Congress would turn steep requested cuts into modest increases for environmental research programs, including R&D in the U.S. Geological Survey (USGS; up 3.4 percent to $583 million) and the National Oceanic and Atmospheric Administration (NOAA; up 7.6 percent to $573 million).* Total environmental R&D would rise 4.0 percent to $2.1 billion instead of falling 3 percent as requested. In addition, appropriators would boost climate change research in other agency budgets, including boosts for earth observing satellites and supporting research at the National Aeronautics and Space Administration (NASA).

*Although most of the increase would go to earmarks, oceans-related research and climate change research would gain strongly.

Congress tried to use Earth Science funding to implement recommendations of a recent National Research Council report expressing concerns that the number of earth-observing sensors on NASA spacecraft could decrease by 40 percent this decade if current NASA budget trends continue. Total Science funding in NASA would reach $5.5 billion, a 1.8 percent increase that falls short of the request... In real terms, NASA R&D funding has remained flat for the past decade.

Environmental Protection Agency: Congress deleted a $50 million climate change commission to prioritize climate change adaptation and mitigation research that was proposed in the House appropriation.
The global climate:

0.55°C in 2007 (4th warmest); last 6 years all exceptionally warm
January through November 2007 average temperature anomalies

<table>
<thead>
<tr>
<th>Region</th>
<th>Anomaly (°C)</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Global mean:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land</td>
<td>1.03</td>
<td>warmest in 128 years</td>
</tr>
<tr>
<td>Ocean</td>
<td>0.39</td>
<td>9th warmest</td>
</tr>
<tr>
<td>Land and Ocean</td>
<td>0.56</td>
<td>4th warmest</td>
</tr>
<tr>
<td><strong>Northern Hemisphere mean:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land</td>
<td>1.20</td>
<td>warmest</td>
</tr>
<tr>
<td>Ocean</td>
<td>0.43</td>
<td>6th warmest</td>
</tr>
<tr>
<td>Land and Ocean</td>
<td>0.72</td>
<td>2nd warmest</td>
</tr>
<tr>
<td><strong>Southern Hemisphere mean:</strong></td>
<td></td>
<td></td>
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<tr>
<td>Land</td>
<td>0.55</td>
<td>7th warmest</td>
</tr>
<tr>
<td>Ocean</td>
<td>0.36</td>
<td>9th warmest</td>
</tr>
<tr>
<td>Land and Ocean</td>
<td>0.39</td>
<td>9th warmest</td>
</tr>
</tbody>
</table>
Temperature Anomalies Jan-Nov 2007
(with respect to a 1961-1990 base period)
National Climatic Data Center/NESDIS/NOAA
Australia: 6th year of drought
U.S. climate:

National (Contiguous U.S.) Temperature
1895 - 2007

Year

National Climatic Data Center / NESDIS / NOAA
January-December 2007 Statewide Ranks

National Climatic Data Center/NOAA

Temperature

1895-2007

1 = Coldest
113 = Warmest

Record Coldest
Much Below Normal
Below Normal
Near Normal
Above Normal
Much Above Normal
Record Warmest
January-December 2007 Statewide Ranks

National Climatic Data Center/NESDIS/NOAA

Precipitation

1895-2007

1 = Driest
113 = Wettest

Record Driest
Much Below Normal
Below Normal
Near Normal
Above Normal
Much Above Normal
Record Wettest
U.S. Drought Monitor

January 1, 2008
Valid 7 a.m. EST

Intensity:
- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

Drought Impact Types:
- Delineates dominant impacts
- A = Agricultural (crops, pastures, grasslands)
- H = Hydrological (water)

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

http://drought.unl.edu/dm

Released Thursday, January 3, 2008
Author: Richard Heim, NOAA/NESDIS/NCDC
Alabama annual precipitation total (1950-2007)
2007: 6 hurricanes, 2 major hurricanes (speeds > 110 mph)
Sea surface temperature forcing of climate anomalies: El Niño / Southern

Warm ENSO (El Niño) in 2006-07 with sudden end in January, Cold ENSO presently.
Temperature Anomalies Jan-Nov 2007
(with respect to a 1961-1990 base period)
National Climatic Data Center/NESDIS/NOAA
October-November-December 2007 SST anomalies

Pacific Decadal Oscillation (PDO) strongest negative in October, has diminished in November and December, although still negative.
Recent skill of ENSO forecasts: black line is observations

ENSO Forecast from Mar 2006 to Dec 2007

Nino3.4 SST Anomaly (°C)

Dyn. model:
- NASA GMAO
- NCEP CFS
- JMA
- SCRIPPS
- LDEO
- AUS/POAMA
- ECMWF
- UKMO
- KMA SNU
- ESSIC ICM
- ECHAM/MOM
- COLA ANOM

Stats. model:
- CPC MRRG
- CDM CDM
- CPC CA
- CPC CCA
- CSU CLIPR
- UBC NINET
- FSU REGR
- UCLA-TCD

2006

2007
Forecast issued last month

Model Forecasts of ENSO from Dec 2007
January-February-March temperature forecast
January-February-March precipitation forecast

Precipitation forecast skill greatest during significant ENSO episodes, like this year.

October-November-December 2007 forecast was for >33% chance of above normal PNW precipitation.
October-November-December 2007 temperature forecast
October-November-December 2007 precipitation forecast