

# *What's Moving on the Waterways?*

## Commodities Panel

November 3, 2021



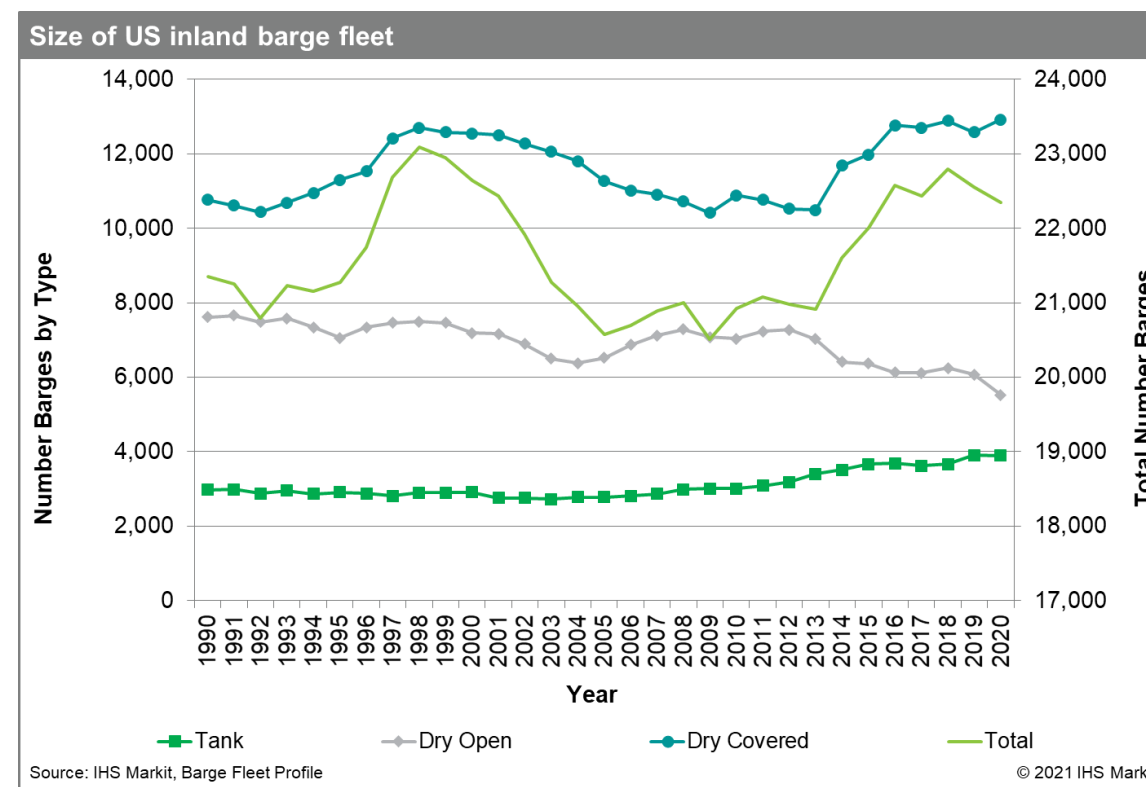
## Charting the Course

- **Ken Eriksen, Senior Vice President, IHS Markit – Moderator, Barge Situation and Outlook**
- **Kristin Beck, Senior Vice President, LafargeHolcim – Cement**
- **Jake Brodbeck, Vice President, ARTCo – Agriculture**

# Barge Situation and Outlook

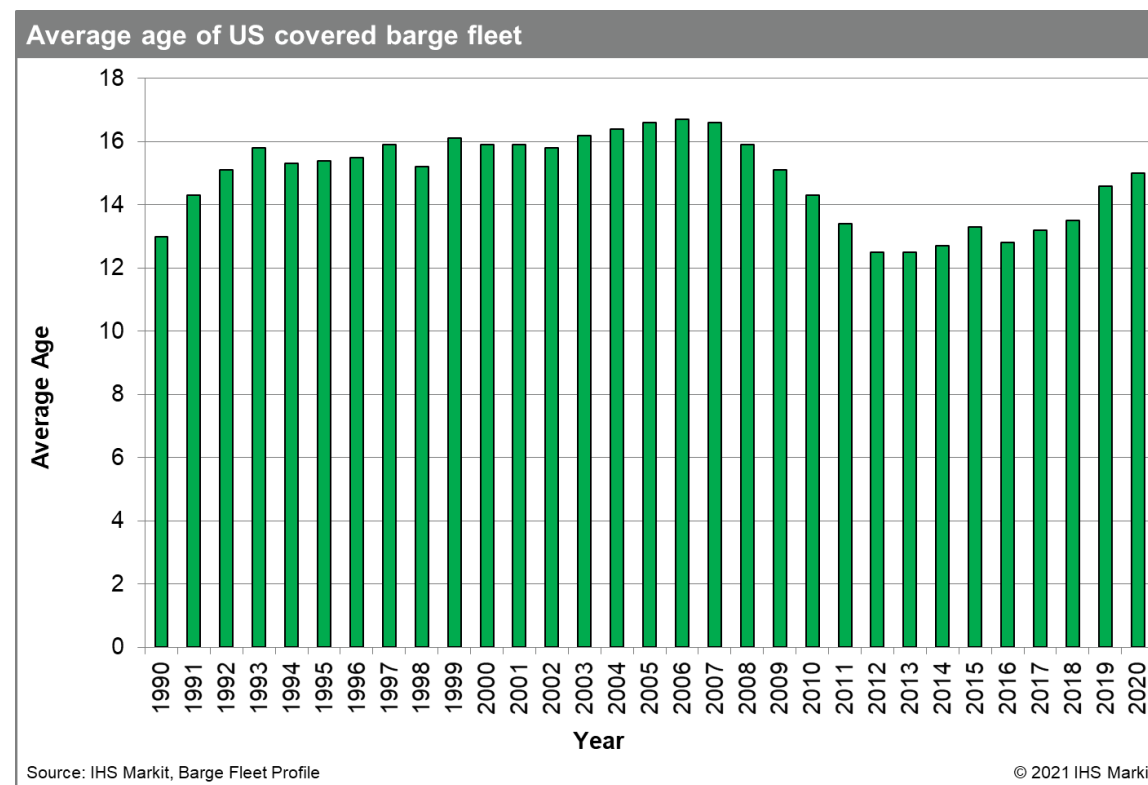
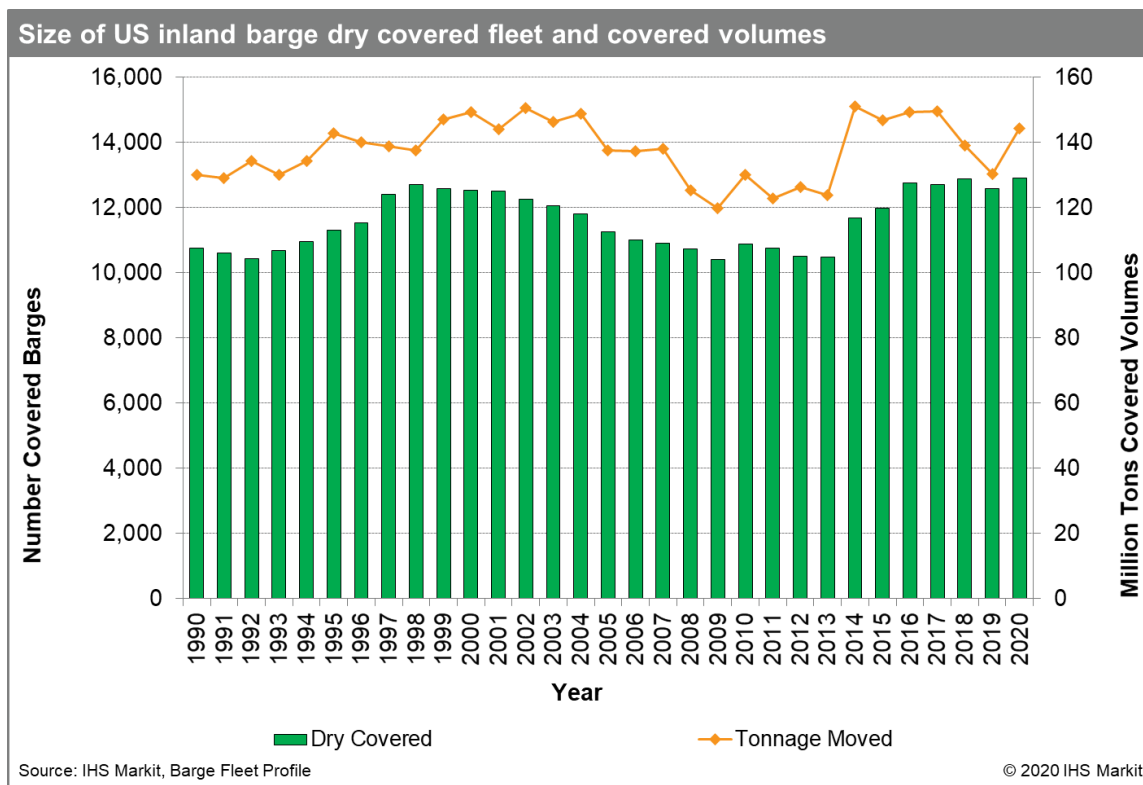
## 2020 inland barge fleet contracted on back of open dry fleet

- Total fleet contracted nearly 1% during 2020
- Open fleet shrinking fast with demise of coal
- Covered fleet expanded to record level, shy of 13,000 barges
- Tank fleet slightly smaller

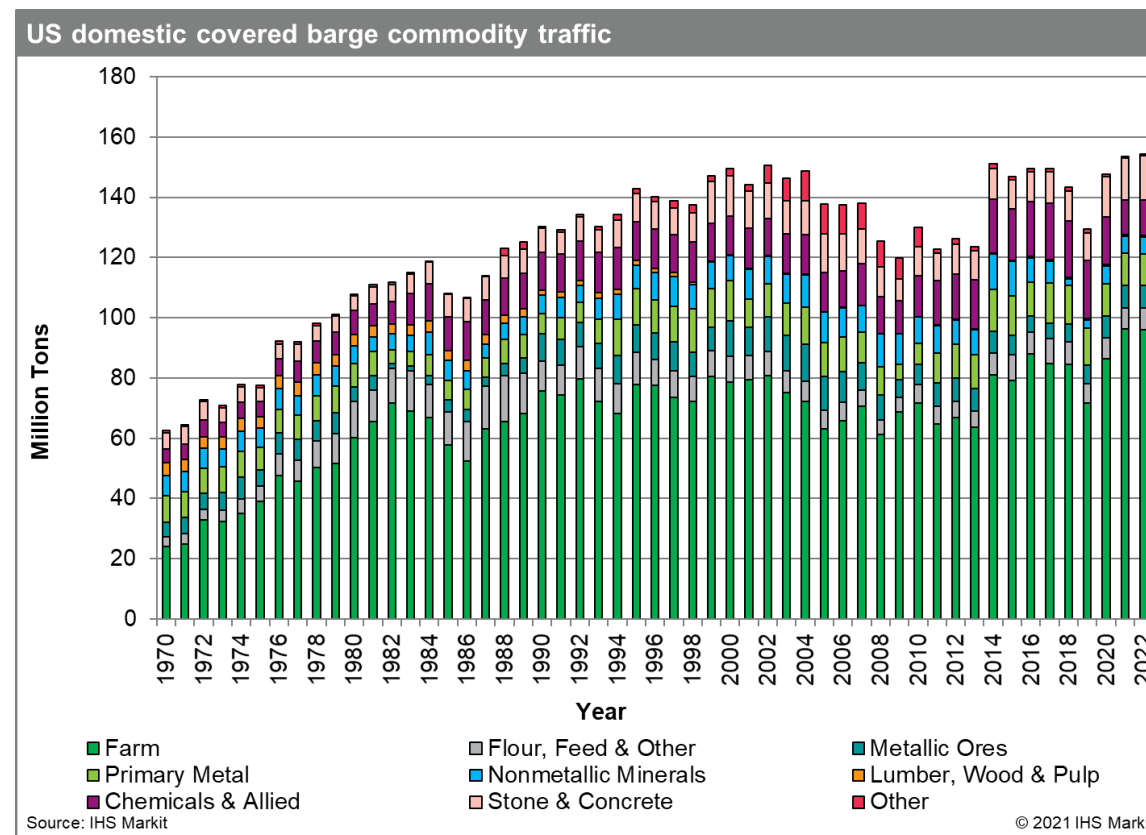
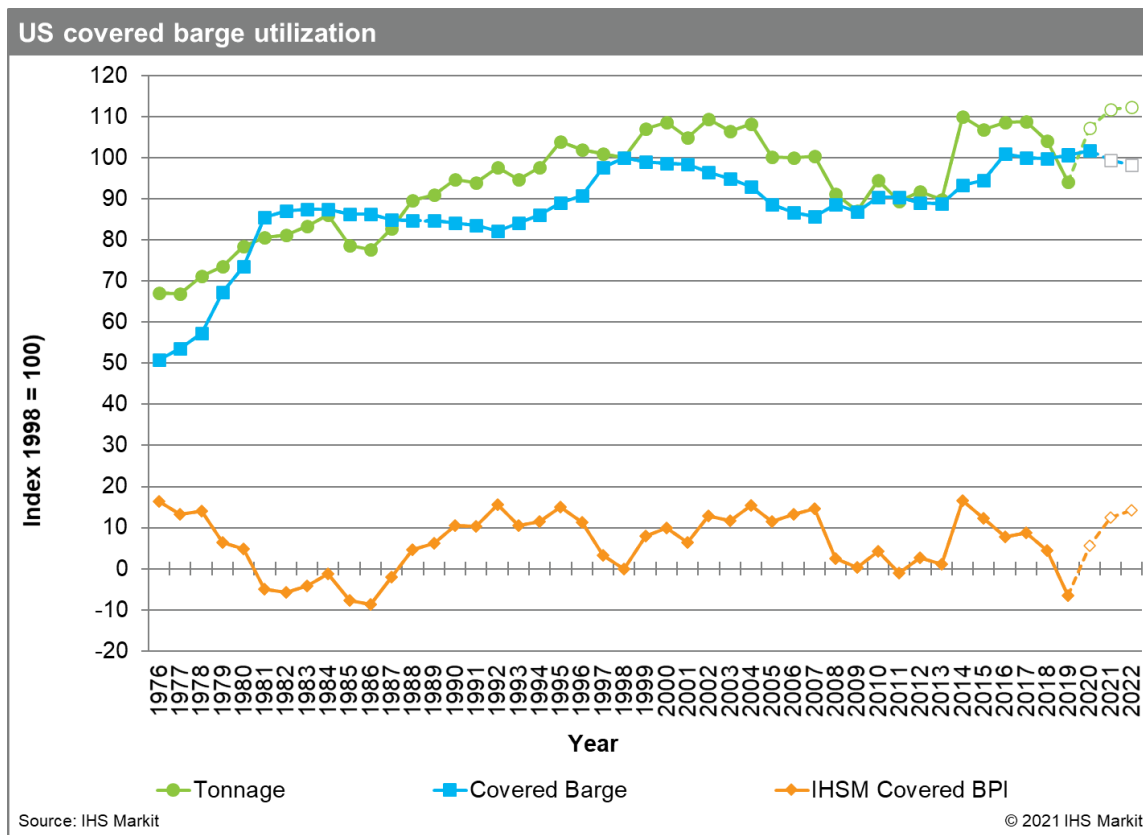




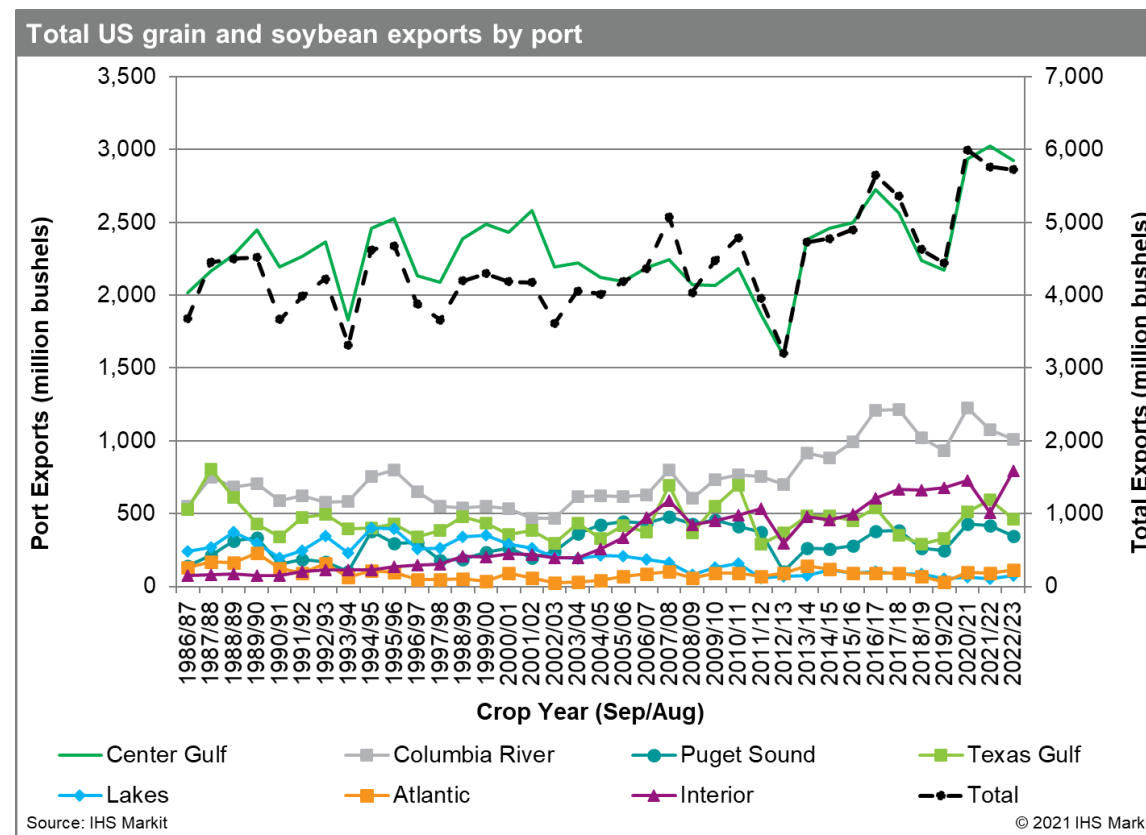
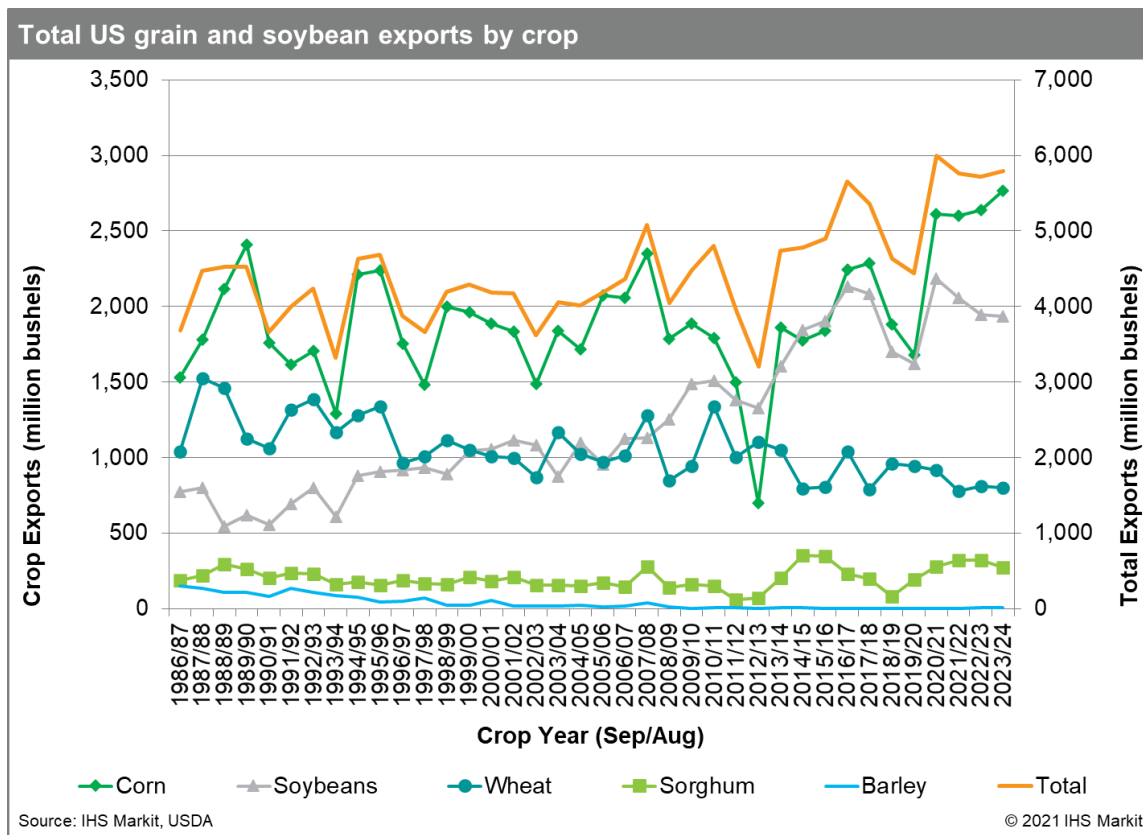
Covered barge fleet expanded modestly, but to a record number, but age creeping higher; meanwhile demand estimated to have expanded and



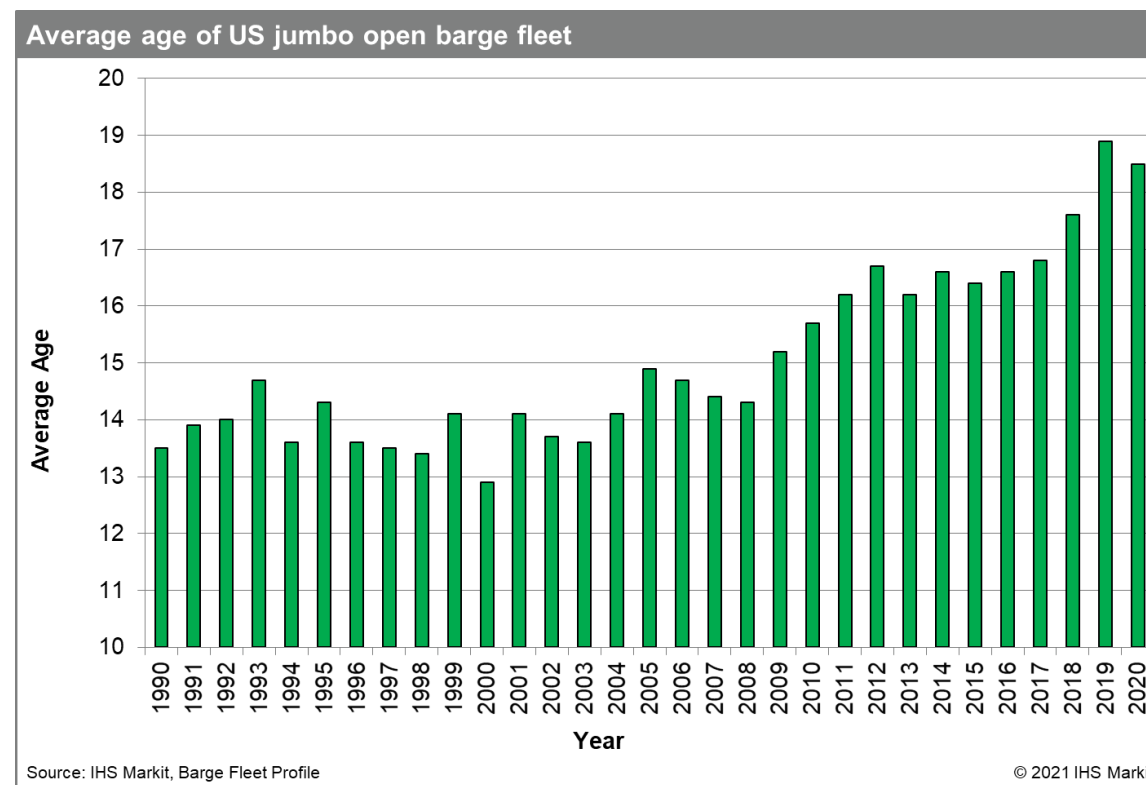
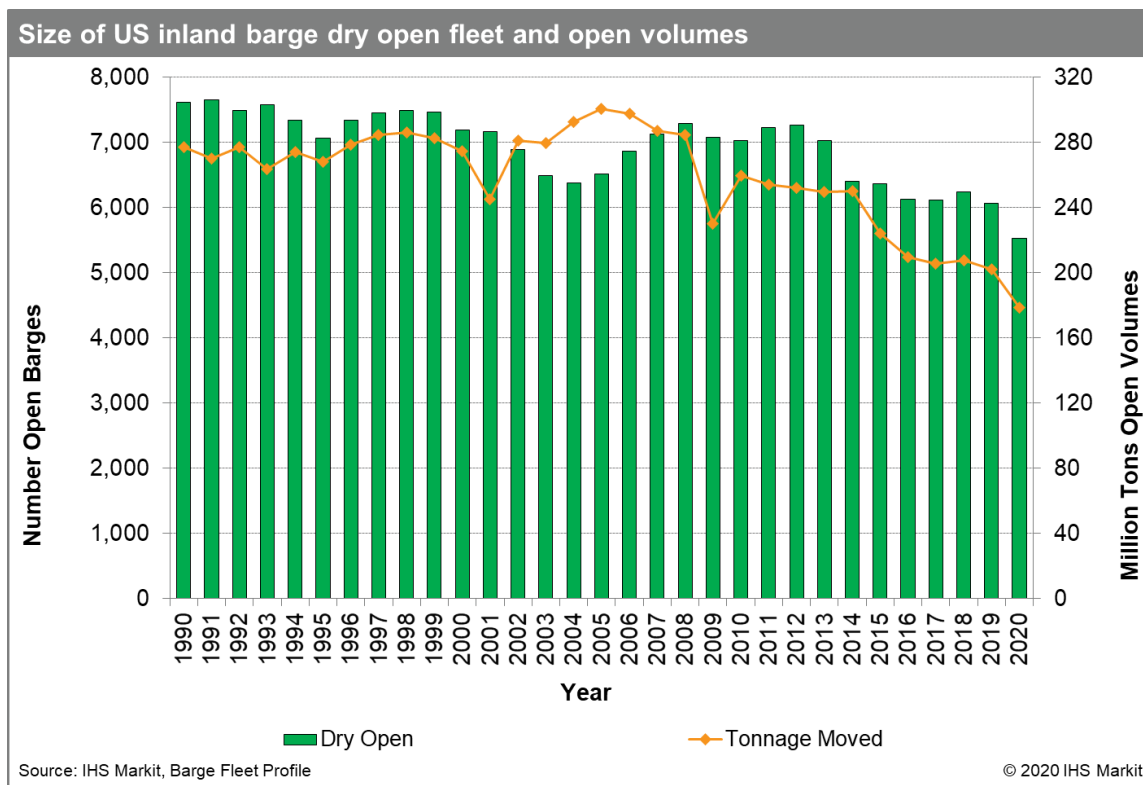
# Covered fleet demand surging to record on solid US grain and soybean exports



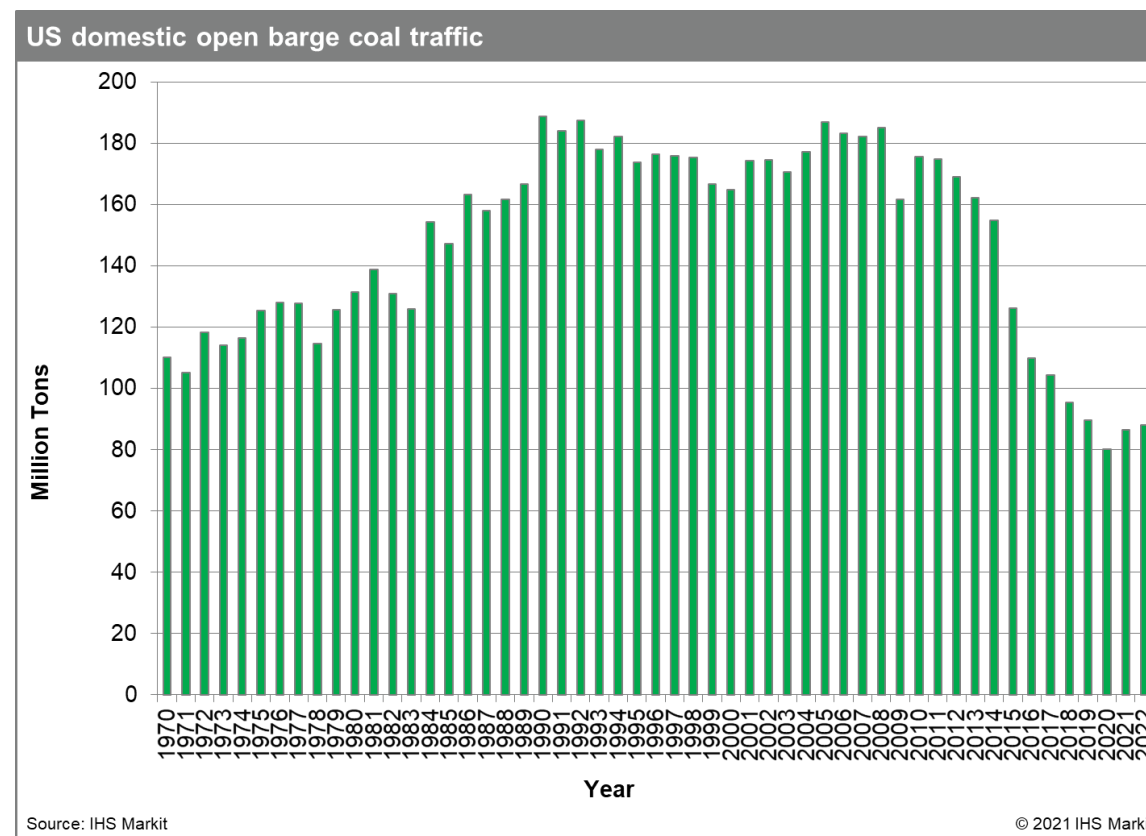
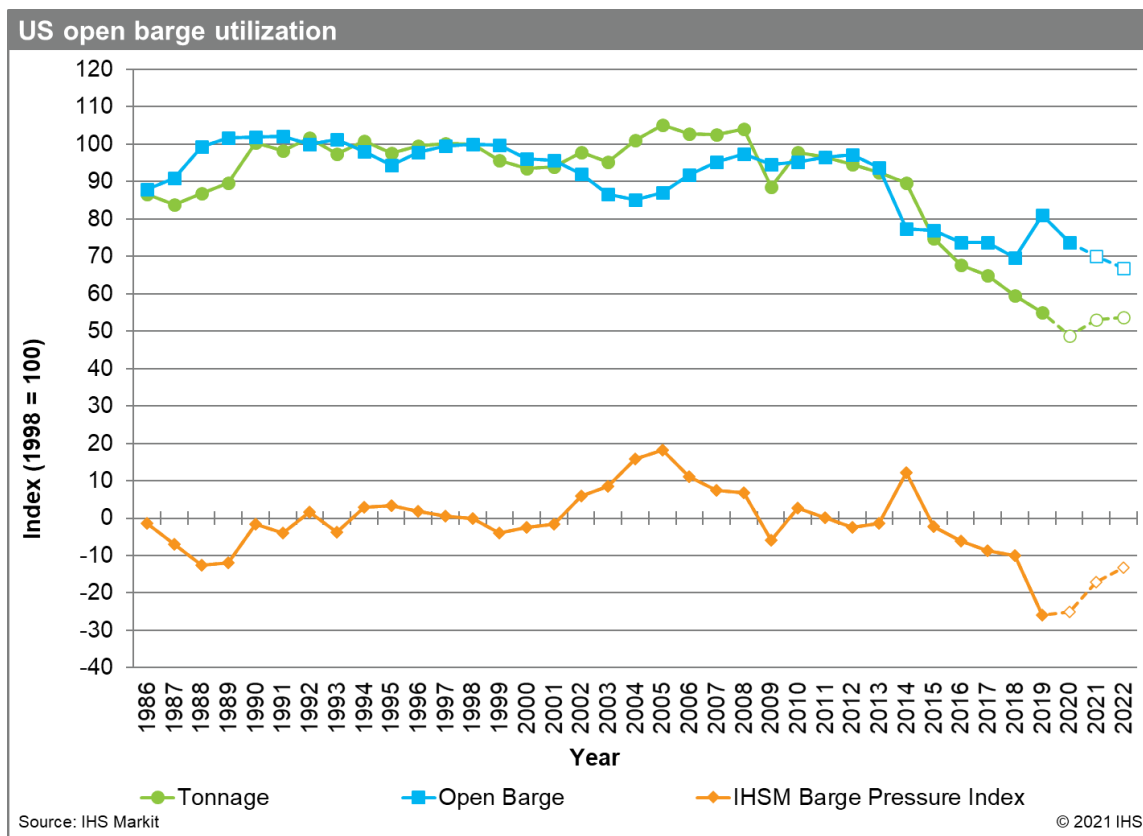
# US grain and soybean exports by port



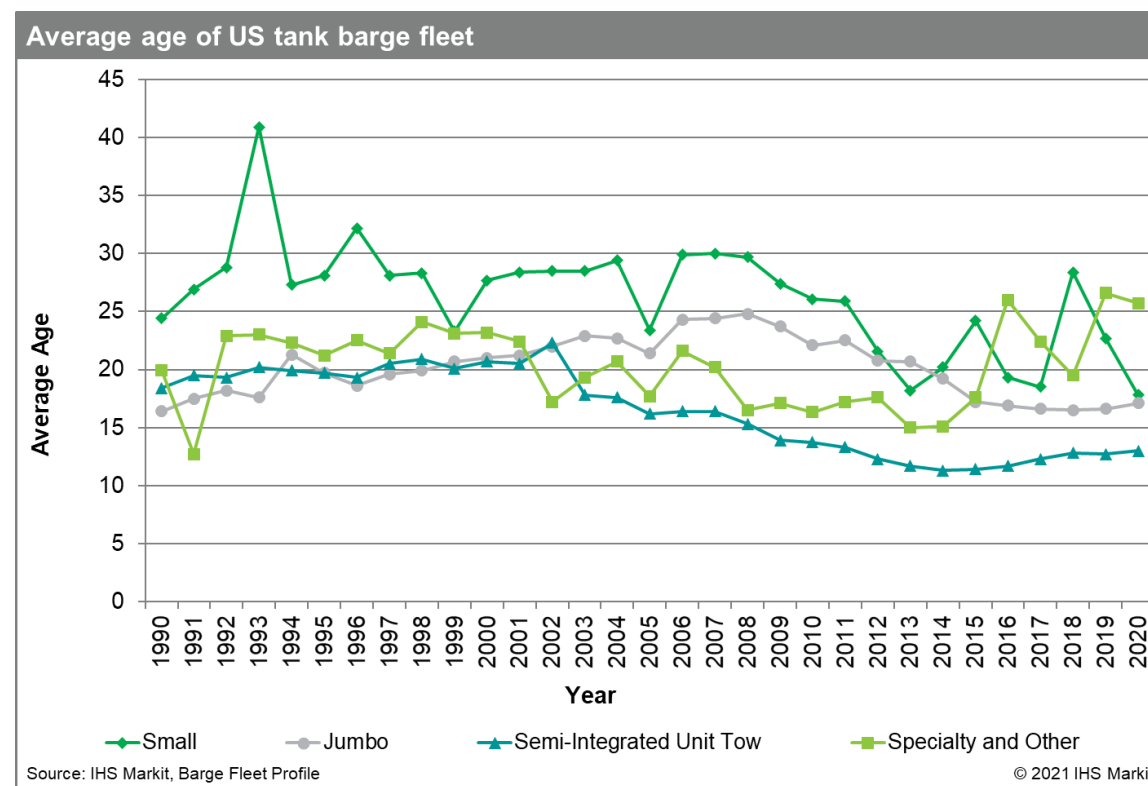
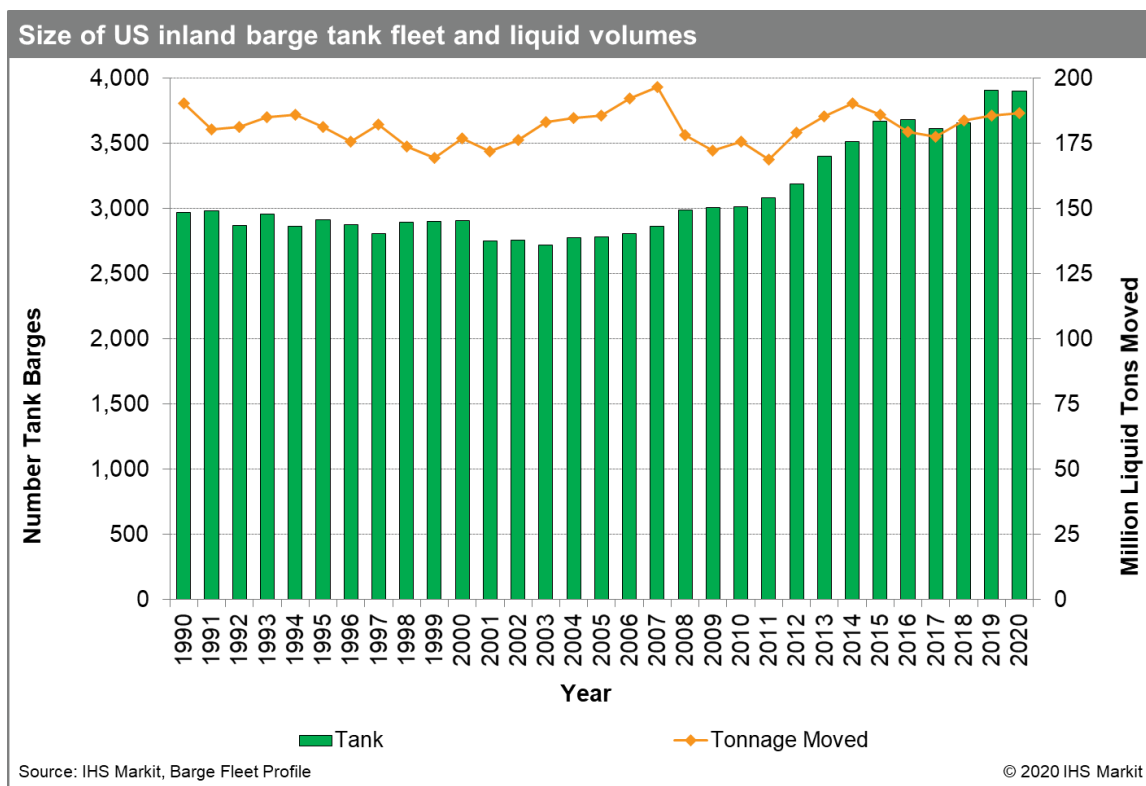
# Open barge fleet smallest in decades, following demand lower and age peaked, but more to come



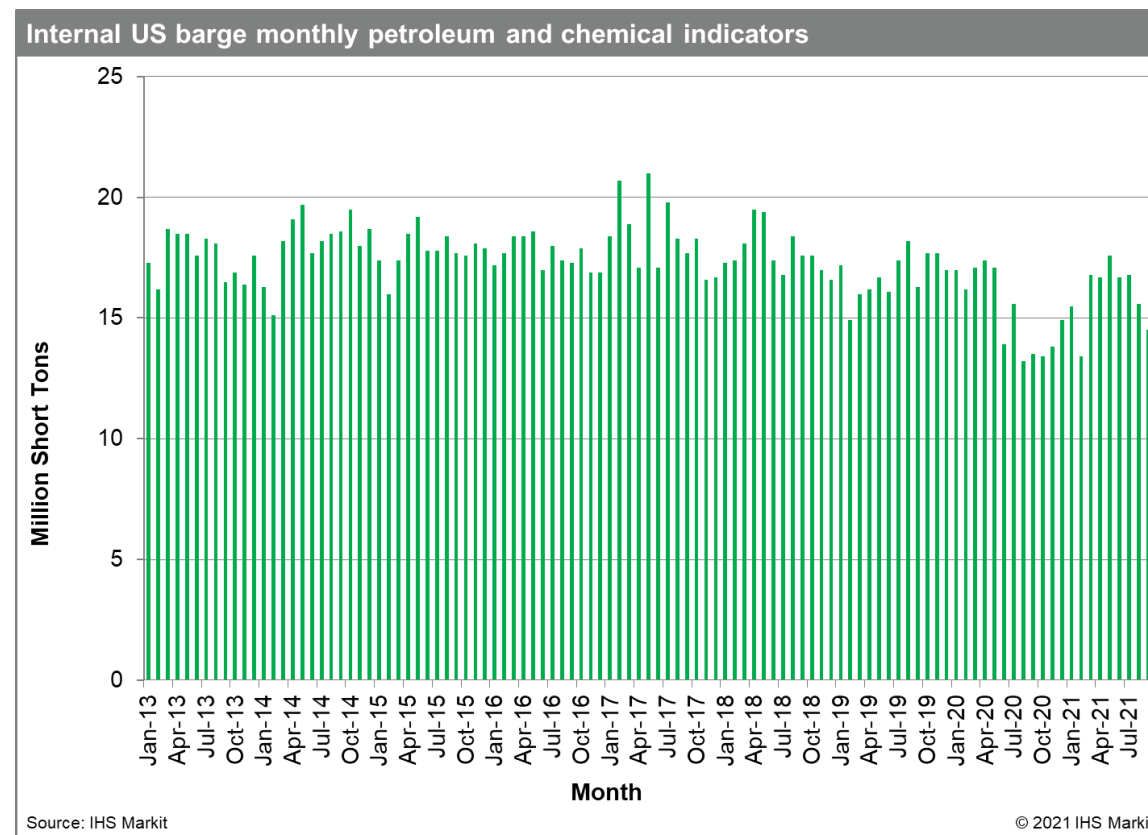
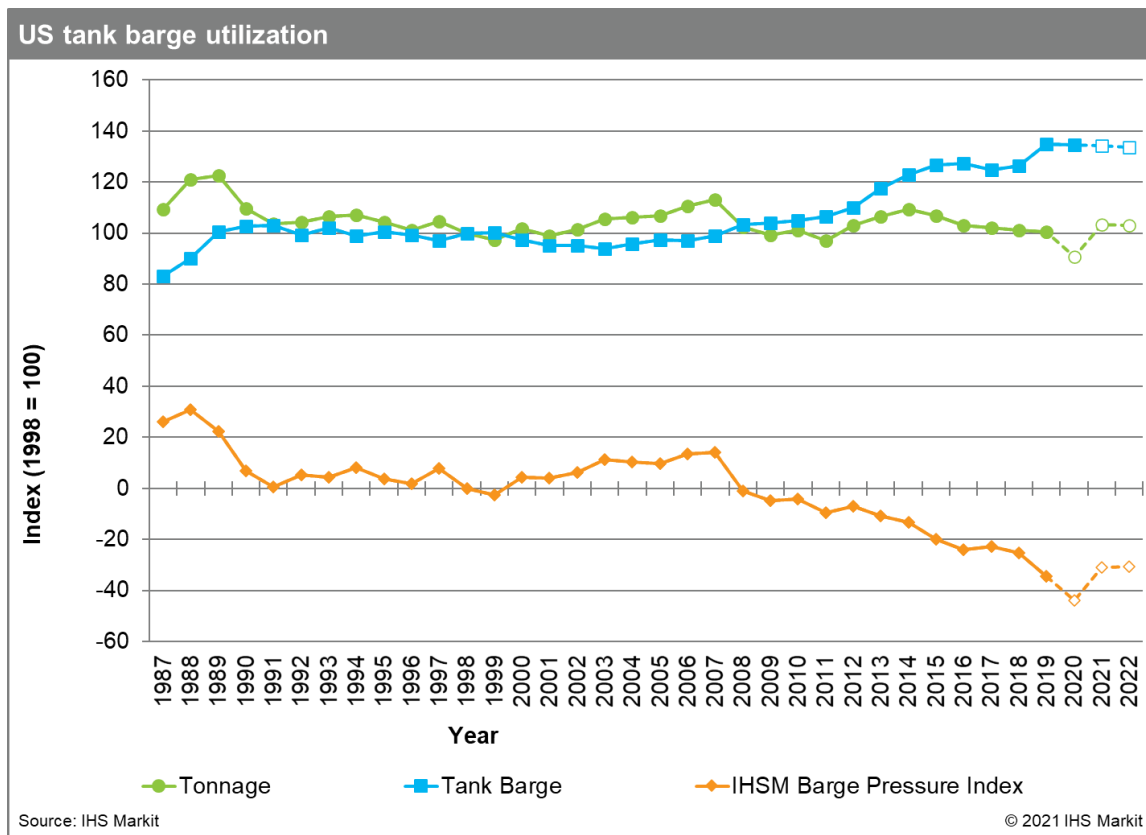
# Open fleet demand falling, despite slight relief; fleet to shrink



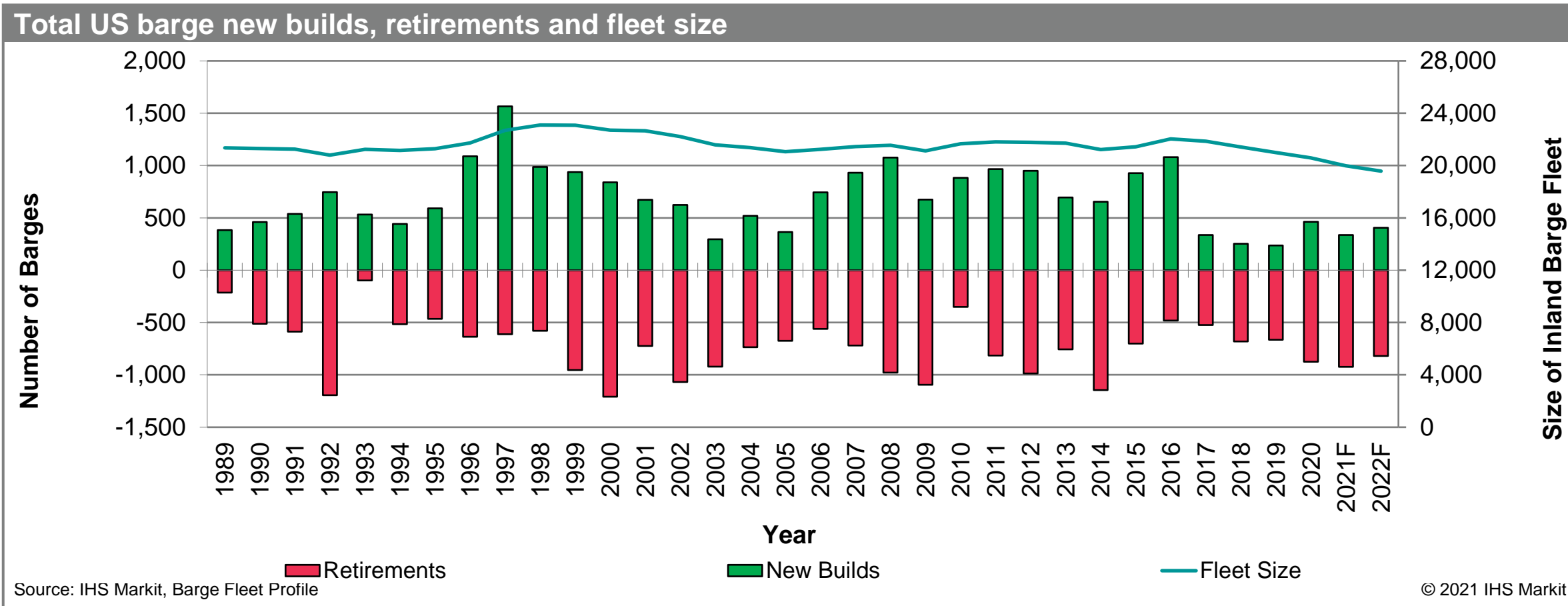
# Tank barge fleet and demand stable, COVID restricted growth impacted chemical and products



# Tank fleet demand struggling to find its level, while fleet flattening out



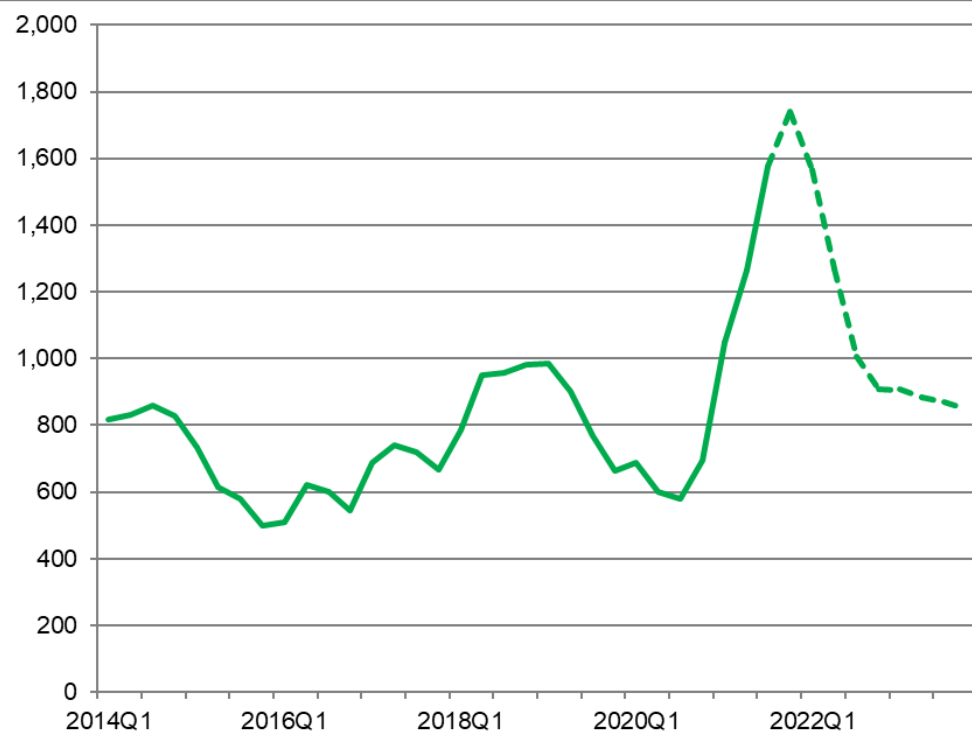
New builds to be constrained, retirements to continue decent pace, especially for opens that are aged while coveredds entering next replacement phase





US steel prices in the stratosphere, but peaking, while price escalators limit newbuilds and scrapping price gives credibility

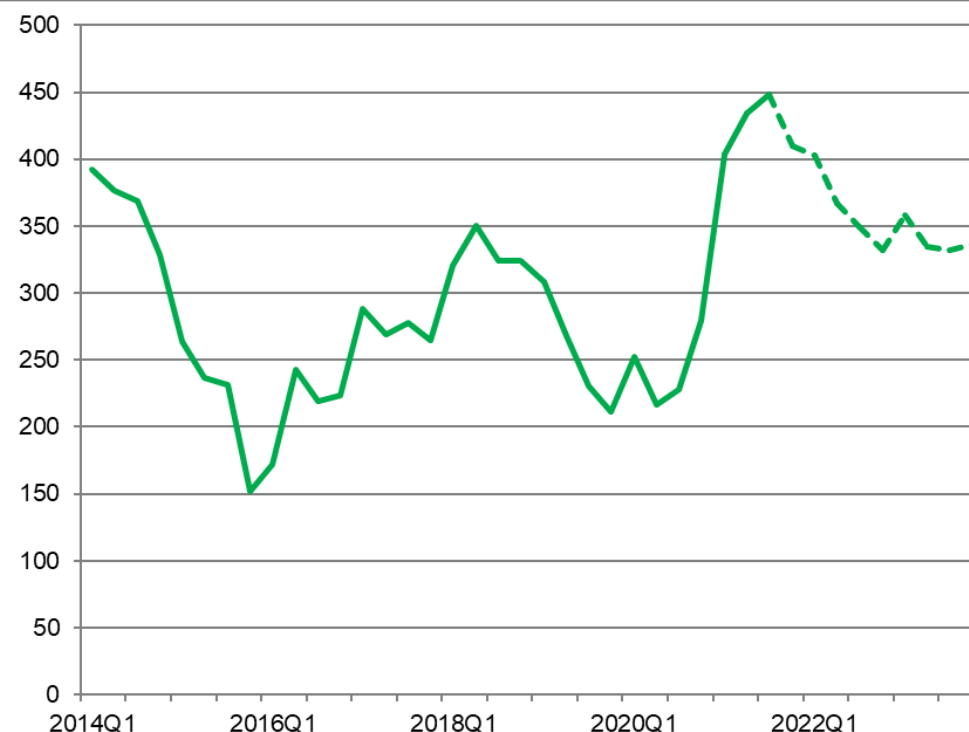
Steel Plate, \$US/Short Ton



Source: IHS Markit

© 2021 IHS Markit

Heavy melt scrap, \$US/long ton



Source: IHS Markit

© 2021 IHS Markit

# Kristin Beck, Senior Vice President, LafargeHolcim – Cement



# LafargeHolcim

## What's Moving on the Waterways

Kristin Beck

Senior Vice President Integrated Supply Chain & Logistics



LafargeHolcim



# LafargeHolcim

## The Global Leader in Building Materials & Solutions



Since 1990, the company has reduced CO2 emissions per ton of cementitious by **27%**

less CO2 emissions per ton of cementitious by 2030 validated by SBTi<sup>1</sup> **40%**

Pledge to net zero aligned with **1.5°C**

**Four business segments:** Cement, Aggregates, Ready-Mix Concrete & Solutions & Products.

Following our pledge to NETZERO, our ambition is to lead the industry in reducing carbon emissions & shifting towards low-carbon construction.

# LafargeHolcim

## Answering Sectoral Needs with Specific Solutions



### Infrastructure



Mining



Transport



Roads



Energy



Oil & Gas



### Building & affordable housing



Individual housing



Collective housing



Industrial & Commercial



Affordable housing



### Distribution & retail



Distribution



Retail



E-commerce & services




# LafargeHolcim

## Building Progress for People and Planet



We are proudly working to turn global challenges into solutions!

<p><b>LH is becoming a NetZero company with sustainability at the core of our strategy.</b></p>	 <p><b>Making cities greener from Foundation to Rooftop</b></p>	<p>90% of our electricity must come from renewable sources by 2050.</p>	<p>→</p>	<p>With our building solutions, we are enabling more wind, solar, and hydro-power around the world, accelerating the transition to renewable energy.</p>		
<p>6.5 billion people are expected to live in cities by 2050.</p>		<p>→</p>	<p>With our green building solutions from ECOPact to ECOPlanet, we are making cities greener and more livable.</p>	<p>Over three billion people are expected to need affordable housing by 2030.</p>	<p>→</p>	<p>We are deploying solutions from Durabric to 3D printing to bridge our world's infrastructure gap, improving living standards for all.</p>
<p>Growing inequality is pulling society apart, with rising social unrest around the world.</p>		<p>→</p>	<p>We are building for progress, connecting society with smarter infrastructure - from railroads and metros to tunnels and bridges.</p>	<p>The world is building the equivalent of New York City every month.</p>	<p>→</p>	<p>We are driving the circular economy to build more with less, recycling construction and demolition waste wherever we can.</p>



# LafargeHolcim

## Largest Footprint in the Industry



Over 75,000 people work for LafargeHolcim in over 80 countries with a balanced portfolio between developing and mature markets.

We believe in building progress for people and the planet, advancing society & uplifting communities.

That's why we are reinventing how the world builds on our way to becoming a net zero company.

# LafargeHolcim's U.S. Network At A Glance

## Distributing value one ton at a time!



The LH US cement network is optimized to utilize environmentally conscious, cost efficient, sustainable shipping options. Terminal locations are primarily located on water or rail to reduce our carbon footprint.



- +7,000 + employees across 43 states



- 13 cement plants
- 106 cement/fly ash terminals
- 3 slag facilities



- 98 aggregates sites + 18 docks
- 121 ready mix sites
- 28 hot mix asphalt

US Headquarters Chicago IL

### Shipping Modes

- Primary Mode: Marine
- Secondary Mode: Rail
- Tertiary: Short Haul Truck



LafargeHolcim



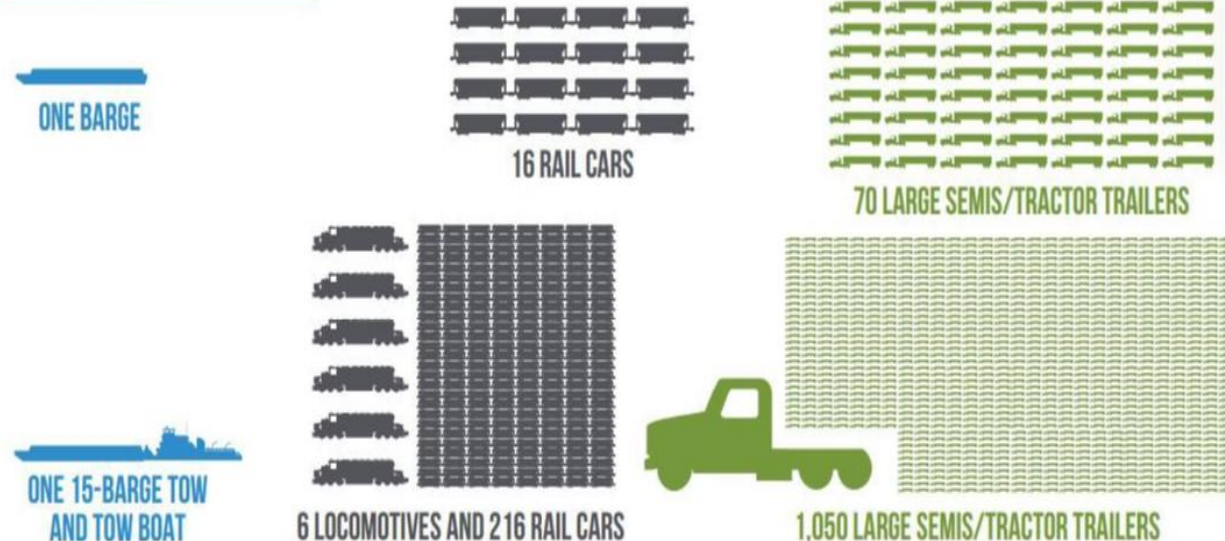
# LafargeHolcim

## Protecting Our Planet Utilizing Sustainable Shipping Modes



LH US cement utilizes Marine as our primary shipping mode in the United States. We ship over 53% of our product annually on our great lakes, inland waterways and coast.

### EQUIVALENT UNITS



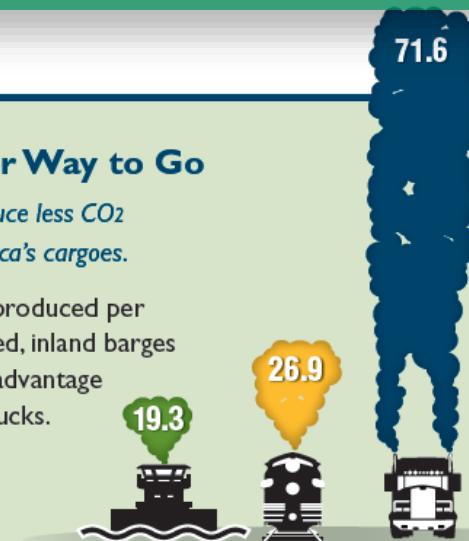
By Shipping Marine and Rail in 2020, LH saved:

## 1.3 trillion lbs. of CO<sub>2</sub>

### The Greener Way to Go

*Inland barges produce less CO<sub>2</sub> while moving America's cargoes.*

In terms of CO<sub>2</sub> produced per ton of cargo moved, inland barges have a significant advantage over trains and trucks.



Tons of CO<sub>2</sub> per Million Ton-miles

Did you know?

One Barge = 16 Rail Cars or 70 Trucks

One 15-Barge & Tow = 216 Rail Cars or 1,050 Trucks



LH US holds the largest cement network footprint in the industry. With 15 plant locations, and 106+ terminals, LH as well as our valued customers, are able to maximize tons shipped and minimize fuel utilization and miles traveled.

### LH Sustainable Marine Facts:

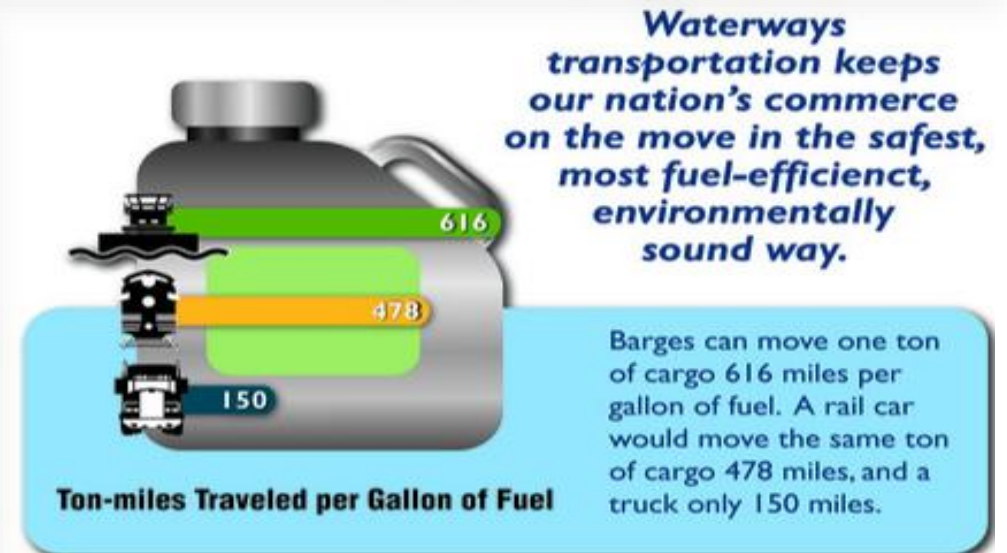
- All Vessels/Barges are Max loaded
- Coastal low sulfur fuel
- 100% Utilization of all owned assets
- Upgraded boiler system reducing CO2 emissions

### LH Sustainable Rail Facts:

- All Rail Cars are Max loaded
- 100% Utilization of all owned assets
- New upgraded low weight high capacity fleet

### LH Sustainable Truck Facts:

- Avg length of haul <100 miles
- Multi-stop TL optimization (future measurement in progress)
- Network optimization to consolidate loads
- Drop yard/Relay usage to reduce carbon footprint



By Shipping Marine and Rail in 2020, LH saved:

**19,078,334 gallons of fuel**



## Cement

We provide the widest range of high quality cements on the market to meet the most challenging needs, from sustainability requirements to specialty cements



Cement is the key ingredient in the development of concrete, **which is second only to water** as the most consumed substance on Earth, with almost one ton of it being used for each human every year.



# LafargeHolcim

## What is Cement?

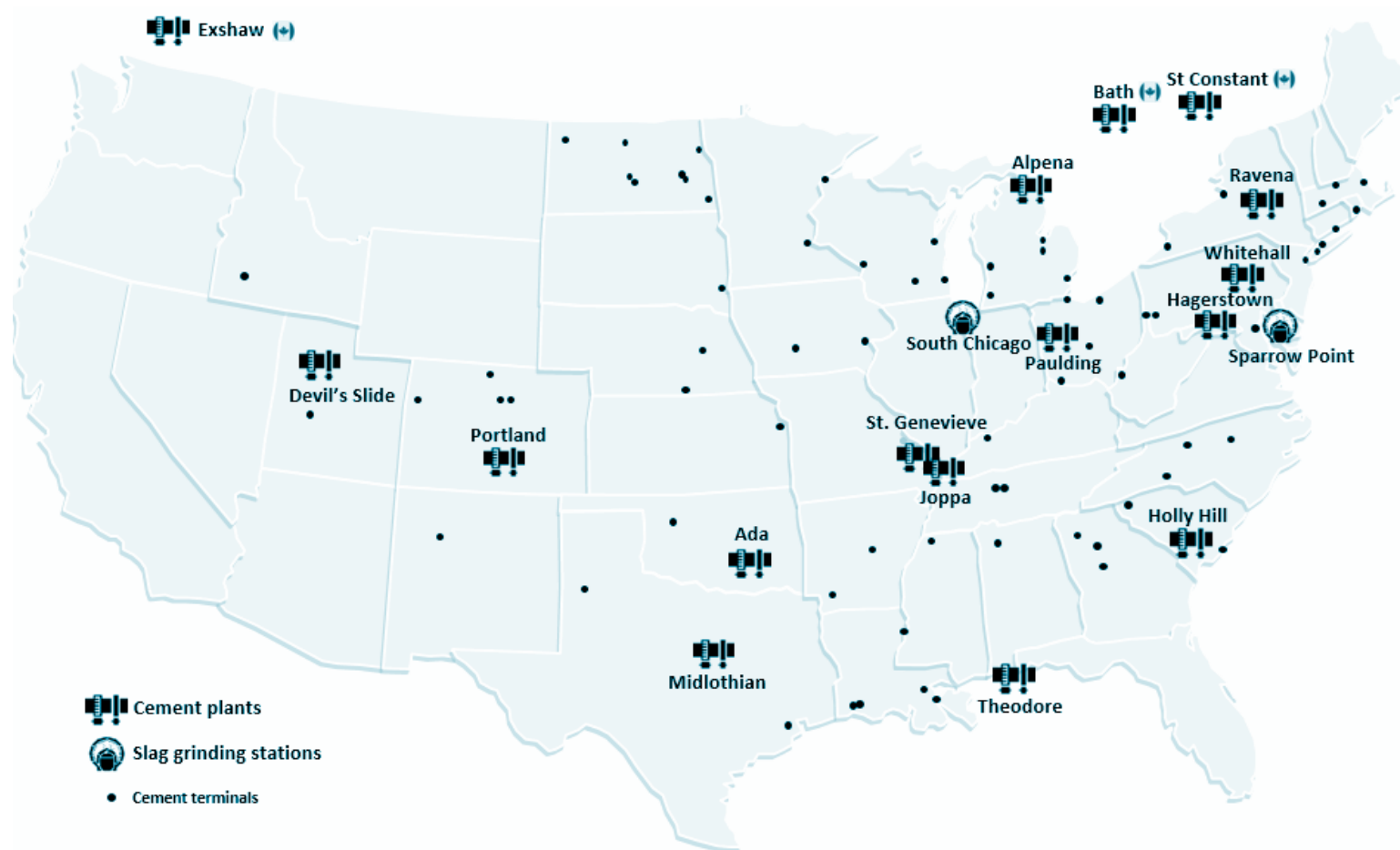


Cement is a fine powder that is the principal strength-giving and property-controlling component of concrete. A mixture of cement, aggregates and water hardens to form concrete which is used for everything from sidewalks, homes, roads, bridges, dams and skyscrapers.

- Cement is used in virtually all forms of construction.
- Cement is manufactured through a large-scale, capital-and-energy-intensive process. At the core of the production process is a rotary kiln, in which limestone and clay are heated to approximately 1,450 degrees Celsius. The semi-finished product, clinker, is created by sintering. In the cement mill, gypsum is added to the clinker and the mixture is ground to a fine powder – traditional Portland cement. Other high-grade materials such as granulated blast furnace slag, fly ash, pozzolan, and limestone can be added in order to modify the properties of the cement for special uses or specific application.

Every day we have opportunities to reduce our carbon footprint—and help create a better world. We believe cement can help do that, too. Learn more about how [Envirocore™ Cements](#) help reduce CO<sub>2</sub>.

# LafargeHolcim US Marine Cement Network



LH US Cement is heavily reliant on our countries waterways for receipt & distribution of raw materials and finished goods. We operate on the Inland Waterways, Great Lakes & Coastlines.

- 7 Marine equipped Plants/Grinding stations
- 40 Terminals



# LafargeHolcim

## Shipping on the Inland Waterways



LH is proud to utilize the Inland Waterways to receive and distribute raw material and finished goods. We work with our valued Marine Service Partners to ship on average 80+ barges per week.



Joppa plant - primary purpose is to produce Oilwell for the Southern US market.



S. Chicago plant - produces slag Grade 100 to supply the US market via river barge, rail and truck.



Belpre, OH terminal loading out trucks with cement produced by the Ste Genevieve plant delivered by river barge.



# LafargeHolcim

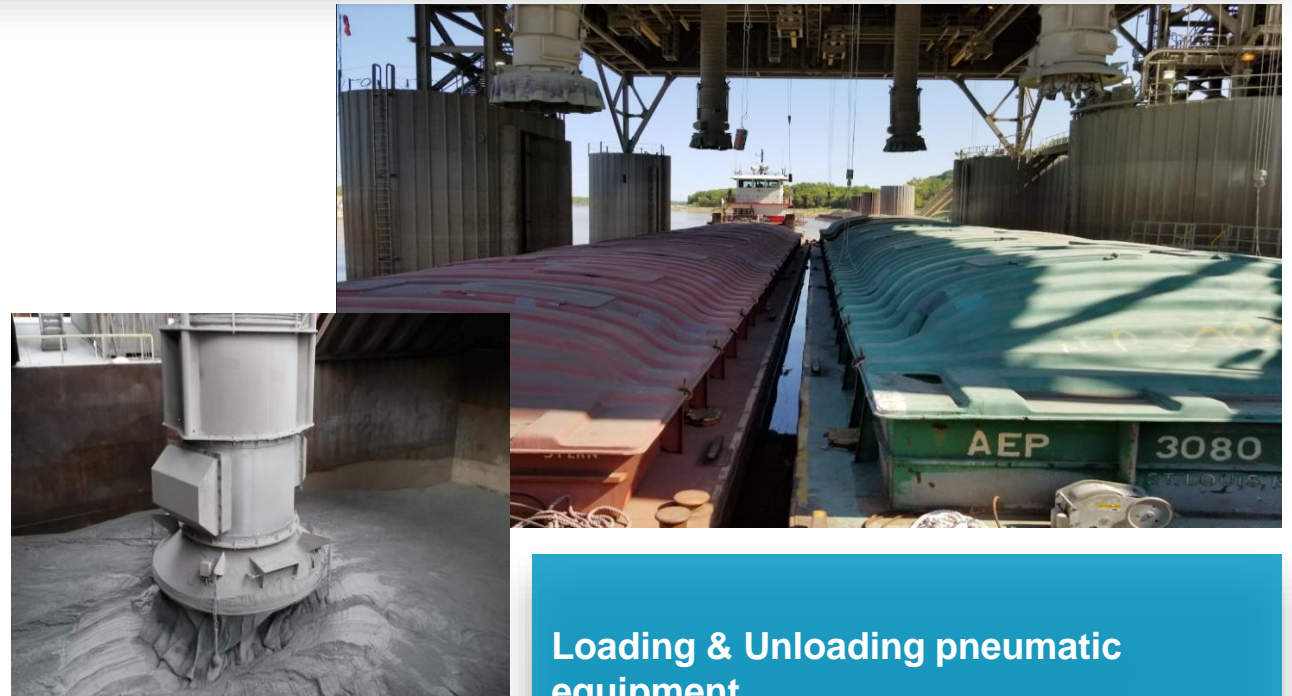
## How we Ship Cement on the Waterways



Cement is loaded into barges and vessels by loading spouts/chutes. In turn cement is unloaded at our terminals by pneumatic equipment (Kovako, Docksider, Siwertell). Average loading and unloading times range from 4-8 hours depending on the loading/unloading platform capabilities.



Loading cement at our Holcim Ste. Genevieve MO Plant. Loading spouts extend and pump product into barges.



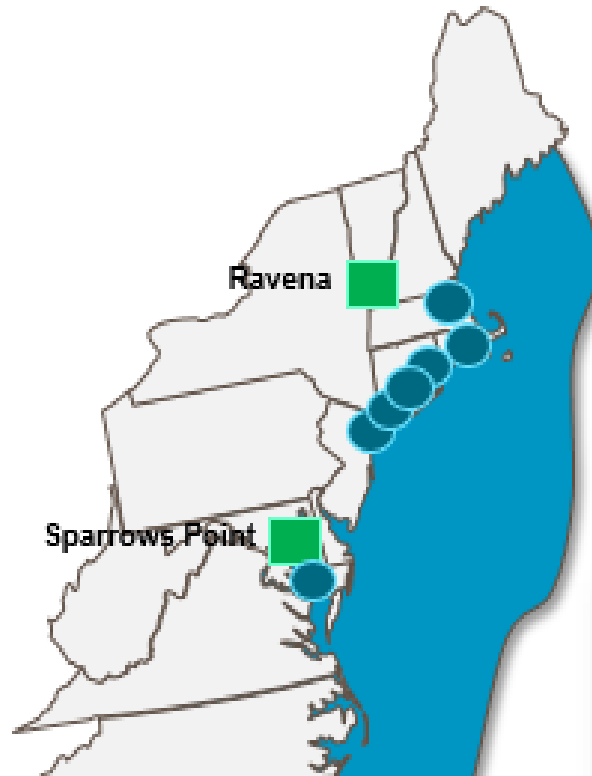
Loading & Unloading pneumatic equipment.

# LafargeHolcim

## Shipping on the US Coastal Waterways



What's LH moving on the East Coast? Cement ships from our manufacturing plant in Ravena, NY to NYC, CT, RI, and MA. Finished (ground) slag moves to many of the same locations from our grinding facility in Sparrows Point, MD



**Barge loading cement in Ravena, NY. All barges transit down the Hudson River for delivery in the Northeast Region.**



**Barge loading with slag at our Sparrows Point, MD slag grinding plant.**



# LafargeHolcim

## Shipping on the Great Lakes



LH owns (3) Jones Act Great Lakes Barges/Vessels. Our Great Lakes fleet it utilized to provide finished product & raw material to and from our Alpena MI plant.



Our Great Lakes Fleet service MI, IL, WI, OH & Canada.



SS Alpena vessel loading ground slag at our plant in South Chicago. The SS Alpena (1942) is the oldest operating commercial vessel on the Great Lakes.



Tug/Barge unit GLO/Integrity loading cement at our plant in Alpena.

# LafargeHolcim

## Shipping Raw Materials



Our Alpena MI plant receives many of its raw materials using the Great Lakes. Materials such as bottom ash, air cooled slag, and iron fines are used in the cement manufacturing process. Materials such as petcoke and coal are used to generate heat for the kilns.



Alpena Michigan Plant.



Interlake Steamship Herbert C Jackson unloads bottom ash into a receiving hopper at daybreak.



# LafargeHolcim GeoCycle Waste Reduction & Reuse



**Turning Trash  
into  
Treasure!**

## Focused on Circular Economy

We are one of the world's largest waste solutions & recycling companies. We co-process industrial, municipal & agricultural waste using the high temperatures of cement kilns to recover energy while safely recycling the waste.

Giving buildings a second life, we recycle construction & demolition waste, as a source of materials for new green building products, like our ECOPlanet range.

We design low-carbon building products with recycled low-emission raw materials, ranging from calcined clay to slag or fly ash.

We power our plants with alternative energy, coming from waste at the end of its life cycle.

# LafargeHolcim

## Shipping GeoCycle Raw Materials



LH utilizes the waterways to ship and receive our Geocycle recycled & reused raw materials. Our Geocycle teams work closely with utilities to reuse material that would otherwise be sent to a landfill.



Recycled bottom ash being offloaded at our Ste Genevieve MO Plant.





## Aggregates

We offer aggregates that serve as raw materials for concrete, masonry and asphalt, as well as the foundations for buildings, roads and landfills.



## Ready-Mix Concrete

We deliver a wide range of high-performance, high-quality ready-mix concrete, flexibly and reliably.



# LafargeHolcim

## Shipping Aggregates on the Great Lakes



LH Aggregates ship from four quarries located on Lake Huron and Lake Erie. Most of this volume is delivered directly to customer docks via self-discharging vessels, commonly referred to as “Lakers”. There are over 30 different sizes and blends of aggregate products available.



Vessel loads aggregates at our quarry in Presque Isle, MI.



Laker vessel discharging aggregates to ground.



# LafargeHolcim

## Shipping Aggregates on the Inland Waterways



Aggregates sourced from Three Rivers, KY rock quarry used to support LNG projects such as Venture Global Calcasieu Pass, and Golden Pass, TX and river bank stabilization projects on the Mississippi River.



# LafargeHolcim Projects & Strong Relationships



## Making builders' lives easier

LafargeHolcim's solutions are designed to help home builders, masons, and contractors deliver high quality buildings and meet their daily challenges: getting the job done quicker, at the best cost, and with the smartest use of resources and the highest environmental performance.



## Major infrastructure partner



LafargeHolcim is a reliable global partner for major infrastructure projects such as roads, mines, ports, dams, data centers, stadiums, wind farms and electric power plants. With an unparalleled geographical footprint, LafargeHolcim is able to deliver in the most remote areas of the globe.





# LafargeHolcim

## Supporting Vital Infrastructure



### I-91 Bridge Replacement

Rockingham, VT

- LH Slag & Cement used for full bridge replacement.
- 4 spans over Williams River, 880' in length.



### C470

Denver, CO

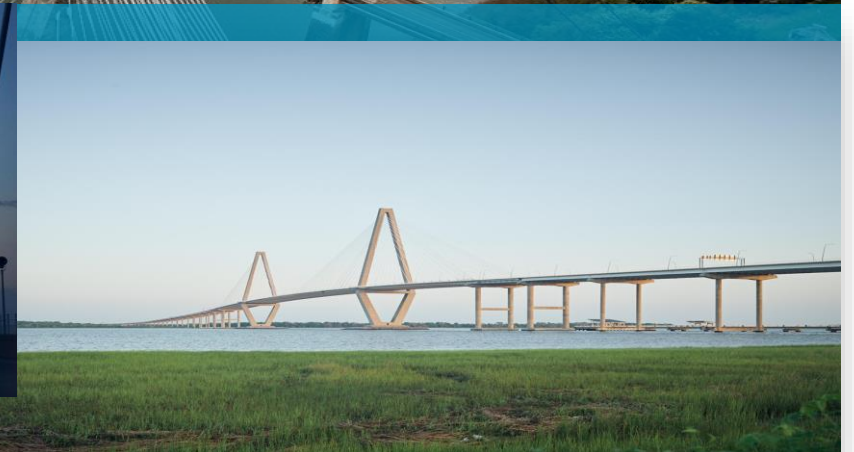
- Express lanes providing greater capacity and reliability in the Denver metro area. OneCem Portland Limestone Cement.



### Ravenel Bridge

Charleston, SC

- Opened in 2005.
- Eight lane, cable-stayed bridge.
- Built to allow passage of modern ocean freighters for efficient transportation.
- LH Portland cement was used.





# LafargeHolcim

## Sustainable Cities & Iconic Buildings



### One World Trade Center New York, NY

- 65,000 tonnes LH Cement, more than half of which use recycled materials.
- 150,000m<sup>3</sup> LH Concrete.



### One Dalton Tower Boston, MA

- LH Agileflow Self-Consolidating Concrete.

### Walt Disney Headquarters Manhattan, NYC

- LH Cement.





# LafargeHolcim

## Providing Two Countries with World Renowned Infrastructure



### Gordie Howe Bridge

Detroit, MI

- Constructed on/next to LH Detroit MI Terminal (Small portion sold to MDOT).
- LH Great Lakes barge will be partially parked under bridge.
- Our cement and aggregates have been used extensively in the current construction of the Gordie Howe Bridge, which will span from Detroit, MI to Windsor, ON.





# LafargeHolcim

## Connecting Communities



### Warrior Ice Arena

Boston, MA

Practice facility for the Boston Bruins. Artevia® decorative concrete resembles curved cuts of ice commonly created in hockey, and was used in the outdoor common area.



### UBS Arena

Elmont, NY

Future home of the New York Islanders of the NHL.





# LafargeHolcim

## Building to Improve the Quality of Life



### Batson Children's Hospital

Jackson, MS

The only children's hospital in the state to provide medical care in more than 30 areas. OneCem® portland limestone cement helped reduce the carbon footprint of the project.



### Maggie Daley Park

Chicago, IL

25-acre, adventurous public space. In addition to 20,000 tons of LH natural sand to create this beautiful urban landscape, the project team supplied 20,000 tons of material for areas of the park requiring excellent drainage.





# LafargeHolcim

## Protecting Human Rights



As a signatory of the United Nations Global Compact since 2003, LafargeHolcim (LH) maintains a firm pledge to respect and protect Human Rights. This pledge includes LH's commitment to do what we can to reduce crimes against humanity through education & prevention.

LH created on-line training to teach all employees how to recognize and report the illegal crime of Human Trafficking in the United States.



# TOGETHER

We can make a difference!

# LafargeHolcim

## What is Human Trafficking?



U.S. law defines human trafficking as The use of force, fraud, or coercion to compel a person into commercial sex acts or labor or services against his or her will.

Further, Inducing a minor into commercial sex is considered human trafficking regardless of the presence of force, fraud or coercion.

**HUMAN TRAFFICKING IS MODERN DAY  
SLAVERY**

SOURCE:  
<https://polarisproject.org/sex-trafficking/>

# LafargeHolcim

## Protecting People - Trafficking Facts



Human trafficking is the **world's fastest silent growing crime** and is a serious epidemic in the U.S., with cases reported in all **50 states** and our nation's capital.



There are more than  
**40.3 million**  
victims of human  
trafficking globally.

Human trafficking is a  
**\$150 billion**  
criminal enterprise.

A victim may be forced  
to have sex up to **20**  
**times** a day.

**>1 million children** are **victims** (1 in 4) of **commercial sex** exploitation annually.

SOURCE:  
International Labor Organization

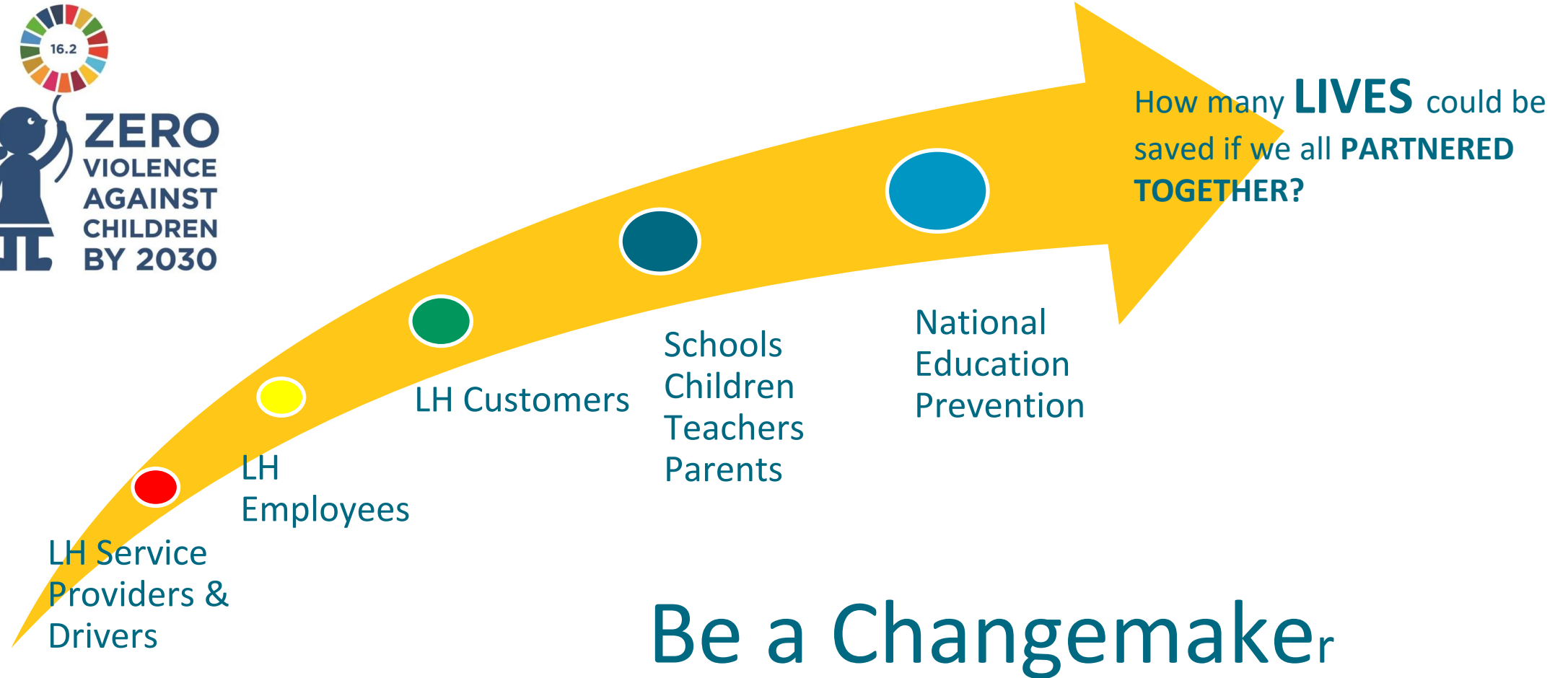




- LafargeHolcim (LH) is fully aligned with the UN Guiding Principles on Business & Human Rights.
  - o Human rights due diligence.
  - o Remediation.
  - o Stakeholder engagement.
  - o Employee code of conduct.
- LH prevents external human rights violations through Responsible Sourcing.
  - o Supplier code of business conduct.
  - o Sustainable procurement.
  - o Security service providers.
- LH developed internal training for employees to recognize & report human trafficking.
- LH requires all transportation service providers to complete training on how to recognize & report human trafficking.
- LH continues to work with State & Government officials on HT education and prevention methods.
- LH added immediate termination clauses to the employee code of conduct if found guilty participating in HT.
- LH joined the US Department of Transportation DOT Leaders Against Human Trafficking (HT).
- LH registered as a Truckers Against Trafficking® (TAT) Carrier & Shipping Partner.
- LH displays anti-trafficking signage across all US terminal locations.
- LH supports anti-trafficking initiatives by helping to educate the industry (including friends, family, supplier, customer base).
- LH works with State & Government officials on HT education and prevention methods.

# LafargeHolcim

## TOGETHER we can make a DIFFERENCE





The background of the slide is a photograph of a modern building facade. The building features a green wall with various plants and trees growing on it. The facade is made of dark, horizontal slats. The entire image is overlaid with a semi-transparent blue filter. In the center, the words "Thank You" are written in a large, white, sans-serif font.

# Thank You

A circular logo with the text "BUILDING FOR" at the top, "net zero" in the center, and "PEOPLE & PLANET" at the bottom. The text is in a white, sans-serif font. The logo is semi-transparent and overlaid on the blue-tinted background.

BUILDING FOR  
net zero  
PEOPLE & PLANET



LafargeHolcim



# Jake Brodbeck, Vice President, ARTCo – Agriculture





Jake Brodbeck



WCI Symposium

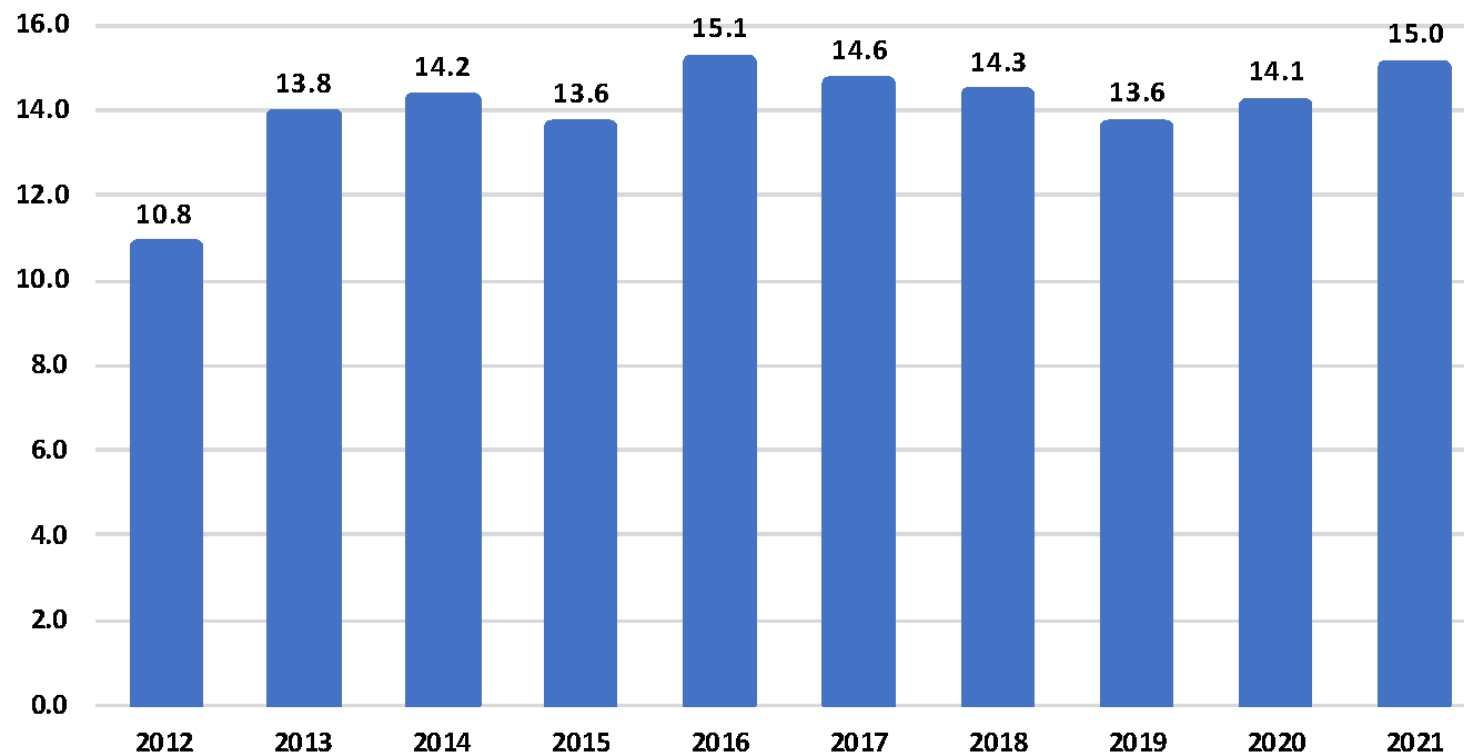
November 3, 2022



## Corn Production United States



**Billion Bushels**

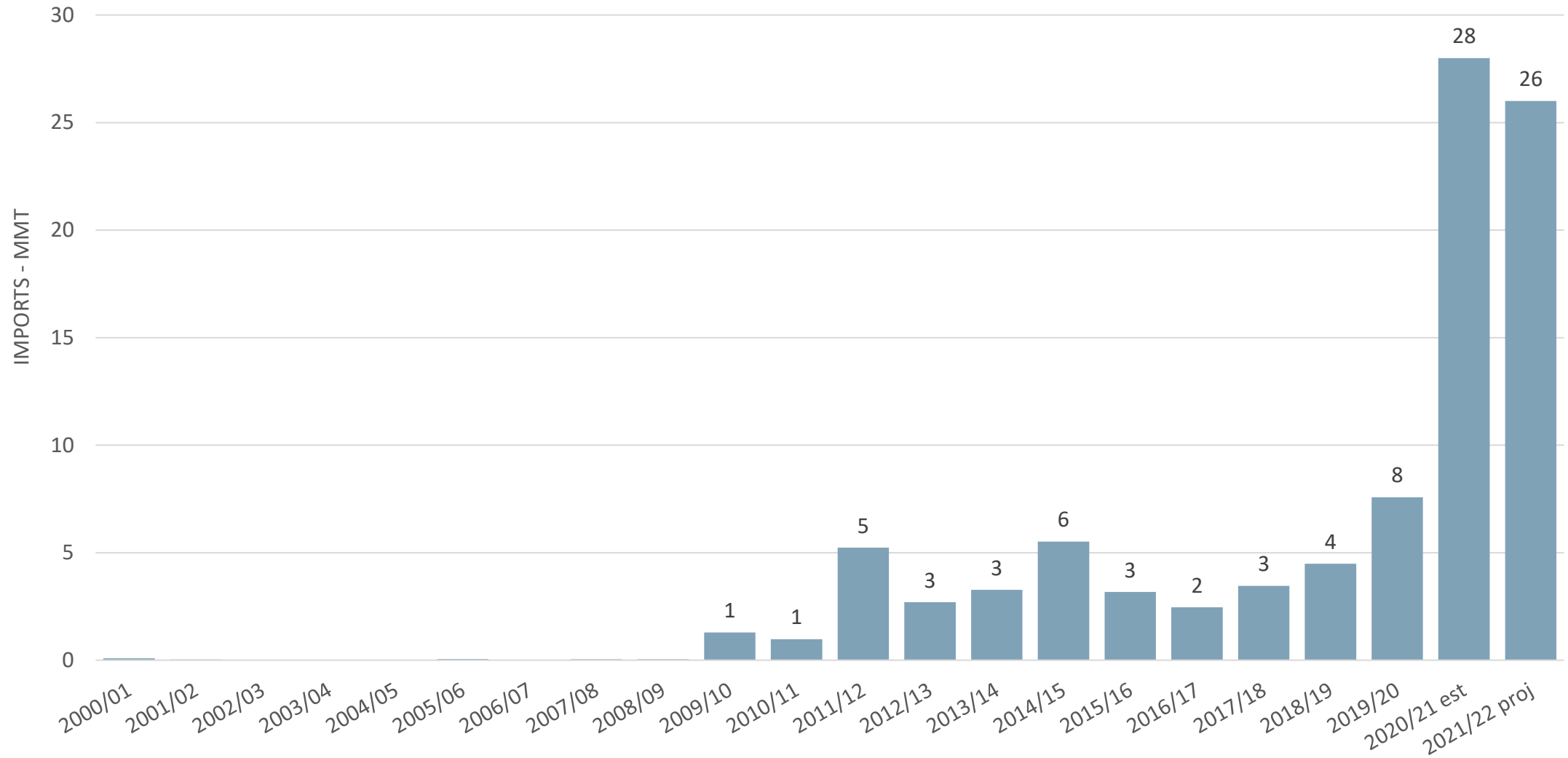


**United States Department of Agriculture**  
National Agricultural Statistics Service

October 12, 2021



## China Corn Imports

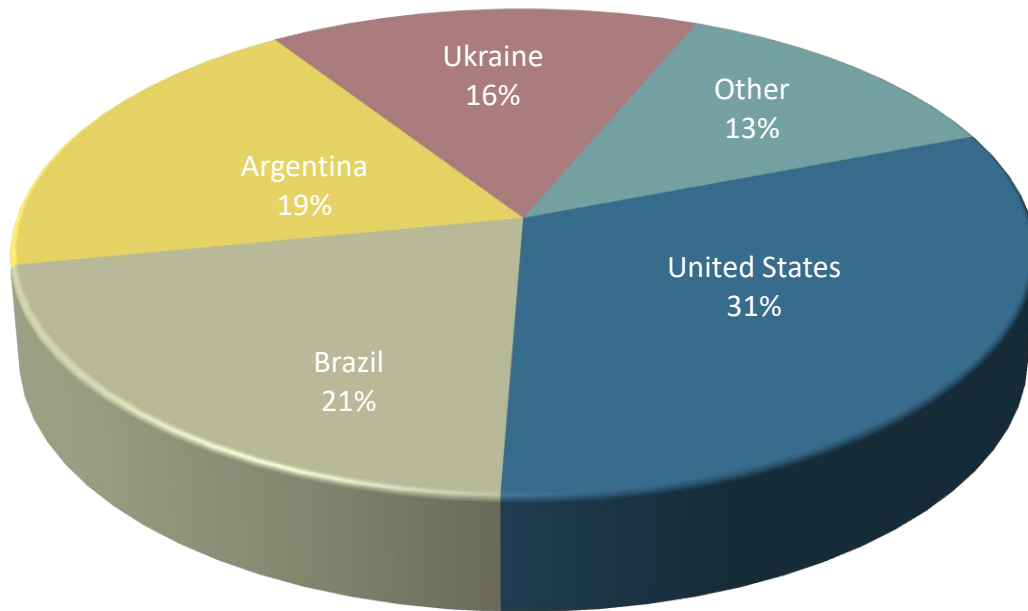


Source: USDA



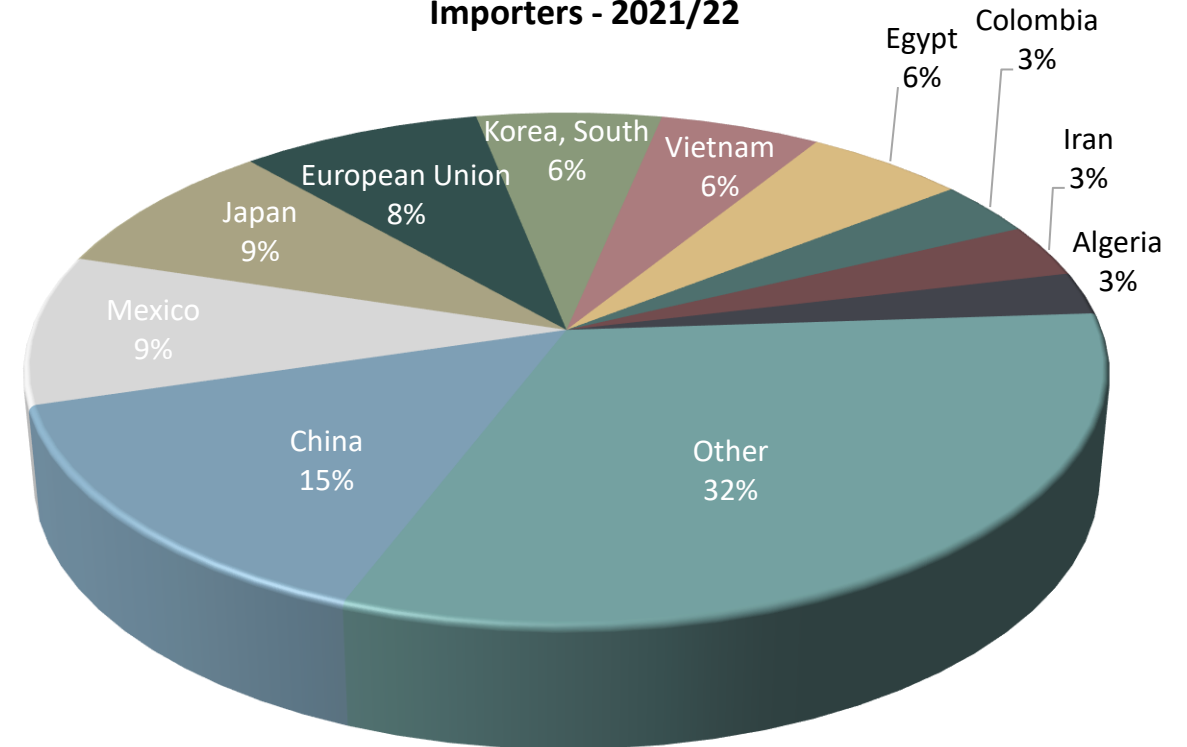
## World Corn Trade

Exporters - 2021/22



Major Exporters (MMT)	2019/20	2020/21	2021/22
United States	45.1	69.9	63.5
Brazil	35.2	20.0	43.0
Argentina	36.3	37.5	38.0
Ukraine	28.9	23.8	31.5
<b>World</b>	<b>172.4</b>	<b>178.0</b>	<b>201.9</b>

Importers - 2021/22



Major Importers (MMT)	2019/20	2020/21	2021/22
China	7.6	28.0	26.0
Mexico	16.5	16.5	17.0
Japan	15.9	15.4	15.6
European Union	17.4	14.2	15.0
<b>World</b>	<b>167.6</b>	<b>186.4</b>	<b>183.8</b>



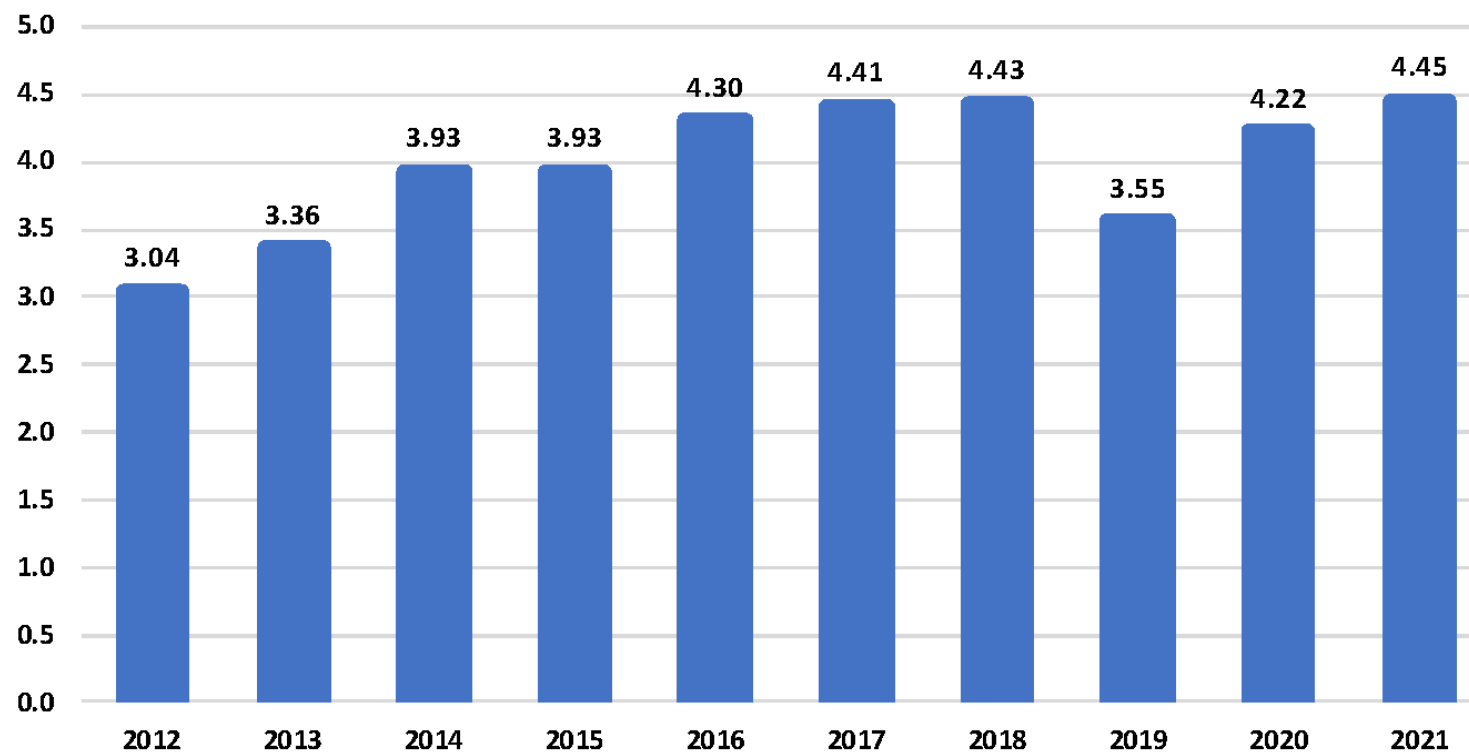


# Soybean Production

## United States



Billion Bushels

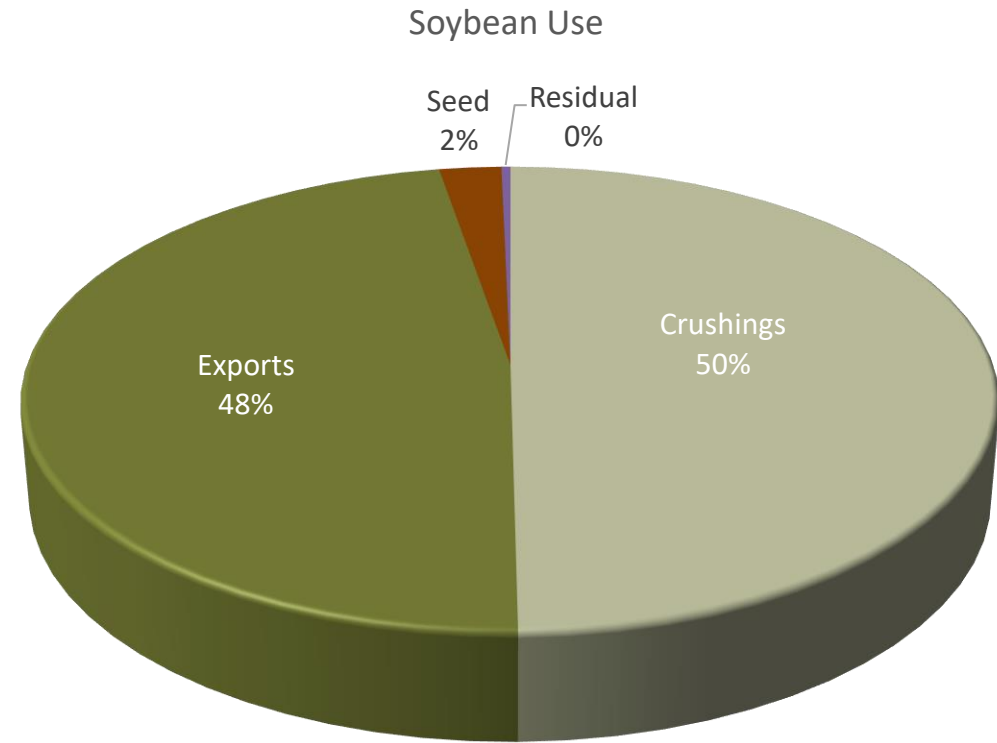
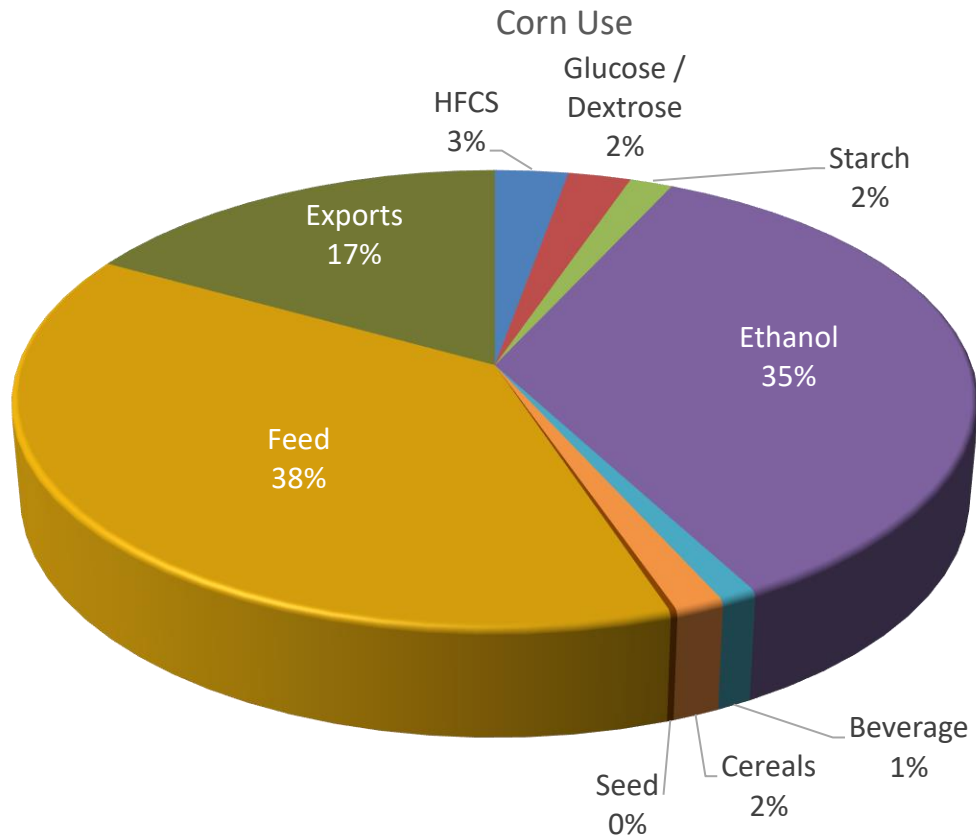


United States Department of Agriculture  
National Agricultural Statistics Service

October 12, 2021

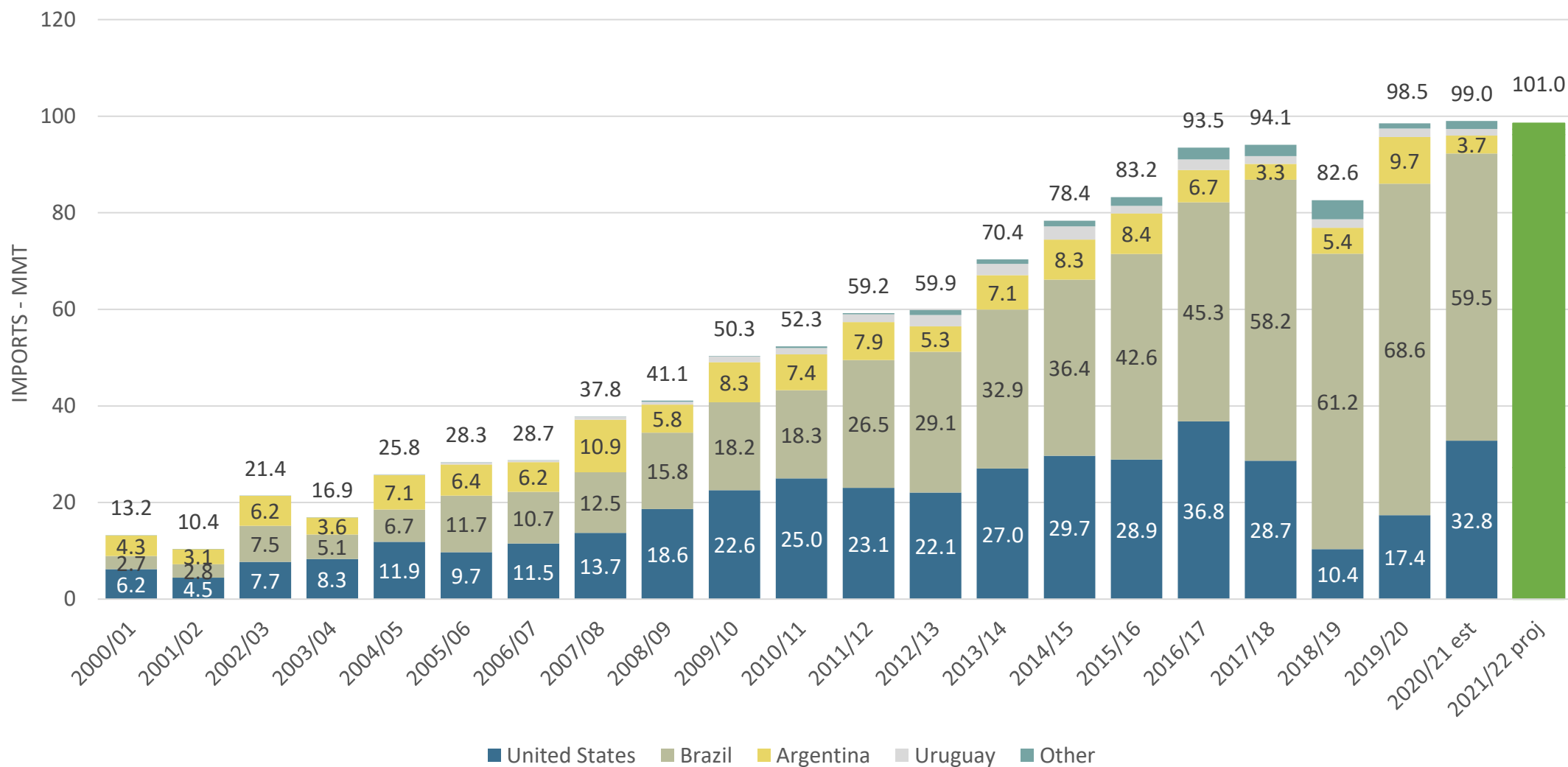


## Corn and Soybean Use 21/22 MY





## China Soybean Imports



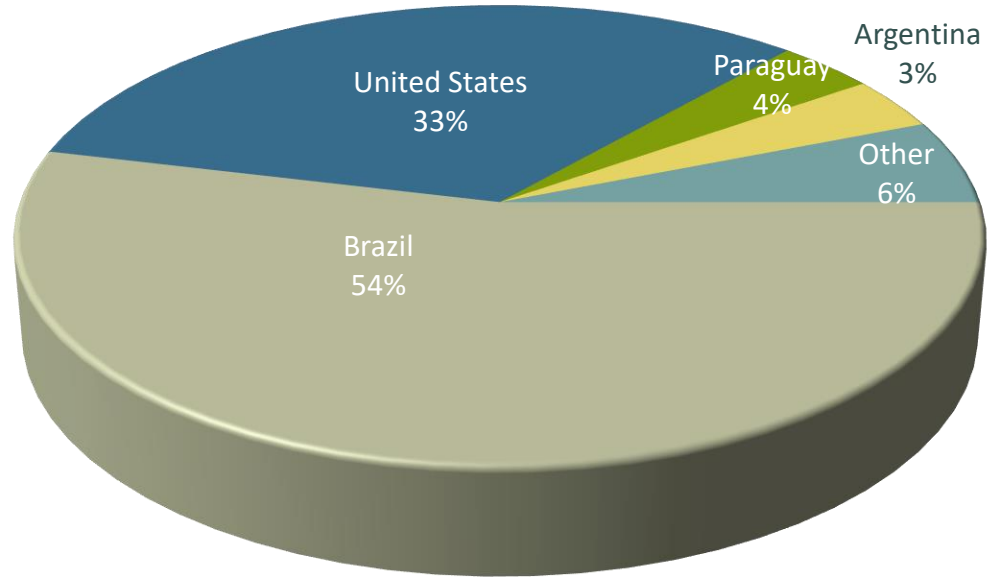
Source: USDA/GTA





## World Soybean Trade

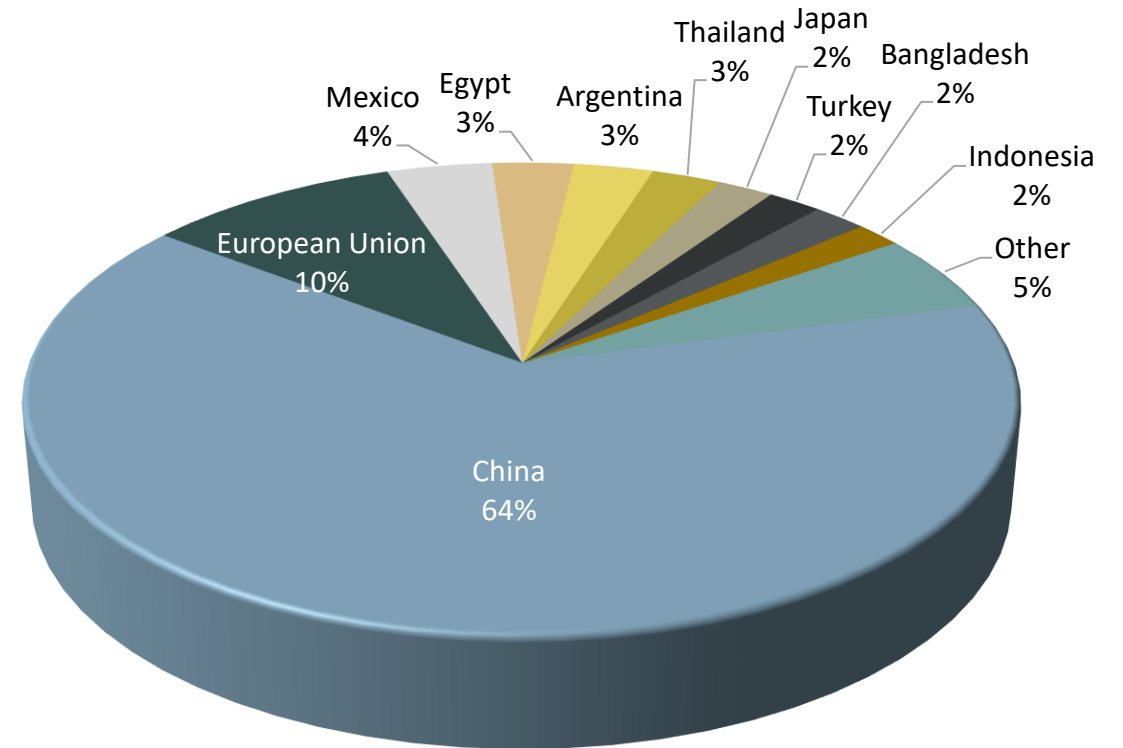
Exporters - 2021/22



Major Exporters (MMT) 2019/20 2020/21 2021/22

Brazil	92.1	81.7	93.0
United States	45.7	61.7	56.9
Paraguay	6.6	6.6	6.5
Argentina	10.0	5.2	6.4
<b>World</b>	<b>165.1</b>	<b>164.9</b>	<b>173.1</b>

Importers - 2021/22



Major Importers (MMT) 2019/20 2020/21 2021/22

China	98.5	99.0	101.0
European Union	14.9	15.0	15.0
Mexico	5.7	6.0	6.2
Egypt	4.9	4.0	4.8
<b>World</b>	<b>165.0</b>	<b>165.9</b>	<b>170.6</b>



## US Weekly Export Inspections Comparison

(000) MT as of 10/07/2021



**YTD**  
2,943

**Last Year**  
4,576

**Difference**  
1,633

**% Change**  
-35.7%



**YTD**  
3,443

**Last Year**  
9,558

**Difference**  
-6,115

**% Change**  
-64.0%



All

**YTD**  
9,522

**Last Year**  
10,723

**Difference**  
-1,201

**% Change**  
-11.2%



HRW

**YTD**  
3,712

**Last Year**  
4,256

**Difference**  
-544

**% Change**  
-12.8%



## Corn and Soybean Continuous Front Month

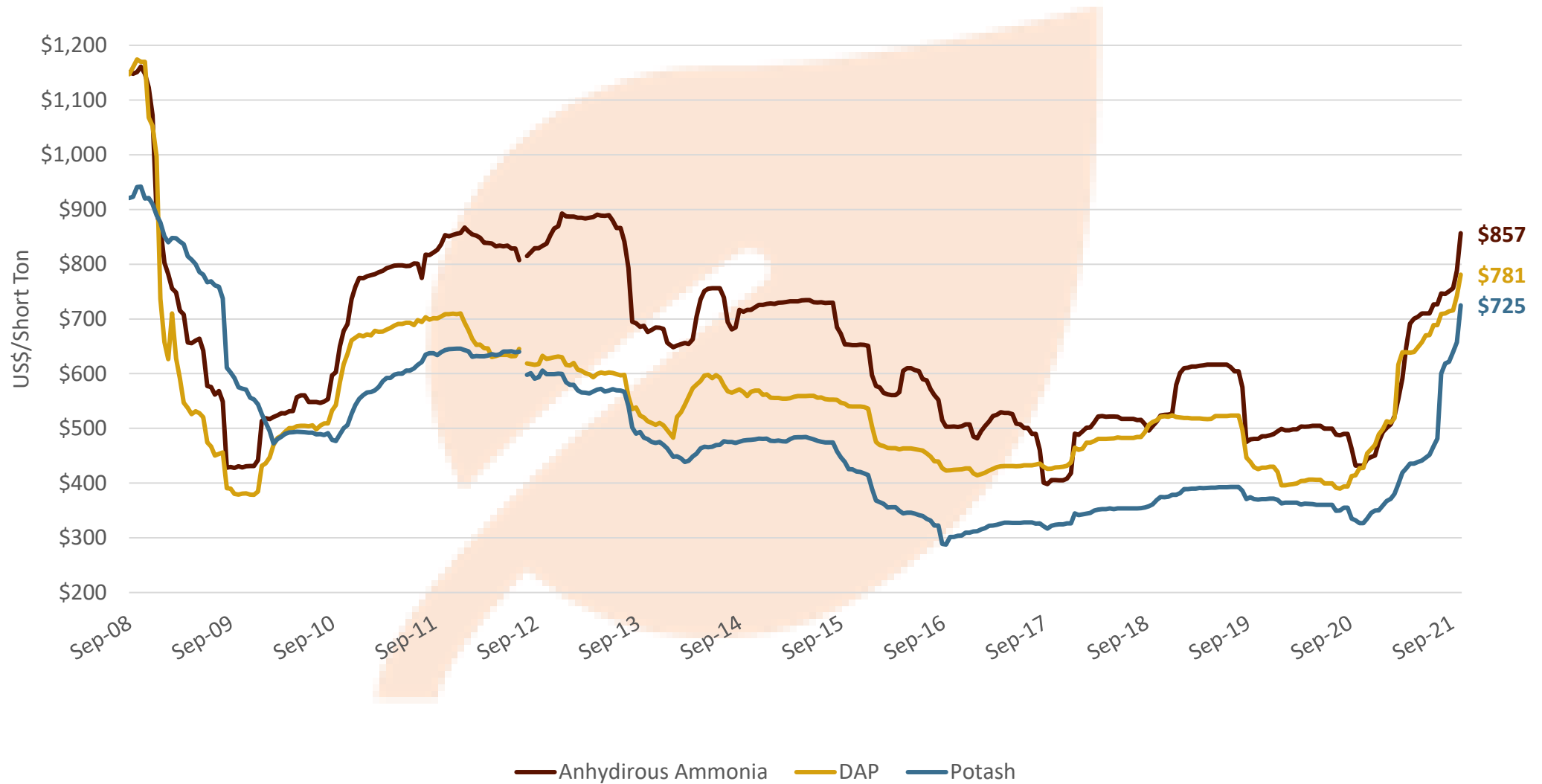


Source: FutureSource



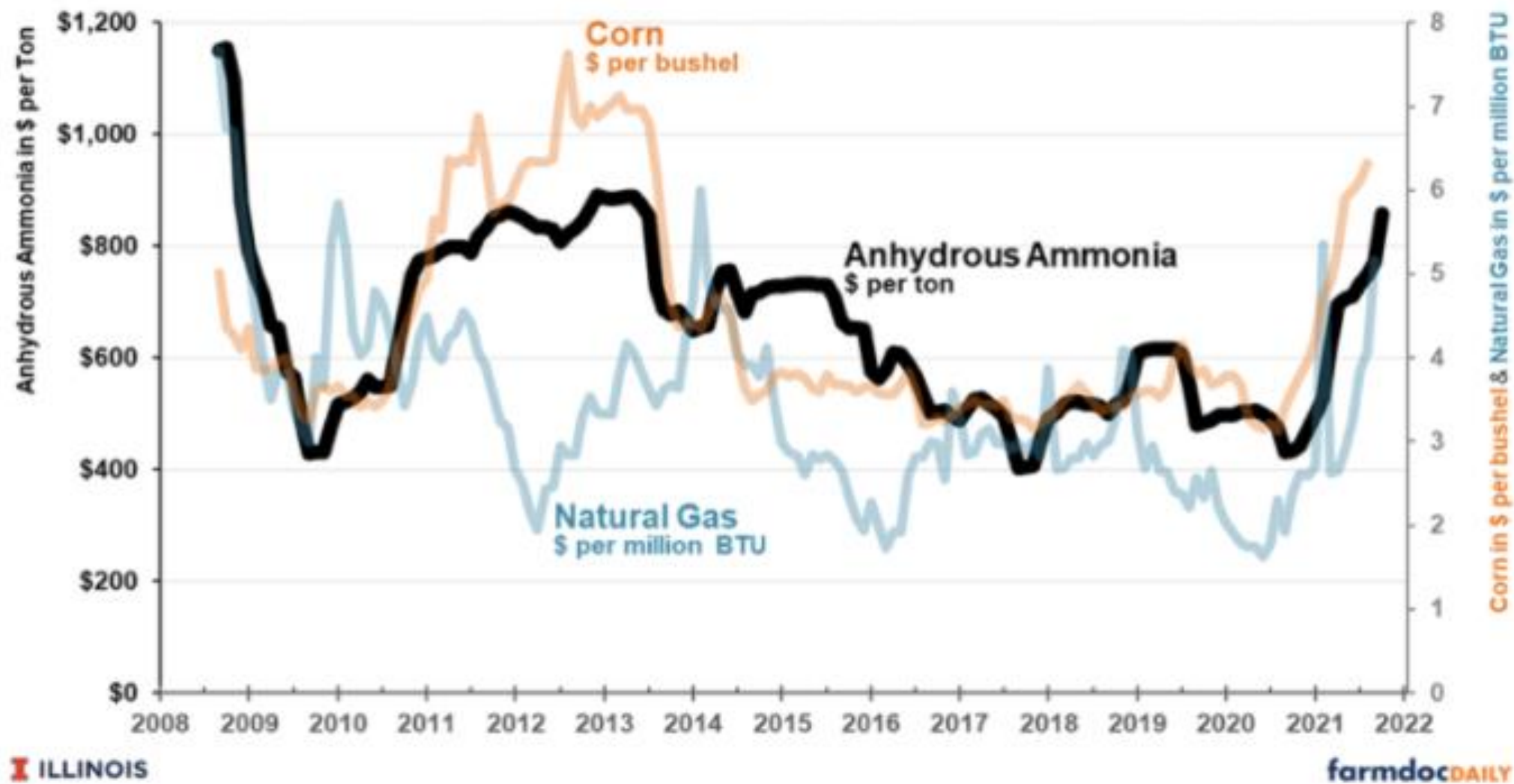


## Illinois Fertilizer Prices



➡ Crop input inflation will have an impact on soybean/corn relations possibly altering the planting mix.

Figure 2. Anhydrous Ammonia, Natural Gas, and Corn Prices, 2008 to 2021





Jake Brodbeck



WCI Symposium

November 3, 2022



# Questions and Discussion

## Questions and Discussion

- **Ken Eriksen, Senior Vice President, IHS Markit – Moderator, Barge Situation and Outlook**
- **Kristin Beck, Senior Vice President, LafargeHolcim – Cement**
- **Jake Brodbeck, Vice President, ARTCo – Agriculture**

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