

FREIGHT POLICY TRANSPORTATION INSTITUTE



A Real Time Assessment of a Major
Transportation Disruption
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Freight Policy Transportation Institute



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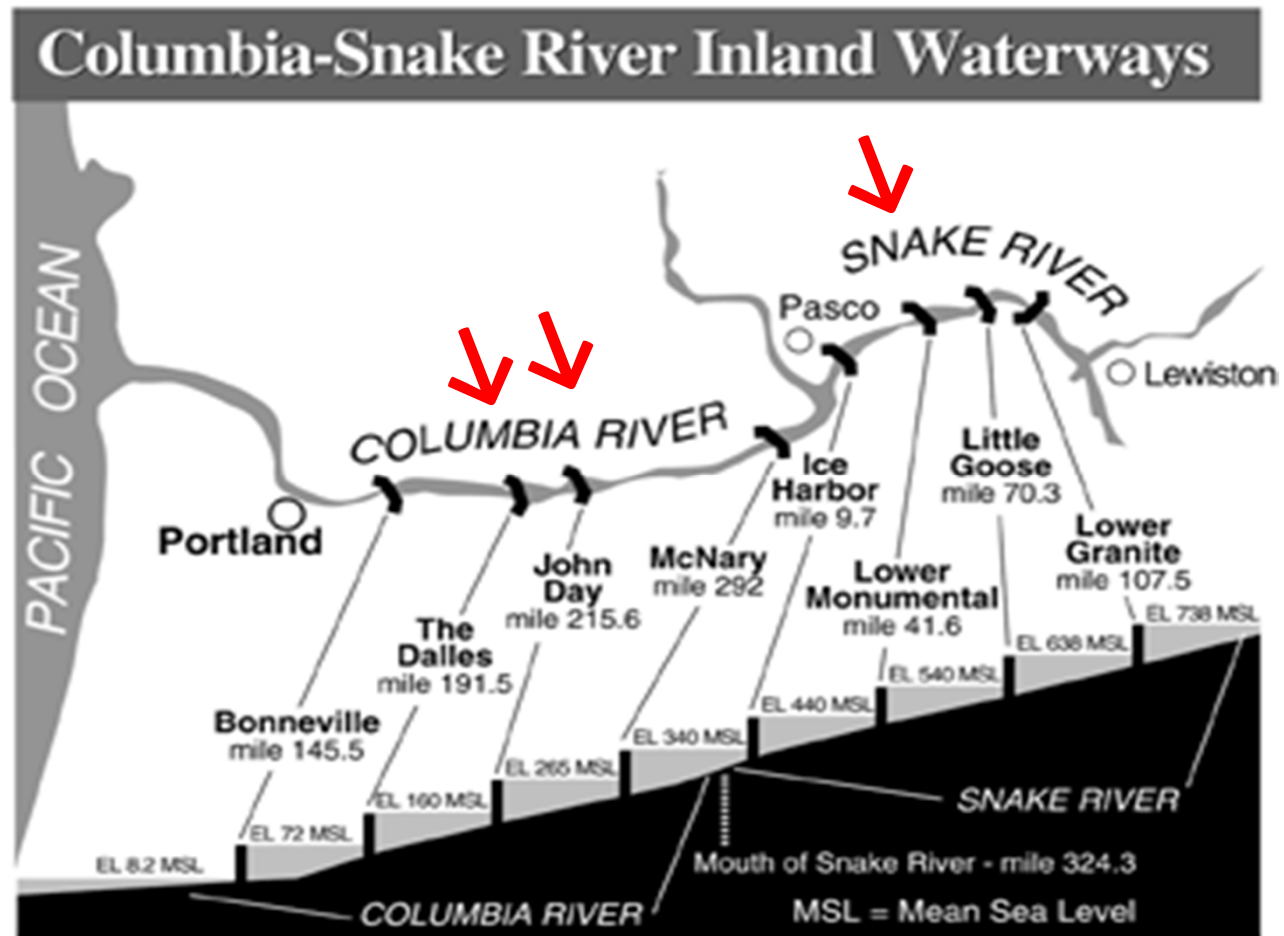


Columbia-Snake River Extended Lock Closure (Dec 2010 – Mar 2011)

Planned outage to rehabilitate an aging infrastructure

Replaced downstream gates for three locks

15 weeks



Transportation Disruption Study

- Purpose

- Determine

- Historical use of the river system
 - Preparations for the outage
 - Impacts of the outage
 - Return of traffic to the river system

- Evaluate the economic and environmental impacts

- Produce a guide for other planned disruptions



Historical Use of the Columbia-Snake River System

□ Phase I

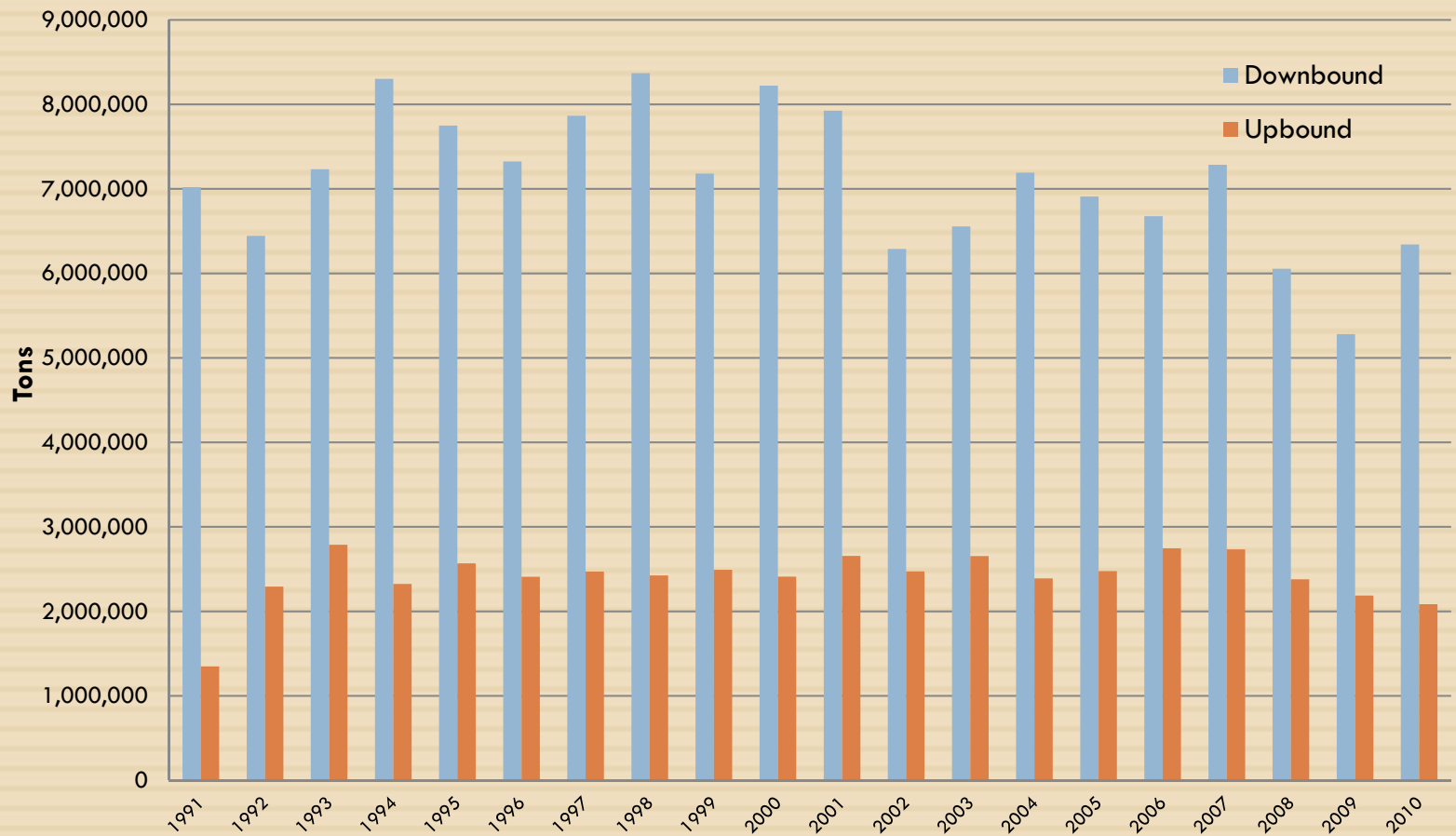
□ Objectives

- Describe historical waterborne commodity movements
- Identify the general trends in movements
- Identify major commodities that could be affected by the extended lock outage

□ Data Source

- U.S. Army Corps of Engineers' Waterborne Commerce Statistics Center
- 1991 – June 2010





Annual Downbound and Upbound Tonnage of All Commodities, 1991-2010

Source: U.S. Army Corps of Engineers Monthly Lock Tonnage Reports



Major Commodities Moving on the Columbia-Snake River System

Downriver

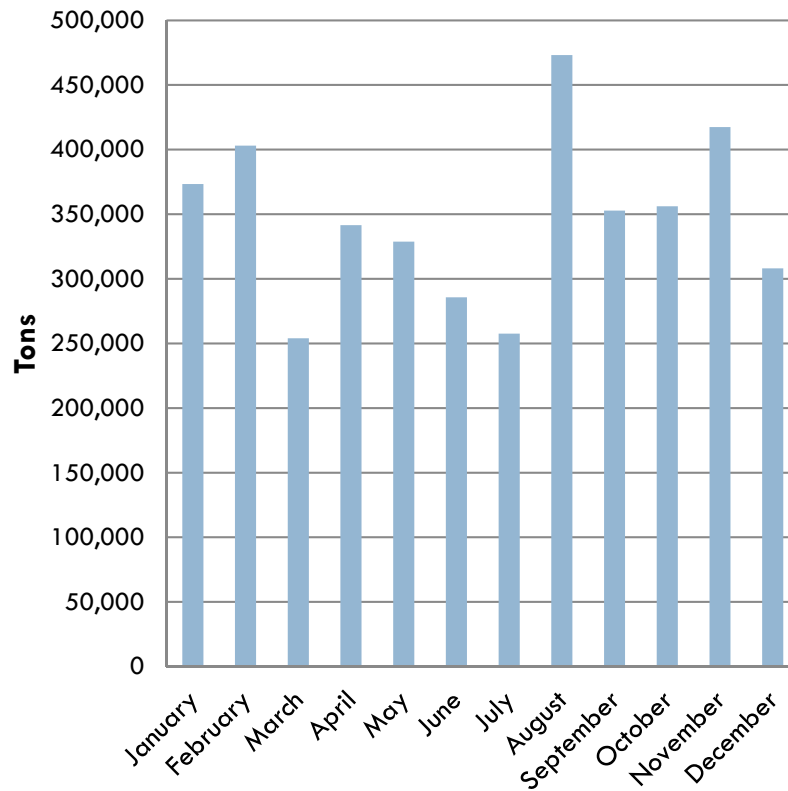
- Wheat
- Forest products
- Sand, gravel and stone
- Rye, barley, rice, sorghum and oats
- Vegetable products
- Paper and allied products

Upriver

- Gasoline
- Distillate fuels (diesel)
- Garbage
- Fertilizer
- Smelted products

Seasonality in Major Downriver Commodities, 2008 – 2010

Average Monthly Tonnage of Wheat



- 75 % of all downriver shipments
- Harvest in August
 - ▣ High volume shipments through the winter
- March is a low volume month
 - ▣ Routine 2 week outages

Industry Preparations for Extended Lock Outage, July – December 2010

□ Phase II

□ Objectives

- To describe the major waterborne movements prior to the extended lock outage
- To learn how the actors prepared

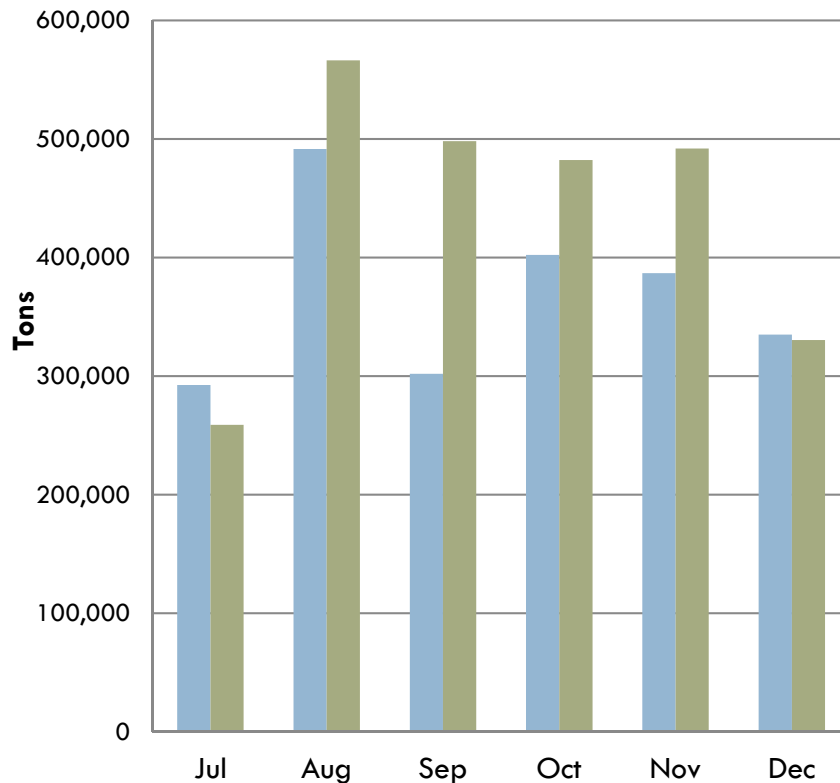
□ Data Sources

- U.S. Army Corps of Engineers' Waterborne Commerce Statistics Center
- Shippers, government divisions, industry personnel and ports



Above Average Downriver Movements, Jul – Dec 2010

Monthly and Average Tonnages
of Wheat



- Above average months: August – November
- December 2010: shipped almost as much as an average December
- Early shipments to preposition and fill early orders

Pacific Northwest Wheat Case Study

- Background

- Wheat is the largest volume commodity that moves on the Columbia-Snake River

- Purpose

- To capture the options and decisions of the wheat industry
- To provide a baseline scenario for wheat transportation



Pacific Northwest Wheat Case Study

Annual Wheat Tonnage Shipped by Survey Respondents			
Region	Number of Firms	Annual Tonnage Shipped in Bushels	Percentage of Total Tonnage Shipped
Eastern Oregon	5	32,800,000	12.68%
Northern Idaho	5	40,600,000	15.69%
Southern Idaho	3	7,500,000	2.90%
Northern Washington	5	87,900,000	33.98%
Southern Washington	8	89,912,000	34.75%
Pacific Northwest	26	258,712,000	100.0%

Industrial Preparations

Barge Line Preparations

- Implementation of a “business interruption surcharge”
- Prepared customers and employees
 - ▣ Continued benefits
 - ▣ Layoffs for outage

Rail Line Preparations

- Prepared for an increase in cargo loads
- Advertised, identified inland markets and partnered with local ports to aid in the movement of products

Institutional Preparations

- Pacific Northwest Waterways Association (PNWA)
 - The leader of preparations for the extended lock outage
 - Preparations
 - Conducted conferences justifying the importance of the lock outage
 - Suggested alternative means of transportation
 - Spoke to the public and press



Impacts of the Extended Lock Outage

□ Phase III

□ Objectives

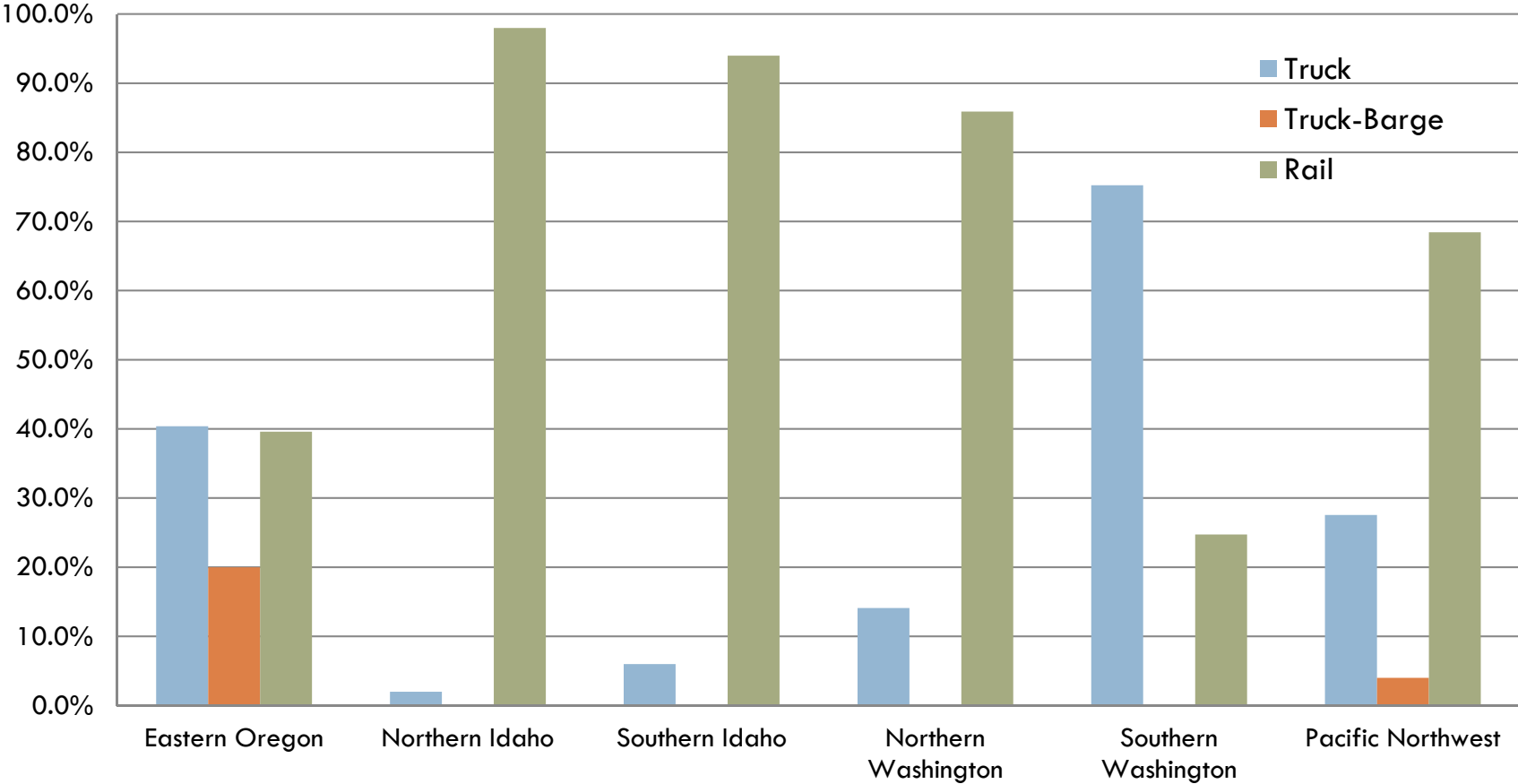
- To learn how the actors were impacted
- To describe the major commodity movements by barge, rail and truck during the lock outage

□ Data Sources

- U.S. Army Corps of Engineers' Waterborne Commerce Statistics Center
- Shippers, government divisions, industry personnel and ports



Percentage of Wheat Shipped via Various Modes by Survey Respondents



Pacific Northwest Wheat Case Study

Region	Average Tonnage Shipped in Bushels, Dec - Mar	Actual Tonnage Shipped in Bushels, Dec '10 - Mar '11	Percentage Difference
Eastern Oregon	12,136,000	9,681,700	-20.22%
Northern Idaho	17,052,000	2,428,000	-85.76%
Southern Idaho	2,375,000	1,620,000	-31.79%
Northern Washington	33,929,400	20,315,826	-40.12%
Southern Washington	29,221,400	1,433,200	-95.10%
Pacific Northwest	94,050,436	35,478,726	-62.28%

Percentage Difference in Shipping Rates for Wheat Elevator Managers

Region	Percentage Difference during Lock Outage	
	Direct Truck to Final Market	Rail
Eastern Oregon	11%	-7%
Northern Idaho	0%	1%
Southern Idaho	7%	8%
Northern Washington	-13%	1%
Southern Washington	10%	5%
Pacific Northwest	4%	2%

Industrial Impacts and Activities

Barge Line Impacts

- ❑ Laid off employees
- ❑ Reduced employees' work hours
- ❑ Continued service below The Dalles
- ❑ Barging tugs were called to Portland

Rail Line Impacts

- ❑ Increased cargo loads (going east and west)
- ❑ Increased employees' hours to handle large loads and increased railcar numbers
- ❑ Increased fuel and employees' costs

Governmental Impacts and Activities

- U.S. Army Corps of Engineers (USACE)

- Impacts and Activities

- Hosted teleconferences
 - Documented progression made
 - Made plans for potential disruptions
 - Announced delays and revisions in construction and opening dates
 - Hosted several tours at various Columbia-Snake River locks



Questions?

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