

November 19, 1990

## Southeastern U.S. Faces Rural Ozone Problems

Future industrialization and economic expansion in the southeastern United States could cause a severe surface-level ozone problem in rural areas there, with attendant damage to crops and forests, a NOAA study has indicated.

A recently concluded field investigation at a rural location

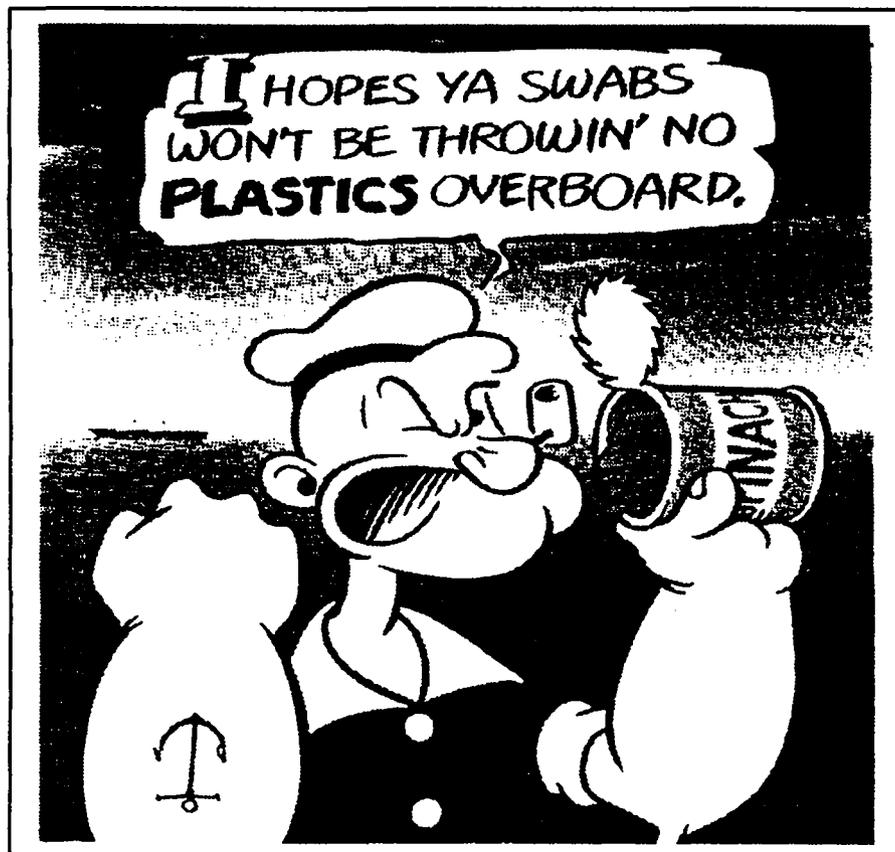
in western Alabama found elevated—but not extreme—ozone levels.

The highest ozone recorded at the measurement site near Demopolis, Ala., was approximately 90 ppb (parts per billion). This was well below the 120 ppb considered a maximum permissible ozone level by the U.S. Clean Air Act, but higher than the 60 ppb

that has been suggested could cause damage to sensitive vegetation.

The ozone likely was produced photochemically by interactions between oxides of nitrogen and non-methane hydrocarbons. The production of ozone found probably was limited by "surprisingly low" levels of oxides of nitrogen, scientists said, which are believed to be emitted from industrial sources and motor vehicles. Because the air in the vicinity of the study site was reasonably stagnant, oxides of nitrogen generated in the large cities upwind from the site probably were oxidized before reaching the measurement instruments, thus accounting for the low levels.

The study was done in the southeast because meteorological conditions, high levels of sunlight and humidity in that region are conducive to ozone formation. Also, he noted, there is potential for considerable economic loss in the rural areas of this region from ozone-caused damage to crops and forests. ☉



### Spinach Overboard? Popeye Says Pick It Up!

Littering of plastics on the high seas has become a major problem. So who to turn to? Obviously, somebody with seagoing experience, a great public image, and oversized forearms—Popeye the Sailor Man, star of screen and comic strip. NOAA, in cooperation with the Center for Marine Conservation and the Society of the Plastics

Industry, has produced a new color poster (partially shown above) featuring the spinach-eating swabbie, his first mate Olive Oyl, and his pals Wimpy and Bluto. His message is clear, and it's a good one—if you takes it out, Matey, Bring it Back! ☉

### Coming Events

- Marine Fisheries Advisory Committee Meeting in Tyson's Corner, Va., Nov. 28-29.
- American Geophysical Union Meeting in San Francisco, Ca., Dec. 7

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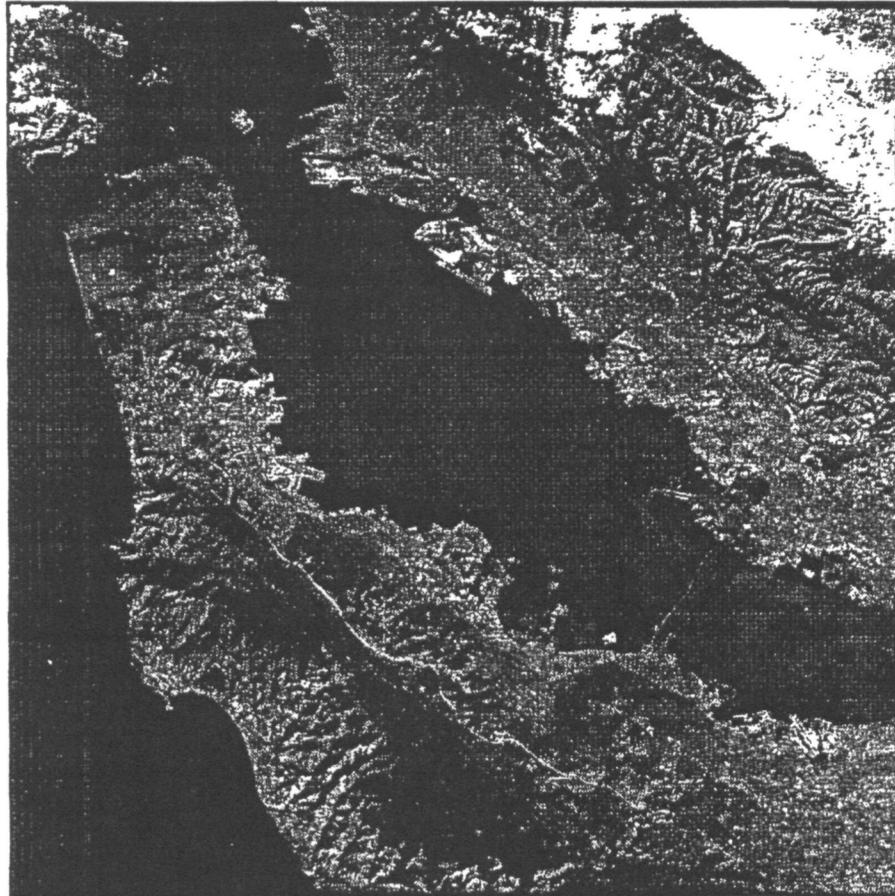
## NOAA-EOSAT Pact Means Cheaper Data Costs for Users

NOAA and the Earth Observation Satellite Company (EOSAT) have reached an agreement which will materially cut users' costs for Landsat data more than two years old.

Landsat images are invaluable for planning, change detection, and monitoring of earth resources and environment. The agreement is expected to benefit the study of global climate change substantially.

Under the agreement, EOSAT gives up its exclusive right to market the first 16 years of Landsat Multi-Spectral Scanner (MSS) data in archival storage. This data will be made available through federal sources at prices reflecting reasonable costs of reproduction and distribution. EOSAT will keep exclusive marketing rights to all Landsat MSS data only for two years from its acquisition.

MSS images are a primary element of the data archive, which contains some 600,000 such images taken since 1972



Landsat Sees All: A 1983 Landsat image of San Francisco Bay

by a series of five earth-orbiting satellites. The images, each covering about 10,000 square

nautical miles of the earth's surface, distinguish features as small as 80 meters. ☆

## NOAA, Navy Will Seek Sonar Images of Seafloor Plumes

Scientists from NOAA's Environmental Research Laboratories and the Naval Research Laboratory will attempt to take sound "pictures" of plumes of mineral-rich fluids injected into the Pacific Ocean through vents in the seafloor.

The plumes, from ocean bottom hot springs, carry chemicals, minerals and heat into the surrounding ocean.

The effect of this venting on the ocean environment is significant, and contributes to driving deep-ocean circulation.

### 8,600 Feet Beneath the Sea

Diving to a depth of 8,600 feet in a Navy deep submergence vehicle, the DSV Turtle, the researchers will try to obtain sonic images of plumes which often rise 1,000 feet or more from the seafloor vents like smoke from smokestacks. The plumes are of the black

smoker variety, so-called because the particles of metallic minerals formed in the hot springs give the plumes a black color.

### South of Baja California

The study will focus on a field of seafloor hot springs previously discovered on the East Pacific Rise, an area of the Pacific south of Baja California and several hundred miles off the Mexican coast. ☆

## NOAA Launches Marine Mammal Contaminant Test

NOAA's National Marine Fisheries Service (NMFS) has started a program to determine the levels of chemical pollutants in marine mammals, out of concern for the possible effects of environmental contaminants on the mammals.

The effort has already produced two reports on levels of PCBs, DDT and non-DDT pesticides found in marine mammal tissues. Tests on Steller's sea lions, grey and pilot whales, and harbor and fur seals, used chemical and biochemical methods to com-

pare exposure in stranded and healthy animals.

Investigations on a small sample of 23 animals by the NMFS Environmental Conservation Division in Seattle produced widely varying findings. Tests conducted on recently stranded grey whales in Puget Sound, speculated to have high levels of pollutant exposure, showed levels considered too low to cause health problems. Levels in Alaskan harbor seals and fur seals were even lower than those for grey whales.

Surprisingly high levels, however, were discovered in two of eight healthy Alaskan

Steller's sea lions tested: contaminant concentrations greater than 50 parts per million--which may put marine mammals at increased risk--were recorded.

It was also found that contaminants in pregnant pilot whales were easily transferred to developing fetuses, which raises questions concerning the effects of these accumulated chemicals in adults on the early life stages of all marine mammals. ☉

## NOAA Speeds News of Volcano Eruption

When Washington State's famous (or infamous) volcano, Mt. St. Helens, erupted again on November 5, NOAA's National Environmental Satellite, Data and Information Service (NESDIS) promptly initiated the joint NOAA/Federal Aviation Administration Volcano Hazards Alert Program, which informs all appropriate federal agencies that an eruption has taken place.

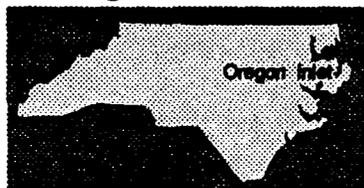
A GOES satellite picture showed the 24 kilometer wide ash cloud and 30,000 foot high ash cloud from the eruption. No one was injured in the blast, which was relatively minor compared to the mountain's eruption in 1980, which in which the volcano literally blew its top, and Mt. St. Helens lost 1,313 feet of its then-9,677 foot height. ☉

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## Quick Action May Save N.C. Vegetation

When a recent severe storm caused a tug and barge to destroy a portion of the bridge spanning Oregon Inlet, off North Carolina's Cape Hatteras islands, the U.S. Army Corps of Engineers made plans to dredge a nearby channel to shorten the path that ferries would take to reach the stranded residents. But NOAA's National Marine Fisheries Service (NMFS) said that the dredging would destroy the submerged aquatic vegetation in the channel. How to prove its point?

NOAA's National Ocean Service (NOS) Photogrammetry Branch was surveying and mapping the vegetation in nearby Currituck and Albe-



marle Sounds right before the storm, producing high quality photographic base maps. NMFS representatives asked NOS to find the right photographs to show the typical underwater vegetation of the area, and what might be lost if the channel was dredged.

Luckily, NOS was able to identify the right photos--80 of them--and print and ship them to NMFS's Beaufort Laboratory in two days. At press time, the outcome of the project was still in question.

# **National Oceanic and Atmospheric Administration**

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July 23, 2010