USDA United States Department of Agriculture

Grain Transportation Report

A weekly publication of the Agricultural Marketing Service
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Contents

The next release is March 7, 2019

WEEKLY HIGHLIGHTS

Increased Wheat and Soybean Inspections Boost Total

For the week ending February 21, **total inspections of grain** (corn, wheat, and soybeans) for export from all major U.S. export regions reached 2.84 million metric tons (mmt), which is up 19 percent from the previous week, up 15 percent from last year, and up 4 percent from the 3-year average. The increase in total inspections of grain was helped by a 91 percent rebound in wheat inspections and a 27 percent increase in soybean inspections. Corn inspections were the lowest since early January, falling 20 percent from week to week. Pacific Northwest (PNW) grain inspections jumped 55 percent from the previous week, as shipments to Asia rebounded and Mississippi Gulf grain inspections increased 5 percent, for the same period.

Corps Opens Bonnet Carré Spillway to Prevent Flooding in New Orleans

Heavy rains have caused high water levels and flooding on portions of the Mississippi River and its tributaries, triggering navigation restrictions that have delayed barge traffic throughout the system. On February 27, the U.S. Army Corps of Engineers (Corps) opened the Bonnet Carré Spillway, located 28 miles north of New Orleans, in an effort to decrease flood conditions through the New Orleans region and reduce flood risk to the city and surrounding areas. Operation of the spillway diverts Mississippi River floodwaters, via Lake Pontchartrain, into the Gulf of Mexico. Current projections indicate the spillway may be open for a month. The Mississippi River Basin drains 40 percent of the continental United States. Corps officials report that portions of the Mississippi River Basin have seen the wettest winter in 124 years. Additionally, the Corps noted spring rains and snow melt could bring more water in the coming months.

BNSF Announces Capital Plan for 2019

On February 13, BNSF Railway (BNSF) announced its plans to spend $3.57 billion in capital expenditures in 2019, up 5 percent from last year. About $2.47 billion will be spent on replacing and maintaining the core network, including replacing/upgrading rail and track infrastructure and maintaining rolling stock. In addition, approximately $0.76 billion has been allocated for expansion and efficiency projects, with most expansion projects planned for its Northern and Southern cross-country routes that connect the Pacific Northwest to Upper Midwest and Southern California to Chicago. Finally, about $0.34 billion is for freight cars, locomotives, and other equipment acquisitions. BNSF has invested nearly $65 billion in its network since 2000.

Snapshots by Sector

Rail

U.S. Class I railroads originated 21,302 **grain carloads** for the week ending February 16, up 3 percent from the previous week, down 1 percent from last year, and down 4 percent from the 3-year average.

Average March shuttle **secondary railcar** bids/offers per car were $1,313 above tariff for the week ending February 21, up $913 from last week, and up $244 from last year. Average non-shuttle secondary railcar bids/offers per car were $250 above tariff, up $100 from last week. There were no non-shuttle bids/offers this week last year.

Barge

For the week ending February 23, **barge grain movements** totaled 389,722 tons, 3 percent more than the previous week and down 7 percent from the same period last year.

For the week ending February 23, 244 grain barges **moved down river**, 25 barges more than the previous week. There were 633 grain barges **unloaded in New Orleans**, 15 percent lower than the previous week.

Ocean

For the week ending February 21, 35 **ocean-going grain vessels** were loaded in the Gulf, 5 percent more than the same period last year. Sixty-five vessels are expected to be loaded within the next 10 days, 16 percent more than the same period last year.

For the week ending February 21, the ocean freight rate for shipping bulk grain, from the Gulf to Japan, was $39.25 per metric ton, 1 percent more than the previous week. The cost of shipping, from the PNW to Japan, was $22.25 per metric ton, 1 percent more than the previous week.

Fuel

For the week ending February 25, the **U.S. average diesel fuel price** increased 4.2 cents, from the previous week, to $3.048 per gallon, 4.1 cents above the same week last year.

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Feature Article/Calendar

Takeaways from USDA's 95th Annual Agricultural Outlook Forum

On February 21-22, USDA held its 95th Annual Agricultural Outlook Forum, in Arlington, VA. The theme of the forum was "Growing Locally, Selling Globally." Keynote addresses were given by the U.S. and Mexico Secretaries of Agriculture and Canadian Minister of Agriculture. Additionally, several sessions were held on a variety of topics, including outlooks for commodities, food prices, farm incomes; international trade and selling globally; innovation in agriculture; linking producers to consumers, among others. This article presents key takeaways on: (1) the overall economic outlook for agriculture and foreign trade, (2) issues in agricultural transportation, and (3) the outlook for grains and oilseeds for marketing year 2019/20.

Agricultural Economic and Foreign Trade Outlook

According to Robert Johansson, USDA's Chief Economist, farmers are facing trade and market uncertainties. Following are some of the specifics he cited. The International Monetary Fund lowered its projection of the growth in global gross domestic product to 3.5 percent for 2019. However, the U.S. economy remains strong and the dollar has strengthened since last February. Trade to China is expected to fall in 2019, but trade to other countries is expected to grow. Current total U.S. soybean exports fell by 13.5 million metric tons (mmt) in 2018/19, compared to last year, including a 22 mmt decline in exports to China. Soybean prices fell about 20 percent following the trade dispute. While farmer debt financing is high in real terms, debt-to-asset ratios remain low. Real agricultural prices are likely to decline over the next 10 years, as production outstrips demand.

Issues in Agricultural Transportation

Grain farmers are concerned about the condition of inland waterways and the funding for rehabilitation, modernization, and maintenance. Rail shippers are experiencing service disruptions due to weather and demand volatility of commodity traffic. Due to capacity constraints, trucks are sometimes not available, and rates have climbed sharply. A panel with representatives from the truck, barge, and rail modes, examined various challenges shippers currently face in moving farmer products to market. The following is a synopsis of the three presentations (which have been posted online).

Presentation I: "Agricultural Trucking Challenges"

Jon Samson, Executive Director of the Agricultural and Food Transporters Conference of the American Trucking Associations, identified capacity and highway funding as two of the biggest issues facing the trucking industry. Regarding highway funding, he advocated for increased fuel taxes with the understanding that focus is also being applied to a tax on vehicle miles-traveled. He noted that all modes of transportation will grow through 2020, but the truck driver shortage is expected to increase dramatically. Samson said the trucking industry currently needs about 50,000 to 55,000 additional drivers to meet current demand. He further elaborated the ongoing driver shortage has contributed to higher pay and an increased emphasis on respecting drivers' available working hours, during loading and unloading. Samson said truck drivers can be 18 years old and drive within their own state but need to be 21 years old to cross state lines. Samson said the U.S. Department of Transportation has a pilot program which will allow 18-20-year-old former military or current reservist drivers to cross state lines, but there are not many candidates in the program. He said hurdles in moving forward with lowering the age include prohibitive insurance costs and concerns about teen truck drivers on the road. Samson also mentioned the recent flexibility in the driver 150 air-mile hours of service agricultural exemption, and the need for additional flexibility for driver rest periods and split sleeper berth.

Presentation II: "Outlook for Barge Supply, Grain Demand, and Inland Waterway Issues"

Ken Eriksen, Senior Vice President at Informa Economics IEG, explained some of the many supply and demand factors influencing the flow of grain and oilseeds, from surplus areas to deficit areas. He said a key factor for examining the grain flows is the actual number of barges used to haul agricultural products, saying that having a sufficient supply of barges is critical for maintaining adequate barge transportation. Eriksen said Informa surveys barge companies to collect data on the number of dry covered hopper barges used to haul grain, as well as tank barges that transport vegetable oils and ethanol. He further elaborated that while the barge fleet is adequate for today's market, there has been a drastic reduction in the barge manufacturing market. In 2018, Jeffboat, the second largest builder of barges, closed it operations. Future expansion of the barge fleet will be limited, if there is a demand for additional barges. However, if there are sustained increases

in barge rates, there could be pressure to ramp up additional barge manufacturing capabilities. Eriksen also emphasized that inland waterway projects are multi-year projects and current annual appropriations from Congress are not efficient for their timely construction and rehabilitation. He said a major issue for the inland waterways is the lack of funding for a backlog of projects that, according to the Waterway Council Inc., will need an estimated $9 billion to complete. Eriksen also promoted the advantages of deepening port drafts to accommodate larger vessels, citing past improvements on the Columbia River and possible benefits of increased dredging of the lower Mississippi River.

Presentation III: "Grain Rail Service in an Uncertain World"

Greg Guthrie, Director of Agricultural Products at BNSF Railway (BNSF), showed the composition of BNSF's freight portfolio and that of the rail industry. Railroads move a variety of products, such as coal, chemicals, agricultural commodities, and food. Coal is still the largest component of rail carload traffic, but volumes have fallen from about 7 million carloads in the mid-2000's to just over 4 million carloads in recent years. At the same time, there has been a rise in intermodal traffic, which rose from about 11.5 million units in 2005 to 14.5 million in 2018, according to Association of American Railroad data. Grain is an important component of rail's total shipments. For BNSF, grain is about an 8 to 9 percent share across the network, but some corridors (such as the Northern Corridor) see much denser volumes. Notably, grain is about 20 percent of Canadian Pacific's traffic mix for its U.S. operations.

Guthrie described how railroads face a variety of challenges in moving this mix of traffic, two of which are weather and demand volatility. Low temperatures require shortening train lengths to maintain airbrake continuity, which can mean doubling the number of locomotives and crew to move the same amount of freight. In additional to weather difficulties, transportation demand from different commodities can vary significantly both across time and across routes. Typically, the Pacific Northwest sees a large spike in soybean exports from September to October, which was not realized in 2018. While some of the shortfall was mitigated by an increase in corn, Guthrie noted that volatility makes planning and allocating resources and investments difficult.

Guthrie emphasized rail is very capital-intensive, and unlike other forms of transportation, infrastructure investments are almost entirely privately funded. Within this context, he detailed some of BNSF's investment trends. BNSF invests in excess of $2 billion annually in maintenance alone. Along its Northern Corridor, which is critical in the movement of agricultural products, BNSF has invested $6.1 billion from 2014 to 2018 ($1.8 billion on expansion and $4.3 billion on maintenance).

Over the years, BNSF and its customers have made substantial investments in shuttle infrastructure. According to Guthrie, from 2000 to 2018, BNSF went from 69 to 248 shuttle originations and 32 to 103 shuttle destinations. Much of the BNSF's grain shuttle freight (almost two-thirds) originates in the Upper Plains states of Minnesota, North Dakota, South Dakota, and Montana. A majority of BNSF shuttles terminate in the Pacific Northwest (66 percent), with portions to the Gulf (8 percent), Mexico (7 percent), California (5 percent), and other areas.

Early Outlook for 2019/20

As part of the annual Agricultural Outlook Forum, USDA released its outlook reports for grain and oilseeds, livestock and poultry, and other commodities. The commodity outlooks contain the latest projections on prices, supply, and demand for the new marketing year, 2019/20. USDA projects a net increase of about 119 million bushels (mbu) of corn, soybeans, and wheat production in 2019 compared to the year before, which could boost aggregate transportation demand. More specifically, USDA projects increases from corn (470 mbu) and wheat (18 mbu), but a drop in soybean production (369 mbu). In terms of type of movement—domestic or export—USDA forecasts domestic movements of corn, soybeans, and wheat to increase 163 mbu (+125 for corn, +18 mbu for soybeans, and +20 mbu for wheat). Collective exports could increase 150 mbu, as higher soybean and corn exports (+150 mbu and +25 mbu, respectively) exceed a 25 mbu drop in wheat exports.
Nick.Marathon@ams.usda.gov, *Surajudeen.Olowolayemo@ams.usda.gov*, *PeterA.Caffarelli@ams.usda.gov*, *Jesse.Gastelle@ams.usda.gov*

Grain Transportation Indicators

Table 1

Grain Transport Cost Indicators[1]

	Truck	Rail		Barge	Ocean	
For the week ending		Unit Train	Shuttle		Gulf	Pacific
02/27/19	205	295	276	333	176	158
02/20/19	202	295	272	292	174	156

[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); and ocean = routes to Japan ($/metric ton)

Source: Transportation & Marketing Program/AMS/USDA

Table 2

Market Update: U.S. Origins to Export Position Price Spreads ($/bushel)

Commodity	Origin--Destination	2/22/2019	2/15/2019
Corn	IL--Gulf	-0.87	-0.81
Corn	NE--Gulf	-0.96	-0.89
Soybean	IA--Gulf	-1.25	-1.20
HRW	KS--Gulf	-1.57	-1.62
HRS	ND--Portland	-1.85	-1.79

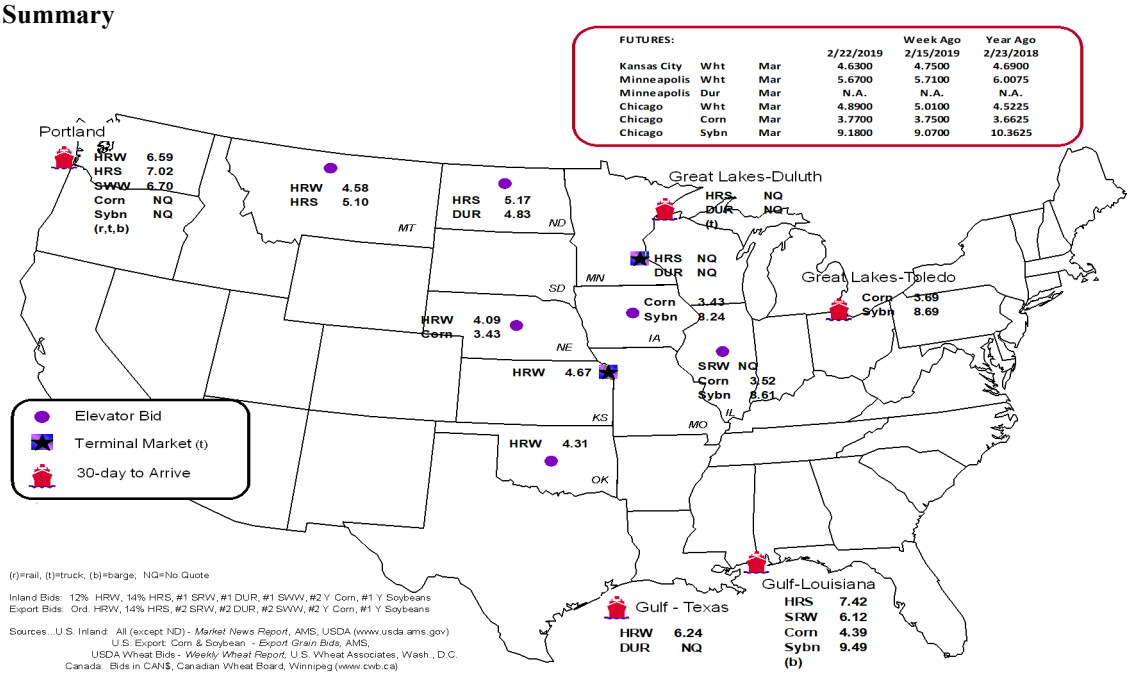
Note: nq = no quote; n/a = not available

Source: Transportation & Marketing Program/AMS/USDA

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]
2/20/2019[p]	942	1,488	5,903	222	8,555	2/16/2019	2,011
2/13/2019[r]	649	1,692	4,418	401	7,160	2/9/2019	2,132
2019 YTD[r]	4,454	8,421	42,006	3,361	58,242	2019 YTD	17,734
2018 YTD[r]	4,086	12,089	48,084	2,117	66,376	2018 YTD	14,362
2019 YTD as % of 2018 YTD	109	70	87	159	88	% change YTD	123
Last 4 weeks as % of 2018[2]	189	85	83	119	89	Last 4wks % 2018	121
Last 4 weeks as % of 4-year avg.[2]	111	83	82	57	83	Last 4wks % 4 yr	117
Total 2018	22,118	46,532	310,449	21,432	400,531	Total 2018	129,116
Total 2017	28,796	75,543	287,267	21,312	412,918	Total 2017	119,661

[1] Data is incomplete as it is voluntarily provided

[2] Compared with same 4-weeks in 2018 and prior 4-year average.

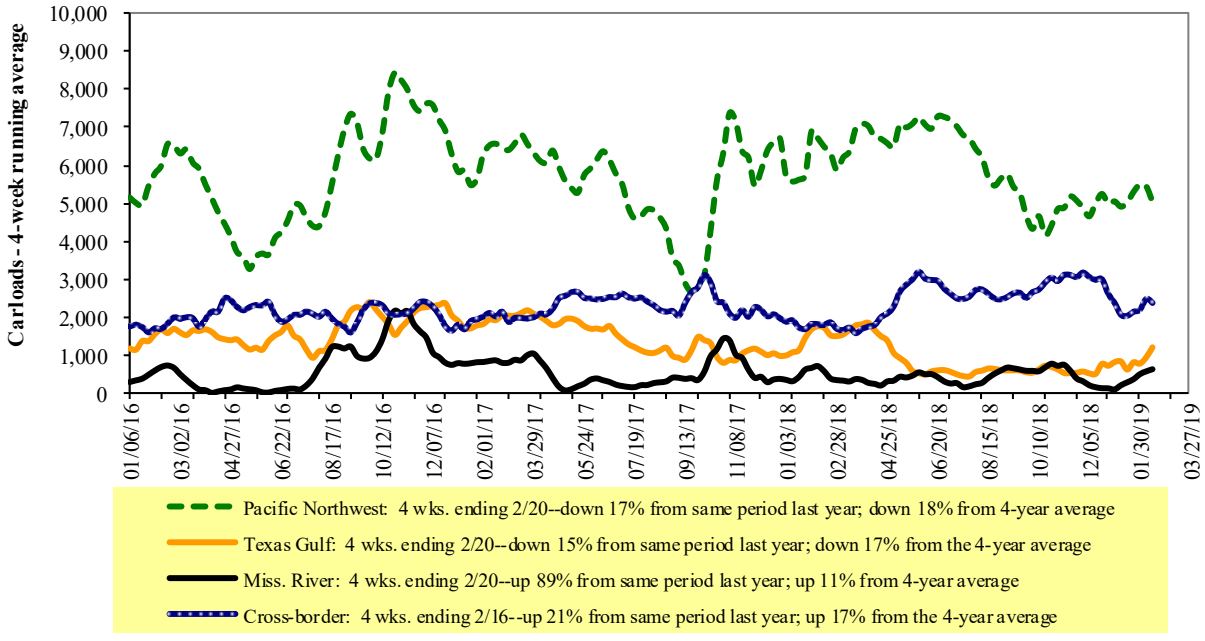
[3] Cross-border weekly data is approximately 15 percent below the Association of American Railroads' reported weekly carloads received by Mexican railroads to reflect switching between KCSM and Grupo Mexico.

YTD = year-to-date; p = preliminary data; r = revised data; n/a = not available

Source: Transportation & Marketing Program/AMS/USDA

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: Transportation & Marketing Program/AMS/USDA

Table 4

Class I Rail Carrier Grain Car Bulletin (grain carloads originated)

For the week ending:	East		West			U.S. total	Canada	
2/16/2019	CSXT	NS	BNSF	KCS	UP		CN	CP
This week	2,131	2,593	9,947	1,294	5,337	21,302	4,188	3,645
This week last year	1,980	2,251	11,204	1,081	4,982	21,498	2,479	4,783
2019 YTD	13,577	18,567	77,127	7,427	36,368	153,066	27,095	27,640
2018 YTD	12,747	16,793	80,724	6,948	35,486	152,698	23,199	30,126
2019 YTD as % of 2018 YTD	107	111	96	107	102	100	117	92
Last 4 weeks as % of 2018*	105	103	92	105	101	97	126	83
Last 4 weeks as % of 3-yr avg.**	96	92	95	110	93	95	112	82
Total 2018	98,978	133,149	635,458	48,638	267,713	1,183,936	211,942	244,697

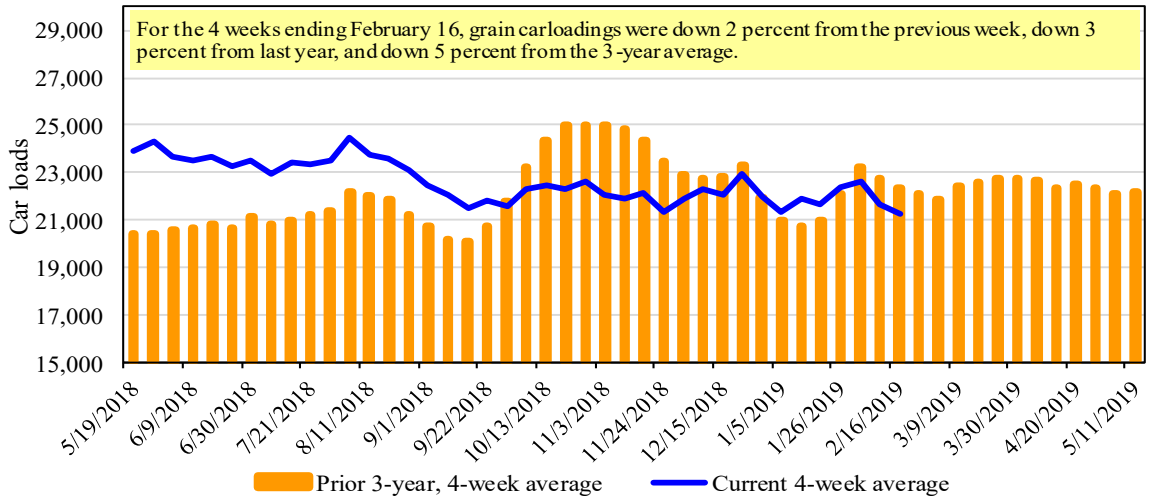
*The past 4 weeks of this year as a percent of the same 4 weeks last year.

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

Source: Association of American Railroads (www.aar.org)

Figure 3

Total Weekly U.S. Class I Railroad Grain Car Loadings



Source: Association of American Railroads

Table 5

Railcar Auction Offerings[1] ($/car)[2]

For the week ending:		Delivery period							
2/21/2019		Mar-19	Mar-18	Apr-19	Apr-18	May-19	May-18	Jun-19	Jun-18
BNSF[3]	COT grain units	0	0	0	0	0	0	0	0
	COT grain single-car[5]	0	65	0	0	0	no bids	no bids	no bids
UP[4]	GCAS/Region 1	no offer	no bids	no offer	10	no offer	no bids	n/a	n/a
	GCAS/Region 2	no offer	10	no offer	no bids	no offer	no bids	n/a	n/a

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

[2]Average premium/discount to tariff, last auction

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

[4]UP - GCAS = Grain Car Allocation System

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

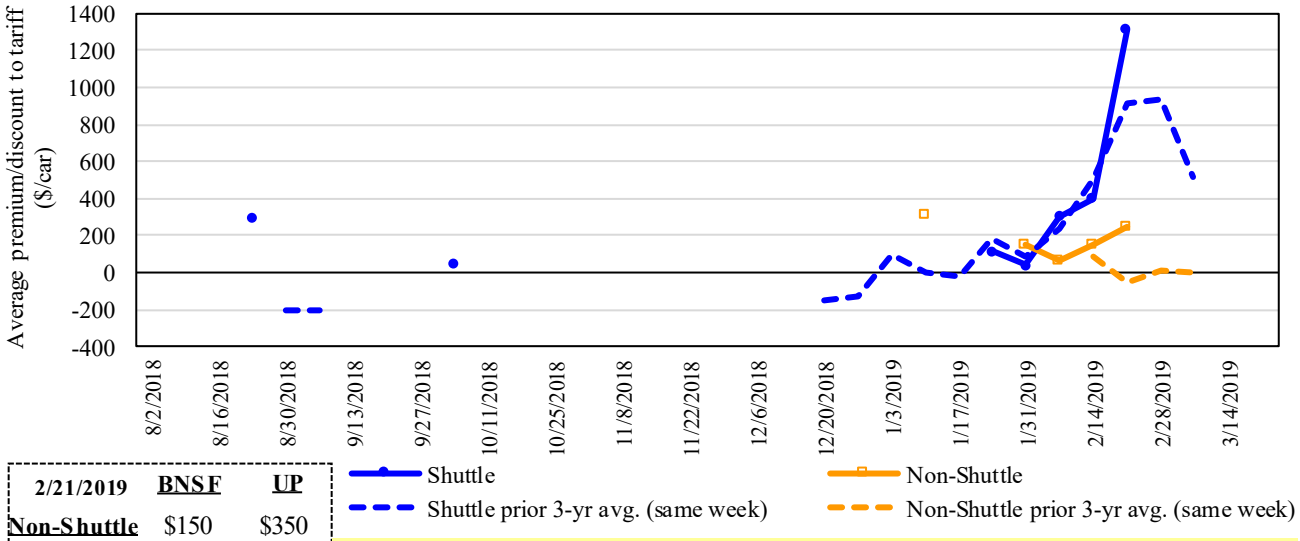
Region 2 includes: CO, IA, KS, MN, NE, WY, and Kansas City and St. Joseph, MO.

[5]Range is shown because average is not available. Not available = n/a.

Source: Transportation & Marketing Program/AMS/USDA.

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
Bids/Offers for Railcars to be Delivered in March 2019, Secondary Market

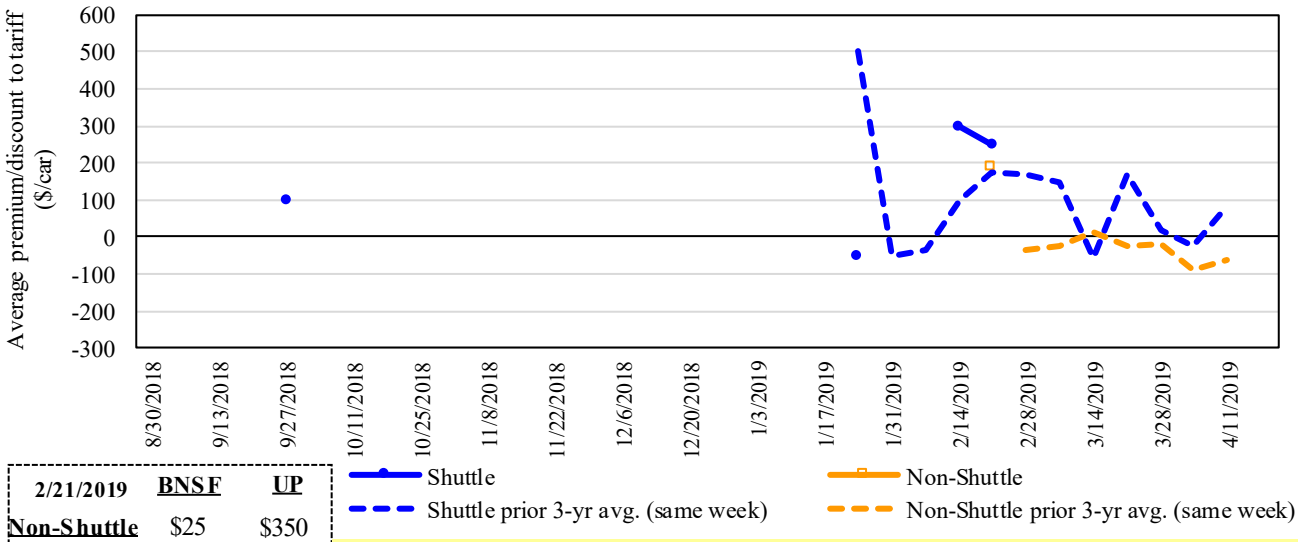


2/21/2019	BNSF	UP
Non-Shuttle	$150	$350
Shuttle	$1,800	$825

Average Non-shuttle bids/offers rose $100 this week, and are $63 below the peak.
Average Shuttle bids/offers rose $913 this week and are at the peak.

Non-shuttle bids include unit-train and single-car bids. n/a = not available.
Source: Transportation & Marketing Program/AMS/USDA

Figure 5
Bids/Offers for Railcars to be Delivered in April 2019, Secondary Market



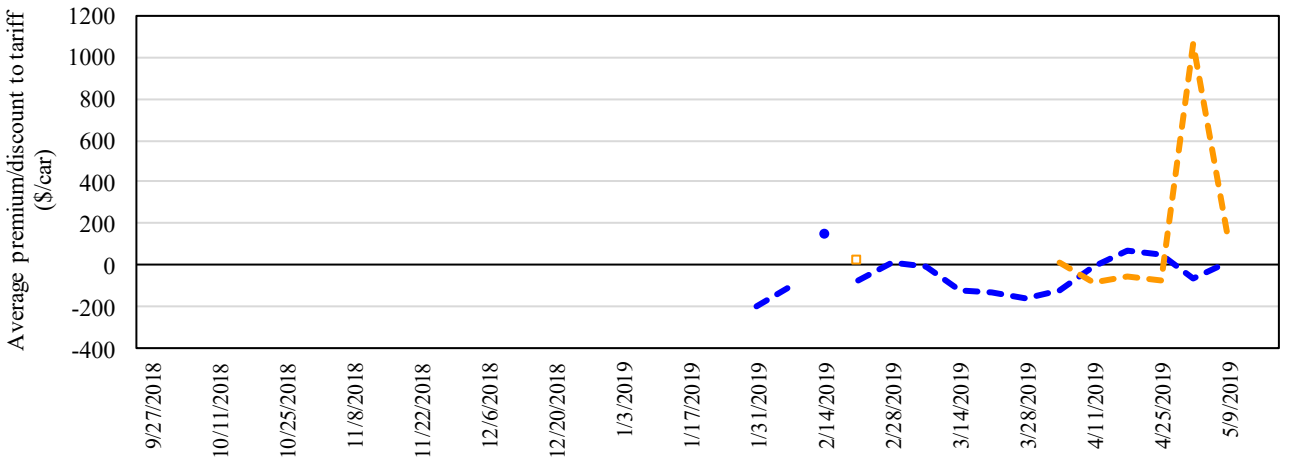
2/21/2019	BNSF	UP
Non-Shuttle	$25	$350
Shuttle	$600	-$100

There were no Non-Shuttle bids/offers last week. Average Non-Shuttle bids/offers this week are at the peak.
Average Shuttle bids/offers fell $50 this week and are $50 below the peak.

Non-shuttle bids include unit-train and single-car bids. n/a = not available.
Source: Transportation & Marketing Program/AMS/USDA

Figure 6

Bids/Offers for Railcars to be Delivered in May 2019, Secondary Market



2/21/2019	BNSF	UP
Non-Shuttle	$25	n/a
Shuttle	n/a	n/a

There were no Non-Shuttle bids/offers last week. Average Non-Shuttle bids/offers this week are at the peak.
There were no Shuttle bids/offers this week.

Non-shuttle bids include unit-train and single-car bids. n/a = not available.
Source: Transportation & Marketing Program/AMS/USDA

Table 6

Weekly Secondary Railcar Market ($/car)[1]

	For the week ending: 2/21/2019	Delivery period					
		Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19
Non-shuttle	**BNSF-GF**	**150**	**25**	**25**	**n/a**	**n/a**	**n/a**
	Change from last week	100	n/a	n/a	n/a	n/a	n/a
	Change from same week 2018	n/a	n/a	n/a	n/a	n/a	n/a
	UP-Pool	**350**	**350**	**n/a**	**n/a**	**n/a**	**n/a**
	Change from last week	100	n/a	n/a	n/a	n/a	n/a
	Change from same week 2018	n/a	n/a	n/a	n/a	n/a	n/a
Shuttle	**BNSF-GF**	**1800**	**600**	**n/a**	**n/a**	**n/a**	**n/a**
	Change from last week	1100	300	n/a	n/a	n/a	n/a
	Change from same week 2018	250	n/a	n/a	n/a	n/a	n/a
	UP-Pool	**825**	**(100)**	**n/a**	**n/a**	**n/a**	**n/a**
	Change from last week	725	n/a	n/a	n/a	n/a	n/a
	Change from same week 2018	238	(100)	n/a	n/a	n/a	n/a

[1]Average premium/discount to tariff, $/car-last week

Note: Bids listed are market INDICATORS only & are NOT guaranteed prices,

n/a = not available; GF = guaranteed freight; Pool = guaranteed pool

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

Source: Transportation and Marketing Program/AMS/USDA

The **tariff rail rate** is the base price of freight rail service, and together with **fuel surcharges** and any **auction and secondary rail** values constitute 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. High auction and secondary rail values, during times of high rail demand or short supply, can exceed the cost of the tariff rate plus fuel surcharge.

Table 7

Tariff Rail Rates for Unit and Shuttle Train Shipments[1]

February, 2019	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	$3,983	$106	$40.61	$1.11	3
	Grand Forks, ND	Duluth-Superior, MN	$4,268	$0	$42.38	$1.15	3
	Wichita, KS	Los Angeles, CA	$7,175	$0	$71.25	$1.94	2
	Wichita, KS	New Orleans, LA	$4,540	$187	$46.94	$1.28	1
	Sioux Falls, SD	Galveston-Houston, TX	$6,911	$0	$68.63	$1.87	2
	Northwest KS	Galveston-Houston, TX	$4,816	$205	$49.86	$1.36	1
	Amarillo, TX	Los Angeles, CA	$5,121	$285	$53.68	$1.46	3
Corn	Champaign-Urbana, IL	New Orleans, LA	$4,000	$211	$41.82	$1.06	3
	Toledo, OH	Raleigh, NC	$6,581	$0	$65.35	$1.66	4
	Des Moines, IA	Davenport, IA	$2,258	$45	$22.87	$0.58	0
	Indianapolis, IN	Atlanta, GA	$5,646	$0	$56.07	$1.42	4
	Indianapolis, IN	Knoxville, TN	$4,704	$0	$46.71	$1.19	4
	Des Moines, IA	Little Rock, AR	$3,609	$131	$37.14	$0.94	1
	Des Moines, IA	Los Angeles, CA	$5,327	$383	$56.70	$1.44	1
Soybeans	Minneapolis, MN	New Orleans, LA	$4,131	$208	$43.09	$1.17	15
	Toledo, OH	Huntsville, AL	$5,459	$0	$54.21	$1.48	3
	Indianapolis, IN	Raleigh, NC	$6,698	$0	$66.51	$1.81	4
	Indianapolis, IN	Huntsville, AL	$4,937	$0	$49.03	$1.33	4
	Champaign-Urbana, IL	New Orleans, LA	$4,745	$211	$49.22	$1.34	1
Shuttle Train							
Wheat	Great Falls, MT	Portland, OR	$4,078	$0	$40.50	$1.10	3
	Wichita, KS	Galveston-Houston, TX	$4,296	$0	$42.66	$1.16	3
	Chicago, IL	Albany, NY	$5,896	$0	$58.55	$1.59	4
	Grand Forks, ND	Portland, OR	$5,736	$0	$56.96	$1.55	2
	Grand Forks, ND	Galveston-Houston, TX	$6,056	$0	$60.14	$1.64	2
	Northwest KS	Portland, OR	$5,912	$336	$62.04	$1.69	3
Corn	Minneapolis, MN	Portland, OR	$5,180	$0	$51.44	$1.31	4
	Sioux Falls, SD	Tacoma, WA	$5,140	$0	$51.04	$1.30	4
	Champaign-Urbana, IL	New Orleans, LA	$3,800	$211	$39.83	$1.01	3
	Lincoln, NE	Galveston-Houston, TX	$3,880	$0	$38.53	$0.98	5
	Des Moines, IA	Amarillo, TX	$4,060	$165	$41.96	$1.07	3
	Minneapolis, MN	Tacoma, WA	$5,180	$0	$51.44	$1.31	4
	Council Bluffs, IA	Stockton, CA	$5,000	$0	$49.65	$1.26	4
Soybeans	Sioux Falls, SD	Tacoma, WA	$5,750	$0	$57.10	$1.55	3
	Minneapolis, MN	Portland, OR	$5,800	$0	$57.60	$1.57	3
	Fargo, ND	Tacoma, WA	$5,650	$0	$56.11	$1.53	3
	Council Bluffs, IA	New Orleans, LA	$4,775	$244	$49.84	$1.36	1
	Toledo, OH	Huntsville, AL	$4,634	$0	$46.02	$1.25	6
	Grand Island, NE	Portland, OR	$5,710	$344	$60.12	$1.64	1

[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 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 calculated using tariff rate plus fuel surcharge

Sources: www.bnsf.com, www.cn.ca, www.csx.com, www.up.com

Table 8

Tariff Rail Rates for U.S. Bulk Grain Shipments to Mexico

Date: February, 2019							
Commodity	Origin state	Destination region	Tariff rate/car[1]	Fuel surcharge per car[2]	Tariff plus surcharge per: metric ton[3]	Tariff plus surcharge per: bushel[3]	Percent change[4] Y/Y
Wheat	MT	Chihuahua, CI	$7,284	$0	$74.43	$2.02	-2
	OK	Cuautitlan, EM	$6,743	$146	$70.39	$1.91	2
	KS	Guadalajara, JA	$7,371	$403	$79.43	$2.16	3
	TX	Salinas Victoria, NL	$4,329	$89	$45.14	$1.23	1
Corn	IA	Guadalajara, JA	$8,528	$362	$90.83	$2.31	4
	SD	Celaya, GJ	$7,880	$0	$80.51	$2.04	2
	NE	Queretaro, QA	$8,207	$304	$86.96	$2.21	3
	SD	Salinas Victoria, NL	$6,905	$0	$70.55	$1.79	2
	MO	Tlalnepantla, EM	$7,573	$297	$80.41	$2.04	3
	SD	Torreon, CU	$7,480	$0	$76.43	$1.94	2
Soybeans	MO	Bojay (Tula), HG	$8,284	$335	$88.07	$2.39	3
	NE	Guadalajara, JA	$8,842	$363	$94.05	$2.56	3
	IA	El Castillo, JA	$9,110	$0	$93.08	$2.53	2
	KS	Torreon, CU	$7,714	$266	$81.53	$2.22	4
Sorghum	NE	Celaya, GJ	$7,527	$332	$80.30	$2.04	4
	KS	Queretaro, QA	$8,000	$183	$83.61	$2.12	3
	NE	Salinas Victoria, NL	$6,633	$147	$69.27	$1.76	3
	NE	Torreon, CU	$6,962	$253	$73.72	$1.87	3

[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

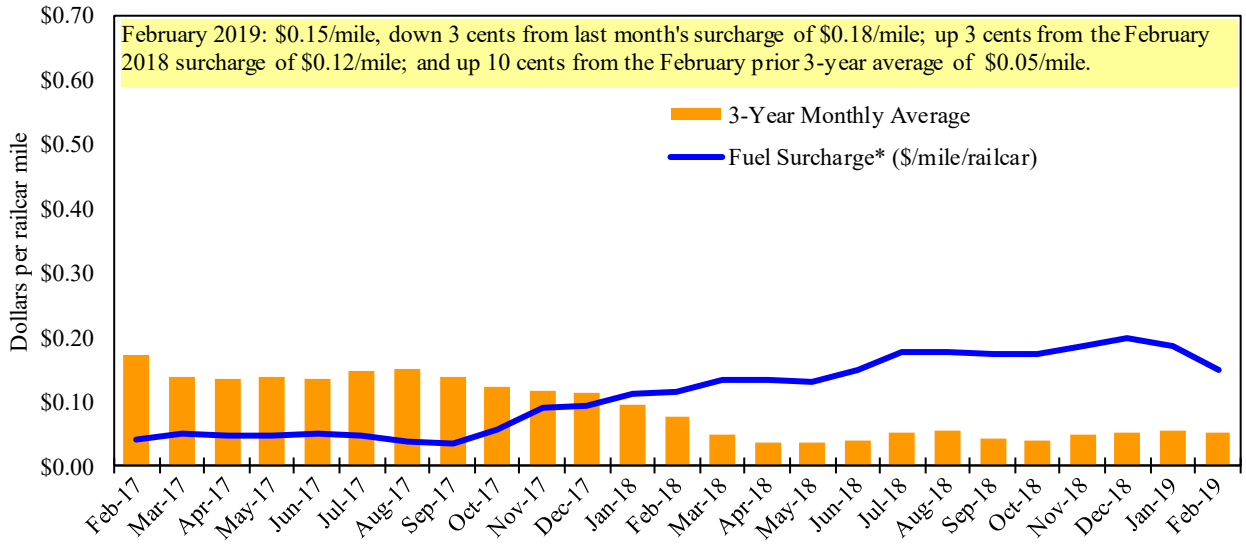
[3]Approximate load per car = 97.87 metric tons: Corn & Sorghum 56 lbs/bu, Wheat & Soybeans 60 lbs/bu

[4]Percentage change calculated using tariff rate plus fuel surchage

Sources: www.bnsf.com, www.uprr.com, www.kcsouthern.com

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.

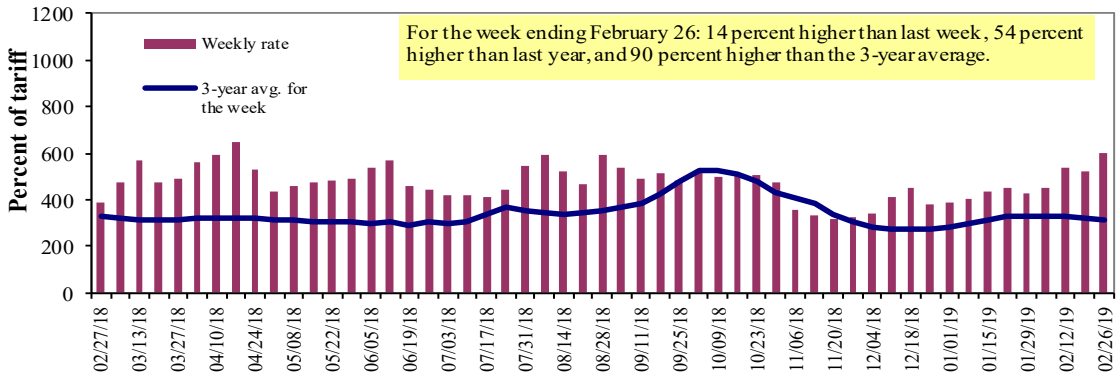
* Beginning January 2009, the Canadian Pacific fuel surcharge is computed by a monthly average of the bi-weekly fuel surcharge.

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

Sources: www.bnsf.com, www.cn.ca, www.cpr.ca, www.csx.com, www.kcsi.com, www.nscorp.com, www.uprr.com

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: Transportation & Marketing Program/AMS/USDA

Table 9
Weekly Barge Freight Rates: Southbound Only

		Twin Cities	Mid-Mississippi	Lower Illinois River	St. Louis	Cincinnati	Lower Ohio	Cairo-Memphis
Rate[1]	2/26/2019	-	-	600	458	-	-	417
	2/19/2019	-	-	525	442	480	492	408
$/ton	2/26/2019	-	-	27.84	18.27	-	-	13.09
	2/19/2019	-	-	24.36	17.64	22.51	19.88	12.81
Current week % change from the same week:								
	Last year	-	-	54	55	-	-	71
	3-year avg. [2]	-	-	90	102	-	-	116
Rate[1]	March	-	583	592	450	492	500	408
	May	488	467	475	392	433	433	350

[1]Rate = percent of 1976 tariff benchmark index (1976 = 100 percent); [2]4-week moving average; ton = 2,000 pounds; "-" n/a due to closure
Source: Transportation & Marketing Programs/AMS/USDA

Figure 9
Benchmark tariff rates

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

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

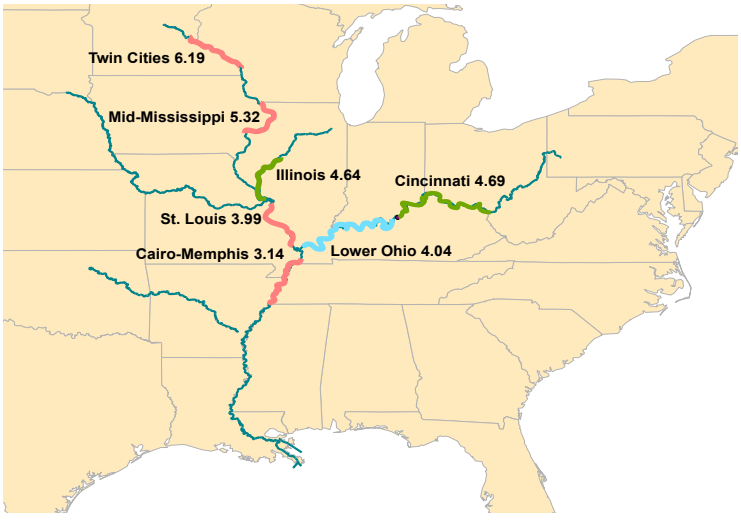
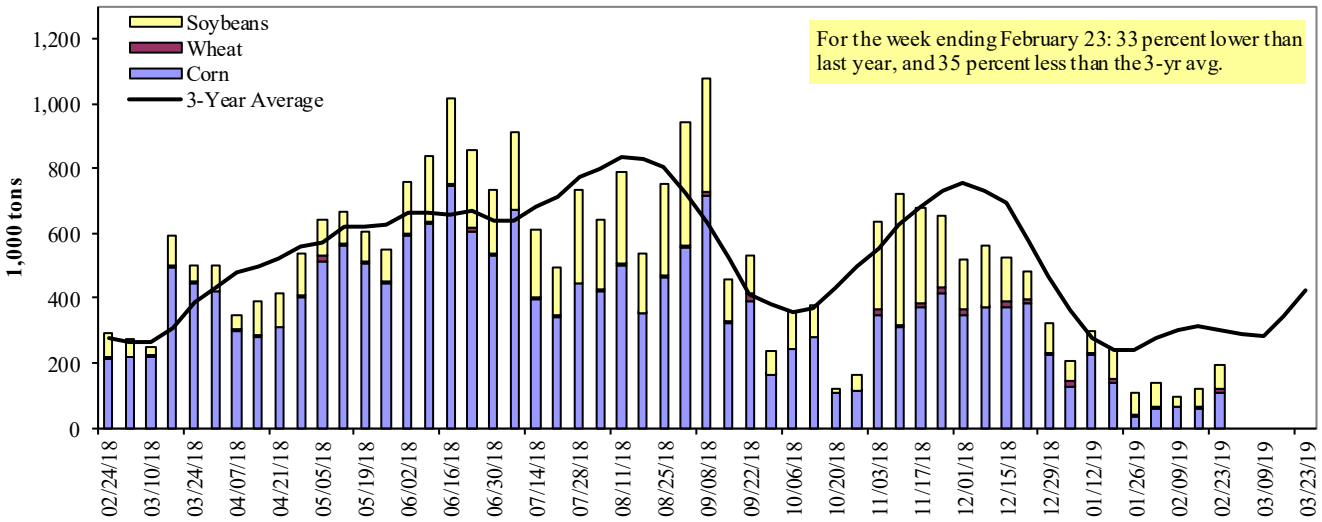


Figure 10

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 02/23/2019	Corn	Wheat	Soybeans	Other	Total
Mississippi River					
Rock Island, IL (L15)	0	0	0	0	0
Winfield, MO (L25)	0	0	0	0	0
Alton, IL (L26)	105	13	72	0	190
Granite City, IL (L27)	106	14	75	0	196
Illinois River (L8)	93	13	72	0	178
Ohio River (OLMSTED)	71	2	43	0	115
Arkansas River (L1)	0	37	42	0	79
Weekly total - 2019	177	53	160	0	390
Weekly total - 2018	276	25	116	2	418
2019 YTD[1]	1,539	309	1,650	9	3,506
2018 YTD[1]	1,749	203	1,966	25	3,942
2019 as % of 2018 YTD	88	152	84	35	89
Last 4 weeks as % of 2018[2]	49	114	74	8	63
Total 2018	23,349	1,674	12,819	133	37,975

[1] Weekly total, YTD (year-to-date) and calendar year total includes Miss/27, Ohio/OLMSTED, and Ark/1; "Other" refers to oats, barley, sorghum, and rye.

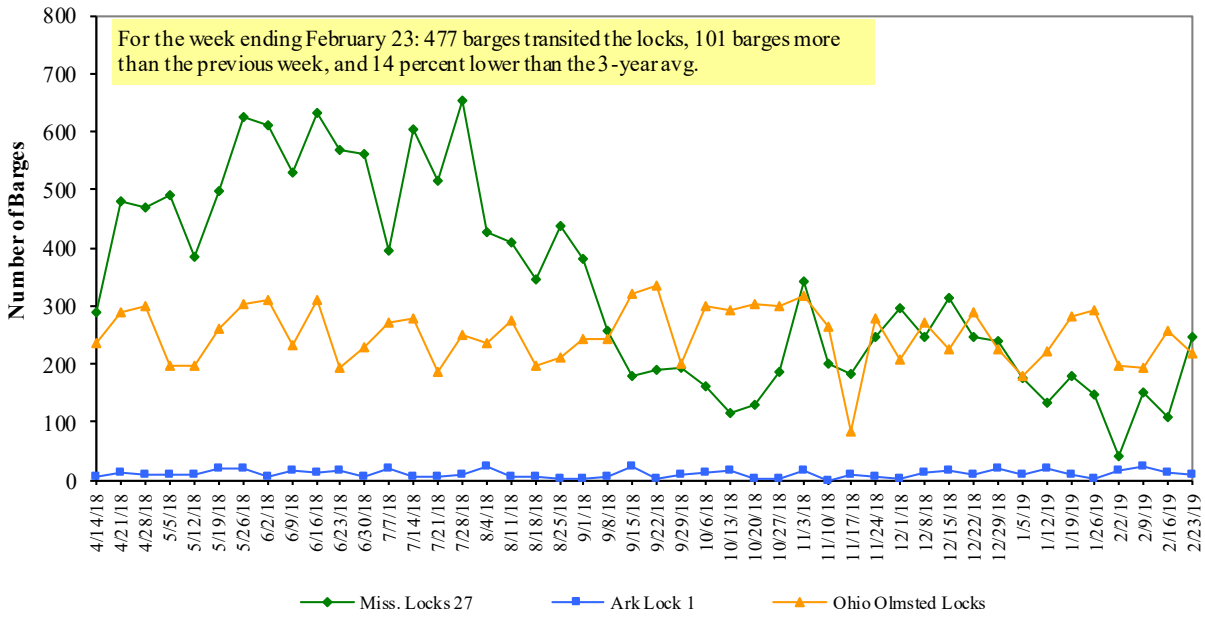
[2] As a percent of same period in 2018.

Note: 1. Total may not add exactly, due to rounding.
2. Starting from 11/24/2018, weekly movement through Ohio 52 is replaced by Olmsted.

Source: U.S. Army Corps of Engineers

Figure 11

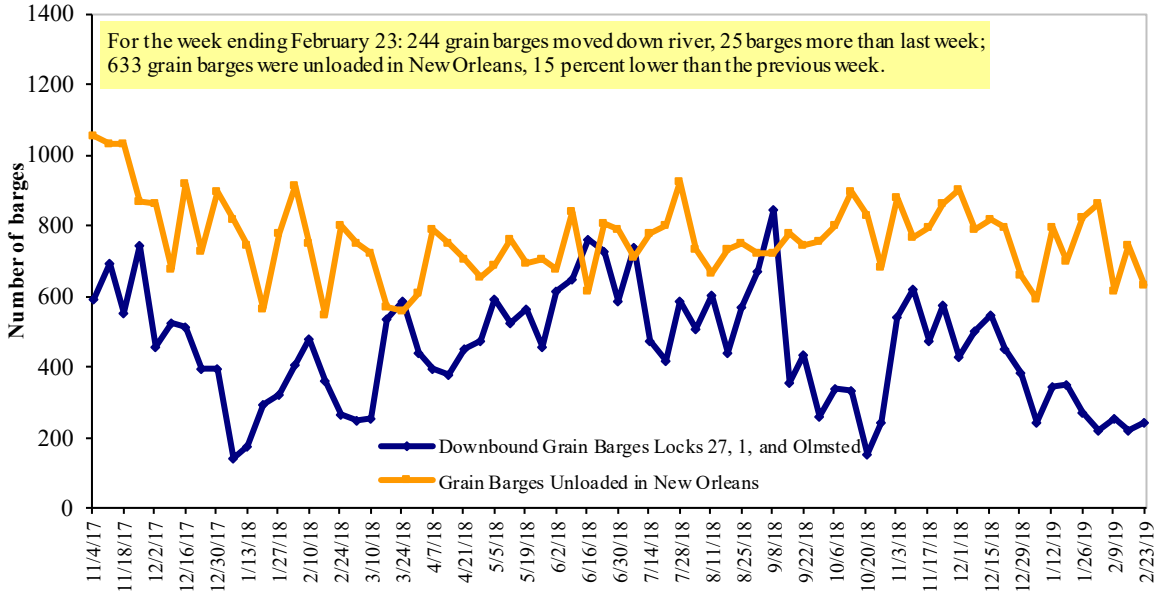
Upbound Empty Barges Transiting Mississippi River Locks 27, Arkansas River Lock and Dam 1, and Ohio River Olmsted Locks and Dam



Source: U.S. Army Corps of Engineers

Figure 12

Grain Barges for Export in New Orleans Region



Source: U.S. Army Corps of Engineers and GIPSA

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 2/25/2019 (US $/gallon)

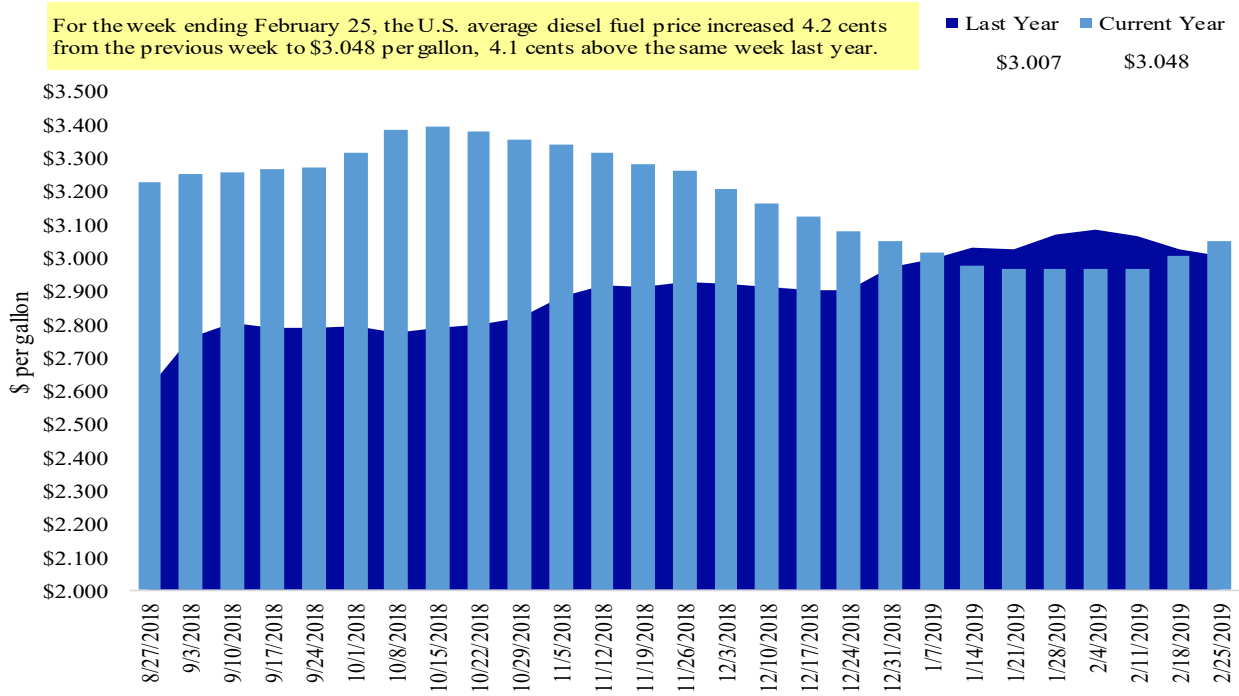
Region	Location	Price	Change from Week ago	Change from Year ago
I	East Coast	3.094	0.021	0.037
	New England	3.171	0.006	0.044
	Central Atlantic	3.286	0.030	0.031
	Lower Atlantic	2.949	0.022	0.043
II	Midwest	2.969	0.065	0.022
III	Gulf Coast	2.849	0.040	0.052
IV	Rocky Mountain	2.913	0.026	-0.023
V	West Coast	3.493	0.035	0.096
	West Coast less California	3.141	0.037	0.077
	California	3.772	0.033	0.112
Total	U.S.	3.048	0.042	0.041

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

Source: Energy Information Administration/U.S. Department of Energy (www.eia.doe.gov)

Figure 13

Weekly Diesel Fuel Prices, U.S. Average



Source: Retail On-Highway Diesel Prices, Energy Information Administration, Dept. of Energy

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]									
2/14/2019	2,566	942	1,469	1,402	119	6,497	13,560	13,459	33,516
This week year ago	1,636	647	1,493	956	78	4,810	21,063	7,770	33,642
Cumulative exports-marketing year[2]									
2018/19 YTD[3]	4,725	1,851	4,659	3,394	358	14,987	24,784	23,442	63,213
2017/18 YTD	6,971	1,511	4,140	3,739	273	16,635	16,489	36,868	69,991
YTD 2018/19 as % of 2017/18	68	122	113	91	131	90	150	64	90
Last 4 wks as % of same period 2017/18	39	36	25	37	38	34	16	43	25
2017/18 Total	9,150	2,343	5,689	4,854	384	22,419	57,209	56,214	135,842
2016/17 Total	11,096	2,285	7,923	4,254	484	26,042	41,864	51,156	119,062

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

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

[3] Please note that the data for this table is not current for this week due to the federal shutdown in December

Note: YTD = year-to-date. Marketing Year: wheat = 6/01-5/31, corn & soybeans = 9/01-8/31

Source: Foreign Agricultural Service/USDA (www.fas.usda.gov)

Table 13

Top 5 Importers[1] of U.S. Corn

For the week ending 2/14/2019	Total Commitments[2]		% change	Exports[3]
	2018/19	2017/18	current MY	3-year avg
	Current MY	Last MY	from last MY	2015-2017
	- 1,000 mt -			
Mexico	12,577	10,729	17	13,691
Japan	7,715	6,199	24	11,247
Korea	2,824	2,227	27	4,754
Colombia	2,863	2,705	6	4,678
Peru	1,864	2,046	(9)	2,975
Top 5 Importers	**27,843**	**23,905**	**16**	**37,344**
Total US corn export sales	**38,344**	**37,551**	**2**	**53,184**
% of Projected	62%	61%		
Change from prior week[2]	**n/a**	**n/a**		
Top 5 importers' share of U.S. corn export sales	73%	64%		70%
USDA forecast, February 2019	**62,341**	**62,036**	**0**	
Corn Use for Ethanol USDA forecast, February 2019	**141,605**	**142,367**	**(1)**	

(n) indicates negative number.

[1]Based on FAS Marketing Year Ranking Reports for 2017/18 - www.fas.usda.gov; Marketing year (MY) = Sep 1 - Aug 31.

[2]Cumulative Exports (shipped) + Outstanding Sales (unshipped), FAS Weekly Export Sales Report, or Export Sales Query--http://www.fas.usda.gov/esrquery/. 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 - http://apps.fas.usda.gov/export-sales/myrkaug.htm; 3-yr average

Table 14

Top 5 Importers[1] of U.S. Soybeans

For the week ending 2/14/2019	Total Commitments[2] 2018/19 Current MY	2017/18 Last MY	% change current MY from last MY	Exports[3] 3-yr avg. 2015-2017
		- 1,000 mt -		- 1,000 mt -
China	7,406	26,201	(72)	31,228
Mexico	4,440	2,850	56	3,716
Indonesia	1,479	1,255	18	2,250
Japan	1,755	1,495	17	2,145
Netherlands	0	0	n/a	2,209
Top 5 importers	**15,079**	**31,801**	**(53)**	**41,549**
Total US soybean export sales	**36,901**	**44,638**	**(17)**	**55,113**
% of Projected	72%	77%		
Change from prior week[2]	**n/a**	**n/a**		
Top 5 importers' share of U.S. soybean export sales	41%	71%		**75%**
USDA forecast, February 2019	**51,090**	**58,011**	**88**	

(n) indicates negative number.

[1] Based on FAS Marketing Year Ranking Reports for 2017/18 - www.fas.usda.gov; Marketing year (MY) = Sep 1- Aug 31.

[2] Cumulative Exports (shipped) + Outstanding Sales (unshipped), FAS Weekly Export Sales Report, or Export Sales Query-- http://www.fas.usda.gov/esrquery/. The total commitments change (net sales) from prior week could include reivisions from previous week's outstanding sales and/or accumulated sales

[3] FAS Marketing Year Final Reports - www.fas.usda.gov/export-sales/myfi_rpt.htm. (Carryover plus Accumulated Exports)

Table 15

Top 10 Importers[1] of All U.S. Wheat

For the week ending 2/14/2019	Total Commitments[2] 2018/19 Current MY	2017/18 Last MY	% change current MY from last MY	Exports[3] 3-yr avg 2015-2017
		- 1,000 mt -		- 1,000 mt -
Mexico	2,512	2,669	(6)	2,781
Japan	2,413	2,563	(6)	2,649
Philippines	2,718	2,422	12	2,441
Korea	1,288	1,313	(2)	1,257
Nigeria	1,306	1,051	24	1,254
Indonesia	948	1,163	(18)	1,076
Taiwan	933	1,008	(7)	1,066
China	40	890	(96)	944
Colombia	517	276	87	714
Thailand	780	630	24	618
Top 10 importers	**13,457**	**13,985**	(4)	**14,800**
Total US wheat export sales	**21,484**	**21,444**	**0**	**22,869**
% of Projected	79%	87%		
Change from prior week[2]	**n/a**	**n/a**		
Top 10 importers' share of U.S. wheat export sales	63%	65%		65%
USDA forecast, February 2019	**27,248**	**24,550**	**11**	

(n) indicates negative number.

[1] Based on FAS Marketing Year Ranking Reports for 2017/18 - www.fas.usda.gov; Marketing year = Jun 1 - May 31.

[2] Cumulative Exports (shipped) + Outstanding Sales (unshipped), FAS Weekly Export Sales Report, or Export Sales Query-- http://www.fas.usda.gov/esrquery/. 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 - www.fas.usda.gov/export-sales/myfi_rpt.htm.

Table 16

Grain Inspections for Export by U.S. Port Region (1,000 metric tons)

Port Regions	For the Week Ending 02/21/19	Previous Week*	Current Week as % of Previous	2019 YTD*	2018 YTD*	2019 YTD as % of 2018 YTD	Last 4-weeks as % of: Last Year	Last 4-weeks as % of: Prior 3-yr. avg.	2018 Total*
Pacific Northwest									
Wheat	399	186	215	1,934	1,779	109	131	125	13,315
Corn	97	242	40	1,597	2,082	77	53	82	20,024
Soybeans	496	211	235	1,949	2,499	78	96	79	7,719
Total	**991**	**639**	**155**	**5,480**	**6,360**	**86**	**88**	**93**	**41,058**
Mississippi Gulf									
Wheat	97	54	180	760	597	127	145	133	3,896
Corn	508	534	95	3,868	3,752	103	94	83	33,735
Soybeans	770	720	107	5,214	5,581	93	107	98	28,124
Total	**1,375**	**1,308**	**105**	**9,843**	**9,930**	**99**	**104**	**93**	**65,755**
Texas Gulf									
Wheat	224	119	188	785	711	110	114	120	3,198
Corn	0	0	n/a	63	63	100	95	56	730
Soybeans	0	0	n/a	0	0	n/a	n/a	0	69
Total	**224**	**119**	**188**	**848**	**773**	**110**	**113**	**111**	**3,997**
Interior									
Wheat	10	25	42	222	234	95	55	68	1,614
Corn	133	149	89	981	1,046	94	89	95	8,650
Soybeans	97	149	65	929	826	112	130	134	6,729
Total	**240**	**323**	**74**	**2,132**	**2,106**	**101**	**100**	**107**	**16,993**
Great Lakes									
Wheat	1	0	n/a	23	19	117	n/a	n/a	894
Corn	0	0	n/a	0	0	n/a	n/a	n/a	404
Soybeans	0	0	n/a	16	0	n/a	n/a	n/a	1,192
Total	**1**	**0**	**n/a**	**39**	**19**	**202**	**n/a**	**n/a**	**2,491**
Atlantic									
Wheat	0	0	n/a	0	0	n/a	n/a	0	69
Corn	0	0	n/a	21	0	n/a	n/a	n/a	138
Soybeans	13	7	174	221	367	60	52	47	2,047
Total	**13**	**7**	**174**	**242**	**367**	**66**	**55**	**45**	**2,253**
U.S. total from ports*									
Wheat	730	383	191	3,724	3,340	111	124	121	22,986
Corn	738	925	80	6,531	6,942	94	80	84	63,682
Soybeans	1,376	1,088	127	8,329	9,274	90	103	93	45,879
Total	**2,844**	**2,396**	**119**	**18,584**	**19,556**	**95**	**97**	**94**	**132,547**

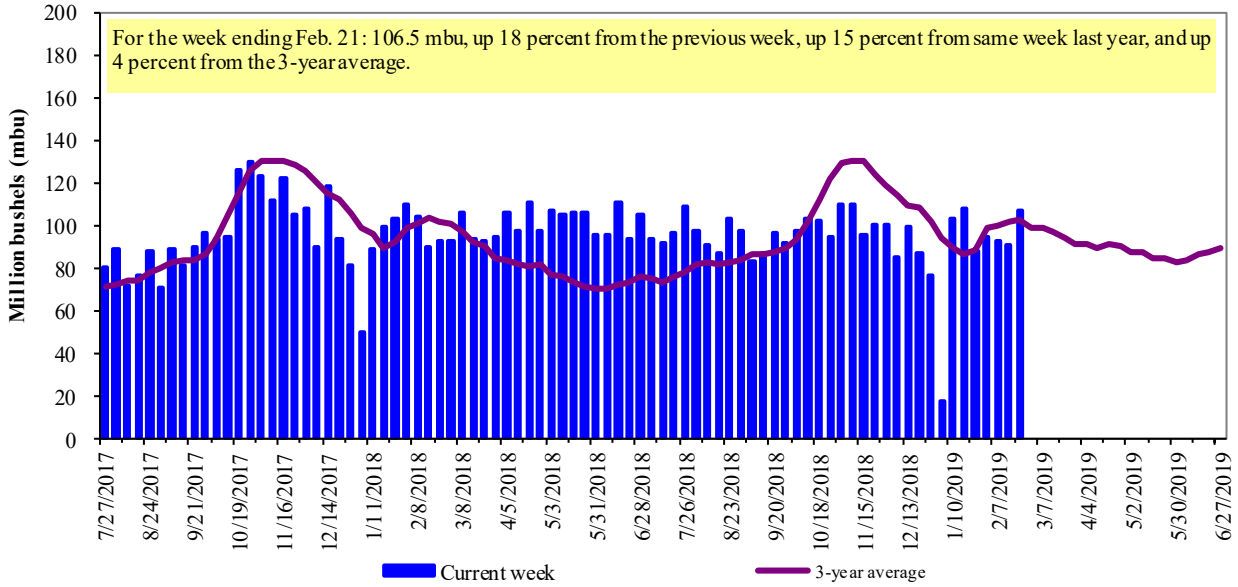
*Data includes revisions from prior weeks; some regional totals may not add exactly due to rounding.

Source: Grain Inspection, Packers and Stockyards Administration/USDA (www.gipsa.usda.gov); YTD= year-to-date; n/a = not applicable

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 2017.

Figure 14

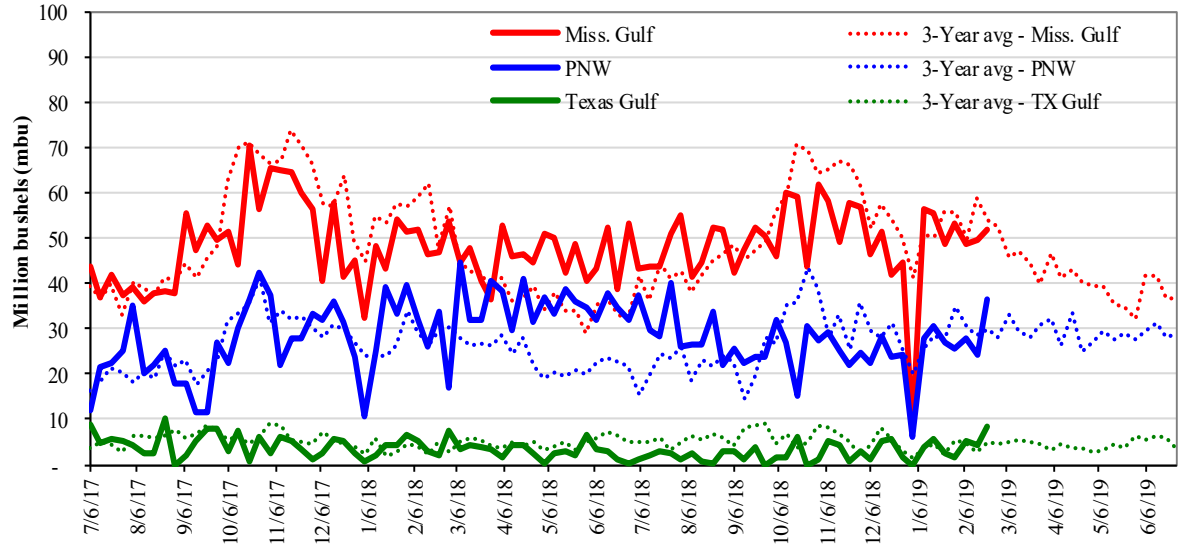
U.S. grain inspected for export (wheat, corn, and soybeans)



Source: Grain Inspection, Packers and Stockyards Administration/USDA (www.gipsa.usda.gov)
Note: 3-year average consists of 4-week running average

Figure 15

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



Week ending 02/21/19 inspections (mbu):	
Mississippi Gulf:	51.9
PNW:	36.7
Texas Gulf:	8.2

Percent change from:	MS Gulf	TX Gulf	U.S. Gulf	PNW
Last Week:	up 5	up 88	up 12	up 52
Last Year (same week):	up 10	up 305	up 23	up 9
3-yr avg. (4-wk. mov. Avg):	down 5	up 88	up 2	up 19

Source: Grain Inspection, Packers and Stockyards Administration/USDA (www.gipsa.usda.gov)

Table 17

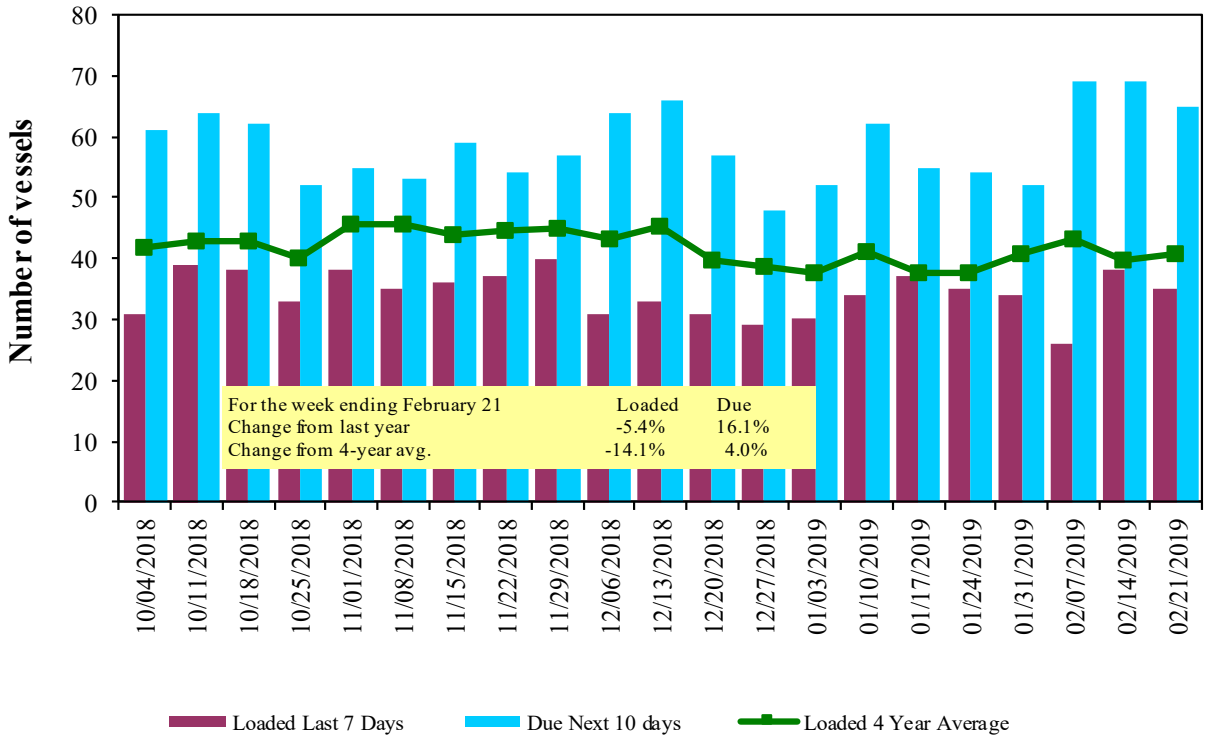
Weekly Port Region Grain Ocean Vessel Activity (number of vessels)

	Gulf			Pacific Northwest
Date	In port	Loaded 7-days	Due next 10-days	In port
2/21/2019	45	35	65	31
2/14/2019	35	38	69	25
2018 range	(23..88)	(24..41)	(38..67)	(4..30)
2018 avg.	40	34	54	17

Source: Transportation & Marketing Programs/AMS/USDA

Figure 16

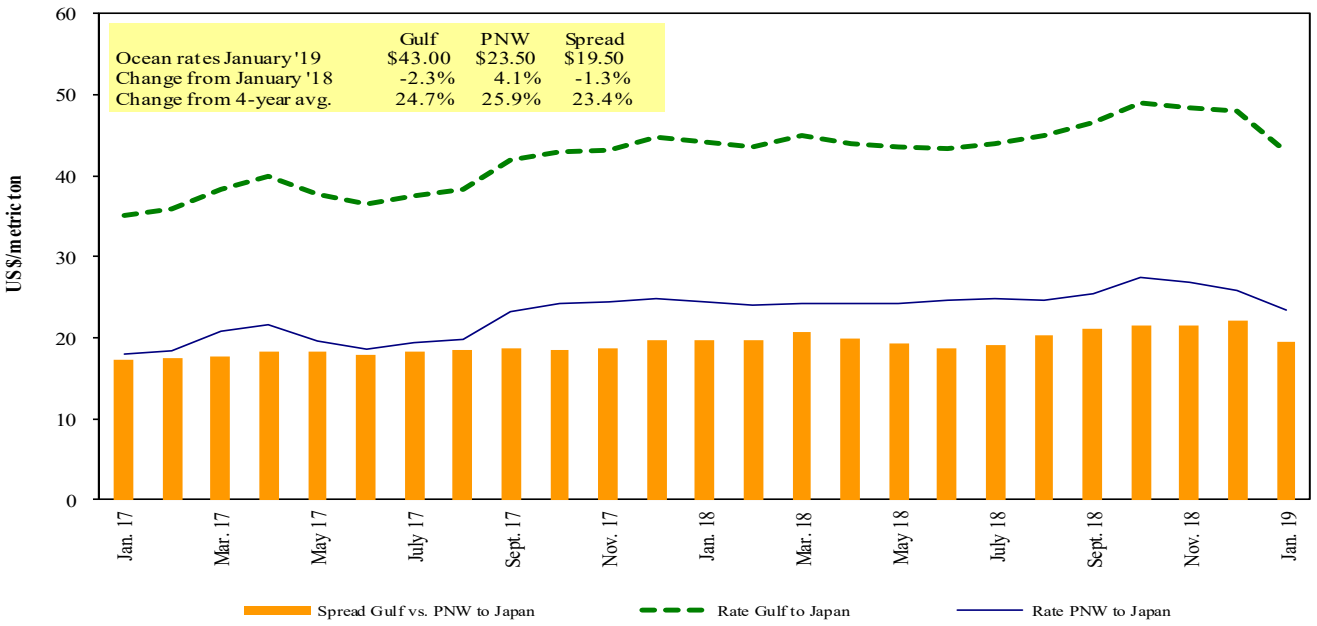
U.S. Gulf Vessel Loading Activity



Source: Transportation & Marketing Program/AMS/USDA
[1]U.S. Gulf includes Mississippi, Texas, and East Gulf.

Figure 17

Grain Vessel Rates, U.S. to Japan



Data Source: O'Neil Commodity Consulting

Table 18

Ocean Freight Rates For Selected Shipments, Week Ending 02/23/2019

Export region	Import region	Grain types	Loading date	Volume loads (metric tons)	Freight rate (US$/metric ton)
U.S. Gulf	China	Heavy Grain	Mar 15/Apr 15	63,000	40.00
PNW	China	Heavy Grain	Mar 2/18	60,000	27.50
PNW	Oman	Wheat	Feb 18/28	25,000	69.94*
PNW	Taiwan	Heavy Grain	Sep 15/Oct 31	63,000	25.00
Brazil	China	Heavy Grain	Mar 3/11	63,000	27.50
Brazil	China	Heavy Grain	Feb 26/Mar 4	66,000	24.75
Brazil	China	Heavy Grain	Feb 20/25	65,000	26.00
Brazil	China	Heavy Grain	Feb 13/26	60,000	26.75
Brazil	China	Heavy Grain	Jan 22/30	60,000	29.50
Brazil	China	Heavy Grain	Dec 15/20	60,000	37.50
Brazil	China	Heavy Grain	Dec 1/10	60,000	36.25
Brazil	China	Heavy Grain	Nov 20/30	60,000	38.00
Brazil	China	Heavy Grain	Nov 1/10	60,000	34.00
Brazil	S.Korea	Heavy Grain	Nov 5/10	66,000	43.00

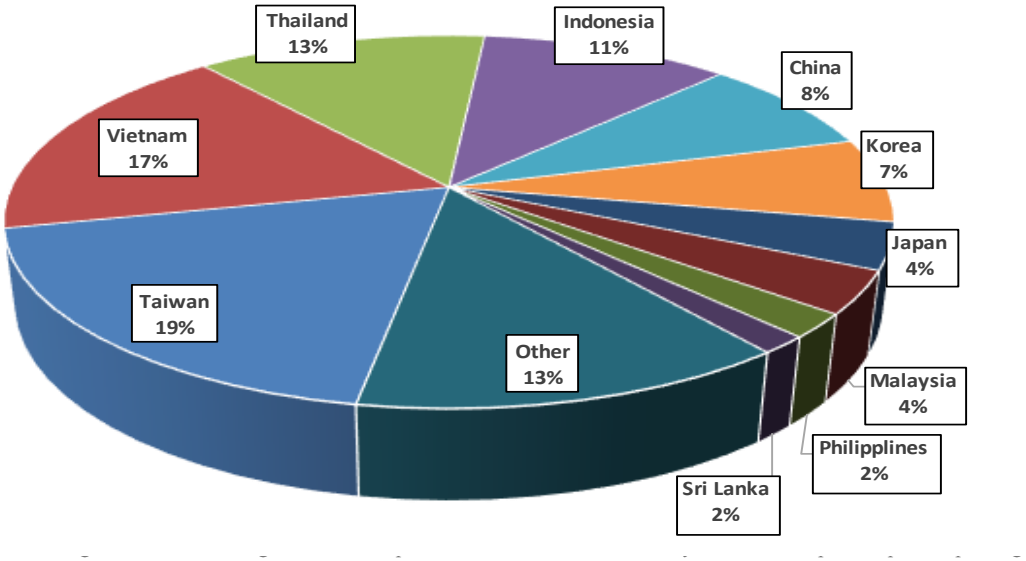
Rates shown are per metric ton (2,204.62 lbs. = 1 metric ton), F.O.B., except where otherwise indicated; op = option

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

Source: Maritime Research Inc. (www.maritime-research.com)

In 2017, containers were used to transport 7 percent of total U.S. waterborne grain exports. Approximately 62 percent of U.S. waterborne grain exports in 2017 went to Asia, of which 10 percent were moved in containers. Approximately 93 percent of U.S. waterborne containerized grain exports were destined for Asia.

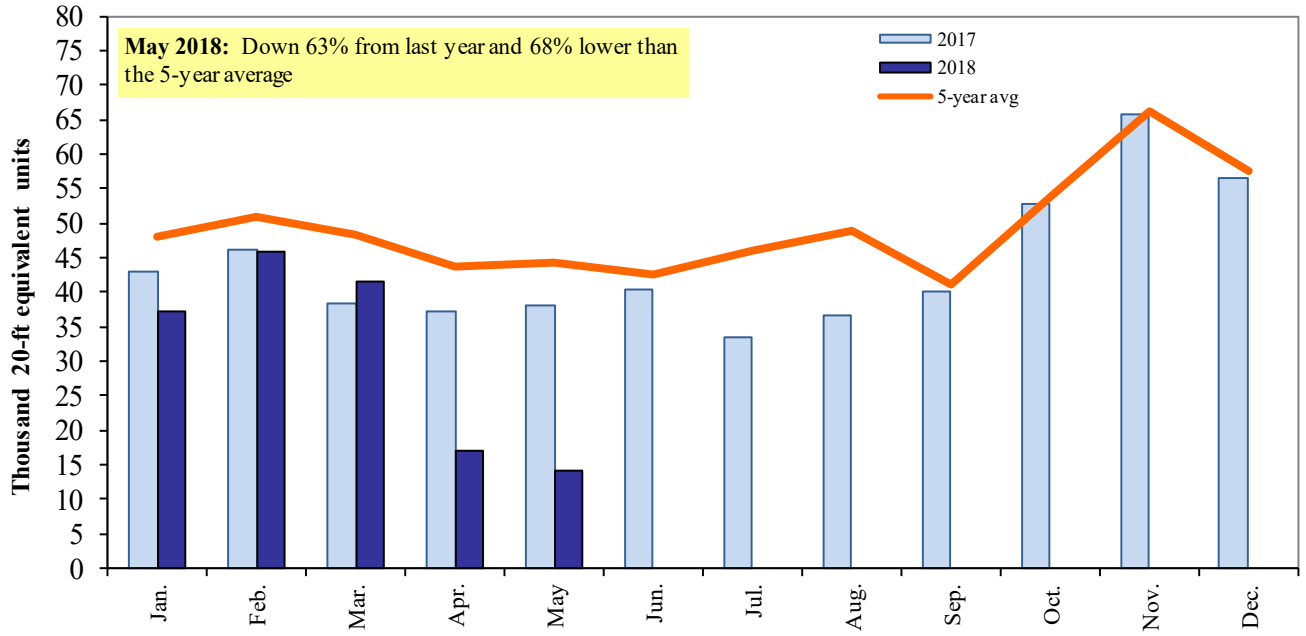
Figure 18
Top 10 Destination Markets for U.S. Containerized Grain Exports, January-May 2018



Service (PIERS) data

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

Figure 19
Monthly Shipments of Containerized Grain to Asia



Source: USDA/Agricultural Marketing Service/Transportation Services Division analysis of Port Import Export Reporting Service (PIERS) data.

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

Contacts and Links

Coordinators		
Surajudeen (Deen) Olowolayemo	surajudeen.olowolayemo@ams.usda.gov	(202) 720 - 0119
Kuo-Liang (Matt) Chang	matt.chang@ams.usda.gov	(202) 690 - 0992
Weekly Highlight Editors		
Surajudeen (Deen) Olowolayemo	surajudeen.olowolayemo@ams.usda.gov	(202) 720 - 0119
April Taylor	april.taylor@ams.usda.gov	(202) 720 - 7880
Nicholas Marathon	nick.marathon@ams.usda.gov	(202) 690 - 4430
Grain Transportation Indicators		
Surajudeen (Deen) Olowolayemo	surajudeen.olowolayemo@ams.usda.gov	(202) 720 - 0119
Rail Transportation		
Johnny Hill	johnny.hill@ams.usda.gov	(202) 690 - 3295
Jesse Gastelle	jesse.gastelle@ams.usda.gov	(202) 690 - 1144
Peter Caffarelli	petera.caffarelli@ams.usda.gov	(202) 690 - 3244
Barge Transportation		
Nicholas Marathon	nick.marathon@ams.usda.gov	(202) 690 - 4430
April Taylor	april.taylor@ams.usda.gov	(202) 720 - 7880
Kuo-Liang (Matt) Chang	matt.chang@ams.usda.gov	(202) 720 - 0299
Truck Transportation		
April Taylor	april.taylor@ams.usda.gov	(202) 720 - 7880
Grain Exports		
Johnny Hill	johnny.hill@ams.usda.gov	(202) 690 - 3295
Ocean Transportation		
Surajudeen (Deen) Olowolayemo (Freight rates and vessels)	surajudeen.olowolayemo@ams.usda.gov	(202) 720 - 0119
April Taylor (Container movements)	april.taylor@ams.usda.gov	(202) 720 - 7880

Subscription Information: Send relevant information to **GTRContactUs@ams.usda.gov** for an electronic copy *(printed copies are also available upon request)*.

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