of drought can lead to lower protein levels in crops, resulting in lower quality grain that is less nutritious and less valuable.

Higher Rates of Disease

Drought can lead to higher rates of disease in crops, making them more vulnerable to pests and fungi. This can result in lower quality grain that is more difficult to sell.



INCREASED RISK OF PESTS AND DISEASES

Drought-stressed wheat plants are more susceptible to pests and diseases, leading to increased costs for farmers and lower yields.

METHODS TO MITIGATE THE EFFECTS OF DROUGHT



Crop Rotation

Crop rotation is a method that involves planting different crops in the same field in successive seasons to improve soil health, reduce pest and disease pressure, and increase yield stability in drought-prone areas.

Conservation Tillage

Conservation tillage is a method that involves reducing or eliminating soil disturbance during planting and seedbed preparation to increase water retention and reduce soil erosion. It can improve crop yields and reduce the impact of drought on agriculture.

Improved Irrigation Management

Improved irrigation management involves using new technologies and methods to enhance the efficiency of irrigation systems, reduce water usage, and improve crop yield in areas with limited water resources.

Research

Drought tolerant wheat traits



NEGATIVE EFFECTS OF REGULATORY RIPARIAN BUFFERS ON WHEAT GROWERS

Reduction in Available Land for Farming

Riparian buffers have reduced the amount of land available for wheat growers in Washington, making it difficult for them to expand their agricultural operations.

Reduced Crop Yields

Riparian buffers can cause reduced crop yields for wheat growers in Washington due to shading and competition for resources from the trees in the buffer zone.

Increased Costs

Installation and maintenance of riparian buffers can be expensive for wheat growers in Washington, adding to their operational costs.

SOLUTIONS AND ALTERNATIVES



Precision Agriculture

Precision agriculture is a farming technique that uses technology to optimize crop yields while minimizing environmental impacts. It involves the use of sensors, GPS, and other tools to monitor crop growth and soil conditions, and to apply fertilizer and other inputs in a targeted and efficient manner.

Cover Crops

Cover crops are plants that are grown specifically to improve soil health and prevent erosion. They can be used to reduce nutrient runoff and improve water quality, and are often used as a more farmer-friendly alternative to riparian buffers.

Buffer Strips

Buffer strips are strips of vegetation that are planted along the edges of fields or waterways to help filter pollutants and prevent erosion. They are often designed to be more farmer-friendly than riparian buffers, and can be tailored to meet the specific needs of different farming operations.

BENEFITS OF THE LOWER SNAKE RIVER DAMS

Hydroelectric Power Generation

The Lower Snake River Dams generate hydroelectric power, a clean and renewable source of energy, which reduces carbon emissions and helps to promote environmental sustainability.

Irrigation for Agriculture

The Lower Snake River Dams provide water for irrigation, which is critical for agriculture in the Pacific Northwest region and helps to support the local economy.

Transportation of Goods

The Columbia-Snake River System, made possible by the Lower Snake River Dams, provides an important transportation route for goods and commodities, which helps to support trade and commerce in the region.





CHALLENGES AND CONTROVERSIES

Environmental Impact

The Lower Snake River Dams have caused significant environmental damage, including habitat loss and water pollution, which have had an adverse effect on fish and wildlife populations.

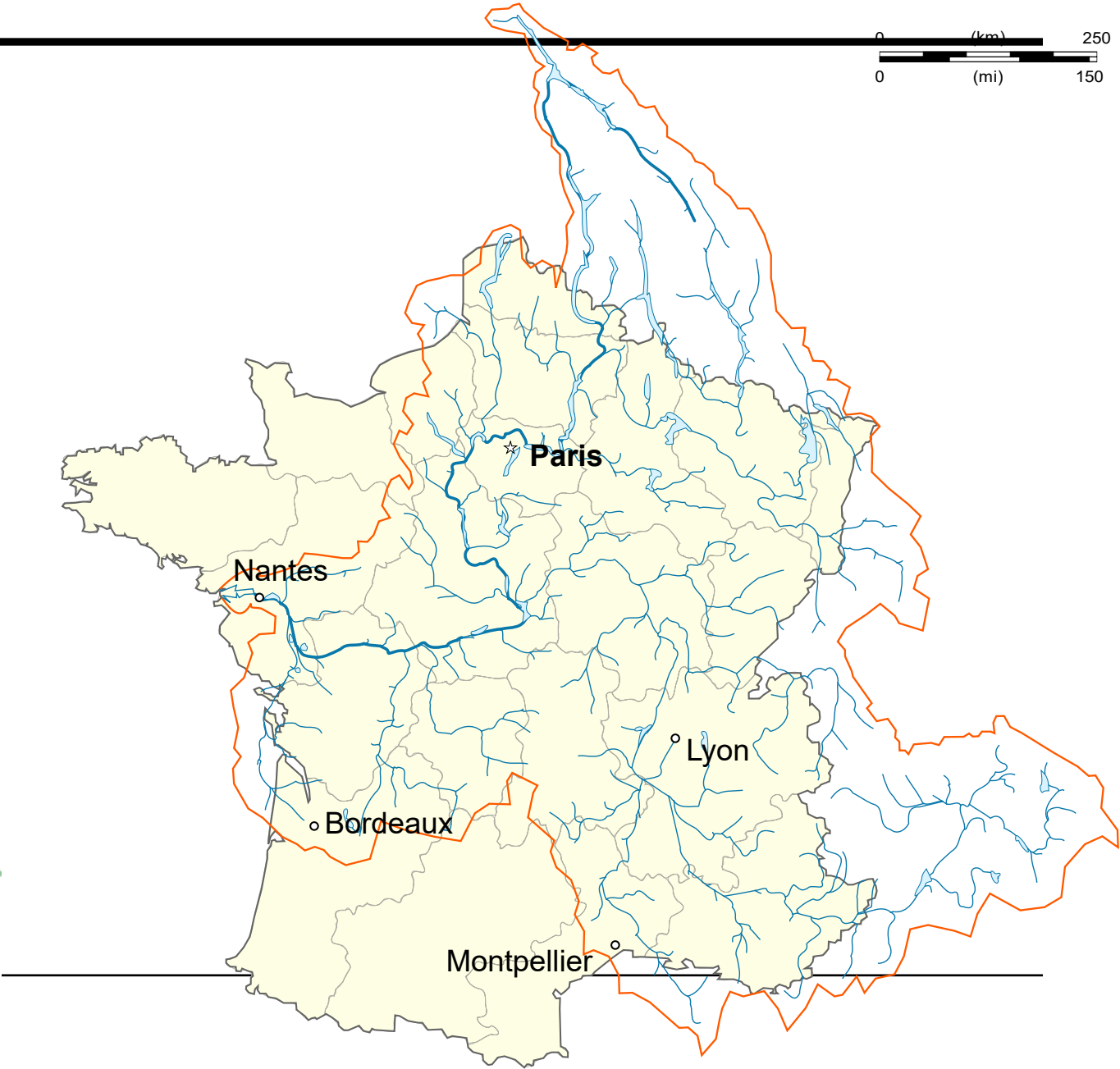
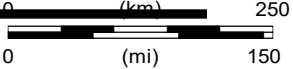
Salmon Populations

The Lower Snake River Dams have been a significant impediment to the upstream migration of salmon, which has had a negative impact on salmon populations and the fishing industry.

Controversies and Legal Challenges

The Lower Snake River Dams have been the subject of numerous controversies and legal challenges due to their environmental impact and the harm caused to salmon populations and fishing communities.

Columbia River Basin



THE RIVER SYSTEM (M-84)

Deep Draft Portion

Astoria to Portland, Oregon

110 miles long

43 ft. deep

55 million tons of cargo

Inland System

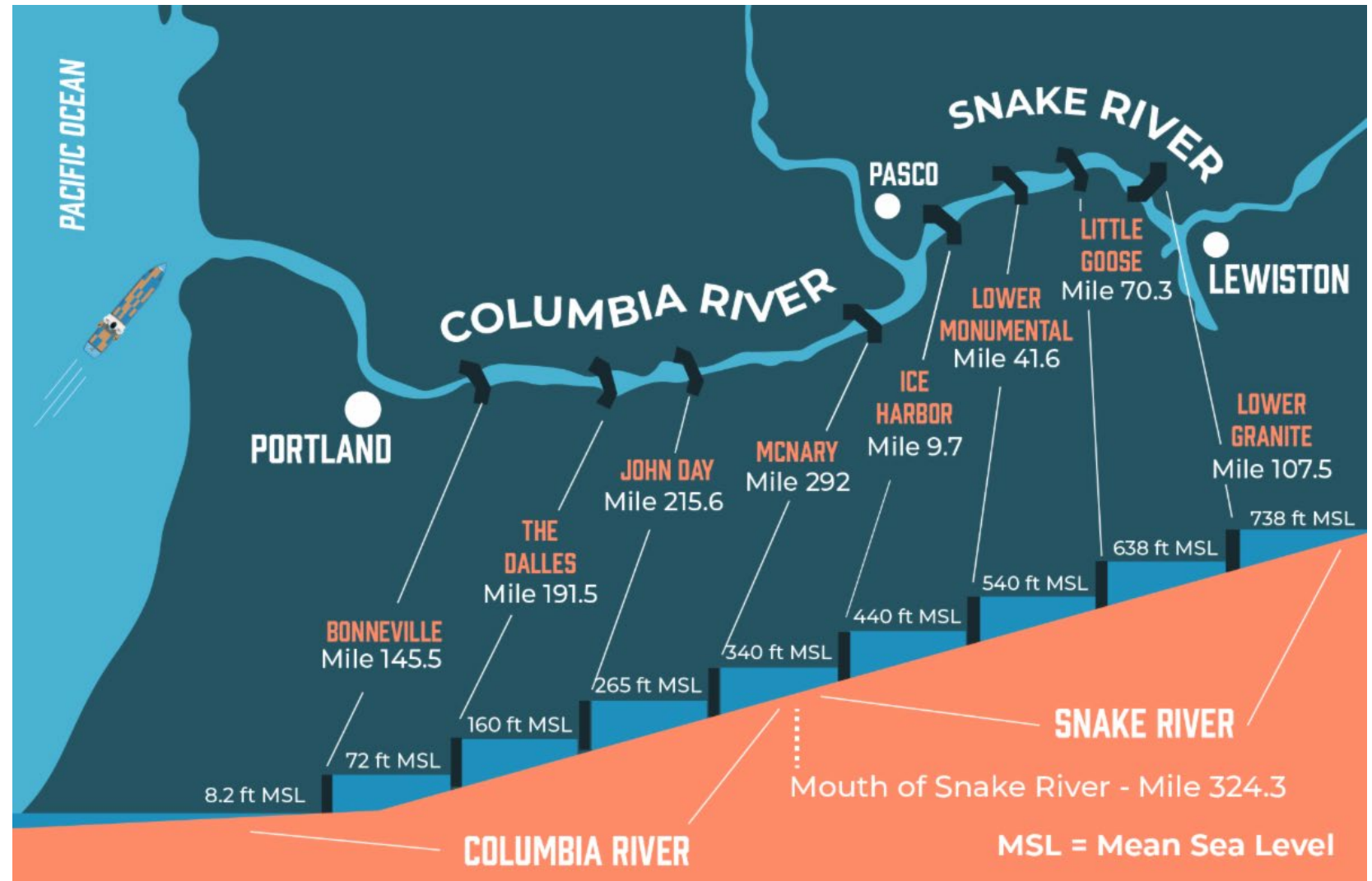
Portland, Oregon to Lewiston, Idaho

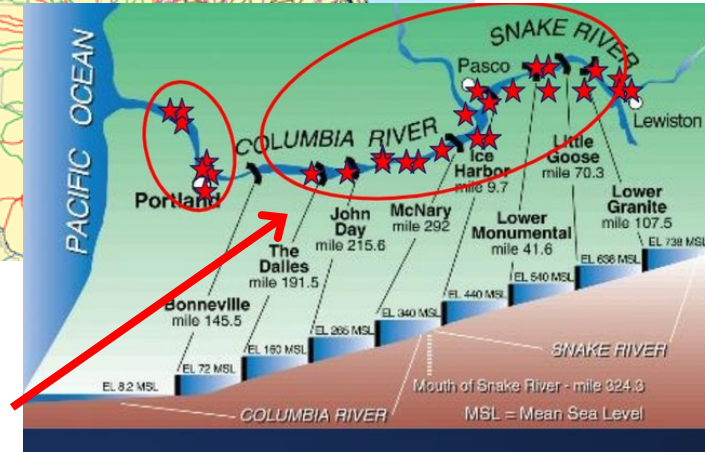
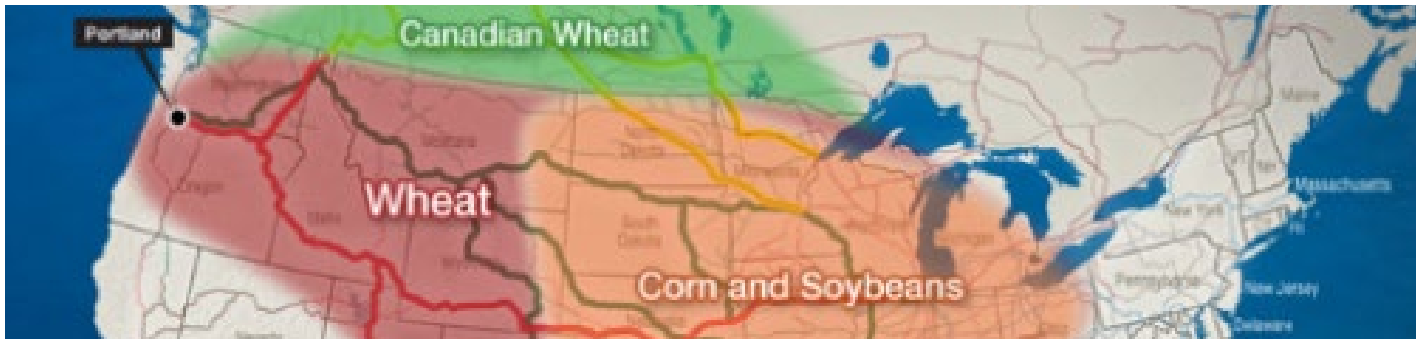
365 miles long

14 ft. deep

8 lock & dams

8.5 million tons of cargo





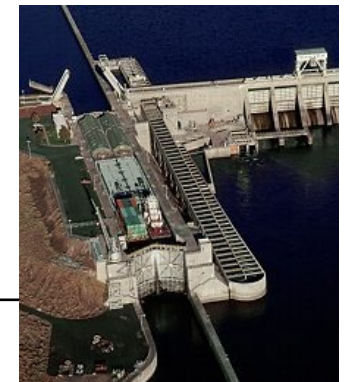
RAIL BARGE

TRADE GATEWAY

- #1 Largest Wheat Export Gateway in U.S.
- #2 Largest Soy & Corn Export Gateway in U.S.
- #3 Largest Grain Gateway in the World.

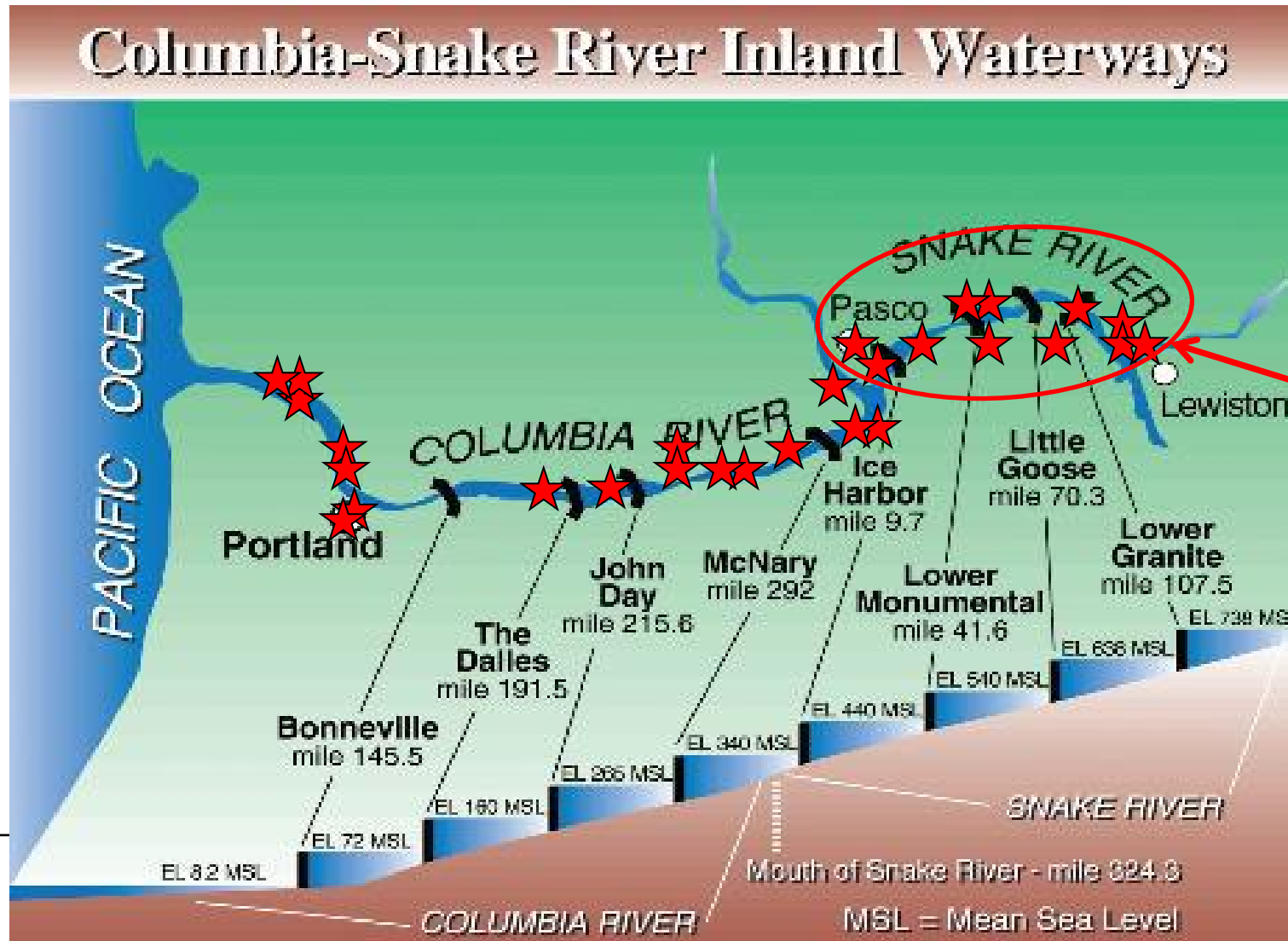
GRAIN ON THE RIVER

A Multimodal Transportation Corridor



SNAKE RIVER DAMS -

CRITICAL TO US WHEAT EXPORTS



Nearly 10% of all U.S. wheat exports move through the Snake River dams

TRANSPORTATION

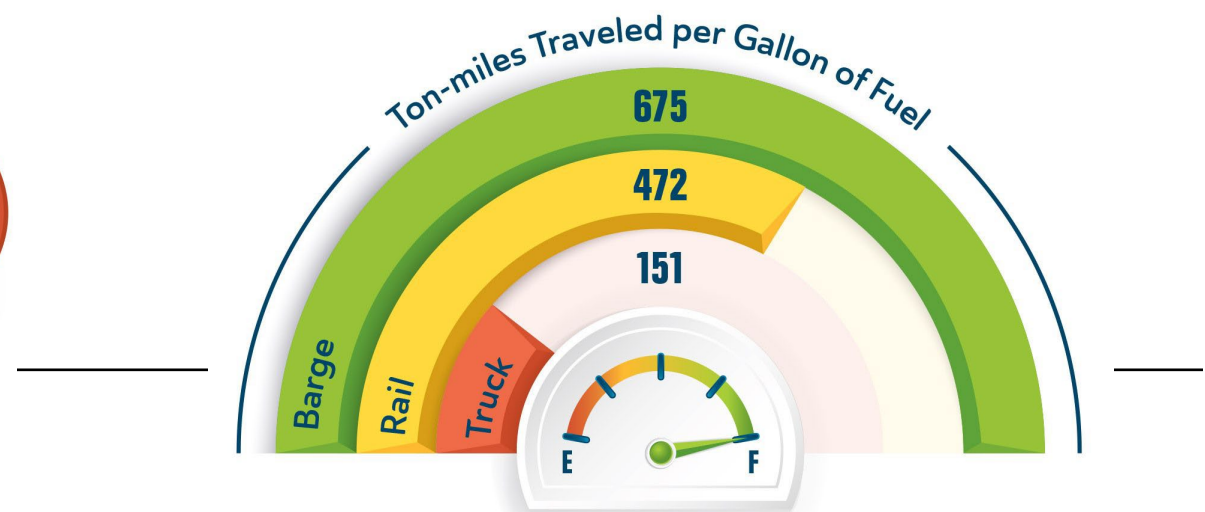
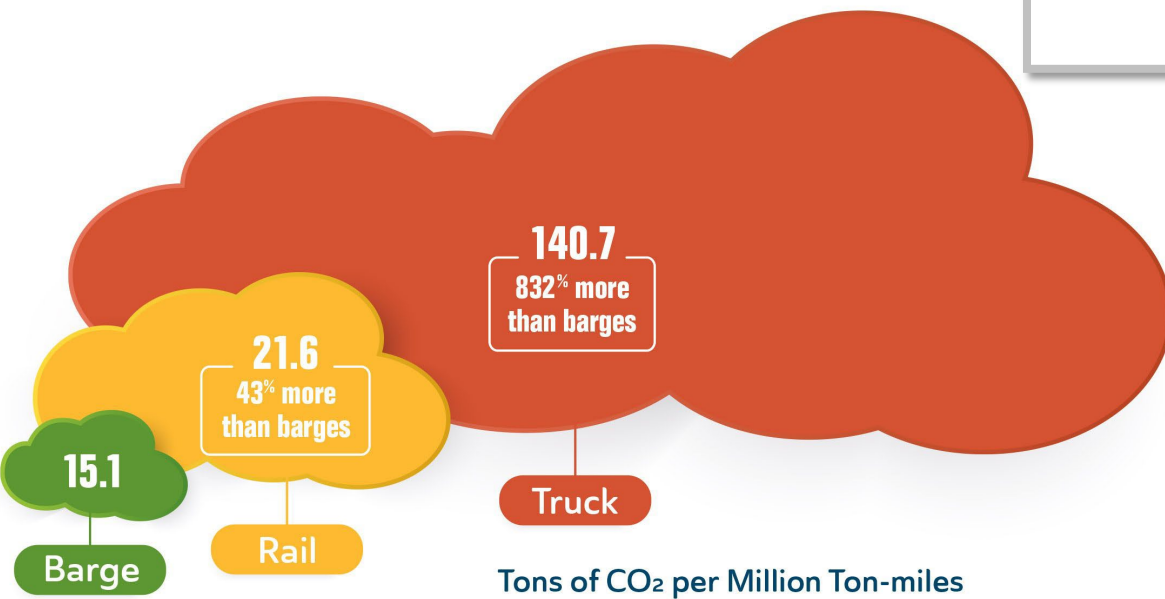
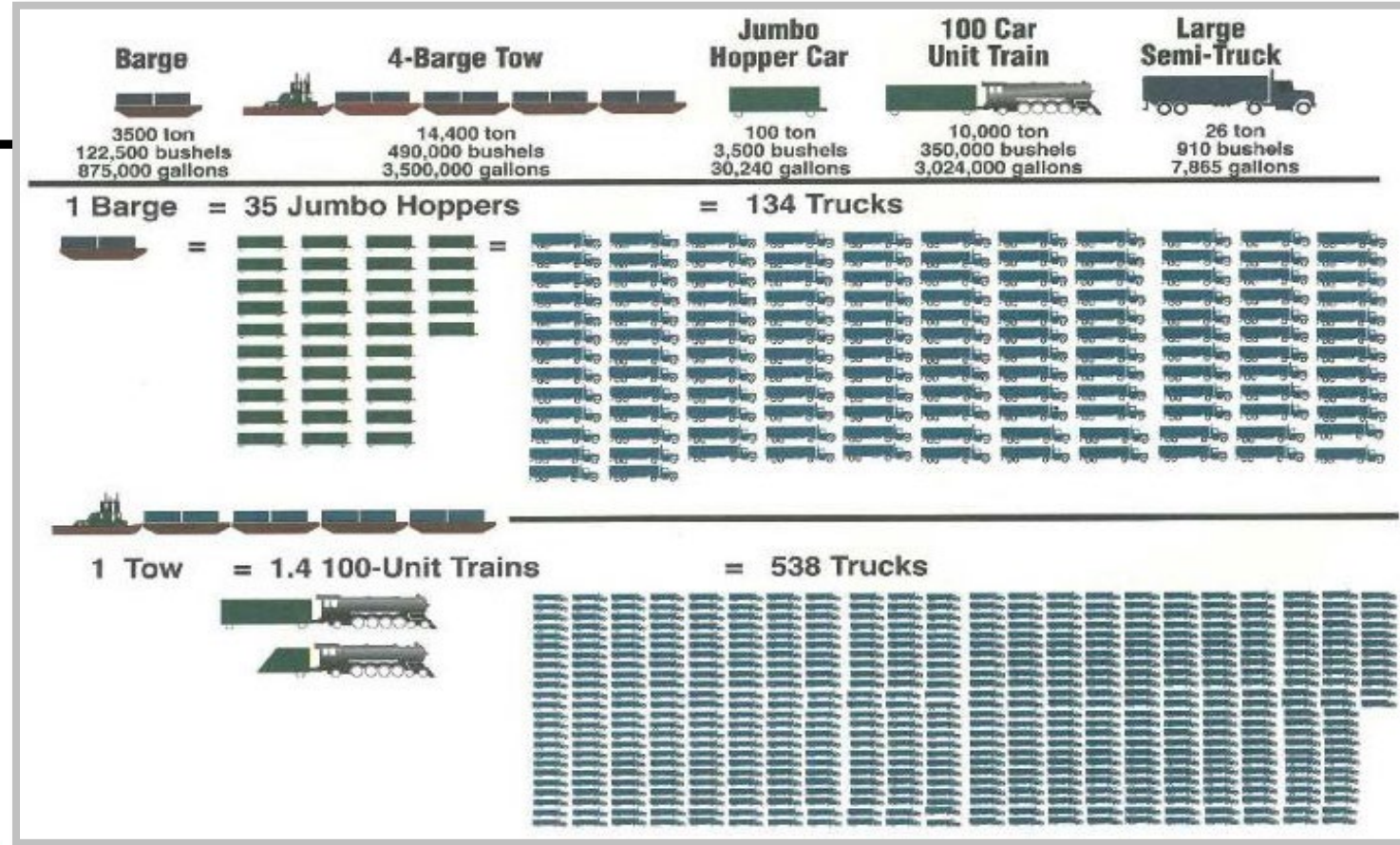
BENEFITS

Benefits of Barging

4,216,000 tons by barge

OR

42,160 rail cars or 162,153 semi-trucks worth of cargo moved on just the Snake River in 2020



Staying Alert

Inland waterways transport has the lowest injury rates compared to rail or truck.

Safety related statistics for all modes of freight transportation between 2001-2019 show **1 injury** in the inland marine sector for every 95.9 in the rail sector and 1,144.6 in the highway sector.

Inland Waterways Transport has the **Lowest Injury Record** Compared to Rail or Truck



1 For Every Barge Injury,
There Are -

96

Rail
Injuries

1,145

Tractor-Trailer
Truck Injuries

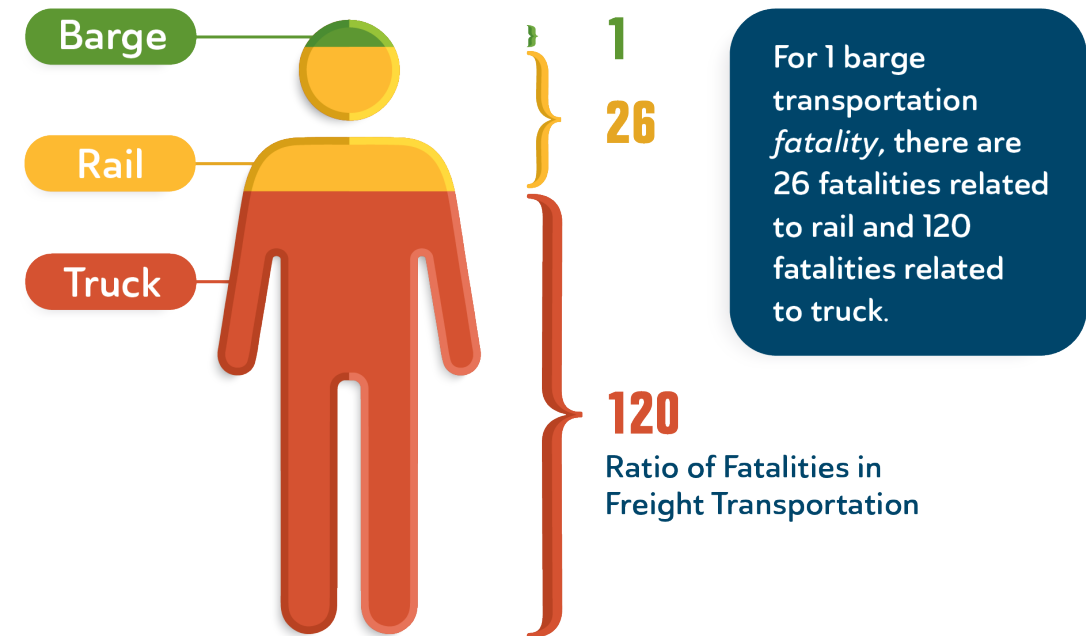
Ratio of Injuries in
Freight Transportation

Safety First

Inland waterways transport has the lowest fatality rates compared to rail or truck.

Safety related statistics for all modes of freight transportation between 2001-2019 show **1 fatality** in the inland marine sector for every 25.9 in the rail sector and 120.1 in the highway sector.

Inland Waterways Transport has the **Lowest Fatality Record** Compared to Rail or Truck





COLLABORATION

By working together and embracing innovation and sustainability, we can ensure a bright future for both the Lower Snake River Dams and the WA Wheat Growing Industry, two important aspects of the Pacific Northwest region that face challenges and controversies.



— Association of —
WHEAT GROWERS

THANK
YOU!!

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