

BROWNING

©Evelyn Browning Garriss

NEWSLETTER

A Fraser Management Publication

Vol. 35, No 8

.....
 This newsletter contains articles, observations and facts to support our contention that man is significantly influenced by the climate in which he exists.

Our calculations show the climate, over the next term, will cause dramatic changes in our social and economic patterns.

We feel that the reader, attuned to the changes that are occurring, may develop a competitive edge; and, by understanding his now and future environment, can use the momentum of change to his advantage.

Hot, Hot, Hot!

SUMMARY: The same natural factors that are creating a summer heat wave throughout the Northern Hemisphere will shape a warm autumn and very cold winter in North America this year.

La Niña in the Pacific, tropical storms and a thin glaze of Gulf oil to top it all off. In short, it has been a summer of extremes.

Heatwave

The extreme weather event that received the most attention has been the soaring temperatures that baked the East, from Quebec to the Carolinas. At the height of the heat wave, temperatures cracked the century mark from Connecticut to South Carolina.

Welcome to Sunny California – on July 10, they were still skiing.

Welcome to New York City – on July 12, they were still sweating.

Welcome to the very odd, very hot summer of 2010.

This summer is a smorgasbord – a heat wave roasting the East, record chills in the West, flooding in Texas and worries about a possible La Niña drought hitting the agricultural belt. Add in erupting volcanoes, a new-born

In New York's Central Park, the temperature reached 100°F (37.8°C) for two consecutive days, July 6 and 7. Many cities had three days in a row of 100° heat including: Baltimore, Maryland; Trenton, New Jersey; Richmond, Virginia; and Reading, Pennsylvania. And at least four locations had 100° heat for a four-day stretch: Newark, New Jersey;

In this issue

- 1 **Hot, Hot, Hot!**
Welcome to the great Northern Hemispheric Heatwave of 2010!
- 4 **Russia's Drought: The Riddle Wrapped in a Mystery Inside an Enigma**
Russia's wheat fields are dying and its capital is choking on smoke – what is happening to the climate of this mighty nation?

8 NEWS NOTES

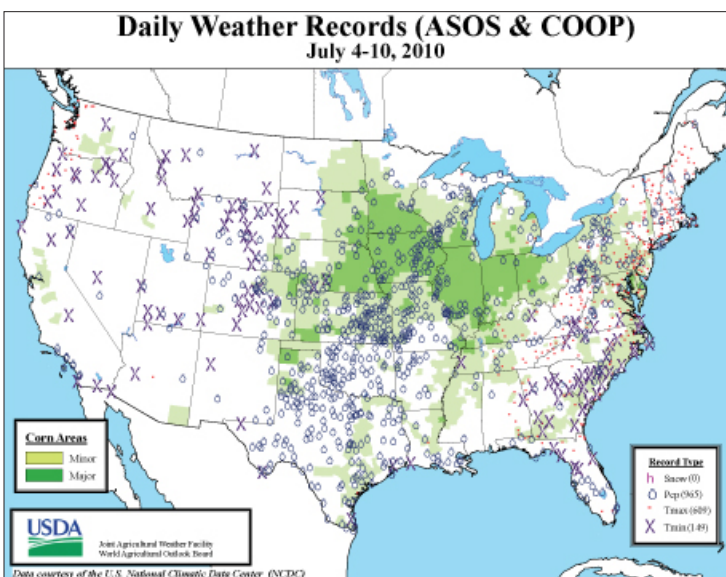


FIG. 1 A record breaking week of weather

http://usda.mannlib.cornell.edu/usda/waob/weather_weekly/2010s/2010/weather_weekly-07-14-2010.pdf

Frederick, Maryland; Selinsgrove, Pennsylvania; and Shenandoah Valley, Virginia. To make matters more wretched, there was high humidity over the entire region, raising the “misery index”. The 103°F (39.5°C) in New York City, for example, felt like it was 111°F (43.9°C). Only a dozen daily high temperature records were actually broken in the Northeast, but a lot of big cities are on that list, which means the media paid extra attention.

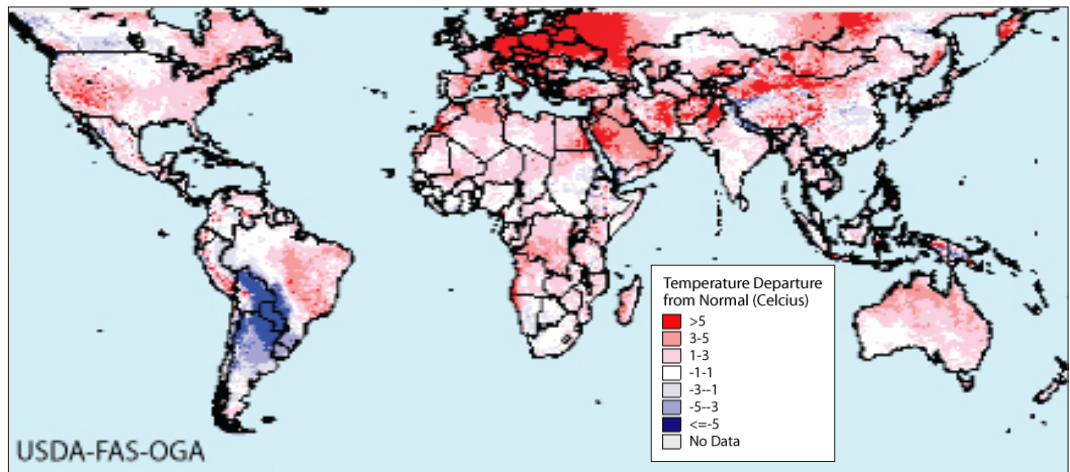


FIG. 3 **Most of the world is suffering from excessive heat July 11-20**

<http://www.pecad.fas.usda.gov/cropexplorer/continentView.cfm?ftypeid=2&fattributeid=1&stypeid=2&sattributeid=3®ionid=world&startdate=07%2F11%2F10&imenddate=07%2F20%2F10>

It also meant that millions of people were cranking up their air conditioners.

The heavy demand for power associated with the use of air conditioners strained the international electrical grid. Power failures shut down electricity service to parts of New York City and Washington D.C., the USA’s financial and political capitals, while Tuesday’s largest blackout occurred in Canada’s most populous city, Toronto. (Unfortunately, this was during the Queen’s visit.) Partial power failures also occurred in Philadelphia, Detroit, Boston, Baltimore, and many smaller cities and towns in the US and Canada. At least 2 people died and cities like Ottawa reported record-breaking numbers of emergency room visits.

Only the current economic slump kept the power usage in the eastern US and southern Ontario, from reaching the

record levels of the 2006 heat wave. Even so, the regional blackouts showed the vulnerability of the eastern continental power grid. Toronto’s blackout, for example, occurred when a breaker belonging to Hydro One burst into flames, leaving 240,000 residents without power. The failure was directly attributed to the age of the power grid. “Much of the Crown-owned utility’s equipment is nearing the end of its design life,” complained the *Globe and Mail*. “The outage was a stark reminder that an aging electricity grid is leaving many regions vulnerable to blackouts.”

The problems of the aging international power grid are not going to be repaired quickly. So the question that has to be asked is whether there are going to be more heat waves straining the system.

Unfortunately – the answer is yes.

The Great Northern Hemisphere Heatwave

At the same time that the US and Canada were baking, things were heating up in China. On July 5, temperatures in Beijing reached 105.1°F (40.6°C), the highest recorded temperature in July

for the city since national records began in 1951. The heatwave blanketed 16 northern provinces. Temperatures were so hot throughout northern China that overheated cars caught on fire and hospital visits spiked. The hot, dry weather also brought huge swarms of locusts to several parts of China. Temperatures well above normal and precipitation 50–90% below normal for this time of year contributed to the pests ravaging 9.6 million acres (3.9 million hectares) of grassland in Inner Mongolia, according to an official from China’s Department of Agriculture and Animal Husbandry.

As temperatures soared, the waters throughout China began to change colors – a phenomenon that previous generations superstitiously considered an ill omen. The Xingqing Lake, in the Xingqing Palace Park turned crimson. Park officials blamed a mixture of pollutants and high heat for the change. The ancient city of Xi’an city saw lakes and rivers turn green and red as a result of algae blooms flourishing in the hot weather, according to the Xinhua news agency. Similar events are being reported throughout both China and Taiwan.

Unfortunately, the heat was not confined to two countries. By July 11 and 12 heat waves were sweeping across Europe, South Korea, Kazakhstan, Russia and North Africa. Hot desert air from the Sahara surged north, baking Spain, Italy and the Balkans, and then moving further to Switzerland, Germany, Eastern Europe and Russia. Most of Germany, including

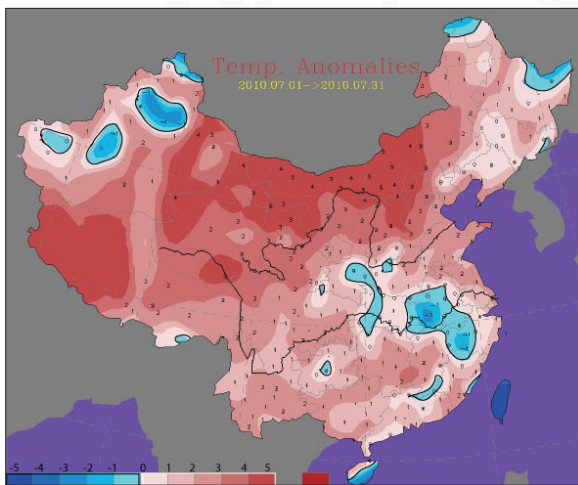


FIG. 2 **A Hot July in China**

<http://ncc.cma.gov.cn/upload/upload8/t2a160.gif>

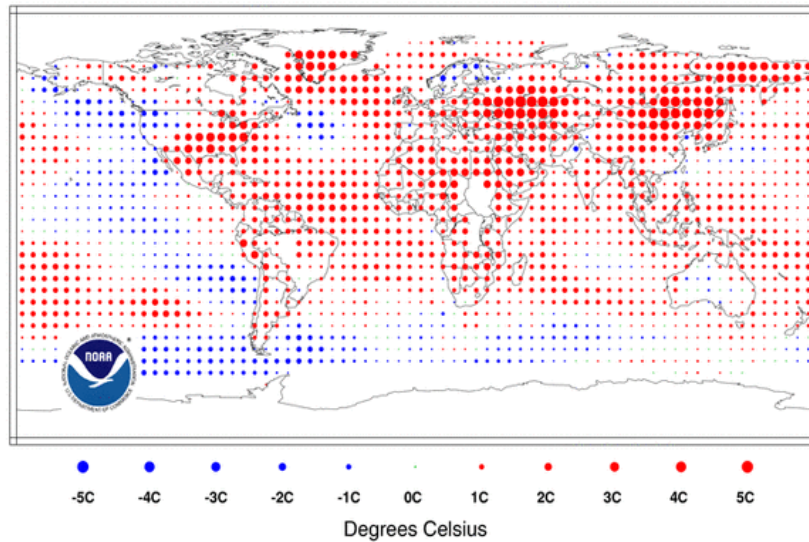


FIG. 4 **Warm world temperatures June 2010**

<http://www.ncdc.noaa.gov/sotc/get-file.php?report=global&file=map-blended-mntp&year=2010&month=6&ext=gif>

Berlin, recorded temperatures as high as 38°C (102°F). Further south, the Middle East baked, with all-time record high temperatures established in Saudi Arabia, Iraq (125.6° F/52°C for both) and Pakistan (128.3° F/53.5°C).

This heat has not been unexpected. NOAA, the US weather department, warned back on July 8 that “The current year may become the warmest on record.” David Easterling, a climatologist with NOAA’s National Climatic Data Center in Asheville, North Carolina announced that the combined land and ocean temperatures around the world were 1.22°C (2.2°F) warmer than the 20th-century average. The summer in the Northern Hemisphere started hot and it has showed no sign of cooling.

In Hot Water

The reason that all this heat has been so predictable has been that the most of the world’s oceans have been warmer than normal. And the ocean waters cover 70% of the Earth’s surface. For the last three months, most of the Atlantic, Indian, Western Pacific and Arctic waters have been 1 - 2°C (2.8 - 3.6°F) above normal. Not only have the Earth’s land masses gone through their normal summer warming, they have been heated by unusually warm marine air

masses. A number of natural ocean cycles are concurrently entering their warm phases. This simultaneous peaking is creating some extraordinary warmth.

THE ATLANTIC - Currently, the offshore waters along the East Coast and portions of Europe have been 1.5° - 3.5°C (2.7° - 6.3°F) above normal. Spring and summer winds have carried the warm, moist air throughout the eastern portions of North America.

This pattern will continue. The warmth of the Atlantic is due to a long-term trend – the flow of the giant Atlantic Thermohaline

Circulation. This circulation is the flow of water from the tropics to the northern Atlantic. The waters, including the Gulf Stream, are flowing very fast, heating up the entire ocean. Studies have shown that this pattern of warmth, called the warm phase of the Atlantic Multidecadal Oscillation (AMO), usually lasts 35 - 40 years. Since this warm phase began in 1995, we can expect it to continue for another 20 - 25 years.

THE INDIAN OCEAN – The Indian Ocean’s cycles are not understood quite as well as the Atlantic’s. What is known is that its tropical and northern waters are dominated by the Indo-Pacific warm pool. This is an enormous, bathtub-shaped region spanning a huge area of the tropical oceans stretching from the east coast of Africa east to the International Date Line in the Pacific. The warm pool heat has increased by about 1°F (0.5°C) in the past 50 years.

At the same time a shorter irregular cycle, the Indian Ocean Dipole, which was negative last year, has become neutral. This has moved more warm water near Africa and the Middle East.

THE PACIFIC OCEAN – As noted in the last two issues of the Browning Newsletter, the Pacific is in the middle of a period of rapid change. Last winter and spring it was experiencing an El Niño, which warmed the tropics and eastern portions of the ocean. Since then, these portions of the Pacific have cooled dramatically.

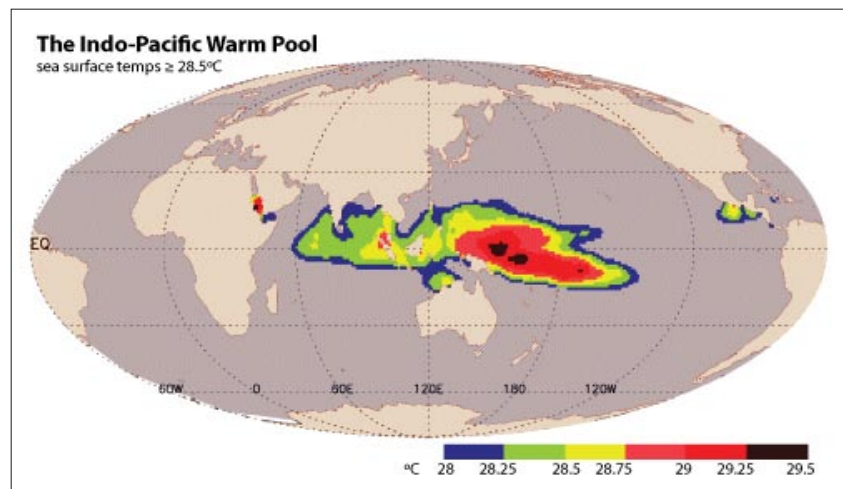


FIG. 5 http://www.decvr.org/presentations/dmv_elnino/images/sst.gif

It is now, according to the US Climate Prediction Center, "a developing La Niña." This means the Western Pacific, the waters around Southeast Asia and China, have rapidly been growing warmer since April. Marine winds have carried the heat and moisture inland.

Notice the one large area of the world where the ocean waters are unusually cool. The La Niña has cooled the tropical and eastern Pacific. While most of the world has been experiencing heat waves, the western coasts of the Americas have been colder than usual. For South America, this has proved deadly. The continent is in the middle of winter and a cold front sweeping north from Antarctica has killed nine people in Argentina and an uncounted number in Paraguay, Uruguay and Bolivia. Temperatures dropped to -14°C (6.8°F) in Argentina's Patagonian region and the cold temperatures surged as far north as southern Brazil. Most of the region has been 6 - 10°C (11 - 18°F) below normal.

Fortunately for North America, it's summertime, but that has not kept the La Niña from cooling the West Coast. San Diego has experienced a record cool July, with temperatures not seen since 1912. Los Angeles, following a gloomy, cool June, actually enjoyed a brief heatwave before ending the month with record-breaking low temperatures. Temperatures were low enough that Boreal Mountain Resort in Northern California was able to open for skiing on the second weekend of July. Further north, the Pacific Northwest was cool and gray. Temperatures heated up for the inland West, beyond the reach of the cooler

marine air, but the West Coast is already feeling the impact of cool La Niña currents.

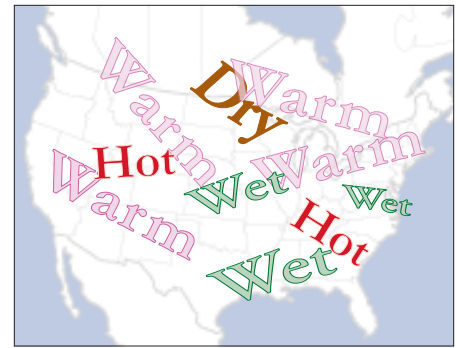
Looking Ahead Towards Autumn

All of the factors shaping this summer's weather are expected to linger through autumn and winter. Most US and Japanese models and observations indicate the La Niña, which is already moderate in strength, will intensify in early winter and linger through spring. One of the major models in the Beijing Climate Center suggests that it might intensify again in April.

From the warmth of the Atlantic to the typical weather patterns of a La Niña, the current dynamics suggest that late summer in North America will be hot. Most of autumn will be very warm. While La Niñas normally bring a strong risk of drought, a number of factors, including the continuing small and moderate sized eruptions of the Kamchatka volcanoes, suggest that most of the North America grain belt will receive ample rain. In 80% of similar years, there is an active hurricane season that brings tropical moisture to relieve the dry conditions in the South and East Coast.

Notice, as autumn draws to an end, Western Canada and parts of the Pacific Northwest typically show signs of cooling while most of the US remains warm. La Niñas typically have warmer weather in late fall and the early days of winter. This is followed by a sharp cold mid-winter. Investors frequently get fooled by the moderate

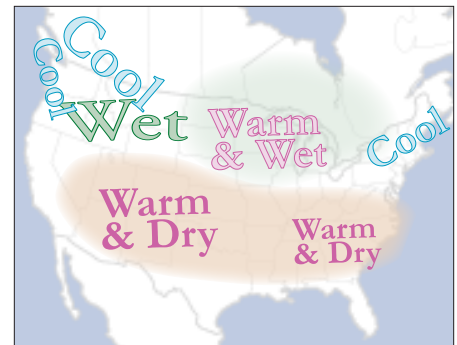
conditions of November into under-estimating the bitter cold of late December. Just as last winter's El Niño was colder than anyone expected, so this winter is shaping up to be very cold and stormy. Enjoy the current heat – most of us will be remembering it nostalgically next January.



Late Summer



Early Autumn



Late Autumn

FIGS. 7-9 Late Summer and Autumn if the North Pacific Volcanoes continue erupting

Cool 2°C or more lower than normal temp.	Hot 5°C or more higher than normal temps	Wet 125% or more of normal moisture
Warm 2-4°C or more higher than normal temps.		Dry 75% or less of normal moisture

© Browning maps

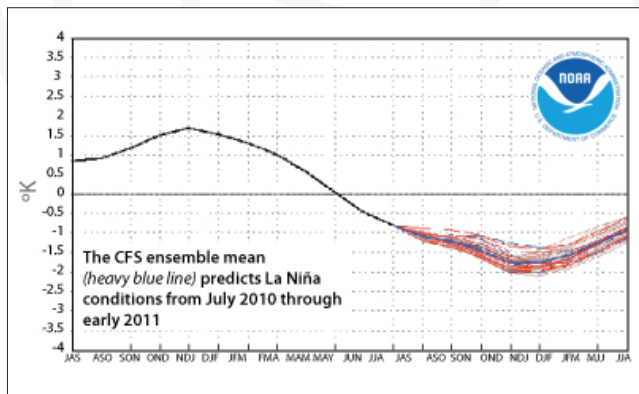


FIG. 6 NOAA's Climate Forecasting System projects a moderate to strong La Niña that will last into spring 2011

http://www.cpc.noaa.gov/products/analysis_monitoring/lanina/ens0_evolution-status-fcsts-web.pdf

Russia's Drought: The Riddle Wrapped in a Mystery Inside an Enigma

SUMMARY: Russia is currently experiencing a severe heatwave and drought that is greatly affecting its crops, especially wheat production. This drought is part of a long-term pattern that could possibly last well into next year. Changing climate – specifically the current negative PDO – increase the probability of this type of serious drought repeating.

It was almost enough to make Russian and American leaders long for the Cold War . . . almost. Washington sweated through two prolonged heat waves in July, one so fierce that it caused blackouts and warped one of the rails on the city's Metro system. Across the world, Moscow is still choking through high temperatures that are stifling its citizens with heat, smoke and misery. In both capitals right now, anything cold sounds good.

Choking on the Heat

Both nations are reeling from the great Northern Hemispheric Heatwave of 2010. As noted in the first article, record-breaking heatwaves have baked nations from the Americas to Europe, Asia and Africa. While the misery is widespread, no place has suffered more than Russia. The Russians can swagger through bone-chilling cold, but have greater difficulty with high temperatures.

Over the last two months, European Russia's temperatures have climbed 8 – 12°F (4–8°C) above average. High June temperatures soared even higher in July, breaking 60 and 80 year records. On July 26, Moscow recorded its highest temperature ever -- 98.9°F (37.2°C). In a city with little to no air conditioning, the heat has been almost unbearable. Residents of the capital and surrounding regions have tried to escape the sweltering temperatures by swimming in the local rivers and more than 2,000 have drowned.

The heatwave has brought more than misery to Moscow – it has brought wildfires. Russia has declared a state of emergency as 948 forest fires covering 64,000 acres (26,000 hectares) have burned across

18 provinces. Twenty-six forest fires and 34 peat fires are burning in the Moscow region alone.

Peat, used in the past to produce heat and electricity, can smolder deep underground for months, years and even centuries. A fire from a casually flipped cigarette butt or an improperly placed campfire can burrow into the dry peat and then creep along, dozens of feet underground. They pollute the air, ignite above-ground forest fires and are extremely difficult and expensive to fight. According to Reuters, Moscow region chief Mikhail Gromov reported "According to preliminary estimates, in only one district where fires are now most severe, over 4.5 billion rubles (\$827 million) are needed. We have five such districts,"

This has led to dangerous air pollution levels. The Moscow government agency in charge of monitoring air pollution, Mosekomonitoring, announced during the last week of July that smog levels were five to eight times greater than normal. The current level of carbon monoxide "damages an average of 20 per cent of red blood cells in a human body, which equals the effect of two packs of cigarettes smoked within three or four hours."

In short, the weather has been deadly and its impact will linger for months, possibly even years. Unfortunately, it is not expected to leave any time soon. According to Russian weather services, a rare meteorological phenomenon has been responsible for the

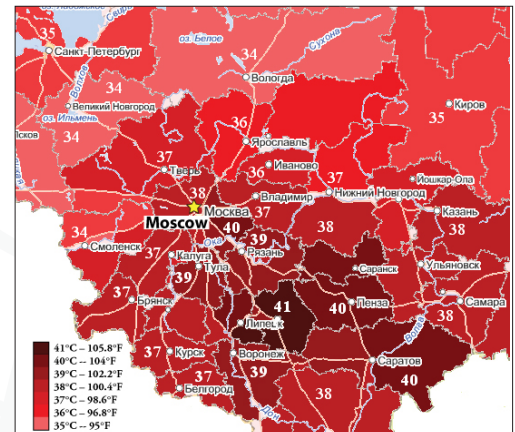


FIG. 10 The Russian heatwave July 27, 2010
source: Texmon, <http://en.wikipedia.org/wiki/File:%D0%A6%D1%84%D0%BE.png>

heat. A zone of low pressure over the Atlantic Ocean was interacting with a region of high pressure in North Africa, pushing hot air from the Middle East deep into Russia.

Weather Phenomenon or Climate Trend

The good thing about a rare weather phenomenon is that it is short-term and will be unlikely to return. However, much of what we are seeing is not weather – it is climate. And climate is long-term.

There are two long-term climate trends that have helped create the fires of Moscow. The first is the development in the Indian Ocean. Last year the Indian monsoon failed causing some major crop shortages and high food prices. The Indian Ocean Dipole, a weather oscillation pattern, was negative and the Pacific was experiencing an El Niño – both of these events suppressed the seasonal rainfall in India. Now the Indian Ocean Dipole has become neutral. This has allowed the ocean waters to heat and the high air pressure to shift over to North Africa.

This has created ideal conditions for the Indian monsoon. The rains started a week



FIG. 11 Russia's smoke & fires, above and below ground
<http://earthobservatory.nasa.gov/NaturalHazards/view.php?id=44952> –

late but once they arrived, they have been heavy. Pakistan has had over 1000 people die in the heavy flooding, but for India, the strong monsoon has been a blessing, bringing bountiful moisture to parched fields.

Unfortunately, the same pattern that allows heavy monsoons for South Asia frequently directs hot air from Northern Africa and the Middle East deep into Europe. When the tropical monsoon rain belts expand further from the equator, so do the desert heat zones north of the rain belts. We saw a similar pattern in 2003 and 2006.

An even longer climate trend – the Pacific Decadal Oscillation (PDO) has added drought to the heat from the south.

The PDO is one of the longest, strongest, and most influential weather patterns on Earth. Basically, every 30 – 40 years, the warm water switches from the eastern to the western side of the Pacific, and then 30 – 40 years later, the water switches back again. When the eastern waters are warmest, so are the tropics. When the western side is warmer than normal, so are the polar regions.

Since 2006, the PDO appears to be in its cool phase. This was interrupted briefly by last winter's warming El Niño, but it was cool again by June. This means the waters by Asia are unusually warm. Heat is streaming into Russia from the east as well as from the south west.

More importantly, the current negative PDO is altering normal precipitation patterns. Historically, during negative PDOs, India, Indonesia and Southeastern Australia tend to have more rainfall and Northern

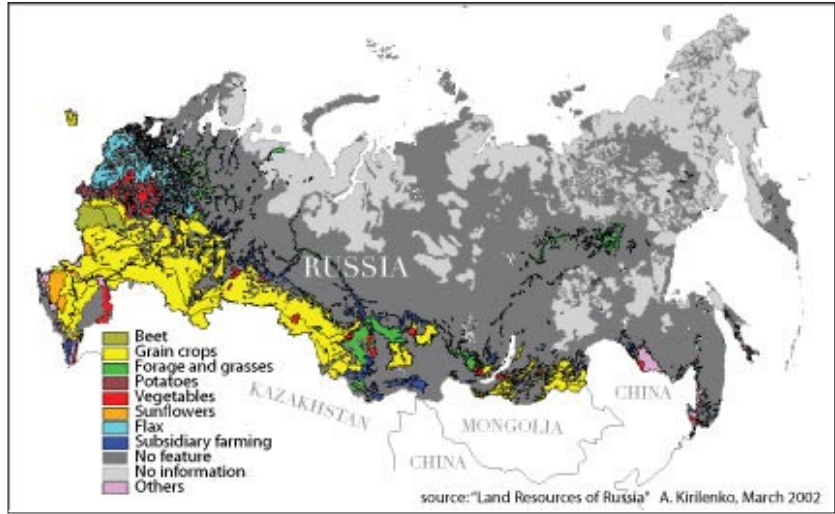


FIG. 12 Russian agricultural land is very limited

http://www.usf.uni-kassel.de/ftp/dokumente/projekte/droughts_and_food_in_russia.pdf

China, Central Asia, Southern Russia, the Middle East and East Africa have more frequent droughts.

This means that Russia is not only being hit by more heat, it is being swept by a severe, crop-killing drought.

Russian Agriculture – A Story of Freezes and Droughts

Russia is Europe's biggest wheat producer. It has become the world's third largest wheat exporter, behind only the US and Canada. Its recent policy of privatizing collective farms has successfully attracted huge investments in agricultural machinery, silos and grain-carrying railroad cars.

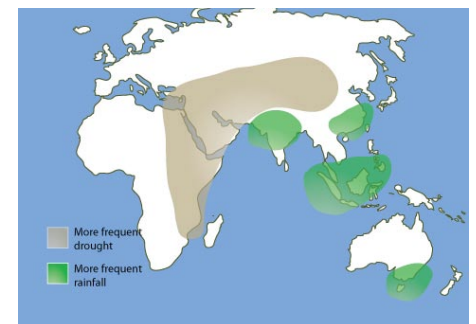
The result has been bumper crops - 108 million tons in 2008 and 97 million tons of grain in 2009. Since domestic consumption is typically 77 million tons, Russia's export trade has soared. Both years saw lines over a dozen miles long of trains and trucks delivering surplus grain to the Black Sea's busy ports. The abundance of food led to reduced inflation. It has been an incredible achievement.

To understand how remarkable this achievement has been, one has to understand how difficult Russian agriculture is. Russia has two major climatic factors that historically have limited its crops:

1. The length and severity of Russian winters limits the growing season in the northern (forest) part of the country and
2. The southern steppes have frequent droughts.

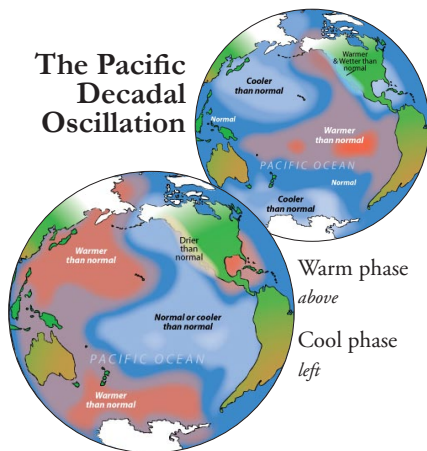
A study by Genady Golubev and Nikolai Dronin, *Geography of Droughts and Food Problems in Russia (1900-2000)*, published in 2004 compared the problems of Russian agriculture to the US.

- 80% Russia is in the least productive thermal zone for agriculture compared to 19% for the US,
- Only 4% of Russia is in the most favorable thermal zone compared to 31% of US territories,
- Overall, Russia with its mostly continental climate is drier. Its average annual precipitation is 490 mm (19.3 inches) while the average precipitation for the US is 782 mm (30.8 inches).



The PDO and the Eastern Hemisphere

FIG. 15



FIGS. 13 & 14

The cool phase of the PDO started in 2006

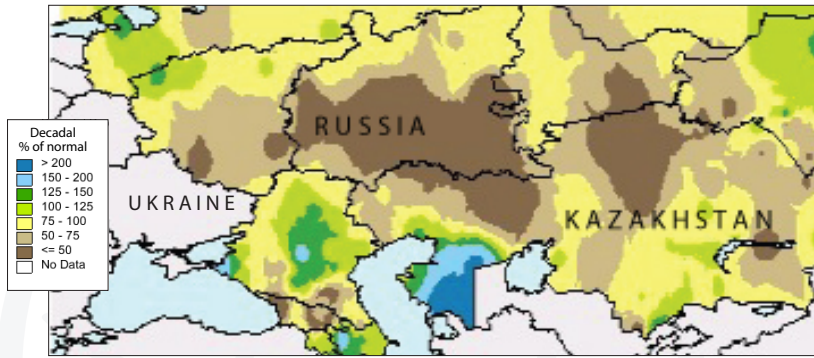


FIG. 16 Areas badly affected by this year's drought.

<http://www.pecad.fas.usda.gov/cropexplorer/imageview2.cfm?ftypeid=1&fattributeid=8&stypeid=8&sattributeid=&startdate=2010-07-11%20>

- Only 1.4% of Russia's land has the optimum combination of temperature and moisture for agriculture. 56% of US land has that combination.
- 80% of Russian territory is in risky agricultural zones while only 25% of US land is risky.

As a result, droughts occur in Russia on a fairly regular basis. Historically Russia had a drought every 5 – 7 years and a famine every 10 – 13 years. Golubev and Dronin's report gave the following table of major droughts in Russia during the last century:

- **CENTRAL:** 1920, 1924, 1936, 1946, 1972, 1979, 1981, 1984.
- **SOUTHERN:** 1901, 1906, 1921, 1939, 1948, 1951, 1957, 1975, 1995.
- **EASTERN:** 1911, 1931, 1963, 1965, 1991.

It is obvious, looking at the scattered drought years, that no one climate phenomenon is responsible for Russia's droughts. **However, if one examines history, the most severe droughts have tended to correlate with periods of time when the Pacific Decadal Oscillation is negative – as it has been this summer.**

The most recent droughts and heat waves were in 2003 and 2006. The current event is right on schedule. With the recent negative turn of the PDO, Russia is facing another two or more decades of more frequent and severe droughts.

The Drought of 2010

The current event is, according to Russian records, the nation's worst drought in 130 years. Some regions of the fertile Volga black earth area have not seen a drop of rain since April.

Below normal precipitation has stretched across the nation, from Russia's Pacific provinces, to the Caspian and Black Sea. The most concentrated early summer drought was in the south-central portions of the nation, but as July progressed, the dry weather expanded northwest, leaving the Volga and Ural grain belts desiccated. Scorching heat and constant dry winds intensified the arid conditions. Initially the Ukraine and western portions of Kazakhstan were equally parched but large portions of the Ukraine have had some timely rains.

As the wheezing citizens of Moscow can testify, the most dramatic result of this drought has been an explosion of wild fires. Since May, the nation has been ablaze. The situation has gotten so out of hand that ex-president and current prime minister Vladimir Putin has been put in charge of the emergency. So far there have been 21,690 fires in 18 provinces, 10% more than last year. The average fire is five-times larger than normal and a record-breaking number are raging through Russia's European provinces. More than 25 people have been killed and 1,275 homes have been lost, including one entire village. Putin has called out the army and demanded the resignation of dozens of local officials in regions than normally have few fires and were therefore caught entirely unprepared and unorganized.

What is making the emergency so frustrating is that studies are showing that 90% of these wildfires were caused by human action and ignitions along the railroads. In forest districts a large number of blazes appear to be due to commercial arson. Private logging companies, many of them run by criminal gangs, are setting fires in order to obtain cheap contracts for salvage logging of charred tree stands.

While the flames and choking smoke are grabbing the headlines, a more serious problem has emerged. Russia's fields are so large that they are impossible to irrigate and farmers depend on summer rains. This year's drought has killed over 20% of Russia's crops, 9.6 million hectares (23.7 million acres), an area the size of Maine or Portugal.

The current drought shows no sign of letting up in August. This has spurred an early harvest across Russia and so far the results are disastrous. A state of emergency has been declared in 23 crop-producing regions. The current estimates are that another 4 - 5% of the crop may be lost bringing grain production down to 70 to 75 million tons, millions less than the nation's annual consumption rate.

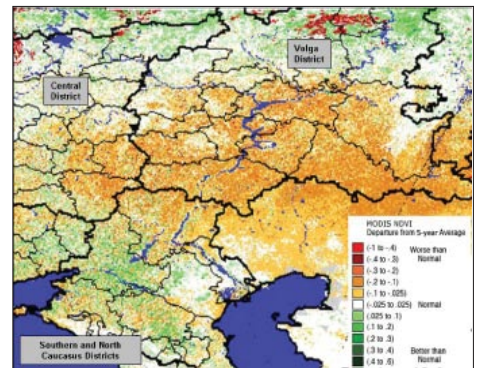


FIG. 17 Satellite pictures show withered crops and vegetation in the Volga croplands

<http://www.fas.usda.gov/wap/circular/2010/10-07/production-full07-10.pdf>

Fortunately, after 2 years of bountiful production, the government has stockpiled grain. Officials have announced that there will be no need to import and there will be no bread shortages but there may be some shortages for animal feed. Russian farmers are already slaughtering their livestock, unable to afford the rising cost of feed.

The Russian problems with grain production are only part of the overall global picture. Its drought, combined with drought in Western Europe and heavy rains in Canada and parts of the Black Sea region has pushed wheat prices up by the biggest amount in more than a half century.

News Notes



In heat waves, like anything else, scientists are finding out that what is really important is – location, location, location. They have known that cities are heat islands, with paved surfaces, enclosed spaces, energy use and pollution that enhance temperatures, but they did not realize how much. Climate scientists at The City College of New York (CCNY) set up a network of stations and discovered that during the first July heatwave this year, Manhattan temperatures nighttime temperatures were 10 - 15°F (5.5 – 8.3°C) warmer than the surrounding suburbs. The rule of thumb that is that raising temperatures 1°F gives the equivalence in climate of moving 300 miles south. This means that it was hot in New Jersey, but the heat was equatorial in New York City.



Both the US and China have not only been enduring record high temperatures, they have been slammed by extreme storms.

- o Hot eastern air slammed into cooler western air and the result has been some record storms throughout the Midwest and Mid Atlantic states. The result has been flooding in some Midwestern cities, including Chicago, record-breaking 2 pound (0.9 kilograms) hailstones and a dam collapse. The 92-year-old Lake Delhi dam in Iowa failed, emptying a 9 mile river downstream. Fortunately there were no fatalities.
- o China has been enduring the worst floods in a decade. Weeks of heavy rain have swollen rivers and caused damage, landslides and bridge collapses across a swathe of the country. Seventy-five percent of China's provinces were affected and at least 25 rivers reached record high water levels. So far 928 people have died because of the seasonal bad weather and another 477 are missing. More than 35 million people across China have been affected by the floods and 1.2 million have been relocated. The nation has been crediting the controversial Three Gorges Dam with minimizing potentially catastrophic flooding on the Yangtze River. The Chinese flood season normally hits in July and August, so it has another month to go.



Good news for air travelers! Iceland's unpronounceable volcano, Eyjafjallajökull not only brought European travel to a halt last April, but we were told that it was a precursor of a larger event, the eruption of its near neighbor, Mt. Katla. Historically, when one went off, so did the other. However, not only has Eyjafjallajökull calmed down, but scientists are saying that Katla's "imminent" eruption may not take place for another 100 years.



Not all the extreme weather this year has been earthbound. Last spring, the awakening sun had a massive eruption of plasma and solar energy that knocked out a satellite, Galaxy 15. The storm was amazing – initially moving at 2.2 million mph (3.6 million kph) as it blasted off the solar surface on April 3. It reached the Earth's surface two days later, creating the strongest geomagnetic storm and brightest aurora of the year.

It also fried Intelsat communication satellite Galaxy 15. The satellite, nicknamed "*the zombie satellite*" lost contact with its ground controllers and has been drifting around Earth ever since. It's C-band telecommunications payload (which provided broadcast services to customers) is stuck on, emitting aimless electronic signals. As reported by space.com, the satellite is in no danger of hitting anything but it forces other communications satellites to conduct evasive maneuvers from time to time to avoid signal interference.

Just remember – this has taken part during a "quiet" time in the solar cycle. Scientist expect 2012 and 2011 to be much more active.



This summer, the National Special Olympics were held in Lincoln, Nebraska and my daughter was a competitor. The friendliness and generosity of the city cannot be overstated. On the first day, for example, the organizers of the event asked for 5,000 volunteers and 15,000 showed up. In a world where headlines stress rancor and fear-mongering, my family spent a week in a kind and decent city that went to enormous effort to give joy to the disadvantaged. It was the ultimate vacation.

The **BROWNING**
NEWSLETTER
is published by

**Fraser Management
Associates**

a Registered Investment
Advisor.

For more information or an
informational brochure
call 1-802-658-0322

or e-mail us at alex@fraser.com

The opinions expressed are those of the writer, and although they are based on extensive studies of physical data and phenomena, many statements published here are not entitled to be regarded as rigorously proved in a scientific sense. Some decades must pass before these issues are resolved.

Meanwhile, decisions must be based on the best available information and estimates.

This newsletter will **not** contain:

- Analysis of, or recommendations concerning, any investment possibilities.
- Recommendations on any particular course of action.

VOLCANO UPDATES

Evelyn Garriss now offers an e-mail update service to notify subscribers when eruptions happen, and how they are likely to affect the weather.

For more details, price, and subscribing information: www.BrowningNewsletter.com/contact.html

The **BROWNING NEWSLETTER** is published monthly at an annual subscription rate of \$250 for print OR email version, \$270 for both formats. Subscriptions should be directed to:

Questions? Comments?

contact us at
www.BrowningNewsletter.com

The **BROWNING NEWSLETTER**
PO Box 1777
Burlington, VT 05402

phone: 1-802-658-0322
fax: 1-802-658-0260
e-mail: linda@fraser.com

BROWNING NEWSLETTER

August 2010