AN ENVIRONMENTAL PRIMER

Russian Domes of Moisture Emissions
Engineered to Warm Siberia

By

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ABSTRACT

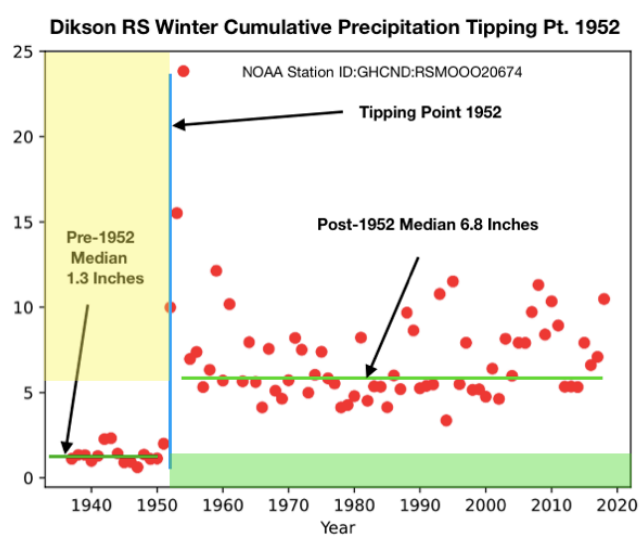
This Primer focuses on winter domes of moisture emissions (DOMEs) created by Arctic mega power stations (AMPSs) on rivers in the Barent Sea's Kola Penisnsula and the Kara Sea's watershed in central Siberia between latitude 50 to 70 degrees North. Rivers upon which AMPSs have been built experience much greater flows of relatively warm water during the winter compared to rivers in their natural frozen state. The colossal reservoirs of these AMPSs absorb the solar radiation that, for the first time ever, through human hydrologic engineering causes "positive feedbacks" releasing vast volumes of water vapor, a powerful greenhouse gas. The evaporation, from these warmer regulated waters, downstream from the dams, interacts 24/7 with the arid frigid air to produce winter DOMEs. This same phenomena occurs naturally over the Great Lakes in late fall and early winter when there are large temperature differences between the relatively warm surface lake water and the very arid cold air in conjunction with strong winds. In order to maximize a river's potential hydropower, multiple hydropower plants (HPPs) have been built downstream of the AMPS. Evaporation from each of these run of the river HPPs creates additional summer and winter DOMES amplifying the greenhouse effect. Even though the Soviets announced in 1949 their hypothesis to use hydroelectric reservoirs to moisten the air to warm Siberia, the Arctic climate changing impacts of these Russian AMPSs and HPPs have historically not been well documented or recognized by the scientific community.

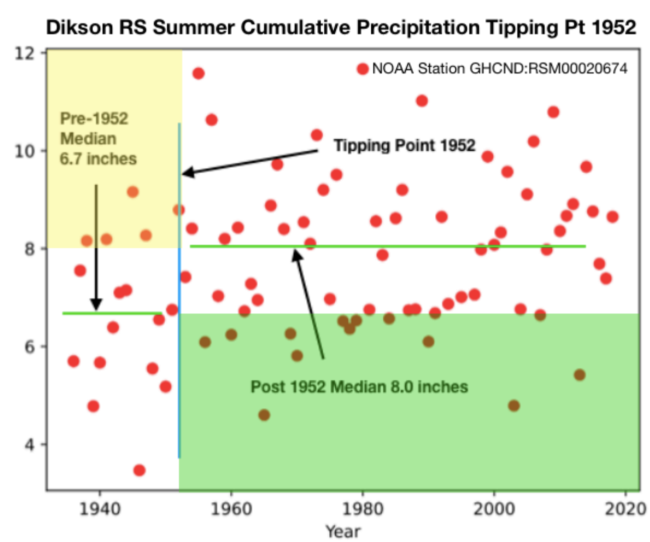
The colossal reservoirs of Canadian and Russian Arctic mega power stations (AMPSs) create domes of moisture emissions (DOMEs). Their "positive feedback" loops increase humidity and precipitation as much as 2,000 miles downwind.

Using summer DOMEs to amplify the greenhouse effect is not an original hypothesis. In 1949, the Soviets announced to the United Nations, their plan to build two very large reservoirs on the north flowing Ob and Yenisei Rivers to irrigate the Asian Desert. The Soviets hypothesized that the evaporation of immense volumes of water from the reservoirs would also moisten the winds and warm the Arctic climate. This irrigation plan was abandoned and replaced with a scaled down version designed and engineered to warm central Siberia. It was reported in the March 3, 1958 Fort Worth Star-Telegram that *"Moscow radio boasted… 'Astonishing climatic changes would occur… evaporation (from the inland sea) would increase and with it the humidity of the air' "*.

Quantitative analysis of Russian weather data reveals that the forced winter evaporation was typically much greater than the summers and identifies four tipping points in 1952, 1957, 1967 and 1980 of severe increases in winter (Jan-Apr, Nov, Dec) precipitation and annual temperatures. The 1952 commissioning of the Niva-1 AMPS on the Barents Sea's Kola Peninsula created the first tipping point. The Niva-1's winter DOME created a positive feedback loop amplifying pre-1952 winter precipitation median five fold, from 1.3 inches to 6.8 inches, over a distance of 1,100 miles at Dikson, Russia along the Kara Sea (See Map on page 12).

There are eight winter precipitation graphs in this Primer and all of them exhibit one or more tipping points. If these extreme increases in winter precipitation were caused by increasing C02 and methane concentrations, then why has the range of average winter precipitation remained constant after the tipping points occurred.



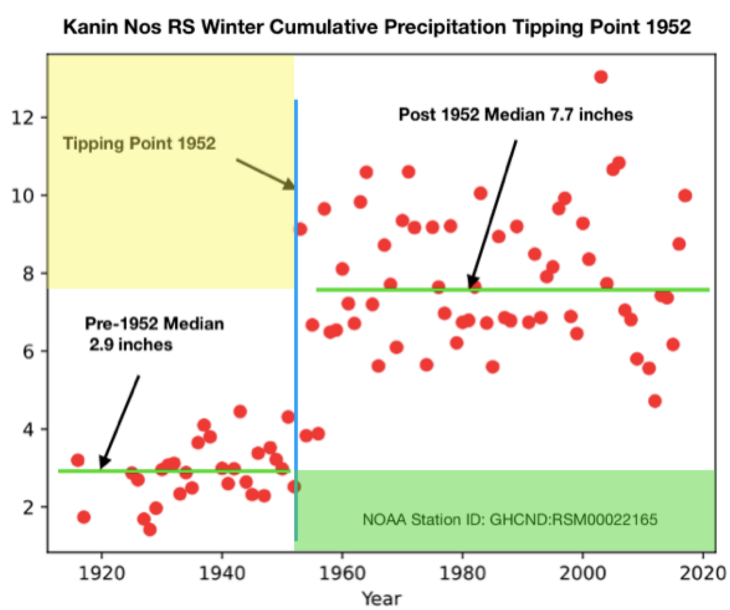


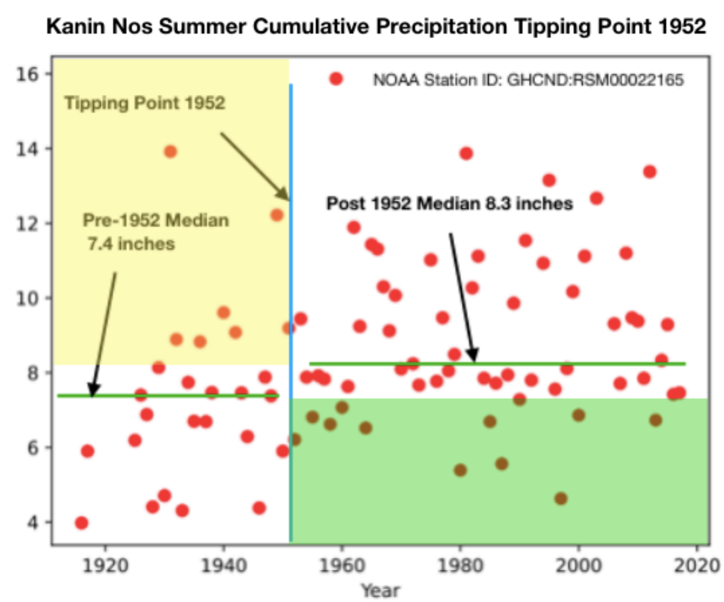
“What is the greenhouse effect? The greenouse effect is the process through which heat is trapped near Earth’s surface by substances known as ‘greenhouse gases’. Imagine these gases as a cozy blanket enveloping our planet, helping to maintain a warmer temperature than it would have otherwise. Greenhouse gases consist of carbon dioxide, methane, ozone, nitrous oxide, chlorofluorocarbons, and water vapor. Water vapor, which reacts to temperature changes, is referred to as a ‘feedback’, because it amplifies the effect of forces that initially caused the warming.” NASA- Global Climate Change

New human DOMEs are not addressed in this definition. They have been created by immense volumes of winter and summer evaporation from Canadian and Russian AMPSs and HPPs. They have caused “positive feedbacks” rapidly amplifying precipitation and warming temperatures in coastal and central Siberia, northern Quebec, Nunavut and Greenland’s southwest coastline.

In Russia, the Kanin Nos weather station is located on the Barents Sea coastline and 270 miles west of Lake Imandra on the Kola Peninsula. Its post-1952 winter median precipitation increased 4.8 inches compared to 5.5 inches at Dikson. These abrupt coinciding changes are strikingly similar for two weather stations, 830 miles apart. The increase in the summer median precipitation at both weather stations was much less but the total amounts were similar before and after 1952.

At Dikson and Kanin Nos, the hours of daylight in the six months of summer (May through October) are more than double the amount in the six months of winter. If the increased winter water vapor emissions and precipitation were created by solar driven evaporation, then why has the increased summer preciptation been so minimal?

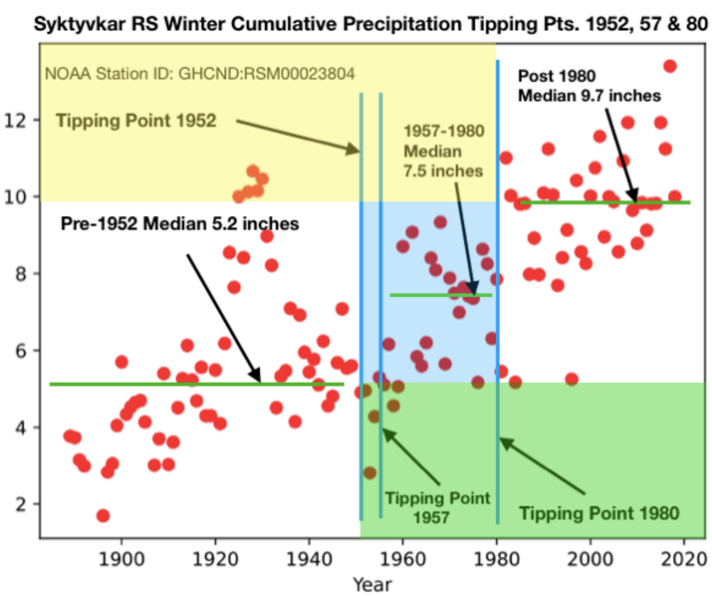


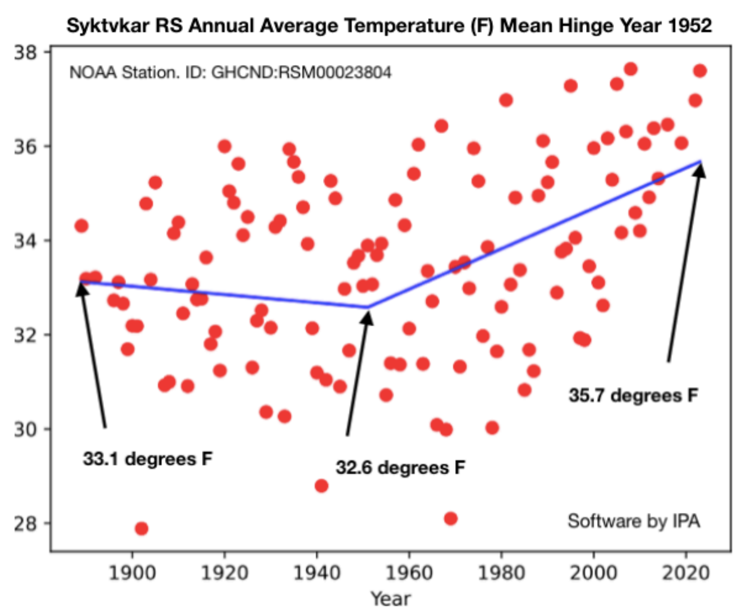


The regulated waters of Lake Imandra and Pirengskoe Reservoir on the Kola Peninsula provide the power for the 1952 Niva-1 hydroelectric AMPS. There were two existing HPPs downstream, namely the 1934 Niva-2 and 1949 Niva-3. The second Kola tipping point occurred when the 1956 Ondskaya AMPS went on line on the Lower Vyg River and there was a 1953 existing HPP downstream. This tipping point coincides with the 1956 and 1957 commissioning of the Irkutsk and Novobirsk AMPS on the Angara and Ob, respectively. For consistency, a 1957 tipping point has been used. When the 1959 Kaitakoski AMPS was commissioned on the Paz River there were two existing downstream HPPs built in 1950 and 1955. By 1991, the Kola Peninsula has a total of 7 AMPSs and 19 HPPs on different rivers (Magritskii, Water Resources 2008) for a total of 26 DOMEs. Fifteen of these power stations are on rivers flowing into the White Sea.

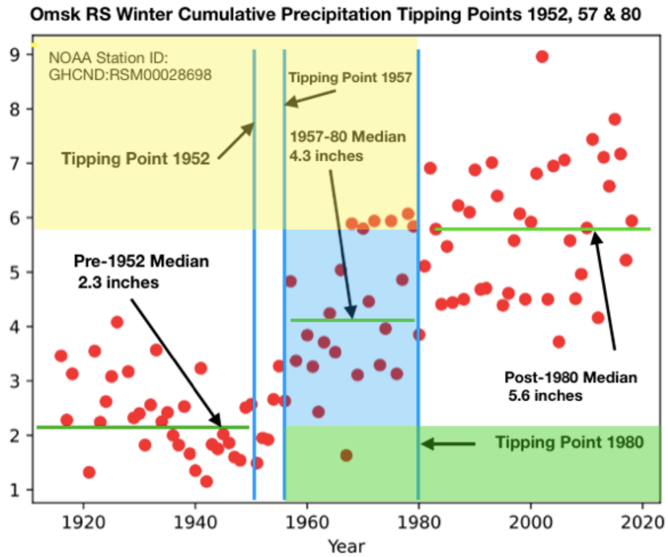
The forced water vapor and thermal footprints of the 1952 winter DOME extends easterly 270 miles along the Barent Sea's coastline to Kanin Nos and another 830 miles along the Kara Sea's coastline to Dikson. More astonishing is the inland reach of the forced water vapor and thermal footprints to Syktyvkar and Omsk, Russia, which are 800 and 1,600 miles from Lake Imandra, respectively.

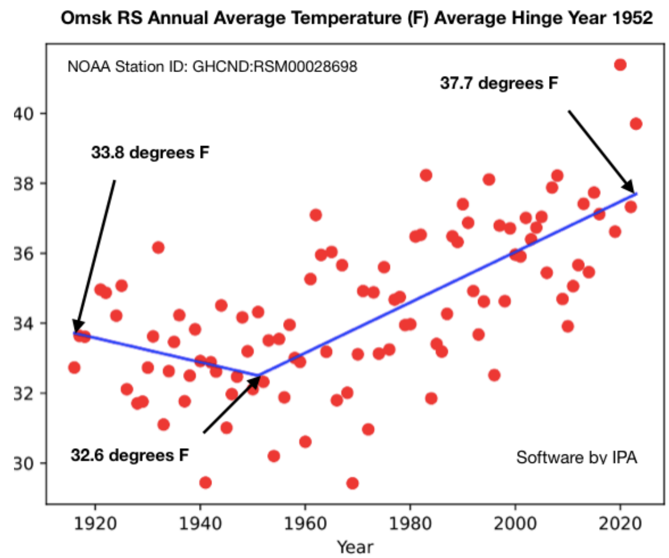
After the start-up of the 1952 Niva-1 and 1956 Ondskaya AMPS, the Syktyvkar pre-1952 winter (Jan-Apr, Nov, Dec) precipitation median of 5.2 inches increased to a 1957-80 median of 7.5 inches. When the 1980 Yushkozerskaya AMPS was commissioned on the Kem River, there were two existing downstream HPPs built in 1967 and 1971 and the post 1980 median increased to 9.7 inches. Post 1952, Syktyvkar has experienced a warming trend of 3.1 degrees Farenheit (F) and reversed a pre-1952 cooling trend.



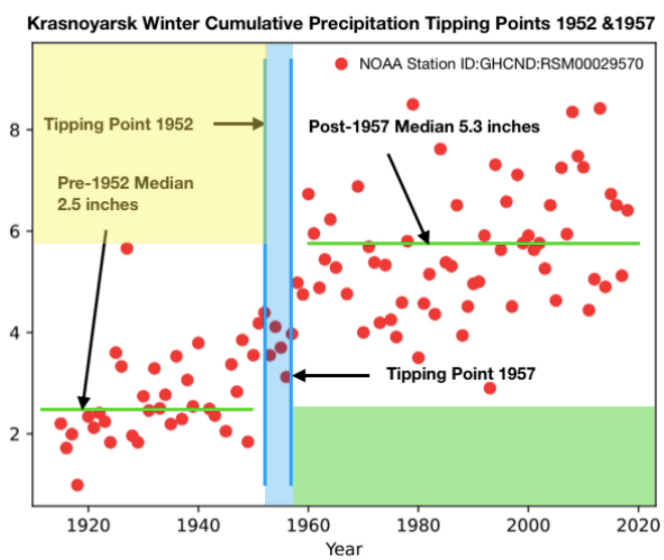


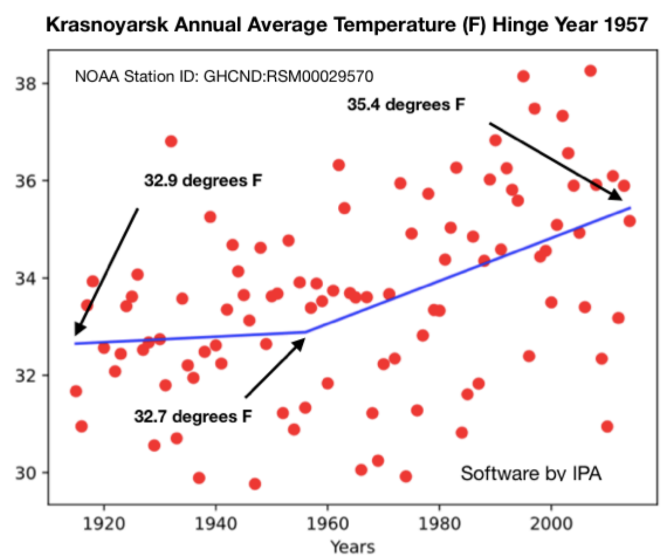
The Omsk pre-1952 winter precipitation median of 2.3 inches almost doubled to a 1957-1980 median of 4.3 inches and increased to a post 1980 median of 5.6 inches. Post 1957, Omsk has experienced a warming trend of 5.1 degrees F and reversed a pre-1952 cooling trend.





The Krasnoyarsk weather station is 400 miles to the east and downwind of the Novosibirsk AMPS. After the start up of this 1957 AMPS, Krasnoyarsk's pre-1952 winter precipitation median of 2.5 inches doubled to a post-1957 median of 5.3 inches.





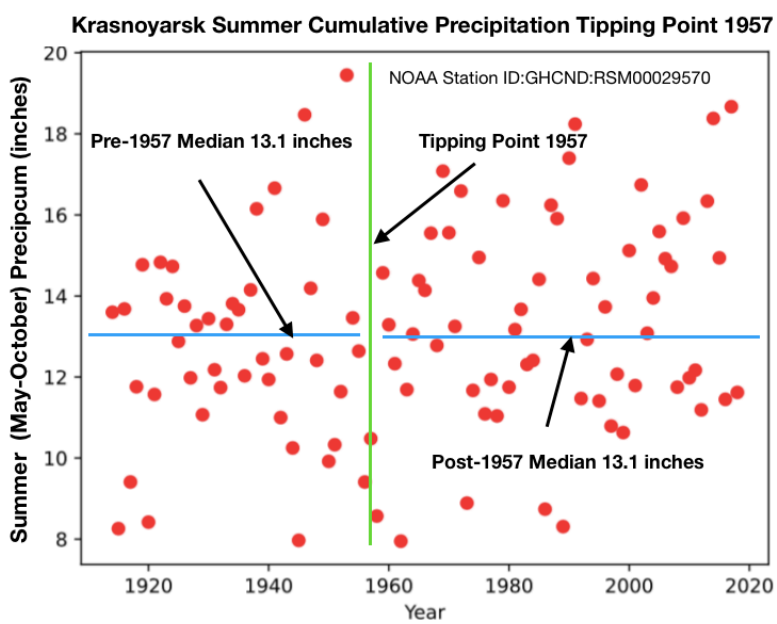
Although this weather station is 1,800 miles to the southeast of the 1952 Niva-1 AMPS, the weather data also reveals a significant increase in winter precipitation. In 1967, the Krasnoyarsk AMPS went on line. There were no discernible tipping points on the precipitation graph but the additional accumulating impact of its forced water vapor emissions bolstered the 1957 Novobirsk tipping point by keeping post 1957 winter averages much higher than the pre-1952 median of 2.5”.

The magnitude of Krasnoyarsk’s winter evaporation and its forced water vapor emissions are enormous and extensive according to the following:

“The Krasnoyarsk Dam significantly influences the local climate; normally the river would freeze over in the bitterly-cold Siberian winter, but because the dam releases unfrozen water year-around, the river never freezes in the 200 kilometers (120 mi) to 300 kilometers (190 mi) stretch of river immediately downstream from the dam. In winter, the frigid air interacts with the warm river water to produce fog, which shrouds Krasnoyarsk and other downstream areas.”

1. *Gotlib,Y.L. December 1996. “**Possible Improvement of the Ice and Thermal Condition in the Lower Pool of the Krasnoyarsk Hydroelectric Station**.” Hydrotechnical Construction. Vol. 30*
2. *Pacific Environment. 21 September 2013 (archive retrieval). “**Hydroelectric Dams: A Looming Threat to Russia’s Mighty Rivers**.”*

The start up of the 1957 Novosibirsk AMPS has created an unexpected departure from the historical normal winter climate by making unfrozen water available for evaporation. Since 1957, Krasnoyarsk’s winter precipitation doubled (see graph on preceding page). Before 1957 all surface water was formerly locked up in ice and unavailable to be readily converted into water vapor by evaporation. It is profound that the post 1957 summer median is unchanged but the post winter median doubled.

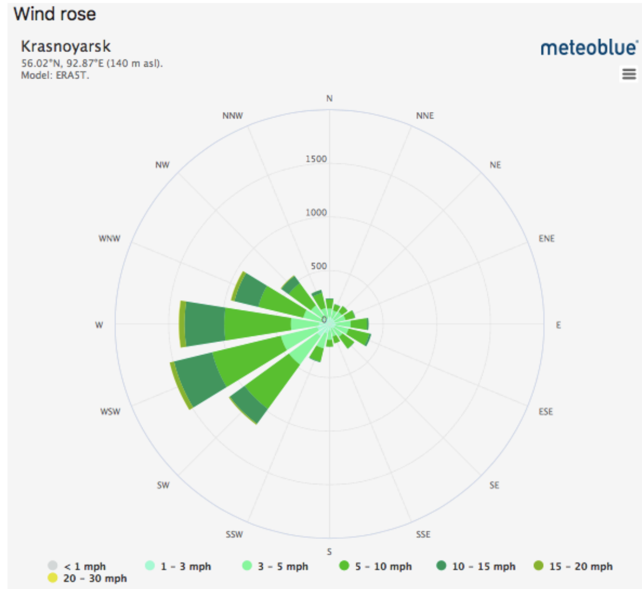


Wind Roses -

A wind rose shows how many hours per year the wind blows from the indicated direction.

The surface area of Krasnoyarsk Reservoir is 773 square miles and is the source of its summer DOME. Its regulated winter discharges created a downstream winter DOME, 120 to 190 miles long in the Yenisei River valley. The forced water vapor emissions from the winter and summer DOMES are readily transported downwind by the prevailing west to southwest winds shown in the Krasnoyarsk wind rose.

Krasnoyarsk



The surface area of the 1967 Vilyuy Reservoir in Chernyshesky is 996 square miles and creates another huge summer DOME in central Siberia. The greenhouse gases from its 24/7 winter and summer DOMEs are readily transported downwind to the Vilyuysk and Yakutsk weather stations.

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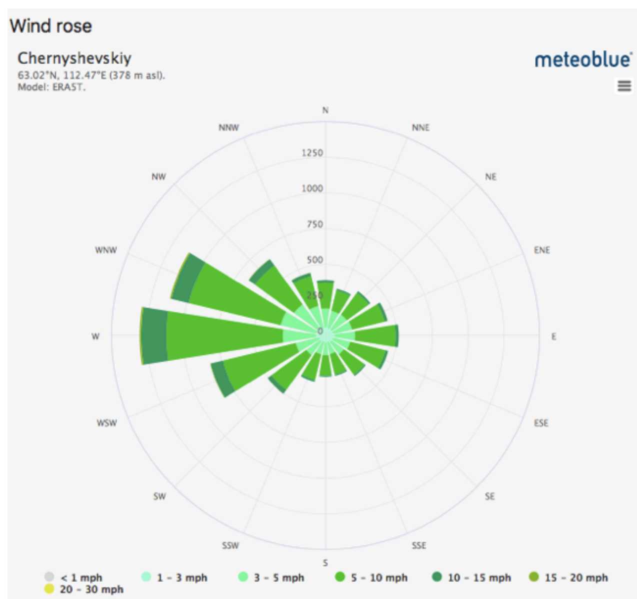
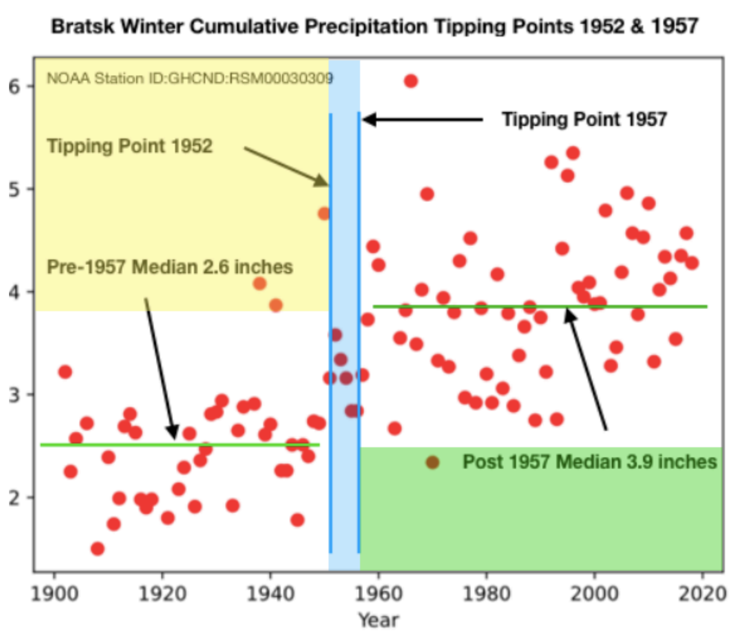
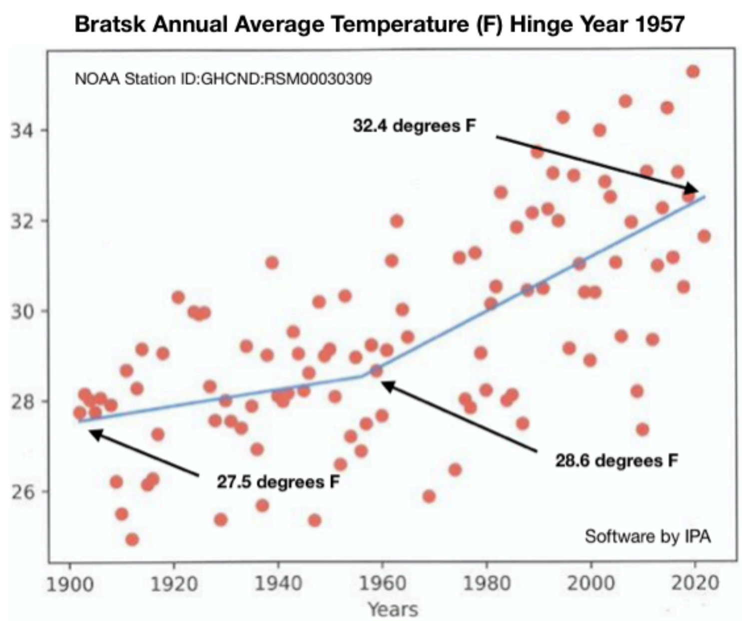


The Bratsk weather station is 2,150 miles to the southeast of the 1952 Niva-1 and and 750 miles to the east of the 1957 Novosibirsk AMPS and their DOMEs are major drivers increasing Bratsk's average winter precipitation.

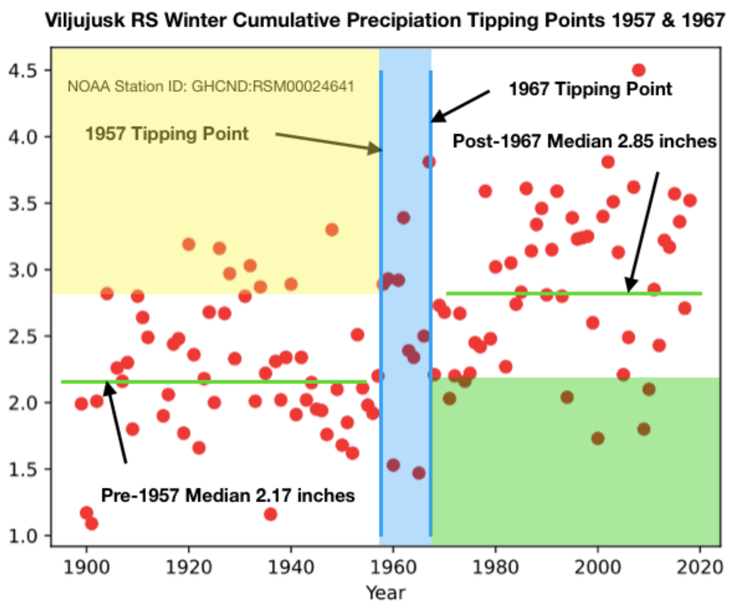
It should be noted, as highlighted in green, that the post 1957 winter total precipitation was only 2.6 inches or lower once but it was this low or lower in half of the years pre-1957. Just the opposite happened in regards to higher precipation totals. The pre-1957 six month winter total precipitation was 3.9 inches or higher only three times, as highlighted in yellow, but it was this high or higher in half of the post 1957 years.

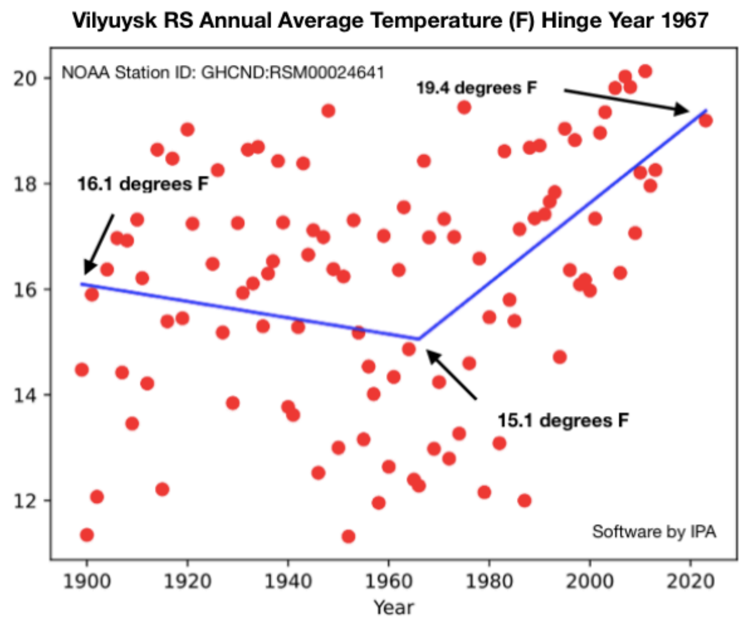
In 1967, the Bratsk hydroelectric AMPS was commissioned, and, as noted at Krasnoyarsk, there was no discernible tipping point in the Bratsk weather data. However, the cumulative impact of the 1972 Krasnoyarsk and 1967 Bratsk forced water vapor emissions have bolstered the 1957 tipping point recorded at Bratsk by keeping Bratsk post-1957 winter precipitation above the pre-1957 median of 2.6 inches every year except for one.





The commissioning of the 1967 Bratsk AMPS on the Angara River, a tributary of the Yenisei, and the Vilyuy AMPS on the Vilyuy River, a tributary of the Lena River, impacted weather at downwind stations in Viljujusk and Jakutsk.





The Viljujsk and Yakutsk (Jakutsk) weather stations are 1,400 and 1,700 miles to the east of the 1957 Novasibirsk AMPS, respectively, and 230 and 450 miles east of the 1967 Vilyuy AMPS built in Cherynshesky. The data from the Vilyuysk (Viljujusk) weather station reveals a rapid winter warming rate of 6.7 degrees Fahrenheit (F) between 1967 and 2023. This is a warming rate 6 times faster than the global rate of 2 degrees over the last 100 years. The 1957 to 2023 average winter temperature trend (blue line) confirms this abrupt change from a long cooling trend to rapid warming.

The 1952, 1957, 1967 and 1980 precipitation tipping points reveal extreme “positive feedback” loops from the increased humidity due to the winter and summer DOMEs from these AMPSs. It should be recognized that the coinciding temperature tipping points provide compelling evidence of the amplified greenhouse effect caused by the forced DOMEs’ moisture laden atmospheric blankets 24/7.

The following excerpts from, **Environmental Change Tied to Soviet Dam**, published in the Jackson Sun of March 26, 1981, highlight that the Vilyuy AMPS and its 966 square mile reservoir has warmed the region and increased the humidity by 33 percent:

“Our dam has altered the local climate for the better, declared Boris A. Medvedev,52 director of the Chernyshevsky hydroelectric project of the Vilyuy River…”

"The reservoir cools the air in summer and warms it in winter. Like the sea, the reservoir has a softening effect on the climate, Medvedev said."

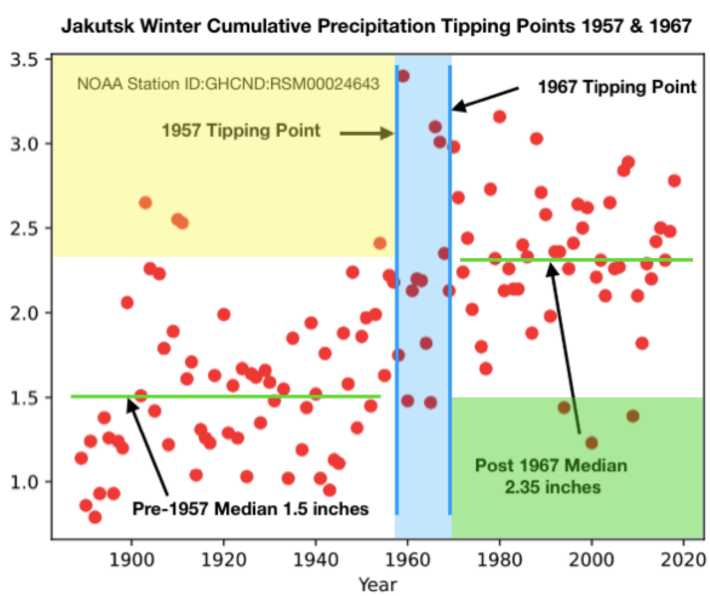
"The lowest record temperature here was minus 69 centigrade (-91 Fahrenheit), years ago. Now there's a definte warming trend, he said. Before the dam, July was the only month a year when temperatures didn't go below freezing. Now the summer temeratures are cooler and season longer, influenced by the 33 percent increase in humidity from the huge reservoir, the engineer said."

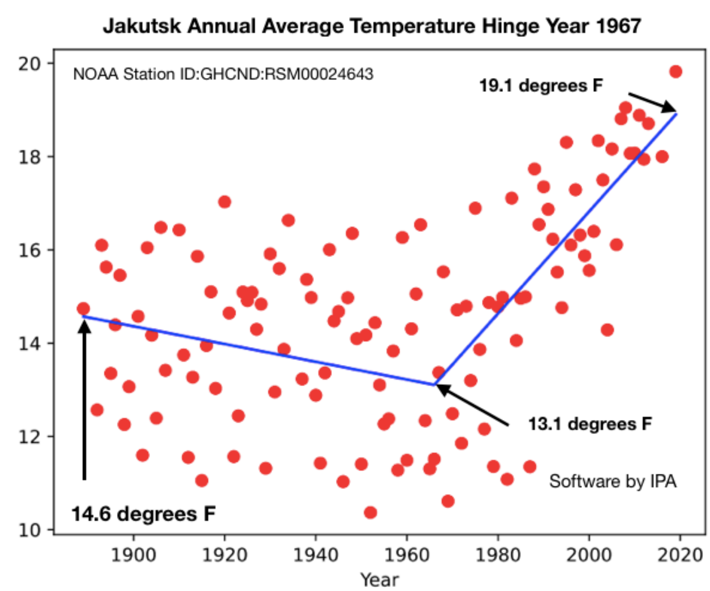
The Bratsk and Viljujsk AMPSs have reservoir surface areas of 2,222 and 966 square miles, respectively, and dwarf the 1957 Novosibirsk reservoir of 413 square miles.

It appears that the DOMEs from the two larger AMPSs were major drivers creating the 1967 tipping point and its immediate and sustained increase in winter precipitation totals in this seasonally very arid region.

After the 1967 commissioning of the Vilyuy AMPS in Chernyshevsky and the Bratsk AMPS, there was a rapid warming trend documented 450 miles to the southeast and downwind at the Jakutsk (Yakutsk) weather station.

Analysis of the data reveals a rapid winter warming rate of 6.0 degrees Fahrenheit between 1967 to 2022. This is a warming rate 5.5 times faster than the global rate of 2 degrees over the past 100 years. The 1967 to 2022 annual average temperature trend (blue line) confirms this abrupt change in climate reversing a long term cooling period.





Source: www.freeworldmaps.net

SMK added black dots and arrows to identify approximate locations of AMPS and/or weather stations discussed in this Primer.

This Primer has focused on Russian DOMEs on the Barent Sea's Kola Peninsula, which has 7 AMPSs and 19 HPPs and central Siberia with 9 AMPSs in the watersheds of the Ob, Yenisei, and Vilyuy Rivers.

My next Primer will be on Canadian AMPSs and HPPs built between 53 to 57 degrees latitude North, on rivers flowing into Hudson Bay. Their DOMEs are upwind and in close proximity to the southwest coast of Greenland, which contains the second largest body of ice in the world. The weather data provides compelling evidence that "positive feedbacks" from these DOMEs are major drivers warming northern Quebec and southwest Greenland, melting its glaciers and raising sea levels.

SMK/rdw arcticbluedeserts.com October 4, 2024