



SOY TRANSPORTATION COALITION

FARM TO MARKET: A SOYBEAN'S JOURNEY

Barge Statistics for Grains and Soybeans

This section evaluates the key barge factors impacting movements of grains and soybeans. The information in this section is based on information from the Army Corps of Engineers Lock Performance Monitoring System, Waterborne Commerce of the United States Vessel Operator Characteristics, and Informa's annual Barge Fleet Profile report. A map of the Inland Waterway System is shown on the next page.



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U.S. Inland River System





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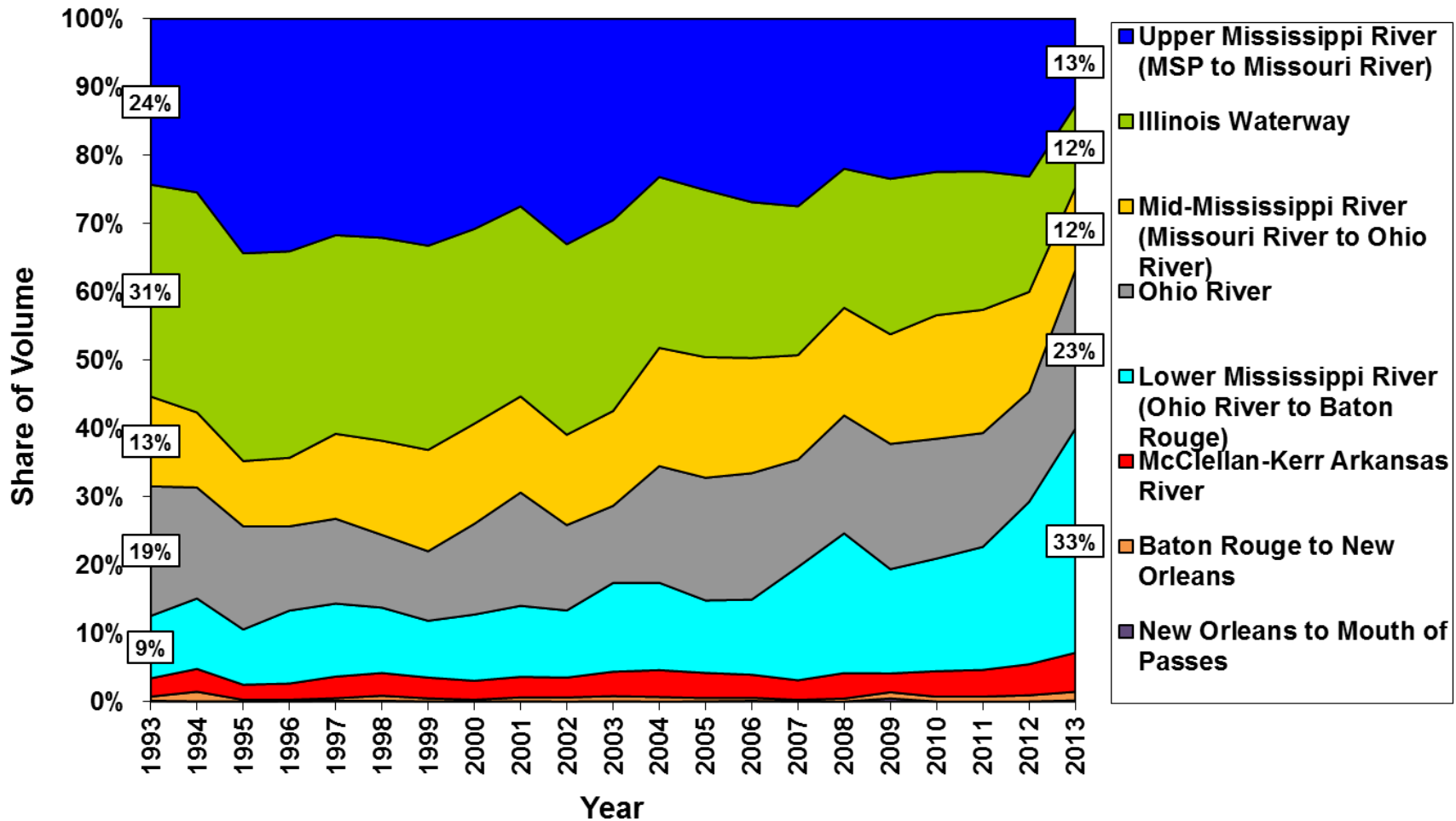
- Grain barge loadings demonstrate a shift in loadings by waterway. The trend of relatively less grain being loaded in locking areas of the upper Mississippi and Illinois Rivers has emerged since the early 2000s.
 - About 60% of annual grain barge loadings originated on the upper Mississippi and Illinois Rivers, and has trended lower to about 40% in 2013.
 - This trend is particularly evident for soybean loadings with increased loadings on the lower Ohio and lower Mississippi Rivers.
- This shift in loadings has occurred during the time of the ethanol build out across the Corn Belt and within proximity of the navigable river system, especially in Iowa where corn became deficit.
 - Once the corn ethanol mandate is achieved, corn surpluses are expected to return along the upper Mississippi River.
 - With issues of crumbling lock infrastructure, increased crop production near the lower Mississippi River, deeper draft barge equipment being used, and a widening barge freight spread, will the upper Mississippi River gain a competitive edge with the lower Mississippi River, during a time when the Panama Canal expansion effort will be completed and will likely expand the draw area for river navigation.



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Share of Grain and Soybean Loadings by River Segment

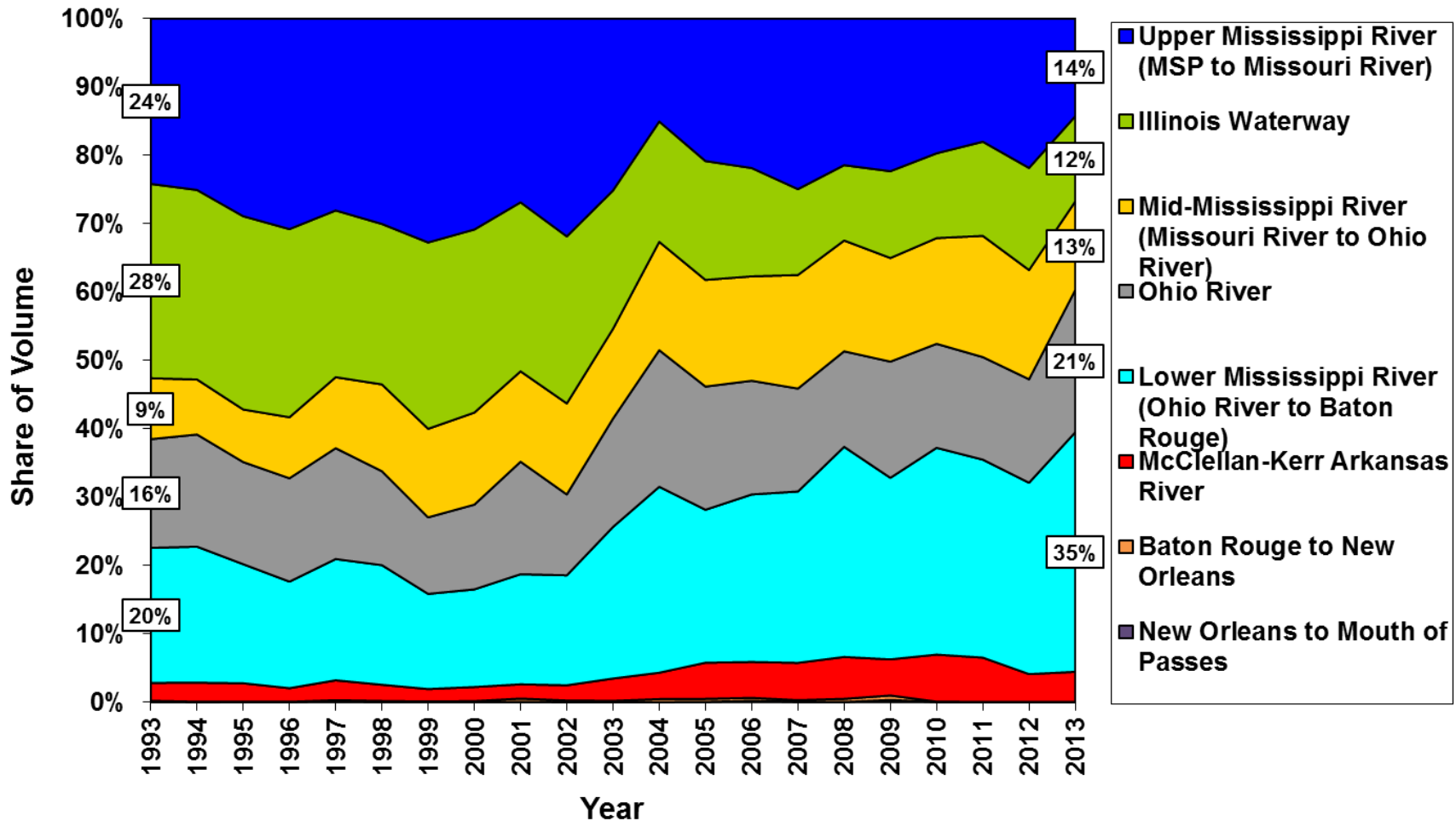


Source: Army Corps of Engineers and Informa

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Share of Soybean Barge Loadings by River Segment



Source: Army Corps of Engineers and Informa



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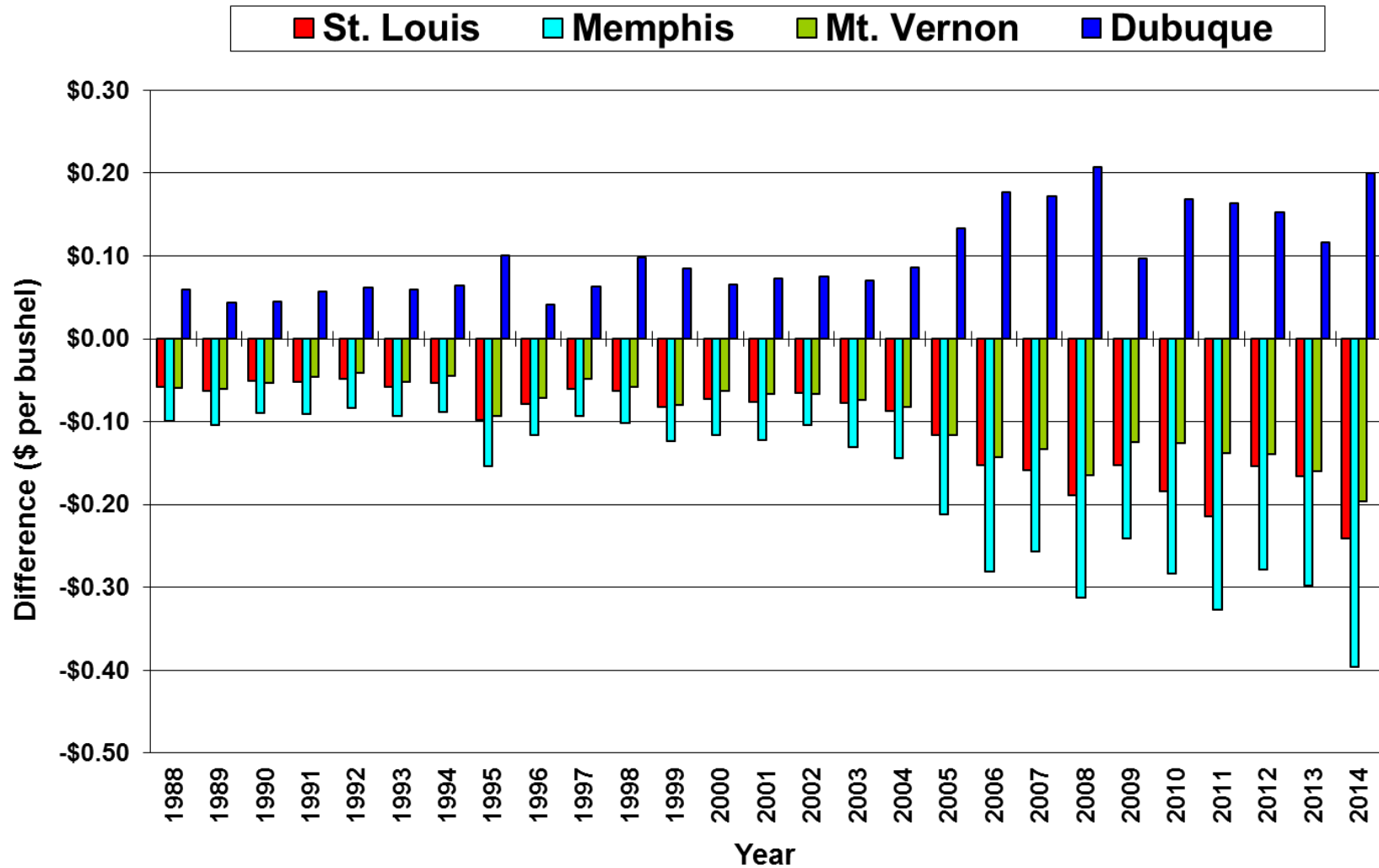
- Since 2001, the average tons loaded per barge for grains and soybeans by river segment:
 - Upper Mississippi River 1,554 tons;
 - Lower Mississippi River approximately 1,700 tons;
 - Illinois Waterway 1,552 tons;
 - Ohio River 1,561 tons; and
 - Arkansas River 1,406 tons (average since 2003).
- Since 2011, the average tons loaded per barge for grains and oilseeds by river segment:
 - Upper Mississippi River 1,538 tons;
 - Lower Mississippi River approximately 1,700 tons;
 - Illinois Waterway 1,544 tons;
 - Ohio River 1,699 tons; and
 - Arkansas River 1,397 tons.
- Around 95% of the covered hopper barge fleet is able to handle loads that draft 12 feet to 14 feet compared with 5% that is limited to 9 feet to 10 feet. As a result, in most cases a covered hopper barge will be able to take advantage of deeper drafts if the river allows. This is creating a freight differential between segments of the Mississippi River System that have locks and the lower Mississippi River.
 - The barge freight rate differentials between key river locations and Peoria, IL on the Illinois River have been widening. The spreads at locations downriver from Peoria have widened from a range of –10 cents to –15 cents per soybean bushel from the mid-1990s to the mid-2000s from Memphis, for example.
 - Since 2004, the barge freight spread between Memphis with Peoria has widened further to more than –30 cents per soybean bushel and has maintained a greater than 25% freight advantage since 2009.
 - Memphis, which represents the lower Mississippi River where freight can be loaded heaviest, is almost 40 cents per bushel cheaper.
 - The switching of 1,100 open barges to covered barges is expected to reverse this trend because these barges have a lower combing (front) that hinder the ability to load the barge to full capacity.



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Barge Freight Rate Differential with Peoria, IL for Soybean Movements to New Orleans, LA by Select River Segments



Source: USDA and Informa



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Commodities Moved

Tons

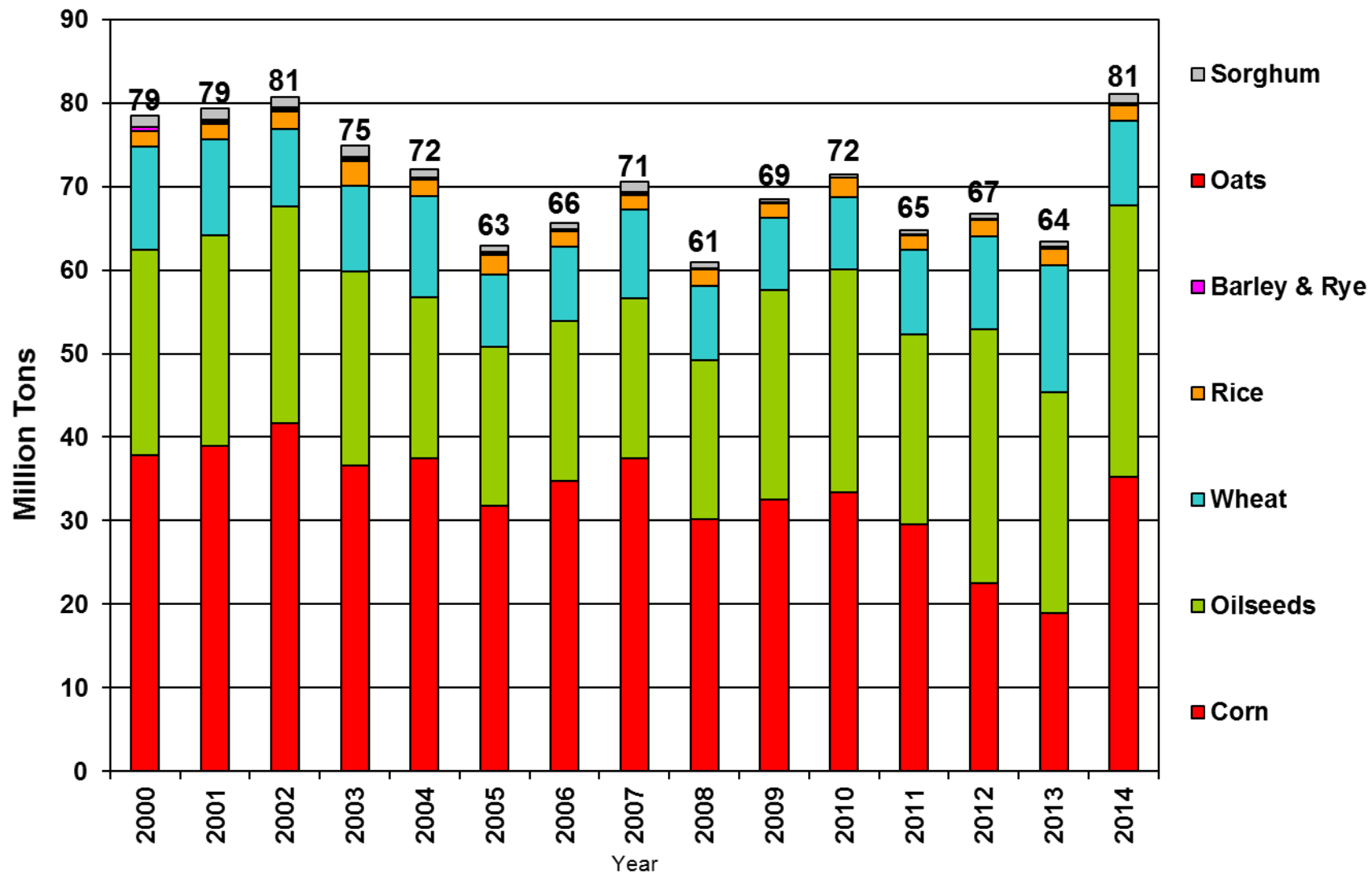
- On the demand side, commodity volumes moved on the inland waterways during 2013 totaled 559 million tons, an increase of 7% from 2009. The economic recession led to a dramatic drop in commodity flows during 2009, but movements during 2010 showed a decent rebound.
 - Coal is clearly the largest commodity moved by barge. Coal barge volumes have decreased approximately 70 million tons since 2005. For comparison, total grains and oilseed barge movements in 2013 was 63 million tons.
 - The decline in coal, which is moved by open barge, is resulting in barge companies retrofitting open barges with covers to move grain and oilseeds.
- Volumes of farm products moved by covered barge are shown on the next page.



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Farm Product Moved by Covered Barge (million tons)





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Average Distance

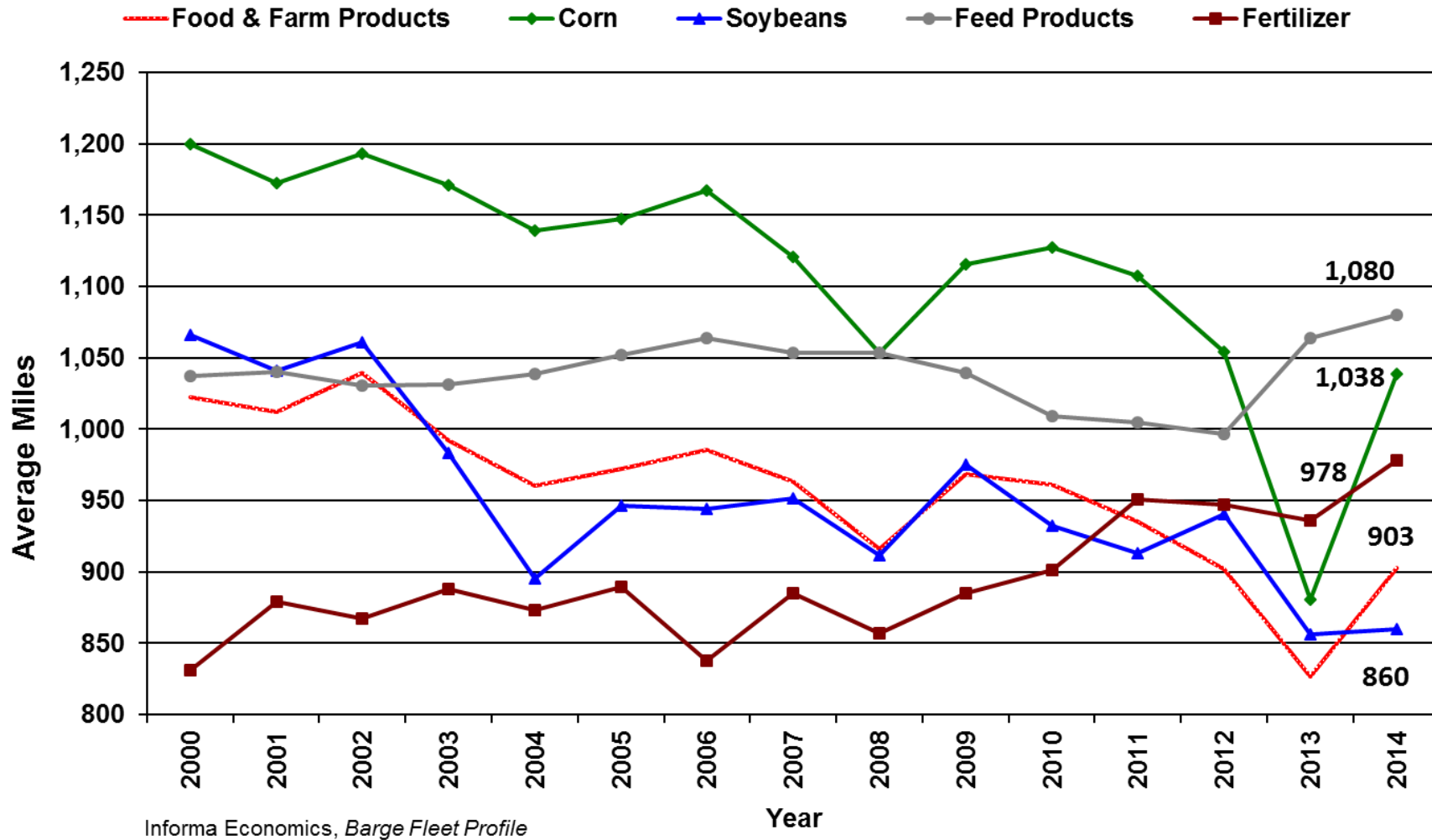
- The average distance commodities continue to decrease as grain and oilseeds continue to be loaded lower on the Mississippi River.
- Since 2006, grain and oilseeds average distance has declined from 1,200 and 957 miles, respectively, to 773 and 877 in 2013 shown in the table on the next page.
 - Corn and soybeans are in a clear downward slope. It is anticipated that as the grain and soybean supplies increase in the upper Mississippi River draw region, average distance traveled will increase.
 - The risk is that the locks become more unreliable and the ability to load barges heavier in the locking areas will lead barge companies to incentivize loadings on the lower Mississippi River.



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Average Distance Food and Farm Product Moved by Barge (miles)





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Ton-Miles

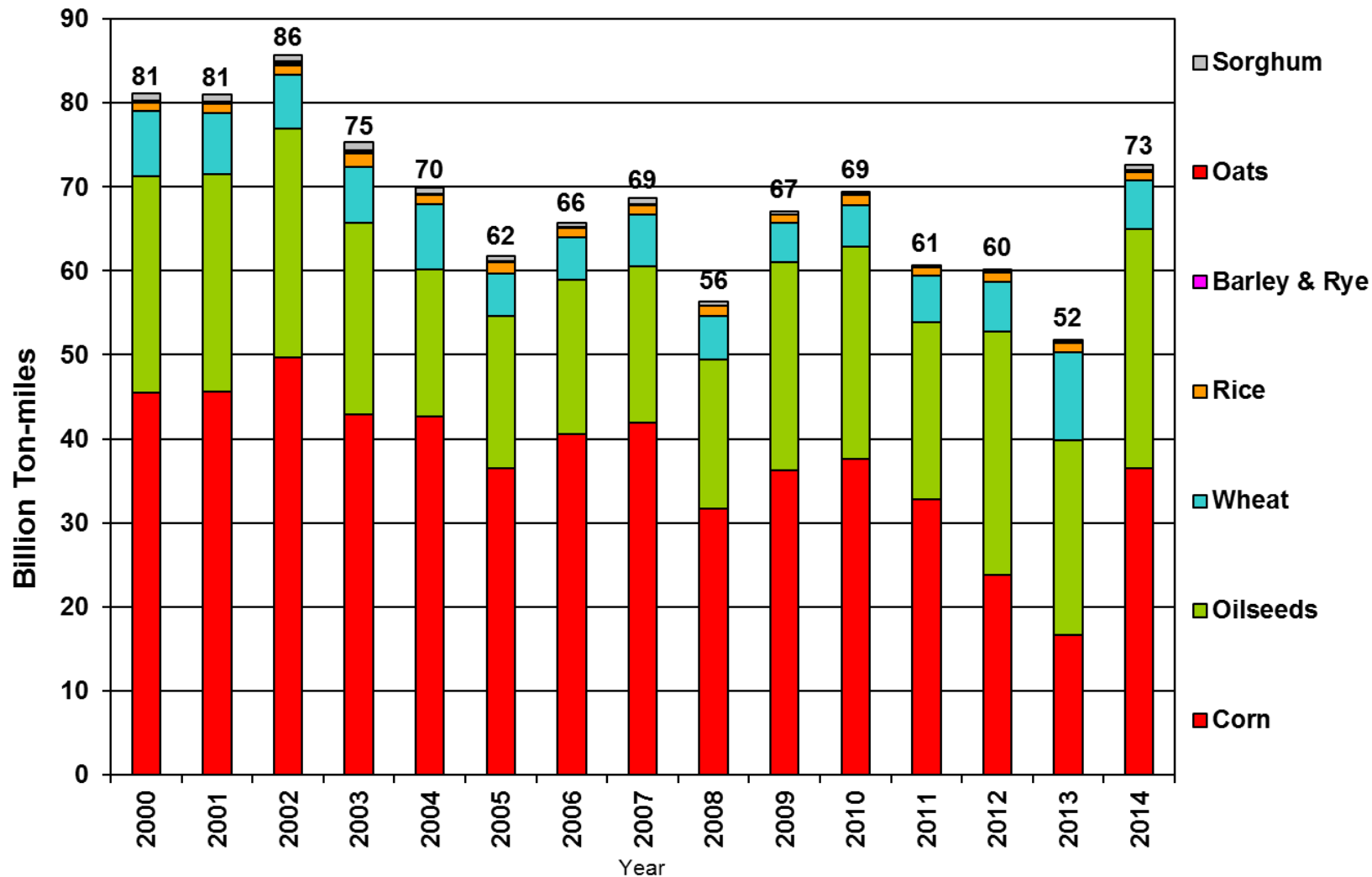
- Commodity ton-miles for all internal movements during 2013 totaled 252 billion ton-miles, down 6% from 2012.
- Grain and oilseeds totaled 52 billion ton-miles during 2013, a decrease of decrease of 13% on lower volumes and shorter distances moved.



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Farm Product Moved by Barge (billion ton-miles)



"Farm to Market: A Soybean's Journey" can be accessed at www.unitedsoybean.org or www.soytransportation.org

Funded by the Soybean Checkoff

