United States Department of Agriculture

Grain Transportation Report

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

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March 28, 2019

Contents

The next release is April 4, 2019

WEEKLY HIGHLIGHTS

Railroads Make Progress Repairing Track; Some Outages Remain

Midwest flooding continues to significantly affect railroads. BNSF Railway (BNSF) and the Union Pacific Railroad (UP) both report progress in reopening corridors, but outages remain. BNSF reopened its Sioux City subdivision and track between O'Neil, NE and Bayard, IA. However, the routes from Kansas City, MO to Columbus and Omaha, NE remain closed. UP reopened its Omaha, Blair, and Columbus subdivisions, with trains moving under reduced speeds through the Columbus subdivision (between Fremont and Grand Lakes, NE). UP's route between Jefferson City, MO and Omaha, NE remains out of service. Carloading and service data highlight the impact of recent extreme whether on grain shippers. Grain carloads are down considerably from last year and are below the 3-year average (see snapshot below). In addition, March grain train speeds averaged 12 percent below January for BNSF and UP, while their average terminal dwell times and average grain origin dwell times rose 15 percent and 87 percent, respectively.

Flooding Stops Traffic on Upper Mississippi River

Widespread flooding on the inland waterways continues to disrupt grain barge shipments. As of March 28, the following Upper Mississippi River Locks are closed: 16-18 and 20-22. In addition, Mississippi River traffic is stopped between Locks 22 and 24 due to highwater preventing barge passage under a bridge near Louisiana, MO. Mississippi River traffic is restricted to daylight hours through St. Louis, MO, Memphis, TN, Vicksburg, MS, and Baton Rouge, LA. While some locks may reopen by early April, the National Weather Service indicates the Mississippi River will likely remain above flood stage into May. Peak flows are expected to occur from mid to late April. As of March 23, year-to-date grain traffic on the locking portions of the Mississippi, Ohio, and Arkansas rivers is 5.5 million tons, 16 percent lower than the same period last year.

Grain Inspections Rise; Corn Inspections Rebound

For the week ending March 21, **total inspections of grain** (corn, wheat, and soybeans) for export from all major U.S. export regions reached 2.24 million metric tons (mmt). This is a 7 percent increase from the previous week, an 8 percent decrease from last year, and is 10 percent below the 3-year average. Total grain inspections increased as corn inspections jumped 24 percent from the previous week. Shipments of corn rebounded to Latin America and Asia. Soybean inspections increased 1 percent from week-to-week, but inspections of wheat decreased 12 percent, for the same period. Grain inspections in the Mississippi Gulf increased 16 percent from the past week, while Pacific Northwest (PNW) inspections increased 2 percent.

Snapshots by Sector

Export Sales

For the week ending March 14, **unshipped balances** of wheat, corn, and soybeans totaled 32.9 mmt. This indicates a 13 percent decrease from the same time last year. Net weekly **wheat export sales** were .299 mmt, up 14 percent from the previous week. Net **corn export sales** totaled .856 mmt, up 130 percent from the previous week. However, net **soybean export sales** were down 78 percent from last week, at a total of .400 mmt.

Rail

U.S. Class I railroads originated 18,619 **grain carloads** for the week ending March 16. This is a 3 percent decline from the previous week, 22 percent lower than last year, and 18 percent below the 3-year average.

Average April shuttle **secondary railcar** bids/offers (per car) were $621 above tariff for the week ending March 21. This is down $50 from last week, but up $165 from last year. Average non-shuttle secondary railcar bids/offers were $425 above tariff, up $44 from last week. There were no non-shuttle bids/offers this week last year.

Barge

For the week ending March 23, **barge grain movements** totaled 697,390 tons. This is 6 percent higher than the previous week and 29 percent lower than the same period last year.

For the week ending March 23, 428 grain barges **moved down river.** This is 39 more barges than the previous week. There were 644 grain barges **unloaded in New Orleans**, 38 percent higher than the previous week.

Ocean

For the week ending March 21, 34 **ocean-going grain vessels** were loaded in the Gulf. This is 3 percent less than the same period last year. Fifty-eight vessels are expected to be loaded within the next 10 days, 9 percent more than the same period last year.

For the week ending March 21, the ocean freight rate for shipping bulk grain from the Gulf to Japan was $41.00 per metric ton. This is 3 percent more than the previous week. The cost of shipping from the PNW to Japan was $23.50 per metric ton. This is 2 percent more than the previous week.

Fuel

For the week ending March 25, the **U.S. average diesel fuel price** increased to $3.080 per gallon, 1 cent above the previous week's average and 7 cents above the same week last year.

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Feature Article/Calendar

Fourth Quarter Corn and Soybean Transportation Costs Mixed

In 2018, fourth quarter transportation costs for shipping corn and soybeans from Minneapolis, MN through the Gulf, were unchanged from the previous quarter but were up from last year. Pacific Northwest (PNW) transportation costs increased from the third quarter and last year. Due primarily to higher rates for each mode of transportation, PNW transportation costs for shipping grain increased. Trucking rates rose due, in part, to higher diesel prices and increasing demand for grain. Barge rates for shipping grain decreased, as demand for barge services declined. Ocean rates increased due to rising long haul coal trade, which boosted demand for minor bulk trade (*see **Grain Transportation Report (GTR), 2/14/2019***). Rail rates were up slightly from quarter to quarter and year to year.

Total landed costs for shipping corn through the Gulf and PNW to Japan were up from the previous quarter and last year for each route. Landed costs for shipping soybeans through the PNW, however, were mostly down for each route (*see tables 1, 2*). Fourth quarter farm values were higher for corn compared to the previous quarter and the past year. Soybean farm values were down for the same period.

U.S. Gulf Costs: Fourth quarter transportation costs for shipping corn and soybeans from Minneapolis through the Gulf to Japan were unchanged from quarter to quarter (*table 1*). U.S. Gulf ocean rates increased 7 percent from the previous quarter, while trucking rates increased 15 percent for the same period. Fourth quarter barge rates for shipping grain to the Gulf decreased 13 percent from the previous quarter. An increase in ocean freight rates caused a 3 percent increase in year-to-year transportation costs for shipping corn and soybeans through the Gulf (*see table 1*).

Table 1: Cost of Shipping Corn and Soybeans from Minneapolis to Japan through the U.S. Gulf

	Corn					Soybeans				
	$/metric ton			Percent change		$/metric ton			Percent Change	
	4thQtr 17	3rdQtr 18	4thQtr 18	Yr. to Yr.	Qtr to Qtr	4thQtr 17	3rdQtr 18	4thQtr 18	Yr. to Yr.	Qtr to Qtr
Truck	14.39	10.54	12.10	-15.91	14.80	14.39	10.54	12.10	-15.91	14.80
Barge	31.93	36.31	31.69	-0.75	-12.73	31.93	36.31	31.69	-0.75	-12.72
Ocean	43.56	45.13	48.46	11.25	7.38	43.56	45.13	48.46	11.25	7.38
Total Transportation Cost	89.88	91.98	92.25	2.64	0.29	89.88	91.98	92.25	2.64	0.29
Farm Value [2]	117.05	126.37	129.65	10.76	2.60	332.04	315.38	312.08	-6.01	-1.05
Total Landed Cost	206.93	218.35	221.90	7.23	1.62	421.92	407.36	404.33	-4.17	-0.74
Transportation % Landed Cost	43.43	42.13	41.57			21.30	22.58	22.82		

Table 2: Cost of Shipping Corn and Soybeans from Minneapolis to Japan through the U.S. PNW

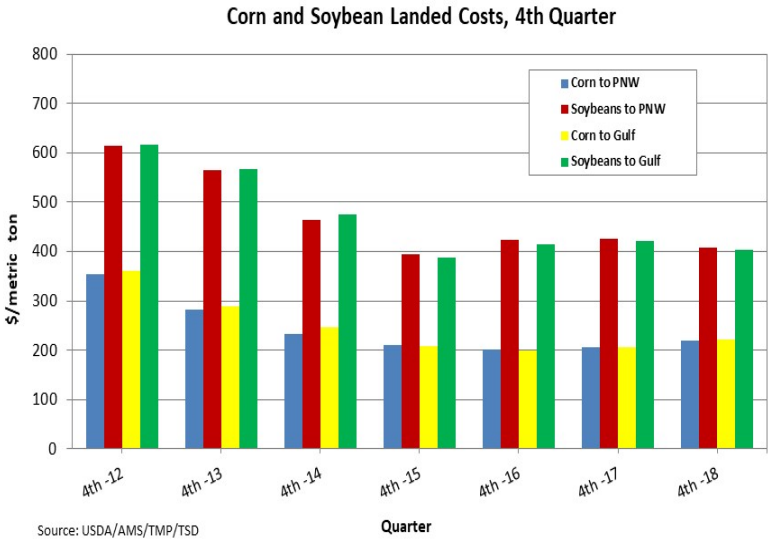
	Corn					Soybeans				
	$/metric ton			Percent change		$/metric ton			Percent Change	
	4thQtr 17	3rdQtr 18	4thQtr 18	Yr. to Yr.	Qtr to Qtr	4thQtr 17	3rdQtr 18	4thQtr 18	Yr. to Yr.	Qtr to Qtr
Truck	14.39	10.54	12.10	-15.91	14.80	14.39	10.54	12.10	-15.91	14.80
Rail[1]	49.65	49.65	51.44	3.61	3.61	56.35	56.61	57.60	2.22	1.75
Ocean	24.56	24.97	26.69	8.67	6.89	24.56	24.97	26.69	8.67	6.89
Total Transportation Cost	88.60	85.16	90.23	1.84	5.95	95.30	92.12	96.39	1.14	4.64
Farm Value [2]	117.05	126.37	129.65	10.76	2.60	332.04	315.38	312.08	-6.01	-1.05
Total Landed Cost	205.65	211.53	219.88	6.92	3.95	427.34	407.50	408.47	-4.42	0.24
Transportation % Landed Cost	43.08	40.26	41.04			22.30	22.61	23.60		

Source: USDA/AMS/TMP

[1] Rail tariffs include fuel surcharges and revisions for heavy axle rail cars and shuttle trains. The rail tariff rate is a base price of rail freight rates, but during periods of high rail demand or car shortages, high auction and secondary market rates could exceed the base rail tariffs per car

[2] Source: USDA/NASS, Agricultural Prices

Fourth quarter total landed costs for shipping corn and soybeans through the Gulf totaled $222 per metric ton (mt) for corn and $404 per mt for soybeans. Quarter-to-quarter landed costs for shipping through the Gulf increased 2 percent for corn, due to higher farm values, while lower barge rates caused a slight decrease in the costs for soybeans. (*table 1*). Compared to last year, landed costs for shipping grain from the Gulf increased 7 percent for corn and decreased 4 percent for soybeans (*see table 1*). Transportation costs from the Gulf to Japan represented 42 percent of the total landed costs for corn and 23 percent for soybeans during the fourth quarter, above the previous quarter and last year. This is below the previous quarter and last year (*see table 1*).



Pacific Northwest Costs: Quarter-to-quarter transportation costs for shipping corn and soybeans, from Minneapolis through the PNW to Japan, increased 6 percent and 5 percent, respectively (see *table 2*). Rates for shipping grain to the PNW were higher for each mode during the fourth quarter. From quarter to quarter, rail rates for shipping corn and soybeans to the PNW increased 4 and 2 percent, respectively. Year-to-year transportation costs for shipping grain to the PNW increased 2 percent for corn and 1 percent for soybeans because of higher rail and ocean rates.

Quarter-to-quarter total landed costs for shipping grain from the PNW to Japan increased 4 percent for corn but remained unchanged for soybeans. Total fourth quarter landed costs ranged from $220/mt to $408/mt (*see table 2*). Year-to-year PNW total landed costs increased 7 percent for corn but decreased 4 percent for soybeans. Transportation costs for shipping grain to the PNW represented 41 percent of the landed cost for corn and 24 percent for soybeans, both above the third quarter and last year.

According to USDA's Federal Grain Inspection Service, fourth quarter export inspections of corn jumped 82 percent from the previous year (*see **GTR 02/07/19***). Total fourth quarter inspections of corn to Japan reached 3.1 mmt, up 138 percent from 2017. At the same time, corn shipments rebounded to Asia and South America. Soybean inspections totaled only 13.6 mmt during the fourth quarter, down 47 percent from the previous year. Shipments of soybeans destined to Japan reached .649 mmt, up 14 percent from 2017.

According to USDA's *World Agricultural Supply and Demand Estimates* report in March, the forecast for 2018/19 corn exports is down 3 percent from February and the past marketing year. Lower price competiveness and higher expected exports for South America moved the forecast for corn exports down during the 4th quarter. The forecast for 2018/19 soybean exports is unchanged from February and 12 percent below 2017/18. *Johnny.Hill@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
03/27/19	207	303	246	292	183	167
03/20/19	206	302	289	261	179	163

[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	3/22/2019	3/15/2019
Corn	IL--Gulf	-0.79	-0.80
Corn	NE--Gulf	-0.82	-0.85
Soybean	IA--Gulf	-1.15	-1.22
HRW	KS--Gulf	-1.60	-1.62
HRS	ND--Portland	-2.06	-1.95

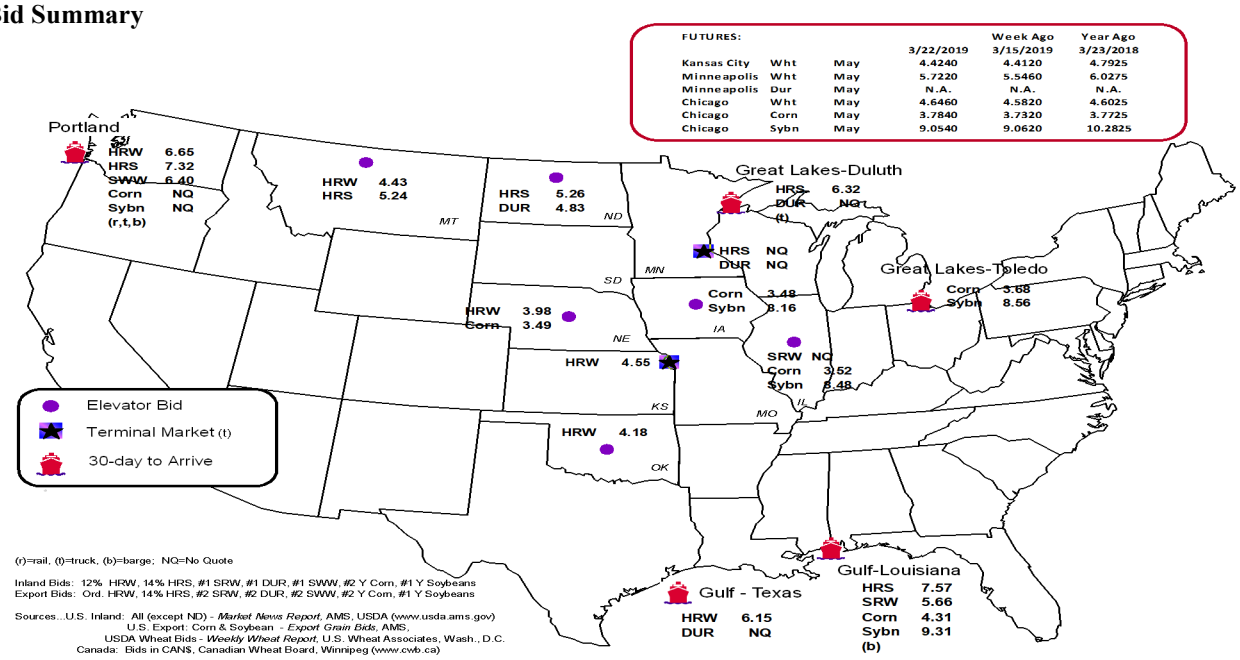
Note: nq = no quote; n/a = not available

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]
3/20/2019[p]	1,148	815	6,412	258	8,633	3/16/2019	1,985
3/13/2019[r]	541	491	5,866	397	7,295	3/9/2019	1,895
2019 YTD[r]	8,239	12,435	64,075	4,540	89,289	2019 YTD	25,261
2018 YTD[r]	5,594	19,152	75,933	3,439	104,118	2018 YTD	20,762
2019 YTD as % of 2018 YTD	147	65	84	132	86	% change YTD	122
Last 4 weeks as % of 2018[2]	251	55	79	89	82	Last 4wks % 2018	118
Last 4 weeks as % of 4-year avg.[2]	191	55	88	69	86	Last 4wks % 4 yr	107
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.

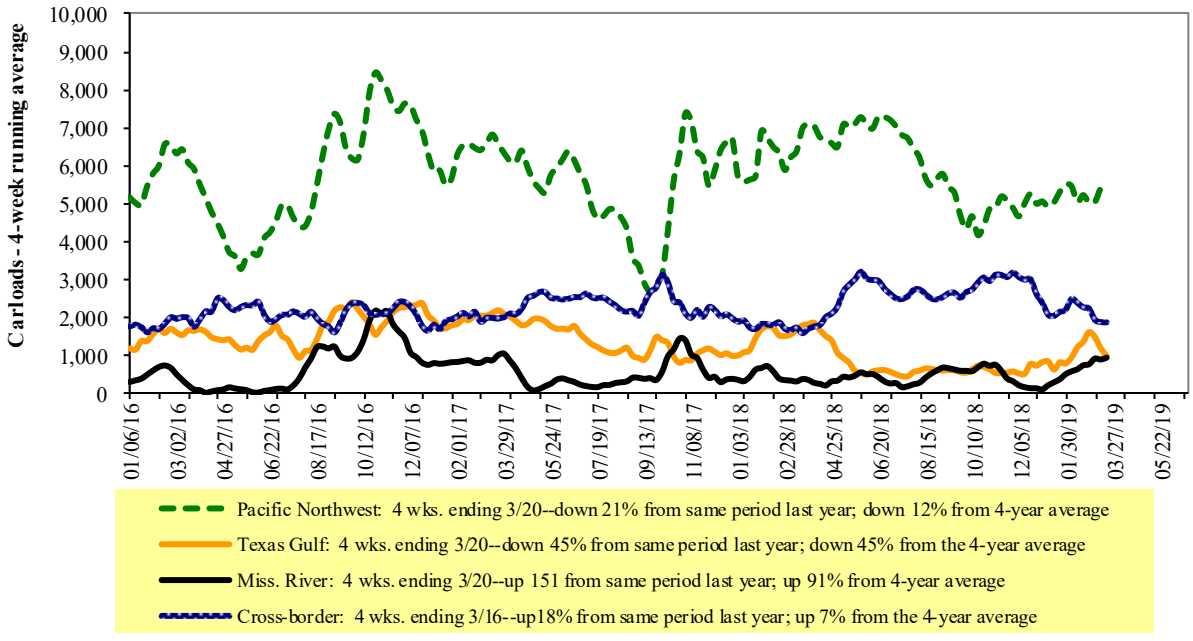
YTD = year-to-date; p = preliminary data; r = revised data; n/a = not available

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	
3/16/2019	CSXT	NS	BNSF	KCS	UP		CN	CP
This week	1,755	2,823	8,733	999	4,309	18,619	3,872	3,989
This week last year	2,236	2,438	12,992	590	5,511	23,767	3,732	4,369
2019 YTD	21,001	29,047	115,531	12,132	55,201	232,912	42,934	42,780
2018 YTD	20,040	26,753	128,984	10,246	56,711	242,734	36,997	46,416
2019 YTD as % of 2018 YTD	105	109	90	118	97	96	116	92
Last 4 weeks as % of 2018*	102	105	80	143	89	89	115	93
Last 4 weeks as % of 3-yr avg.**	101	99	84	132	82	89	110	91
Total 2018	98,978	133,167	635,458	48,638	267,713	1,183,954	211,873	244,697

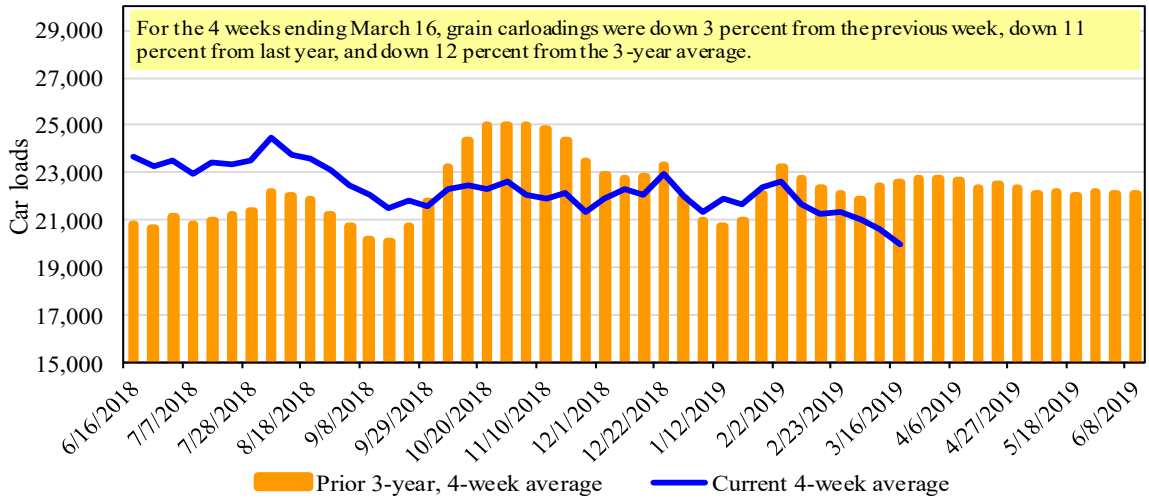
*The past 4 weeks of this year as a percent of the same 4 weeks last year.

**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							
3/21/2019		Apr-19	Apr-18	May-19	May-18	Jun-19	Jun-18	Jul-19	Jul-18
BNSF[3]	COT grain units	n/a	81	n/a	0	n/a	0	n/a	no bids
	COT grain single-car[5]	n/a	201	n/a	0	n/a	0	n/a	0
UP[4]	GCAS/Region 1	no offer	no offer	no offer	no offer	no offer	no bids	n/a	n/a
	GCAS/Region 2	no offer	no offer	no offer	no offer	no offer	10	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.

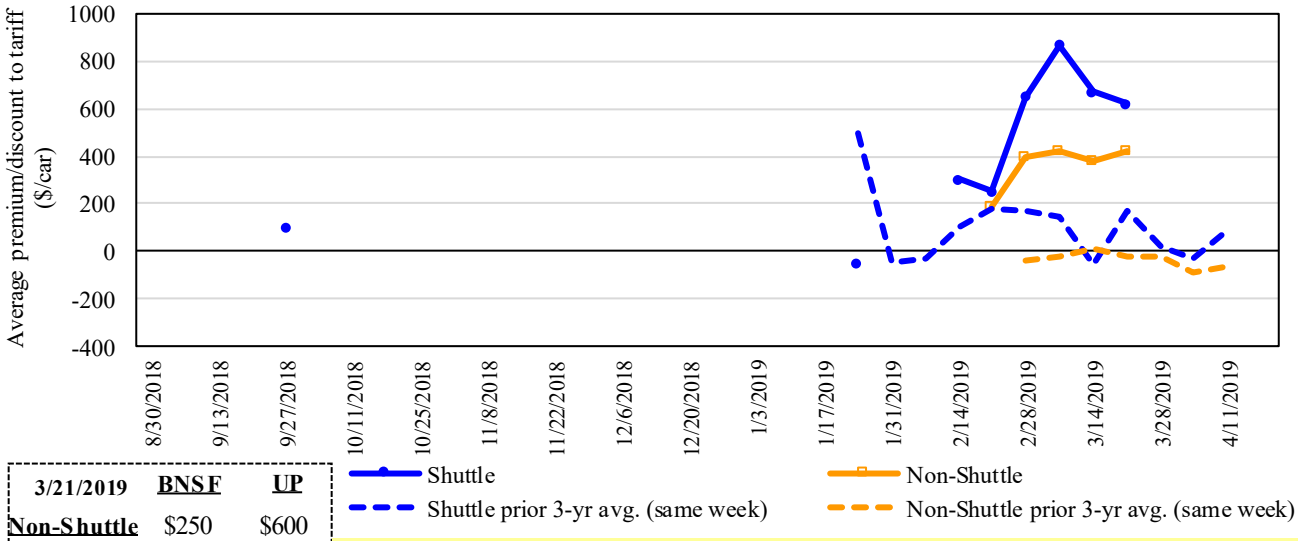
Region 2 includes: CO, IA, KS, MN, NE, WY, and Kansas City and St. Joseph, MO.

[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 April 2019, Secondary Market

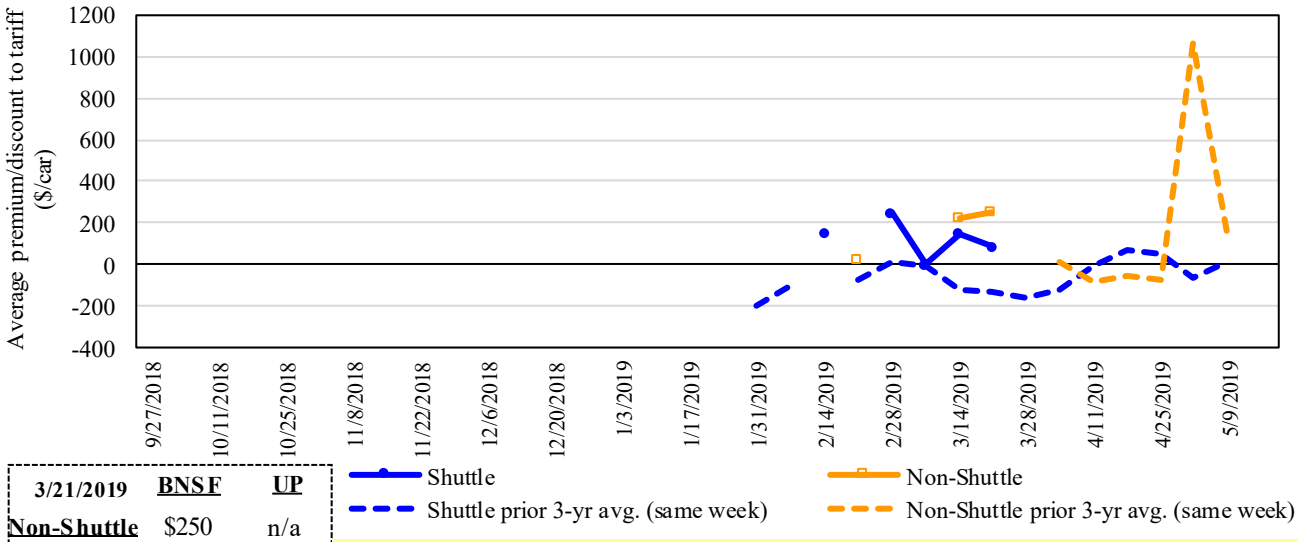


3/21/2019	BNSF	UP
Non-Shuttle	$250	$600
Shuttle	$1,067	$175

Average Non-shuttle bids/offers rose $44 this week, and are at the peak.
Average Shuttle bids/offers fell $50 this week and are $246 below 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 May 2019, Secondary Market



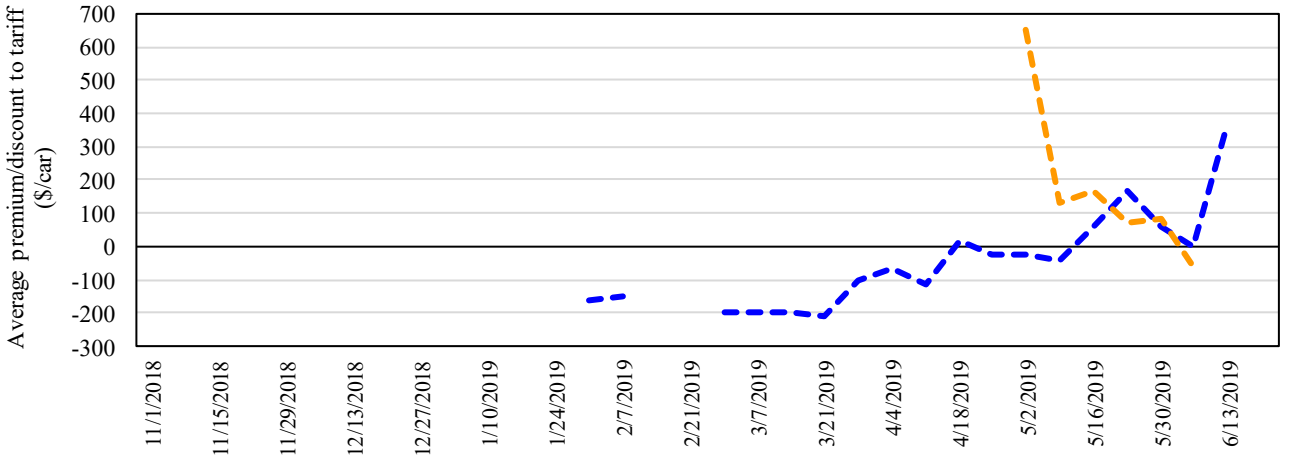
3/21/2019	BNSF	UP
Non-Shuttle	$250	n/a
Shuttle	$75	$100

Average Non-shuttle bids/offers rose $25 this week, and are at the peak.
Average Shuttle bids/offers fell $63 this week and are $163 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 June 2019, Secondary Market



3/21/2019	BNSF	UP
Non-Shuttle	n/a	n/a
Shuttle	n/a	n/a

There were no Non-Shuttle bids/offers this week.
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: 3/21/2019		Delivery period					
		Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19
Non-shuttle	**BNSF-GF**	**250**	**250**	**n/a**	**n/a**	**n/a**	**n/a**
	Change from last week	(25)	100	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	**600**	**n/a**	**n/a**	**n/a**	**n/a**	**n/a**
	Change from last week	112	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**	**1067**	**75**	**n/a**	**n/a**	**n/a**	**n/a**
	Change from last week	75	(125)	n/a	n/a	n/a	n/a
	Change from same week 2018	667	n/a	n/a	n/a	n/a	n/a
	UP-Pool	**175**	**100**	**n/a**	**n/a**	**n/a**	**n/a**
	Change from last week	(175)	0	n/a	n/a	n/a	n/a
	Change from same week 2018	(338)	300	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]

March, 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	$91	$40.46	$1.10	2
	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	$160	$46.68	$1.27	0
	Sioux Falls, SD	Galveston-Houston, TX	$6,911	$0	$68.63	$1.87	2
	Northwest KS	Galveston-Houston, TX	$4,816	$176	$49.57	$1.35	0
	Amarillo, TX	Los Angeles, CA	$5,121	$244	$53.28	$1.45	2
Corn	Champaign-Urbana, IL	New Orleans, LA	$4,000	$181	$41.52	$1.05	1
	Toledo, OH	Raleigh, NC	$6,581	$0	$65.35	$1.66	4
	Des Moines, IA	Davenport, IA	$2,258	$38	$22.80	$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	$113	$36.96	$0.94	0
	Des Moines, IA	Los Angeles, CA	$5,327	$328	$56.16	$1.43	0
Soybeans	Minneapolis, MN	New Orleans, LA	$4,131	$171	$42.72	$1.16	0
	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	$181	$48.92	$1.33	0
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	$288	$61.57	$1.68	1
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	$181	$39.53	$1.00	2
	Lincoln, NE	Galveston-Houston, TX	$3,880	$0	$38.53	$0.98	5
	Des Moines, IA	Amarillo, TX	$4,060	$142	$41.72	$1.06	2
	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	$209	$49.49	$1.35	0
	Toledo, OH	Huntsville, AL	$4,634	$0	$46.02	$1.25	6
	Grand Island, NE	Portland, OR	$5,710	$295	$59.63	$1.62	0

[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: March, 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	$125	$70.18	$1.91	2
	KS	Guadalajara, JA	$7,371	$456	$79.97	$2.17	3
	TX	Salinas Victoria, NL	$4,329	$77	$45.02	$1.22	1
Corn	IA	Guadalajara, JA	$8,528	$388	$91.10	$2.31	4
	SD	Celaya, GJ	$7,880	$0	$80.51	$2.04	2
	NE	Queretaro, QA	$8,207	$265	$86.56	$2.20	2
	SD	Salinas Victoria, NL	$6,905	$0	$70.55	$1.79	2
	MO	Tlalnepantla, EM	$7,573	$258	$80.02	$2.03	2
	SD	Torreon, CU	$7,480	$0	$76.43	$1.94	2
Soybeans	MO	Bojay (Tula), HG	$8,284	$361	$88.33	$2.40	3
	NE	Guadalajara, JA	$8,842	$387	$94.29	$2.56	3
	IA	El Castillo, JA	$9,110	$0	$93.08	$2.53	2
	KS	Torreon, CU	$7,714	$275	$81.62	$2.22	4
Sorghum	NE	Celaya, GJ	$7,527	$350	$80.48	$2.04	4
	KS	Queretaro, QA	$8,000	$157	$83.34	$2.11	2
	NE	Salinas Victoria, NL	$6,633	$126	$69.05	$1.75	3
	NE	Torreon, CU	$6,962	$256	$73.75	$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

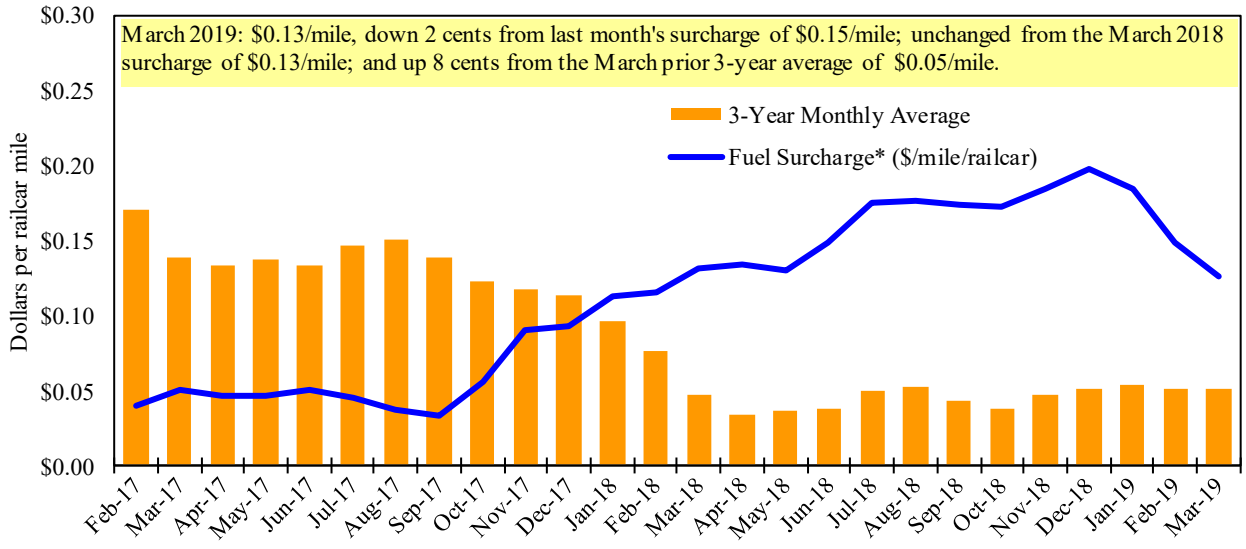
[3]Approximate load per car = 97.87 metric tons: Corn & Sorghum 56 lbs/bu, Wheat & Soybeans 60 lbs/bu

[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.

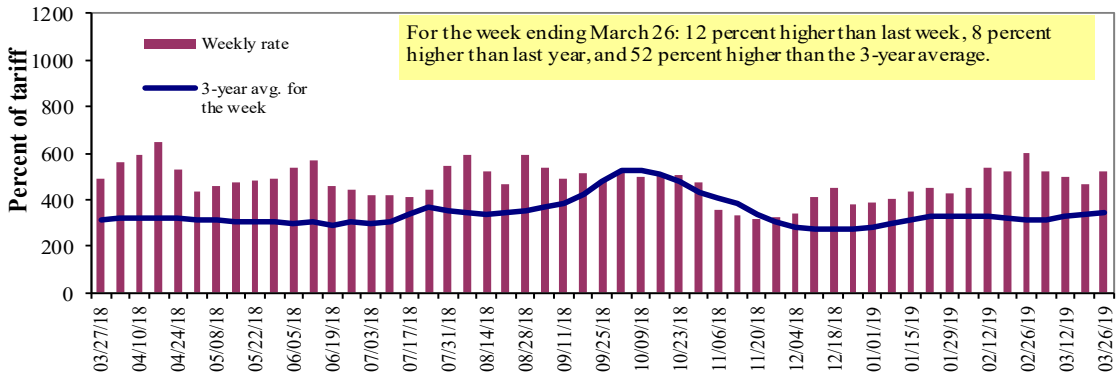
* Beginning January 2009, the Canadian Pacific fuel surcharge is computed by a monthly average of the bi-weekly fuel surcharge.

**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]	3/26/2019	-	-	525	457	492	492	433
	3/19/2019	-	-	470	370	450	450	363
$/ton	3/26/2019	-	-	24.36	18.23	23.07	19.88	13.60
	3/19/2019	-	-	21.81	14.76	21.11	18.18	11.40
Current week % change from the same week:								
	Last year	-	-	8	19	-4	-4	12
	3-year avg. [2]	-	-	52	76	61	62	85
Rate[1]	April	-	488	475	415	450	450	400
	June	475	458	443	363	387	387	333

[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.

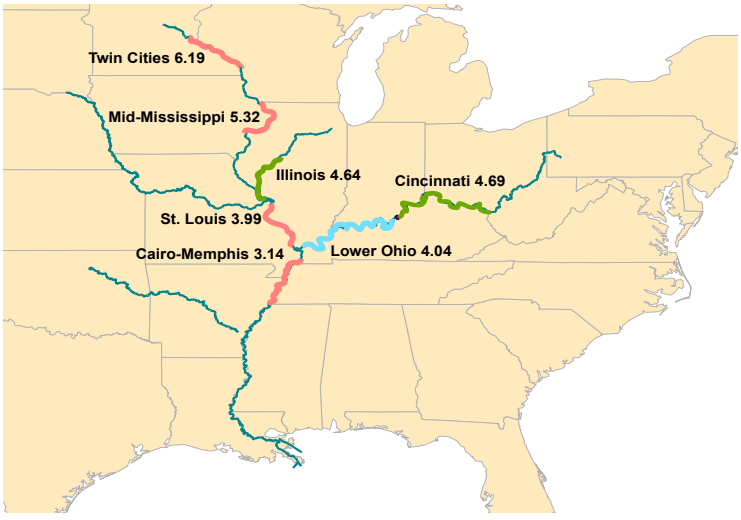
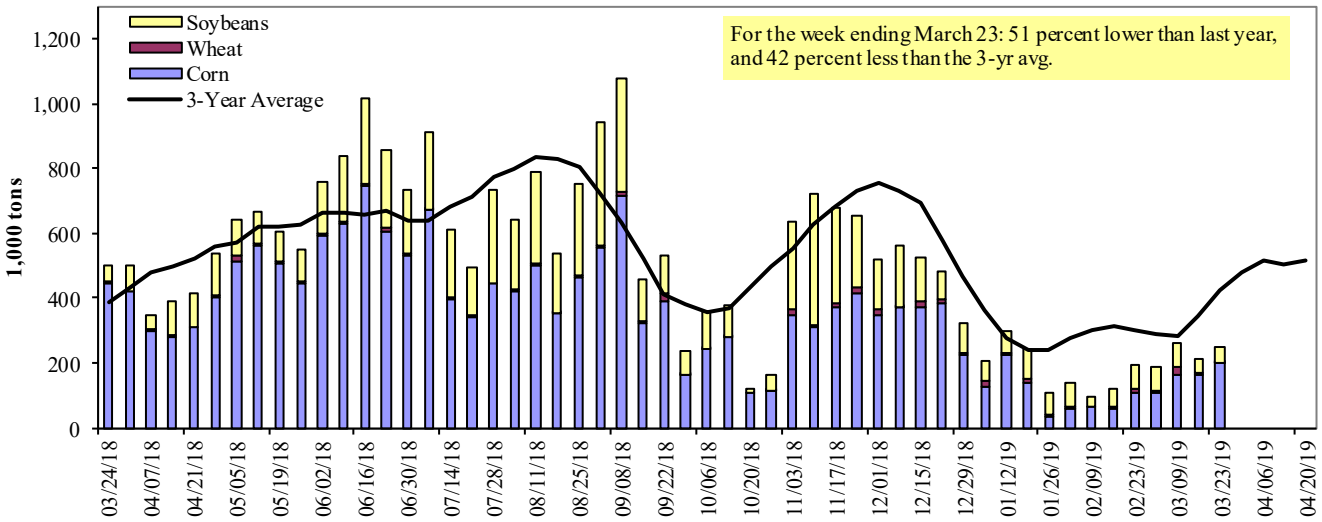


Figure 10

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 03/23/2019	Corn	Wheat	Soybeans	Other	Total
Mississippi River					
Rock Island, IL (L15)	0	0	0	0	0
Winfield, MO (L25)	38	2	2	0	41
Alton, IL (L26)	197	2	47	0	246
Granite City, IL (L27)	198	2	47	0	247
Illinois River (L8)	90	0	23	0	113
Ohio River (OLMSTED)	215	14	130	7	366
Arkansas River (L1)	0	45	39	0	84
Weekly total - 2019	413	61	217	7	697
Weekly total - 2018	634	84	251	7	976
2019 YTD[1]	2,565	519	2,346	34	5,464
2018 YTD[1]	3,499	366	2,596	42	6,504
2019 as % of 2018 YTD	73	142	90	82	84
Last 4 weeks as % of 2018[2]	59	128	111	146	76
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.

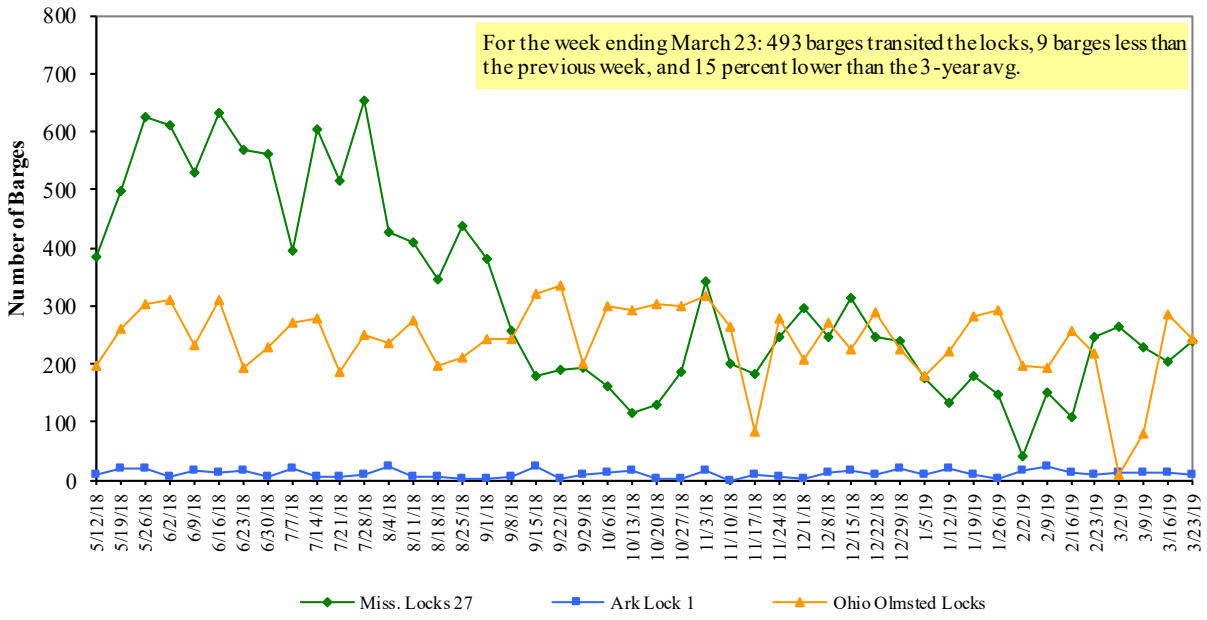
[2] As a percent of same period in 2018.

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

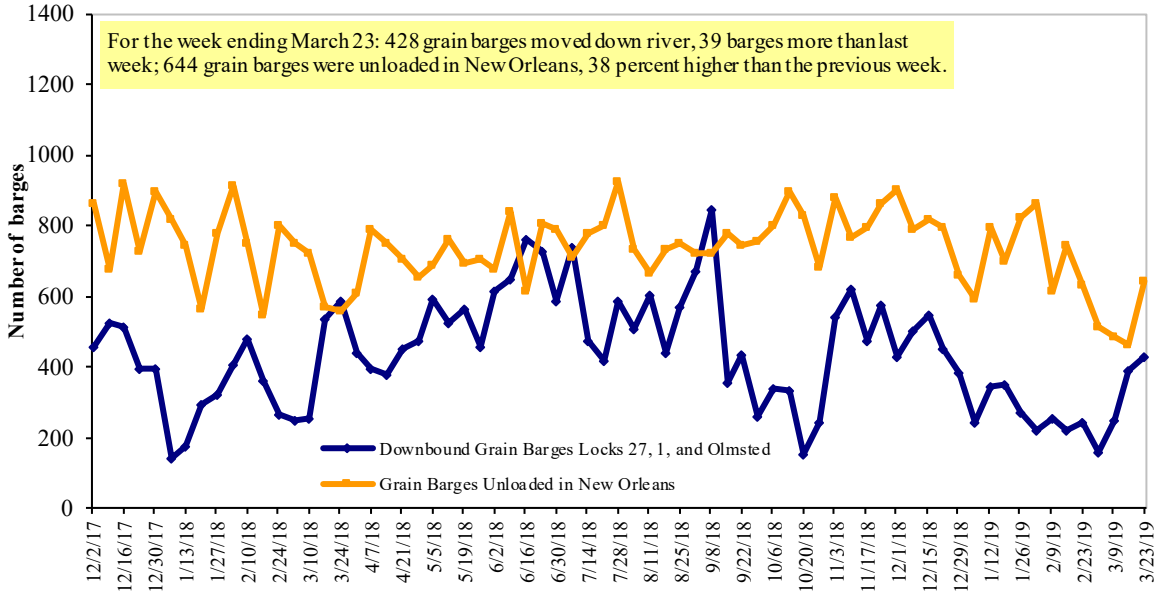
Upbound Empty Barges Transiting Mississippi River Locks 27, Arkansas River Lock and Dam 1, and Ohio River Olmsted Locks and Dam



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 3/25/2019 (US $/gallon)

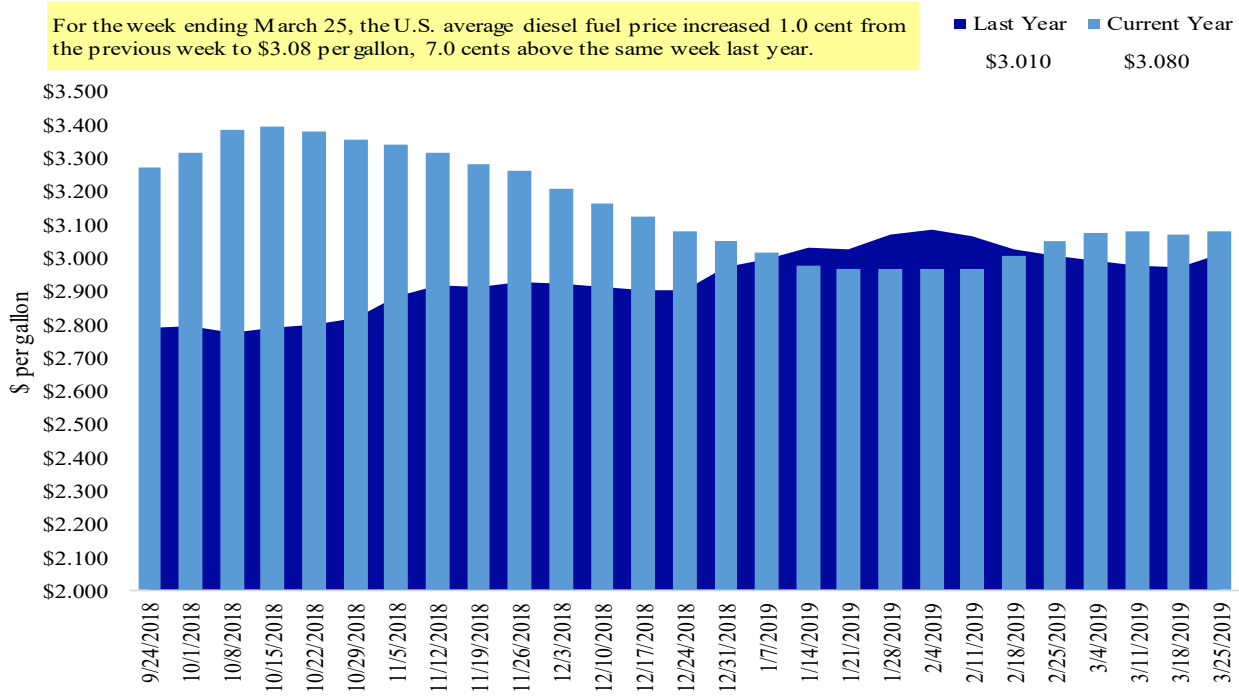
Region	Location	Price	Change from Week ago	Change from Year ago
I	East Coast	3.132	0.008	0.094
	New England	3.214	0.014	0.099
	Central Atlantic	3.310	-0.003	0.093
	Lower Atlantic	2.995	0.014	0.097
II	Midwest	2.993	0.001	0.059
III	Gulf Coast	2.876	0.007	0.053
IV	Rocky Mountain	2.974	0.030	-0.017
V	West Coast	3.526	0.029	0.088
	West Coast less California	3.156	0.017	0.009
	California	3.819	0.038	0.150
Total	U.S.	3.080	0.010	0.070

[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]									
3/14/2019	2,415	875	1,334	1,024	121	5,769	13,934	13,189	32,892
This week year ago	1,183	627	1,425	990	95	4,321	23,514	9,818	37,653
Cumulative exports-marketing year[2]									
2018/19 YTD	5,675	2,186	5,103	4,049	360	17,374	27,819	28,317	73,510
2017/18 YTD	7,642	1,738	4,450	4,028	276	18,134	21,587	40,216	79,937
YTD 2018/19 as % of 2017/18	74	126	115	101	130	96	129	70	92
Last 4 wks as % of same period 2017/18	210	148	98	113	121	140	60	135	89
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

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 3/14/2019	Total Commitments[2]		% change	Exports[3]
	2018/19 Current MY	2017/18 Last MY	current MY from last MY	3-year avg 2015-2017
	- 1,000 mt -			
Mexico	13,456	11,689	15	13,691
Japan	8,861	8,191	8	11,247
Korea	3,402	3,023	13	4,754
Colombia	3,256	3,051	7	4,678
Peru	1,877	2,240	(16)	2,975
Top 5 Importers	**30,851**	**28,194**	**9**	**37,344**
Total US corn export sales	**41,754**	**45,102**	**(7)**	**53,184**
% of Projected	67%	73%		
Change from prior week[2]	**856**	**1,470**		
Top 5 importers' share of U.S. corn export sales	74%	63%		70%
USDA forecast, March 2019	**62,341**	**62,036**	**0**	
Corn Use for Ethanol USDA forecast, March 2019	**140,970**	**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 3/14/2019	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	11,218	28,526	(61)	31,228
Mexico	4,567	3,621	26	3,716
Indonesia	1,589	1,467	8	2,250
Japan	1,939	1,697	14	2,145
Netherlands	1,679	995	69	2,209
Top 5 importers	**20,993**	**36,307**	**(42)**	**41,549**
Total US soybean export sales	**41,506**	**50,034**	**(17)**	**55,113**
% of Projected	81%	86%		
Change from prior week[2]	**400**	**759**		
Top 5 importers' share of U.S. soybean export sales	51%	73%		**75%**
USDA forecast, March 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 3/14/2019	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	2,758	2,766	(0)	2,781
Japan	2,580	2,665	(3)	2,649
Philippines	2,880	2,481	16	2,441
Korea	1,554	1,407	10	1,257
Nigeria	1,427	1,111	28	1,254
Indonesia	1,132	1,164	(3)	1,076
Taiwan	1,096	1,105	(1)	1,066
China	42	926	(95)	944
Colombia	592	301	97	714
Thailand	742	634	17	618
Top 10 importers	**14,804**	**14,558**	2	**14,800**
Total US wheat export sales	**23,143**	**22,455**	**3**	**22,869**
% of Projected	88%	91%		
Change from prior week[2]	**299**	**265**		
Top 10 importers' share of U.S. wheat export sales	64%	65%		65%
USDA forecast, March 2019	**26,294**	**24,550**	**7**	

(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 03/21/19	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	117	180	65	2,840	2,461	115	125	87	13,315
Corn	239	235	102	2,413	3,809	63	47	64	20,024
Soybeans	353	283	125	3,186	3,380	94	132	136	7,719
Total	**709**	**697**	**102**	**8,439**	**9,650**	**87**	**86**	**91**	**41,058**
Mississippi Gulf									
Wheat	63	82	77	1,143	1,017	112	91	105	3,896
Corn	594	404	147	5,846	6,449	91	73	66	33,735
Soybeans	429	450	95	7,000	7,354	95	101	101	28,124
Total	**1,086**	**935**	**116**	**13,988**	**14,820**	**94**	**85**	**81**	**65,755**
Texas Gulf									
Wheat	152	99	154	1,354	1,158	117	122	116	3,198
Corn	30	22	138	146	131	112	123	132	730
Soybeans	0	0	n/a	0	0	n/a	n/a	n/a	69
Total	**182**	**121**	**151**	**1,500**	**1,289**	**116**	**122**	**118**	**3,997**
Interior									
Wheat	27	37	72	358	359	100	107	107	1,614
Corn	115	121	95	1,508	1,591	95	95	95	8,650
Soybeans	108	99	109	1,436	1,358	106	95	125	6,729
Total	**250**	**257**	**97**	**3,302**	**3,308**	**100**	**96**	**107**	**16,993**
Great Lakes									
Wheat	0	8	0	30	19	157	n/a	300	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	**0**	**8**	**0**	**47**	**19**	**242**	**n/a**	**300**	**2,491**
Atlantic									
Wheat	0	0	n/a	1	64	1	1	1	69
Corn	0	7	0	35	0	n/a	n/a	460	138
Soybeans	13	63	21	341	506	67	86	79	2,047
Total	**13**	**70**	**19**	**377**	**570**	**66**	**66**	**69**	**2,253**
U.S. total from ports*									
Wheat	358	405	88	5,725	5,079	113	111	97	22,986
Corn	979	789	124	9,949	11,979	83	68	70	63,682
Soybeans	903	894	101	11,979	12,598	95	107	113	45,879
Total	**2,240**	**2,089**	**107**	**27,653**	**29,656**	**93**	**88**	**89**	**132,547**

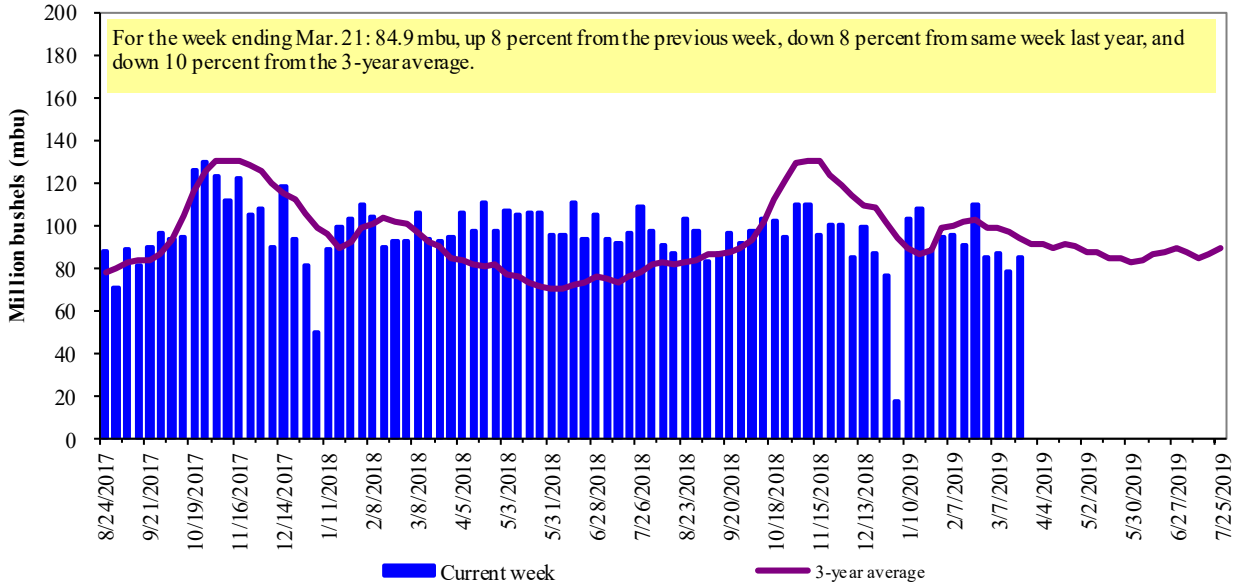
*Data includes revisions from prior weeks; some regional totals may not add exactly due to rounding.

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

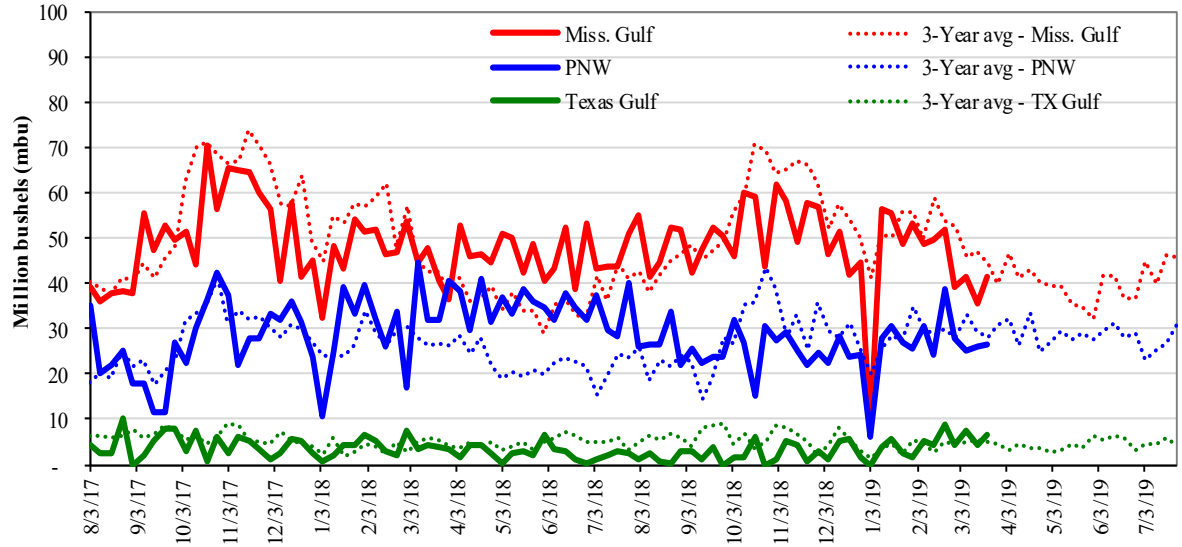
U.S. grain inspected for export (wheat, corn, and soybeans)



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 03/21/19 inspections (mbu):	
Mississippi Gulf:	41.4
PNW:	26.7
Texas Gulf:	6.8

Percent change from:	MS Gulf	TX Gulf	U.S. Gulf	PNW
Last Week:	up 17	up 51	up 21	up 2
Last Year (same week):	up 2	up 69	up 8	down 17
3-yr avg. (4-wk. mov. Avg):	down 13	up 35	down 8	down 10

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

Table 17

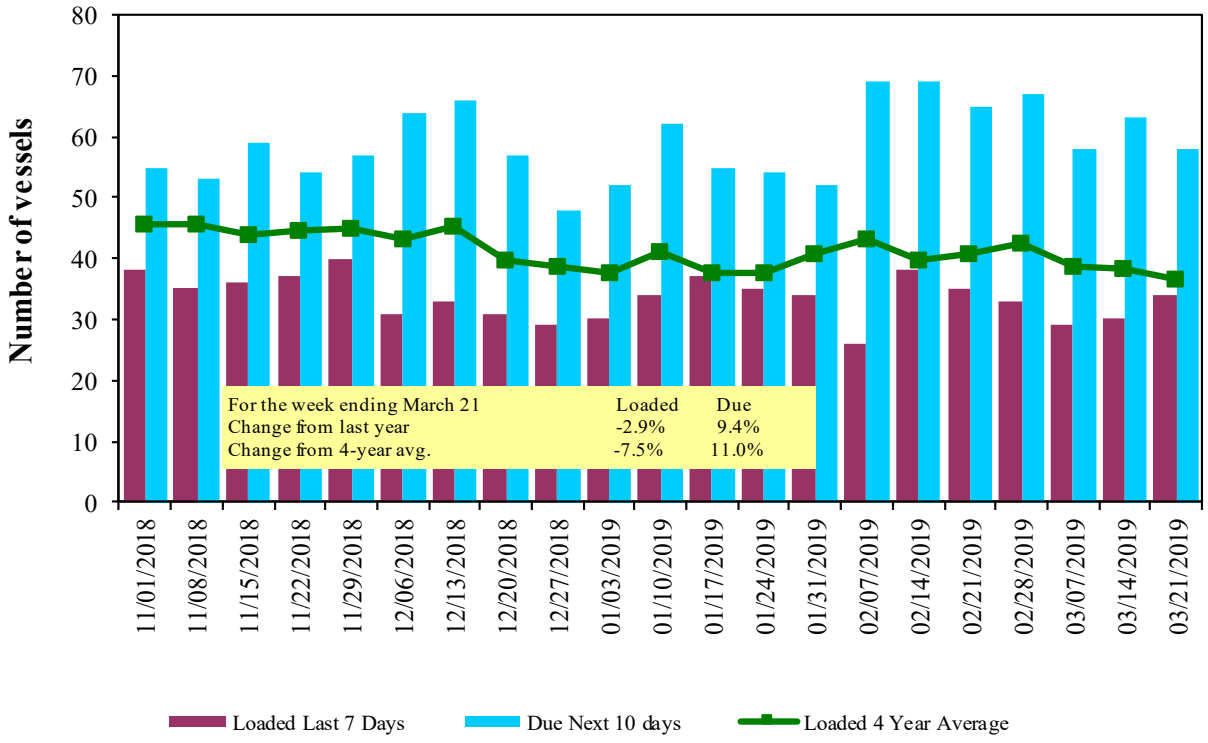
Weekly Port Region Grain Ocean Vessel Activity (number of vessels)

	Gulf			Pacific Northwest
Date	In port	Loaded 7-days	Due next 10-days	In port
3/21/2019	41	34	58	33
3/14/2019	47	30	63	28
2018 range	(23..88)	(24..41)	(38..67)	(4..30)
2018 avg.	40	34	54	17

Source: Transportation & Marketing Programs/AMS/USDA

Figure 16

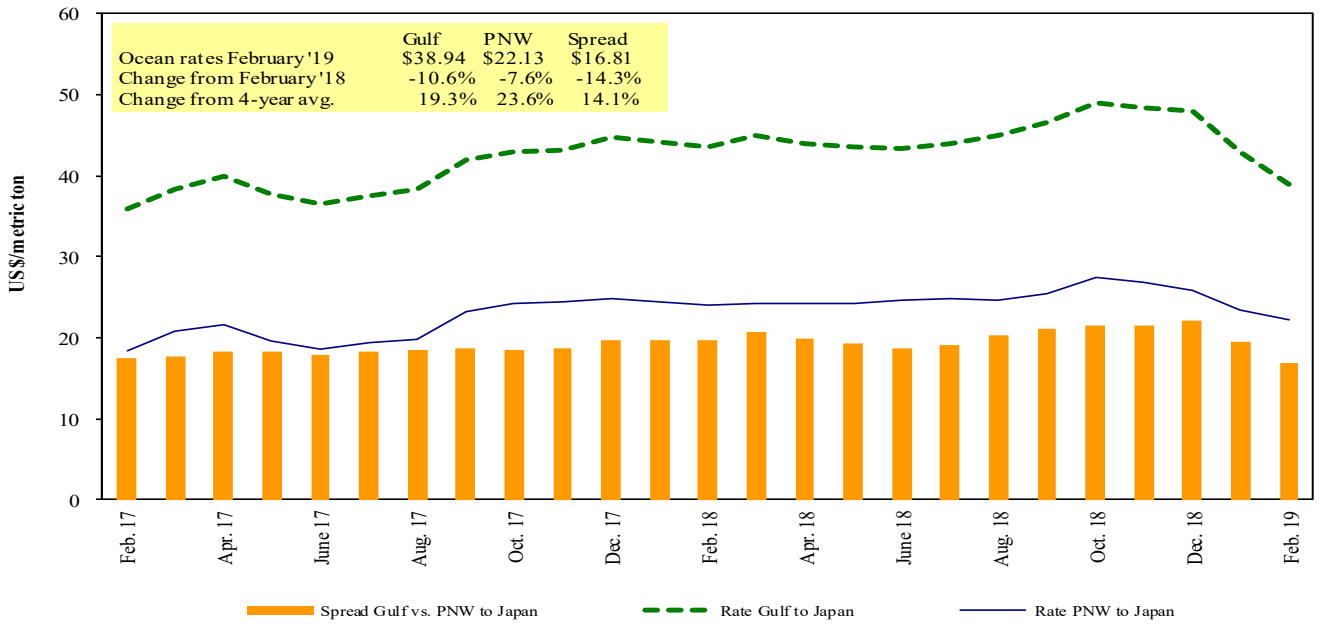
U.S. Gulf Vessel Loading Activity



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 03/23/2019

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	Apr 15/30	63,000	32.50
Brazil	China	Heavy Grain	Mar 20/30	66,000	13.30
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

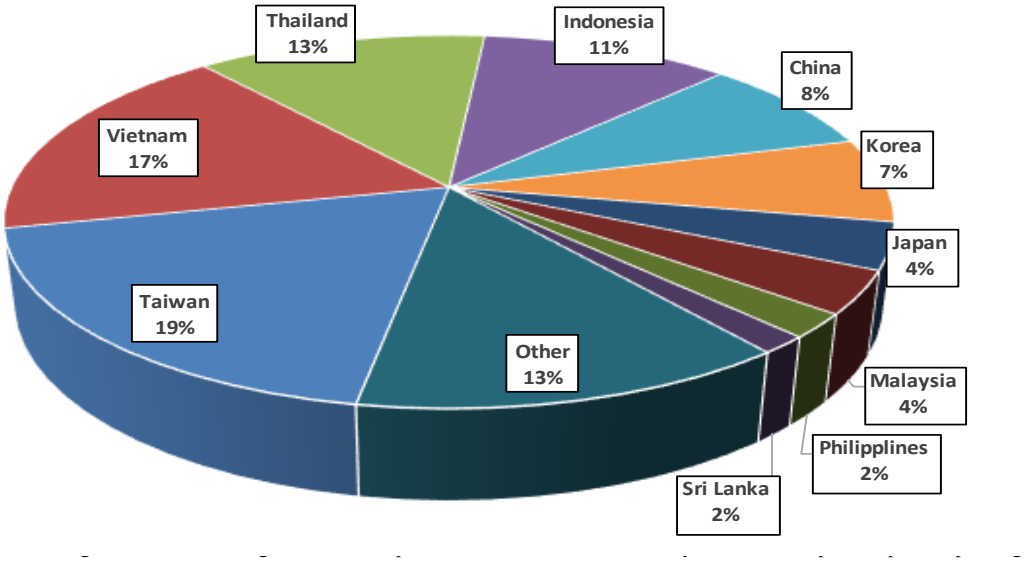
Rates shown are per metric ton (2,204.62 lbs. = 1 metric ton), F.O.B., except where otherwise indicated; op = option

*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.

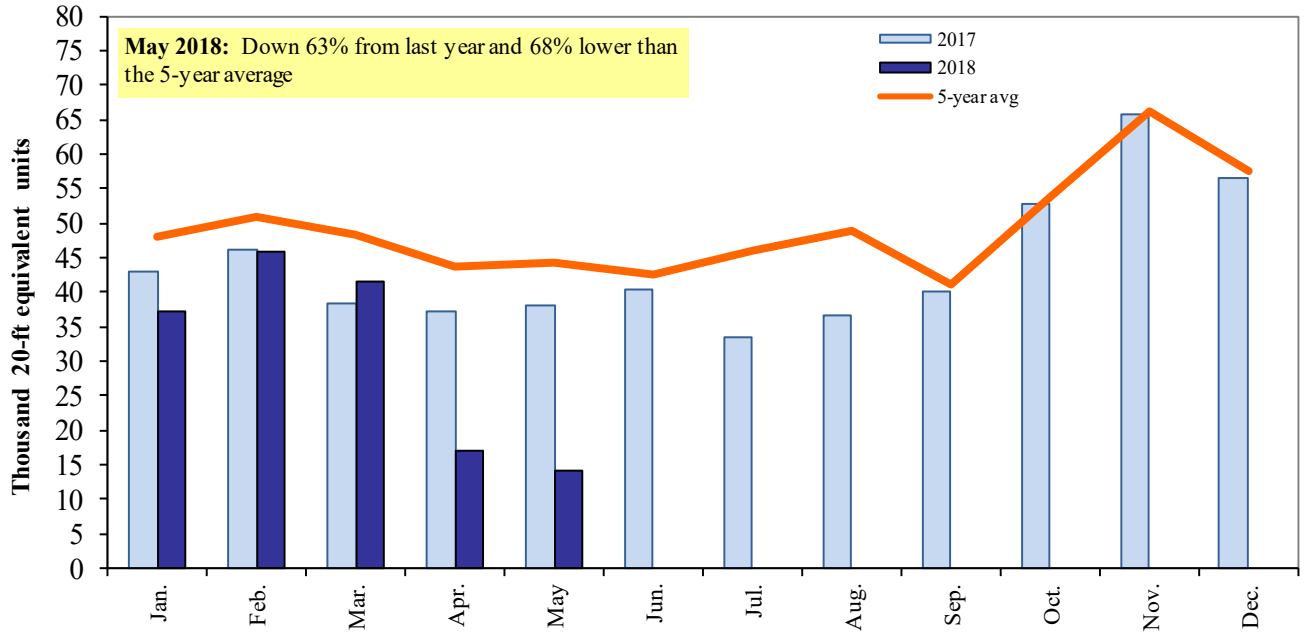
Figure 18
Top 10 Destination Markets for U.S. Containerized Grain Exports, January-May 2018



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) 720 - 0299
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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