

2006 Northern California Tree and Jet Contrails

AGRICULTURE ALERT
October 2006

EXPERIMENTAL WEATHER MODIFICATION BILL FAST TRACKING FOR PASSAGE IN U.S. SENATE & HOUSE OF REPRESENTATIVES

By Rosalind Peterson

U.S. Senate Bill 517 and U.S. House Bill 2995, a bill that would allow experimental weather modification by artificial methods and implement a national weather modification policy, does not include agriculture or public oversight, was not passed by Congress in 2006. This bill may be reintroduced in Congress early in 2007, and we must be prepared to defeat this bill.

This bill is designed to implement experimental weather modification. The appointed Board of Directors established by this bill does not include any agricultural, water, EPA, or public representatives, and has no provisions for Congressional, State, County, or public oversight of their actions or expenditures.

Weather Modification may adversely impact agricultural crops and water supplies. If the weather is changed in one state, region or county it may have severe consequences in another region, state or county. And who is going to decide the type of weather modification experimentation and who it will benefit or adversely impact?

This experimental weather modification bill will impact residents across the United States not just in California. Many current and ongoing weather modification programs (50+ listed by NOAA in 2005), including the one in Wyoming that is designed to increase the snowpack, may be diverting rainwater away from Oklahoma and Texas, two states that are currently fighting fires caused by a lack of rainfall. We have no idea what the unintended consequences of the Wyoming action or other experimental weather modification programs might be now or in the future.

In addition to the experimental weather modification programs listed by NOAA, there are both private and ongoing government sponsored atmospheric testing and heating programs underway in Alaska and across the United States. Alaska Senator Stevens recently received \$50 million in funding for Alaska's atmospheric heating program.

All of these unregulated, private, government, and public weather modification programs, may also have unintended synergistic effects. Senate Bill 517 does not address these issues but intends to implement more experimental weather modification programs without a national debate or public oversight.

Artificial weather modification can impact all of us by reducing water supplies, changing agricultural crop production cycles, reducing crop production, and water availability. Since most experimental weather modification programs use chemicals released into the atmosphere the public could be subjected increasingly toxic or unknown substances that could adversely impact agricultural crops and trees.

Trimethyl Aluminum (TMA) and barium are just two of the toxic chemicals used in recent atmospheric heating and testing programs according to NASA. The Alaska H.A.A.R.P. atmospheric heating program may have the capability of changing the Jet Stream which could also change our weather.

Many private weather modification companies admit that precipitation effects may be positive or negative. Fog dispersal programs, using dry ice, liquid nitrogen, liquid propane or silver iodide may improve visibility while adversely impacting Redwood Trees along the California coast by depriving them of needed water they derive from the fog.

The increasing use of varied chemicals like aluminum (coupled with increasing air pollution), can severely impact tree health by depriving trees of water and nutrients normally absorbed through their root systems.

The December 2005 Popular Science Magazine discussed a plan to use an oil slick to stop hurricanes without noting the adverse environmental impacts of the oil used to cover the ocean.

Popular Science also noted that a private company, Dyn-O-Mat, plans to purchase jets to drop thousands of pounds of a water absorbing chemical powder (unknown substance), into hurricanes to absorb moisture that may dissipate hurricanes. There is no agriculture oversight or public hearings to determine the consequences of this and other actions or to monitor or prevent adverse impacts of this chemical once it falls on the surface of the ocean or on land.

Alaska and other areas across the United States are beginning to feel the impacts of climate change. Enormous changes are being seen in the declining health of native plant and tree communities in many areas across the United States.

NASA noted in an October 2005 newsletter that increasingly persistent contrails are "...trapping warmth in the atmosphere and exacerbating global warming..." NASA goes on to note that: "...Any increase in global cloud cover will contribute to long-term changes in Earth's climate. Likewise, any change in Earth's climate may have effects on natural resources..."

Global dimming and the persistent contrails, that produce man-made clouds, may have serious impacts on crop production. A recent corn crop study in Illinois shows that cloud cover reduces corn crop production while direct sunlight increases production. In addition, increasing man-made clouds may reduce the effectiveness of solar panels.

Gil Smolin, an Avian Bird Flu expert, noted on the Ron Owens Show on KGO Radio (January 5, 2006), that the flu was spread more quickly in the winter when there was a "lack of sunlight". Would man-made clouds be contributing to the lack of sunlight which might cause the Avian Bird flu to spread more quickly at other times of the year? Experimental weather modification programs could also exacerbate this problem by changing climate patterns, increasing man-made cloud cover, and changing our weather and climate patterns.

Senate Bill 517 does not address any of these important issues. Its sole purpose is to establish an experimental weather modification policy without any agriculture or public oversight of private, military, and government programs. Without oversight or public hearings agriculture, our natural resources, and watersheds may be negatively impacted. And who will be responsible to determine the synergistic effects of these programs or pay for unintended disasters created by this experimentation. If these programs change growing seasons and interrupt the pollination process crop losses could be substantial exacerbating economic losses.

Please contact all of your elected local, state and federal officials to stop this bill in its present form. This bill needs to have appropriate agriculture and public oversight, with public hearings included, prior to any more experimental projects. We need a national dialogue on this subject before more experimentation takes place.

For more information please contact:

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In 1995, she became a certified U.S.D.A. Farm Service Agency Crop Loss Adjustor working in more than ten counties throughout California. Many crop losses throughout the State can be attributed to weather related causes.

Rosalind has a BA degree from Sonoma State University in Environmental Studies & Planning (ENSP), with emphasis on agriculture and crop production.

Rosalind Peterson was born and raised on a working farm in Redwood Valley, California. The weather was the foremost factor in determining whether or not our tree crops produced fruit and nuts.

Between 1989 and 1993 Rosalind worked as an Agricultural Technologist for the Mendocino County Department of Agriculture. After leaving Mendocino County she took a position with the USDA Farm Service Agency as a Program Assistant in Mendocino, Sonoma, and the Salinas County Offices.

The first successful protest rally against U.S. Senate Bill 517 was held in Los Angeles, California on March 23, 2006.

The second successful educational forum and demonstration rally opposing U.S. Senate Bill 517 was held in Phoenix, Arizona on Saturday, April 29, 2006. The Agriculture Defense Coalition is now moving their message east across the United States toward Washington, D.C.

Concerned grassroots citizens are involved in this educational protest movement to protect agriculture from unwise experimental weather modification programs. "We, the people, simply will not accept this reckless experimenting on our weather and are fighting the passage of this bill in order to protect agricultural crop production and our water supplies."

For Information on our Educational Forums Please Contact:

Bridget Conroy

Agriculture Defense Coalition

P.O. Box 54297

Phoenix Arizona 85078

(602) 404-0847

E-Mail: bcolemanconroy8@yahoo.com

Recommended Book: The Dying of the Trees, by Charles Little 1995

Associated Reference Articles:

<http://www.asp.bnl.gov/>

<http://www.medicalnewstoday.com/medicalnews.php?newsid=36105#>

http://www.usatoday.com/tech/science/2005-12-19-wyoming-cloud-seeding_x.htm

<http://www.popsci.com/popsci/science/c955700641f87010vgnvcm1000004eecbccdrcred.html>

http://asd-www.larc.nasa.gov/GLOBE/Count/Oct2005/ConEdNews_p1.pdf

http://asd-www.larc.nasa.gov/GLOBE/Count/Oct2005/ConEdNews_p2.pdf

http://asd-www.larc.nasa.gov/GLOBE/Count/Oct2005/ConEdNews_p3.pdf

http://asd-www.larc.nasa.gov/GLOBE/Count/Oct2005/ConEdNews_p4.pdf

http://asd-www.larc.nasa.gov/GLOBE/Count/Oct2005/ConEdNews_p6.pdf

http://asd-www.larc.nasa.gov/GLOBE/Count/Oct2005/ConEdNews_p7.pdf

http://asd-www.larc.nasa.gov/GLOBE/Count/Oct2005/ConEdNews_p8.pdf

HOW DO YOU LIKE YOUR SKIES NATURAL OR MAN-MADE?

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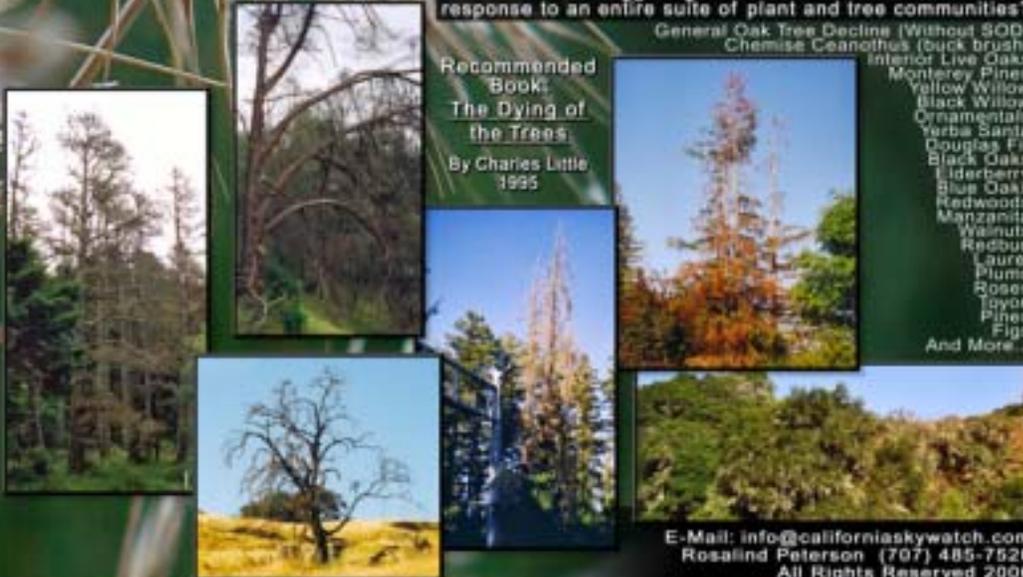
What impacts are experimental weather modification and atmospheric heating programs having on our climate, agricultural crops, growing seasons, trees, and watersheds?

CALIFORNIA TREE DECLINE

What is triggering such a broad decline and die-off response to an entire suite of plant and tree communities?

- General Oak Tree Decline (Without SOD)
- Chemise Ceanothus (buck brush)
- Interior Live Oaks
- Monterey Pines
- Yellow Willow
- Black Willow
- Ornamentals
- Yerba Santa
- Douglas Fir
- Black Oaks
- Elderberry
- Blue Oaks
- Redwoods
- Manzanita
- Walnuts
- Redbud
- Laurel
- Plums
- Roses
- Jayon
- Pines
- Figs
- And More...

Recommended Book:
The Dying of the Trees
By Charles Little
1995



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SUBSONIC JET EMISSIONS REPORT

ENVIRONMENTAL PROTECTION AGENCY PA420-R-99-013 - Final Report "Evaluation of Air Pollutant Emissions from Subsonic Commercial Jet Aircraft", U.S. Environmental Protection Agency April 1999. Excerpts from this report are reprinted below:

"Public Health and Aircraft Emissions":

"Ultimately, EPA's principal concern in evaluating and controlling (jet fuel) emissions is the preservation of human health and, secondarily, the protection of public welfare (including protection against damage to crops, vegetation, animals, and buildings)...In particular, they have significant concerns regarding the effect of NO_x on local and regional environments. Tropospheric NO_x has multiple environmental quality impacts...contributing to ground-level O₃ and PM, but also air toxic concentrations, excess nitrogen loads to sensitive water bodies, and acidification of sensitive ecosystems (EPA 1997a)." (PM = Particulate Matter)

"Table 1.1 Representative health effects of air pollutants." Jet Emission Pollutants:

'Ozone - Lung function impairment, effects on exercise performance, increased airway responsiveness, increased susceptibility to respiratory infection, increased hospital admissions and emergency room visits, and pulmonary inflammation, lung structure damage. (Examples of these effects are chronic inflammation and structural damage to lung tissue and accelerated decline in baseline lung function.)"

"Carbon Monoxide - Cardiovascular effects, especially in those persons with heart conditions...Similar health effects on animals as on humans."

"Nitrogen Oxides - Lung irritation and lower resistance to respiratory infections. Premature mortality, aggravation of respiratory and cardiovascular disease, changes in lung function and increased respiratory symptoms, changes to lung tissues and structure, and altered respiratory defense mechanisms..." (Asthmatics are especially sensitive.)

"Volatile Organic Compounds - Eye and respiratory tract irritation, headaches, dizziness, visual disorders, and memory impairment."

"Table 1.2 Representative Environmental Effects:

Ozone - Crop damage, damage to trees and decreased resistance to disease for both crops and other plants. (Ground-level ozone interferes with the ability of plants to produce and store food so that growth, reproduction and overall plant health are compromised. By weakening trees and other plants, ozone can make plants more susceptible to disease, insect attacks, and harsh weather ...Ground level ozone can also

kill or damage leaves so that they fall off the plants too soon or become spotted and brown...")

“Nitrogen Oxides - Acid rain, visibility degradation, particle formation, contribution towards ozone formation. NO₂ is an important precursor to both ozone and acidic precipitation, which harms both terrestrial and aquatic ecosystems...NO_x also plays a role in the formation of acid rain. Acid rain causes surface water acidification and damages trees...NO_x contributes to the formation of particles in the atmosphere, with the resulting health and visibility effects...”)”

“Particulate Matter - Visibility degradation and...safety effects for aircraft from reduced visibility. (PM is the generic term for a broad class of chemically and physically diverse substances that exist as discrete particles...over a wide range of sizes...PM may either be emitted directly or formed in the atmosphere by the transformations of gaseous emissions of compounds including NO_x, VOCs, and sulfur oxides SO_x...In addition to the evidence found for health effects associated with aggravation of asthma and increased respiratory illness, and that they may be chronic health effects associated with long-term exposure to high concentrations of coarse particles (FR, July 18, 1997)...”

“...the nature of the effects that have been reported to be associated with ambient PM, including premature mortality, aggravation of respiratory and cardiovascular disease...change in lung function and increased respiratory symptoms, changes to lung tissues and structure, and altered respiratory defense mechanisms; and sensitive sub-populations that appear to be at greater risk to such effects, specifically individuals with respiratory disease, cardiovascular disease and the elderly...children, asthmatic children and adults...”

“Volatile Organic Compounds - Contribution towards ozone formation, odors, and some direct effect on buildings and plants.” (...They can arise from evaporation or incomplete fuel combustion. As a class, VOCs react with NO_x in the atmosphere to form ozone, but individual VOCs may have additional health effects. Some VOCs have little or no known direct health effect, while other VOCs, such as benzene, are carcinogens...Eye and respiratory tract irritation, headaches, dizziness, visual disorders, and memory impairment are among the immediate symptoms that some people have experienced soon after exposure to some organics...At high levels, VOCs can have a damaging effect on plants...VOCs that contain chlorine can also contribute to stratospheric ozone depletion.)...”

Intergovernmental Panel on Climate Change - IPCC Special Report - Aviation and the Global Atmosphere - Summary for Policymakers – 1999:

"2. How Do Aircraft Affect Climate and Ozone? Aircraft emit gases and particles directly into the upper troposphere and lower stratosphere where they have an impact on atmospheric composition. These gases and particles...trigger formation of condensation trails (contrails)...”

"4.6 **Cirrus Clouds.** Extensive cirrus clouds have been observed to develop after the formation of persistent contrails. Increases in cirrus cloud cover (beyond those identified as line-shaped contrails) are found to be positively correlated with aircraft emissions..."

*Note: The full report is available online at:
<http://www.epa.gov/oms/regs/nonroad/aviation/r99013.pdf> or on the EPA Website.

ADDITIONAL QUESTIONS

1. If JP-4 or JP-8 Jet Fuel consists of a complex mixture of hydrocarbons, including poly aromatic hydrocarbons (PAHs), naphthalene and benzene (a known carcinogen), how will increasing jet fuel emissions impact public health?
2. When will our elected officials direct our local air pollution districts to start testing our air for barium (salts), aluminum (oxides), perchlorate, cadmium, manganese, magnesium, lead, iron, tungsten, and carcinogenic poly aromatic hydrocarbons like naphthalene and benzene?
3. Are fine particles of aluminum oxide and other highly refractive metals being released by jets over our state along with aluminum coated fiberglass (Chaff)?

HOW DO YOU LIKE THE AIR YOU BREATHE NATURAL OR MAN-MADE?

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"...the nature of the effects that have been reported to be associated with ambient PM, including premature mortality, aggravation of respiratory and cardiovascular disease...change in lung function and increased respiratory symptoms, changes to lung tissues and structure, and altered respiratory defense mechanisms, and sensitive sub-populations that appear to be at greater risk to such effects, specifically individuals with respiratory disease, cardiovascular disease and the elderly...children, asthmatic children and adults..."

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"2. How Do Aircraft Affect Climate and Ozone? Aircraft emit gases and particles directly into the upper troposphere and lower stratosphere where they have an impact on atmospheric composition..." Is this why we are having higher UV-radiation levels?

"4.6 Cirrus Clouds: Extensive cirrus clouds have been observed to develop after the formation of persistent contrails. Increases in cirrus cloud cover (beyond those identified as line-shaped contrails) are found to be positively correlated with aircraft emissions..."

"Note: The full report is available online at: <http://www.epa.gov/oms/reg/nonroad/aviation/199013.pdf> or on the EPA Website. It should be noted that persistent jet contrails produce artificial man-made clouds that could lower crop production.

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3. Are fine particles of aluminum oxide and other highly refractive metals being released by jets over our state along with aluminum coated fiberglass (Chaff)?
4. It is believed that one of the causes of increasing childhood asthma may be caused by jet fuel emissions.

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HOW DO YOU LIKE YOUR SKIES **NATURAL OR MAN-MADE?**



**EPA 420-R-99-013 - Final Report
"Evaluation of Air Pollutant Emissions
from Subsonic Commercial Jet
Aircraft", U.S. EPA, April 1999: Public
Health & Aircraft Emissions: Jet Fuel
Emissions include carbon monoxide,
particulates, nitrogen oxides (asthma &
increased respiratory symptoms, acid
rain), volatile organic compounds
(memory impairment), ozone (crop and
tree damage), and carcinogens.**

**LOS ANGELES
Air Quality Alert!**

HOLLYWOOD

Quill Pen Plume

**"WE, THE PEOPLE, HAVE
THE RIGHT TO BREATHE
HEALTHY AIR!"**

Los Angeles Sky Images
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For more information:
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(707) 485-7520

HOW DO YOU LIKE YOUR SKIES NATURAL OR MAN-MADE?

CONTRAIL INDEX

Jets leave clearly identifiable types of contrails. Each type persists for a specific amount of time. Some dissipate quickly leaving only a white haze, others turn into identifiable types of contrails. Each type of trail that persists for any length of time forms its own unique man-made cloud.

BURST WITH TRAIL THAT DEVELOPS INTO SPIRAL TRAIL
(2 HOUR TIME-LAPSE)



X-LARGE TRAIL

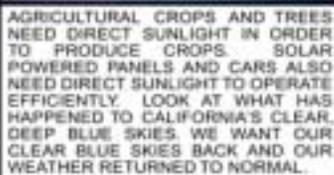


EXPANDED X-LARGE



X-LARGE

FILMY DISSIPATION TRAIL
(FROM SHORT JET BURST)



AGRICULTURAL CROPS AND TREES NEED DIRECT SUNLIGHT IN ORDER TO PRODUCE CROPS. SOLAR POWERED PANELS AND CARS ALSO NEED DIRECT SUNLIGHT TO OPERATE EFFICIENTLY. LOOK AT WHAT HAS HAPPENED TO CALIFORNIA'S CLEAR, DEEP BLUE SKIES. WE WANT OUR CLEAR BLUE SKIES BACK AND OUR WEATHER RETURNED TO NORMAL.

Identification is easy once you start watching contrails. Start with the small plume left by a jet and watch for several minutes. See if you can identify the more common contrails listed below. Let us know what types of contrails you are observing. If you have time-lapse or unusual pictures of contrails or man-made clouds please contact us.

Please see the Burst time lapse spiral (left 1-3) and the Mushroom time-lapse (below A-C), examples.

BLACK TRAIL TO MUSHROOM



EXPANDED MUSHROOM (SEE ABOVE)

ZIG-ZAG



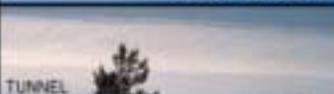
TWIST



SAW-TOOTH



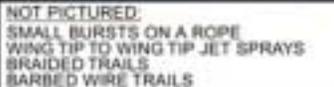
KNOTS ON A ROPE



TUNNEL



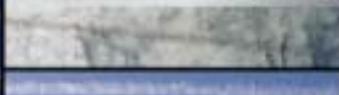
OCEAN WAVE



NOT PICTURED:
SMALL BURSTS ON A ROPE
WING TIP TO WING TIP JET SPRAYS
BRAIDED TRAILS
BARBED WIRE TRAILS

NASA noted in an October 2005 newsletter that increasingly persistent contrails are "...trapping warmth in the atmosphere..." Persistent contrails produce man-made clouds that could negatively impact agricultural crop production. NASA goes on to state that: "...Any increase in global cloud cover will contribute to long-term changes in Earth's climate. Likewise, any change in Earth's climate may have effects on natural resources..."

BLACK TRAILS



DIFFERENT TRAIL TYPES FROM ONE JET WITH TWO ENGINES



TOOTHPASTE TRAIL CROSSING ENLARGING X-LARGE PLUME



DISSIPATED TOOTHPASTE TRAIL
(ALWAYS LEAVES PERSISTANT WHITE HAZE)



PROPELLER



FEATHER



FEATHER

INVERTED REFLECTIVE RIBBED TRAIL



RIBBED TRAIL

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BURST WITH TRAIL THAT DEVELOPS INTO SPIRAL TRAIL
(2 HOUR TIME-LAPSE)



X-LARGE TRAIL



PERSISTING PARALLELS



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BLACK TRAIL TO MUSHROOM



EXPANDED MUSHROOM (SEE ABOVE)



ZIG-ZAG



SAW-TOOTH



KNOTS ON A ROPE



TUNNEL



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SMALL BURSTS ON A ROPE
WING TIP TO WING TIP JET SPRAYS
BRAIDED TRAILS
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BLACK TRAILS



DIFFERENT TRAIL TYPES FROM ONE JET WITH TWO ENGINES



DISSIPATED TOOTHPASTE TRAIL (ALWAYS LEAVES PERSISTANT WHITE HAZE)



VIBRANT SPECTRUM



HIGHLIGHTING ARTIFICIAL MAN-MADE CLOUDS



FEATHER



INVERTED REFLECTIVE RIBBED TRAIL



RIBBED TRAIL

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