USDA 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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April 5, 2018

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**The next release is April 12, 2018**

## WEEKLY HIGHLIGHTS

### STB Requests Service Outlook from Class I Railroads

On March 16, 2018, STB sent letters requesting service outlook plans from all Class I railroads—in the near term and for the remainder of 2018—due to increased concerns over deteriorating service. STB asked about the adequacy of rail operations concerning locomotive availability, employee resources, local service performance, service demand, communication strategies, and capacity constraints. STB is concerned about service issues raised in letters from the National Grain and Feed Association, Alliance of Automobile Manufacturers, and The Fertilizer Institute regarding impacts from system-wide rail service deterioration. BNSF Railway and Canadian National have posted responses. All correspondence on this matter is available on the STB website.

### Pacific Northwest Grain Inspections Above Average

For the week ending March 29, **total inspections of grain** (corn, wheat, and soybeans) for export, from all major U.S. export regions, reached 2.3 million metric tons (mmt); down 6 percent from the previous week, down 14 percent from last year, and 3 percent above the 3-year average. Corn and wheat inspections increased slightly, but could not offset the 24 percent drop in inspections of soybeans. Pacific Northwest (PNW) grain inspections remained strong at 1 mmt and increased 24 percent from the previous week. During the last four weeks, inspections of grain in the PNW were 21 percent above last year and 37 percent above the 3-year average. Mississippi Gulf grain inspections decreased 20 percent from week to week. Current outstanding (unshipped) export sales were up for wheat but down for corn and soybeans.

### Additional Rainfall Contributes to On-going Navigation Disruptions

As of April 5, widespread rainfall in the lower and middle Mississippi River Valley, extending into the Ohio River Valley, has added additional navigation disruptions to already flooded segments throughout the inland waterway system. For example, levels on the Ohio River at Cairo, IL, are already above flood stage but will not crest until April 9. Navigation on the lower Mississippi River continues to be restricted to daylight only, though Vicksburg, MS, and Baton Rouge, LA. Barge movements in the area between Baton Rouge and New Orleans require additional time and towboats to unload grain and return empty barges upriver, due to high and fast river conditions. As of April 3, the weekly change in spot barge rates for export grain has increased 15 percent on the Illinois River, 19 percent on the Upper Mississippi River at Davenport, IA, and 29 percent at St Louis, MO.

## Snapshots by Sector

### Export Sales

For the week ending March 22, **unshipped balances** of wheat, corn, and soybeans totaled 37.2 mmt, up 20 percent from the same time last year. Net weekly **wheat export sales** were .354 mmt, up 33 percent from the previous week. Net **corn export sales** were 1.35 mmt, down 8 percent from the previous week. Net **soybean export sales** totaled .317 mmt, down 58 percent from the previous week.

### Rail

U.S. Class I railroads originated 23,570 **grain carloads** for the week ending March 24, unchanged from the previous week, up 1 percent from last year, and up 6 percent from the 3-year average.

Average April shuttle **secondary railcar** bids/offers per car were $588 above tariff for the week ending March 29, up $131 from last week, and $908 higher than last year. There were no non-shuttle bids/offers this week.

### Barge

For the week ending March 31, **barge grain movements** totaled 696,950 tons, 29 percent lower than the previous week and down 18 percent from the same period last year.

For the week ending March 31, 442 grain barges **moved down river**, 148 barges less than the previous week. There were 610 grain barges **unloaded in New Orleans**, 9 percent lower than the previous week.

### Ocean

For the week ending March 29, 35 **ocean-going grain vessels** were loaded in the Gulf, 30 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 29, the ocean freight rate for shipping bulk grain from the Gulf to Japan was $45.00 per metric ton, 1 percent less than the previous week. The cost of shipping from the PNW to Japan was $24.50 per metric ton, unchanged from the previous week.

### Fuel

During the week ending April 2, average **diesel fuel prices** increased 3 cents from the previous week to $3.04 per gallon, 49 cents higher than the same week last year.

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# Feature Article/Calendar

## Analysis of Truck Data in the Transportation of Grain and Agricultural Products

Trucking is a critical mode of transportation for U.S. agriculture and rural communities, helping link farmers and ranchers to end markets, such as grain elevators, ethanol plants, processors, and feedlots. Trucks move over three-quarters of the total value and tonnage of agricultural freight and about half of agriculture's ton-miles. They often provide the first and last mile of agricultural shipments. The efficiency and flexibility of trucking enables agricultural producers and shippers to be competitive in the global marketplace for agricultural products.[1]

However, data on truck freight, particularly for grain and agricultural products, is limited, which makes accurately estimating the economic impact and contribution of trucking to agriculture a challenge. Two related data sources, the Commodity Flow Survey (CFS) and Freight Analysis Framework (FAF), provide public data to analyze truck flows. This article briefly describes CFS and FAF and highlights key transportation characteristics of agricultural truck freight, including truck's movement of grain and agricultural products.[2]

### CFS and FAF: Major Data Sources for Truck Flows

CFS and FAF both provide freight data across all modes, including multi-modal shipments, and both programs cover the full spectrum of commodities. This enables insight into the nature of grain and other agricultural shipments. While CFS and FAF are related, they are not the same. The CFS scope covers mining, manufacturing, wholesale, and other selected industries. It is conducted by asking business establishments to report destinations, weights, and modes for a sample of individual shipments. FAF uses the definitions established by CFS, and then expands the economic coverage by estimating shipments from industries that are not covered by CFS. For more information about these two sources, see the sidebar.

**More About CFS and FAF**

The Commodity Flow Survey (CFS), a joint effort by the U.S. Department of Transportation's Bureau of Transportation Statistics (BTS) and the U.S. Census Bureau, is an important source for National and State-level data on domestic freight shipments. CFS is conducted every five years as part of the Economic Census. It involves sampling around 100,000 business establishments, which fill out a questionnaire detailing their shipment characteristics during a one-week period in each calendar quarter. Data are provided on the type, origin, destination, value, weight, mode, distance shipped, and ton-miles of commodities shipped. It provides a modal picture of gross freight flows and represents the only publicly available source of original commodity flow data for the highway mode.

CFS data is a major input into the Freight Analysis Framework (FAF), which integrates data from a variety of sources to create a comprehensive picture of freight movement among states and major metropolitan areas by all modes of transportation. FAF is produced jointly by BTS and the Federal Highway Administration. The most recent FAF is FAF4. The "4" in "FAF4" refers to the database version. For instance, FAF2 is based on the 2002 CFS, FAF3 on the 2007 CFS, and FAF4 on the 2012 CFS. FAF4 also estimates projections at 5-year intervals from 2020 to 2045.

A key distinction between the two datasets is coverage. The 2012 CFS covered about 62 percent of the agricultural freight volume (by tonnage) of FAF4. The remainder covered in FAF is outside the scope of CFS. For example, farm-based agricultural shipments are not included in CFS. Shipments from the fishing and logging sectors are also excluded from CFS, but included in FAF. FAF uses additional sources, such as the 2012 *Census of Agriculture*, to estimate shipments from farms to grain elevators, distribution or processing centers, slaughterhouses, etc.

Since CFS excludes farm-based shipments, FAF uses data from USDA and other sources to estimate the volumes, values, and movements of this sector. Consequently, FAF generates markedly higher estimates of truck's share of the total value, tonnage, and ton-miles compared to CFS. For example, the estimated truck tonnage for grain and agricultural products was 1.15 billion tons in FAF, but only 0.36 billion tons in CFS, over three times larger. Similarly, FAF's estimated value and ton-miles ($451 billion and 159 billion, respectively) of these two commodity groupings were over two times larger than CFS's estimates. For many rural areas, truck is the main, and sometimes only, mode of transportation to move grain and agricultural products from farms and elevators to end markets. The inclusion of farm-based shipments more accurately estimates truck's contribution to the transportation system. The following section highlights observations from the truck freight data in FAF4, the latest version of the FAF.

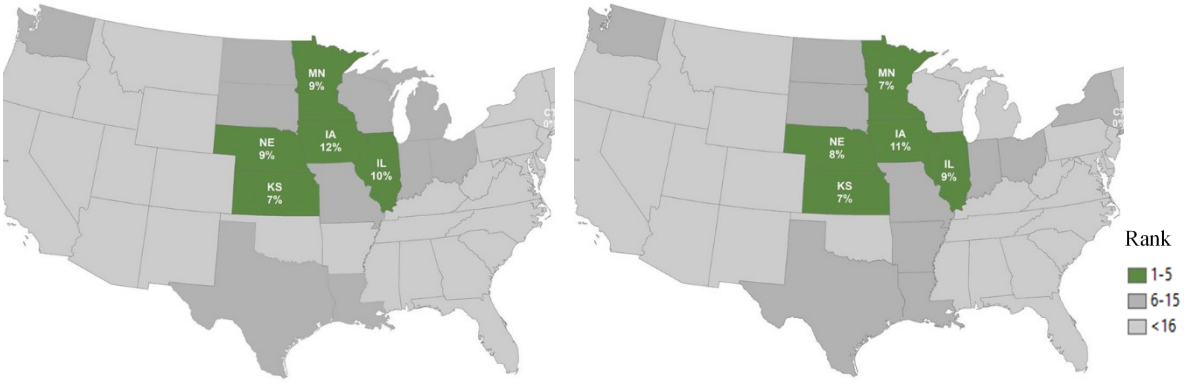
### Tonnage and Value by State

According to FAF data, most truck hauls of grain are in-State. For example, trucks hauled over 75 million tons within Iowa, over 69 million tons within Illinois, and over 59 million tons in Nebraska in 2012.[3] The largest out-of-state truck movements of grain were from Iowa to Minnesota (7 million tons), Iowa to Nebraska (6 million tons), and Nebraska to Kansas (4 million tons). Figure 1 shows States ranked by the tonnage and value of truck-hauled grain. The top five States for these grain shipments—Iowa (12 percent of total U.S. grain tonnage hauled by truck),

[1] USDA and U.S. Department of Transportation, Study of Rural Transportation Issues, Chapter 13.
[2] In this article, "grain" refers to SCTG (Standard Classification of Transported Goods) code 2, which includes cereal grains, such as corn, wheat, rice, barley, oats, and sorghum. "Agricultural products" refers to commodities under SCTG code 3, including fruit, vegetables, and oilseeds.
[3] As noted in Footnote 2, grain (SCTG code 2) does not include oilseeds.

Illinois (10 percent), Nebraska (9 percent), Minnesota (9 percent), and Kansas (7 percent)—are located in the Corn Belt and Upper Great Plains where much of the crops are produced. These States also have considerable ethanol capacity and livestock operations, which rely heavily on sourcing grain by truck. The total tonnage from these five States accounted for almost half of all domestic truck grain shipments. About 90 percent of the total truck tonnage in these five States consisted of intrastate, short-distance routes. A majority of the total value ($72 billion) from the top five States was also in-State grain truck shipments.

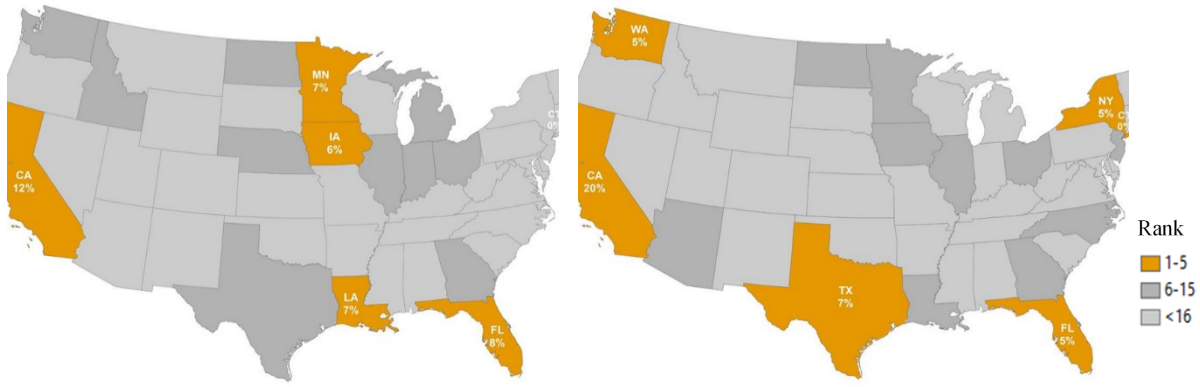
***Figure 1: Grain Shipments by Truck, Tonnage (Left) and Value (Right), 2012.***




Source: AMS-TSD analysis of FAF4 data. Percentages reflect each State's originated tonnage and value as a share of the total for SCTG code 2.

The top five States for agricultural product shipments—California, Florida, Louisiana, Minnesota, and Iowa—represented 40 percent of the total annual tonnage (Figure 2). About 81 percent were in-State shipments. Similarly, the top five States for truck shipments by value (California, Texas, Washington, Florida, and New York) accounted for about 41 percent of the total value, with 74 percent of shipments remaining in-State. Notably, California alone consisted of 12 percent of the total tonnage and 20 percent of the total value, mostly due to its high productivity in fruits and vegetables and its closeness to major seaports.

***Figure 2: Agricultural Products Shipments by Truck, Tonnage (Left) and Value (Right), 2012.***




Source: AMS-TSD analysis of FAF4 data. Percentages reflect each State's originated tonnage and value as a share of the total for SCTG code 3.

## Conclusions

Trucking is an important mode in the movement of grain and agricultural products. While CFS and FAF offer insight into the otherwise relatively limited availability of truck data, FAF provides more farm-level observations than CFS, making it more useful for analyzing agricultural truck movements. One major finding using FAF data is that many agricultural truck shipments stay within States. Although not described in this article, FAF can support additional applications and insights such as spatial analysis and flows, and examining trends over time, using FAF's projections at 5-year intervals through 2045. Overall, FAF data could be very helpful for stakeholders who want to estimate and understand truck tonnages and flows for agriculture.

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# Grain Transportation Indicators

Table 1

**Grain Transport Cost Indicators**[1]

| | Truck | Rail | | Barge | Ocean | |
|---|---|---|---|---|---|---|
| For the week ending | | Unit Train | Shuttle | | Gulf | Pacific |
| 04/04/18 | 204 | 275 | 239 | 310 | 201 | 174 |
| 03/28/18 | 202 | 275 | 234 | 271 | 202 | 174 |

[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 Programs/AMS/USDA

Table 2

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

| Commodity | Origin--Destination | 3/29/2018 | 3/23/2018 |
|---|---|---|---|
| Corn | IL--Gulf | -0.82 | -0.85 |
| Corn | NE--Gulf | -0.85 | -0.91 |
| Soybean | IA--Gulf | -1.21 | -1.19 |
| HRW | KS--Gulf | -2.05 | -2.10 |
| HRS | ND--Portland | -2.26 | -2.17 |

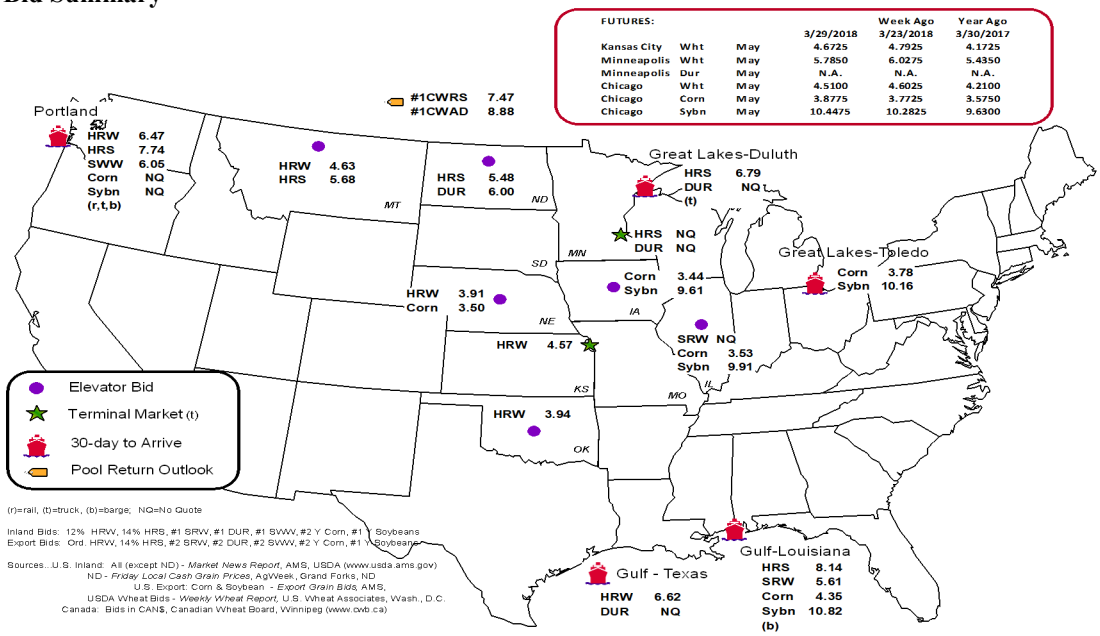
Note: nq = no quote; n/a = not available

Source: Transportation & Marketing Programs/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] |
|---|---|---|---|---|---|---|---|
| 03/28/2018[p] | 254 | 1,512 | 6,805 | 345 | 8,916 | 3/24/2018 | 1,753 |
| 03/21/2018[r] | 468 | 1,412 | 7,542 | 332 | 9,754 | 3/17/2018 | 1,706 |
| 2018 YTD[r] | 5,848 | 20,062 | 82,737 | 3,692 | 112,339 | 2018 YTD | 22,515 |
| 2017 YTD[r] | 11,684 | 25,800 | 81,195 | 8,475 | 127,154 | 2017 YTD | 26,287 |
| 2018 YTD as % of 2017 YTD | 50 | 78 | 102 | 44 | 88 | % change YTD | 86 |
| Last 4 weeks as % of 2017[2] | 34 | 77 | 112 | 67 | 94 | Last 4wks % 2017 | 85 |
| Last 4 weeks as % of 4-year avg.[2] | 55 | 95 | 124 | 61 | 109 | Last 4wks % 4 yr | 91 |
| Total 2017 | 28,766 | 76,045 | 289,178 | 21,999 | 415,988 | Total 2017 | 119,661 |
| Total 2016 | 36,925 | 87,863 | 299,606 | 29,007 | 453,401 | Total 2016 | 92,982 |

[1] Data is incomplete as it is voluntarily provided

[2] Compared with same 4-weeks in 2017 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.

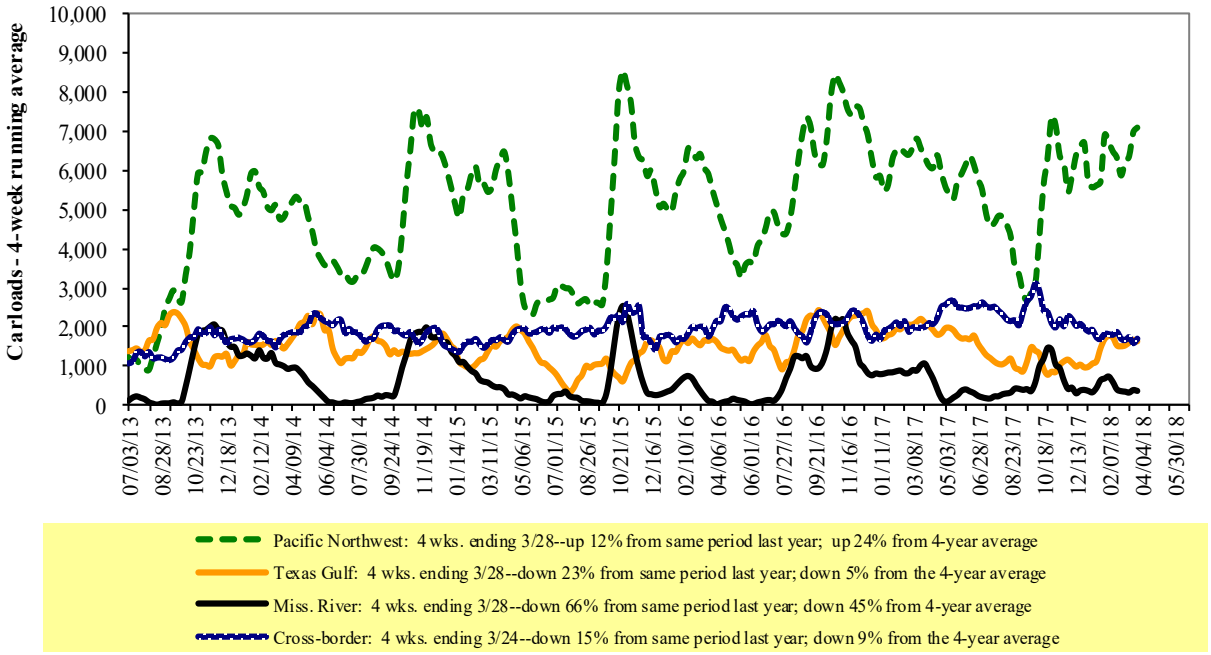
**YTD = year-to-date; p = preliminary data; r = revised data; n/a = not available**

Source: Transportation & Marketing Programs/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 Programs/AMS/USDA

Table 4

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

| For the week ending: | East | | West | | | U.S. total | Canada | |
|---|---|---|---|---|---|---|---|---|
| 3/24/2018 | CSXT | NS | BNSF | KCS | UP | | CN | CP |
| This week | 1,775 | 2,525 | 13,181 | 966 | 5,123 | 23,570 | 4,302 | 4,872 |
| This week last year | 1,545 | 3,300 | 11,823 | 883 | 5,763 | 23,314 | 3,779 | 4,089 |
| 2018 YTD | 21,815 | 29,175 | 142,165 | 11,212 | 61,834 | 266,201 | 41,551 | 51,288 |
| 2017 YTD | 23,220 | 34,142 | 134,422 | 12,068 | 74,533 | 278,385 | 46,461 | 49,747 |
| 2018 YTD as % of 2017 YTD | 94 | 85 | 106 | 93 | 83 | 96 | 89 | 103 |
| Last 4 weeks as % of 2017* | 110 | 89 | 109 | 84 | 84 | 99 | 92 | 110 |
| Last 4 weeks as % of 3-yr avg.** | 105 | 92 | 113 | 94 | 96 | 105 | 97 | 107 |
| Total 2017 | 89,465 | 142,823 | 578,964 | 50,223 | 289,574 | 1,151,049 | 198,623 | 244,766 |

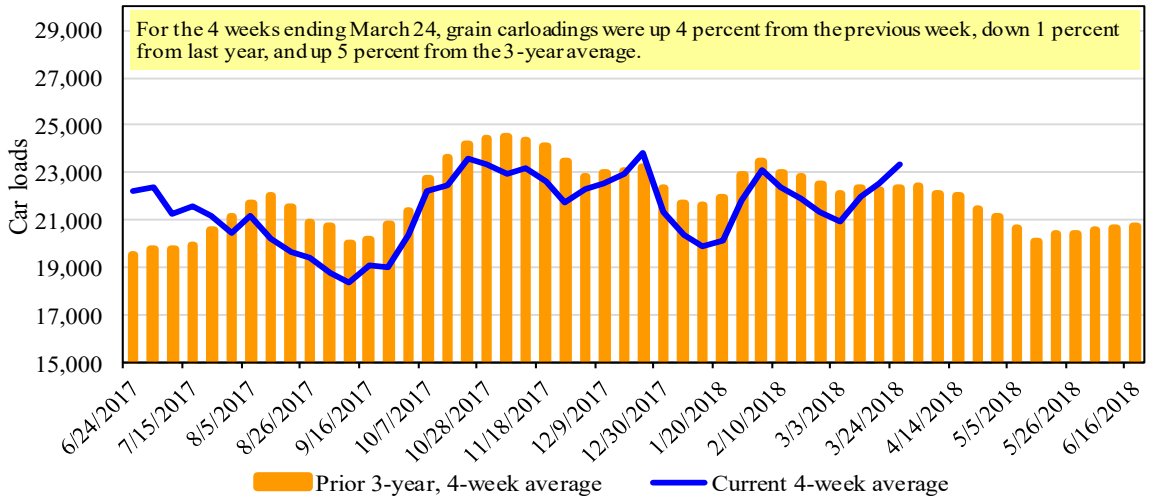
*The past 4 weeks of this year as a percent of the same 4 weeks last year.

**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 | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 3/29/2018 | | Apr-18 | Apr-17 | May-18 | May-17 | Jun-18 | Jun-17 | Jul-18 | Jul-17 |
| BNSF[3] | COT grain units | 66 | no bids | 0 | no bids | no bids | no bids | no bids | no bids |
| | COT grain single-car[5] | 1 | 0 | 0 | 3 | 0 | 3 | 0 | 3 |
| UP[4] | GCAS/Region 1 | no offer | no bids | no offer | no bids | 10 | no bids | n/a | n/a |
| | GCAS/Region 2 | no offer | no bids | no offer | no bids | 20 | 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.

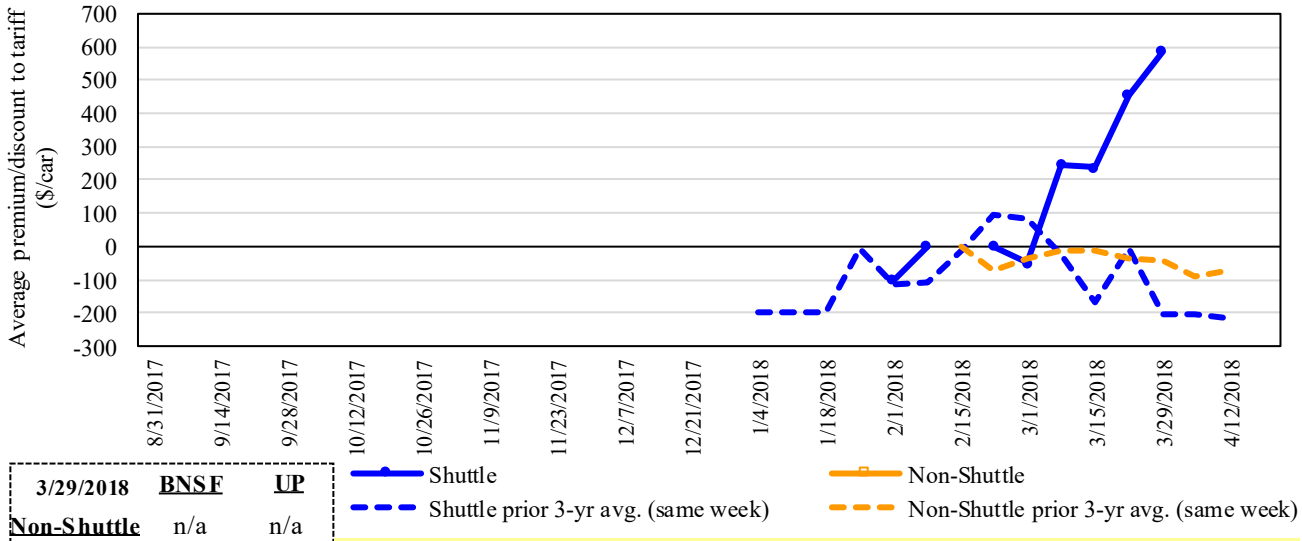
Region 2 includes: CO, IA, KS, MN, NE, WY, and Kansas City and St. Joseph, MO.

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

Source: Transportation & Marketing Programs/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 2018, Secondary Market**

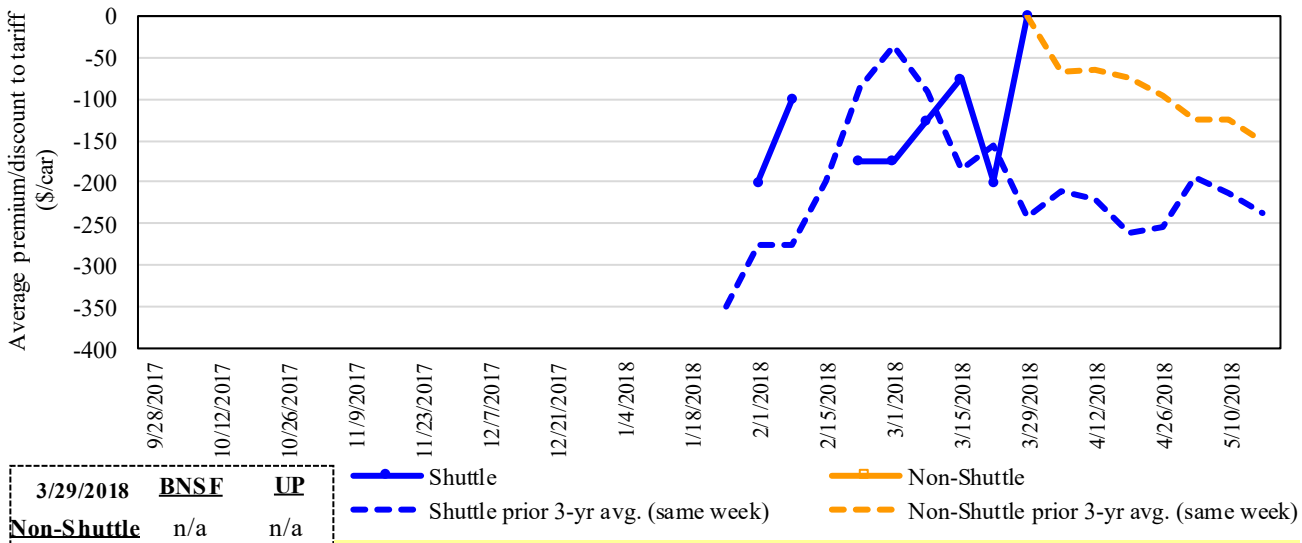



| 3/29/2018 | BNSF | UP |
|---|---|---|
| Non-Shuttle | n/a | n/a |
| Shuttle | $650 | $525 |

There were no Non-Shuttle bids/offers this week.
Average Shuttle bids/offers rose $131 this week and are at the peak.

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

Figure 5
**Bids/Offers for Railcars to be Delivered in May 2018, Secondary Market**



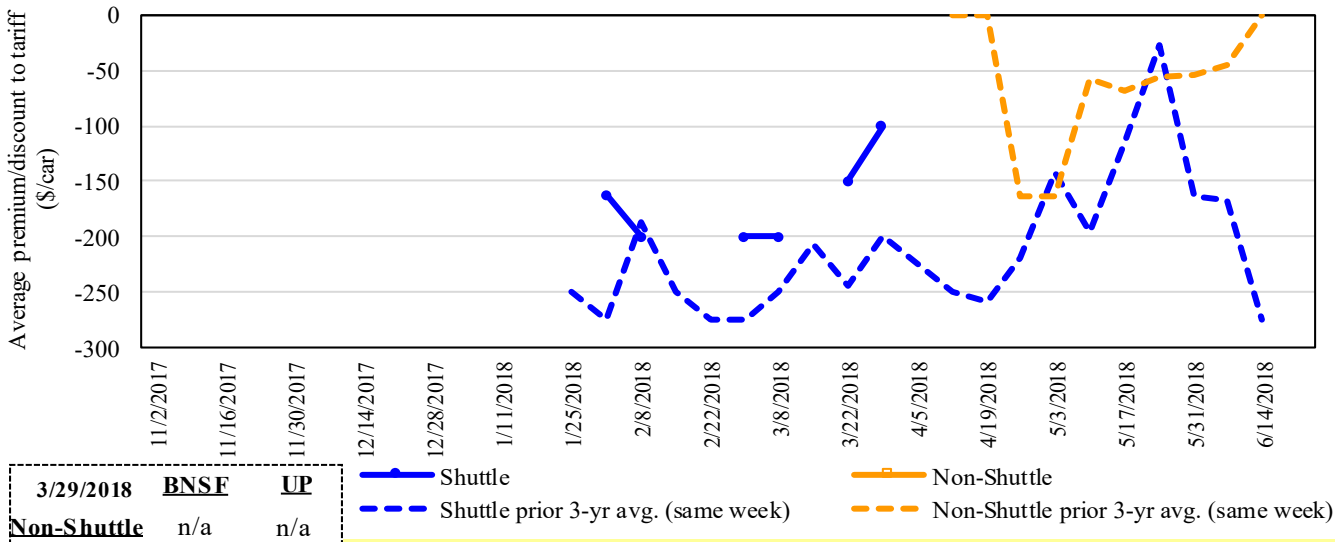

| 3/29/2018 | BNSF | UP |
|---|---|---|
| Non-Shuttle | n/a | n/a |
| Shuttle | n/a | $0 |

There were no Non-Shuttle bids/offers this week.
Average Shuttle bids/offers rose $200 this week and are at the peak.

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

Figure 6

**Bids/Offers for Railcars to be Delivered in June 2018, Secondary Market**




| 3/29/2018 | BNSF | UP |
|---|---|---|
| Non-Shuttle | n/a | n/a |
| Shuttle | n/a | -$100 |

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

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

Table 6

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

| | For the week ending: 3/29/2018 | Delivery period | | | | | |
|---|---|---|---|---|---|---|---|
| | | Apr-18 | May-18 | Jun-18 | Jul-18 | Aug-18 | Sep-18 |
| Non-shuttle | **BNSF-GF** | **n/a** | **n/a** | **n/a** | **n/a** | **n/a** | **n/a** |
| | Change from last week | n/a | n/a | n/a | n/a | n/a | n/a |
| | Change from same week 2017 | n/a | n/a | n/a | n/a | n/a | n/a |
| | **UP-Pool** | **n/a** | **n/a** | **n/a** | **n/a** | **n/a** | **n/a** |
| | Change from last week | n/a | n/a | n/a | n/a | n/a | n/a |
| | Change from same week 2017 | n/a | n/a | n/a | n/a | n/a | n/a |
| Shuttle | **BNSF-GF** | **650** | **n/a** | **n/a** | **n/a** | **n/a** | **n/a** |
| | Change from last week | 250 | n/a | n/a | n/a | n/a | n/a |
| | Change from same week 2017 | 892 | n/a | n/a | n/a | n/a | n/a |
| | **UP-Pool** | **525** | **0** | **(100)** | **(200)** | **n/a** | **n/a** |
| | Change from last week | 12 | 200 | 50 | (50) | n/a | n/a |
| | Change from same week 2017 | 925 | 375 | 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

Sources: Transportation and Marketing Programs/AMS/USDA

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

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]**

| April, 2018 | 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 | $3,883 | $96 | $39.51 | $1.08 | 4 |
| | Grand Forks, ND | Duluth-Superior, MN | $4,143 | $0 | $41.14 | $1.12 | 0 |
| | Wichita, KS | Los Angeles, CA | $7,050 | $0 | $70.01 | $1.91 | 1 |
| | Wichita, KS | New Orleans, LA | $4,540 | $169 | $46.76 | $1.27 | 5 |
| | Sioux Falls, SD | Galveston-Houston, TX | $6,786 | $0 | $67.39 | $1.83 | 1 |
| | Northwest KS | Galveston-Houston, TX | $4,816 | $185 | $49.66 | $1.35 | 5 |
| | Amarillo, TX | Los Angeles, CA | $5,021 | $258 | $52.42 | $1.43 | 5 |
| Corn | Champaign-Urbana, IL | New Orleans, LA | $3,931 | $191 | $40.93 | $1.04 | 9 |
| | Toledo, OH | Raleigh, NC | $6,344 | $0 | $63.00 | $1.60 | 5 |
| | Des Moines, IA | Davenport, IA | $2,258 | $40 | $22.82 | $0.58 | 1 |
| | Indianapolis, IN | Atlanta, GA | $5,446 | $0 | $54.08 | $1.37 | 5 |
| | Indianapolis, IN | Knoxville, TN | $4,540 | $0 | $45.08 | $1.15 | 5 |
| | Des Moines, IA | Little Rock, AR | $3,609 | $119 | $37.02 | $0.94 | 4 |
| | Des Moines, IA | Los Angeles, CA | $5,327 | $346 | $56.34 | $1.43 | 5 |
| Soybeans | Minneapolis, MN | New Orleans, LA | $4,131 | $186 | $42.87 | $1.17 | 17 |
| | Toledo, OH | Huntsville, AL | $5,287 | $0 | $52.50 | $1.43 | 5 |
| | Indianapolis, IN | Raleigh, NC | $6,460 | $0 | $64.15 | $1.75 | 5 |
| | Indianapolis, IN | Huntsville, AL | $4,764 | $0 | $47.31 | $1.29 | 5 |
| | Champaign-Urbana, IL | New Orleans, LA | $4,745 | $191 | $49.02 | $1.33 | 7 |
| **Shuttle Train** | | | | | | | |
| Wheat | Great Falls, MT | Portland, OR | $3,953 | $0 | $39.26 | $1.07 | 0 |
| | Wichita, KS | Galveston-Houston, TX | $4,171 | $0 | $41.42 | $1.13 | 2 |
| | Chicago, IL | Albany, NY | $5,663 | $0 | $56.24 | $1.53 | 3 |
| | Grand Forks, ND | Portland, OR | $5,611 | $0 | $55.72 | $1.52 | 0 |
| | Grand Forks, ND | Galveston-Houston, TX | $5,931 | $0 | $58.90 | $1.60 | 0 |
| | Northwest KS | Portland, OR | $5,812 | $304 | $60.73 | $1.65 | 5 |
| Corn | Minneapolis, MN | Portland, OR | $5,000 | $0 | $49.65 | $1.26 | 0 |
| | Sioux Falls, SD | Tacoma, WA | $4,960 | $0 | $49.26 | $1.25 | 0 |
| | Champaign-Urbana, IL | New Orleans, LA | $3,731 | $191 | $38.95 | $0.99 | 10 |
| | Lincoln, NE | Galveston-Houston, TX | $3,700 | $0 | $36.74 | $0.93 | 0 |
| | Des Moines, IA | Amarillo, TX | $3,970 | $150 | $40.91 | $1.04 | 4 |
| | Minneapolis, MN | Tacoma, WA | $5,000 | $0 | $49.65 | $1.26 | 0 |
| | Council Bluffs, IA | Stockton, CA | $4,820 | $0 | $47.86 | $1.22 | 2 |
| Soybeans | Sioux Falls, SD | Tacoma, WA | $5,600 | $0 | $55.61 | $1.51 | 0 |
| | Minneapolis, MN | Portland, OR | $5,650 | $0 | $56.11 | $1.53 | 0 |
| | Fargo, ND | Tacoma, WA | $5,500 | $0 | $54.62 | $1.49 | 0 |
| | Council Bluffs, IA | New Orleans, LA | $4,775 | $220 | $49.61 | $1.35 | 8 |
| | Toledo, OH | Huntsville, AL | $4,352 | $0 | $43.22 | $1.18 | 3 |
| | Grand Island, NE | Portland, OR | $5,710 | $311 | $59.79 | $1.63 | 7 |

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

[2]Approximate load per car = 111 short tons (100.7 metric tons): corn 56 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

Table 8

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

| Date: April, 2018 | | | | | | | |
|---|---|---|---|---|---|---|---|
| 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 | $7,459 | $0 | $76.21 | $2.07 | 0 |
| | OK | Cuautitlan, EM | $6,631 | $132 | $69.10 | $1.88 | 1 |
| | KS | Guadalajara, JA | $7,309 | $323 | $77.98 | $2.12 | 2 |
| | TX | Salinas Victoria, NL | $4,292 | $81 | $44.68 | $1.21 | 2 |
| Corn | IA | Guadalajara, JA | $8,313 | $293 | $87.93 | $2.23 | 2 |
| | SD | Celaya, GJ | $7,700 | $0 | $78.68 | $2.00 | 2 |
| | NE | Queretaro, QA | $8,013 | $278 | $84.72 | $2.15 | 3 |
| | SD | Salinas Victoria, NL | $6,743 | $0 | $68.90 | $1.75 | 2 |
| | MO | Tlalnepantla, EM | $7,379 | $271 | $78.16 | $1.98 | 3 |
| | SD | Torreon, CU | $7,300 | $0 | $74.59 | $1.89 | 2 |
| Soybeans | MO | Bojay (Tula), HG | $8,134 | $273 | $85.90 | $2.34 | -5 |
| | NE | Guadalajara, JA | $8,692 | $298 | $91.85 | $2.50 | -2 |
| | IA | El Castillo, JA | $8,960 | $0 | $91.55 | $2.49 | 0 |
| | KS | Torreon, CU | $7,489 | $219 | $78.75 | $2.14 | 1 |
| Sorghum | NE | Celaya, GJ | $7,345 | $271 | $77.82 | $1.97 | 3 |
| | KS | Queretaro, QA | $7,819 | $165 | $81.58 | $2.07 | 4 |
| | NE | Salinas Victoria, NL | $6,452 | $133 | $67.28 | $1.71 | 5 |
| | NE | Torreon, CU | $6,790 | $211 | $71.53 | $1.82 | 4 |

[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

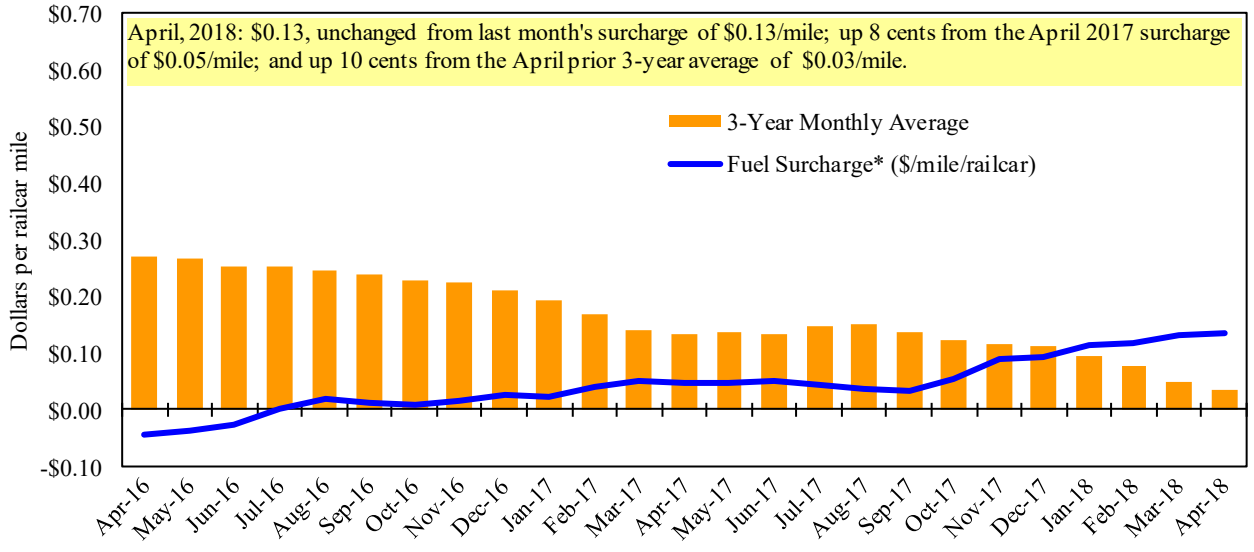
[3]Approximate load per car = 97.87 metric tons: Corn & Sorghum 56 lbs/bu, Wheat & Soybeans 60 lbs/bu

[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.

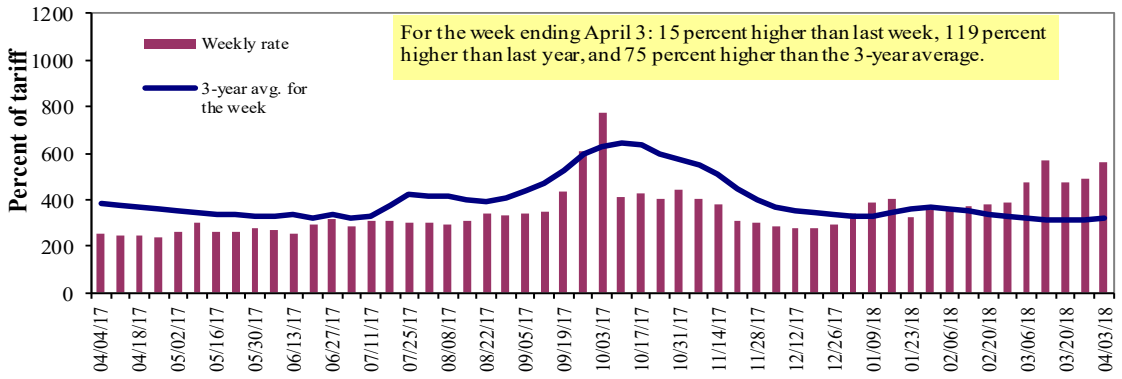
* Beginning January 2009, the Canadian Pacific fuel surcharge is computed by a monthly average of the bi-weekly fuel surcharge.

**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 Programs/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]** | 4/3/2018 | - | 575 | 558 | 495 | 525 | 525 | 403 |
| | 3/27/2018 | - | 485 | 488 | 385 | 513 | 513 | 388 |
| **$/ton** | 4/3/2018 | - | 30.59 | 25.89 | 19.75 | 24.62 | 21.21 | 12.65 |
| | 3/27/2018 | - | 25.80 | 22.64 | 15.36 | 24.06 | 20.73 | 12.18 |
| **Current week % change from the same week:** | | | | | | | | |
| | Last year | - | 125 | 119 | 175 | 176 | 176 | 142 |
| | 3-year avg. [2] | - | 99 | 75 | 103 | 110 | 110 | 91 |
| **Rate[1]** | May | 513 | 492 | 467 | 392 | 417 | 417 | 342 |
| | July | 488 | 443 | 422 | 342 | 363 | 363 | 298 |

[1]Rate = percent of 1976 tariff benchmark index (1976 = 100 percent); [2]4-week moving average; ton = 2,000 pounds; "-" = closed
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.

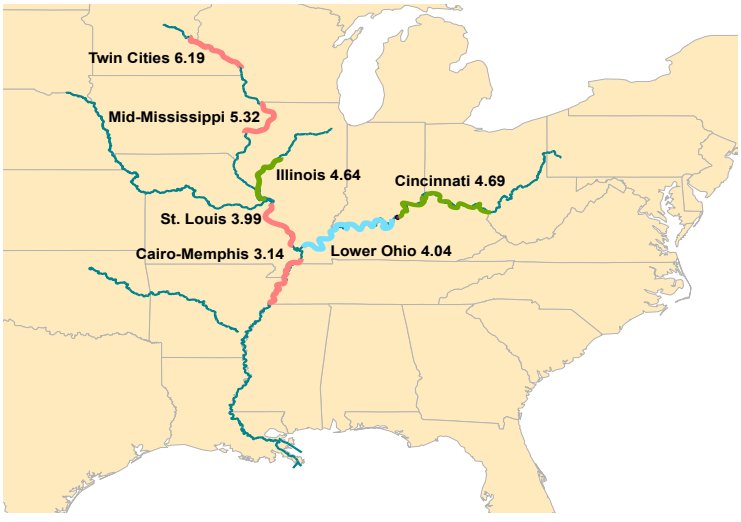
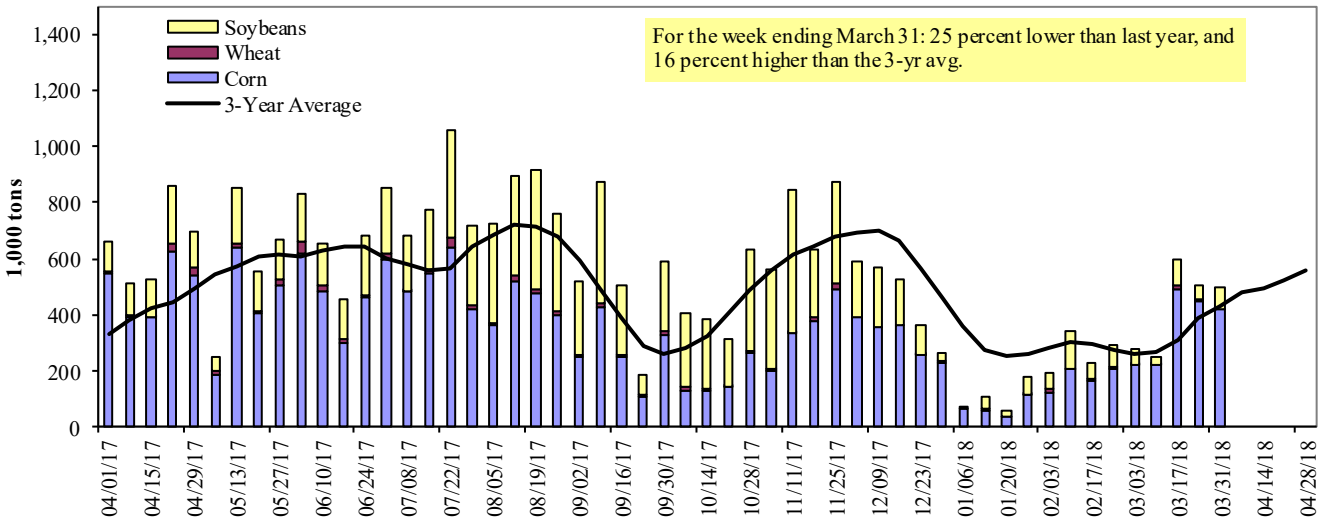


Figure 10

## 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 03/31/2018 | Corn | Wheat | Soybeans | Other | Total |
|---|---|---|---|---|---|
| **Mississippi River** | | | | | |
| Rock Island, IL (L15) | 40 | 5 | 9 | 0 | 54 |
| Winfield, MO (L25) | 121 | 0 | 25 | 0 | 146 |
| Alton, IL (L26) | 403 | 0 | 63 | 0 | 466 |
| Granite City, IL (L27) | 423 | 0 | 77 | 3 | 503 |
| **Illinois River (L8)** | 246 | 0 | 33 | 0 | 279 |
| **Ohio River (L52)** | 97 | 2 | 80 | 0 | 179 |
| **Arkansas River (L1)** | 6 | 6 | 4 | 0 | 15 |
| | | | | | |
| Weekly total - 2018 | 526 | 7 | 161 | 3 | 697 |
| Weekly total - 2017 | 646 | 32 | 172 | 0 | 851 |
| 2018 YTD[1] | 4,025 | 374 | 2,757 | 45 | 7,201 |
| 2017 YTD | 5,814 | 503 | 3,519 | 128 | 9,964 |
| 2018 as % of 2017 YTD | 69 | 74 | 78 | 35 | 72 |
| Last 4 weeks as % of 2017[2] | 79 | 80 | 77 | 205 | 79 |
| Total 2017 | 22,242 | 2,210 | 16,123 | 360 | 40,936 |

[1] Weekly total, YTD (year-to-date) and calendar year total includes Miss/27, Ohio/52, and Ark/1; "Other" refers to oats, barley, sorghum, and rye.

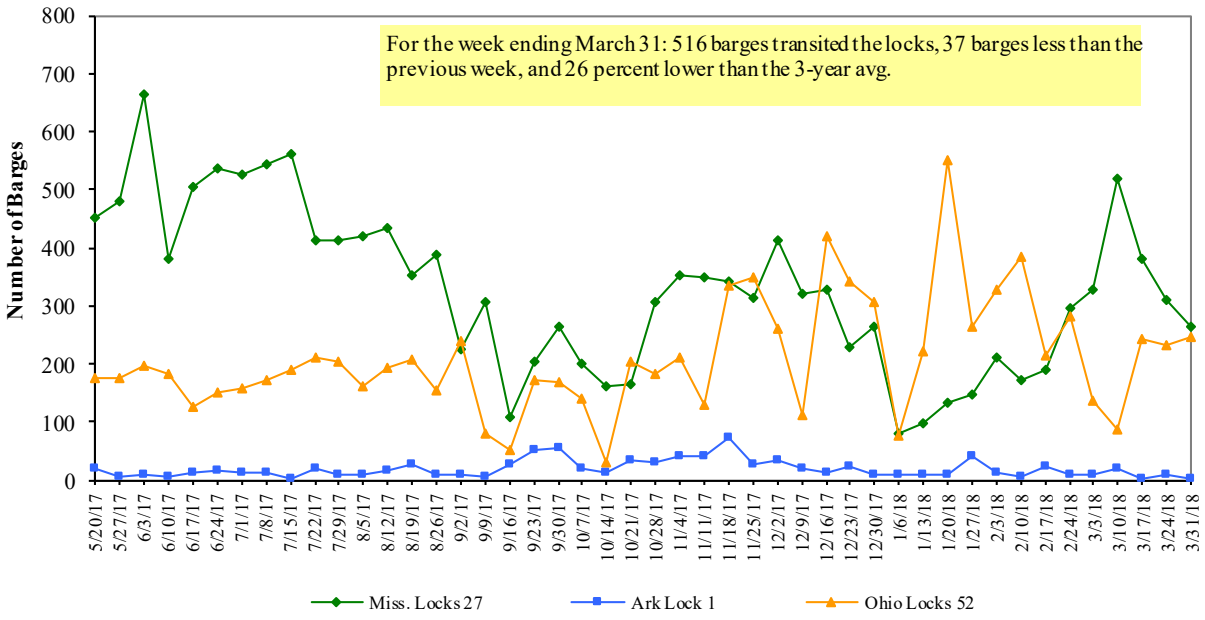
[2] As a percent of same period in 2017.

Note: Total may not add exactly, due to rounding.

Source: U.S. Army Corps of Engineers

Figure 11

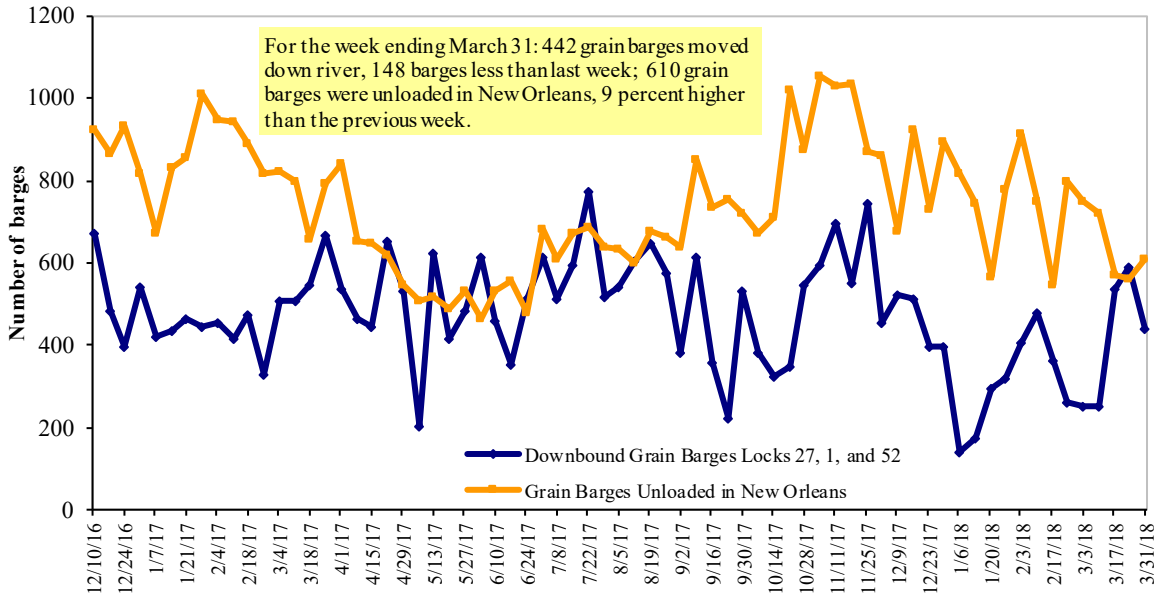
**Upbound Empty Barges Transiting Mississippi River Locks 27, Arkansas River Lock and Dam 1, and Ohio River Locks and Dam 52**




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 4/2/2018 (US $/gallon)**

| Region | Location | Price | Change from Week ago | Change from Year ago |
|---|---|---|---|---|
| I | East Coast | 3.066 | 0.028 | 0.461 |
| | New England | 3.112 | -0.003 | 0.482 |
| | Central Atlantic | 3.233 | 0.016 | 0.494 |
| | Lower Atlantic | 2.938 | 0.040 | 0.433 |
| II | Midwest[2] | 2.962 | 0.028 | 0.481 |
| III | Gulf Coast[3] | 2.851 | 0.028 | 0.437 |
| IV | Rocky Mountain | 3.044 | 0.053 | 0.421 |
| V | West Coast | 3.487 | 0.049 | 0.648 |
| | West Coast less California | 3.202 | 0.055 | 0.467 |
| | California | 3.714 | 0.045 | 0.791 |
| Total | U.S. | 3.042 | 0.032 | 0.486 |

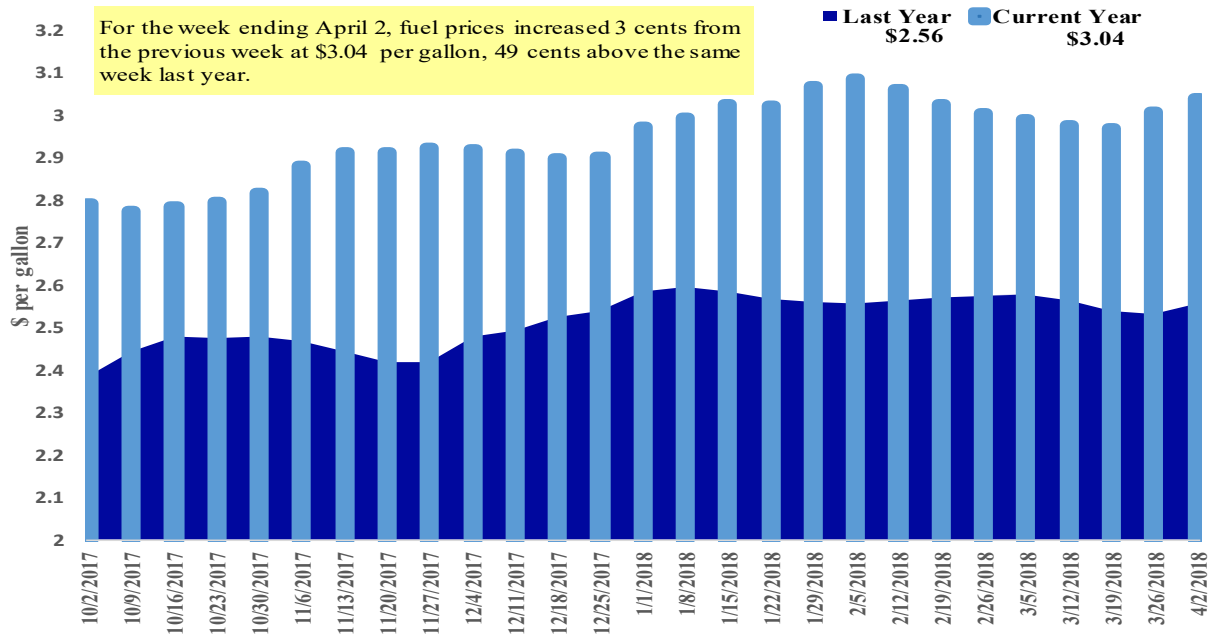
[1]Diesel fuel prices include all taxes. Prices represent an average of all types of diesel fuel.

[2]Same as North Central [3]Same as South Central

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] | | | | | | | | | |
| 3/22/2018 | 1,230 | 562 | 1,429 | 1,059 | 66 | 4,346 | 23,491 | 9,352 | 37,189 |
| This week year ago | 2,089 | 524 | 1,949 | 1,332 | 76 | 5,969 | 16,893 | 8,026 | 30,889 |
| **Cumulative exports-marketing year**[2] | | | | | | | | | |
| 2017/18 YTD | 7,709 | 1,832 | 4,515 | 4,099 | 308 | 18,463 | 22,964 | 40,999 | 82,425 |
| 2016/17 YTD | 8,696 | 1,832 | 6,199 | 3,184 | 369 | 20,280 | 30,530 | 46,644 | 97,454 |
| YTD 2017/18 as % of 2016/17 | 89 | 100 | 73 | 129 | 84 | 91 | 75 | 88 | 85 |
| Last 4 wks as % of same period 2016/17 | 62 | 118 | 73 | 78 | 116 | 75 | 137 | 118 | 120 |
| 2016/17 Total | 11,096 | 2,285 | 7,923 | 4,254 | 484 | 26,042 | 41,864 | 51,156 | 119,062 |
| 2015/16 Total | 5,538 | 3,057 | 6,285 | 3,551 | 670 | 19,101 | 45,564 | 49,821 | 114,486 |

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

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

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 3/22/2018 | Total Commitments[2] 2017/18 Current MY | Total Commitments[2] 2016/17 Last MY | % change current MY from last MY | Exports[3] 3-year avg 2014-2016 |
|---|---|---|---|---|
| | - 1,000 mt - | | | |
| Mexico | 11,897 | 11,629 | 2 | 12,297 |
| Japan | 8,375 | 8,911 | (6) | 11,450 |
| Korea | 3,646 | 4,657 | (22) | 4,494 |
| Colombia | 3,153 | 3,488 | (10) | 4,179 |
| Peru | 2,387 | 2,410 | (1) | 2,693 |
| **Top 5 Importers** | **29,458** | **31,095** | **(5)** | **35,113** |
| **Total US corn export sales** | **46,455** | **47,424** | **(2)** | **49,308** |
| % of Projected | 82% | 81% | | |
| Change from prior week[2] | **1,353** | **717** | | |
| **Top 5 importers' share of U.S. corn export sales** | 63% | 66% | | 71% |
| **USDA forecast, March 2018** | **56,616** | **58,346** | **(3)** | |
| **Corn Use for Ethanol USDA forecast, March 2018** | **141,605** | **137,973** | **3** | |

[1]Based on FAS Marketing Year Ranking Reports for 2016/17 - 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 3/22/2018 | Total Commitments[2] 2017/18 Current MY | 2016/17 Last MY | % change current MY from last MY | Exports[3] 3-yr avg. 2014-2016 |
|---|---|---|---|---|
| | - 1,000 mt - | | | - 1,000 mt - |
| China | 28,537 | 34,847 | (18) | 31,881 |
| Mexico | 3,624 | 3,246 | 12 | 3,452 |
| Indonesia | 1,574 | 1,617 | (3) | 1,987 |
| Japan | 1,728 | 1,775 | (3) | 2,067 |
| Netherlands | 1,109 | 1,176 | (6) | 2,098 |
| **Top 5 importers** | **36,571** | **42,661** | **(14)** | **41,486** |
| **Total US soybean export sales** | **50,351** | **54,670** | **(8)** | **52,919** |
| % of Projected | 89% | 92% | | |
| Change from prior week[2] | **317** | **681** | | |
| **Top 5 importers' share of U.S. soybean export sales** | 73% | 78% | | **78%** |
| **USDA forecast, March 2018** | **56,267** | **59,237** | **95** | |

(n) indicates negative number.

[1] Based on FAS Marketing Year Ranking Reports for 2016/17 - 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 3/22/2018 | Total Commitments[2] 2017/18 Current MY | 2016/17 Last MY | % change current MY from last MY | Exports[3] 3-yr avg 2014-2016 |
|---|---|---|---|---|
| | - 1,000 mt - | | | - 1,000 mt - |
| Japan | 2,771 | 2,497 | 11 | 2,620 |
| Mexico | 2,773 | 3,007 | (8) | 2,743 |
| Philippines | 2,511 | 2,534 | (1) | 2,395 |
| Brazil | 111 | 1,184 | (91) | 862 |
| Nigeria | 1,187 | 1,380 | (14) | 1,254 |
| Korea | 1,419 | 1,186 | 20 | 1,104 |
| China | 926 | 1,233 | (25) | 1,623 |
| Taiwan | 1,106 | 940 | 18 | 768 |
| Indonesia | 1,214 | 1,005 | 21 | 726 |
| Colombia | 606 | 781 | (22) | 635 |
| **Top 10 importers** | **14,623** | **15,746** | (7) | **14,729** |
| **Total US wheat export sales** | **22,809** | **26,249** | **(13)** | **22,804** |
| % of Projected | 90% | 91% | | |
| Change from prior week[2] | **354** | **464** | | |
| **Top 10 importers' share of U.S. wheat export sales** | 64% | 60% | | 65% |
| **USDA forecast, March 2018** | **25,204** | **28,747** | **(12)** | |

(n) indicates negative number.

[1] Based on FAS Marketing Year Ranking Reports for 2016/17 - 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 03/29/18 | Previous Week* | Current Week as % of Previous | 2018 YTD* | 2017 YTD* | 2018 YTD as % of 2017 YTD | Last 4-weeks as % of: Last Year | Last 4-weeks as % of: Prior 3-yr. avg. | 2017 Total* |
|---|---|---|---|---|---|---|---|---|---|
| **Pacific Northwest** | | | | | | | | | |
| Wheat | 218 | 146 | 150 | 2,679 | 3,270 | 82 | 72 | 86 | 14,805 |
| Corn | 606 | 541 | 112 | 4,414 | 3,567 | 124 | 142 | 183 | 10,928 |
| Soybeans | 209 | 144 | 145 | 3,589 | 3,257 | 110 | 180 | 130 | 13,246 |
| **Total** | **1,033** | **831** | **124** | **10,682** | **10,094** | **106** | **121** | **137** | **38,978** |
| **Mississippi Gulf** | | | | | | | | | |
| Wheat | 89 | 103 | 86 | 1,106 | 1,146 | 97 | 101 | 104 | 4,198 |
| Corn | 589 | 531 | 111 | 7,008 | 10,170 | 69 | 72 | 99 | 28,690 |
| Soybeans | 179 | 438 | 41 | 7,533 | 8,718 | 86 | 75 | 97 | 32,911 |
| **Total** | **857** | **1,072** | **80** | **15,648** | **20,034** | **78** | **74** | **99** | **65,800** |
| **Texas Gulf** | | | | | | | | | |
| Wheat | 55 | 75 | 74 | 1,213 | 1,650 | 74 | 46 | 69 | 6,354 |
| Corn | 0 | 32 | 0 | 131 | 268 | 49 | 56 | 48 | 733 |
| Soybeans | 0 | 0 | n/a | 0 | 0 | n/a | n/a | n/a | 292 |
| **Total** | **55** | **107** | **52** | **1,344** | **1,918** | **70** | **47** | **66** | **7,379** |
| **Interior** | | | | | | | | | |
| Wheat | 19 | 4 | 520 | 378 | 483 | 78 | 50 | 70 | 1,727 |
| Corn | 131 | 203 | 64 | 1,721 | 1,755 | 98 | 94 | 110 | 8,758 |
| Soybeans | 107 | 147 | 73 | 1,464 | 1,311 | 112 | 149 | 168 | 5,508 |
| **Total** | **256** | **354** | **72** | **3,563** | **3,549** | **100** | **105** | **124** | **15,993** |
| **Great Lakes** | | | | | | | | | |
| Wheat | 0 | 0 | n/a | 19 | 8 | 251 | 0 | 0 | 711 |
| Corn | 0 | 0 | n/a | 0 | 0 | n/a | n/a | n/a | 192 |
| Soybeans | 0 | 0 | n/a | 0 | 0 | n/a | n/a | n/a | 890 |
| **Total** | **0** | **0** | **n/a** | **19** | **8** | **251** | **0** | **0** | **1,793** |
| **Atlantic** | | | | | | | | | |
| Wheat | 0 | 35 | 0 | 64 | 36 | 176 | n/a | 192 | 46 |
| Corn | 0 | 0 | n/a | 0 | 5 | 0 | 0 | 0 | 32 |
| Soybeans | 76 | 18 | 432 | 582 | 660 | 88 | 135 | 96 | 2,001 |
| **Total** | **76** | **52** | **145** | **646** | **701** | **92** | **188** | **108** | **2,079** |
| **U.S. total from ports*** | | | | | | | | | |
| Wheat | 381 | 362 | 105 | 5,459 | 6,594 | 83 | 70 | 86 | 27,841 |
| Corn | 1,325 | 1,307 | 101 | 13,275 | 15,765 | 84 | 92 | 122 | 49,333 |
| Soybeans | 571 | 747 | 76 | 13,168 | 13,946 | 94 | 105 | 115 | 54,847 |
| **Total** | **2,277** | **2,416** | **94** | **31,903** | **36,304** | **88** | **90** | **112** | **132,021** |

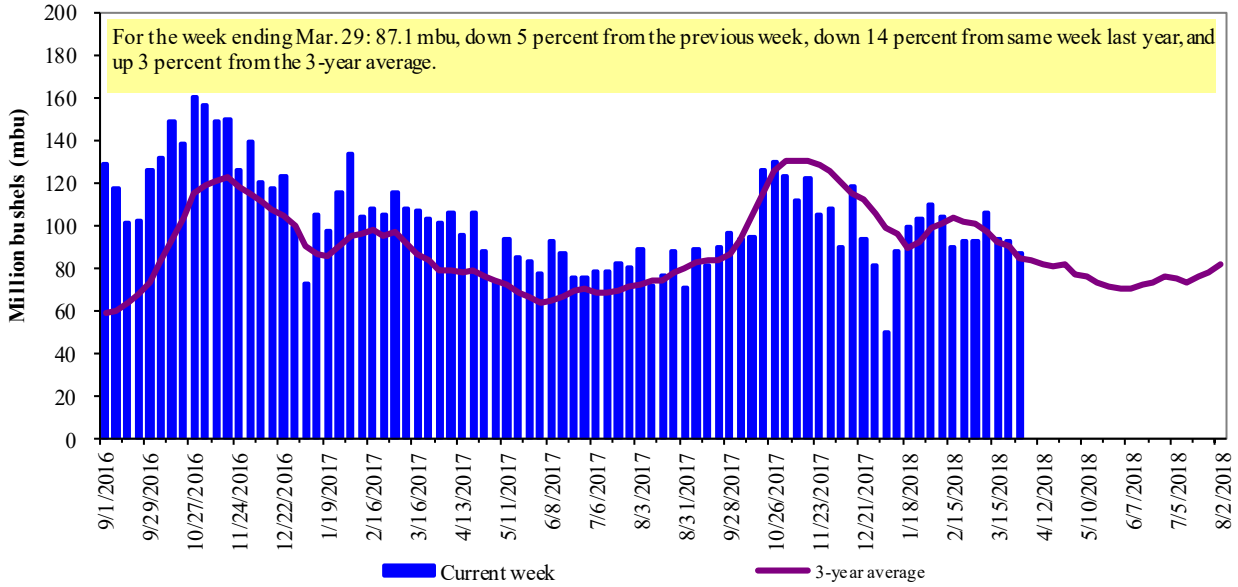
*Data includes revisions from prior weeks; some regional totals may not add exactly due to rounding.

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, 35 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

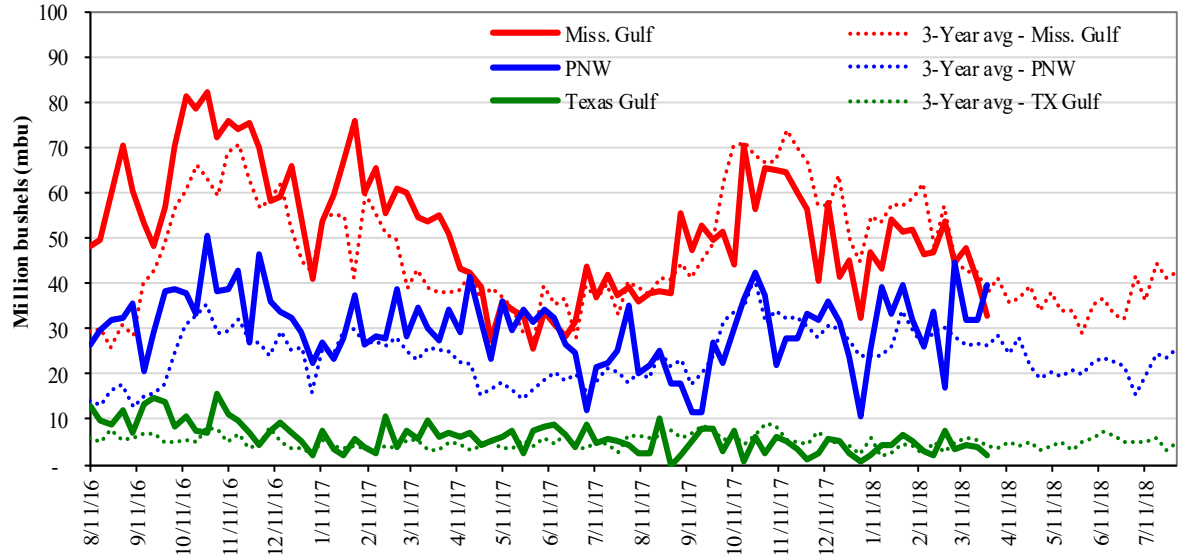
**U.S. grain inspected for export (wheat, corn, and soybeans)**




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 03/29/18 inspections (mbu): | |
|---|---|
| Mississippi Gulf: | 33.0 |
| PNW: | 39.5 |
| Texas Gulf: | 2.0 |

| Percent change from: | MS Gulf | TX Gulf | U.S. Gulf | PNW |
|---|---|---|---|---|
| Last Week: | down 19 | down 50 | down 22 | up 24 |
| Last Year (same week): | down 40 | down 68 | down 43 | up 43 |
| 3-yr avg. (4-wk.mov. Avg): | down 21 | down 61 | down 26 | up 47 |

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

# Ocean Transportation

Table 17

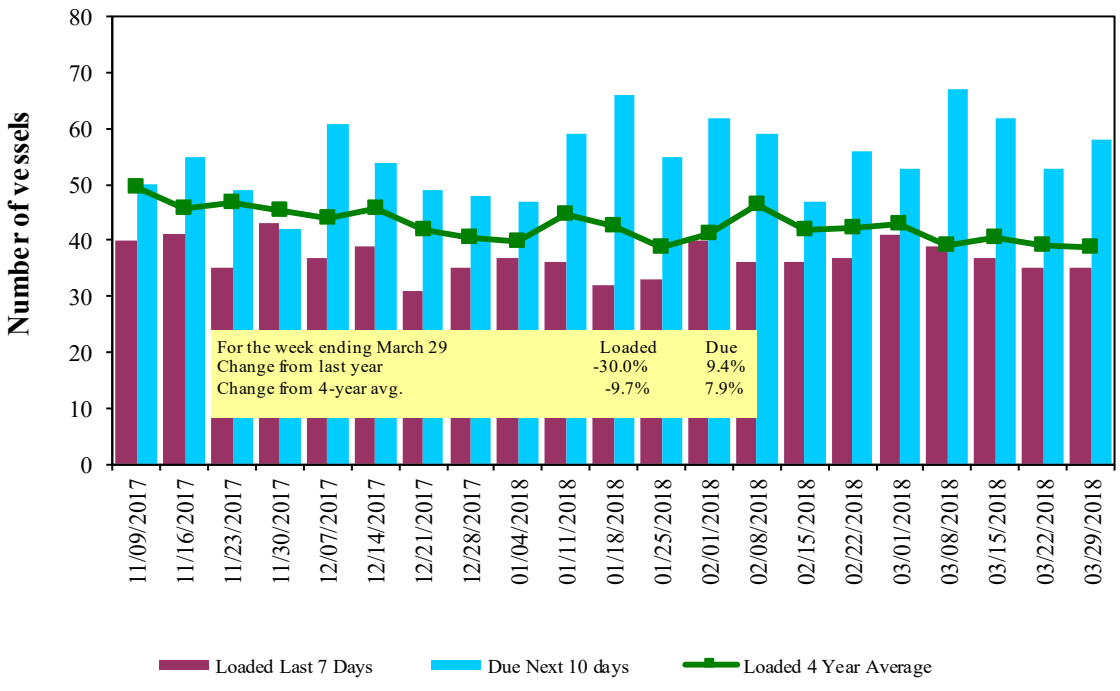
**Weekly Port Region Grain Ocean Vessel Activity (number of vessels)**

| | Gulf | | | Pacific Northwest |
|---|---|---|---|---|
| Date | In port | Loaded 7-days | Due next 10-days | In port |
| 3/29/2018 | 52 | 35 | 58 | 22 |
| 3/22/2018 | 54 | 35 | 53 | 23 |
| 2017 range | (25..66) | (28..54) | (37..87) | (5..44) |
| 2017 avg. | 46 | 38 | 56 | 20 |

Source: Transportation & Marketing Programs/AMS/USDA

Figure 16

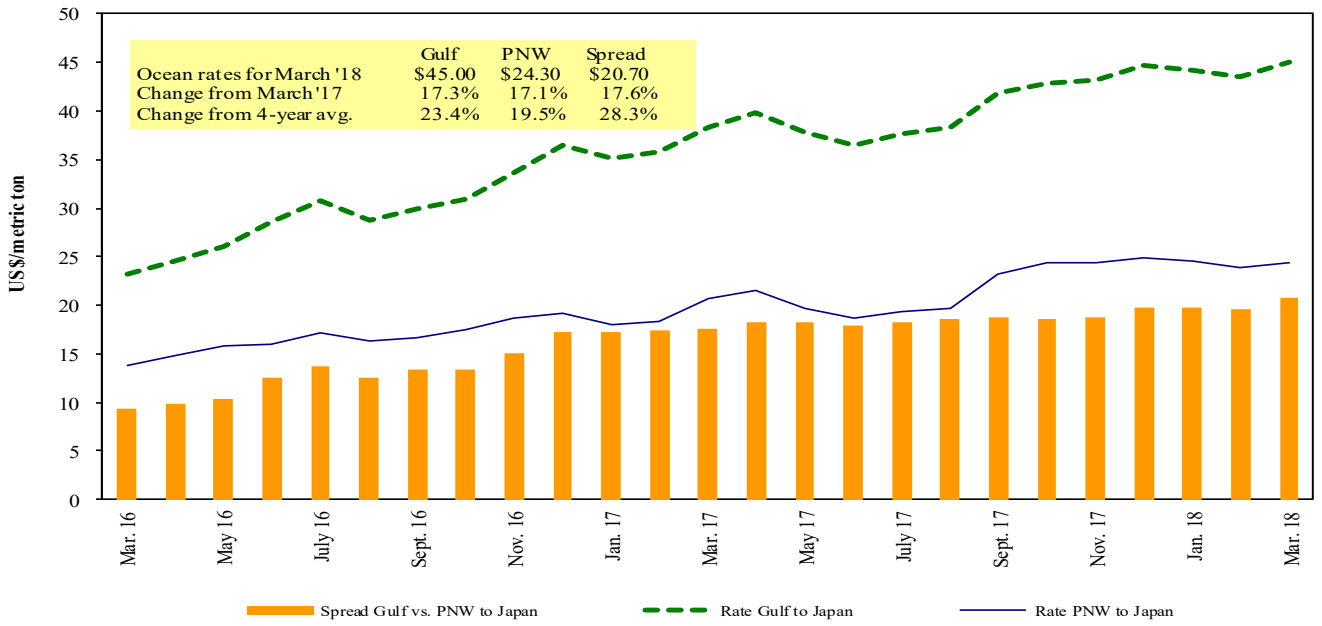
**U.S. Gulf Vessel Loading Activity**




Source:Transportation & Marketing Programs/AMS/USDA
[1]U.S. Gulfincludes 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 03/31/2018**

| Export region | Import region | Grain types | Loading date | Volume loads (metric tons) | Freight rate (US$/metric ton) |
|---|---|---|---|---|---|
| U.S. Gulf | China | Heavy Grain | Jan 1/10 | 60,000 | 45.50 |
| U.S. Gulf | Djibouti | Sorghum | Apr 16/26 | 18,200 | 69.87* |
| U.S. Gulf | Rotterdam | Heavy Grain | Apr 17/30 | 65,000 | 21.00 |
| U.S. Gulf | Somalia | Sorghum | Apr 16/26 | 40,000 | 130.77* |
| PNW | Bangladesh | Wheat | Apr 6/16 | 43,500 | 46.61* |
| Brazil | China | Heavy Grain | May 3/31 | 60,000 | 35.50 |
| Brazil | China | Heavy Grain | Apr 3/12 | 66,000 | 36.25 |
| Brazil | China | Heavy Grain | Mar 12/21 | 66,000 | 32.00 |
| Brazil | China | Heavy Grain | Mar 1/10 | 66,000 | 30.00 |
| EC S. America | China | Heavy Grain | Mar 15/24 | 60,000 | 33.50 |
| France | Morocco | Heavy Grain | Jan 6/12 | 30,000 | 15.00 |
| Portugal | China | Heavy Grain | Feb 10 | 65,000 | 38.00 |

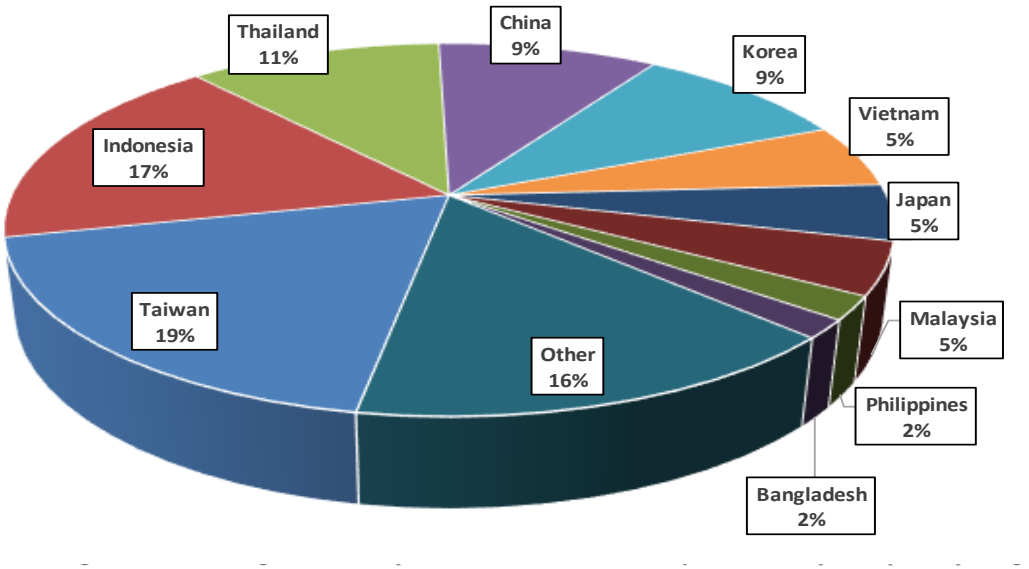
Rates shown are per metric ton (2,204.62 lbs. = 1 metric ton), F.O.B., except where otherwise indicated; op = option

*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.

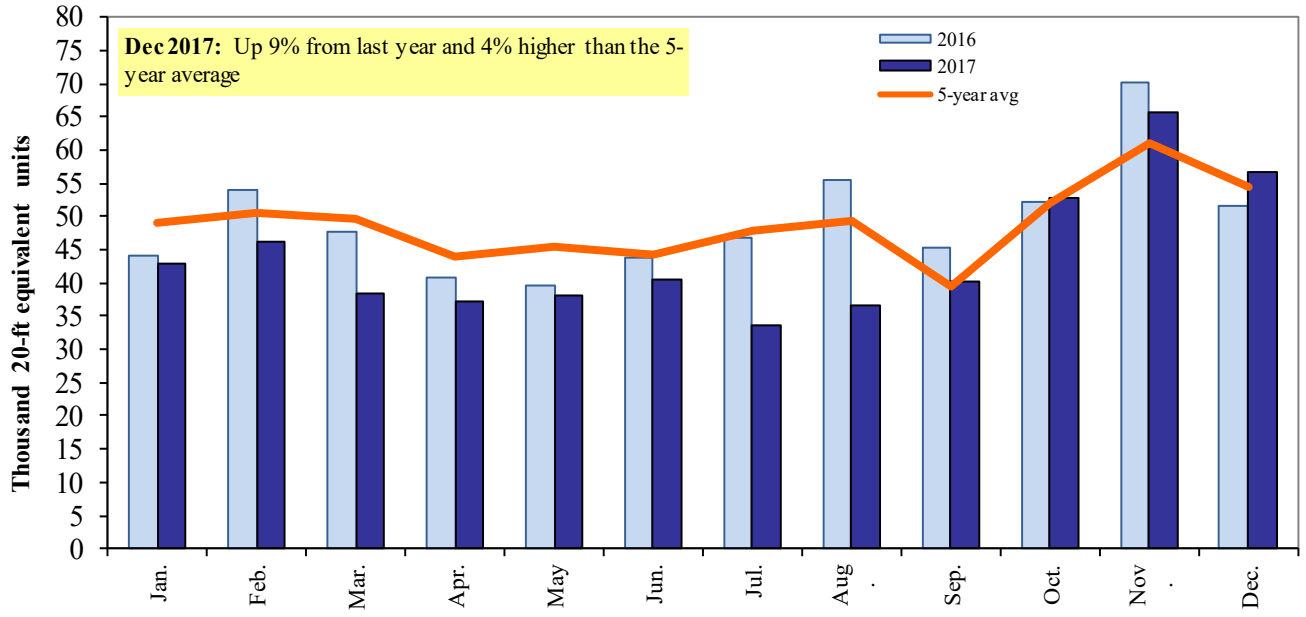
Figure 18
**Top 10 Destination Markets for U.S. Containerized Grain Exports, January-December 2017**




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.

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