



Grain Transportation Report

A weekly publication of the Agricultural Marketing Service www.ams.usda.gov/GTR

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WEEKLY HIGHLIGHTS

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June Grain Stocks Reveal Low Transportation Demand

According to USDA's National Agricultural Statistics Service *Grain Stocks* report (released June 30), total disappearance—the difference in grain stocks from March 1, 2023 to June 1, 2023—was 4.6 billion bushels (bbu). This was down 4 percent from the previous year and the prior 5-year average. Benchmarked against the 5-year average, off-farm stock disappearance was up 1 percent, but on-farm stock disappearance was down 8 percent. Disappearance—the amount of grain *used*—is a proxy for transportation demand, because nearly all grain leaving on-farm and off-farm storage must enter the transportation system to reach domestic and export markets. Following the March-to-June disappearance, U.S. grain stocks were left at 5.6 bbu on June 1. This was down 9 percent from last year and down 21 percent from the 5-year average for June. Low grain stocks suggest grain transportation demand will remain muted until fall when corn and soybeans are harvested. According to USDA's July *World Agriculture Supply and Demand Estimates* report, total grain supplies for marketing year (MY) 2023/2024 are projected to be 24.6 bbu, which is 8 percent higher than MY 2022/2023 supplies.

Lloyd's List Provides Mid-Year Update on Shipping Market

Lloyd's List, a major shipping news publication, recently released a podcast episode on the state of the core shipping sectors in mid-2023. Regarding container shipping, Lloyd's prognosis is mixed. On one hand, the major carriers have retained considerable revenue made during the shipping boom of the last 2-3 years. On the other hand, the industry now faces lower shipping demand and falling rates. During the pandemic, carriers used some of their earnings to order new vessels. However, by time of delivery, the additional supply brought their fleets from undercapacity to possible overcapacity, due to reduced demand. On the dry bulk side, the market outlook depends heavily on the growth of the Chinese economy, which has struggled to reemerge after lifting its COVID-19 restrictions. In contrast to the container sector, the orderbook for new bulkers is thin, reflecting the uncertainty surrounding possible new regulations for greenhouse gas emissions. One possible bright spot for the small bulk (e.g., handysize) market is that China may be poised to increase its grain imports, on account of floods that reduced domestic production.

USDA To Offer Funding for Biofuels Transportation Infrastructure

On June 26, USDA announced plans to invest up to \$500 million from the Inflation Reduction Act of 2022 in the Higher Blends Infrastructure Incentive Program (HBIIP). The HBIIP aims to increase the availability of domestic biofuels by expanding infrastructure for renewable fuels derived from agricultural products—including fuel distribution infrastructure. In December 2022, USDA made \$50 million available to HBIIP. One grant-recipient company will upgrade the existing rail unloading rack spill protection at its California facility. The remaining \$450 million will be allocated quarterly (\$90 million each quarter) from July 1, 2023, to September 30, 2024. Each quarter, approximately \$18 million (20 percent) will be set aside for biofuels transportation—specifically, "fuel distribution facilities, including terminal operations, depots and midstream operations." Interested applicants can apply for HBIIP funding.

Snapshots by Sector

Export Sales

For the week ending June 29, **unshipped balances** of wheat, corn, and soybeans for marketing year (MY) 2022/23 totaled 10.80 million metric tons (mmt), down 4 percent from last week and down 47 percent from the same time last year. Net **corn export sales** for MY 2022/23 were 0.252, up 79 percent from last week. Net **soybean export sales** were 0.188 mmt, down 17 percent from last week. Net weekly **wheat export sales** for MY 2023/24, were 0.406 mmt, up 161 percent from last week.

Rail

U.S. Class I railroads originated 15,716 grain carloads during the week ending July 1. This was a 7-percent increase from the previous week, 26 percent less than last year, and 21 percent lower than the 3-year average.

Average July shuttle secondary railcar bids/offers (per car) were \$250 below tariff for the week ending July 6. This was \$113 more than last week and \$238 lower than this week last year. Average non-shuttle secondary railcar bids/offers per car were at tariff. This was \$17 more than last week and \$213 lower than this week last year.

Barge

For the week ending July 8, barged grain movements totaled 510,793 tons. This was 27 percent more than the previous week and 30 percent less than the same period last year.

For the week ending July 8, 340 grain barges **moved down river**—74 more than last week. There were 376 grain barges **unloaded** in the New Orleans region, 13 percent fewer than last week.

Ocean

For the week ending July 6, 19 occangoing grain vessels were loaded in the Gulf—6 percent more than the same period last year. Within the next 10 days (starting July 7), 25 vessels were expected to be loaded—29 percent fewer than the same period last year.

As of July 6, the rate for shipping a metric ton (mt) of grain from the U.S. Gulf to Japan was \$46.25. This was 3 percent less than the previous week. The rate from the Pacific Northwest to Japan was \$25.50 per mt, 2 percent less than the previous week.

Fue

For the week ending July 10, the U.S. average **diesel fuel price** increased 3.9 cents from the previous week to \$3.806 per gallon, 176.2 cents below the same week last year.

Feature Article/Calendar

Year-to-Date Review of Barged Grain Movements and Rates

The Mississippi River System (MRS) is the Nation's primary set of waterways to move grain from Midwest production areas for export through the U.S. Gulf region. For the week ending July 8, year-to-date (YTD) downbound barged grain volumes on the MRS totaled 14.7 million tons—22 percent lower than the same period in 2022 and 18 percent lower than the previous 5-year-average (GTR table 9). Extreme weather conditions, expected and unexpected river closures, and slow export sales have contributed to the lower volumes. Since March, low barge demand and excess barge supply have kept weekly spot freight rates below last year and below the 5-year average. This article reviews the YTD trends in barged grain movements and freight rates, as well as the factors shaping the trends.

First Quarter: Snow, Ice, and Lock Closures Lower Grain Movements

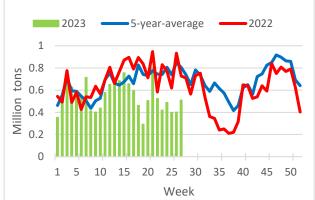
Over the winter, barge supply was limited for a number of reasons. The locks on the Upper- and Mid-Mississippi River were closed because of extreme cold and ice. At the end of 2022, the subzero temperatures of Winter Storm Elliott froze the Illinois River, delaying barge movements along that portion of the MRS as well. At the same time, on the lower MRS, fog delayed barges by 2 to 3 days. Adding to the system's strain, the main chamber of Lock 27 and Melvin Price were closed for repairs and upgrades for most of the first quarter. As a final factor limiting first-quarter barge supply, at the end of March, 10 barges broke loose of their tow on the Ohio River and crashed into the McAlpine Dam (near Louisville, KY). Damage from the accident closed that portion of the river for a few days and caused further shipping delays.

Exports sales serve as a rough indicator of barge demand, because almost all barged grain moves to export ports. In marketing year (MY) 2021/22, 30 percent of exported corn and 25 percent of exported soybeans were moved along the MRS. Like barge supply, export sales of U.S. grain across all export ports were low during the first quarter—down 12 percent from first quarter 2022 and down 5 percent from the 5year average in the first quarter. Compared to the 5-year average, first-quarter export sales of corn were down 29 percent and first quarter export sales of soybeans were up 27 percent.

Weather issues and slow export sales for grain caused drops in barge movements. Movements for first quarter 2023 totaled 6.5 million tons—8 percent below first guarter 2022 and 5 percent below the previous-5-year average (fig. 1). The weather issues also affected barge supply, causing above-average rates for most of the first quarter (fig. 2). Besides showing the pressures of firstquarter weather issues, spot freight rates early in the quarter also reflected residual effects of severe low

2023 2022 5-year-average

Figure 1. Weekly downbound volumes of barged grain



Source: U.S. Army Corps of Engineers, Lock Performance Monitoring System.

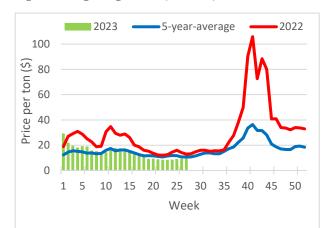


Figure 2. Barge freight rates (St. Louis)

Source: USDA, Agricultural Marketing Service.

water that had stymied barge traffic last fall. The St. Louis spot rate fell from 725 percent of tariff (\$28.93 per ton) in the first week of January to 376 percent of tariff (\$15.00 per ton) in the week of March 28.²

¹ The Mississippi River System comprises the Mississippi, Arkansas, Illinois, Ohio, and Tennessee Rivers, and Gulf Intracoastal

² See *GTR* figure 9 and this document for the calculation of barge freight rates.

Second Quarter: Flooding, Then Low Water, Depress Barged Grain Shipments and Spot Rates

At the beginning of the second quarter, snow melt near St. Paul, MN, led to river flooding, first on the upper portion of the MRS and eventually throughout the rest of the MRS. From the end of April through mid-May, all locks above St. Louis, MO, were closed for high water. Slow barge movements resulted from low export sales, as well as farmers' decision to wait to ship grain until river conditions improved. The high price of U.S. corn relative to Brazilian corn led China to cancel several major corn orders from U.S. producers. U.S. producers also began to hold off sales, waiting for prices to rise. Slower-than-normal export sales, especially for corn, continued through the second quarter.

Although high water posed the main challenge to MRS traffic early in the second quarter, low water became a problem toward the end of the quarter. Along with most of the Midwest, Illinois—the largest producer of soybeans and second-largest producer of corn—is now experiencing its worst drought since 2012. Most of the State is in at least a moderate drought. Currently, because of low water, draft sizes are down 5 percent on the Illinois River, down 10 percent on the Mid-Mississippi River, and down 15 percent on the Lower Mississippi. Also, tow sizes are down 14-25 percent on the Lower Mississippi. Similar to what happened during the floods, farmers are mostly waiting to sell their crops until navigation conditions improve. One major barge company has noted new crop bookings are only a fraction of what they usually are in the second quarter. The result of draft and tow restrictions has been reduced per barge grain loads and transit delays to the Gulf of at least 24 to 48 hours.

With low barge demand (spawned by slow export sales) freight rates began to fall in April and continued to fall through June. The second quarter total southbound barged volume of 8.2 million tons is 30 percent lower than 2022 and 26 percent lower than the 5-year average. Low U.S. corn production in MY 2022/23 (relative to recent years) and high U.S. corn prices (compared to the rest of the world) contributed to low barge movements and rates. Additionally, during the floods, barge operators moved their fleets to areas on the MRS that were safe from flooding. In the non-flooded locations, this maneuver saturated the barge market and helped to further lower spot freight rates. The resulting very low spot rates have prompted operators not only to tie off equipment, but also to tow empty hopper barges from the Upper MRS to the Lower MRS.

The low southbound grain movements are also affecting northbound barge rates: according to *River Transportation News*, the current flow of southbound grain does not generate enough empty barges to meet the demand for northbound freight such as fertilizer, salt, and steel raw materials. Previously, northbound shipments were considered "backhaul" shipments by barges. However, currently, as northbound spot rates trade at a premium, the net impact has been an inversion in typical rate patterns: northbound rates are trending higher than southbound grain freight rates. Since the beginning of April, southbound spot freight rates have been significantly lower than both the 2022 value and the previous-5-year-average. Since mid-May, the differences from these historical numbers has only increased, despite the somewhat tight supply.

Looking Forward

For MY 2023/24, USDA's July *World Agricultural Supply and Demand Estimates* report projects the United States will export 53 million metric tons (mmt) of corn (up 27 percent from MY 2022/23) and 50 mmt of soybeans (down 7 percent from MY 2022/23). In addition, for the week ending June 29, outstanding corn and soybean sales for MY 2023/24 lag 45 percent and 71 percent, respectively, behind the same time last year. (Outstanding sales indicate future transportation demand.) Recent low spot rates reflect a lack of barge demand as export sales continue to fall. However, the 3-month forward freight rate has begun to rise, which signals increased barge demand associated with the corn and soybean harvests.

In recent weeks, restrictions have been placed on draft sizes in the MRS, to accommodate low water levels from the severe Midwest drought. Without additional precipitation, barge freight could become more costly. However, the short-term weather outlook shows above-normal precipitation, and the long-term outlook shows about normal precipitation.

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Grain Transportation Indicators

Table 1 Grain transport cost indicators¹

	Truck	Rai	l Barge		Oc	Ocean	
For the week ending		Non-Shuttle	Shuttle		Gulf	Pacific	
07/12/23	255	321	238	172	207	181	
07/05/23	253	320	233	144	212	184	

¹Indicator: Base year 2000 = 100. Weekly updates include truck = diesel (\$/gallon); rail = near-month secondary rail market bid and monthly tariff rate with fuel surcharge (\$/car); barge = Illinois River barge rate (index = percent of tariff rate); ocean = routes to Japan (\$/metric ton); n/a = not available due to holiday.

Source: USDA, Agricultural Marketing Service.

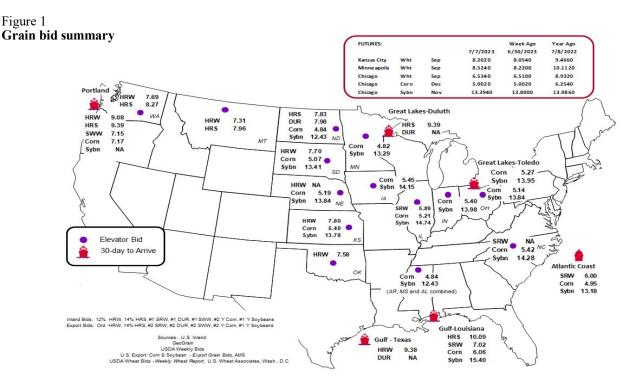
Table 2 Market Update: U.S. origins to export position price spreads (\$/bushel)

Commodity	Origin-destination	7/7/2023	6/30/2023
Corn	IL-Gulf	-0.85	-0.92
Corn	NE-Gulf	-0.87	-0.96
Soybean	IA-Gulf	-1.25	-1.69
HRW	KS-Gulf	-1.58	-1.30
HRS	ND-Portland	-1.56	-1.53

Note: nq = no quote; n/a = not available; HRW = hard red winter wheat; HRS = hard red spring wheat.

Source: USDA, Agricultural Marketing Service.

The grain bid summary illustrates the market relationships for commodities. Positive and negative adjustments in differential between terminal and futures markets, and the relationship to inland market points, are indicators of changes in fundamental market supply and demand. The map may be used to monitor market and time differentials.



Rail Transportation

Table 3

Class I rail carrier grain car bulletin (grain carloads originated)

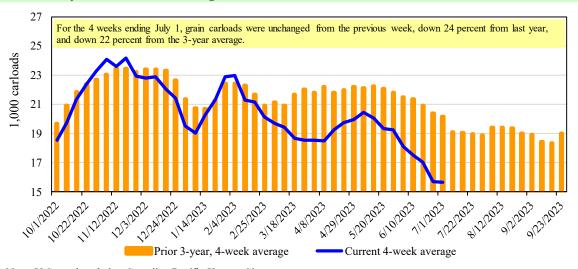
For the week ending:	Ea	ast	West		U.S. total	Central U	.S./Canada
7/01/2023	CSXT	NS	BNSF	UP	U.S. total	CPKC	CN
This week	1,336	2,686	7,475	4,219	15,716	4,517	3,413
This week last year	1,596	2,865	10,467	6,260	21,188	8,632	3,676
2023 YTD	49,885	70,813	238,907	141,369	500,974	256,570	118,704
2022 YTD	47,453	63,039	297,747	150,825	559,064	237,050	89,504
2023 YTD as % of 2022 YTD	105	112	80	94	90	108	133
Last 4 weeks as % of 2022	99	107	65	75	76	118	99
Last 4 weeks as % of 3-yr. avg.	107	113	64	80	78	97	89
Total 2022	93,428	130,467	570,232	296,945	1,091,072	538,276	214,073

Note: The last 4-week percentages compare the last 4 weeks of this year to the closest 4 weeks last year, and to the average across the prior 3 years. The U.S. total column excludes CPKC. NS = Norfolk Southern; UP = Union Pacific; CN = Canadian National;

CPKC = Canadian Pacific Kansas City; YTD = year-to-date; avg. = average; yr. = year.

Source: Association of American Railroads.

Figure 2 **Total weekly U.S. Class I railroad grain carloads**



Note: U.S. total excludes Canadian Pacific Kansas City

Source: Association of American Railroads.

Table 4
Railcar auction offerings¹ (\$/car)²

F	For the week ending:		<u>Delivery period</u>									
	7/06/2023	Jul-23	Jul-22	Aug-23	Aug-22	Sep-23	Sep-22	Oct-23	Oct-22			
BNSF	COT grain units	0	0	no bid	0	no offer	no offer	no offer	no offer			
DINSF	COT grain single-car	201	0	102	4	0	no offer	0	no offer			
UP	GCAS/vouchers	no offer	n/a	no bid	n/a	no offer	n/a	n/a	n/a			

¹Auction offerings are for single-car and unit train shipments only.

Note: BNSF = BNSF Railway; COT = Certificate of Transportation; UP = Union Pacific Railroad; and GCAS = Grain Car Allocation System.

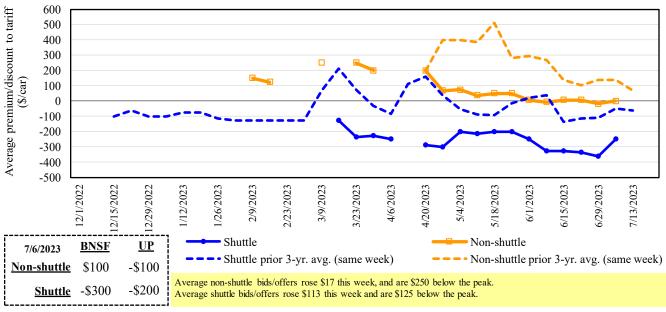
Minimum bids for UP GCAS/vouchers are \$10.

Source: USDA, Agricultural Marketing Service.

²Average premium/discount to tariff, last auction. n/a = not available.

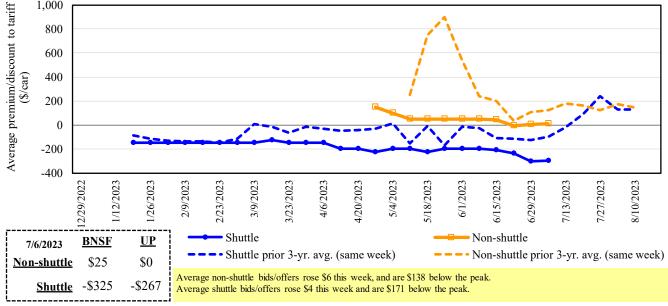
The **secondary rail market** information reflects trade values for service that was originally purchased from the railroad carrier as some form of guaranteed freight. The **auction and secondary rail** values are indicators of rail service quality and demand/ supply.

Figure 3
Secondary market bids/offers for railcars to be delivered in July 2023



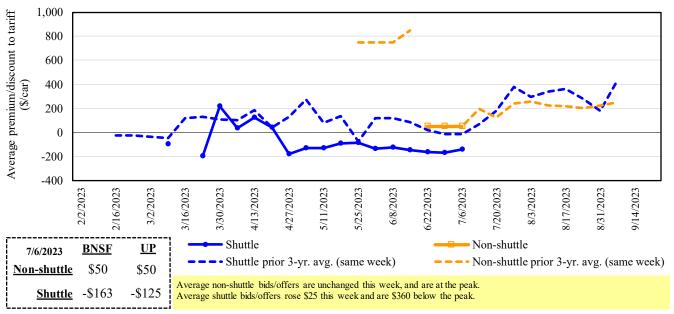
Note: Non-shuttle bids include unit-train and single-car bids. n/a = not available; avg. = average; yr. = year; BNSF = BNSF Railway; UP = Union Pacific Railroad. Source: USDA, Agricultural Marketing Service.

Figure 4
Secondary market bids/offers for railcars to be delivered in August 2023



Note: Non-shuttle bids include unit-train and single-car bids. n/a = not available; avg. = average; yr. = year; BNSF = BNSF Railway; UP = Union Pacific Railroad. Source: USDA. Agricultural Marketing Service.

Figure 5
Secondary market bids/offers for railcars to be delivered in September 2023



Note: Non-shuttle bids include unit-train and single-car bids. n/a = not available; avg. = average; yr. = year; BNSF = BNSF Railway; UP = Union Pacific Railroad. Source: USDA, Agricultural Marketing Service.

Table 5

Weekly secondary railcar market (\$/car)¹

	For the week ending:			De	livery period		
	7/6/2023	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23
	BNSF-GF	100	25	50	n/a	n/a	n/a
le le	Change from last week	58	-13	0	n/a	n/a	n/a
hut	Change from same week 2022	-25	0	n/a	n/a	n/a	n/a
Non-shuttle	UP-Pool	-100	0	50	n/a	n/a	n/a
Z	Change from last week	-25	25	0	n/a	n/a	n/a
	Change from same week 2022	-400	-325	n/a	n/a	n/a	n/a
	BNSF-GF	-300	-325	-163	n/a	n/a	n/a
	Change from last week	50	0	1	n/a	n/a	n/a
	Change from same week 2022	-150	-100	-13	n/a	n/a	n/a
بو	UP-Pool	-200	-267	-125	n/a	n/a	n/a
Shuttle	Change from last week	175	8	50	n/a	n/a	n/a
S	Change from same week 2022	-325	-442	-625	n/a	n/a	n/a
	CP-GF	-100	-100	n/a	n/a	n/a	n/a
	Change from last week	0	n/a	n/a	n/a	n/a	n/a
	Change from same week 2022	0	0	n/a	n/a	n/a	n/a

¹Average premium/discount to tariff, \$/car-last week.

Note: Bids listed are market indicators only and are not guaranteed prices. n/a = not available;

GF = guaranteed freight; Pool = guaranteed pool; BNSF = BNSF Railway; UP = Union Pacific Railroad; CP = Canadian Pacific Railway.

Data from The Malsam Co., Tradewest Brokerage Co.

Source: USDA, Agricultural Marketing Service.

Table 6

Tariff rail rates for unit and shuttle train shipments¹

			Tariff	Fuel surcharge_	Tariff plus surch	arge per:	Percent change
July 2023	Origin region ³	Destination region ³	rate/car	per car	metric ton	bushel ²	Y/Y^4
Unit train				-			
Wheat	Wichita, KS	St. Louis, MO	\$4,095	\$187	\$42.52	\$1.16	1
	Grand Forks, ND	Duluth-Superior, MN	\$3,858	\$51	\$38.81	\$1.06	2
	Wichita, KS	Los Angeles, CA	\$7,640	\$260	\$78.45	\$2.14	-6
	Wichita, KS	New Orleans, LA	\$4,825	\$329	\$51.18	\$1.39	-1
	Sioux Falls, SD	Galveston-Houston, TX	\$7,376	\$214	\$75.37	\$2.05	-5
	Colby, KS	Galveston-Houston, TX	\$5,075	\$361	\$53.98	\$1.47	-2
	Amarillo, TX	Los Angeles, CA	\$5,121	\$502	\$55.84	\$1.52	-7
Corn	Champaign-Urbana, IL	New Orleans, LA	\$4,000	\$372	\$43.42	\$1.10	-7
	Toledo, OH	Raleigh, NC	\$8,551	\$413	\$89.01	\$2.26	1
	Des Moines, IA	Davenport, IA	\$2,655	\$79	\$27.15	\$0.69	3
	Indianapolis, IN	Atlanta, GA	\$6,593	\$310	\$68.55	\$1.74	1
	Indianapolis, IN	Knoxville, TN	\$5,564	\$201	\$57.25	\$1.45	3
	Des Moines, IA	Little Rock, AR	\$4,250	\$232	\$44.50	\$1.13	1
	Des Moines, IA	Los Angeles, CA	\$6,130	\$675	\$67.57	\$1.72	-5
Soybeans	Minneapolis, MN	New Orleans, LA	\$3,472	\$546	\$39.91	\$1.09	-27
	Toledo, OH	Huntsville, AL	\$7,037	\$294	\$72.80	\$1.98	1
	Indianapolis, IN	Raleigh, NC	\$7,843	\$419	\$82.04	\$2.23	1
	Indianapolis, IN	Huntsville, AL	\$5,689	\$199	\$58.47	\$1.59	3
	Champaign-Urbana, IL	New Orleans, LA	\$4,865	\$372	\$52.01	\$1.42	-2
Shuttle train							
Wheat	Great Falls, MT	Portland, OR	\$4,393	\$150	\$45.11	\$1.23	-4
	Wichita, KS	Galveston-Houston, TX	\$4,611	\$116	\$46.95	\$1.28	-6
	Chicago, IL	Albany, NY	\$7,090	\$390	\$74.28	\$2.02	1
	Grand Forks, ND	Portland, OR	\$6,051	\$258	\$62.66	\$1.71	-6
	Grand Forks, ND	Galveston-Houston, TX	\$5,399	\$269	\$56.29	\$1.53	-8
	Colby, KS	Portland, OR	\$5,923	\$592	\$64.69	\$1.76	-7
Corn	Minneapolis, MN	Portland, OR	\$5,660	\$315	\$59.33	\$1.51	-8
	Sioux Falls, SD	Tacoma, WA	\$5,620	\$288	\$58.67	\$1.49	-7
	Champaign-Urbana, IL	New Orleans, LA	\$4,170	\$372	\$45.11	\$1.15	-2
	Lincoln, NE	Galveston-Houston, TX	\$4,360	\$168	\$44.96	\$1.14	-3
	Des Moines, IA	Amarillo, TX	\$4,670	\$291	\$49.27	\$1.25	0
	Minneapolis, MN	Tacoma, WA	\$5,660	\$312	\$59.31	\$1.51	-8
	Council Bluffs, IA	Stockton, CA	\$5,580	\$323	\$58.62	\$1.49	-8
Soybeans	Sioux Falls, SD	Tacoma, WA	\$6,350	\$288	\$65.92	\$1.79	-6
	Minneapolis, MN	Portland, OR	\$6,400	\$315	\$66.68	\$1.81	-7
	Fargo, ND	Tacoma, WA	\$6,250	\$256	\$64.61	\$1.76	-5
	Council Bluffs, IA	New Orleans, LA	\$5,095	\$429	\$54.86	\$1.49	-3
	Toledo, OH	Huntsville, AL	\$5,277	\$294	\$55.33	\$1.51	1
	Grand Island, NE	Portland, OR	\$5,730	\$606	\$62.92	\$1.71	-1

¹A unit train refers to shipments of at least 25 cars. Shuttle train rates are generally available for qualified shipments of

Source: BNSF Railway, Canadian National Railway, CSX Transportation, and Union Pacific Railroad.

⁷⁵⁻¹²⁰ cars that meet railroad efficiency requirements.

²Approximate load per car = 111 short tons (100.7 metric tons): corn 56 pounds per bushel (lbs/bu), wheat and soybeans 60 lbs/bu.

³Regional economic areas are defined by the Bureau of Economic Analysis (BEA).

⁴Percentage change year over year (Y/Y) calculated using tariff rate plus fuel surcharge.

Table 7

Tariff rail rates for U.S. bulk grain shipments to Mexico

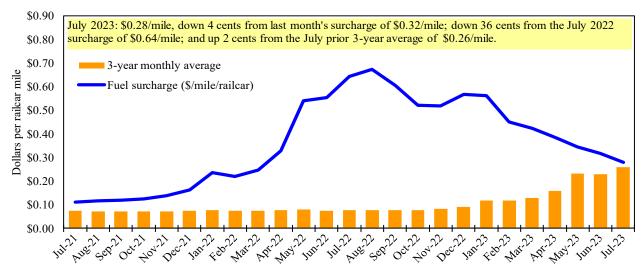
Date	: Decembe	r 2021			Tari	ff rate plus	Percent
	Origin		Tariff rate Fu	el surcharge		charge per:	change ⁴
Commodity	state	Destination region	per car ¹	per car ²	metric ton ³	bushel ³	Y/Y
Wheat	MT	Chihuahua, CI	\$7,699	\$0	\$78.67	\$2.14	4
	OK	Cuautitlan, EM	\$6,900	\$230	\$72.85	\$1.98	6
	KS	Guadalajara, JA	\$7,619	\$719	\$85.19	\$2.32	7
	TX	Salinas Victoria, NL	\$4,420	\$138	\$46.57	\$1.27	4
Corn	IA	Guadalajara, JA	\$9,102	\$663	\$99.77	\$2.53	6
	SD	Celaya, GJ	\$8,300	\$0	\$84.81	\$2.15	2
	NE	Queretaro, QA	\$8,322	\$462	\$89.75	\$2.28	5
	SD	Salinas Victoria, NL	\$6,905	\$0	\$70.55	\$1.79	0
	MO	Tlalnepantla, EM	\$7,687	\$450	\$83.14	\$2.11	5
	SD	Torreon, CU	\$7,825	\$0	\$79.95	\$2.03	2
Soybeans	МО	Bojay (Tula), HG	\$8,647	\$614	\$94.63	\$2.57	5
	NE	Guadalajara, JA	\$9,207	\$646	\$100.67	\$2.74	5
	IA	El Castillo, JA	\$9,510	\$0	\$97.17	\$2.64	1
	KS	Torreon, CU	\$8,109	\$466	\$87.61	\$2.38	5
Sorghum	NE	Celaya, GJ	\$7,932	\$597	\$87.15	\$2.21	6
	KS	Queretaro, QA	\$8,108	\$287	\$85.77	\$2.18	3
	NE	Salinas Victoria, NL	\$6,713	\$231	\$70.94	\$1.80	3
	NE	Torreon, CU	\$7,225	\$438	\$78.29	\$1.99	6

¹Rates are based upon published tariff rates for high-capacity shuttle trains. Shuttle trains are available for qualified

As we incorporate the change, Table 7 updates will be delayed.

Sources: BNSF Railway, Union Pacific Railroad, Kansas City Southern.

Figure 6
Railroad fuel surcharges, North American weighted average¹



¹ Weighted by each Class I railroad's proportion of grain traffic for the prior year.

Sources: BNSF Railway, Canadian National Railway, CSX Transportation, Canadian Pacific Railway, Union Pacific Railroad, Kansas City Southern Railway, Norfolk Southern Corporation.

shipments of 75-110 cars that meet railroad efficiency requirements.

²Fuel surcharge adjusted to reflect the change in Ferrocarril Mexicano, S.A. de C.V railroad fuel surcharge policy as of 10/01/2009.

³Approximate load per car = 97.87 metric tons: Corn & Sorghum 56 lbs/bu, Wheat & Soybeans 60 lbs/bu.

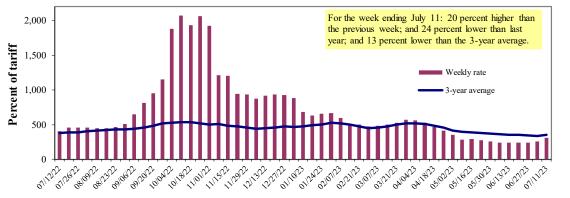
⁴Percentage change calculated using tariff rate plus fuel surchage; Y/Y = year over year.

⁵ As of January 1, 2022, both BNSF and Union Pacific changed their billing and reporting of rates to Mexico.

Barge Transportation

Figure 7

Illinois River barge freight rate^{1,2}



¹Rate = percent of 1976 tariff benchmark index (1976 = 100 percent); ²4-week moving average of the 3-year average. Source: USDA, Agricultural Marketing Service.

Table 8

Weekly barge freight rates: Southbound only

		Twin	Mid-	Lower Illinois			Lower	Cairo-
		Cities	Mississippi	River	St. Louis	Cincinnati	Ohio	Memphis
Rate ¹	7/11/2023	370	319	310	270	258	258	248
	7/4/2023	329	290	259	243	233	233	234
\$/ton	7/11/2023	22.90	16.97	14.38	10.77	12.10	10.42	7.79
	7/4/2023	20.37	15.43	12.02	9.70	10.93	9.41	7.35
Current	week % change	from the sam	e week:					
	Last year	-32	-34	-24	-19	-40	-40	-24
	3-year avg. ²	-15	-10	-	9	-11	-11	2
Rate ¹	August	443	393	375	342	369	369	343
	October	636	611	608	578	606	606	606

¹Rate = percent of 1976 tariff benchmark index (1976 = 100 percent); ²4-week moving average; ton = 2,000 pounds; "-" data not available. Source: USDA, Agricultural Marketing Service.

Figure 8 Benchmark tariff rates

Calculating barge rate per ton:

(Rate * 1976 tariff benchmark rate per ton)/100

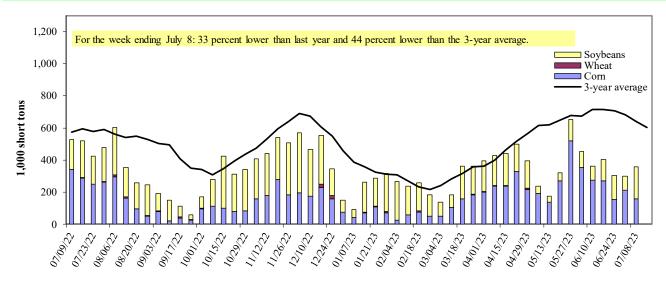
Select applicable index from market quotes are included in tables on this page. The 1976 benchmark rates per ton are provided in map.

Map Credit: USDA, Agricultural Marketing Service



Figure 9

Barge movements on the Mississippi River¹ (Locks 27 - Granite City, IL)



¹ The 3-year average is a 4-week moving average.

Note: The U.S. Army Corps of Engineers has recently migrated its lock and vessel database and has noted the latest data may be revised in coming weeks. Source: U.S. Army Corps of Engineers.

Table 9 **Barged grain movements (1,000 tons)**

For the week ending 07/08/2023	Corn	Wheat	Soybeans	Other	Total
Mississippi River					
Rock Island, IL (L15)	86	0	86	0	172
Winfield, MO (L25)	134	0	183	0	317
Alton, IL (L26)	177	0	208	3	388
Granite City, IL (L27)	159	0	197	3	360
Illinois River (La Grange)	38	0	30	3	71
Ohio River (Olmsted)	52	43	26	2	123
Arkansas River (L1)	0	28	0	0	28
Weekly total - 2023	212	71	223	5	511
Weekly total - 2022	413	81	225	7	728
2023 YTD ¹	7,861	689	6,011	159	14,719
2022 YTD ¹	11,133	961	6,669	153	18,915
2023 as % of 2022 YTD	71	72	90	104	78
Last 4 weeks as % of 2022 ²	60	69	57	32	59
Total 2022	16,437	1,594	14,464	232	32,727

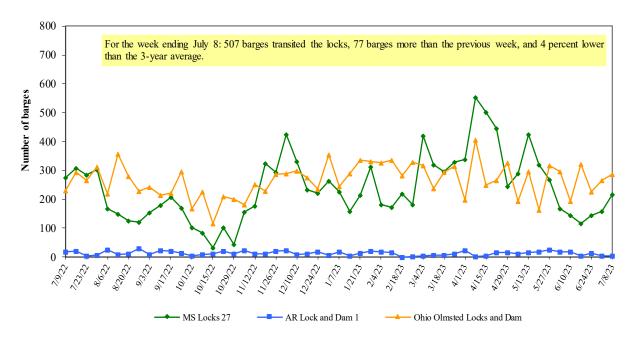
¹ Weekly total, YTD (year-to-date), and calendar year total include MI/27, OH/Olmsted, and AR/1; Other refers to oats, barley, sorghum, and rye. Total may not add exactly due to rounding.

Note: L (as in "L15") refers to a lock, locks, or locks and dam facility. The U.S. Army Corps of Engineers has recently migrated its lock and vessel database database and has noted the latest data may be revised in coming weeks.

Source: U.S. Army Corps of Engineers.

² As a percent of same period in 2022.

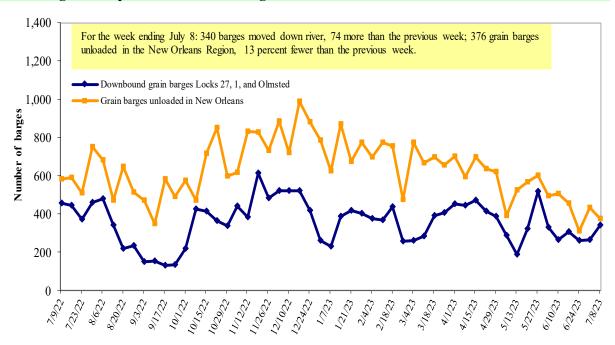
Figure 10
Upbound empty barges transiting Mississippi River Locks 27, Arkansas River Lock and Dam 1, and Ohio River Olmsted Locks and Dam



Note: The U.S. Army Corps of Engineers has recently migrated its lock and vessel database and has noted the latest data may be revised in coming weeks.

Source: U.S. Army Corps of Engineers.

Figure 11 **Grain barges for export in New Orleans region**



Note: Olmsted = Olmsted Locks and Dam. The U.S. Army Corps of Engineers has recently migrated its lock and vessel database and has noted the latest data may be revised in coming weeks.

Source: U.S. Army Corps of Engineers and USDA, Agricultural Marketing Service.

Truck Transportation

The weekly diesel price provides a proxy for trends in U.S. truck rates as diesel fuel is a significant expense for truck grain movements

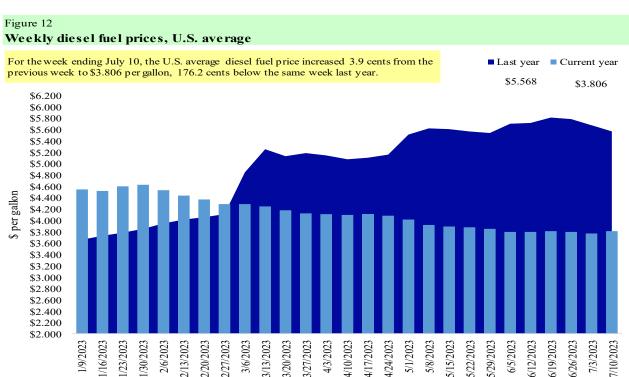
Table 10 Retail on-highway diesel prices, week ending 7/10/2023 (U.S. \$/gallon)

	<u> </u>	8	Change	e from
Region	Location	Price	Week ago	Year ago
I	East Coast	3.858	0.047	-1.742
	New England	4.074	-0.016	-1.746
	Central Atlantic	4.078	0.007	-1.787
	Lower Atlantic	3.754	0.068	-1.725
II	Midwest	3.742	0.038	-1.800
III	Gulf Coast	3.505	0.037	-1.712
IV	Rocky Mountain	3.939	-0.011	-1.735
V	West Coast	4.460	0.048	-1.825
	West Coast less California	4.146	0.037	-1.795
	California	4.821	0.059	-1.844
Total	United States	3.806	0.039	-1.762

¹Diesel fuel prices include all taxes. Prices represent an average of all types of diesel fuel.

Note: On June 13, 2022, the Energy Information Administration implemented a new methodology to estimate weekly on-highway diesel fuel prices.

Source: U.S. Department of Energy, Energy Information Administration.



Note: On June 13, 2022 the Energy Information Administration implemented a new methodology to estimate weekly on-highway diesel fuel Source: U.S. Department of Energy, Energy Information Administration, Retail On-Highway Diesel Prices.

Grain Exports

Table 11
U.S. export balances and cumulative exports (1,000 metric tons)

0.5. export balances and cumulative exp			Wh	eat			Corn	Soybeans	Total
For the week ending	HRW	SRW	HRS	SWW	DUR	All wheat			
Export balances ¹									
6/29/2023	655	1,119	1,142	561	85	3,562	4,081	3,158	10,801
This week year ago	1,359	1,004	1,249	903	94	4,610	7,859	7,724	20,193
Cumulative exports-marketing year ²									
2022/23 YTD	268	191	324	259	17	1,060	34,959	49,364	85,383
2021/22 YTD	436	191	528	274	18	1,447	52,498	52,033	105,978
YTD 2022/23 as % of 2021/22	61	100	61	95	97	73	67	95	81
Last 4 wks. as % of same period 2021/22	50	111	86	59	97	76	61	41	57
Total 2021/22	7,172	2,786	5,254	3,261	196	18,669	59,764	57,189	135,622
Total 2020/21	8,422	1,790	7,500	6,438	656	24,807	66,958	60,571	152,335

¹ Current unshipped (outstanding) export sales to date.

Note: marketing year: wheat = 6/01-5/31, corn and soybeans = 9/01-8/31. YTD = year-to-date; wks. = weeks; HRW= hard red winter;

SRW = soft red winter; HRS= hard red spring; SWW= soft white wheat; DUR= durum.

Source: USDA, Foreign Agricultural Service.

Table 12 **Top 5 importers**¹ **of U.S. corn**

For the week ending 6/29/2023	Total o	commitments ²		% change	Exports ³
	2023/24	2022/23	2021/22	current MY	3-yr. avg.
	next MY	current MY	last MY	from last MY	2019-21
		1,000 mt -			-1,000 mt -
Mexico	2,166	14,831	16,535	(10)	15,227
China	272	7,579	14,722	(49)	12,616
Japan	696	6,473	9,749	(34)	10,273
Columbia	0	2,161	4,359	(50)	4,398
Korea	0	821	1,474	(44)	2,563
Top 5 importers	3,134	31,864	46,839	(32)	45,077
Total U.S. corn export sales	3,568	39,040	60,357	(35)	56,665
% of YTD current month's export projection	7%	93%	96%		
Change from prior week ²	418	252	(67)		
Top 5 importers' share of U.S. corn export sales	88%	82%	78%		80%
USDA forecast July 2023	53,435	41,985	62,901	(33)	
Corn use for ethanol USDA forecast, July 2023	134,620	132,715	135,281	(2)	

¹Based on USDA, Foreign Agricultural Service (FAS) marketing year ranking reports for 2021/22; marketing year (MY) = Sep 1 - Aug 31.

Note: A red number in parentheses indicates a negative number; mt = metric ton.

Source: USDA, Foreign Agricultural Service.

² Shipped export sales to date.

²Cumulative exports (shipped) + outstanding sales (unshipped), FAS weekly export sales report, or export sales query. Total commitments change (net sales) from prior week could include revisions from previous week's outstanding sales or accumulated sales.

³FAS marketing year ranking reports (carryover plus accumulated export); yr. = year; avg. = average; YTD = year to date.

Table 13 **Top 5 importers**¹ of U.S. soybeans

For the week ending 6/29/2023	Total commitments ²			% change	Exports ³
	2023/24	2022/23	2021/22	current MY	3-yr. avg.
	next MY	current MY	last MY	from last MY	2019-21
	1	,000 mt -			-1,000 mt -
China	1,722	31,169	30,490	2	27,283
Mexico	502	4,695	5,373	(13)	4,929
Egypt	0	1,208	4,154	(71)	3,553
Japan	137	2,339	2,419	(3)	2,266
Indonesia	2	1,619	1,656	(2)	2,116
Top 5 importers	2,363	41,030	44,093	(7)	40,147
Total U.S. soybean export sales	3,945	52,522	59,757	(12)	54,231
% of projected exports	8%	97%	102%		
change from prior week ²	593	188	(229)		
Top 5 importers' share of U.S. soybean export sales	60%	78%	74%		74%
USDA forecast, July 2023	50,409	53,951	58,638	(8)	

¹Based on USDA, Foreign Agricultural Service (FAS) marketing year ranking reports for 2021/22; marketing year (MY) = Sep 1 - Aug 31.

Note: A red number in parentheses indicates a negative number; mt = metric ton.

Source: USDA, Foreign Agricultural Service.

Table 14 **Top 10 importers** of all U.S. wheat

For the week ending 6/29/2023	Total commi	Total commitments ²		Exports ³
	2023/24	2022/23	current MY	3-yr. avg.
	current MY	last MY	from last MY	2020-22
	1,000 mt -			-1,000 mt -
Mexico	833	1,112	(25)	3,397
Philippines	681	935	(27)	2,615
Japan	548	614	(11)	2,281
China	17	7	151	1,740
Korea	343	410	(16)	1,426
Nigeria	73	308	(76)	1,276
Taiwan	280	170	65	944
Thailand	50	125	(60)	643
Colombia	66	269	(75)	537
Indonesia	10	11	(5)	469
Top 10 importers	2,902	3,960	(27)	15,327
Total U.S. wheat export sales	4,622	6,057	(24)	20,411
% of projected exports	23%	29%		
change from prior week ²	406	286		
Top 10 importers' share of U.S. wheat export sales	63%	65%		75%
USDA forecast, June 2023	19,755	20,681	(4)	

Based on USDA, Foreign Agricultural Service (FAS) marketing year ranking reports for 2022/23; Marketing year (MY) = Jun 1- May 31.

Note: A red number in parentheses indicates a negative number.

Source: USDA, Foreign Agricultural Service.

²Cumulative exports (shipped) + outstanding sales (unshipped), FAS weekly export sales report, or export sales query. Total commitments change (net sales) from prior week could include revisions from previous week's outstanding sales or accumulated sales.

³FAS marketing year ranking reports (carryover plus accumulated export); yr. = year; avg. = average; YTD = year to date.

²Cumulative exports (shipped) + outstanding sales (unshipped), FAS weekly export sales report, or export sales query. The total commitments change (net sales) from prior week could include revisions from the previous week's outstanding and/or accumulated sales.

³ FAS marketing year ranking reports (carryover plus accumulated export); yr. = year; avg. = average.

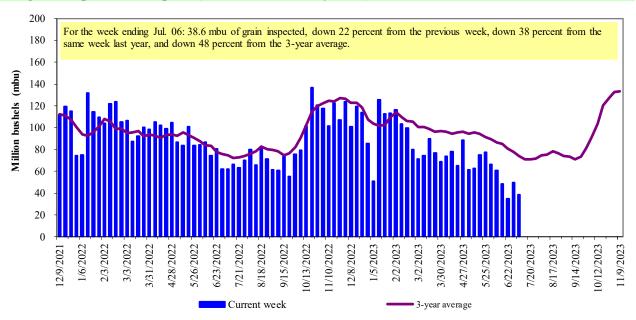
Table 15
Grain inspections for export by U.S. port region (1,000 metric tons)

	For the week ending	Previous	Current week			2023 YTD as	Last 4-w	eeks as % of:	
Port regions	07/06/23	week*	as % of previous	2023 YTD*	2022 YTD*	% of 2022 YTD	Last year	Prior 3-yr. avg.	2022 total*
Pacific Northwest									
Wheat	218	190	115	5,437	4,758	114	110	81	9,836
Corn	0	36	0	3,923	7,967	49	13	11	9,615
Soybeans	0	0	n/a	3,521	4,495	78	0	0	14,178
Total	218	226	96	12,881	17,220	75	45	38	33,629
Mississippi Gulf									
Wheat	148	64	233	1,587	2,196	72	94	87	4,053
Corn	184	451	41	14,337	21,744	66	68	62	30,781
Soybeans	200	205	98	13,307	12,095	110	58	65	31,283
Total	533	720	74	29,230	36,035	81	68	65	66,116
Texas Gulf									
Wheat	28	59	48	1,291	1,684	77	58	22	3,421
Corn	21	11	191	144	388	37	108	87	648
Soybeans	0	0	n/a	52	2	n/a	n/a	n/a	685
Total	50	71	71	1,487	2,074	72	67	28	4,754
Interior									
Wheat	34	46	75	1,273	1,528	83	59	71	2,912
Corn	129	163	79	4,854	4,967	98	83	87	8,961
Soybeans	48	67	72	3,167	3,776	84	62	70	7,109
Total	212	276	77	9,295	10,271	90	73	80	18,982
Great Lakes									
Wheat	12	0	n/a	160	111	144	n/a	138	395
Corn	0	0	n/a	23	118	19	0	0	158
Soybeans	0	0	n/a	31	234	13	0	0	760
Total	12	0	n/a	213	463	46	46	55	1,312
Atlantic									
Wheat	1	1	50	59	38	157	219	144	169
Corn	0	3	0	78	190	41	15	46	309
Soybeans	3	4	63	1,205	1,536	78	18	40	2,867
Total	3	8	40	1,342	1,764	76	18	43	3,345
U.S. total from ports	*								
Wheat	441	360	122	9,806	10,315	95	93	69	20,786
Corn	335	664	50	23,359	35,374	66	56	52	50,471
Soybeans	251	276	91	21,283	22,138	96	50	62	56,882
Total	1,027	1,301	79	54,448	67,826	80	62	58	128,139

^{*}Data includes revisions from prior weeks; some regional totals may not add exactly due to rounding.

 $Source: USDA, Federal\ Grain\ Inspection\ Service;\ YTD=\ year-to-date;\ n/a=not\ applicable\ or\ no\ change.$

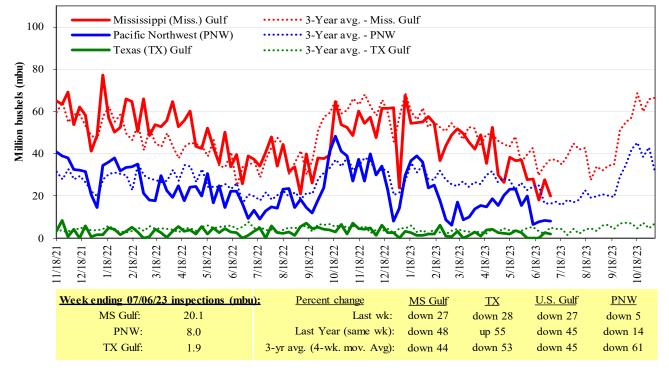
Figure 13
U.S. grain inspected for export (wheat, corn, and soybeans)



Note: 3-year average consists of 4-week running average.

Source: USDA, Federal Grain Inspection Service.

Figure 14
U.S. Grain inspections: U.S. Gulf and PNW¹ (wheat, corn, and soybeans)



Source: USDA, Federal Grain Inspection Service.

Ocean Transportation

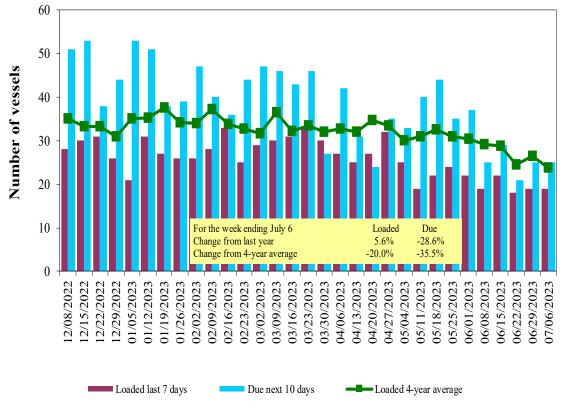
Table 16
Weekly port region grain ocean vessel activity (number of vessels)

			, , , , , , , , , , , , , , , , , , ,	Pacific
		Gulf		Northwest
		Loaded	Due next	
Date	In port	7-days	10-days	In port
7/6/2023	22	19	25	4
6/29/2023	21	19	25	5
2022 range	(1461)	(1839)	(2862)	(523)
2022 average	30	28	44	13

Note: The data is voluntarily collected and may not be complete.

Source: USDA, Agricultural Marketing Service.

Figure 15
U.S. Gulf¹ vessel loading activity



¹U.S. Gulf includes Mississippi, Texas, and East Gulf. Source: USDA, Agricultural Marketing Service.

Figure 16 **Grain vessel rates, U.S. to Japan**



Note: PNW = Pacific Northwest.
Source: O'Neil Commodity Consulting.

Table 17

Ocean freight rates for selected shipments, week ending 07/08/2023

Export	Import	Grain	Loading	Volume loads	Freight rate
region	region	types	date	(metric tons)	(US\$/metric ton)
U.S. Gulf	Japan	Heavy grain	May 2, 2023	50,000	56.70
U.S. Gulf	Japan	Heavy grain	May 1, 2023	50,000	54.80
U.S. Gulf	Japan	Heavy grain	Nov 1/10, 2022	50,000	79.25
U.S. Gulf	S. China	Corn	Aug 1/10, 2022	68,000	71.00
U.S. Gulf	Kenya	Sorghum	Feb 15/25, 2023	22,820	63.30*
U.S. Gulf	Jamaica	Wheat	Jun 20/30, 2023	4,400	63.00 op 66.00
PNW	Indonesia	Soybean Meal	Jul 21/31, 2023	35,000	106.00*
PNW	N. China	Heavy grain	Apr 21/27, 2023	63,000	28.00
PNW	N. China	Heavy grain	May 1/4, 2023	66,000	29.00
Brazil	S. Korea	Heavy grain	Jun 15/Jul 15, 2023	68,000	45.15
Brazil	S. Korea	Soybean Meal	Jun 1, 2023	60,000	53.75
Brazil	China	Heavy grain	Jul 1/31, 2023	63,000	41.50
Brazil	China	Heavy grain	May 5/10, 2023	65,000	36.50
Brazil	N. China	Heavy grain	Apr 21/30, 2023	66,000	40.60
Brazil	Vietnam	Heavy grain	Apr 11/29, 2023	66,000	37.00
Australia	Vietnam	Heavy grain	Feb 24/Apr 9, 2023	60,000	20.80

^{*50} percent of food aid from the United States is required to be shipped on U.S.-flag vessels.

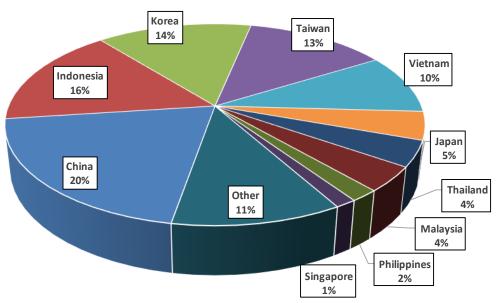
Note: Rates shown are per metric ton (2,204.62 lbs. = 1 metric ton), free on board (F.O.B), except where otherwise indicated;

op = option.

Source: Maritime Research, Inc.

In 2020, containers were used to transport 10 percent of total U.S. waterborne grain exports. Approximately 66 percent of U.S. waterborne grain exports in 2020 went to Asia, of which 14 percent were moved in containers. Approximately 95 percent of U.S. waterborne containerized grain exports were destined for Asia.

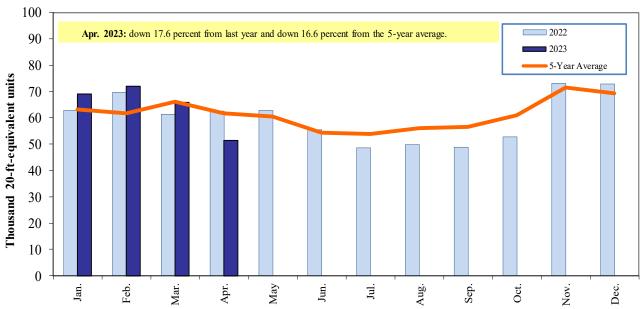
Figure 17
Top 10 destination markets for U.S. containerized grain exports, Jan-Apr 2023



Note: The following Harmonized Tariff Codes are used to calculate containerized grains movements: '1001', '100190', '1002', '10020', '10030', '100300', '1004', '100400', '1005', '100590', '1007', '100700', '110100', '11020', '110220', '110290', '12010', '120100', '120190', '120810', '230210', '230310', '230330', '2304', and '230990'.

Source: USDA, Agricultural Marketing Service, Transportation Services Division analysis of PIERS data.

Figure 18
Monthly shipments of U.S. containerized grain exports



Note: The following Harmonized Tariff Codes are used to calculate containerized grains movements: '1001', '100190', '1002', '100200', '1003', '100300', '1004', '100400', '1005', '100590', '1007', '100700', '110100', '11020', '110220', '110290', '12010', '120190', '120190', '120810', '230210', '230310', '23034', and '230990'.

 $Source:\ USDA,\ Agricultural\ Marketing\ Service,\ Transportation\ Services\ Division\ analysis\ of\ PIERS\ data.$

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