

LONG TERM NATURAL WEATHER CYCLES AND KEY SUPPLY CHAIN VARIABLES IMPACTS TO AGRICULTURAL PRODUCTION, PRICES AND FOOD SECURITY



**Arkansas Bankers Association
Little Rock Arkansas**

**Publisher of The Hackett Agricultural Insiders Report and
The Hackett Dairy Report
HACKETTADVISORS.COM
September 27th, 2022**

The information, tools and material presented on HACKETTADVISORS.COM (this web site), in the HACKETT MONEY FLOW REPORT and in the HACKETT STOCK REPORT are provided for informational purposes only and are not to be used or considered as an offer or a solicitation to sell or an offer or solicitation to buy or subscribe for securities, investment products or other financial instruments, nor to constitute any advice or recommendation with respect to such securities, investment products or other financial instruments.

The information presented on HACKETTADVISORS.COM (this web site), in the HACKETT MONEY FLOW REPORT and in the HACKETT STOCK REPORT is prepared for general circulation. It does not have regard to the specific investment objectives, financial situation and the particular needs of any specific person who may receive this information.

You should independently evaluate particular investments and consult an independent financial adviser before making any investments or entering into any transaction in relation to any securities mentioned on HACKETTADVISORS.COM (this web site), in the HACKETT MONEY FLOW REPORT and in the HACKETT STOCK REPORT.

The use of HACKETTADVISORS.COM is at your own sole risk. HACKETTADVISORS.COM is provided on an "as is" and "as available" basis. Hackett Financial Advisors, Inc. makes no warranty that HACKETTADVISORS.COM will be uninterrupted, timely, secure or error free.

No charts, graphs, formulae, theories or methods of securities analysis can guarantee profitable results. This document does not purport to be a complete description of the securities or commodities, market or developments to which reference is made.

The information contained in HACKETTADVISORS.COM (this website), in the HACKETT MONEYFLOW REPORT and in the HACKETT STOCK REPORT has been taken from trade and statistical services and other sources, which we believe are reliable. Hackett Financial Advisors, Inc. does not guarantee that such information is accurate or complete and it should not be relied upon as such. The HACKETT MONEY FLOW REPORT and the HACKETT STOCK REPORT are written as weekly tools to help investors make better financial decisions. Any opinions expressed reflect judgments at this date and are subject to change without notice. The principals of Hackett Financial Advisors, Inc. and others associated or affiliated with it may recommend or have positions which may not be consistent with the recommendations made. Each of these persons exercises judgment in trading and readers are urged to exercise their own judgment in trading. Past Performance is not indicative of future results.

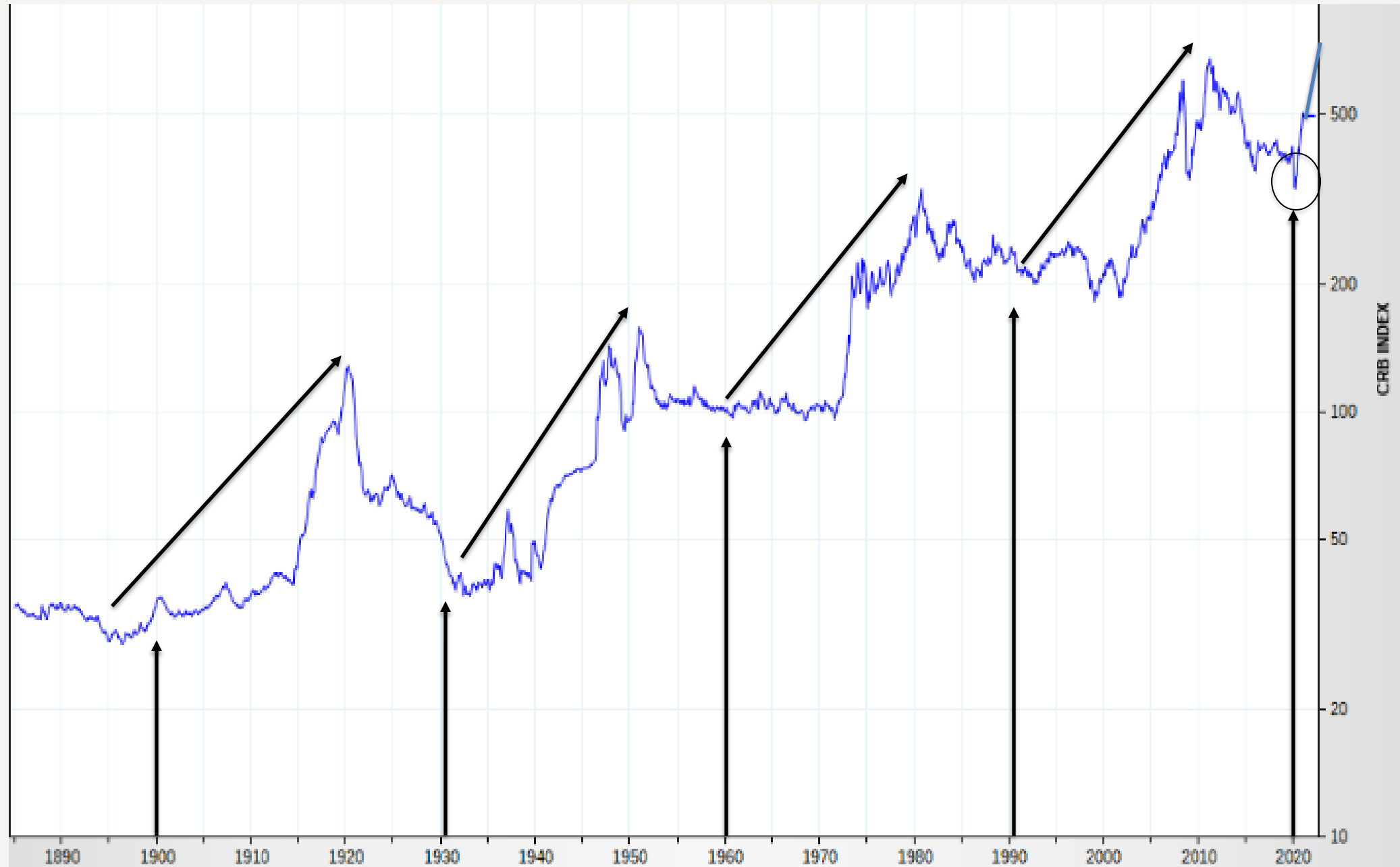
FUTURES AND COMMODITIES TRADING AND STOCK INVESTING AND TRADING INVOLVES SIGNIFICANT RISK AND IS NOT SUITABLE FOR EVERY INVESTOR. INFORMATION CONTAINED HEREIN IS STRICTLY THE OPINION OF ITS AUTHOR AND IS INTENDED FOR INFORMATIONAL PURPOSES AND IS NOT TO BE CONSTRUED AS AN OFFER TO SELL OR A SOLICITATION TO BUY OR TRADE IN ANY COMMODITY OR SECURITY MENTIONED HEREIN. INFORMATION IS OBTAINED FROM SOURCES BELIEVED RELIABLE, BUT IS IN NO WAY GUARANTEED. OPINIONS, MARKET DATA AND RECOMMENDATIONS ARE SUBJECT TO CHANGE AT ANY TIME. PAST RESULTS ARE NOT INDICATIVE OF FUTURE RESULTS.

This material has been prepared by a sales or trading employee or agent of Hackett Financial Advisors Inc. and is, or is, a solicitation. This material is not a research report prepared by R.J. O'Brien's Research Department. By accepting this communication, you agree that you are an experienced user of the futures markets, capable of making independent trading decisions, and agree that you are not, and will not, rely solely on this communication in making trading decisions.

DISTRIBUTION IN SOME JURISDICTIONS MAY BE PROHIBITED OR RESTRICTED BY LAW. PERSONS IN POSSESSION OF THIS COMMUNICATION INDIRECTLY SHOULD INFORM THEMSELVES ABOUT AND OBSERVE ANY SUCH PROHIBITION OR RESTRICTIONS. TO THE EXTENT THAT YOU HAVE RECEIVED THIS COMMUNICATION INDIRECTLY AND SOLICITATIONS ARE PROHIBITED IN YOUR JURISDICTION WITHOUT REGISTRATION, THE MARKET COMMENTARY IN THIS COMMUNICATION SHOULD NOT BE CONSIDERED A SOLICITATION.

The risk of loss in trading futures and/or options is substantial and each investor and/or trader must consider whether this is a suitable investment. Past performance, whether actual or indicated by simulated historical tests of strategies, is not indicative of future results. Trading advice is based on information taken from trades and statistical services and other sources that Hackett Financial Advisors Inc. believes are reliable. We do not guarantee that such information is accurate or complete and it should not be relied upon as such. Trading advice reflects our good faith judgment at a specific time and is subject to change without notice. There is no guarantee that the advice we give will result in profitable trades.

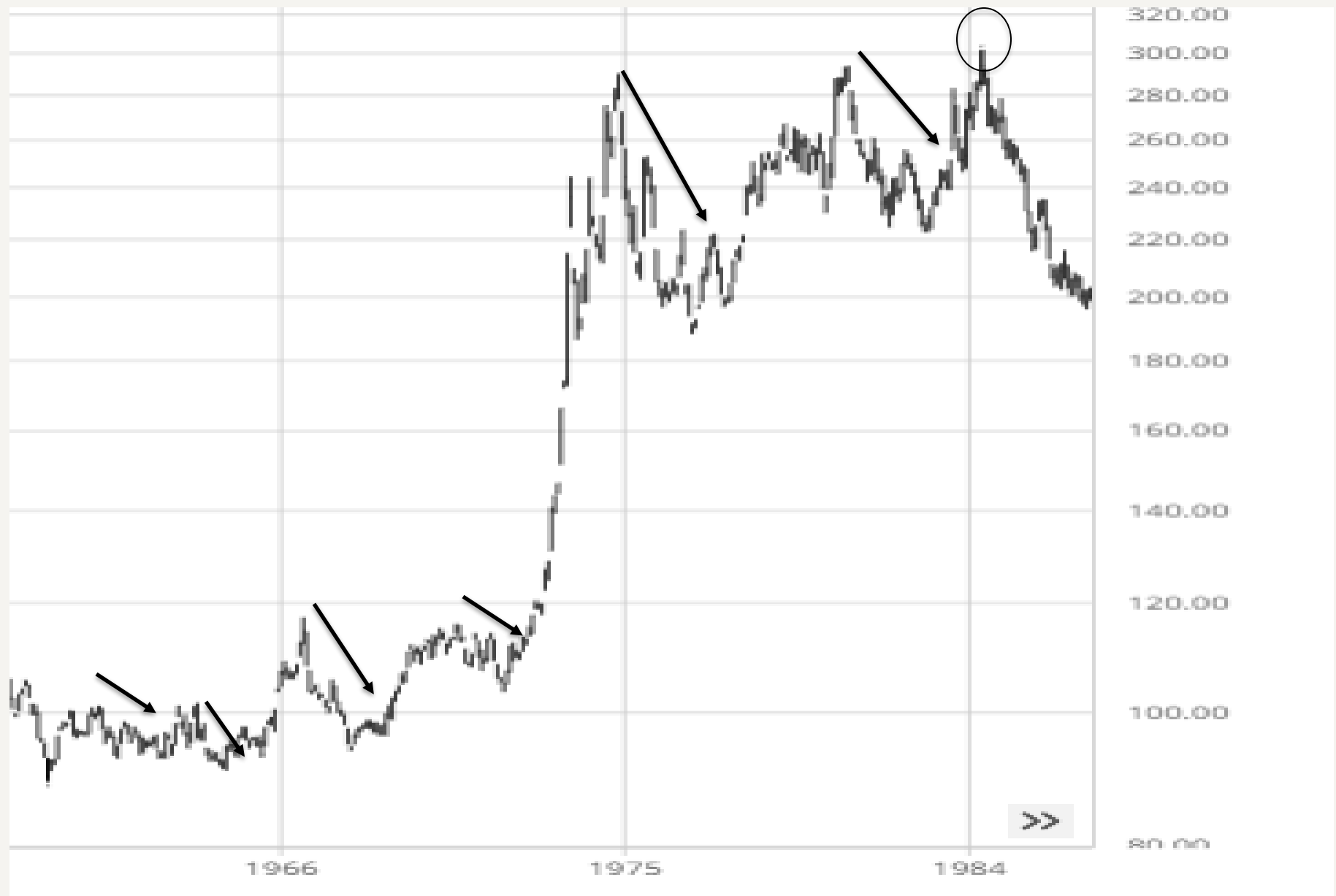
The 30-Year Cycle of 20 Year Bullish Periods for Commodities and Ag Markets Was Triggered in 2020 Projecting 2040 Next Major Top



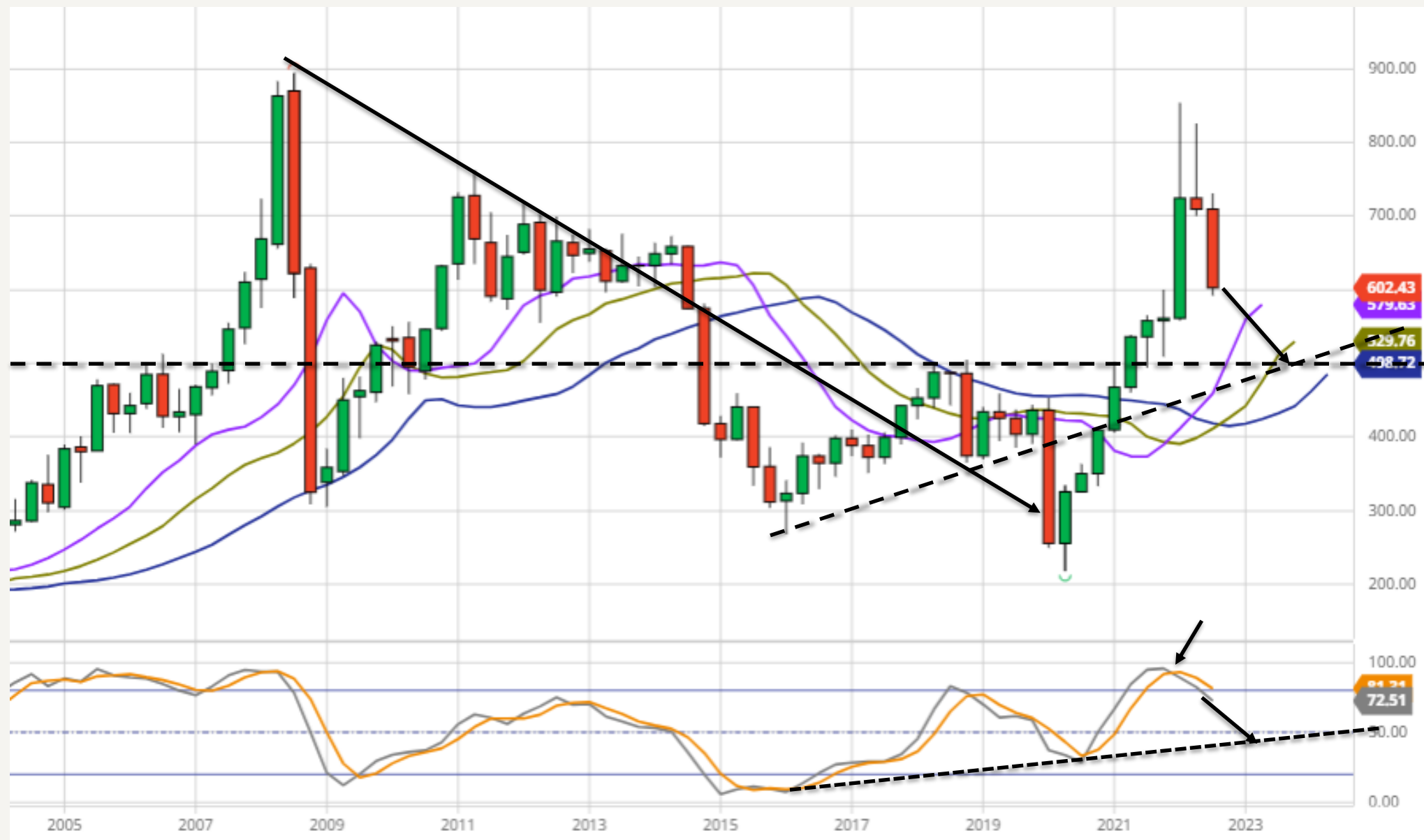
Why do Inflationary Commodity/Ag Cycles Occur?

- 1) A devaluation of Currency System-1931 US Gov. devaluation of US dollar to gold, the 1971 US Gov. devaluation to gold, 2001 Devaluation of US Dollar to emerging market currencies/economies/China and now the devaluation of the US Dollar to Bitcoin/crypto currencies.**
- 2) An escalation/De-escalation war cycle-1900-1920 world war I, 1930-1950 world war II, 1960-1980 Vietnam war, 1990-2010 the war on terror and now Russian/Ukraine war, China Taiwan? Middle East? (war over resources)**
- 3) Enhanced weather/climate volatility-1930's dust bowl, 1970's global cooling scare, 2000's global warming scare and now overall climate change scare(Grande Solar Cycle Minimum and Synchronous Pacific and Atlantic Ocean sea surface temperature Cooling Cycle)**
- 4) One Time Step up in Demand-Post world war II rebuild demand 1940's, Japanese ascension demand 1970's, Chinese ascension demand 2000's and now deglobalization re-stockpiling demand.**

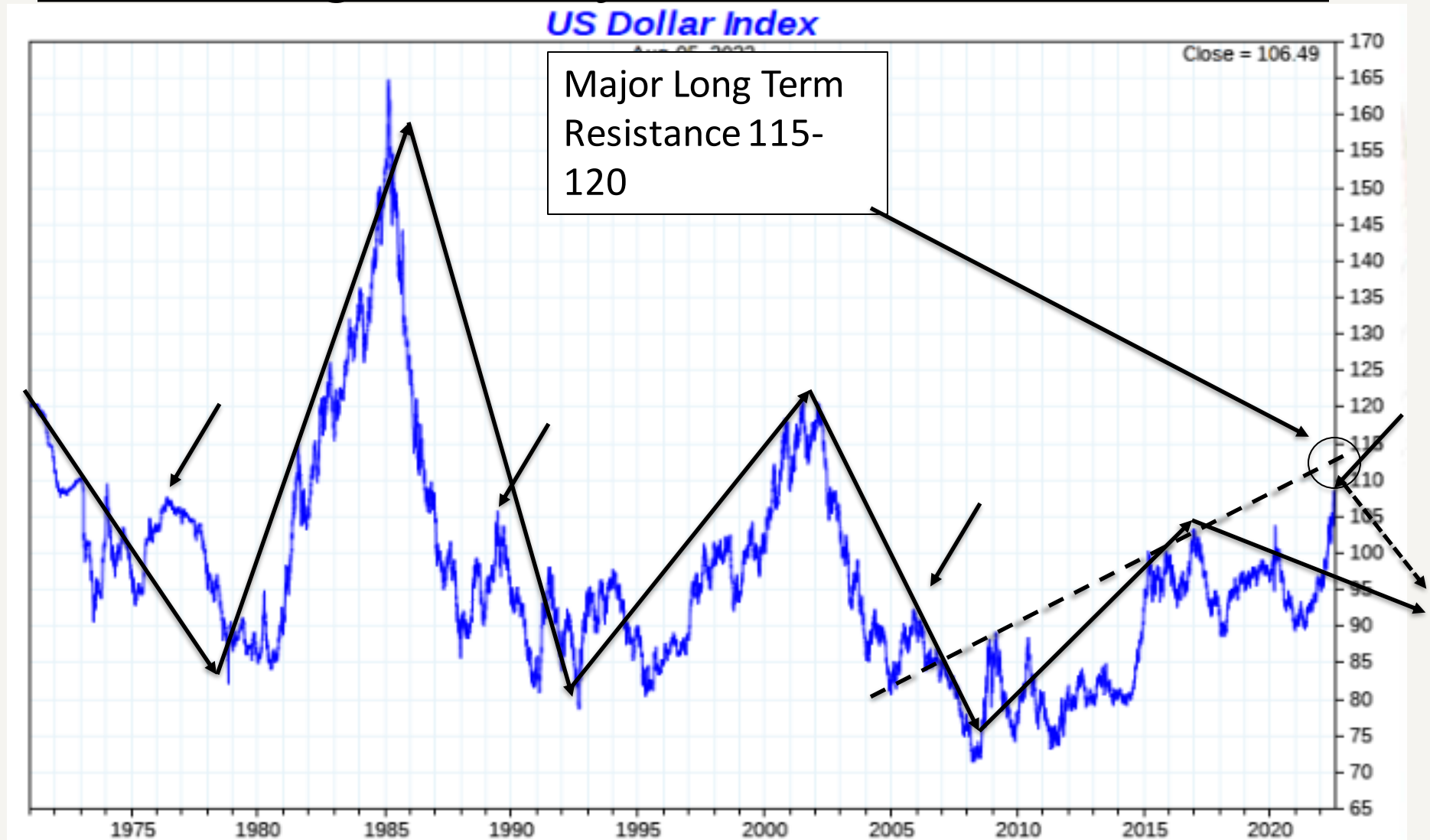
Within that 20-Year Bullish Cycle there will be Huge Periodic Corrections-1960-1980 as Example



GSCI Commodity Index in a Corrective Phase that Should Continue Into Year-End

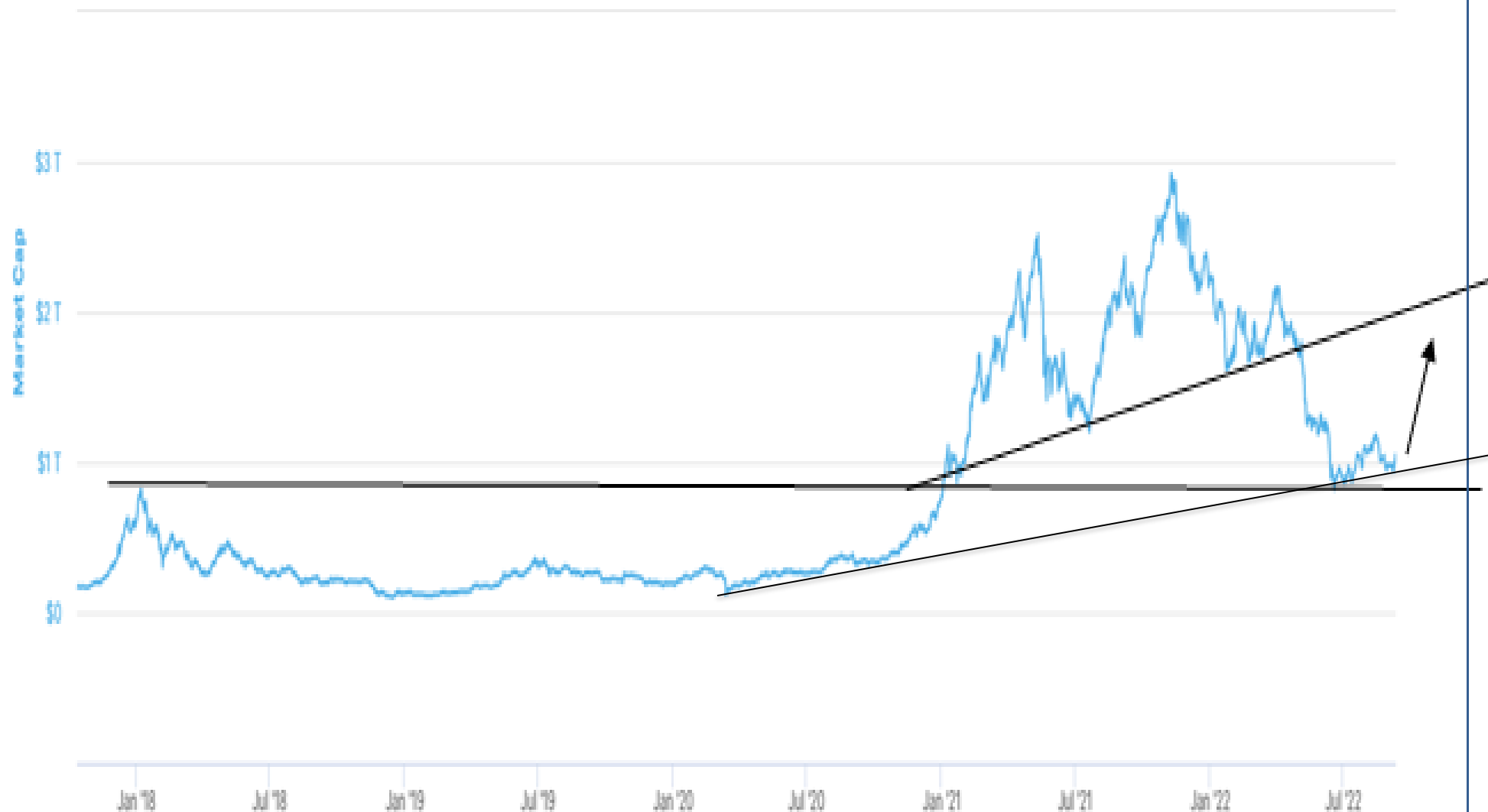


The ~8-Year US Dollar Cycle a Key Metric for Ag and Commodity Prices at Large-Next Major Low in US Dollar 2024-2026

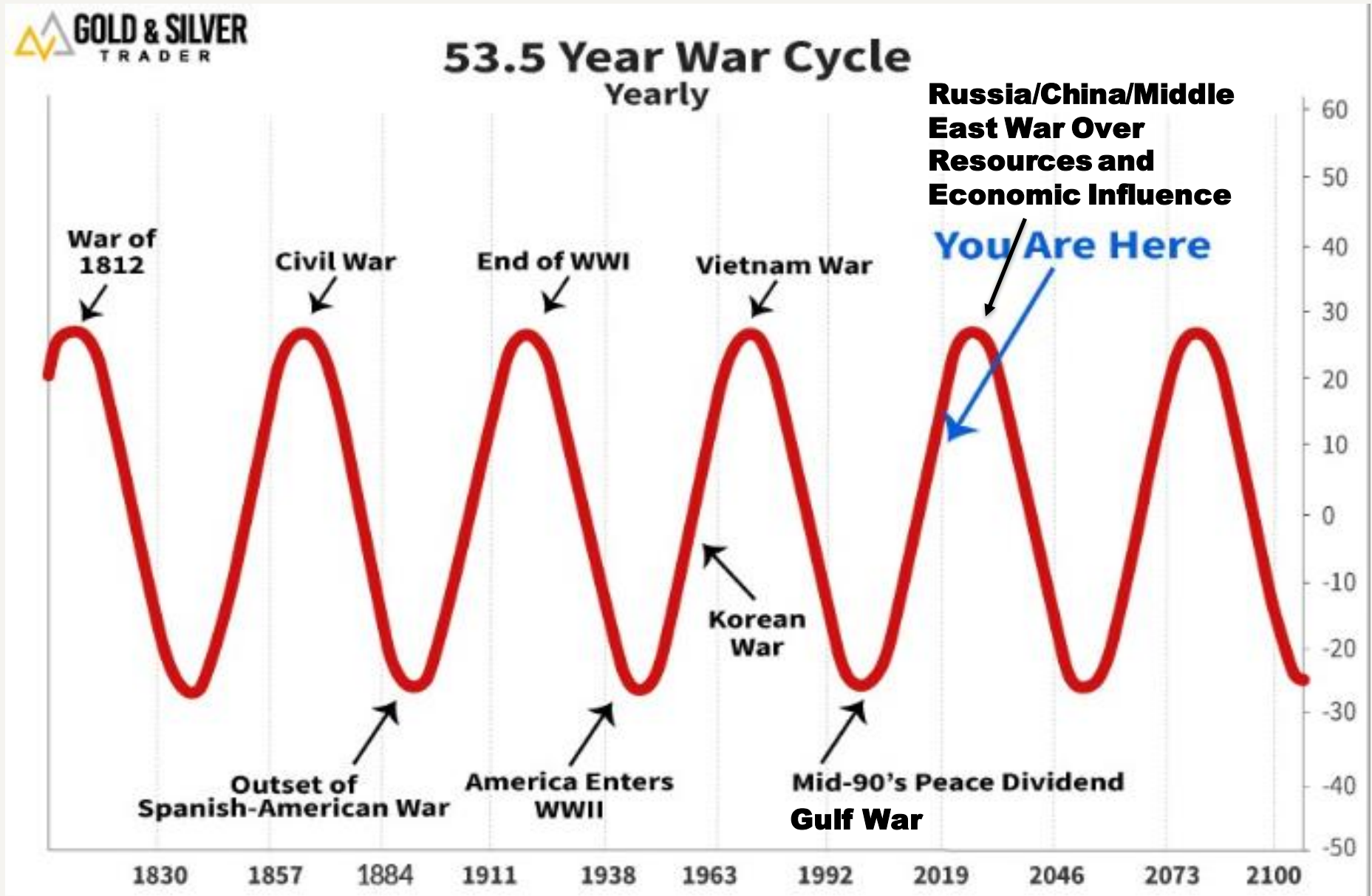


Crypto Currencies A New Inflationary Metric to Factor In as Trillions of Dollars Have Flowed Into this Digital Asset

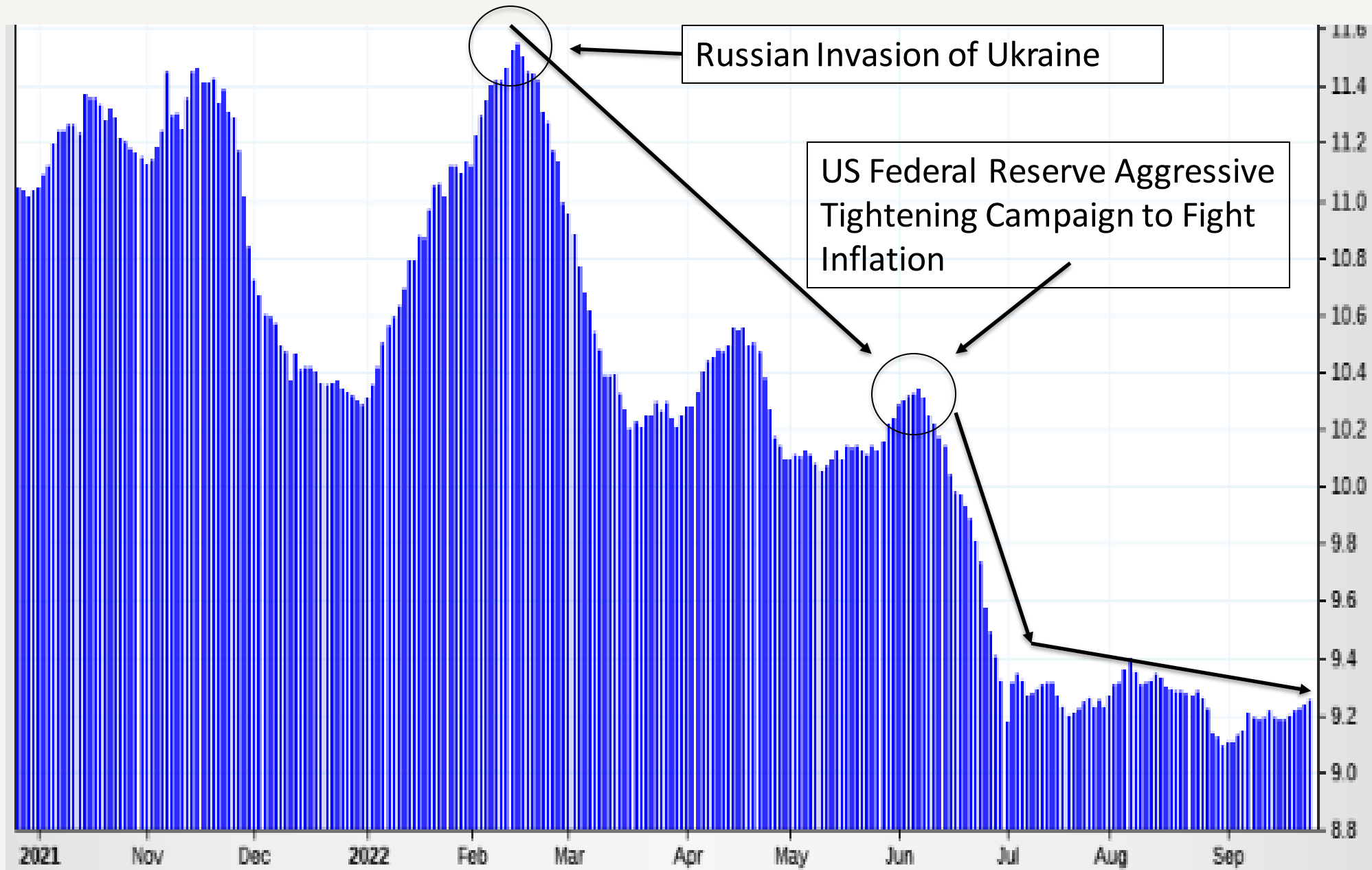
Total Cryptocurrency Market Capitalization Appears to Have Bottomed Providing a Short Inflationary Tailwind to Commodities



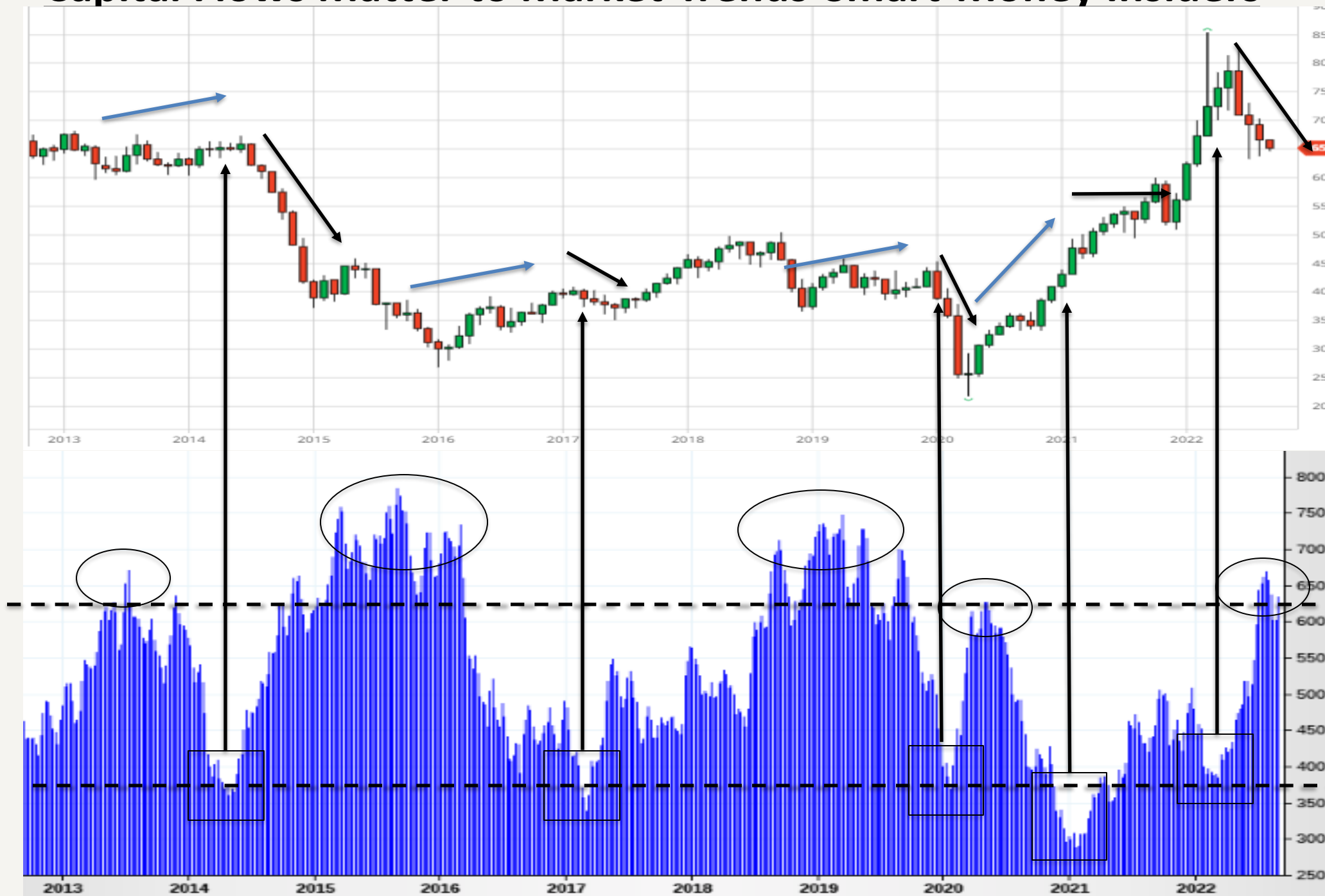
War Cycle Coming Back Into Play Heading into 2026- Russia/China/Middle East Conflict/Civil Unrest



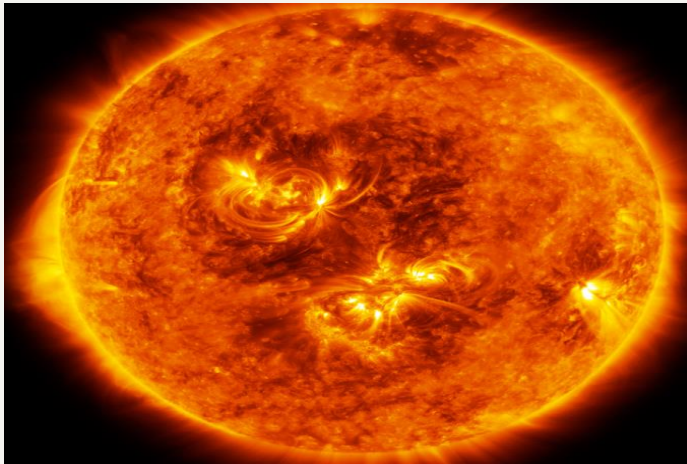
Capital Flows Matter to Market Trends



Capital Flows Matter to Market Trends-Smart Money Insiders



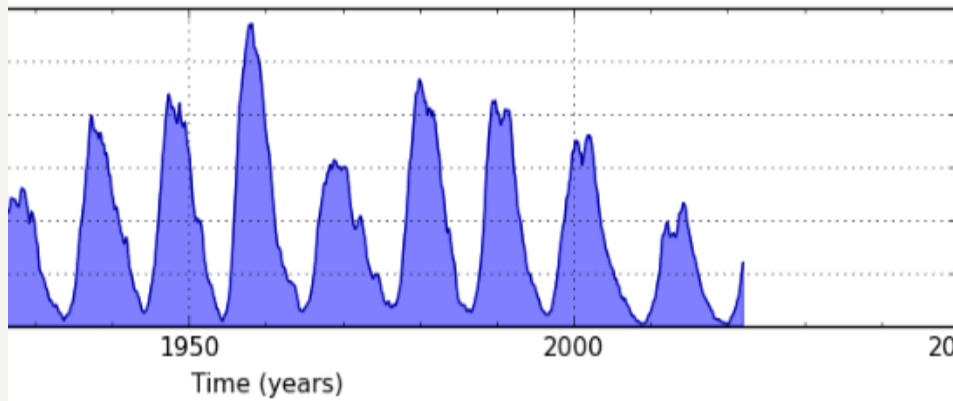
3-Major Climate Cycles Collide for the First Time in 400 Years Projecting Historic Weather and Price Volatility for the Next 15 Years



220-Year Grande Solar Cycle Minimum

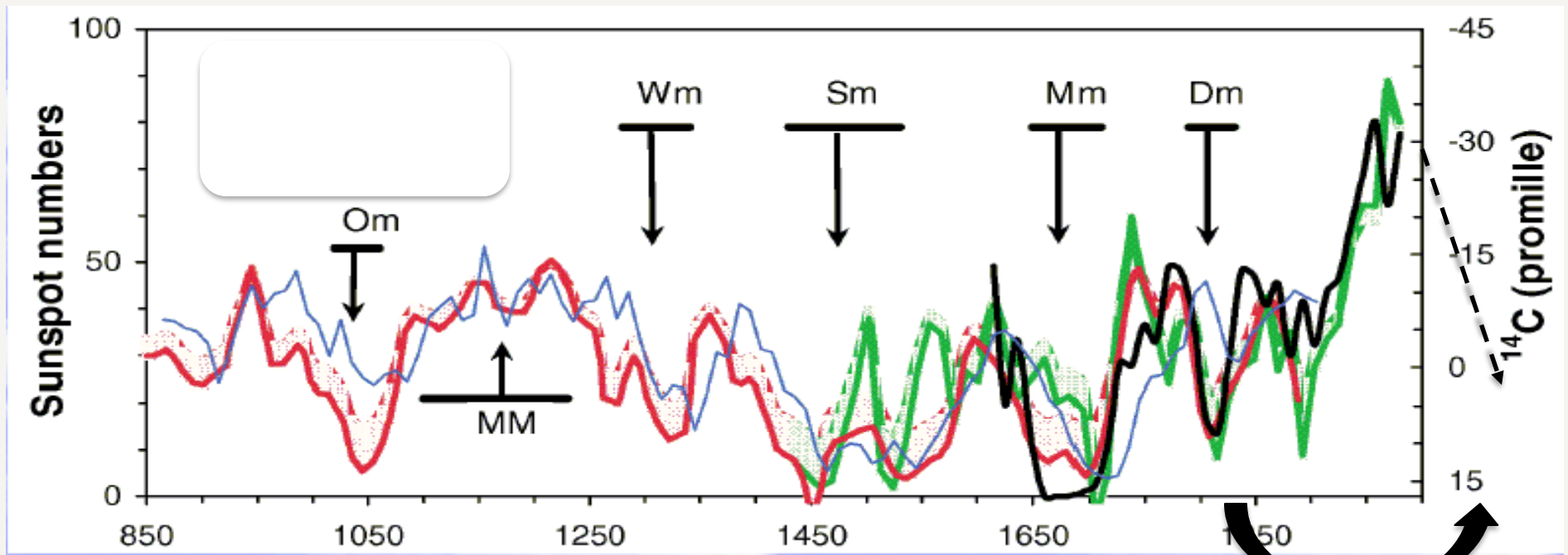
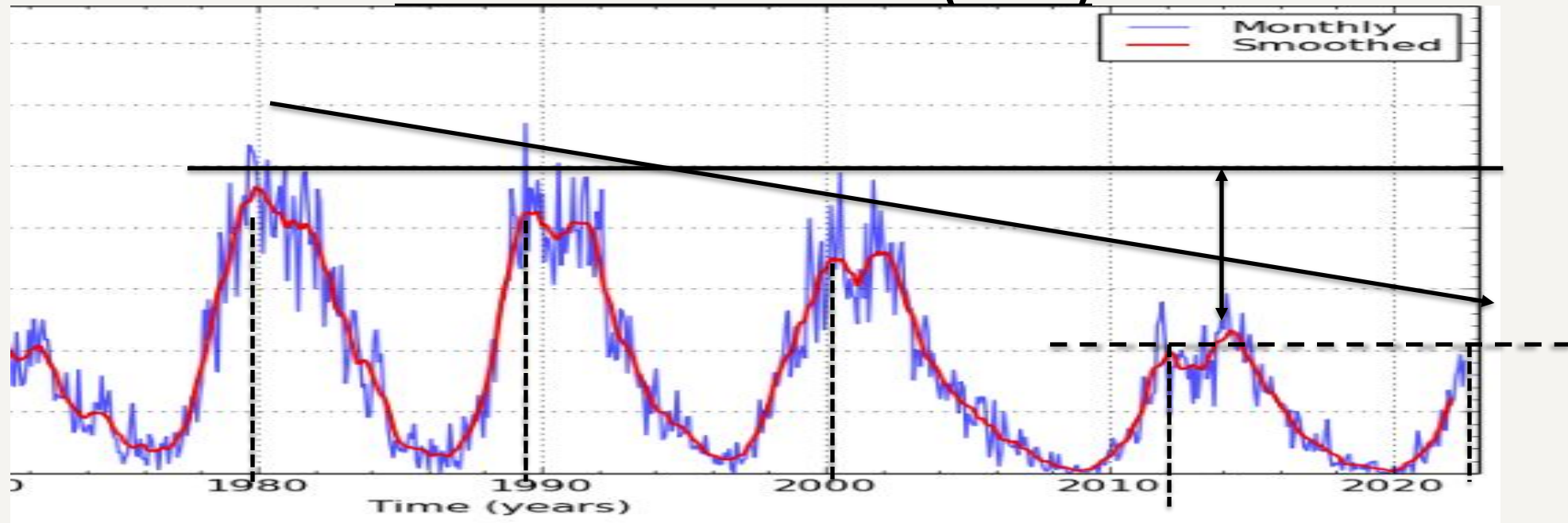


**60-Year-Sea Surface Temperature Cooling
Cycle-Pacific and the Atlantic**



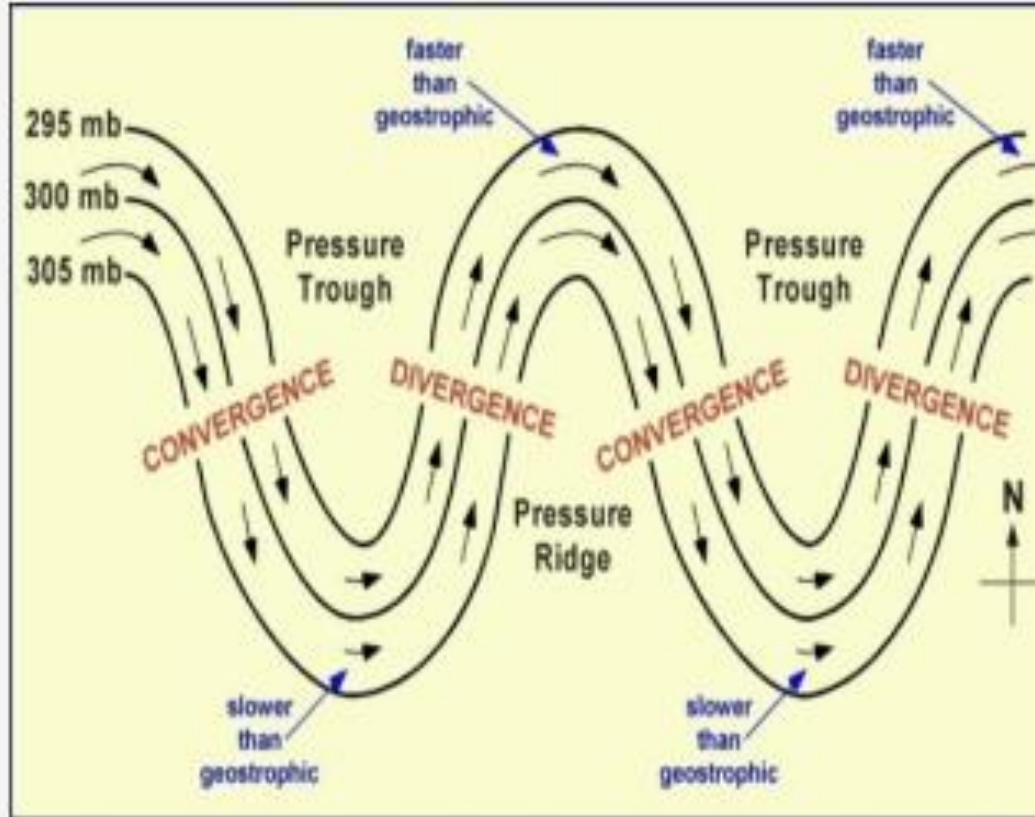
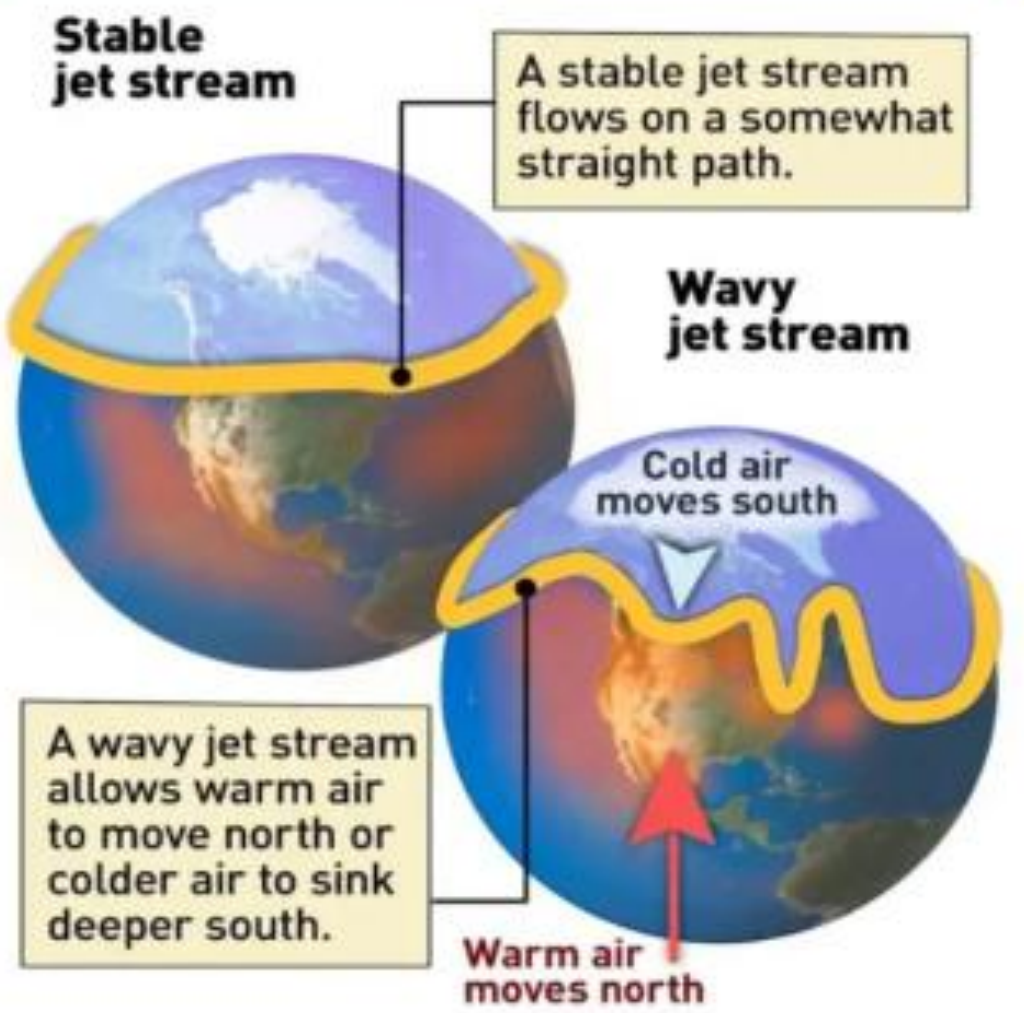
90-Year Gleissberg Solar Cycle Completion

Solar Activity on the Decline Verifying the Onset of an Extended Period of Reduced Solar Irradiation (SILSO)



A Quiet Sun Causes the Outer Atmosphere to Shrink that Changes the Jet Stream Airflow Pattern from Zonal to Wavy that Enhances the Destabilization of the Southern and Northern Polar Vortices

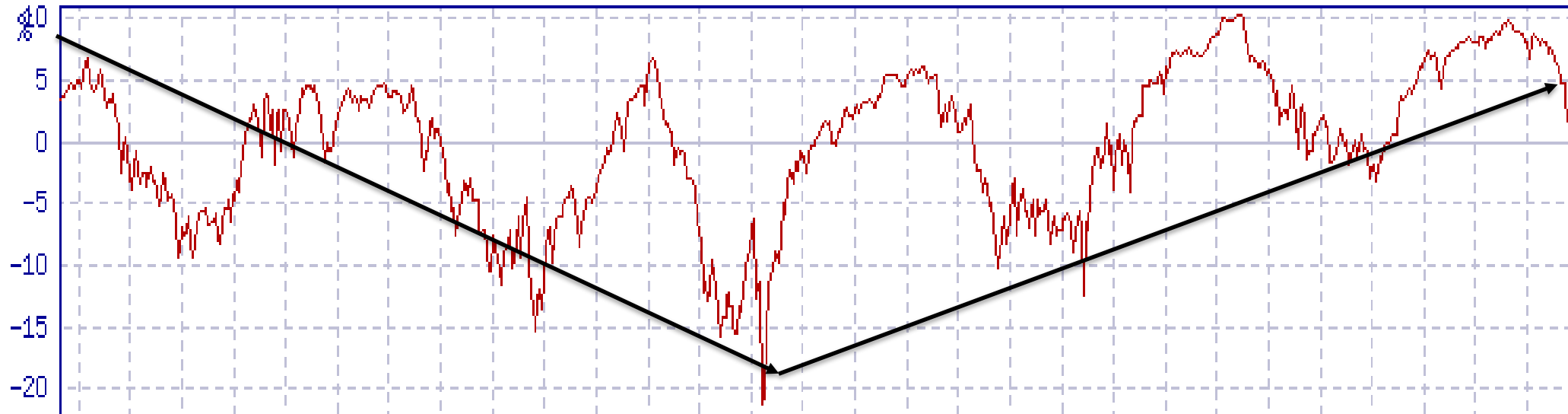
The Changing Jet Stream



©Kendall/Hunt Publishing

Increases in Cosmic Rays Increase Cloud Cover Inducing Greater Storms and Flooding Risks

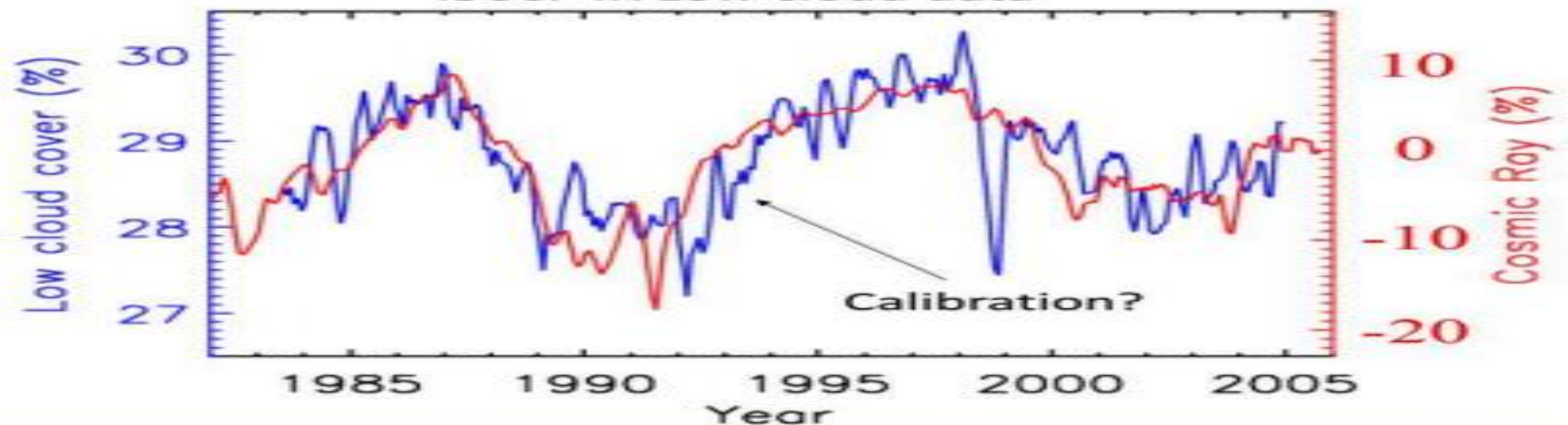
Complete Oulu data (1964-04-01 - 2022-09-27), Monthly averages, Average CR: 6202.58



1965 1967 1969 1971 1973 1975 1977 1979 1981 1983 1985 1987 1989 1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015 2017 2019 2021

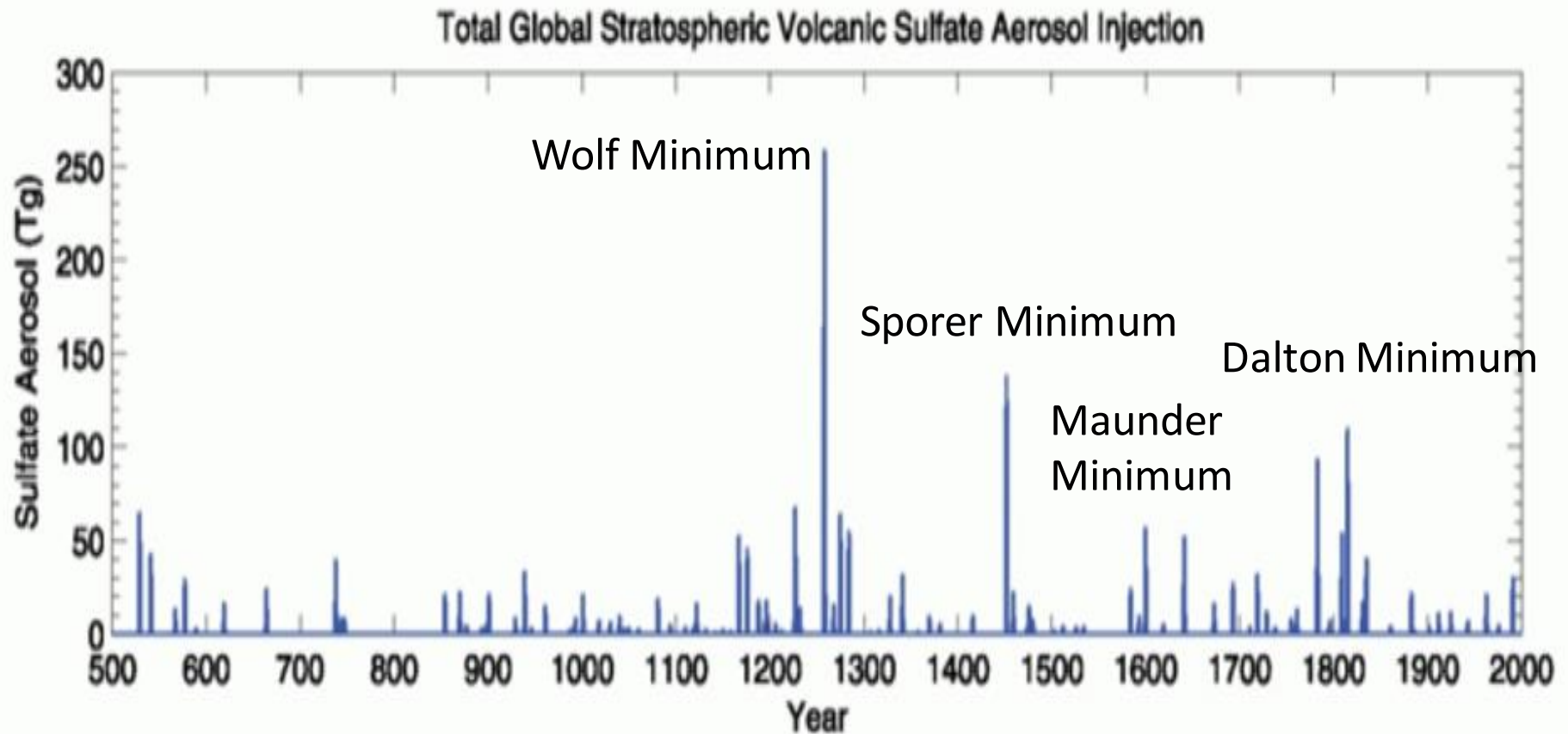
1964-04-01

Link between Low Cloud Cover and Galactic Cosmic Rays?
Solar cycle variation
ISCCP IR Low cloud data



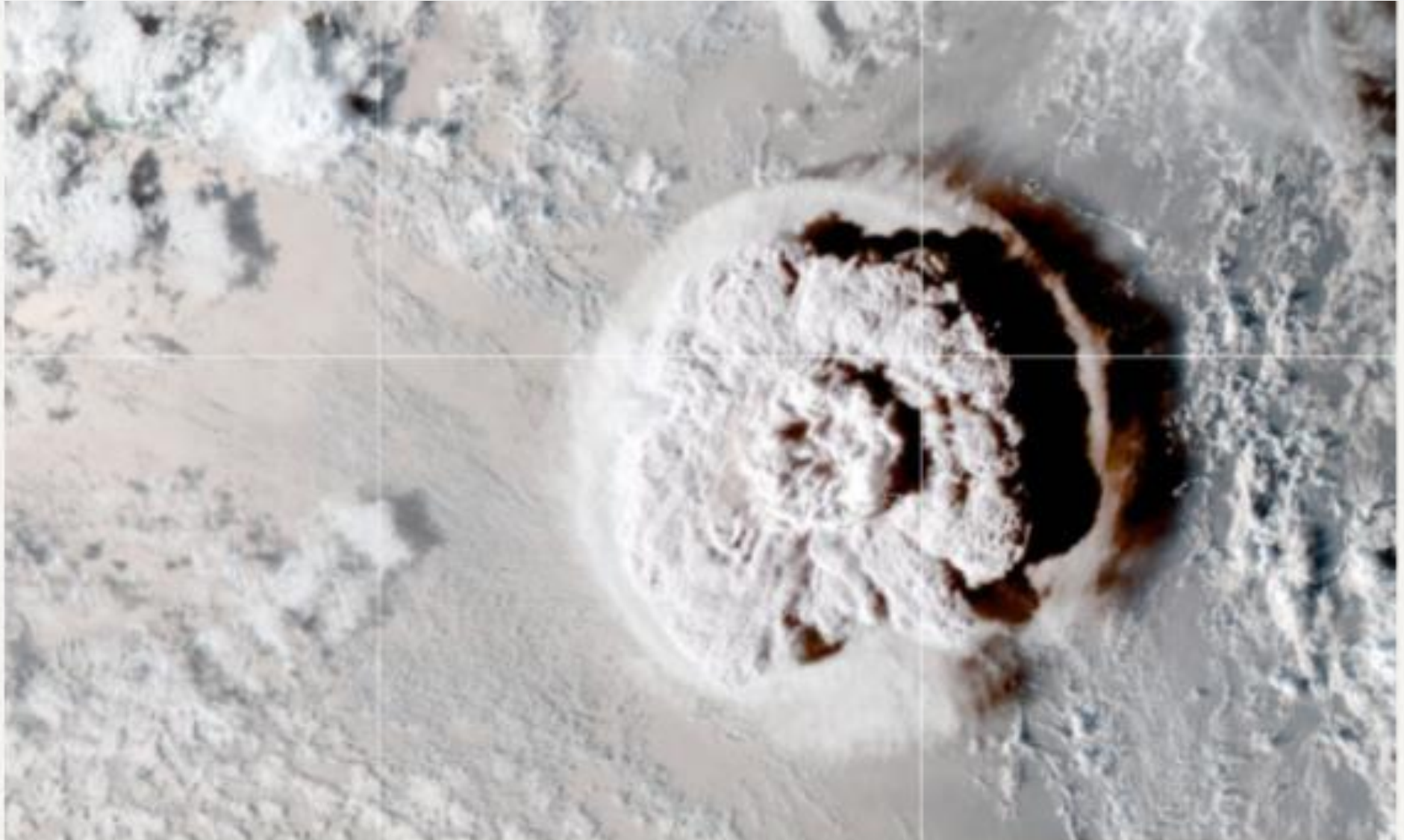
Svensmark & Friis-Christensen, JASTP 1997, Svensmark, PRL 1998, Marsh & Svensmark, PRL, 2000. (update 2005)

Increases in Cosmic Rays Destabilize the Earth's Magnetic Field Leading to Increases in Tectonic Activity

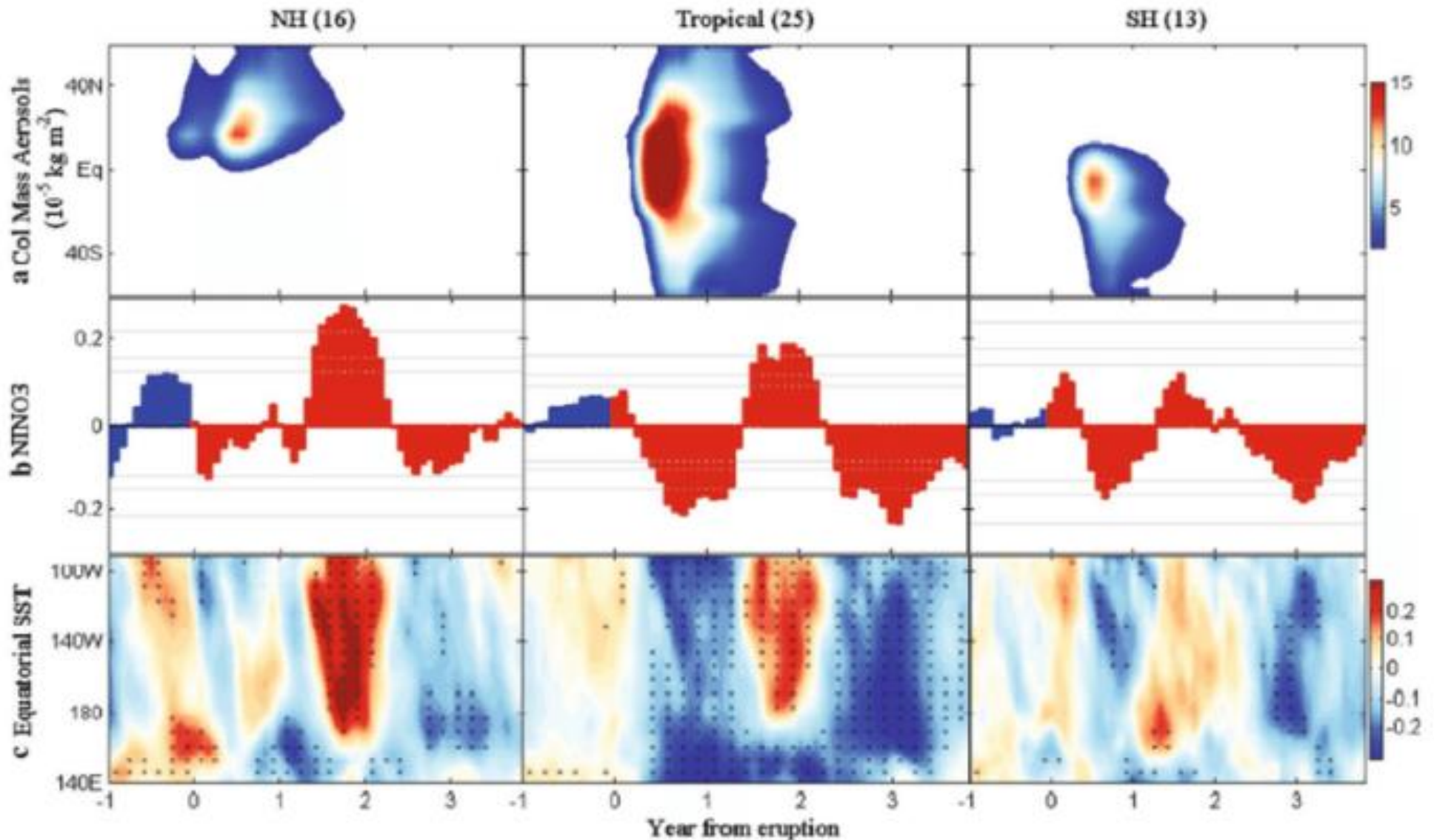


The IVI replaces [H.H. Lamb's famous Dust Veil Index \(DVI\)](#). The idea that particles of dust as opposed to sulphuric acid could reflect light away is rejected *entirely*, or at least the effect of dust is considered insignificant. I find this assumption dubious. For example, the eruption of Huanyaputina in 1600 apparently had catastrophic effects on the climate - causing the Great Russian Famine - yet was, according to the IVI, only about twice as severe as Pinatubo, which really didn't have a huge effect. Its sulphur emissions are dwarfed by those of Tambora in 1815 and Kuwae in 1452, yet it seems to have had at least as much of a cooling effect. Unfortunately, [instrumental temperature records](#) don't go back to 1600, so we have to rely on anecdotal evidence. Here's what Brian Fagan says in [The Little Ice Age](#) (p.104):

The VEI-6 Tonga Eruption Because of the Water Vapor that was Deposited in the Stratosphere instead of Sulphur Dioxide Should Have a Warming Effect During the Summer Months to Amplify the Heat Extremes La Nina and El Nino Effects
(NASA)



Large Volcanic Eruptions Tend to Promote La Nina's in the First Year After Eruption and then Promote a Rapid Change to El Nino (Fei Liu)

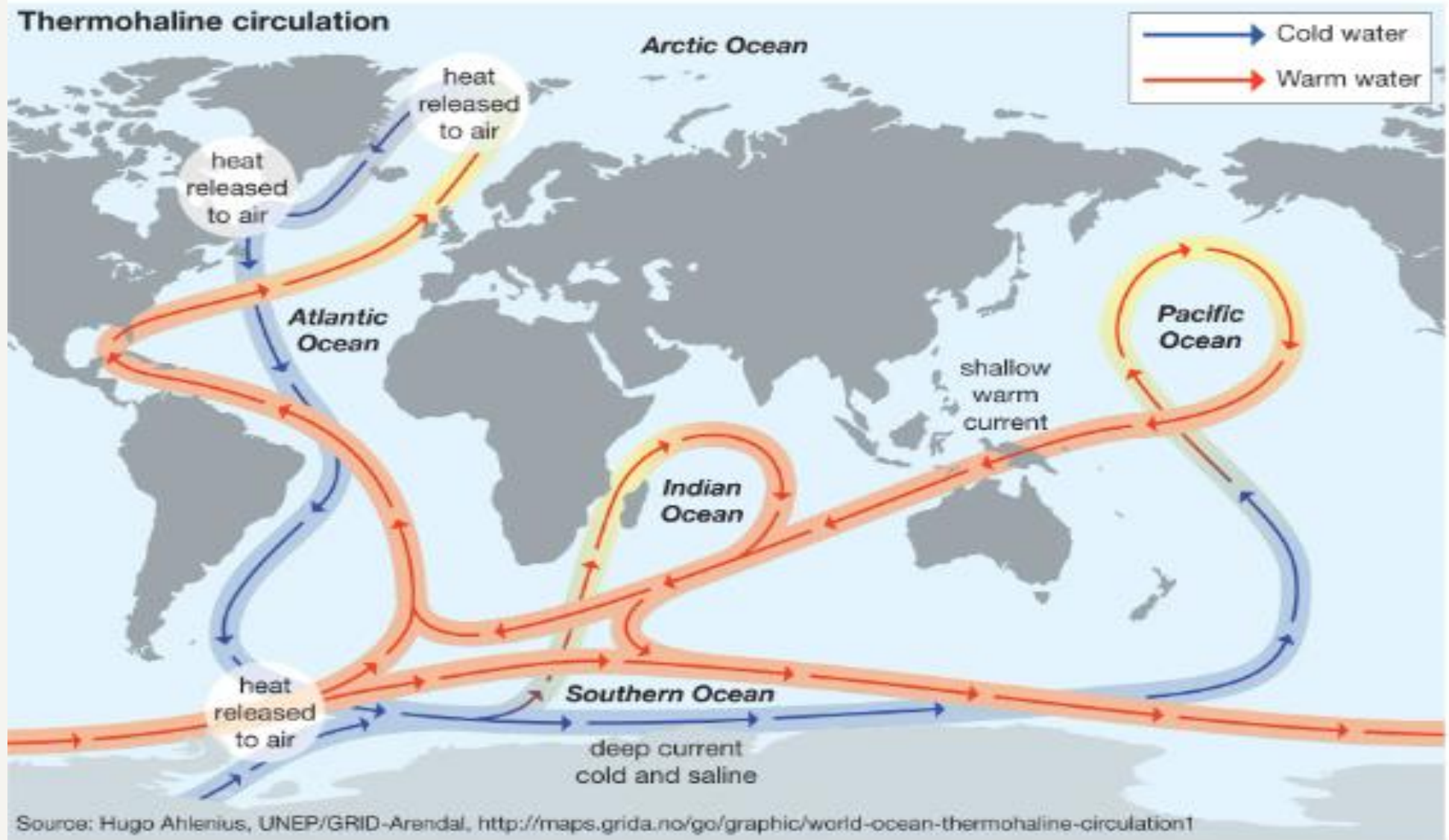


Natural Disaster Occurrences on the Rise Since the Sun Started Going Quiet (NOAA)

Time Period	Billion-Dollar Disasters	Events/Year
1980s (1980-1989)	29	2.9
1990s (1990-1999)	53	5.3
2000s (2000-2009)	63	6.3
2010s (2010-2019)	123	12.3
Last 5 Years (2017-2021)	86	17.2
Last 3 Years (2019-2021)	56	18.7
Last Year (2021)	20	20.0
All Years (1980-2021)	310	7.4



The Sun and the Moon Interacting with the Earth Greatly Alter Currents and Sea Surface Temperatures



Tidal Forces on Earth's Oceans are Driven by the Sun and the Moon Relative to the Earth-(2023-2025 Next Occurrence)

The Earth-Moon-Sun oscillation

The 18.6-year Earth axis oscillations

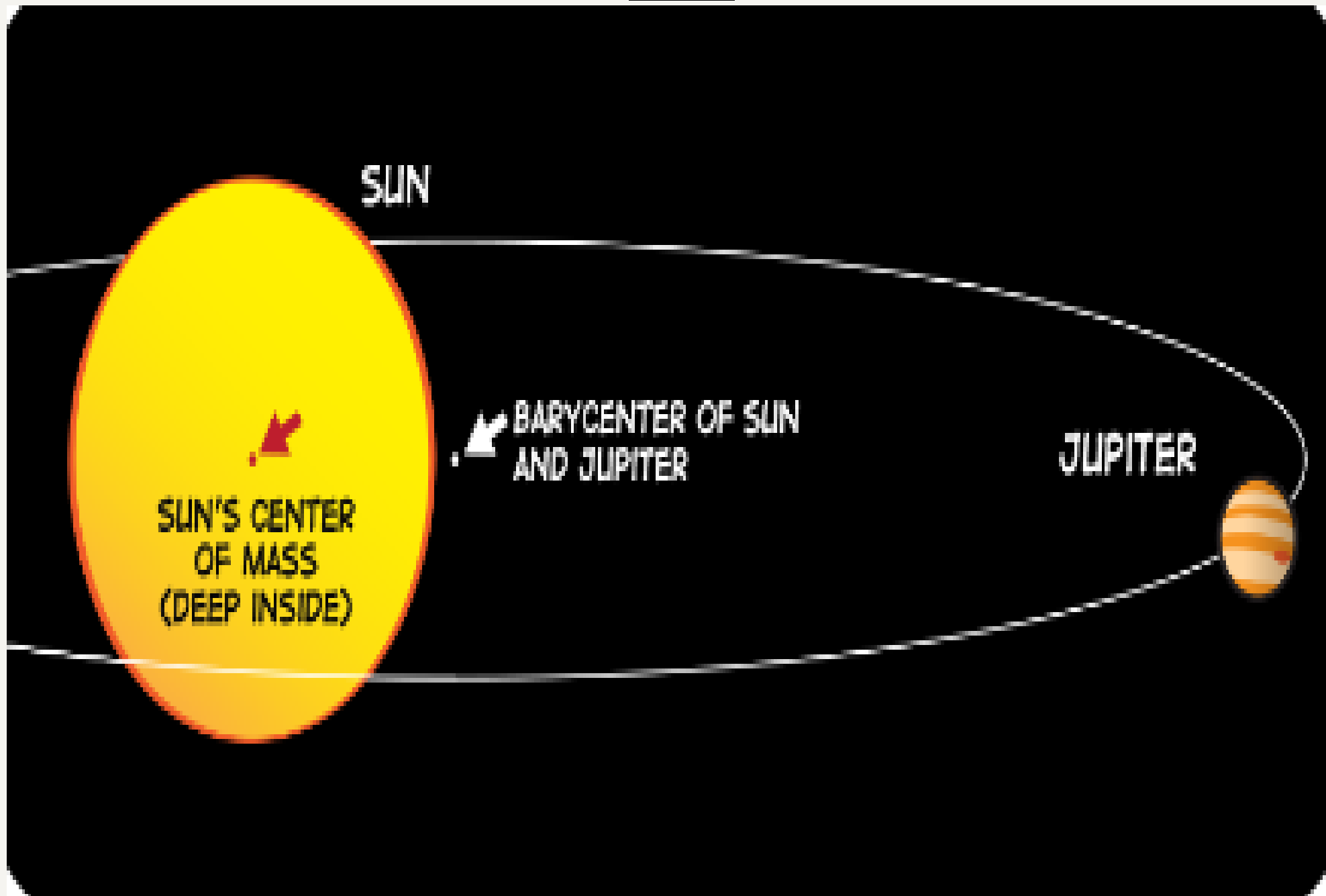


Wobbling Earth Axis: 23.5 ± 5 degrees

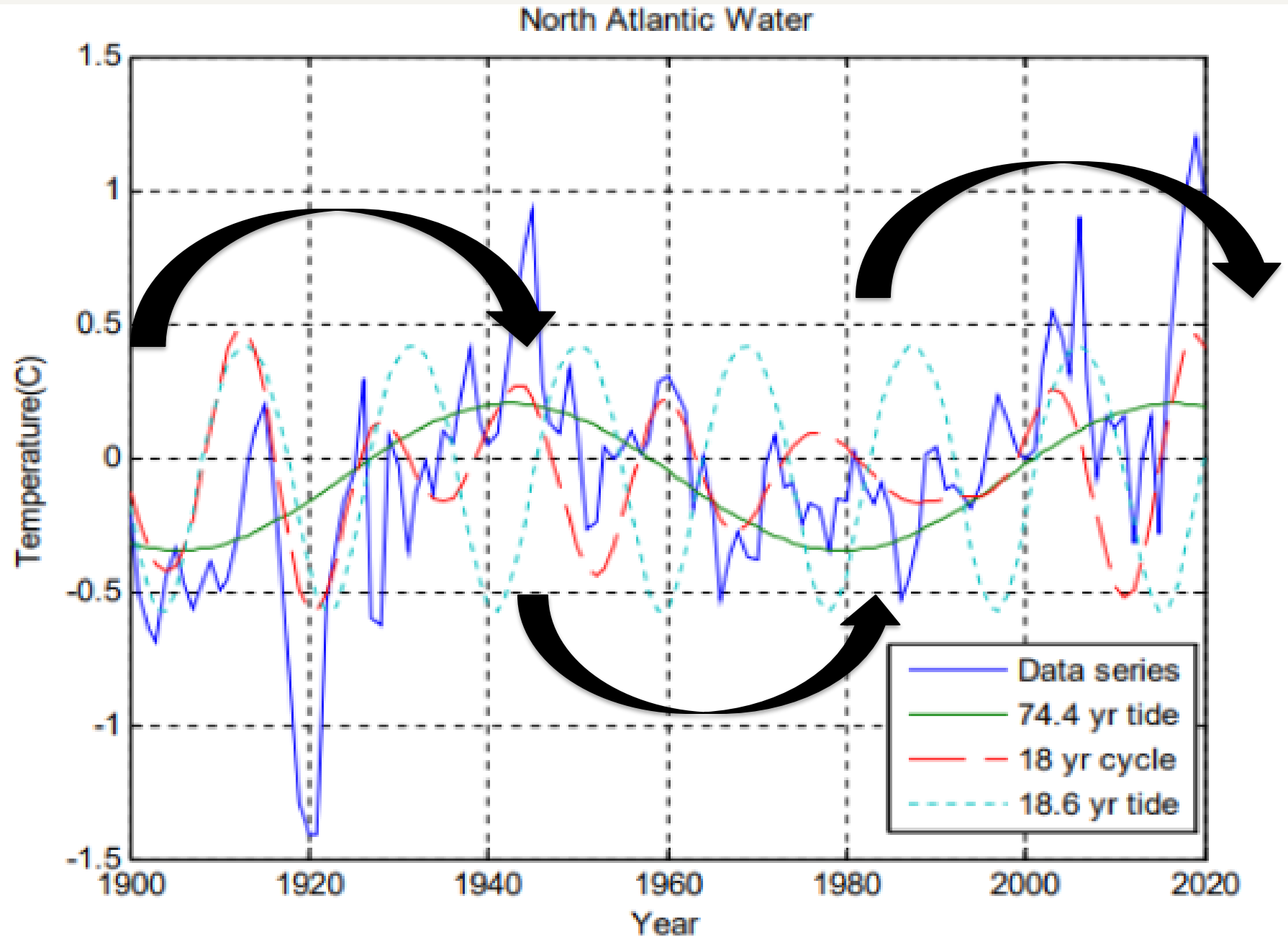
Earth nutation: Dominant period of 18.6 years

(James Bradley (1693-1762))

The Sun Wobbles Around the Barycenter or the Center of Mass of the Solar System (NASA)

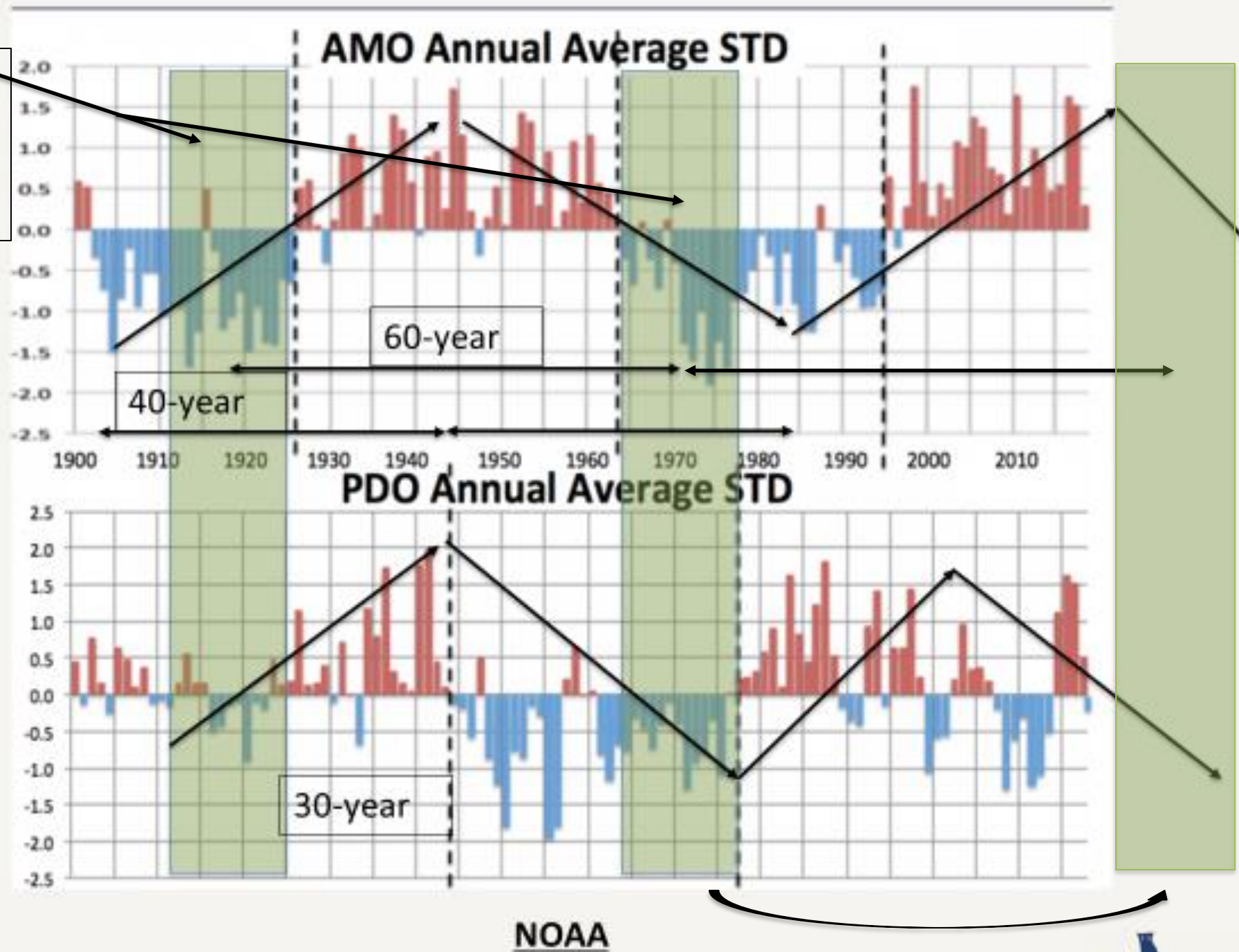


The Sun/Moon/Earth Cycles Create a 40-Year Sea Surface Temperature Cycle for the Atlantic and a 30-Year Cycle for the Pacific (Harald Yndestad)

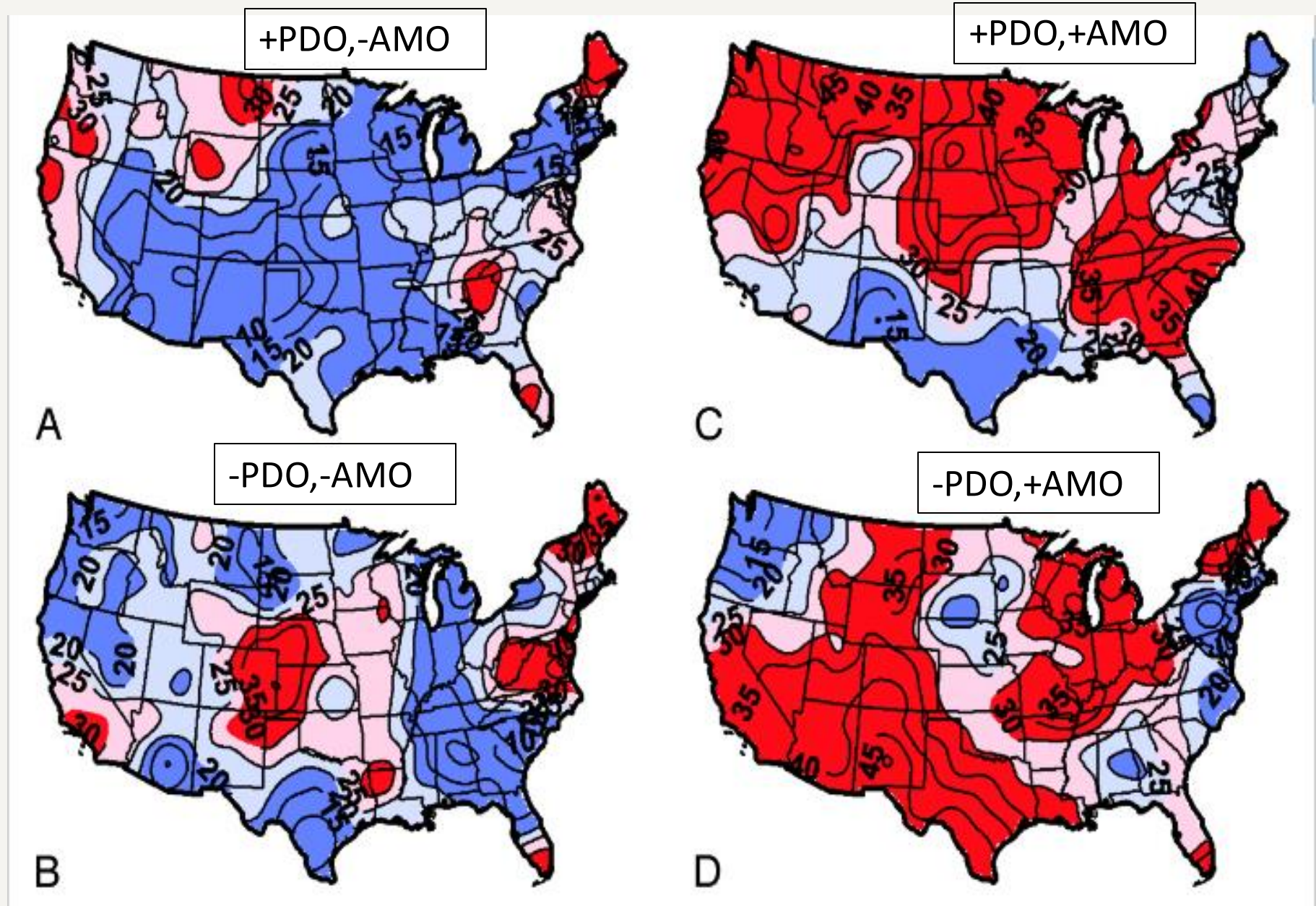


30/40/60-Year Ocean Synchronous Climate Cycle

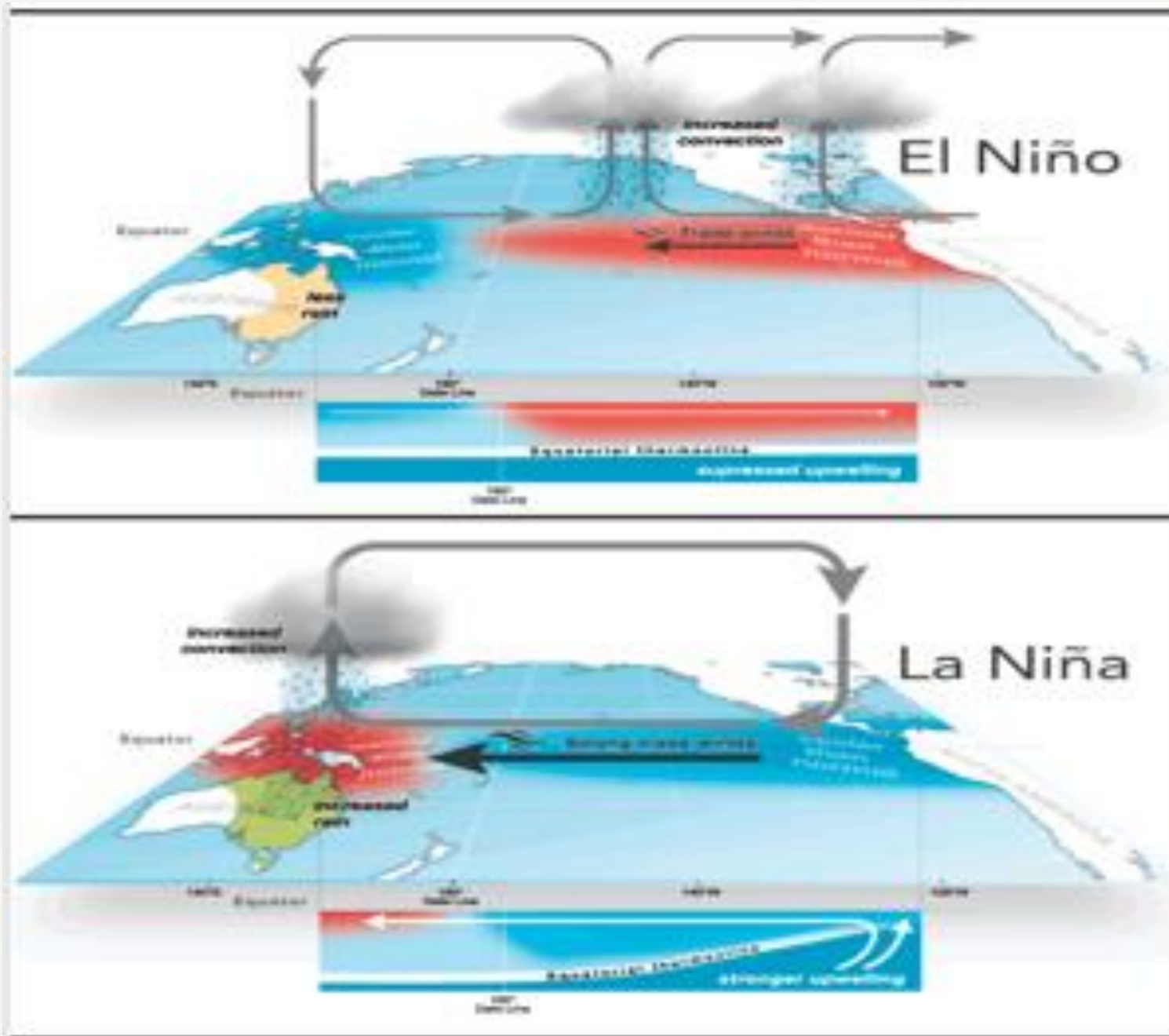
Bullish
Period for
Ag
Markets



Pacific Decadal Oscillation(PDO) and the Atlantic Multidecadal Oscillation(AMO) Modulate US Moisture Patterns (Gregory McCabe)



What Is La Nina and El Nino? And How is the Walker Cycle Air Flow Impacted

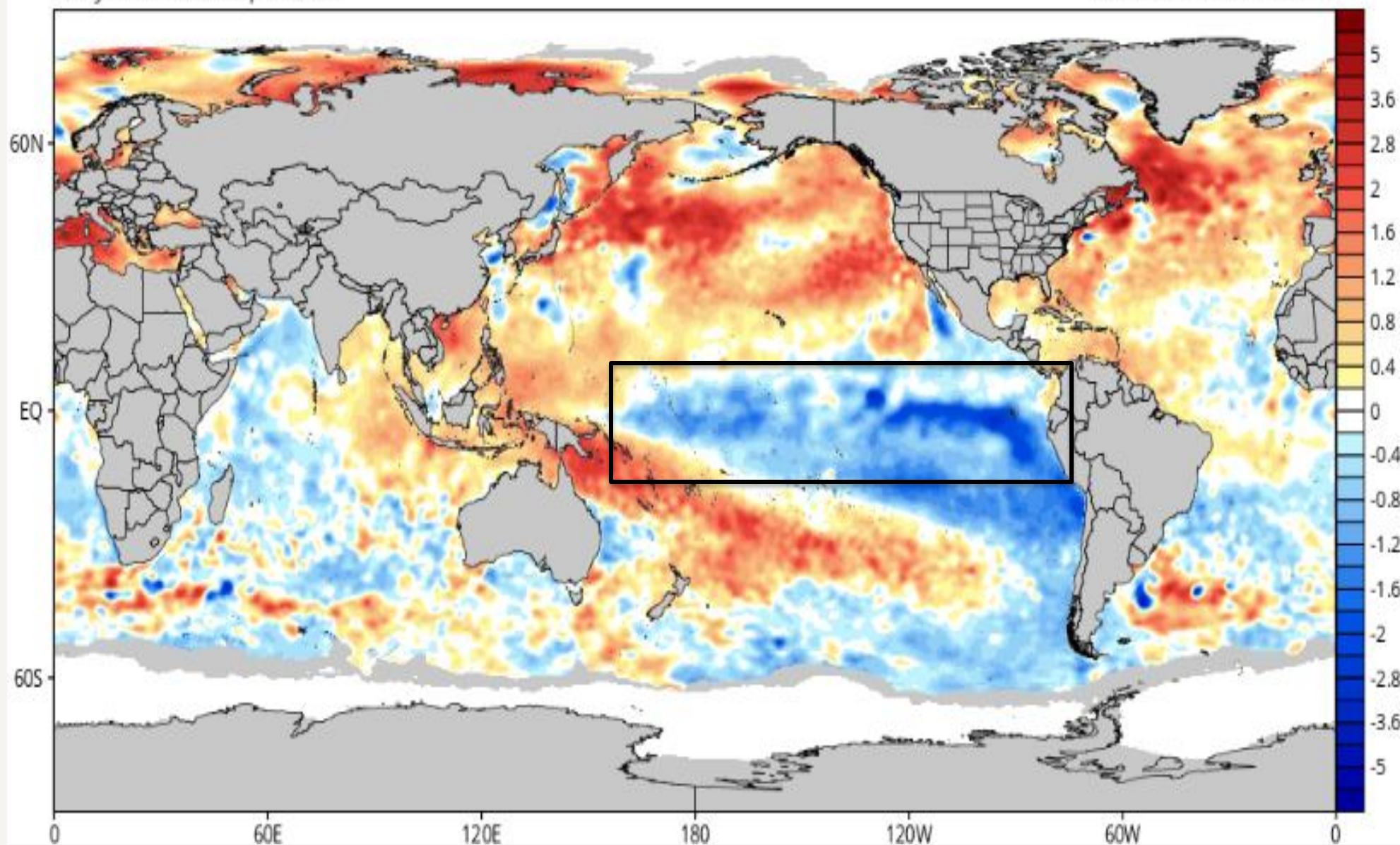


La Nina and El Nino Driven by the PDO and the 22-Year Hale Solar Cycle

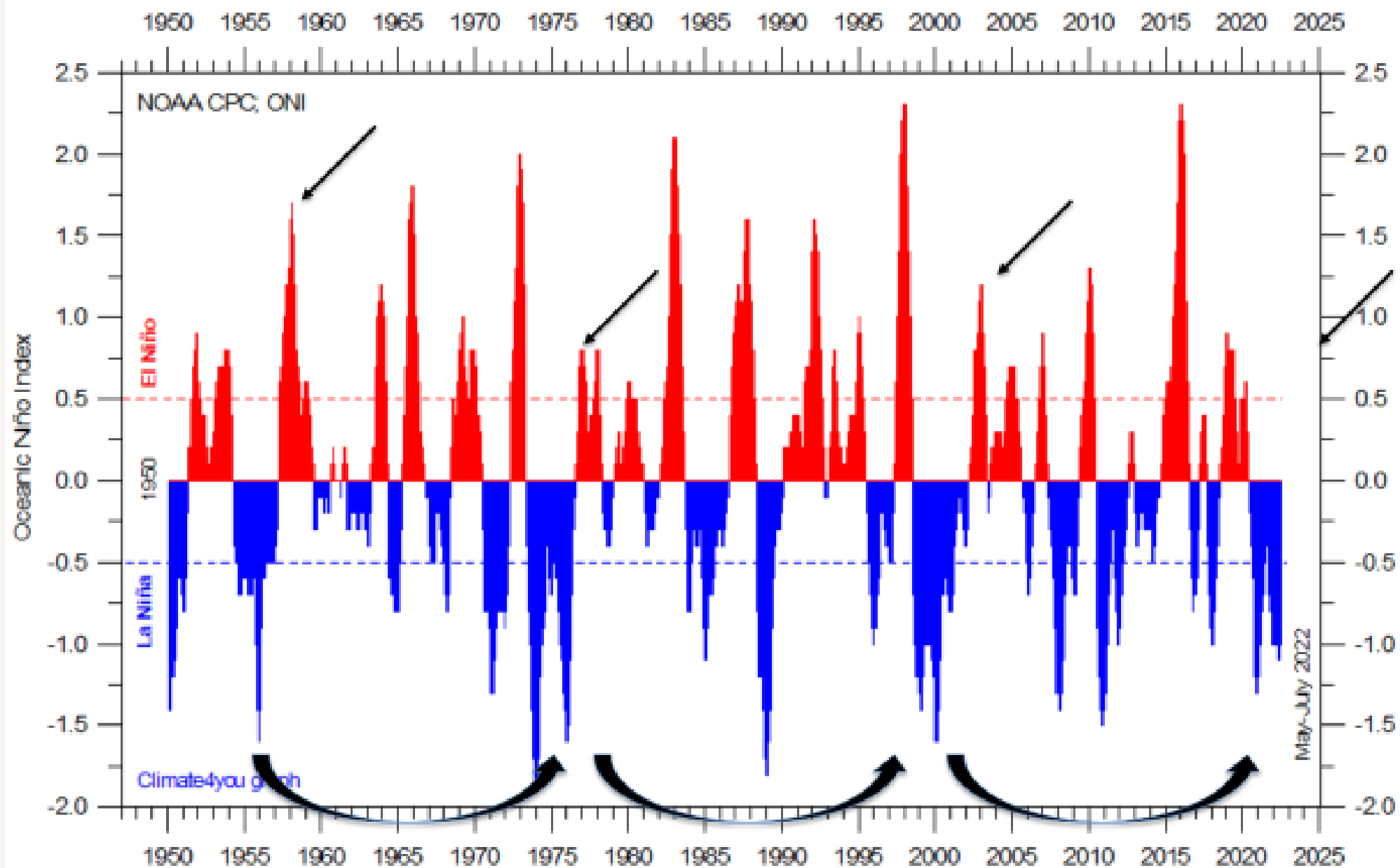
CDAS Sea Surface Temperature Anomaly ($^{\circ}\text{C}$) (based on CFSR 1981-2010 Climatology)

Analysis Time: 06z Sep 18 2022

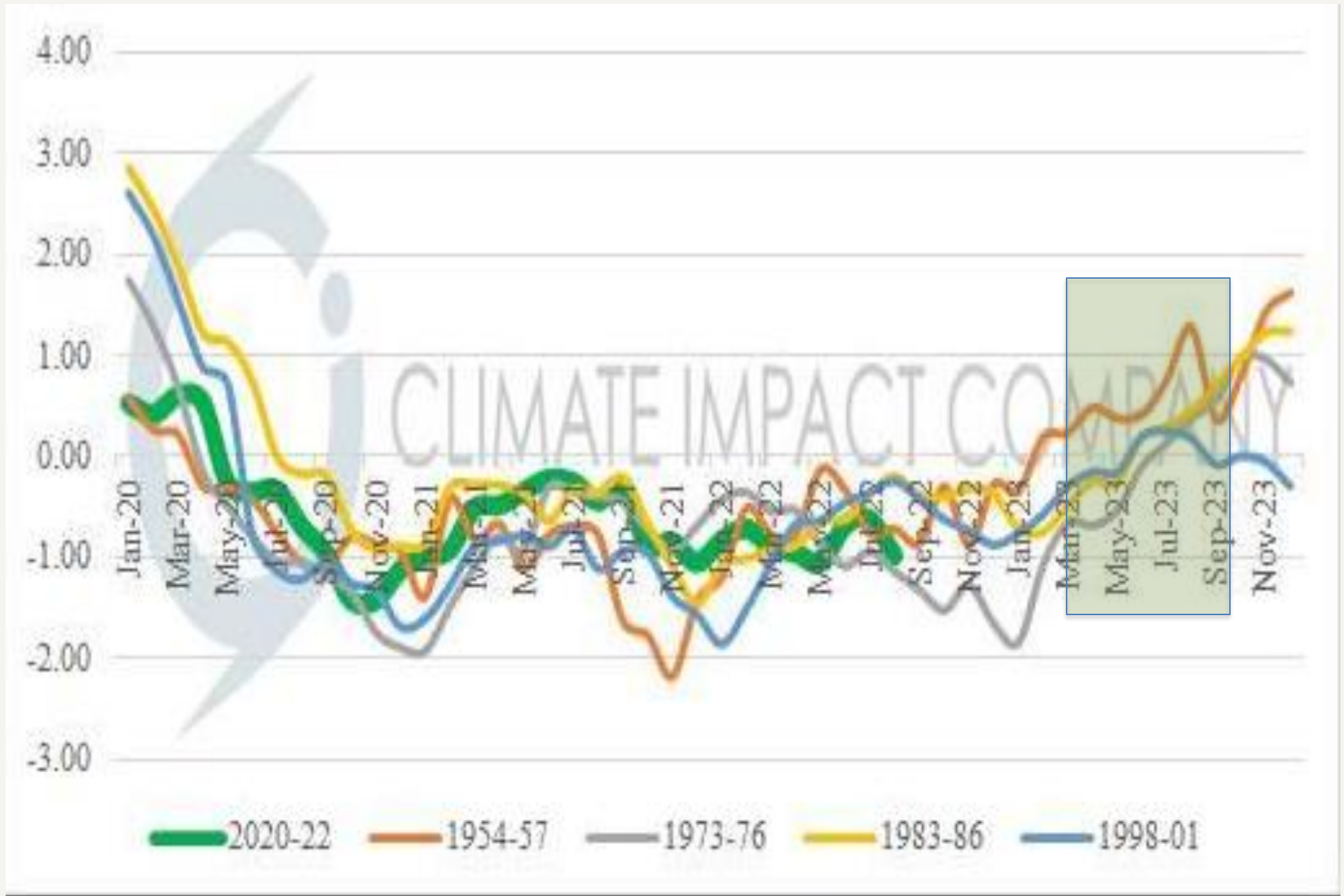
TROPICALTIDBITS.COM



The 22 Year Hale Solar Cycle Produces Alternating Longer and Shorter La Nina's-The Current Cycle Has been the 2 Year La Nina Phase That Project El Nino in 2023



Past 2-Year La Nina Cycle Analogs Suggest El Nino by Spring/Summer of 2023

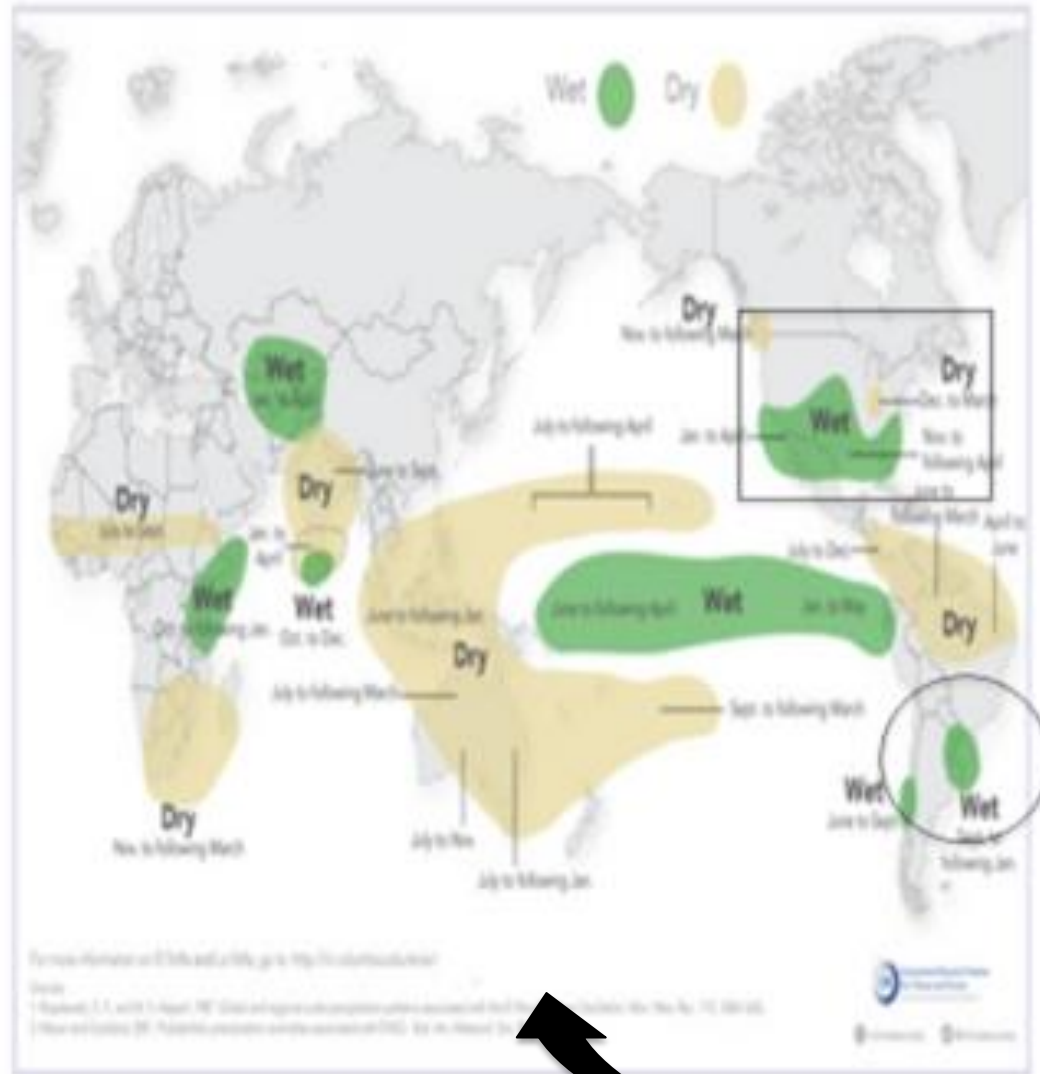


2022/2023 Drought Cycles End for both North and South America

While Drought Cycles Emerge In Asia and Africa

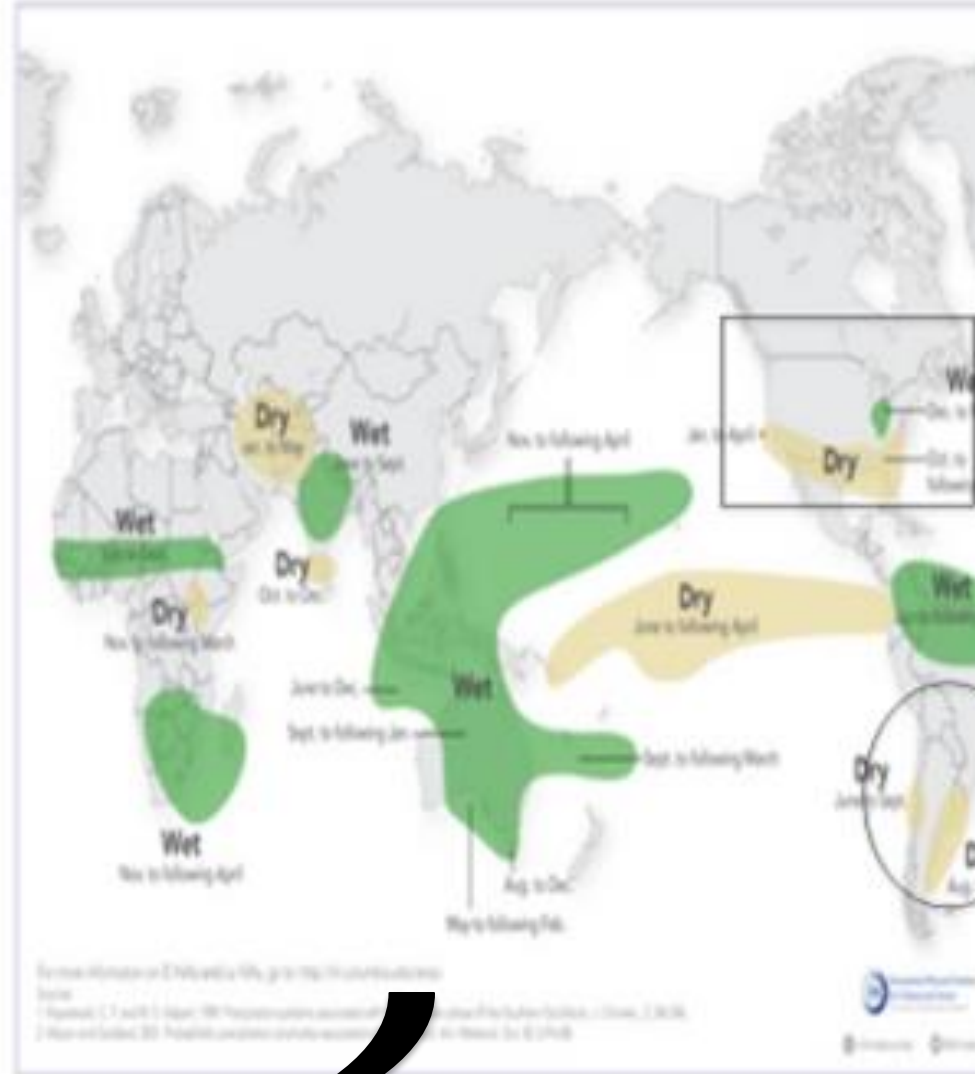
El Niño and Rainfall

El Niño conditions in the tropical Pacific are known to shift rainfall patterns in many different parts of the world. Although they vary somewhat from one El Niño to the next, the strongest shifts remain fairly consistent in the regions and seasons shown on the map below.

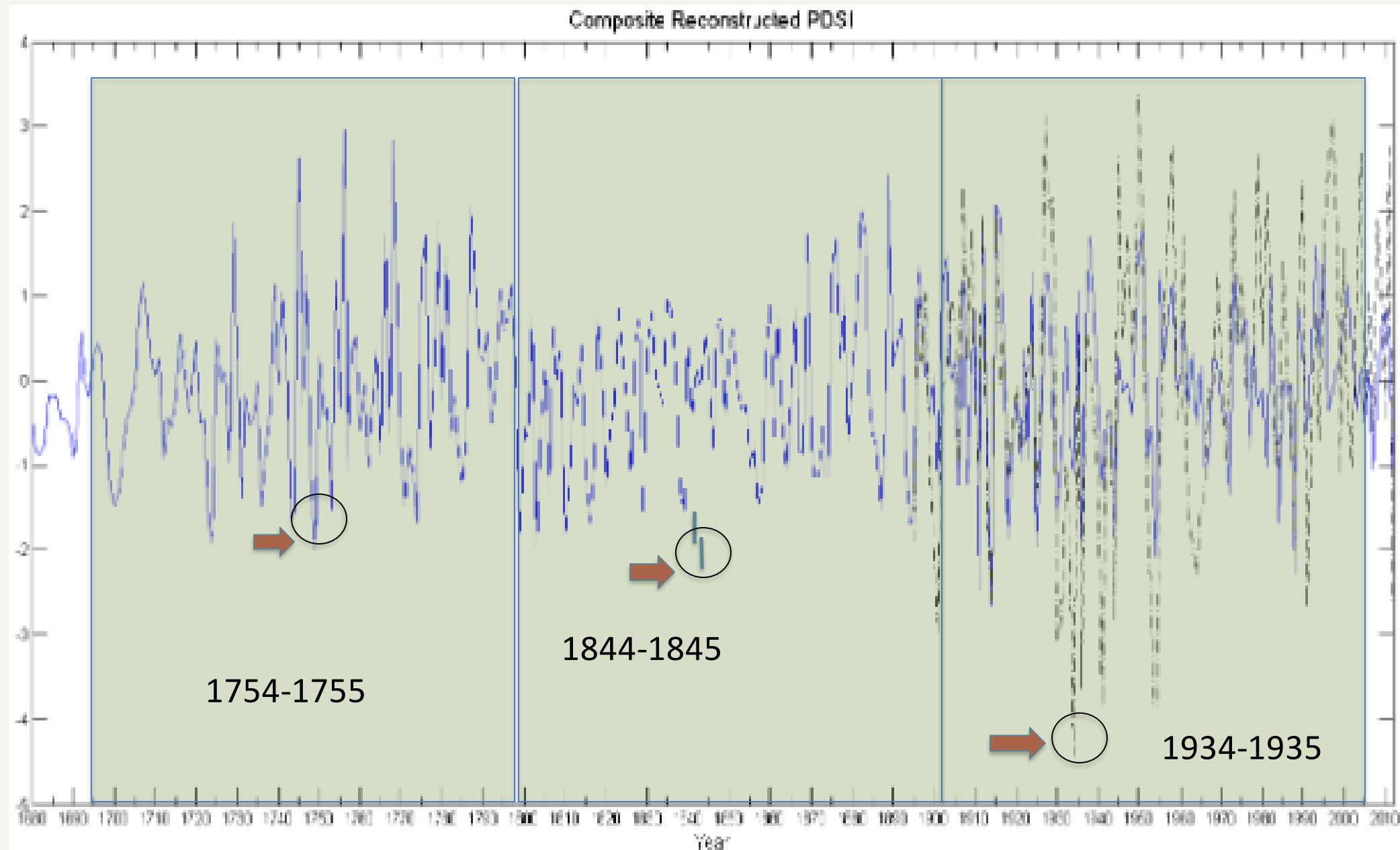


La Niña and Rainfall

La Niña conditions in the tropical Pacific are known to shift rainfall patterns in many different parts of the world. Although they vary somewhat from one La Niña to the next, the strongest shifts remain fairly consistent in the regions and seasons shown on the map below.

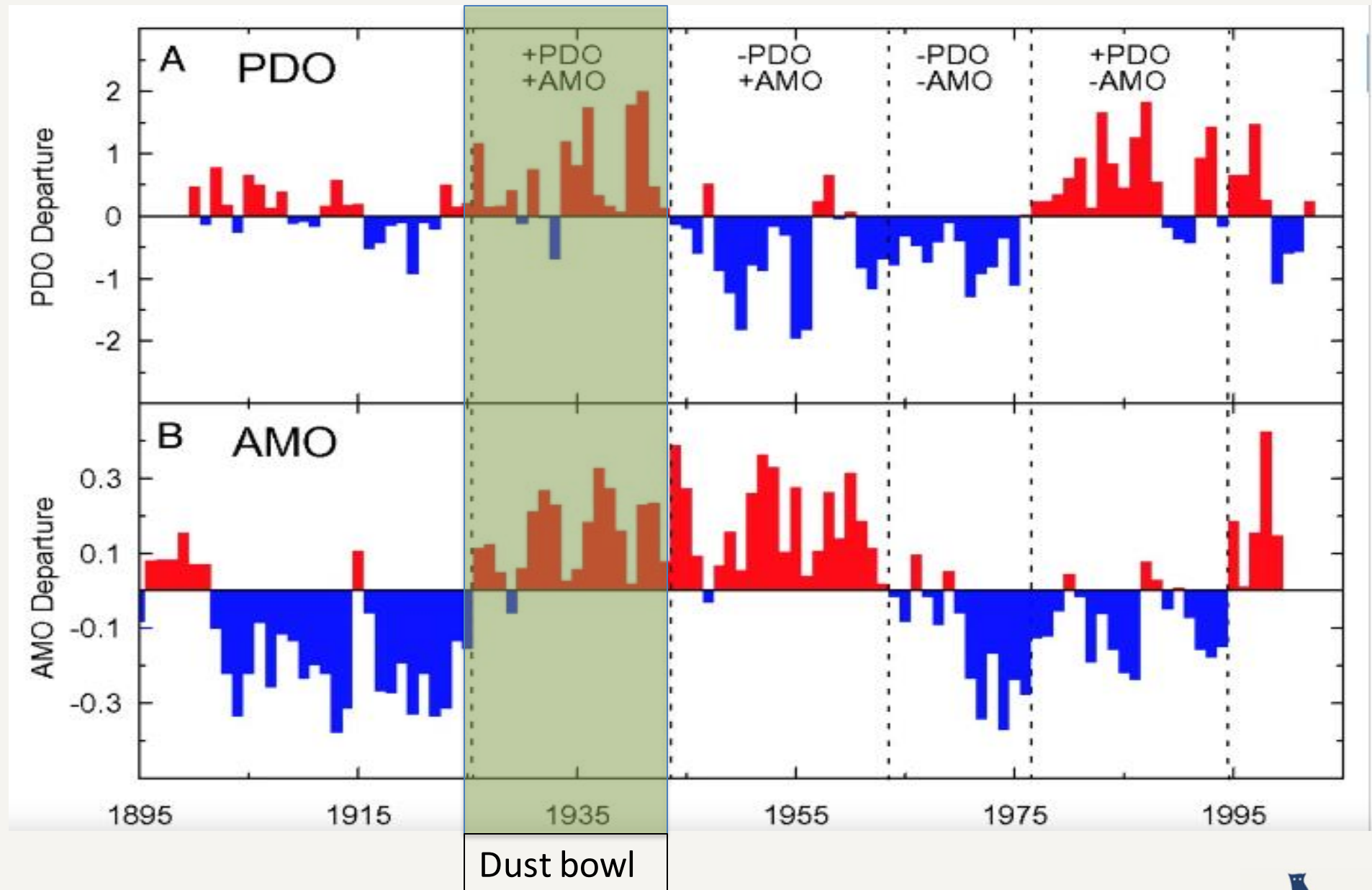


Beware of the 90-Year Gleissberg Cycle-Projects a 1 in 100 Year US Midwest Drought for 2024-2025



Palmer Drought Index Reconstructed From Tree Rings Analysis(Indiana University)

Not All Gleissberg Cycles Are the Same in Terms of Drought Severity-The Pacific Decadal Oscillation(PDO) and the Atlantic Multidecadal Oscillation(AMO) Modulate



Projecting the Severity of the 2024-2025 Gleissberg Cycle Drought

2024-2025 Gleissberg Drought= Not as Hot, Record Dry -PDO,-AMO

1934-1935 Gleissberg Drought= Record Heat, Not as Dry +PDO,+AMO

1844-1845 Gleissberg Drought= Not as Hot, not as Dry +PDO,-AMO

1754-1755 Gleissberg Drought= Record Heat, Record Dry -PDO,+AMO

Takeaways for the Next 3 years

- 1) With El Nino Coming for 2023 Look for Much Improved Production for Ag Markets for North and South America with Crop Problems Developing for Africa and Asia.**
- 2) Look for the US Dollar to Weaken Considerably back half of 2023 into 2024. Keep an on Crypto currency capital flows.**
- 3) Look for an escalation of geopolitical conflict heading into 2026 that will further rupture global trade flows, logistics and heighten the desire for food reserve stockpiling.**
- 4) Look for weather volatility to spike in 2024/2025 as the 90-Year Gleissberg Cycle Triggers Escalating Production Problems with a 1 in 100 Year drought in the US as the focal point.**
- 5) Anticipate Ag and Commodity Inflation to be with us for the better part of the next 15 Years**

Takeaways on Expected Climate Ahead

- 1) The Grand Solar Cycle Minimum will help amplify El Nino drought patterns in 2023 and Continues to Create Wild Climate Volatility**
- 2) The Unprecedented Underwater Tonga Eruption could cause record heat to be seen in 2023 where drought exists from El Nino due to trapped water vapor in the Stratosphere.**
- 3) Also look for the La Nina to El Nino Whipsaw Post Tonga Eruption. The US and Brazil Should see Much Improved Growing Conditions over the Next Crop Cycle. Argentina could Still Have Drought Risks.**
- 4) Look for Secondary Tops in Grain Markets Now as an Add on to that Which Was Seen in May. Look for the Next Major Low in Summer of 2023.**
- 5) Cattle should see and Tremendous Restriction of Animals Coming to the Packing Houses as Herd Liquidation Finally Comes to an End.**

Proposed Ag Market Price Pathway Ahead





Published By:
Hackett Financial Advisors, Inc.

Shawn Hackett, President

22641 Caravelle Circle

Boca Raton, FL 33433

561-573-3766

Email: Shawn@HackettAdvisors.com

www.HackettAdvisors.com