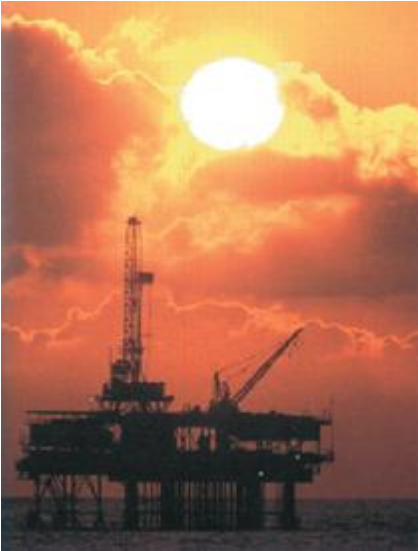


# Propane Supply Overview & Outlook

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**EIA – NASEO**  
**2009 SHOPP Conference**  
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**Walt Hart**

**PURVIN  
& GERTZ  
INC.**

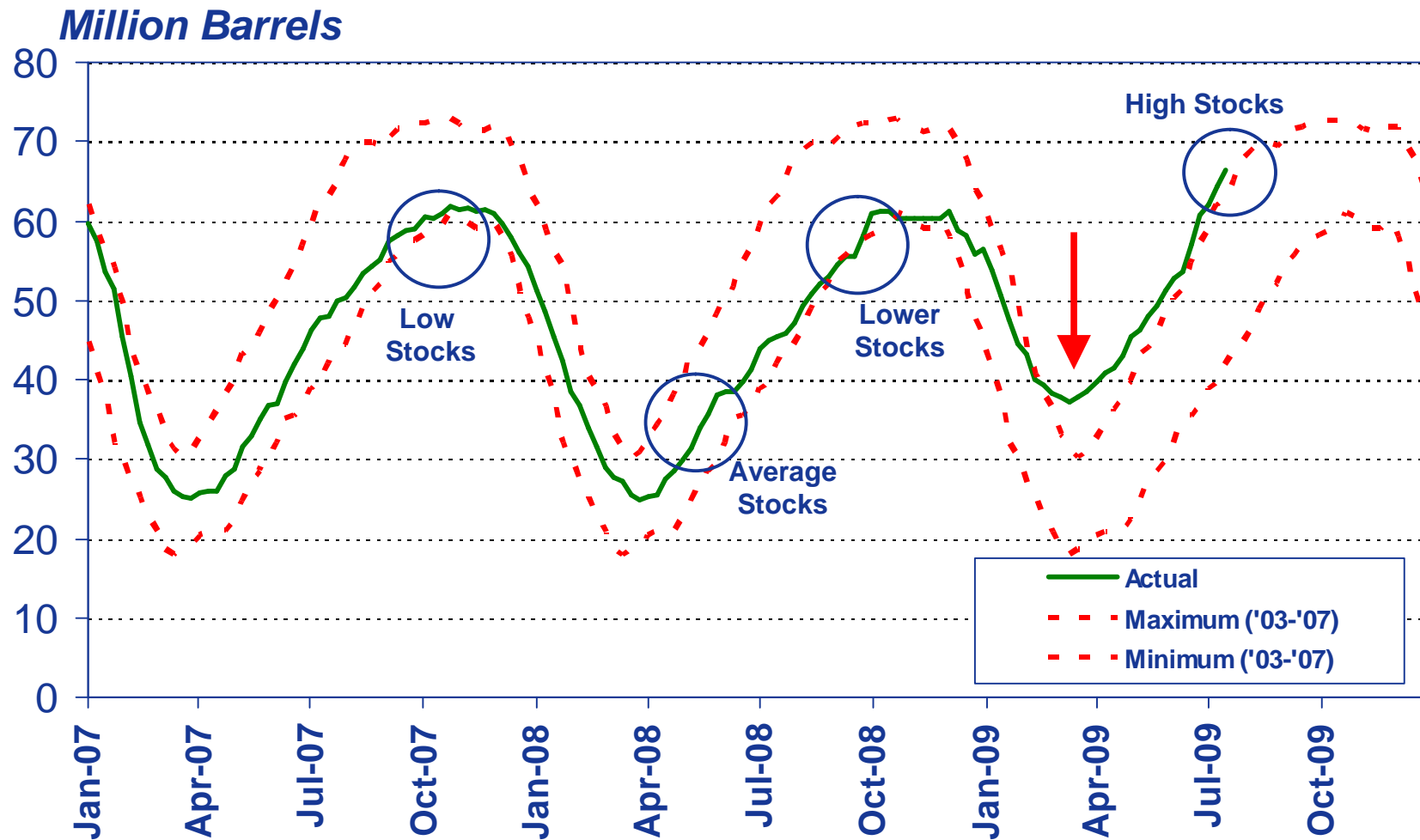
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# Agenda – Propane Supply Overview & Outlook

- Ø Background on U.S. propane supply and demand
- Ø Propane supplies in New England this past winter
- Ø New England propane infrastructure
- Ø Propane outlook



# Total U.S. propane stocks were much higher than normal in the spring



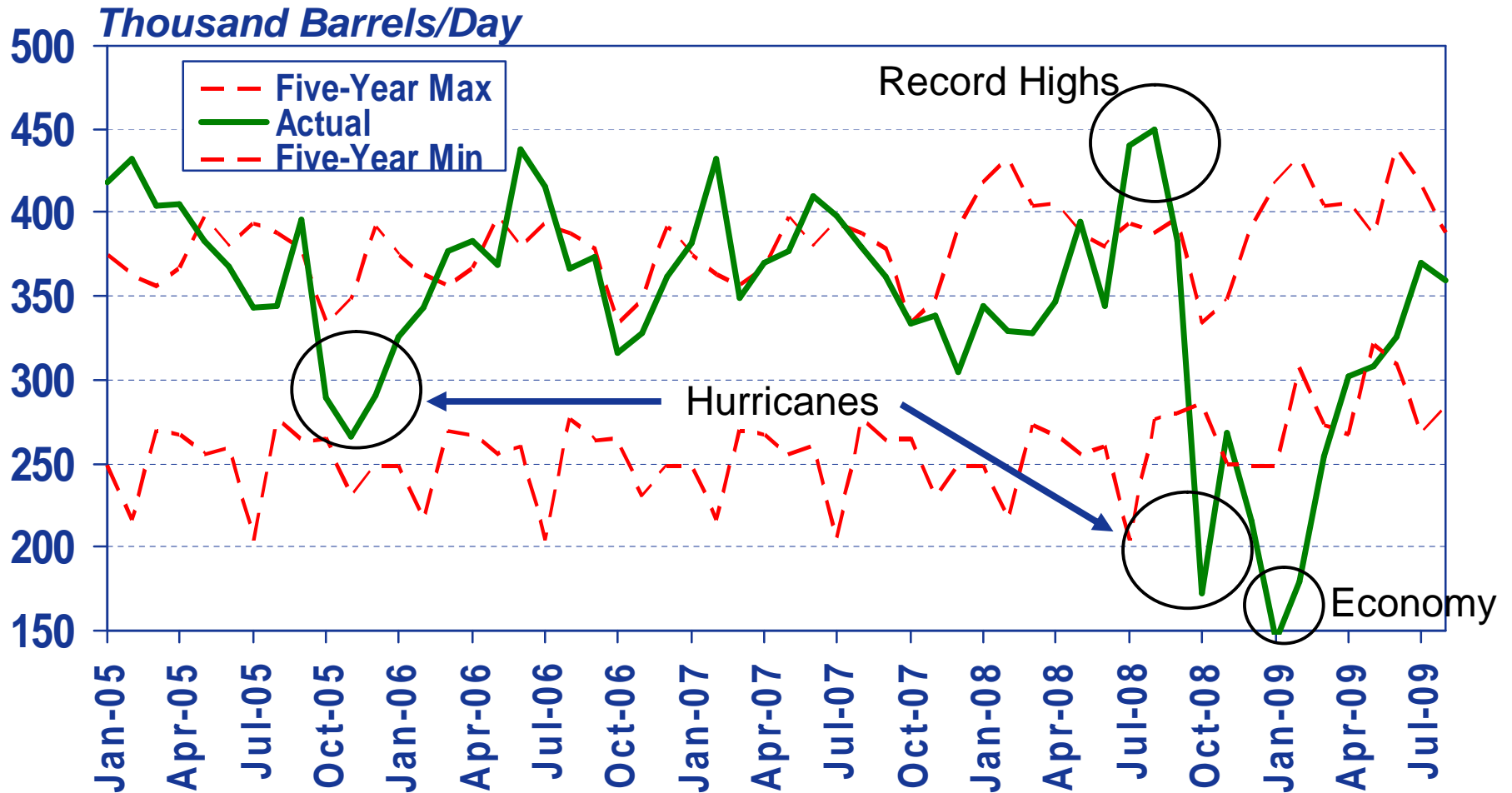
# What slowed the build of U.S. propane inventories in the summer of 2008?

- **Inventories became low by the fall of 2008 because of:**
  - **Low waterborne imports**
  - **Low refinery production rates, and**
  - **High consumption by petrochemical companies**
- **Despite relatively high gas plant production rates**

# What changed the inventory trend in the fall and winter?

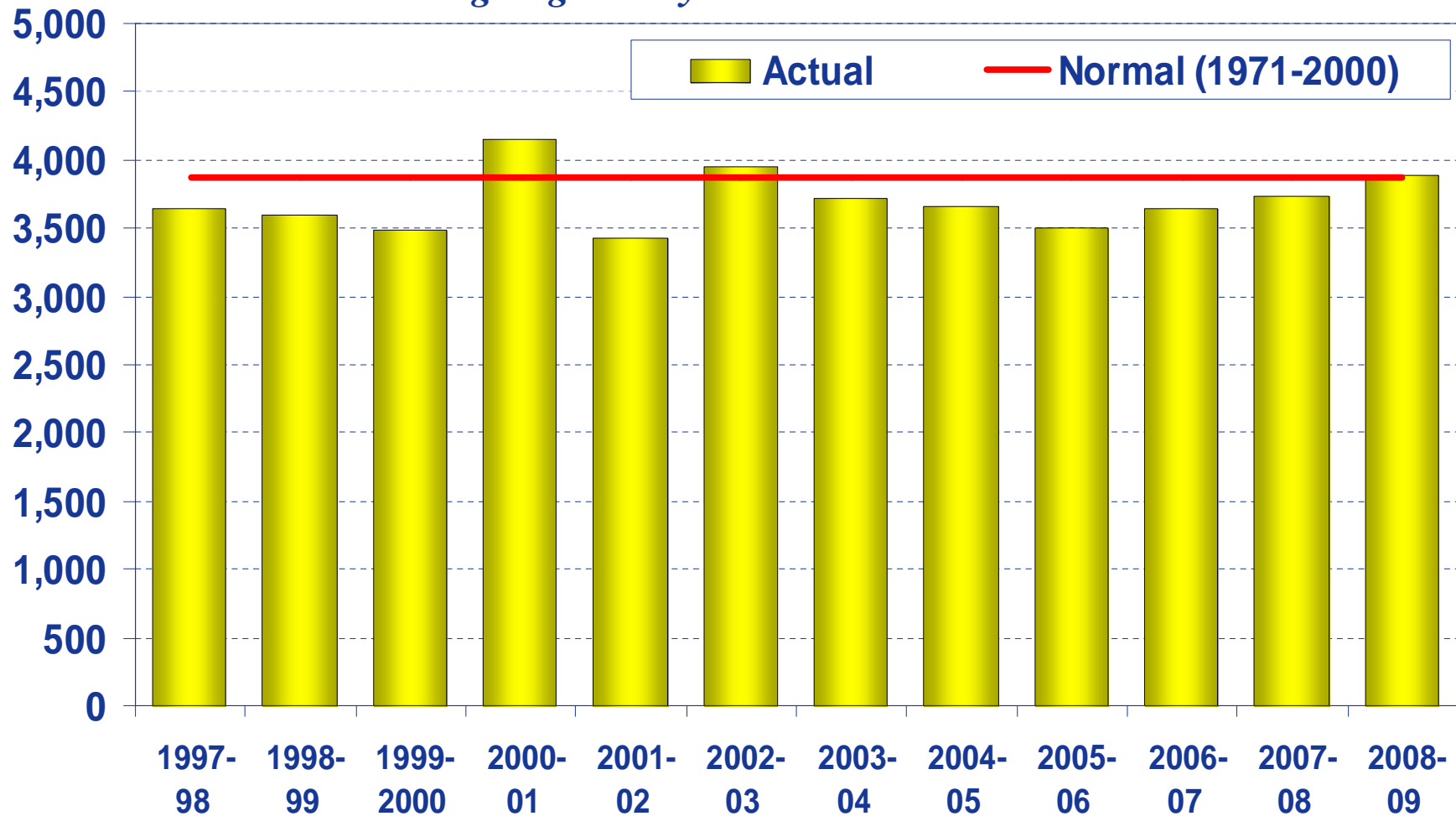
- U.S. propane stocks became relatively high through the fall and winter primarily because of **low petrochemical consumption**
- Despite
  - A normal winter
  - Very low imports
  - Relatively low production levels

# Hurricanes and the economy cut ethylene plant propane consumption roughly in half

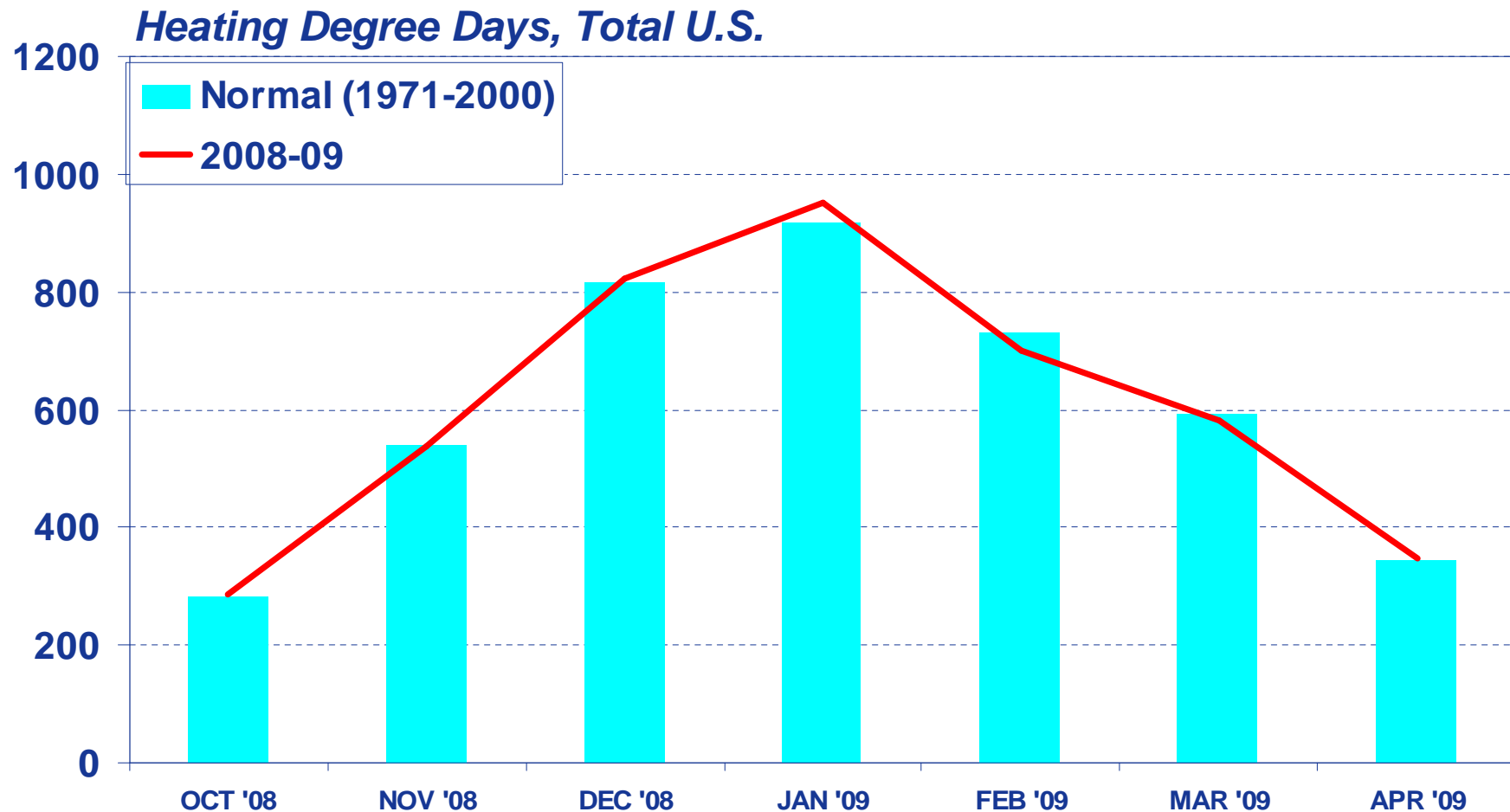


# The U.S. had a “normal” winter

*Oct. – March Heating Degree Days*

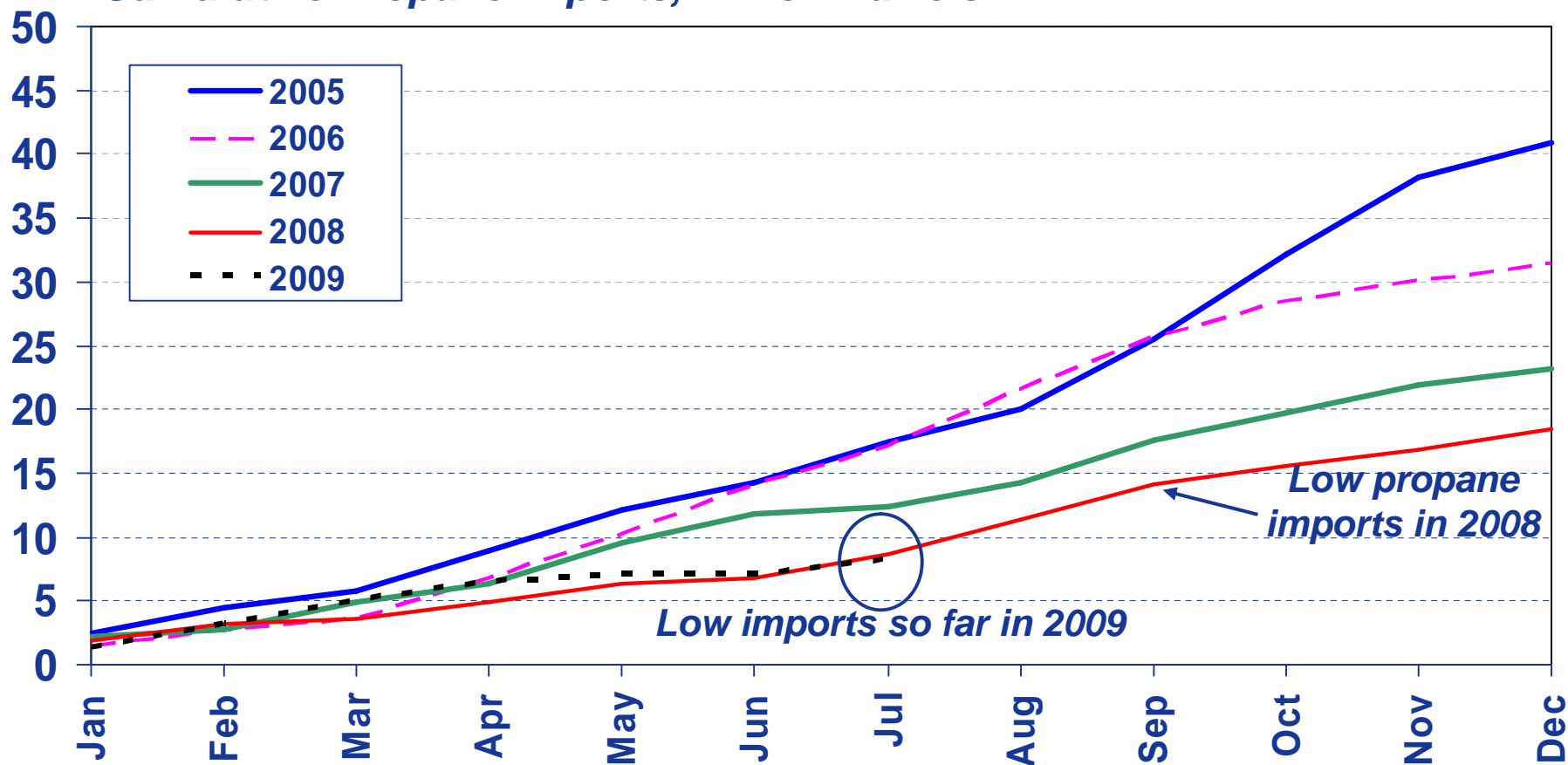


# Last winter, most months had “normal” weather in the total U.S.



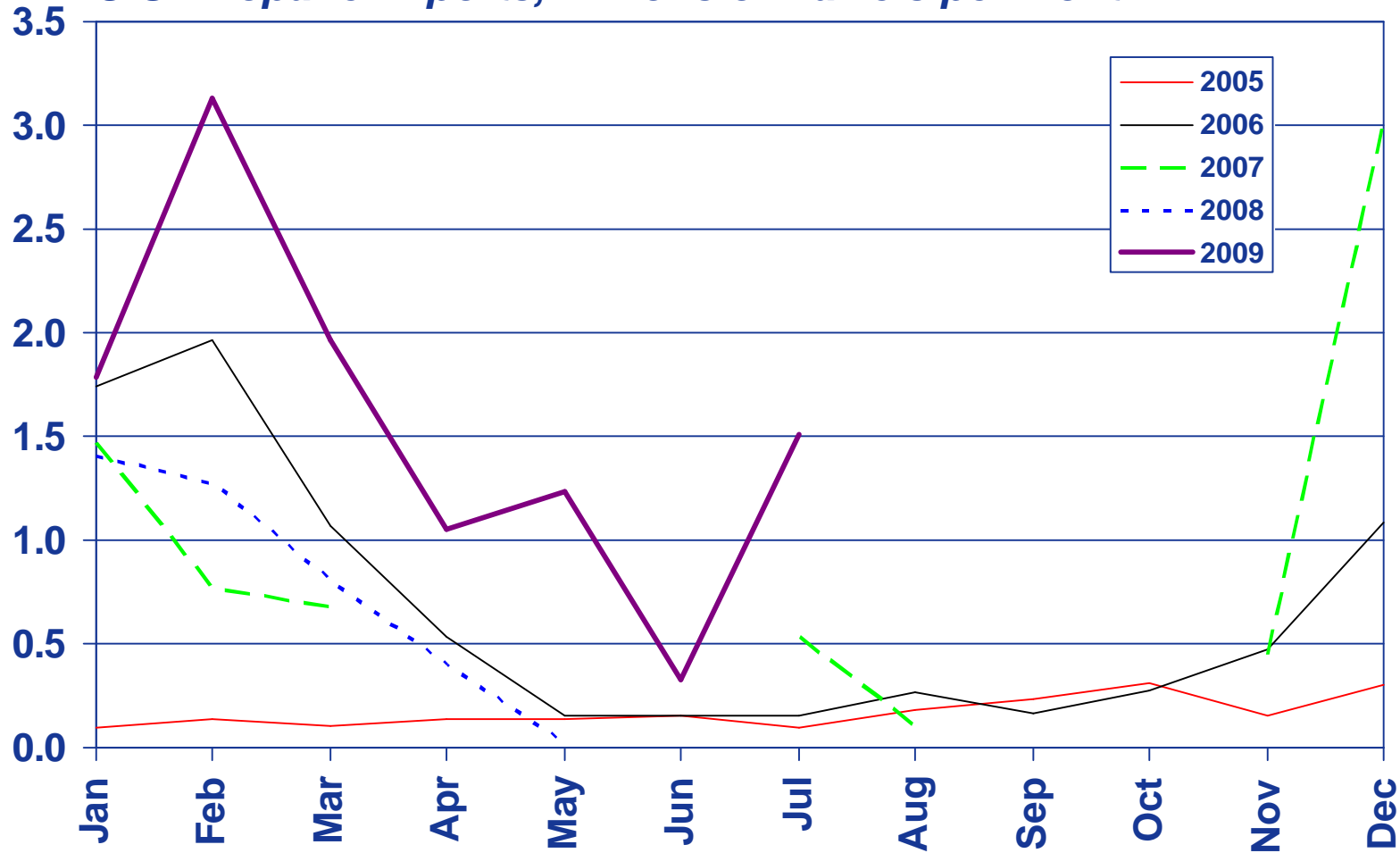
# Year-to-date waterborne propane imports are below average, again

*Cumulative Propane Imports, Million Barrels*

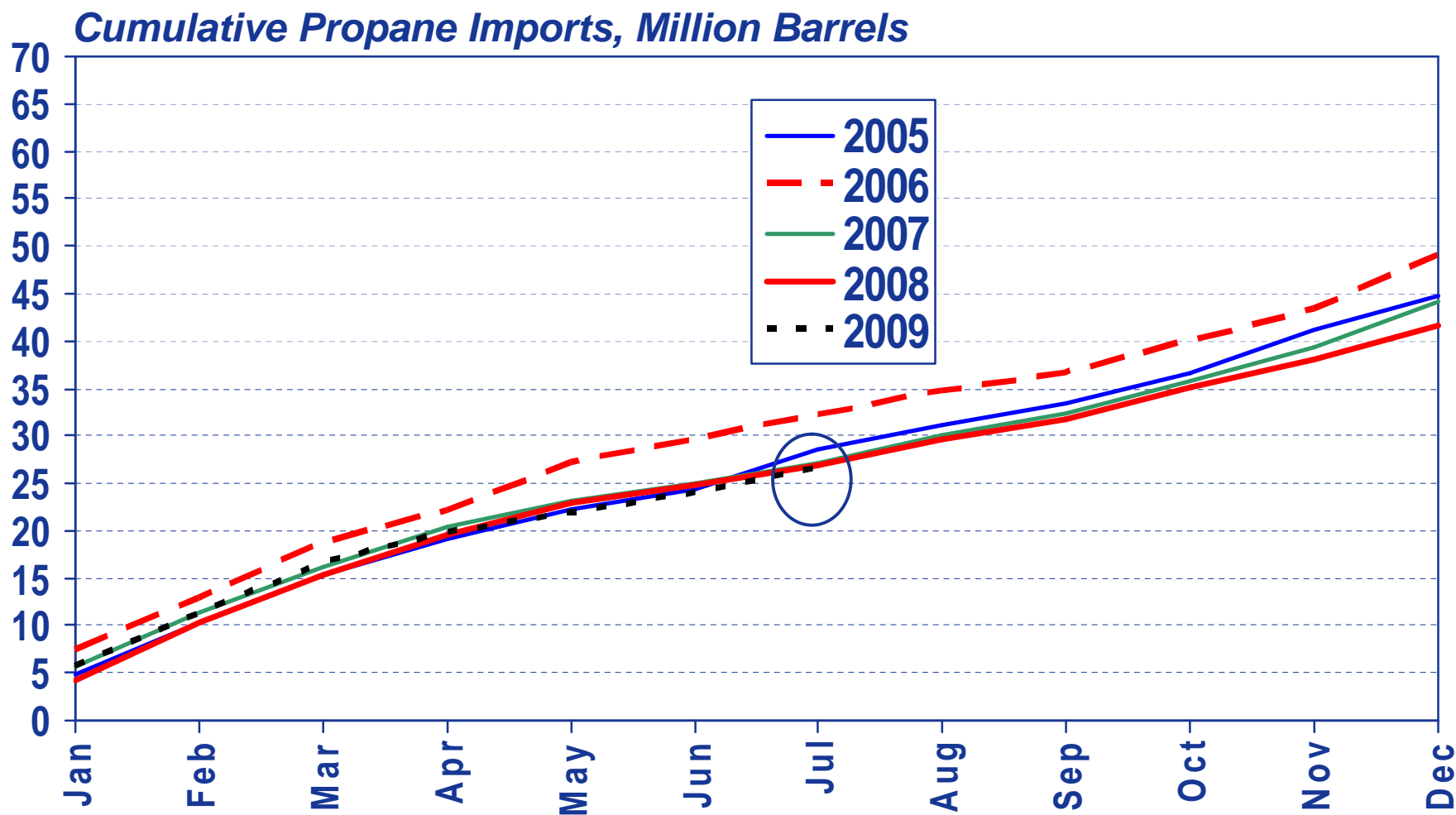


# U.S. propane prices have driven exports rather than imports

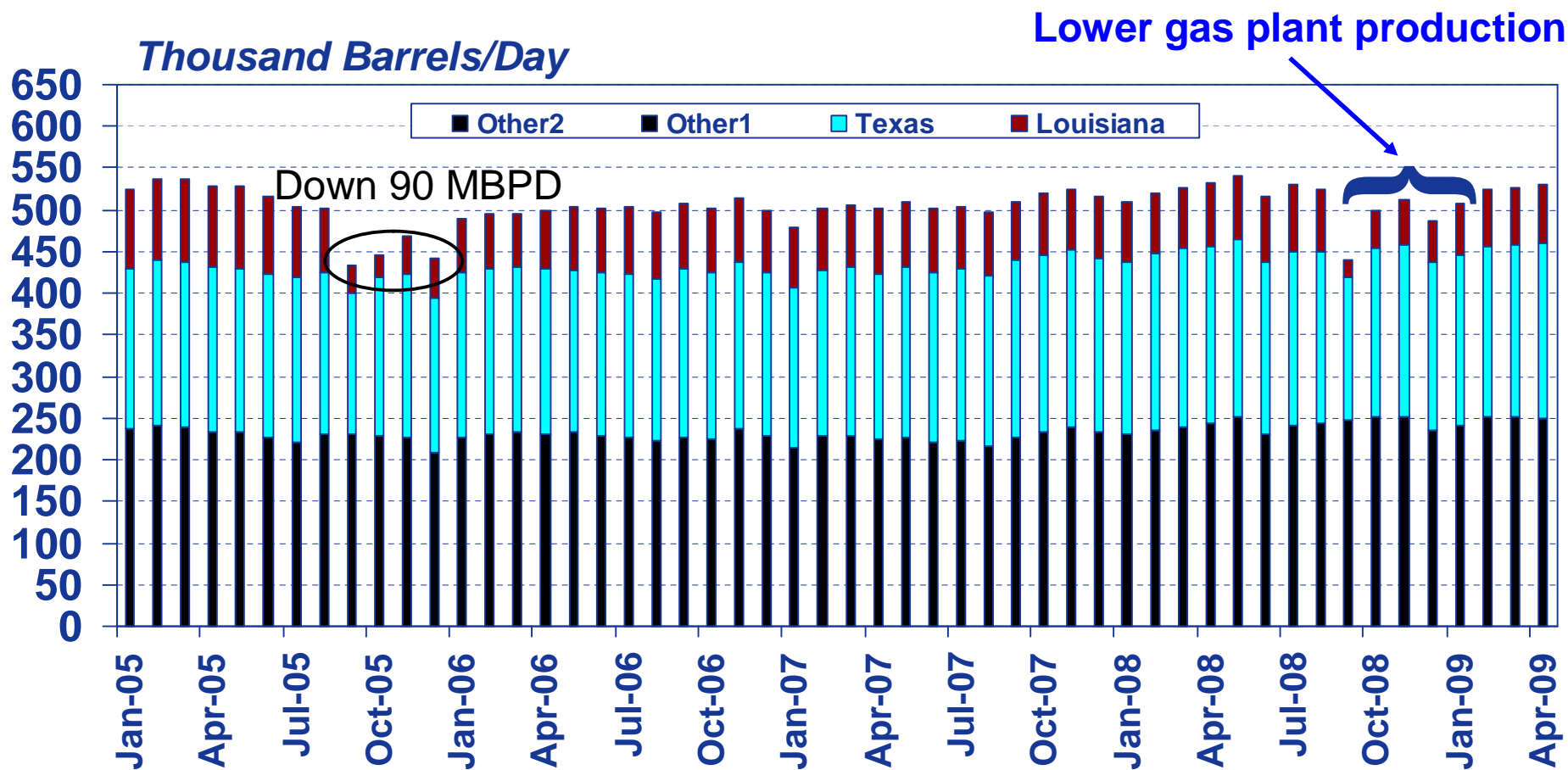
*U.S. Propane Exports, Millions of Barrels per Month*



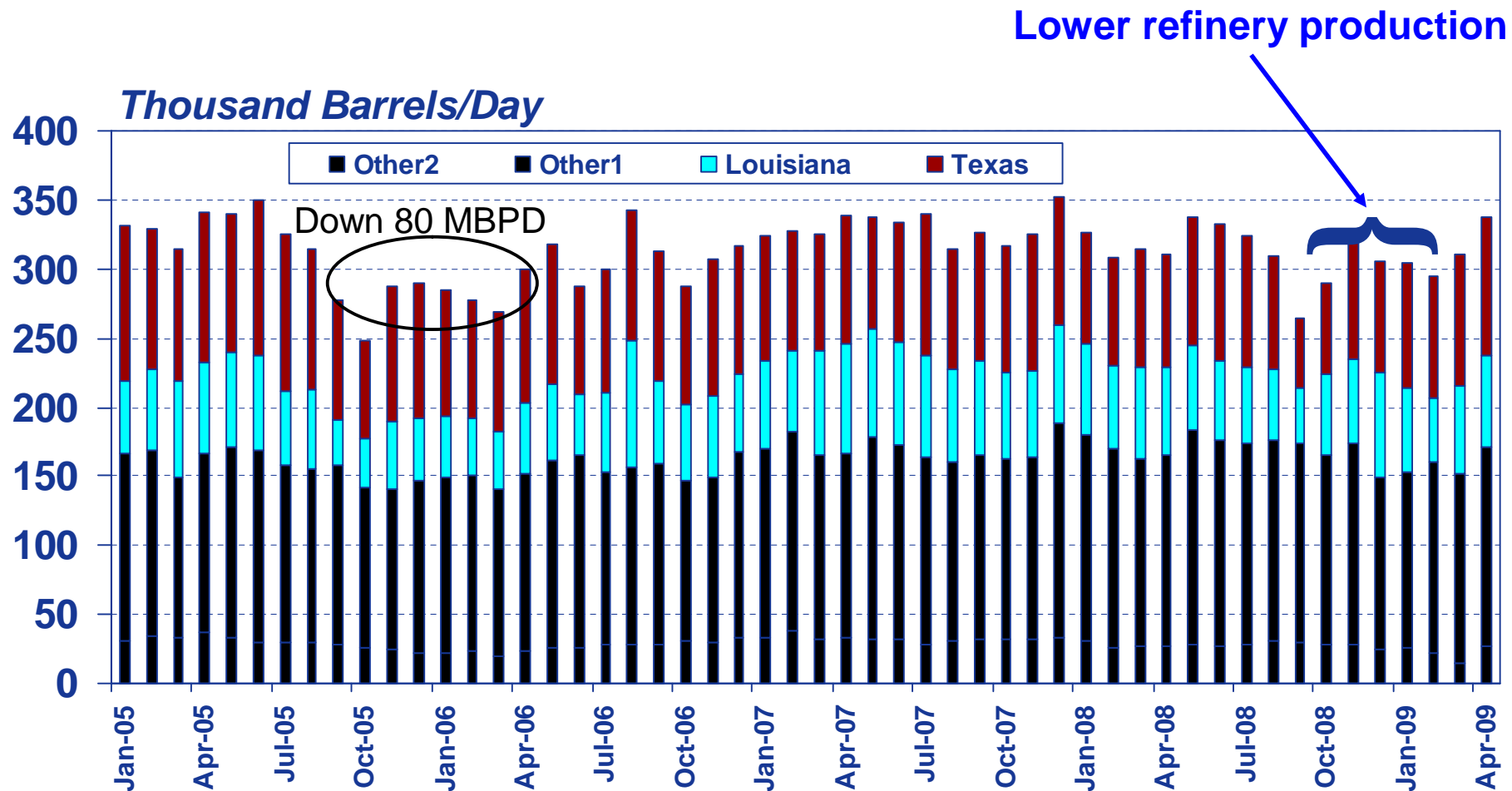
# Year-to-date imports from Canada are on the low end as well



# Gulf Coast hurricanes disrupted propane production from gas processing plants



# U.S. refinery propane production has been affected by the storms as well as the economy



**There are significant regional differences in propane supply and demand within the United States...**

## The winter situation in New England was not the same as reflected in the U.S. totals

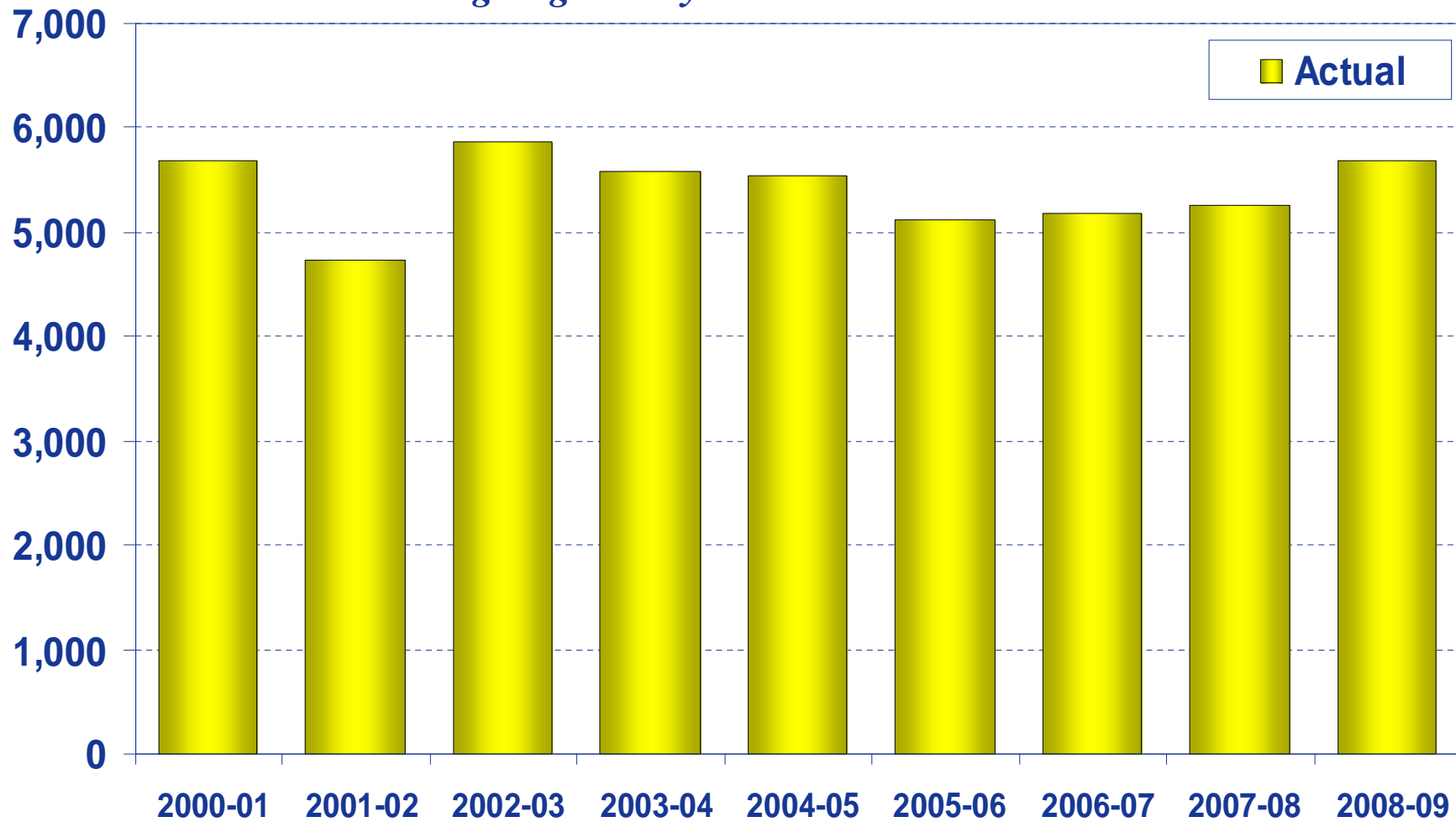
- Ø New England had a colder winter than in recent years
- Ø Consumer stocks were likely low coming into the heating season
- Ø Primary propane stocks declined early in the heating season
- Ø Trucks were lining up at the TEPPCO terminals, and wholesalers began to travel further south to get propane to meet demand
  - § Allocations reportedly began at the Watkins Glen terminal by early December
  - § The Dixie Pipeline eventually went on allocation as well

# The Consummate Tempest??

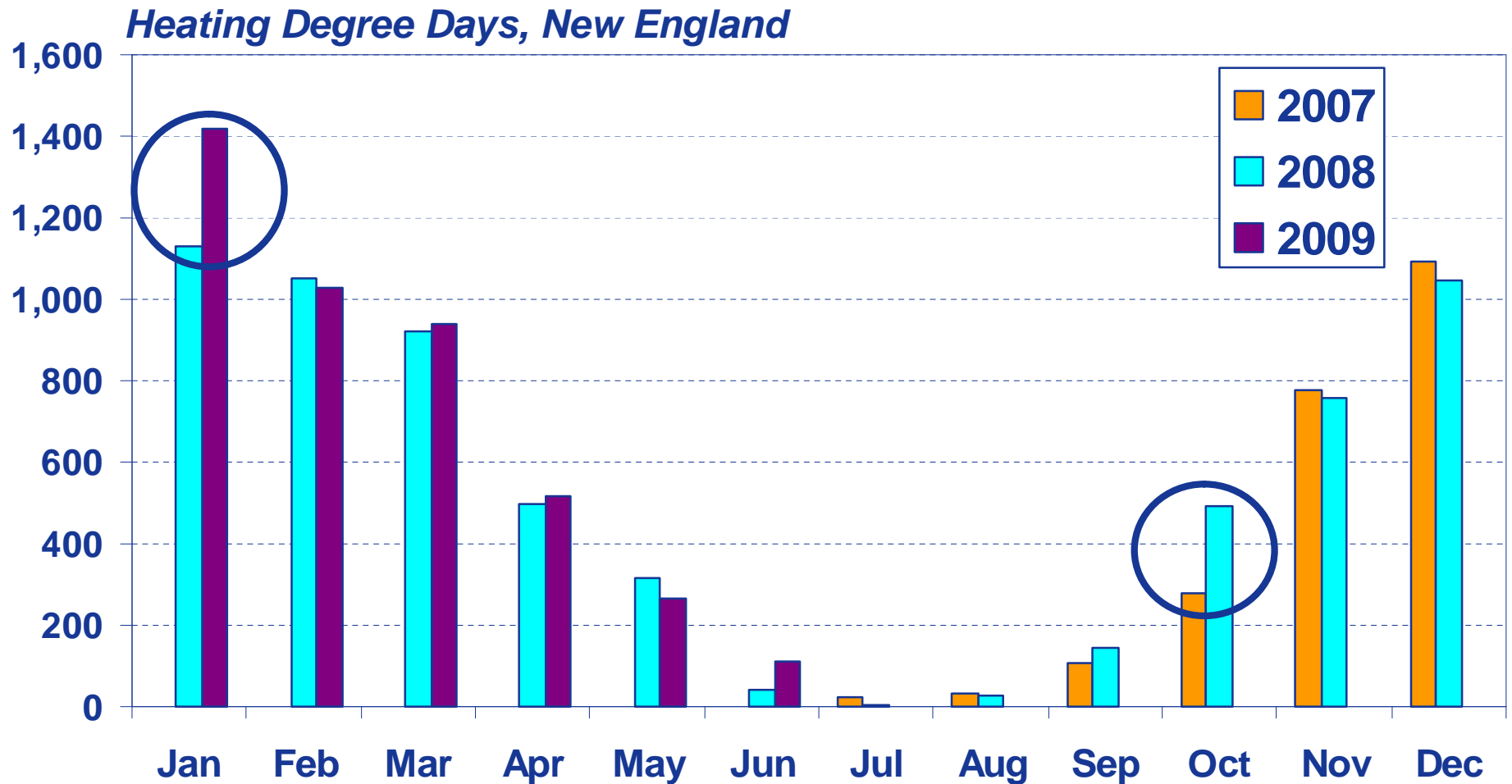
- Ø **Waterborne propane supplies were also limited**
  - § **Algeria's Sonatrach is now the only contract supplier to East Coast terminals**
  - § **Stormy weather in the Mediterranean reportedly closed the Algerian port of Bethouia for a week or more in December, January and February**
  - § **The Jones act prevented foreign-flagged ships from obtaining propane from the U.S. Gulf Coast**
  - § **It didn't help that Europe was also having a cold winter, and was bidding away some cargoes from the U.S. East Coast**
- Ø **Railcars were reportedly delayed as well**

# New England had its coldest winter since 2002/3

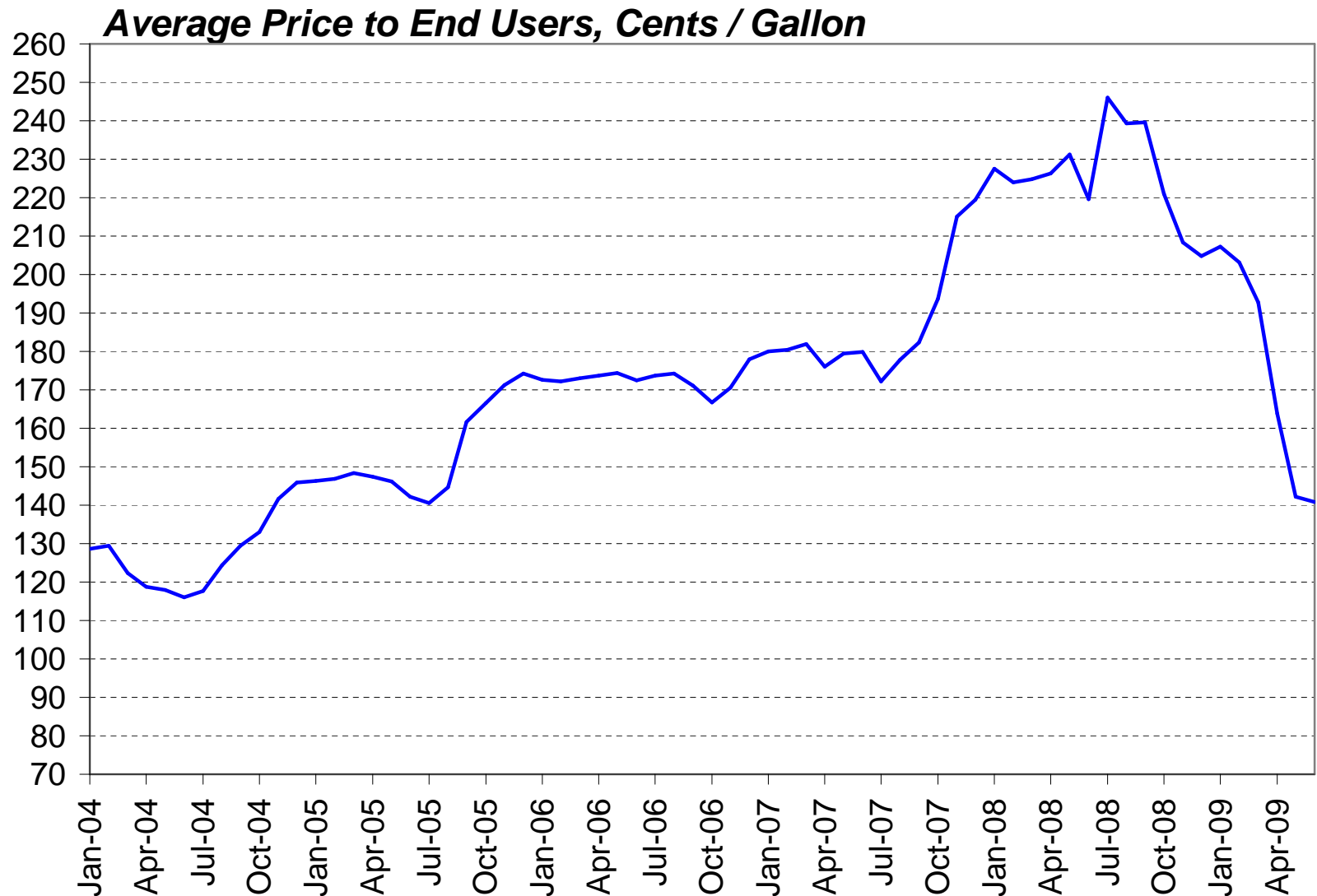
*Oct. – March Heating Degree Days*



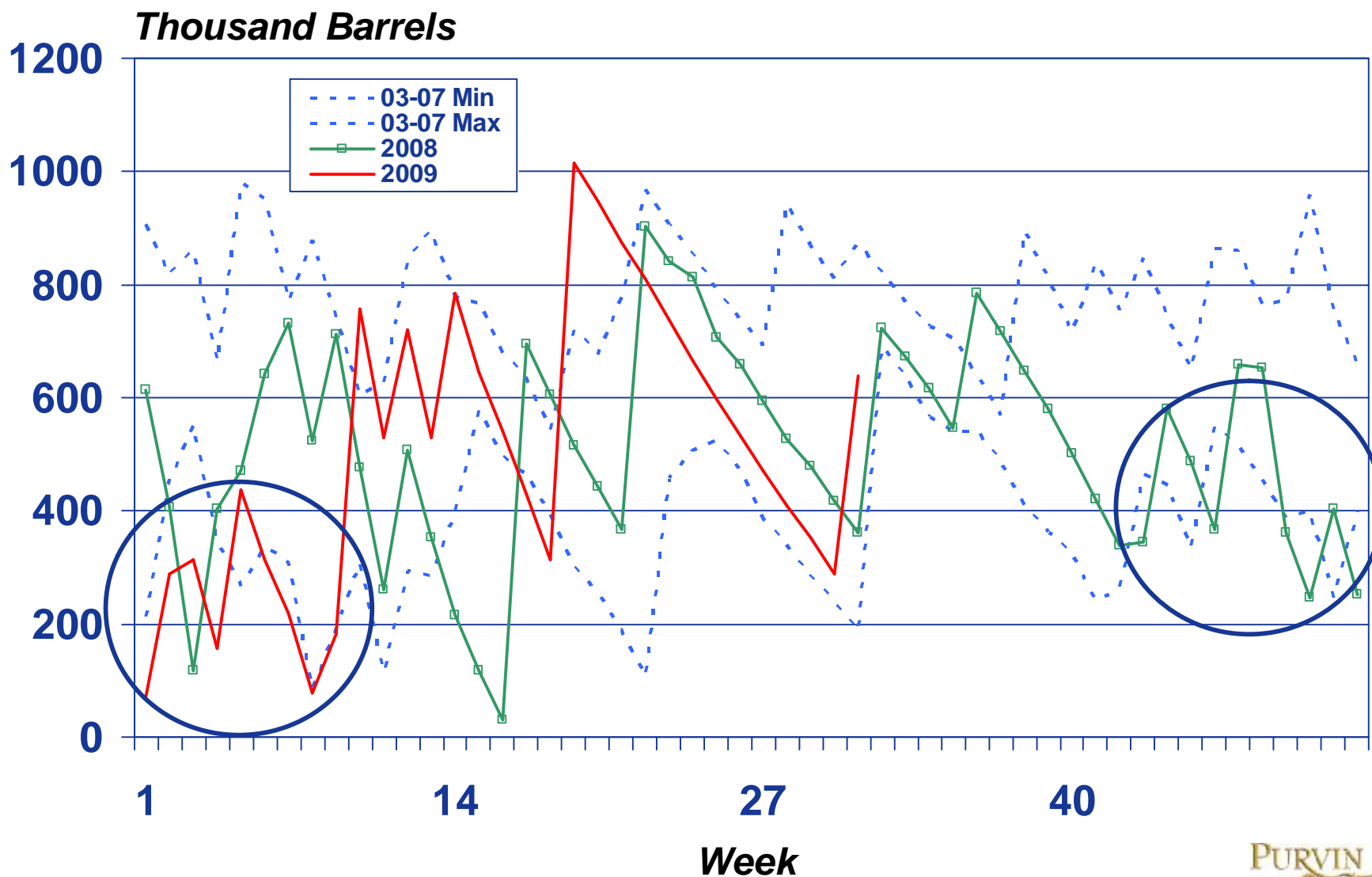
# October and January were much colder than in the previous winter



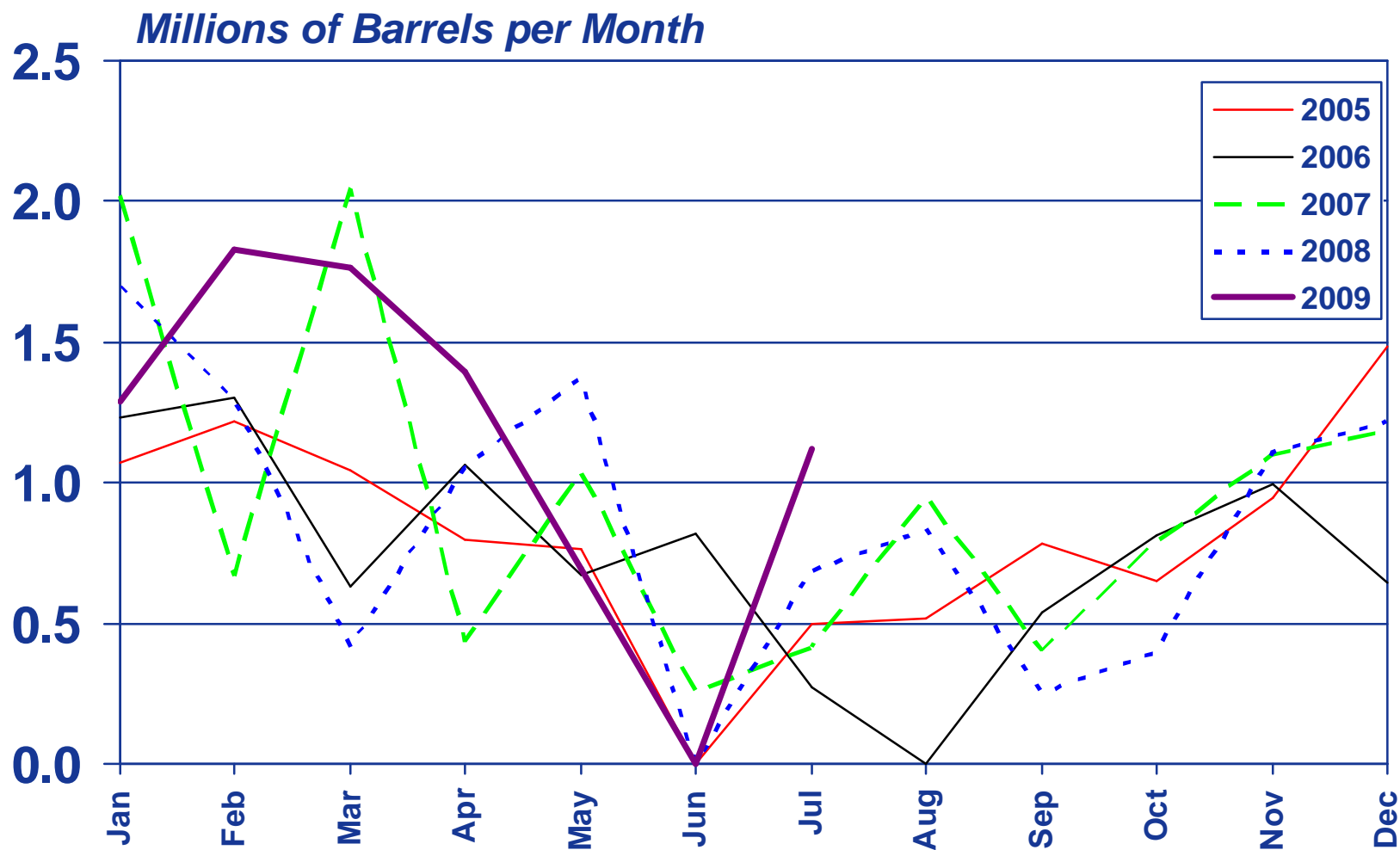
# Consumers appear to have deferred propane tank refills due to high prices



# New England propane stocks plunged early and stayed low



# A boost in East Coast waterborne propane imports came too late



# Major New England Propane Infrastructure

# Major Propane Infrastructure

## ∅ Production (LPG is a By-Product)

- § Gas Processing Plants

- § Refineries

## ∅ Transport

- § Pipelines

- § Waterborne

- § Rail

- § Highway

## ∅ Storage

- § Marine Terminals

- § Inland Terminals

- § Customer Storage

# Propane Production in New England

## ∅ None

### § No Gas Processing Plants

- About seven GPPs in Pennsylvania
- Marcellus and Utica shales in PADD IB

### § No Refineries

- Closest in New Jersey, Pennsylvania, Canada

# Propane Transport

# The TEPPCO Pipeline delivers propane from Mont Belvieu Texas as far as Selkirk New York



## *Pipelines*

- Ø TEPPCO reportedly can deliver up to 60 MBPD
  - § 150 MBPD out of storage
- Ø No other NGL pipelines serve New England
- Ø Pipelines are expensive to build in New England
  - § NH – The Granite State

# LIQUEFIED GAS CARRIER - FULLY REFRIGERATED CARGO



**(Size: 10,000 to 80,000 Cubic Meters)**

# LPG Railcars



- Ø Typical railcar size varies, depending on the country.
- Ø In the U.S., the average LPG railcar has a capacity of 33,500 gallons.
- Ø Typical pressure rating is 250 psi working pressure.
- Ø Cars contain baffles.



# LPG Truck Transportation

## Ø Bobtail

§ 2,200 to 2,600 gallons or 4 to 5 tonnes



## Ø Transport

§ 10,500 gallons or 21 tonnes



# Propane Terminals and Storage

# Sea-3 Newington, NH Terminal Profile

- Ø Propane import terminal with 51 M tonnes of refrigerated storage in 2 tanks (36 and 15 M tonnes capacity)
- Ø The facility was built in 1975 and is owned and operated by Sea-3 / Transammonia (privately held company).
- Ø Dock characteristics are 720' LOA, 110' beam, 36.5' draft, and 130' air draft.
- Ø Two low-span drawbridges prevent access by 75,000 cbm+ vessels, maximum size limit is 62,000 cbm.
- Ø Current maximum unloading rate is 12.5 MBbl/hr at -44 F.
- Ø The facility typically receives 10 to 12 ships per year. SEA-3 Imports and markets around 3 to 4 MM barrels per year.
- Ø The terminal has 6 rail loading spots, 5 truck loading spots, can hold up to 25 railcars on site.
- Ø The terminal can receive pressurized propane via rail.

# Sea-3 Terminal at Newington, NH



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Image © 2009 Maine GeoLibrary

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© 2008 Google™

43°06'25.96"N 70°48'03.19"W

elev 3 m

2003

Eye alt 1.02 km

# TEPPCO Providence, RI Terminal Profile

- Ø Propane import terminal with 400 M barrels of refrigerated storage.
- Ø The facility was built in 1972 and is owned by TEPPCO Partners LP. It has a terminaling agreement with Duke Energy NGL.
- Ø Dock berth is normally 500 feet, but with coordination can be overlapped to handle vessels up to 700' LOA.
- Ø The dock has a 35' draft over a silt bottom.
- Ø There are no significant beam or air draft restrictions.
- Ø The maximum unloading rate is 8,000 barrels per hour.
- Ø The facility receives around 10 ships per year and loads 80 to 100 trucks per day in winter.

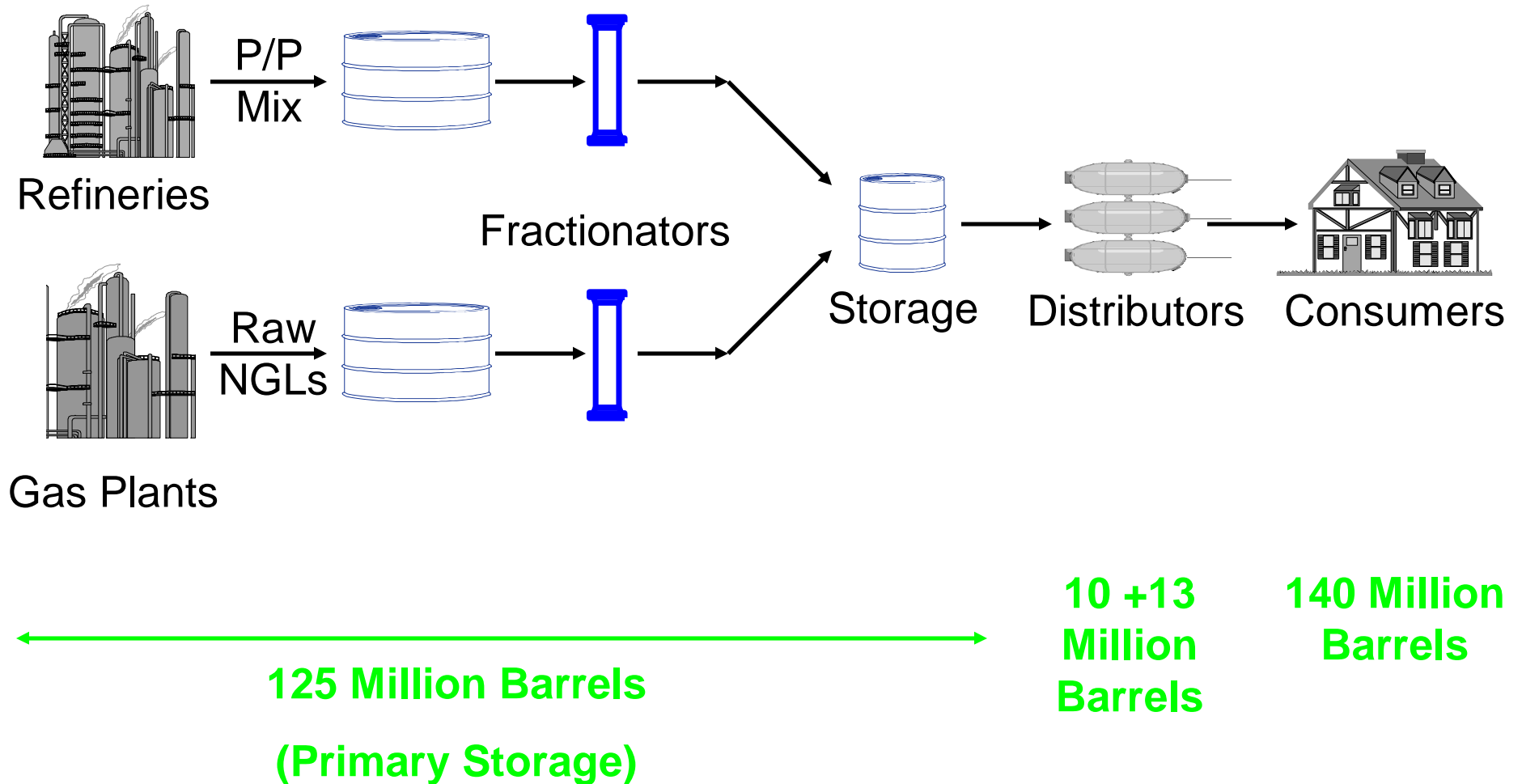
# TEPPCO Providence, RI Terminal



# Major New England Rail to Transport Terminals

<b>Company</b>	<b>Plant Name</b>	<b>State</b>	<b>Storage (Bbls)</b>
<b>Dead River Co</b>	<b>Hampden</b>	<b>ME</b>	<b>2,142</b>
<b>DCP Midstream</b>	<b>Auburn</b>	<b>ME</b>	<b>2,800</b>
<b>DCP Midstream</b>	<b>Bangor</b>	<b>ME</b>	<b>2,857</b>
<b>DCP Midstream</b>	<b>Westfield</b>	<b>MA</b>	<b>2,800</b>
<b>Plains All American</b>	<b>Claremont</b>	<b>NH</b>	<b>15,429</b>
<b>Eastern Propane</b>	<b>Rochester</b>	<b>NH</b>	<b>21,400</b>
<b>DCP Midstream</b>	<b>Berlin</b>	<b>VT</b>	<b>2,800</b>

# U.S. secondary & tertiary storage is LARGE

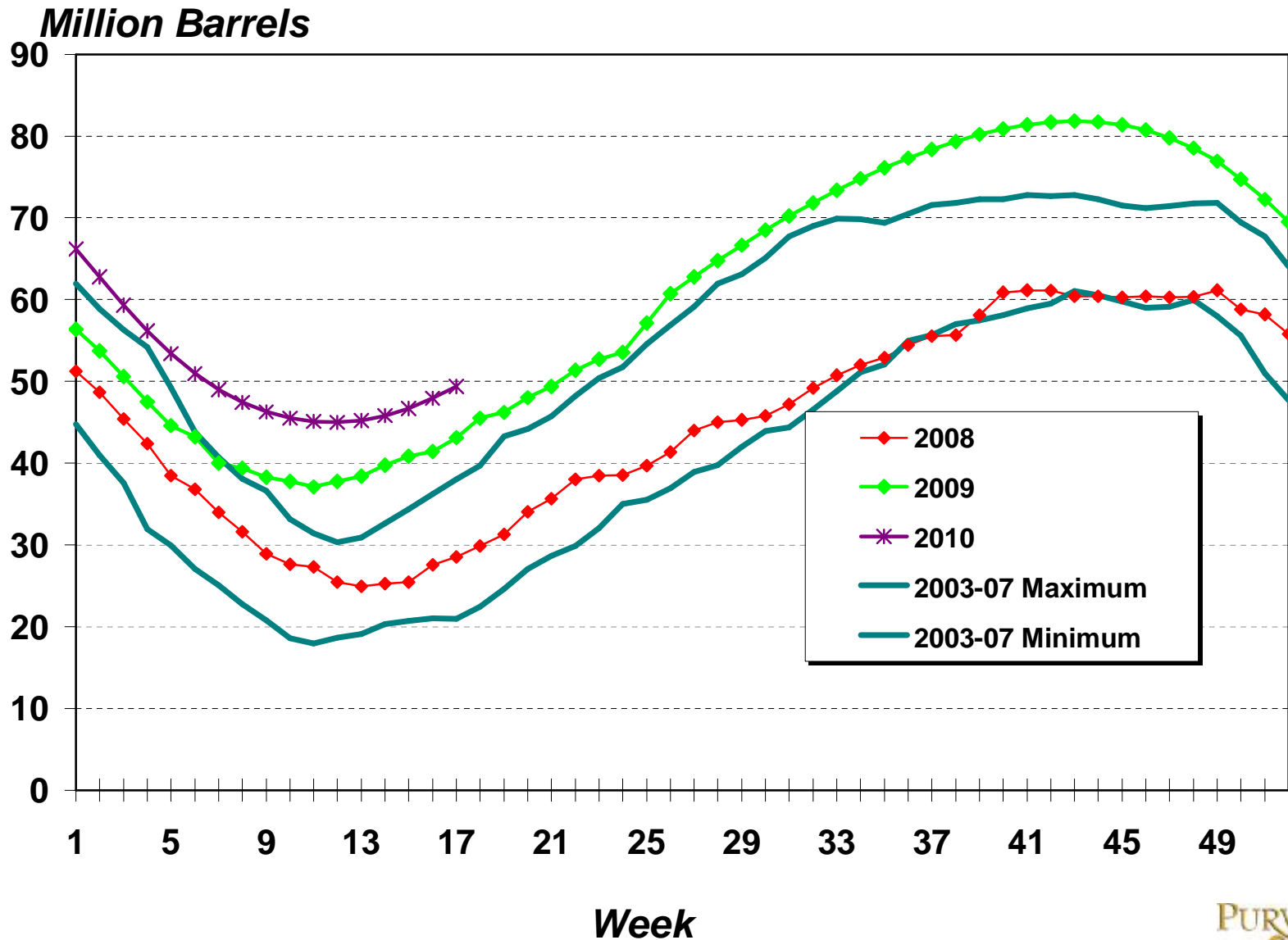


# Propane Outlook

# U.S. propane supplies this winter will depend on:

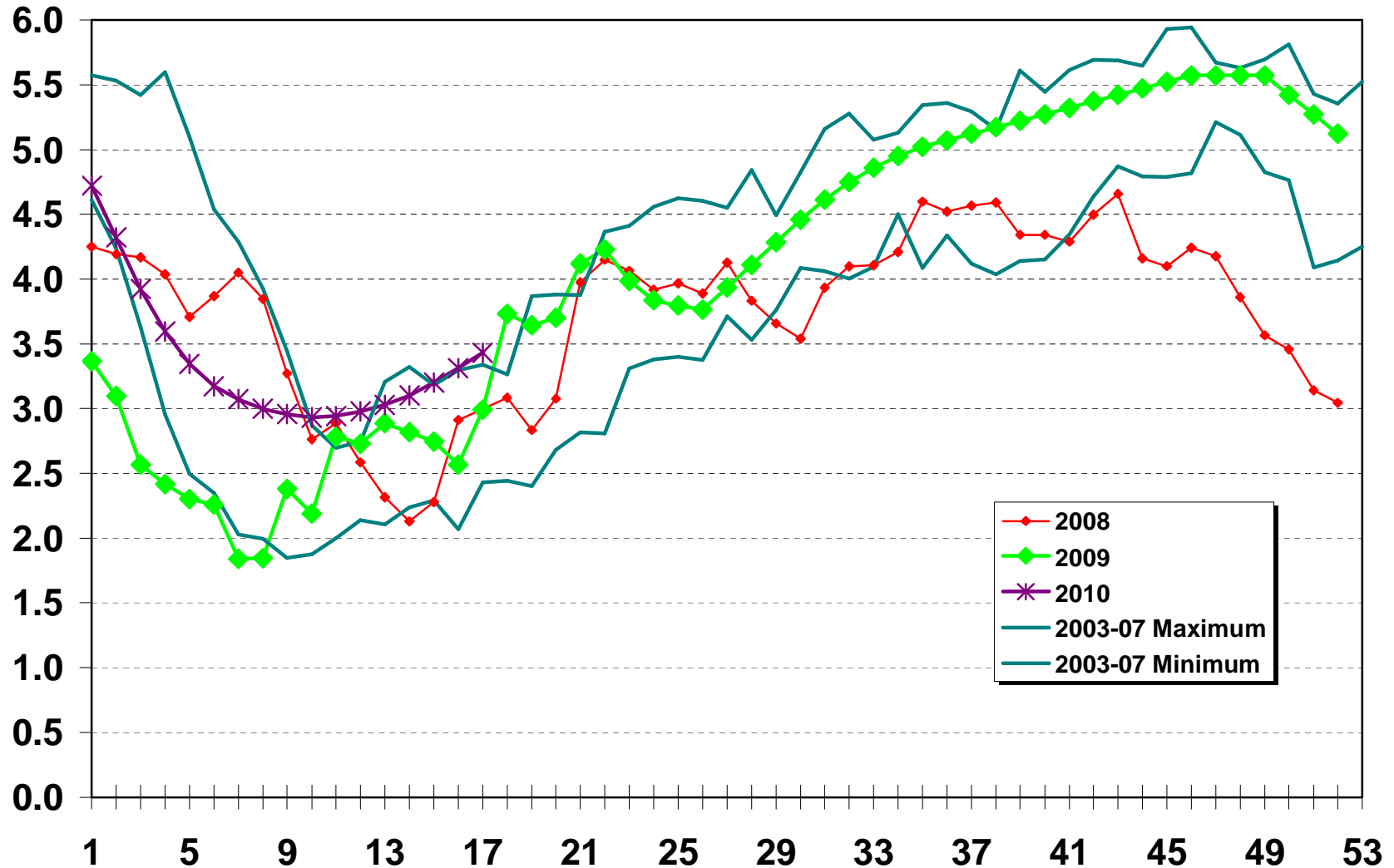
- How much propane will the ethylene plants crack?
- Will the U.S. attract more imports?
- Will hurricanes disrupt supplies?
- Will the winter be warm, cold, or average?
- Will the economy support the normal level of refinery runs?
- Will gas processing plant propane production decline due to reduced natural gas rig counts?

# Propane stocks for the total U.S. should remain high if the winter is about average



# East Coast propane stocks appear adequate for now, but they did last year too...

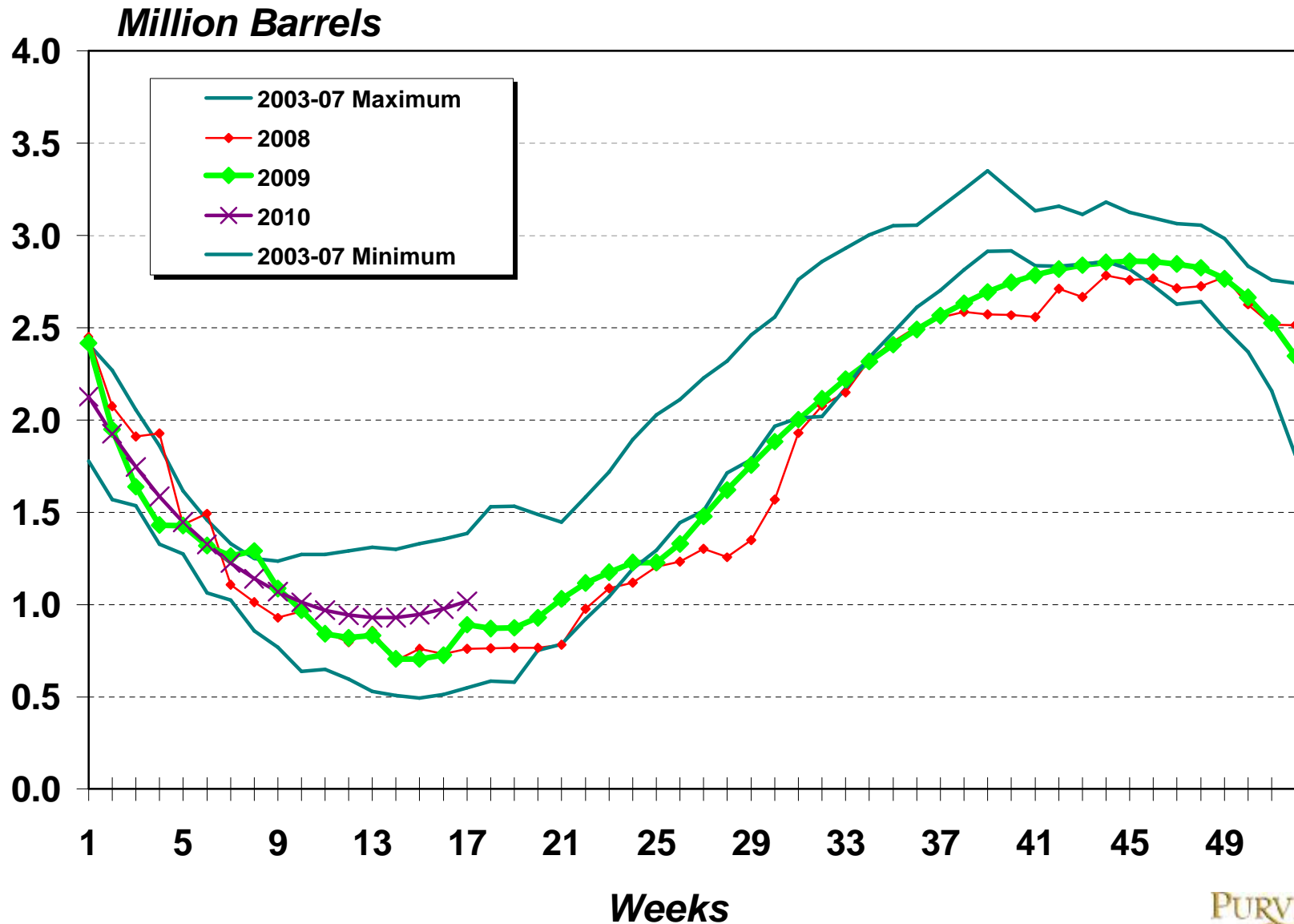
Million Barrels



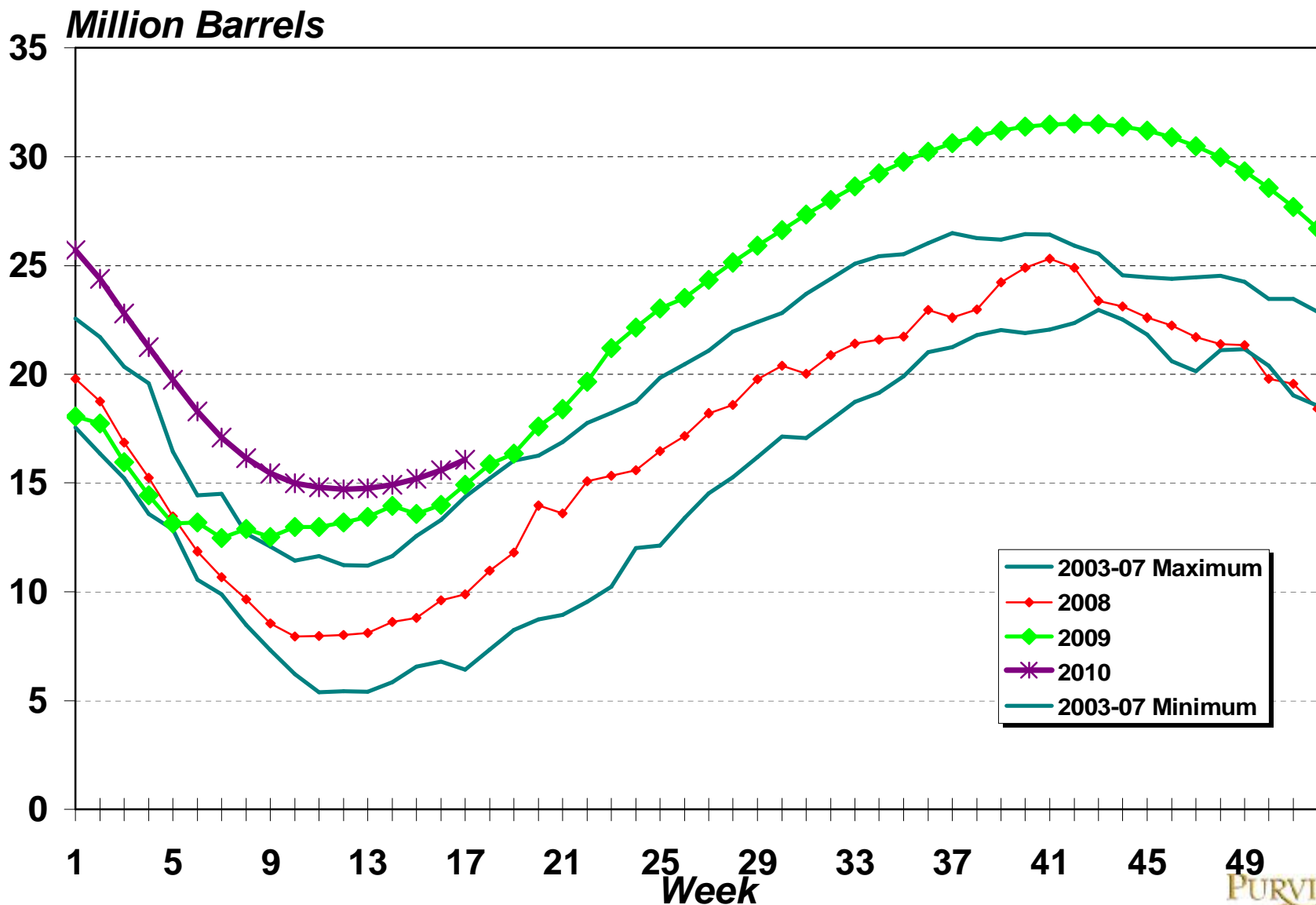
Week

40

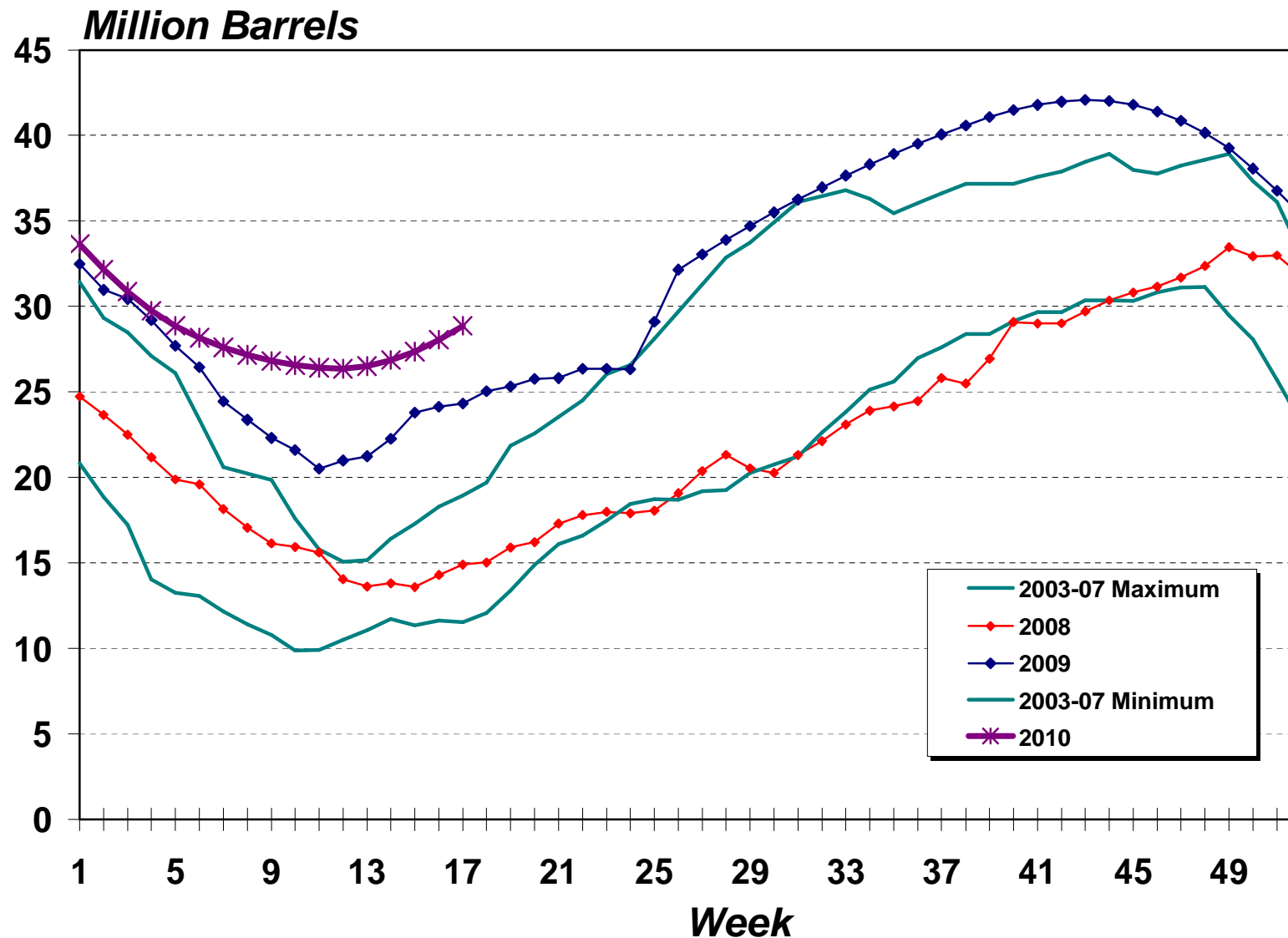
# Propane stocks in the Western U.S. are a little low



# Mid-Continent stocks are high and are likely to stay high



# U.S. Gulf Coast propane stocks should remain high unless propane becomes a highly favored cracker feed



**Thank you for your attention**

**Questions ?**

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