United States Department of Agriculture

Grain Transportation Report

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

Contact Us

March 31, 2022

Contents

The next release is April 7, 2022

WEEKLY HIGHLIGHTS

USDA and NGFA Express Concern to STB Over Rail Service

On March 30, USDA expressed concern to the Surface Transportation Board (STB) over worsening rail service. An earlier, March 24 letter from the National Grain and Feed Association (NGFA) described "significant rail service disruptions," including facilities that have been unable to ship out or receive grain by rail. According to STB's latest service metrics (posted March 23), train speeds for grain across the four major U.S. Class I railroads were 2 percent lower than prior years, origin dwell times for grain were up 60 percent, and the number of unfilled grain car orders was up 152 percent. At the same time, premiums paid in the secondary market for shuttle service have escalated significantly in recent weeks. For the week ending March 24, bids/offers were $2,500 higher than average for shuttle railcars delivered in April and $1,200 higher for May. USDA urged STB take action in the immediate term to improve rail service and to move forward with proceedings that would improve service in the future.

California Leases Out Its Properties To Store 20,000+ Containers

In accord with the California Governor's Executive Order N-19-21, Chunker (an online warehouse marketplace) has signed leases on six California State properties to provide storage for at least 20,000 shipping containers. The new storage sites are expected to help alleviate congestion at California ports. Three facilities are located near the Ports of Los Angeles and Long Beach, and two sites are near the Port of Oakland. Chunker will coordinate among California ports, shipping/trucking companies, and cargo owners to move containers to the new sites. The Ports of Los Angeles and Long Beach are the leading gateway ports for U.S. containerized grain exports.

BTS Resumes Collecting Data on Vehicle Inventory and Use

The U.S. Department of Transportation's Bureau of Transportation Statistics (BTS) recently announced it would conduct a 2021 Vehicle Inventory and Use Survey (VIUS), marking the first VIUS data collection in 20 years. Conducted in partnership with the Federal Highway Administration, U.S. Department of Energy, and U.S. Census Bureau, VIUS once served as the primary data source on the physical and operational characteristics of the U.S. truck population. For the 2021 survey, 150,000 vehicle owners nationwide were randomly selected to provide information on their 2021 vehicle use through an online portal. Focusing on heavy trucks and truck tractors, the survey will collect information on vehicles' physical characteristics, installed safety technologies, maintenance performed, and uses. Expected to be available in 2023, the collected data will be used to guide infrastructure investments, evaluate truck safety, estimate fuel efficiency and emissions, and understand the products and commodities carried on U.S. roadways. The online survey portal will be open through October 2022. More information and instructions for participants, can be found here.

Snapshots by Sector

Export Sales

For the week ending March 17 **unshipped balances** of wheat, corn, and soybeans for marketing year 2021/22 totaled 37.6 million metric tons (mmt), down 16 percent from the same time last year and down 2 percent from the previous week. Net **corn export sales** were 0.979 mmt, down 47 percent from the previous week. Net **soybean export sales** were 0.412 mmt, down 67 percent from the previous week. Net weekly **wheat export sales** were 0.156 mmt, up 7 percent from the previous week.

Rail

U.S. Class I railroads originated 23,317 **grain carloads** during the week ending March 19. This was a 10-percent increase from the previous week, 15 percent fewer than last year, and 4 percent more than the 3-year average.

Average April shuttle **secondary railcar** bids/offers (per car) were $2,756 above tariff for the week ending March 24. This was $444 more than last week and $2,738 more than this week last year. There were no non-shuttle bids/offers this week.

Barge

For the week ending March 26, **barged grain movements** totaled 805,372 tons. This was 16 percent more than the previous week and 5 percent less than the same period last year.

For the week ending March 26, 492 grain barges **moved down river**—72 more barges than the previous week. There were 753 grain barges **unloaded** in the New Orleans region, 18 percent higher than last week.

Ocean

For the week ending March 24, 32 **oceangoing grain vessels** were loaded in the Gulf—3 percent fewer than the same period last year. Within the next 10 days (starting March 25), 47 vessels were expected to be loaded—2 percent fewer than the same period last year.

As of March 24, the rate for shipping a metric ton (mt) of grain from the U.S. Gulf to Japan was $78.50. This was 5 percent more than the previous week. The rate from the Pacific Northwest to Japan was $44.00 per mt, 3 percent more than the previous week.

Fuel

For the week ending March 28, the U.S. average **diesel fuel price** increased 5.1 cents from the previous week to $5.185 per gallon, 202.4 cents above the same week last year.

Preferred citation: U.S. Department of Agriculture, Agricultural Marketing Service. *Grain Transportation Report.* March 31, 2022.
Web: **http://dx.doi.org/10.9752/TS056.03-31-2022**

Feature Article/Calendar

New Research Examines the Use of Integrative Technology In the Agricultural Export Community

The article's descriptions and findings are drawn from recent USDA-sponsored research from Cyrus Ramezani and Chris Carr.[1] The full report is available online.

The pandemic has exposed and exacerbated cracks in the U.S. intermodal-transportation supply chain. Inefficiencies that were frustrating pre-pandemic are now significant roadblocks to moving cargo and staying competitive in overseas markets. To seal these systemic "cracks," shippers (especially agricultural exporters) have long voiced a need for more reliable, timely, and transparent information in moving cargo. Such information is necessary during "normal" times. In extraordinary times, this information is critical to keeping supply chains as fluid and resilient as possible. However, despite a clear need for quality information, the industry's readiness for the next generation of data sharing and integration remains hazy.

Currently, the transportation and logistics industries are entering a period of dynamic and fundamental change. The use of shared applications, cloud-based technologies, and collaborative data platforms are becoming essential for coordinating information and logistics between trading partners and service providers. The new technologies and processes offer multiple benefits, including minimizing operating costs, optimizing supply chain integration, and increasing market power through customer-focused fulfillment.

Ramezani and Carr studied the fragmentation and impacts of digital technologies in the realm of containerized agricultural exports. This article briefly recaps their findings and looks at recent efforts of government and industry to address challenges arising from outmoded technologies.

Growing Pains of Transitioning From Legacy Systems

Many agricultural exporters, truckers, and third-party logistics providers continue to use "legacy" systems. These systems are difficult to connect to today's cloud-based and application programming interface (API) technologies. Their lack of interoperability requires exporters to use multiple information systems, creating a fragmented approach to monitoring trade. Miscommunication among links of the supply chain often results, as each system independently (unintegrated with the others) monitors a separate critical data element or cluster of elements. Among these are chassis availability, container availability, warehouse inventory and capacity, vessel arrival dates, terminal gate appointments, and more.

Yet, despite the clear pain of staying with legacy systems, achieving interoperability is no simple matter either. Agricultural exporters have identified many obstacles to entry. In the fragmented technological ecosystem, many exporters remain fearful of losing control over their proprietary data. Operating on thin margins further complicates investment in the new generation technologies. Costs in terms of both money and time are involved in updating and adopting new digital technologies to replace legacy systems; implementing API integration across all providers and logistics nodes; and investing in human capital (and training). Other potential risks to investment include security concerns, potential downtime to upgrade systems, and transportation partners who are unwilling to share information.

Going the interoperability route makes sense only if all provider/stakeholder and logistics nodes are connected and integrated. Such an ecosystem can function efficiently only if all the providers in the logistics chain share real-time data and information.

[1] Cyrus Ramezani and Chris Carr are Professors with the Orfalea College of Business at California Polytechnic State University.

Over the past decade, the logistics industry has seen such an explosion of new technologies and investment that some agricultural exporters argue that the sheer number of solutions is starting to exacerbate the problem of technology dispersion and fragmentation. To address this concern, the Federal Government is taking steps to help the private sector reach a new standard of transparency.

Efforts of Government and Industry Toward a National Standard

The Departments of Agriculture and Transportation recently released separate supply chain assessments, as directed by President Biden's Executive Order on American Supply Chains. Both reports recommended developing a national portal for transportation and supply chain information. Such a portal is intended to standardize and pool information—facilitating transparency and interoperability and streamlining export logistics. Two major efforts are now underway to develop such a portal. Sponsors of both efforts are working in concert to coordinate and support the other.

FLOW. The Biden Administration recently launched a pilot program, the Freight Logistics Optimization Works (FLOW), to develop an information-sharing platform that can serve the diverse parts of the goods movement supply chain. FLOW's 18 initial participants represent the supply chain's diverse perspectives, including private businesses, trucking, warehousing, and logistics companies, ports, and more. In collaboration with the Administration, these stakeholders will help develop a "proof of concept" information-exchange platform to ease supply chain congestion, expedite the movement of goods, and ultimately, cut costs for American consumers.

SCORe Coalition. Concurrent with the FLOW pilot, a private-sector initiative is in the works, spearheaded by the Supply Chain Optimization and Resilience (SCORe) Coalition. SCORe represents some of the largest U.S. beneficial cargo owners (BCOs), spanning industries of retail, consumer brands, convenience stores, dairy foods, and health care and safety equipment and supplies. The coalition also represents the two largest U.S. container ports, as well as leaders in supply-chain transportation and logistics, digitization, and engineering. To the White House and multiple Government agencies, SCORe has advocated leveraging digital tools and international standards—in particular, through deploying a national freight data portal. In SCORe's concept, the national portal would be voluntary, nonregulatory, technology neutral, and private-sector driven. Like FLOW's concept, the portal would ensure the interoperability of different supply-chain stakeholder systems. It would allow for appropriate data sharing, end-to-end visibility for specific shipments in real time, and more robust predictive analytics for long-term planning.

A third effort to address export-logistics challenges takes a different approach from that of the portal development projects:

MTDI. In December 2021, the Federal Maritime Commission (FMC) launched the Maritime Transportation Data Initiative (MTDI) to identify data constraints that impede the flow of ocean cargo and add to supply chain inefficiencies. FMC intends the project to establish best practices and standards for accessing and transmitting data that are essential for a reliable, stable ocean transportation system. This effort focuses on gaps in the protocols for information sharing. Through the first half of 2022, FMC Commissioner Carl Bentzel is convening a series of meetings with maritime and intermodal stakeholders. Their initial findings will be presented at a data summit hosted by the FMC tentatively on June 1.

Moving Toward a Sustainable, Interoperable Transportation Ecosystem

Transitioning between legacy systems (with which many agricultural exporters still struggle) and next generation collaboration requires trust and neutral-party facilitation. In concert with evolving improvements to physical infrastructure, enhanced technology will fill gaps in the supply chain and keep U.S. shippers globally competitive in the long run. (*April.Taylor@usda.gov*)

Grain Transportation Indicators

Table 1
Grain transport cost indicators[1]

	Truck	Rail		Barge	Ocean	
For the week ending		Non-Shuttle	Shuttle		Gulf	Pacific
03/30/22	348	298	324	452	351	312
03/23/22	345	298	327	470	333	303

[1] Indicator: 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.
Source: USDA, Agricultural Marketing Service.

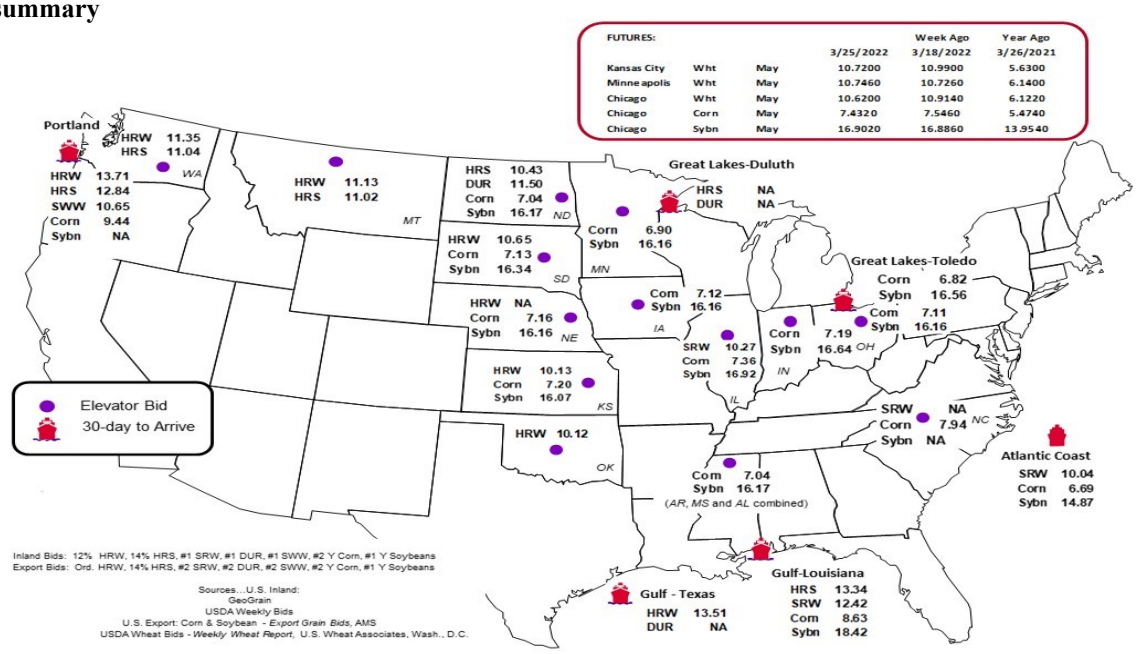
Table 2
Market Update: U.S. origins to export position price spreads ($/bushel)

Commodity	Origin–destination	3/25/2022	3/18/2022
Corn	IL–Gulf	-1.27	-1.29
Corn	NE–Gulf	-1.47	-1.51
Soybean	IA–Gulf	-2.26	-2.32
HRW	KS–Gulf	-3.38	-3.80
HRS	ND–Portland	-2.41	-2.47

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.

Figure 1
Grain bid summary



Rail Transportation

Table 3

Rail deliveries to port (carloads)[1]

For the week ending	Mississippi Gulf	Texas Gulf	Pacific Northwest	Atlantic & East Gulf	Total	Week ending	Cross-border Mexico[3]
3/23/2022[p]	1,745	896	6,324	278	9,243	3/19/2022	2,826
3/16/2022[r]	1,553	436	5,323	552	7,864	3/12/2022	3,027
2022 YTD[r]	19,008	11,691	70,548	7,064	108,311	2022 YTD	31,883
2021 YTD[r]	20,232	19,948	74,949	7,475	122,604	2021 YTD	26,077
2022 YTD as % of 2021 YTD	94	59	94	95	88	% change YTD	122
Last 4 weeks as % of 2021[2]	115	27	83	159	81	Last 4wks. % 2021	113
Last 4 weeks as % of 4-year avg.[2]	233	38	95	150	101	Last 4wks. % 4 yr.	136
Total 2021	54,982	69,213	311,407	22,567	458,169	Total 2021	147,859
Total 2020	45,294	64,116	299,882	24,458	433,750	Total 2020	128,714

[1]Data is incomplete as it is voluntarily provided.

[2] Compared with same 4-weeks in 2021 and prior 4-year average.

[3] Cross-border weekly data is approximately 15 percent below the Association of American Railroads' reported weekly carloads received by Mexican railroads to reflect switching between Kansas City Southern de Mexico (KCSM) and Grupo Mexico.

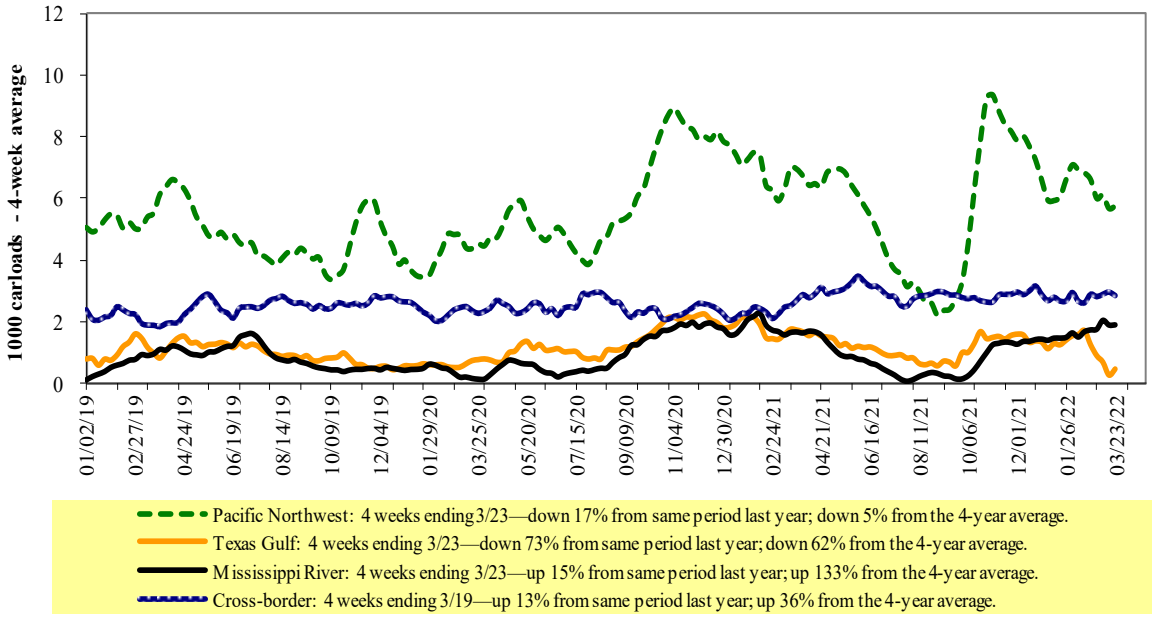
YTD = year-to-date; p = preliminary data; r = revised data; n/a = not available; wks. = weeks; avg. = average.

Source: USDA, Agricultural Marketing Service.

Railroads originate approximately 24 percent of U.S. grain shipments. Trends in these loadings are indicative of market conditions and expectations.

Figure 2

Rail deliveries to port



Source: USDA, Agricultural Marketing Service.

Table 4

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

For the week ending:	East		West			U.S. total	Canada	
3/19/2022	CSXT	NS	BNSF	KCS	UP		CN	CP
This week	1,881	2,338	11,644	1,177	6,277	23,317	3,025	3,961
This week last year	1,871	2,297	14,690	1,386	7,087	27,331	4,598	5,464
2022 YTD	20,503	25,125	129,298	14,335	69,630	258,891	38,721	41,032
2021 YTD	22,774	28,838	144,292	11,308	71,719	278,931	52,784	54,705
2022 YTD as % of 2021 YTD	90	87	90	127	97	93	73	75
Last 4 weeks as % of 2021*	100	101	85	106	92	90	78	71
Last 4 weeks as % of 3-yr. avg.**	106	99	101	107	113	104	91	89
Total 2021	93,935	120,911	609,890	64,818	318,002	1,207,556	210,323	242,533

*The past 4 weeks of this year as a percent of the same 4 weeks last year.

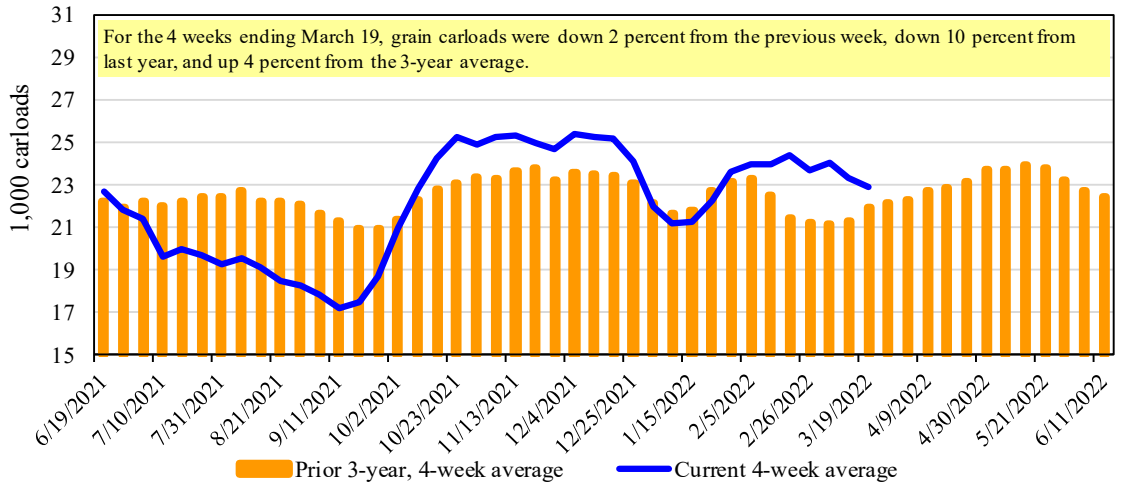
**The past 4 weeks as a percent of the same period from the prior 3-year average. YTD = year-to-date; avg. = average; yr. = year.

Note: NS = Norfolk Southern; KCS = Kansas City Southern; UP = Union Pacific; CN = Canadian National; CP = Canadian Pacific.

Source: Association of American Railroads.

Figure 3

Total weekly U.S. Class I railroad grain carloads



Source: Association of American Railroads.

Table 5

Railcar auction offerings[1] ($/car)[2]

For the week ending:		Delivery period							
3/24/2022		Apr-22	Apr-21	May-22	May-21	Jun-22	Jun-21	Jul-22	Jul-21
BNSF[3]	COT grain units	0	no bids	0	no bids	0	0	0	0
	COT grain single-car	363	51	16	0	0	0	0	0
UP[4]	GCAS/Region 1	no offer	no offer	no offer	no offer	no offer	no offer	n/a	n/a
	GCAS/Region 2	no offer	no offer	no offer	no offer	no offer	no offer	n/a	n/a

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

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

[3]BNSF - COT = BNSF Railway Certificate of Transportation; north grain and south grain bids were combined effective the week ending 6/24/06.

[4]UP - GCAS = Union Pacific Railroad Grain Car Allocation System.

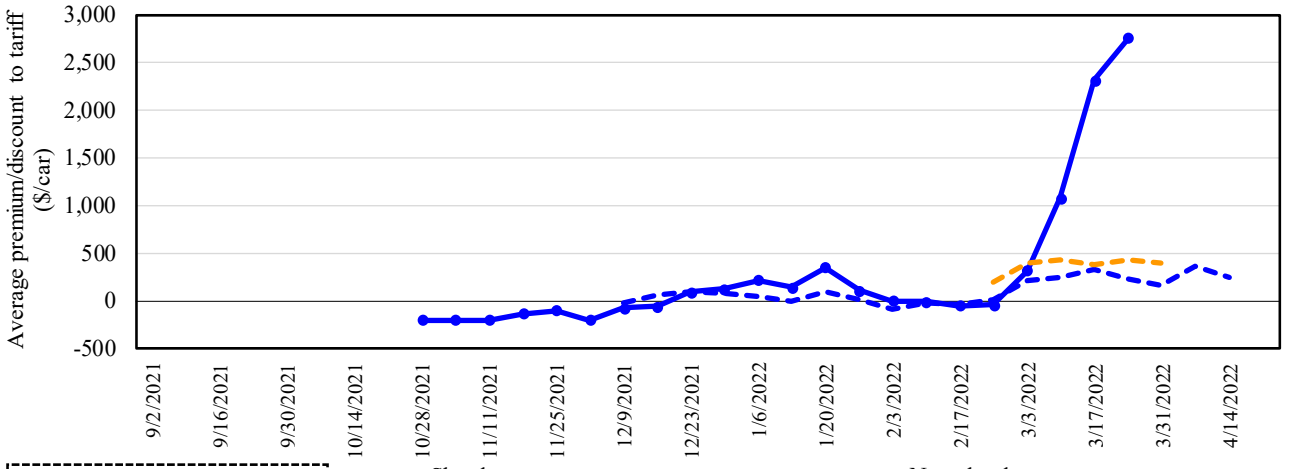
Region 1 includes: AR, IL, LA, MO, NM, OK, TX, WI, and Duluth, MN.

Region 2 includes: CO, IA, KS, MN, NE, WY, and Kansas City and St. Joseph, MO.

Source: USDA, Agricultural Marketing Service.

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 4
Secondary market bids/offers for railcars to be delivered in April 2022

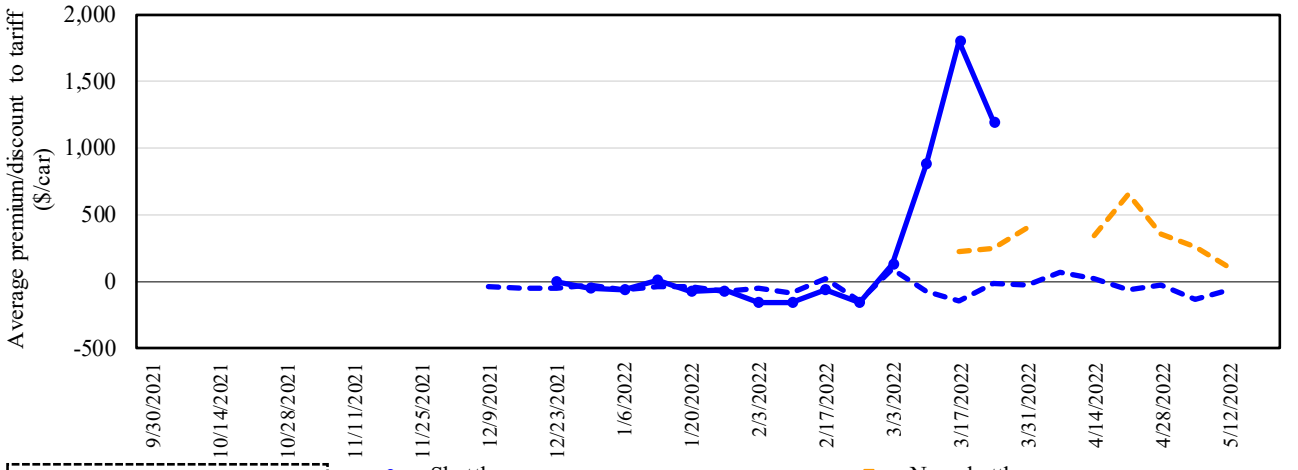


3/24/2022	BNSF	UP
Non-shuttle	n/a	n/a
Shuttle	$2,138	$3,375

There were no non-shuttle bids/offers this week.
Average shuttle bids/offers rose $444 this week and are at the peak.

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 May 2022



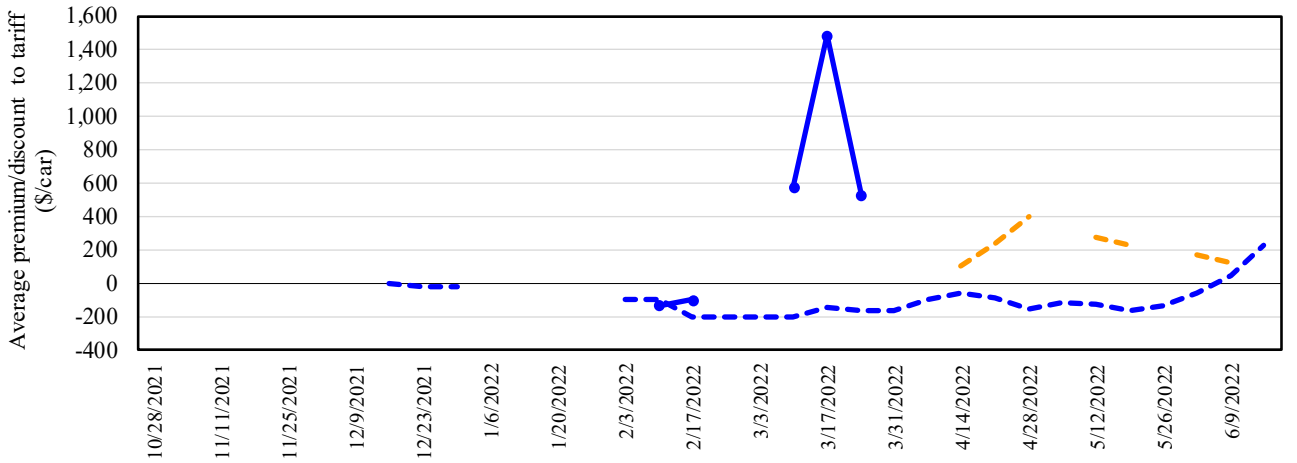
3/24/2022	BNSF	UP
Non-shuttle	n/a	n/a
Shuttle	$1,150	$1,250

There were no non-shuttle bids/offers this week.
Average shuttle bids/offers fell $606 this week and are $606 below the peak.

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 6

Secondary market bids/offers for railcars to be delivered in June 2022



3/24/2022	BNSF	UP
Non-shuttle	n/a	n/a
Shuttle	$531	n/a

There were no non-shuttle bids/offers this week.
Average shuttle bids/offers fell $956 this week and are $956 below the peak.

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 6

Weekly secondary railcar market ($/car)[1]

For the week ending: 3/24/2022		Delivery period					
		Apr-22	May-22	Jun-22	Jul-22	Aug-22	Sep-22
Non-shuttle	**BNSF-GF**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**
	Change from last week	n/a	n/a	n/a	n/a	n/a	n/a
	Change from same week 2021	n/a	n/a	n/a	n/a	n/a	n/a
	UP-Pool	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**
	Change from last week	n/a	n/a	n/a	n/a	n/a	n/a
	Change from same week 2021	n/a	n/a	n/a	n/a	n/a	n/a
Shuttle	**BNSF-GF**	**2,138**	**1,150**	**531**	**300**	**50**	**411**
	Change from last week	(237)	(1,463)	(957)	(250)	(100)	28
	Change from same week 2021	2,203	1,319	719	450	200	561
	UP-Pool	**3,375**	**1,250**	**n/a**	**n/a**	**n/a**	**n/a**
	Change from last week	1,125	250	n/a	n/a	n/a	n/a
	Change from same week 2021	3,273	1,334	n/a	n/a	n/a	n/a

[1]Average 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.

Data from James B. Joiner Co., Tradewest Brokerage Co.

Source: USDA, Agricultural Marketing Service.

The **tariff rail rate** is the base price of freight rail service. Together with **fuel surcharges** and any **auction and secondary rail** values, the tariff rail rate constitutes the full cost of shipping by rail. Typically, auction and secondary rail values are a small fraction of the full cost of shipping by rail relative to the tariff rate. However, during times of high rail demand or short supply, high auction and secondary rail values can exceed the cost of the tariff rate plus fuel surcharge.

Table 7

Tariff rail rates for unit and shuttle train shipments[1]

March 2022	Origin region[3]	Destination region[3]	Tariff rate/car	Fuel surcharge per car	Tariff plus surcharge per: metric ton	Tariff plus surcharge per: bushel[2]	Percent change Y/Y[4]
Unit train							
Wheat	Wichita, KS	St. Louis, MO	$3,695	$167	$38.35	$1.04	3
	Grand Forks, ND	Duluth-Superior, MN	$3,658	$0	$36.33	$0.99	-13
	Wichita, KS	Los Angeles, CA	$7,290	$0	$72.39	$1.97	2
	Wichita, KS	New Orleans, LA	$4,436	$294	$46.97	$1.28	2
	Sioux Falls, SD	Galveston-Houston, TX	$7,026	$0	$69.77	$1.90	3
	Colby, KS	Galveston-Houston, TX	$4,712	$322	$49.99	$1.36	2
	Amarillo, TX	Los Angeles, CA	$5,121	$448	$55.30	$1.51	5
Corn	Champaign-Urbana, IL	New Orleans, LA	$4,000	$332	$43.02	$1.09	8
	Toledo, OH	Raleigh, NC	$8,130	$0	$80.73	$2.05	4
	Des Moines, IA	Davenport, IA	$2,505	$70	$25.57	$0.65	4
	Indianapolis, IN	Atlanta, GA	$6,227	$0	$61.84	$1.57	4
	Indianapolis, IN	Knoxville, TN	$5,247	$0	$52.11	$1.32	4
	Des Moines, IA	Little Rock, AR	$4,000	$207	$41.77	$1.06	6
	Des Moines, IA	Los Angeles, CA	$5,880	$602	$64.37	$1.63	8
Soybeans	Minneapolis, MN	New Orleans, LA	$3,631	$479	$40.82	$1.11	10
	Toledo, OH	Huntsville, AL	$6,714	$0	$66.67	$1.81	2
	Indianapolis, IN	Raleigh, NC	$7,422	$0	$73.70	$2.01	4
	Indianapolis, IN	Huntsville, AL	$5,367	$0	$53.30	$1.45	2
	Champaign-Urbana, IL	New Orleans, LA	$4,665	$332	$49.62	$1.35	5
Shuttle train							
Wheat	Great Falls, MT	Portland, OR	$4,193	$0	$41.64	$1.13	4
	Wichita, KS	Galveston-Houston, TX	$4,411	$0	$43.80	$1.19	4
	Chicago, IL	Albany, NY	$6,670	$0	$66.24	$1.80	5
	Grand Forks, ND	Portland, OR	$5,851	$0	$58.10	$1.58	3
	Grand Forks, ND	Galveston-Houston, TX	$5,199	$0	$51.63	$1.41	-13
	Colby, KS	Portland, OR	$5,923	$528	$64.06	$1.74	4
Corn	Minneapolis, MN	Portland, OR	$5,380	$0	$53.43	$1.36	4
	Sioux Falls, SD	Tacoma, WA	$5,340	$0	$53.03	$1.35	4
	Champaign-Urbana, IL	New Orleans, LA	$3,920	$332	$42.22	$1.07	8
	Lincoln, NE	Galveston-Houston, TX	$4,080	$0	$40.52	$1.03	5
	Des Moines, IA	Amarillo, TX	$4,420	$260	$46.47	$1.18	6
	Minneapolis, MN	Tacoma, WA	$5,380	$0	$53.43	$1.36	4
	Council Bluffs, IA	Stockton, CA	$5,300	$0	$52.63	$1.34	4
Soybeans	Sioux Falls, SD	Tacoma, WA	$6,050	$0	$60.08	$1.64	3
	Minneapolis, MN	Portland, OR	$6,100	$0	$60.58	$1.65	3
	Fargo, ND	Tacoma, WA	$5,950	$0	$59.09	$1.61	3
	Council Bluffs, IA	New Orleans, LA	$4,895	$383	$52.41	$1.43	5
	Toledo, OH	Huntsville, AL	$4,954	$0	$49.20	$1.34	0
	Grand Island, NE	Portland, OR	$5,280	$540	$57.80	$1.57	7

[1]A unit train refers to shipments of at least 25 cars. Shuttle train rates are generally available for qualified shipments of 75-120 cars that meet railroad efficiency requirements.

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

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

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

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

Table 8

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

Date: December 2021							
Commodity	Origin state	Destination region	Tariff rate per car[1]	Fuel surcharge per car[2]	Tariff rate plus fuel surcharge per: metric ton[3]	bushel[3]	Percent change[4] 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	MO	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

[1]Rates are based upon published tariff rates for high-capacity shuttle trains. Shuttle trains are available for qualified shipments of 75-110 cars that meet railroad efficiency requirements.

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

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

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

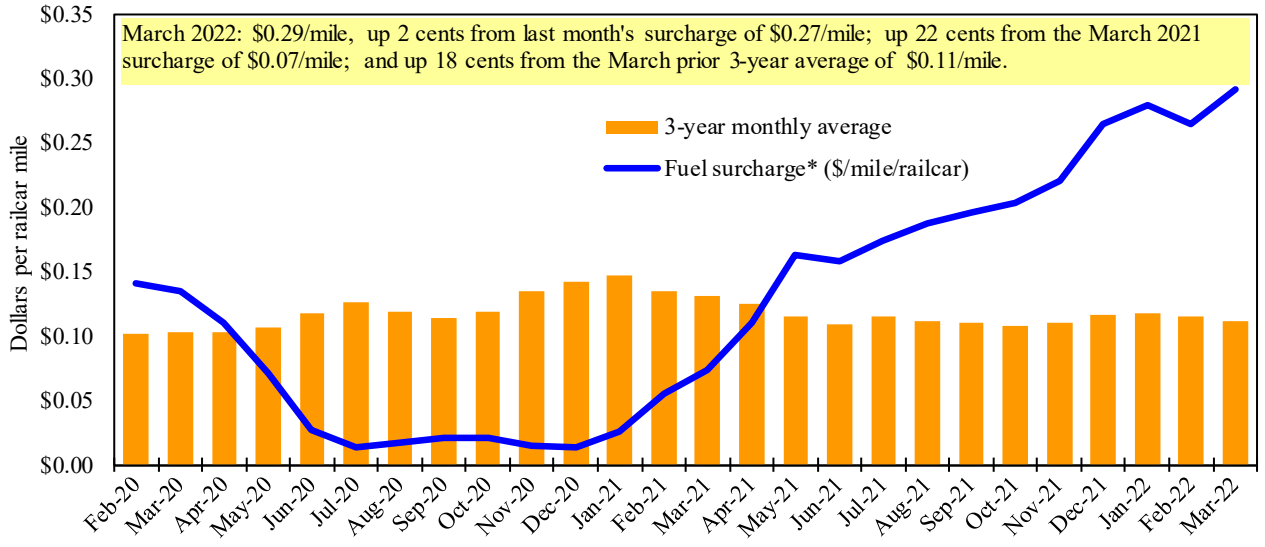
[5] As of January 1, both BNSF and Union Pacific changed their billing and reporting of rates to Mexico.

As we incorporate the change, Table 8 updates will be delayed.

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

Figure 7

Railroad fuel surcharges, North American weighted average[1]



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

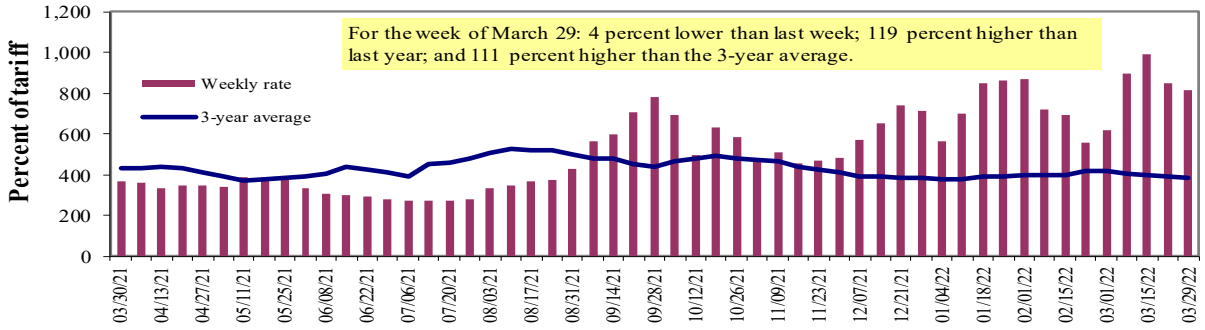
* Beginning January 2009, the Canadian Pacific fuel surcharge is computed by a monthly average of the bi-weekly fuel surcharge.

**CSX strike price changed from $2.00/gal. to $3.75/gal. starting January 1, 2015.

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

Barge Transportation

Figure 8
Illinois River barge freight rate[1,2]



[1]Rate = percent of 1976 tariff benchmark index (1976 = 100 percent); [2]4-week moving average of the 3-year average.
*Source: USDA, Agricultural Marketing Service.

Table 9
Weekly barge freight rates: Southbound only

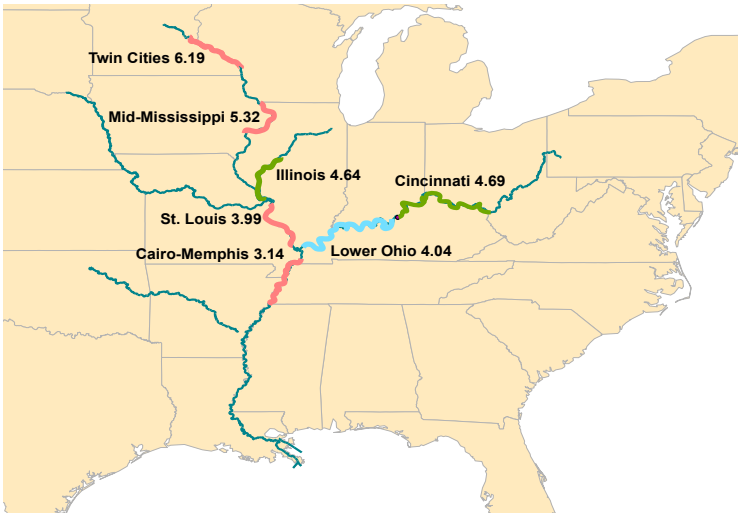
		Twin Cities	Mid-Mississippi	Lower Illinois River	St. Louis	Cincinnati	Lower Ohio	Cairo-Memphis
Rate[1]	3/29/2022	900	850	814	700	786	786	611
	3/22/2022	850	883	846	738	858	858	663
$/ton	3/29/2022	55.71	45.22	37.77	27.93	36.86	31.75	19.19
	3/22/2022	52.62	46.98	39.25	29.45	40.24	34.66	20.82
Current week % change from the same week:								
	Last year	84	121	119	168	148	148	156
	3-year avg. [2]	105	134	111	143	142	141	128
Rate[1]	April	832	800	763	654	721	721	579
	June	661	601	580	479	548	548	421

[1]Rate = percent of 1976 tariff benchmark index (1976 = 100 percent); [2]4-week moving average; ton = 2,000 pounds; "-" data not available.
Source: USDA, Agricultural Marketing Service.

Figure 9
Benchmark tariff rates

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

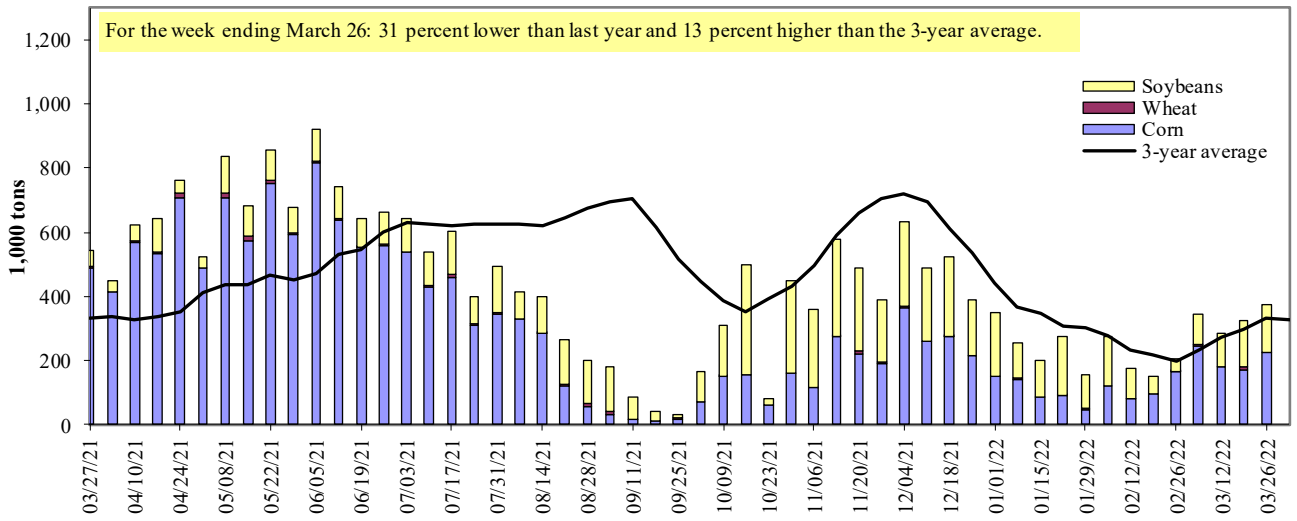
Select applicable index from market quotes are included in tables on this page. The 1976 benchmark rates per ton are provided in map.



Map Credit: USDA, Agricultural Marketing Service

Figure 10

Barge movements on the Mississippi River[1] (Locks 27 - Granite City, IL)



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

Source: U.S. Army Corps of Engineers.

Table 10

Barge grain movements (1,000 tons)

For the week ending 03/26/2022	Corn	Wheat	Soybeans	Other	Total
Mississippi River					
Rock Island, IL (L15)	11	0	9	0	20
Winfield, MO (L25)	81	0	47	0	129
Alton, IL (L26)	221	0	149	0	370
Granite City, IL (L27)	225	0	149	0	374
Illinois River (La Grange)	144	6	109	0	260
Ohio River (Olmsted)	228	7	127	23	385
Arkansas River (L1)	1	32	13	0	46
Weekly total - 2022	455	39	288	23	805
Weekly total - 2021	670	44	121	15	851
2022 YTD[1]	3,870	329	2,825	58	7,083
2021 YTD[1]	6,182	216	2,838	102	9,337
2022 as % of 2021 YTD	63	152	100	57	76
Last 4 weeks as % of 2021[2]	66	119	148	186	84
Total 2021	23,516	1,634	11,325	297	36,772

[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.

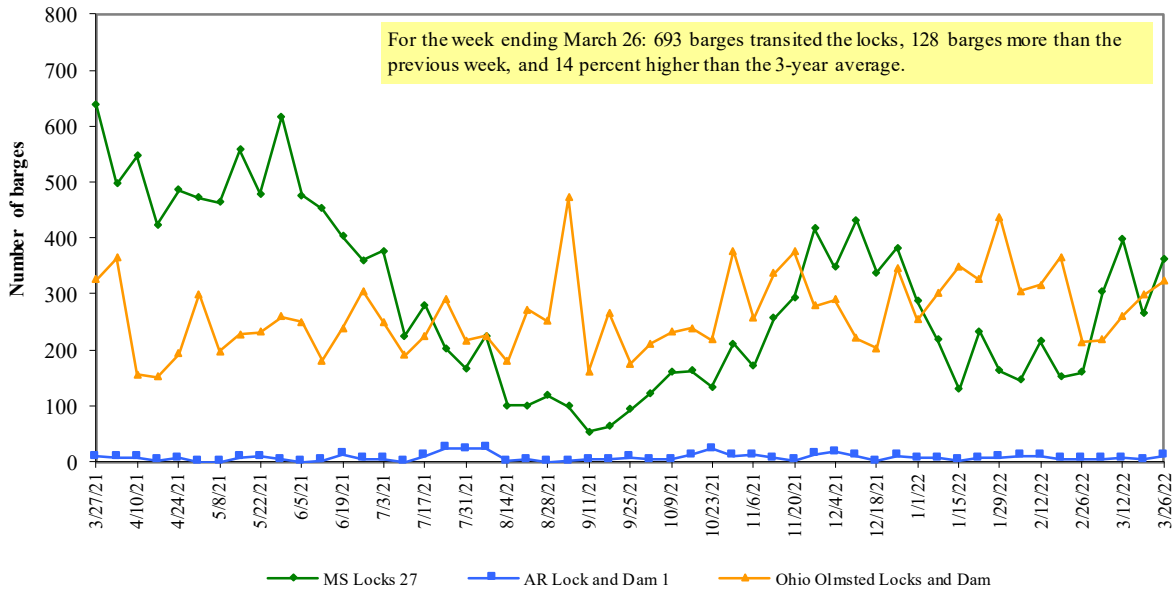
[2] As a percent of same period in 2020.

Note: L (as in "L15") refers to a lock, locks, or locks and dam facility.

Source: U.S. Army Corps of Engineers.

Figure 11

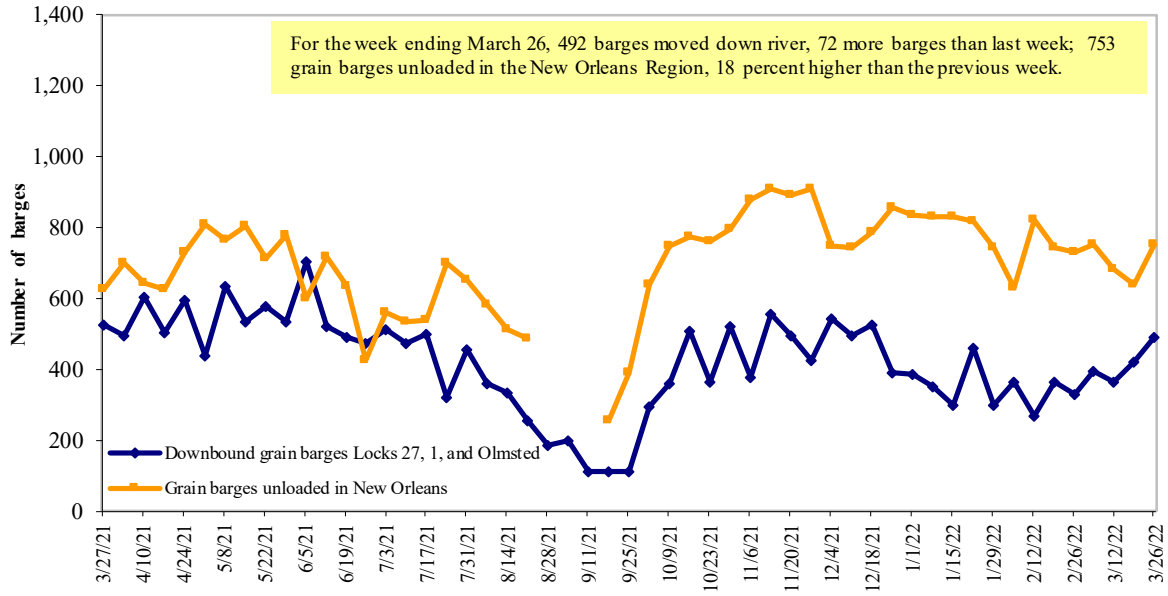
Upbound empty barges transiting Mississippi River Locks 27, Arkansas River Lock and Dam 1, and Ohio River Olmsted Locks and Dam



Source: U.S. Army Corps of Engineers.

Figure 12

Grain barges for export in New Orleans region



Note: Olmsted = Olmsted Locks and Dam.

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 11

Retail on-highway diesel prices, week ending 3/28/2022 (U.S. $/gallon)

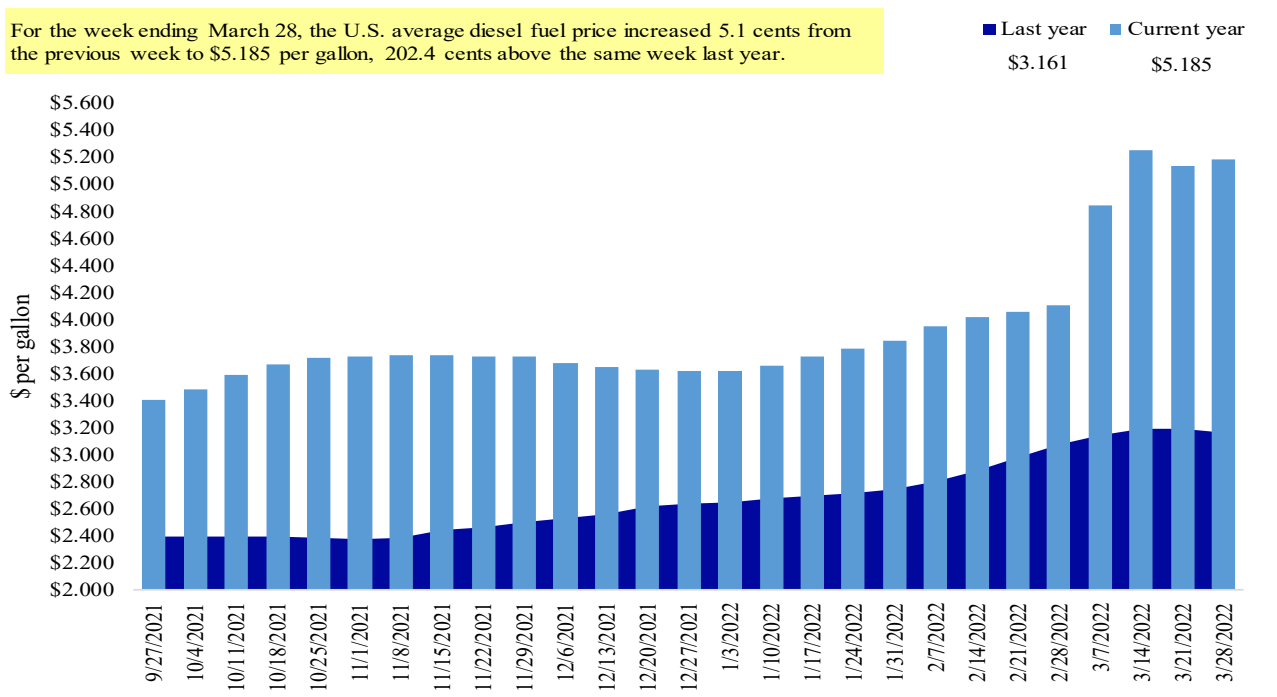
Region	Location	Price	Change from Week ago	Change from Year ago
I	East Coast	5.249	0.070	2.119
	New England	5.309	0.184	2.218
	Central Atlantic	5.400	0.097	2.126
	Lower Atlantic	5.145	0.035	2.104
II	Midwest	4.994	0.035	1.890
III	Gulf Coast	4.972	0.008	2.017
IV	Rocky Mountain	5.044	0.157	1.750
V	West Coast	5.874	0.077	2.215
	West Coast less California	5.402	0.083	2.130
	California	6.289	0.071	2.307
Total	United States	5.185	0.051	2.024

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

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

Figure 13

Weekly diesel fuel prices, U.S. average



Source: U.S. Department of Energy, Energy Information Administration, Retail On-Highway Diesel Prices.

Grain Exports

Table 12

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

	Wheat						Corn	Soybeans	Total
For the week ending	HRW	SRW	HRS	SWW	DUR	All wheat			
Export balances[1]									
3/17/2022	1,587	568	1,067	504	19	3,744	22,719	11,162	37,625
This week year ago	1,399	355	1,648	1,957	78	5,436	32,989	6,380	44,805
Cumulative exports-marketing year[2]									
2021/22 YTD	5,873	2,188	4,112	2,803	170	15,147	30,299	42,875	88,320
2020/21 YTD	7,017	1,440	5,768	4,601	592	19,418	31,940	54,279	105,637
YTD 2021/22 as % of 2020/21	84	152	71	61	29	78	95	79	84
Last 4 wks. as % of same period 2020/21*	124	167	66	28	24	73	69	167	83
Total 2020/21	8,331	1,744	7,337	6,281	654	24,347	66,702	60,287	151,336
Total 2019/20	9,526	2,318	6,960	4,751	922	24,477	42,622	43,994	111,094

[1] Current unshipped (outstanding) export sales to date.

[2] Shipped export sales to date; 2021/22 marketing year now in effect for wheat, corn and soybeans.

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 13

Top 5 importers[1] of U.S. corn

For the week ending 3/17/2022	Total commitments[2] 2021/22 current MY	2020/21 last MY	% change current MY from last MY	Exports[3] 3-yr. avg. 2019-21
	1,000 mt -			
Mexico	14,649	12,624	16	14,817
Japan	8,131	8,633	(6)	11,082
China	12,142	23,254	(48)	7,920
Columbia	3,644	2,987	22	4,491
Korea	474	2,282	(79)	3,302
Top 5 importers	**39,040**	**49,780**	**(22)**	**41,613**
Total U.S. corn export sales	**53,018**	**64,929**	**(18)**	**53,145**
% of projected exports	83%	93%		
Change from prior week[2]	**979**	**4,424**		
Top 5 importers' share of U.S. corn export sales	74%	77%		78%
USDA forecast March 2022	**63,613**	**70,051**	**(9)**	
Corn use for ethanol USDA forecast, March 2022	**135,890**	**127,838**	**6**	

[1] Based on USDA, Foreign Agricultural Service (FAS) marketing year ranking reports for 2020/21; marketing year (MY) = Sep 1 - Aug 31.

[2] Cumulative 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.

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

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

Source: USDA, Foreign Agricultural Service.

Table 14

Top 5 importers[1] of U.S. soybeans

For the week ending 3/17/2022	Total commitments[2] 2021/22 current MY	2020/21 last MY	% change current MY from last MY	Exports[3] 3-yr. avg. 2018-20
				- 1,000 mt -
China	27,719	35,847	(23)	21,666
Mexico	4,881	4,549	7	4,754
Egypt	3,426	2,503	37	3,093
Indonesia	1,268	1,799	(30)	2,325
Japan	1,830	1,814	1	2,275
Top 5 importers	**39,123**	**46,511**	**(16)**	**34,113**
Total U.S. soybean export sales	**54,036**	**60,659**	**(11)**	**50,758**
% of projected exports	95%	98%		
change from prior week[2]	**412**	**102**		
Top 5 importers' share of U.S. soybean export sales	72%	77%		**67%**
USDA forecast, March 2022	**56,948**	**61,608**	**(8)**	

[1]Based on USDA, Foreign Agricultural Service (FAS) marketing year ranking reports for 2020/21; marketing year (MY) = Sep 1 - Aug 31.

[2]Cumulative 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 previous week's outstanding sales and/or accumulated sales.

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

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

Source: USDA, Foreign Agricultural Service.

Table 15

Top 10 importers[1] of all U.S. wheat

For the week ending 3/17/2022	Total Commitments[2] 2021/22 current MY	2020/21 last MY	% change current MY from last MY	Exports[3] 3-yr. avg. 2018-20
		1,000 mt -		- 1,000 mt -
Mexico	3,439	3,395	1	3,388
Philippines	2,720	3,021	(10)	3,121
Japan	2,353	2,455	(4)	2,567
Korea	1,200	1,725	(30)	1,501
Nigeria	1,987	1,391	43	1,490
China	848	3,127	(73)	1,268
Taiwan	873	1,138	(23)	1,187
Indonesia	67	994	(93)	1,131
Thailand	542	808	(33)	768
Italy	229	570	(60)	681
Top 10 importers	**14,258**	**18,624**	(23)	**17,102**
Total U.S. wheat export sales	**18,891**	**24,854**	(24)	**24,617**
% of projected exports	87%	92%		
change from prior week[2]	**156**	**344**		
Top 10 importers' share of U.S. wheat export sales	75%	75%		69%
USDA forecast, March 2022	**21,798**	**27,030**	(19)	

[1] Based on USDA, Foreign Agricultural Service(FAS) marketing year ranking reports for 2020/21; Marketing year (MY) = Jun 1 - May 31.

[2] Cumulative 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 final reports (carryover plus accumulated export); yr. = year; avg. = average.

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

Source: USDA, Foreign Agricultural Service.

Table 16

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

Port regions	For the week ending 03/24/22	Previous week*	Current week as % of previous	2022 YTD*	2021 YTD*	2022 YTD as % of 2021 YTD	Last 4-weeks as % of: Last year	Last 4-weeks as % of: Prior 3-yr. avg.	2021 total*
Pacific Northwest									
Wheat	183	126	145	2,528	3,686	69	49	67	13,243
Corn	452	267	169	3,011	4,302	70	53	85	13,420
Soybeans	142	71	199	3,612	3,697	98	132	81	14,540
Total	**777**	**465**	**167**	**9,152**	**11,685**	**78**	**59**	**77**	**41,203**
Mississippi Gulf									
Wheat	85	83	103	907	422	215	248	114	3,202
Corn	924	1,002	92	10,190	11,925	85	82	129	38,498
Soybeans	362	302	120	6,814	8,708	78	132	108	27,159
Total	**1,371**	**1,387**	**99**	**17,911**	**21,054**	**85**	**95**	**121**	**68,858**
Texas Gulf									
Wheat	70	89	78	750	852	88	43	40	3,888
Corn	0	20	0	141	169	84	38	42	627
Soybeans	0	0	n/a	2	648	0	4	13	1,611
Total	**70**	**110**	**63**	**894**	**1,669**	**54**	**40**	**40**	**6,126**
Interior									
Wheat	20	52	39	671	597	112	100	120	2,972
Corn	202	174	116	2,137	2,082	103	89	115	10,147
Soybeans	140	134	105	1,771	1,771	100	104	115	6,525
Total	**363**	**360**	**101**	**4,579**	**4,451**	**103**	**96**	**116**	**19,644**
Great Lakes									
Wheat	1	1	n/a	24	19	125	374	188	536
Corn	0	0	n/a	0	0	n/a	n/a	n/a	145
Soybeans	0	0	n/a	0	0	n/a	n/a	n/a	592
Total	**1**	**1**	**n/a**	**24**	**19**	**125**	**374**	**188**	**1,273**
Atlantic									
Wheat	0	0	n/a	4	71	6	0	0	128
Corn	0	7	7	43	0	n/a	n/a	369	85
Soybeans	17	75	23	770	852	90	208	247	2,184
Total	**18**	**82**	**21**	**817**	**924**	**88**	**171**	**226**	**2,397**
U.S. total from ports*									
Wheat	359	351	102	4,884	5,647	87	63	72	23,969
Corn	1,578	1,470	107	15,522	18,477	84	75	115	62,921
Soybeans	662	582	114	12,970	15,677	83	127	108	52,612
Total	**2,599**	**2,404**	**108**	**33,376**	**39,801**	**84**	**83**	**104**	**139,501**

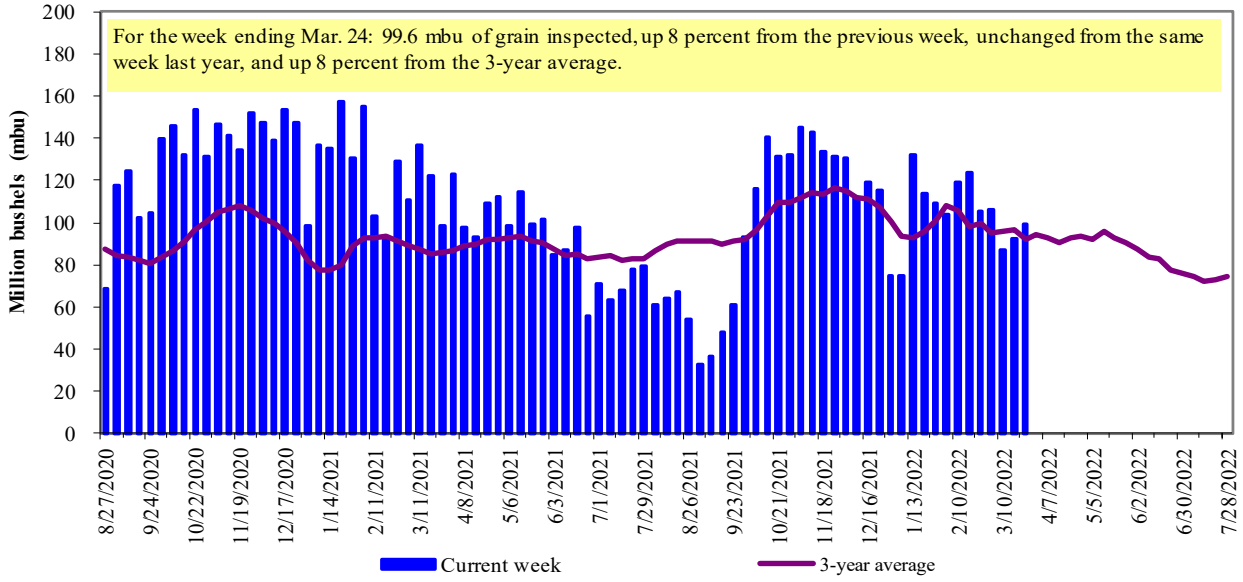
*Data includes revisions from prior weeks; some regional totals may not add exactly due to rounding.

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

The United States exports approximately one-quarter of the grain it produces. On average, this includes nearly 45 percent of U.S.-grown wheat, 50 percent of U.S.-grown soybeans, and 20 percent of the U.S.-grown corn. Approximately 55 percent of the U.S. export grain shipments departed through the U.S. Gulf region in 2019.

Figure 14

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

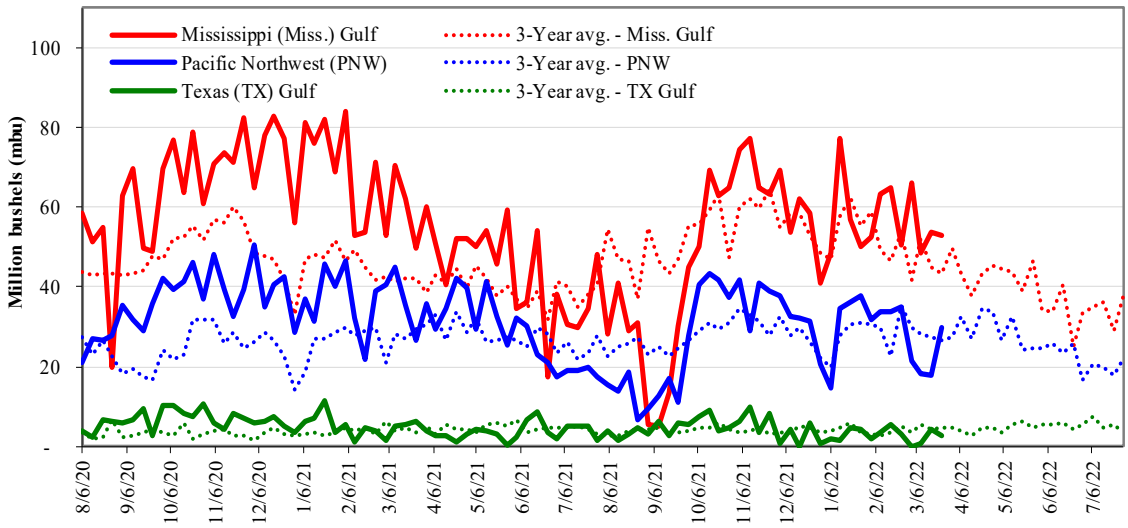


Note: 3-year average consists of 4-week running average.

Source: USDA, Federal Grain Inspection Service.

Figure 15

U.S. Grain inspections: U.S. Gulf and PNW[1] (wheat, corn, and soybeans)



Week ending 03/24/22 inspections (mbu):	
MS Gulf:	52.8
PNW:	29.7
TX Gulf:	2.6

Percent change from:	MS Gulf	TX Gulf	U.S. Gulf	PNW
Last wk:	down 1	down 38	down 4	up 67
Last Year (same wk):	up 6	down 60	down 1	up 11
3-yr avg. (4-wk. mov. Avg):	up 16	down 44	up 11	up 6

Source: USDA, Federal Grain Inspection Service.

Ocean Transportation

Table 17

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

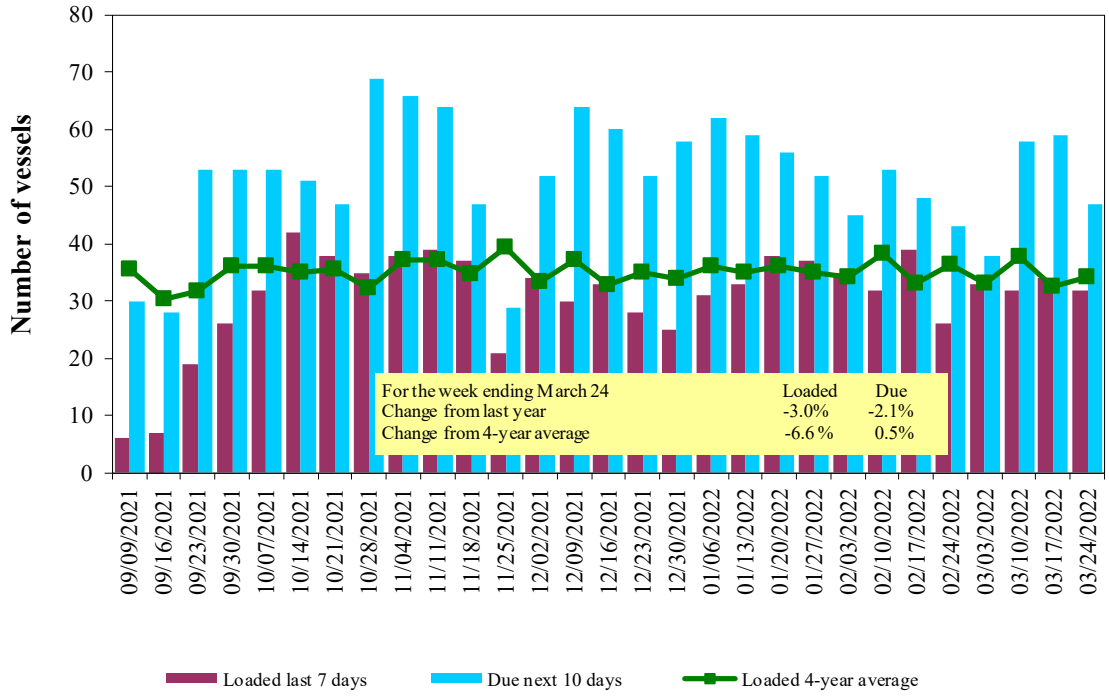
	Gulf			Pacific Northwest
Date	In port	Loaded 7-days	Due next 10-days	In port
3/24/2022	31	32	47	10
3/17/2022	19	34	59	10
2021 range	(10…57)	(5...48)	(15...69)	(4…27)
2021 average	34	32	49	15

Note: n/a = not available due to the holiday

Source: USDA, Agricultural Marketing Service.

Figure 16

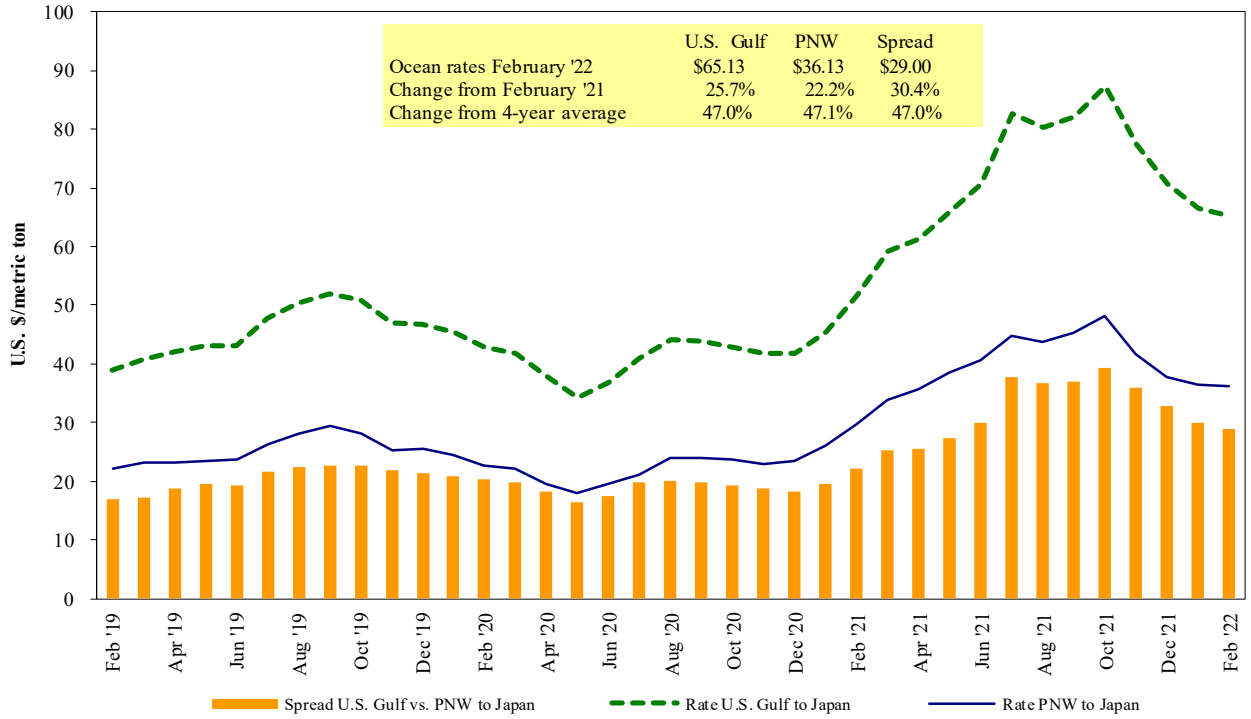
U.S. Gulf[1] vessel loading activity



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

Figure 17

Grain vessel rates, U.S. to Japan



Note: PNW = Pacific Northwest

Source: O'Neil Commodity Consulting

Table 18

Ocean freight rates for selected shipments, week ending 03/26/2022

Export region	Import region	Grain types	Loading date	Volume loads (metric tons)	Freight rate (US$/metric ton)
U.S. Gulf	Japan	Heavy grain	Jun 1/10	50,000	89.65
U.S. Gulf	Japan	Heavy grain	May 1/20, 2022	50,000	78.90
U.S. Gulf	China	Heavy grain	Dec 1/10, 2021	65,000	76.00
U.S. Gulf	China	Heavy grain	Nov 1/10, 2021	66,000	89.00
U.S. Gulf	Djibouti	Sorghum	Mar 1/10, 2022	10,000	209.97*
U.S. Gulf	Honduras	Soybean Meal	Feb 18/28, 2022	7,820	57.15*
U.S. Gulf	S. Korea	Heavy grain	Jun 1/Jul, 2022	55,000	82.75
U.S. Gulf	Sudan	Sorghum	Mar 1/10, 2022	35,790	149.97*
U.S. Gulf	Sudan	Sorghum	Feb 1/10, 2022	35,780	77.60*
PNW	Japan	Wheat	Sep 1, 2021	52,170	56.55*
PNW	Yemen	Wheat	Jan 24/Feb 4, 2022	29,960	124.00*
Brazil	N. China	Heavy grain	Mar 18/27, 2022	64,000	56.85
Brazil	N. China	Heavy grain	Jan 1/5, 2022	64,000	58.25
Argentina	Taiwan	Corn	May 1/Jun, 2022	65,000	85.00
Australia	Japan	Barley	Nov 1/10, 2021	55,000	65.50

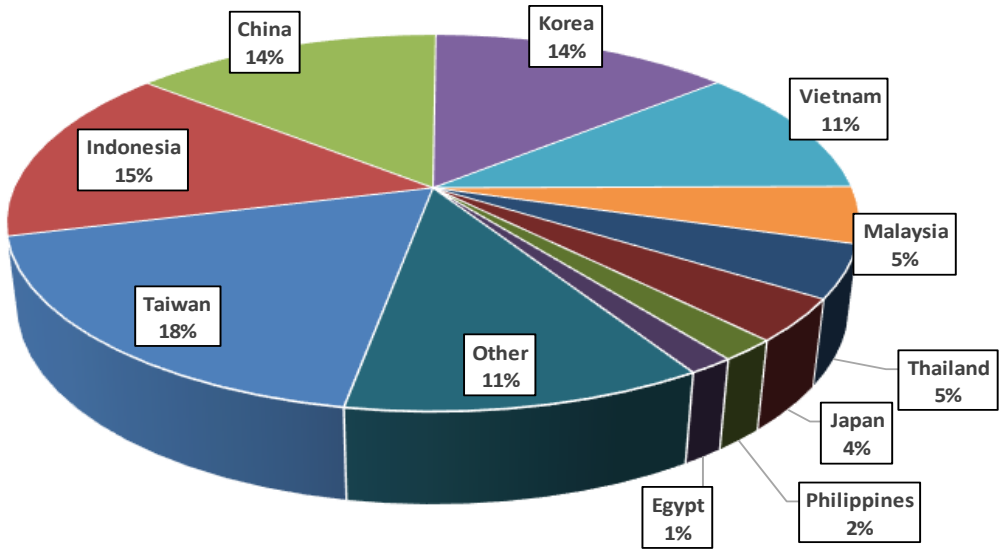
*50 percent of food aid from the United States is required to be shipped on U.S.-flag vessels.

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.

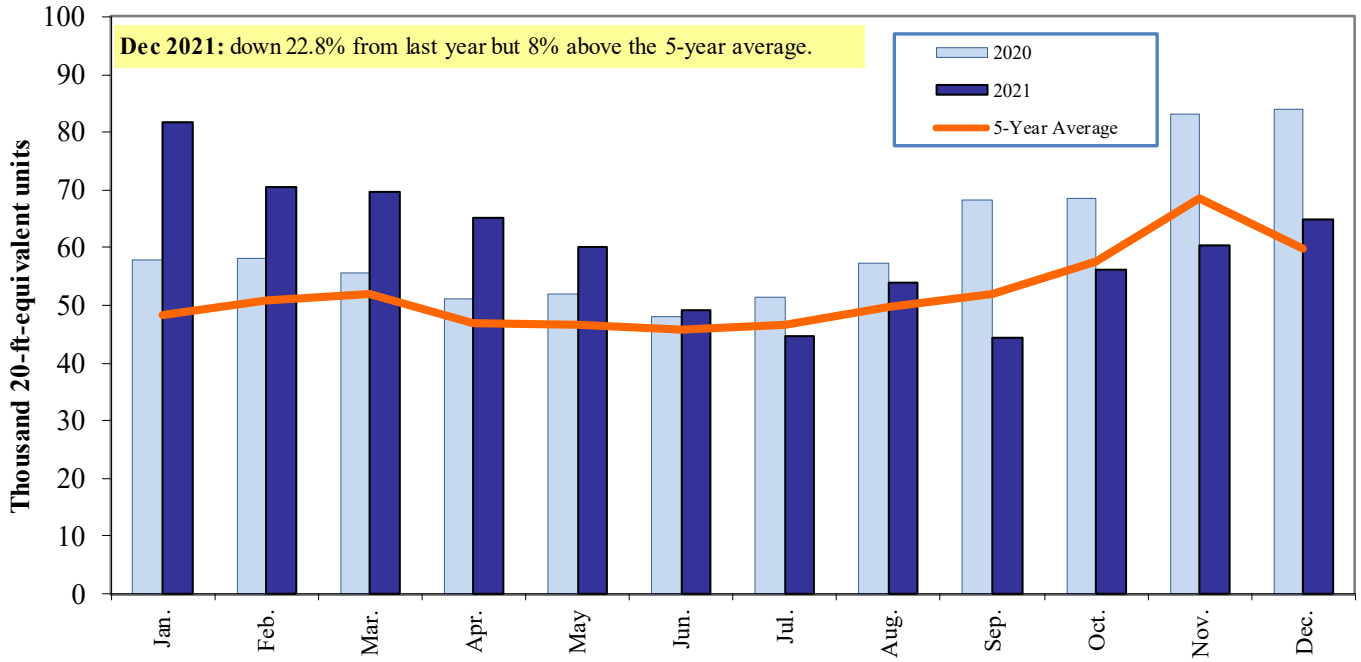
Figure 18
Top 10 destination markets for U.S. containerized grain exports, Jan-Dec 2021



Note: The following Harmonized Tariff Codes are used to calculate containerized grains movements: 1001, 100190, 1002, 1003 100300, 1004, 100400, 1005, 100590, 1007, 100700, 1102, 110100, 230310, 110220, 110290, 1201, 120100, 230210, 230990, 230330, 120810, and 120190.

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

Figure 19
Monthly shipments of U.S. containerized grain exports



Note: The following Harmonized Tariff Codes are used to calculate containerized grains movements: 100190, 100200, 100300, 100400, 100590, 100700, 110100, 110220, 110290, 1201, 120100, 120190, 120810, 230210, 230310, 230330, and 230990.

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

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Preferred citation: U.S. Department of Agriculture, Agricultural Marketing Service. *Grain Transportation Report.* March 31, 2022. Web: **http://dx.doi.org/10.9752/TS056.03-31-2022**