

The State of the Nation's Ecosystems: Update 2005

Summary of Changes in Data Availability and Ecosystem Use and Condition

Update 2005 is the second Web-only revision to *The State of the Nation's Ecosystems*, which was originally published in 2002. *Update 2005* provides updated or new data for 12 indicators, as summarized in the table below.

For each indicator, this table:

- describes how and from where the new data were obtained;
- summarizes the changes in reported ecosystem condition and use;
- provides the page number for the original indicator in the 2002 *State of the Nation's Ecosystems* report.

This table can be accessed via the following link: www.heinzctr.org/ecosystems/intro/updates_05_categories.shtml, which also provides access to the updated indicator pages in the *State of the Nation's Ecosystems* web site.

SYSTEM DIMENSIONS	
Total Cropland (Farmlands Indicator, p. 91)	<p>The <i>USDA National Agricultural Statistics Service</i> 2002 Census of Agriculture provided new data on cropland area for 2001 and revised the value for 1997 based on new methodology.</p> <p>According to several major monitoring efforts, the area of croplands, which cover about one quarter of the land area of the lower 48 states, has been declining since the late 1970s or early 1980s. The new NASS data indicate a reduction of about 11 million acres (or about 2%) from 1997-2001, consistent with the previously reported drop of 9 million acres from 1997-2001 from the National Resources Inventory (NRI).</p>
Grassland and Shrubland Land Use (Grassland and Shrublands Indicator, p. 162)	<p>The <i>USDA National Agricultural Statistics Service</i> released new data to estimate the number of cattle on grasslands, shrublands, and pasture for 2003 and 2004. We applied new methodology—enabling the exclusion of additional non-grazing cattle from previous estimates of grazing cattle—to the entire dataset, resulting in reduced estimates of grazing cattle overall.</p> <p>The number of cattle grazed on grasslands and shrublands has declined from about 87 million in 1994 to about 79 million in 2004. This decline may be part of a cycle of fluctuations that has been observed since the 1880s.</p>

CHEMICAL AND PHYSICAL CHARACTERISTICS	
<p>Movement of Nitrogen (Core National Indicator, p. 46)</p>	<p>The <i>U.S. Geological Survey</i> provided several years of new data for the St. Lawrence, Columbia, and Susquehanna rivers, and applied new models and methodology to data from earlier years, resulting in revised estimates for these rivers and the Mississippi River. Some of these revised estimates differ considerably from previous values.</p> <p>The amount of nitrate carried by two of four major U.S. rivers is much higher than it was in the 1950s. This increase is most striking for the Mississippi, which drains more than 40% of the land area of the lower 48 states, and which carries about twice as much nitrate today as it did in the 1950s. Data from a new USGS model indicate that the amount of nitrate carried by the Mississippi peaked in 1993 (not in 1983 as previously reported), and has fluctuated substantially through 2003. The amount of nitrate carried by the St. Lawrence has increased since the late 1980s (not decreased since the late 1980s as previously reported). Data for recent years show that upward trends in the amount of nitrate carried by the Columbia and Susquehanna rivers have been followed by recent declines, leading to no overall trend.</p>
<p>Urban and Suburban Air Quality (Urban and Suburban Areas Indicator, p. 188)</p>	<p>The <i>Environmental Protection Agency</i> provided new data on urban air quality for 2003–2004 and slightly revised data for some earlier years.</p> <p>In 2004, 11% of monitoring stations in urban/suburban areas recorded high ozone levels on 4 or more days—a considerable drop compared to the period from 1990–2003, during which this value had fluctuated around an average of about 45%. The percentage of stations recording 25 or more days with high levels has decreased since 1990 to 1% in 2004, all of which were in Southern California.</p>
BIOLOGICAL COMPONENTS	
<p>Plant Growth Index (Core National Indicator, p. 56)</p>	<p>The <i>U.S. Geological Survey, EROS Data Center</i> provided new data for 2003 and 2004</p> <p>During 2004, the plant growth index was somewhat below average in the Pacific and Rocky Mountain regions, higher than the 15-year average in the Northeast/Mid-Atlantic and Southeast, and about average in the remaining regions. Since 1989, year-to-year variability in the plant growth index has been high, within all six regions of the United States, and for all six ecosystem types described in <i>The State of the Nation's Ecosystems</i>. Thus, the values for 2004 are consistent with year-to-year fluctuation rather than a trend in the 15-year data series.</p>

HUMAN USES	
Commercial Fish and Shellfish Landings (Coasts and Oceans Indicator, p. 81)	<p>The <i>National Marine Fisheries Service</i> provided new data for 2003–2004 from their ongoing fisheries statistics program.</p> <p>The amount of fish and shellfish taken from U.S. waters has averaged nearly 5 million tons each year between the late 1970s and 1994. Following a peak in 1994, landings declined, reaching a low of about 4.5 million tons of fish in 2000. The most recent figures range from 4.7 to 4.8 million tons per year; about the same as in the early 1980s. Except for Alaska and the region including the West Coast and Hawaii, landings by U.S. vessels have decreased since the late 1970s. In Alaska, an expanding fleet has substantially increased U.S. landings.</p>
Major Crop Yields (Farmlands Indicator, p. 106)	<p>The <i>USDA National Agricultural Statistics Service</i> released new yield data for 2003 and 2004 from their ongoing data collection program.</p> <p>Yields of major crops (quantities harvested per acre) have increased over the past 50 years. Per acre yields of corn, wheat, and cotton more than doubled, with corn increasing nearly fourfold. Soybean and hay yields nearly doubled. New data for 2003 and 2004 appear consistent with these trends.</p>
Monetary Value of Agricultural Production (Farmlands Indicator, p. 108)	<p>The <i>USDA Economic Research Service</i> released new data on the dollar value of crops and livestock for 2003–2004 and the <i>Bureau of Economic Analysis (Department of Commerce)</i> released new county-level data on agricultural sales in 2003.</p> <p>Since the 1950s, the money received by farmers for their goods has fluctuated—with a low of about \$150 billion in 1957 and a high of about \$280 billion in 1973. (These data are in constant dollars and do not include agricultural income support or other government payments.) Amounts received by farmers overall between 2001–2004 ranged from approximately 9% lower to 3% higher (about \$199–235 billion) than the average for the previous 20 years.</p>
Production of Cattle on Grasslands and Shrublands (Grasslands and Shrublands Indicator, p. 173)	<p>The <i>USDA National Agricultural Statistics Service</i> released new data to estimate the number of cattle on grasslands, shrublands, and pasture for 2003 and 2004. We applied new methodology—enabling the exclusion of additional non-grazing cattle from our previous estimates—to the entire dataset, resulting in reduced estimates of grazing cattle for all years reported.</p> <p>The number of cattle grazed on grasslands and shrublands has declined from about 87 million in 1994 to about 80 million in 2004. This decline may be part of a cycle of fluctuations that has been observed since the 1880s.</p>

HUMAN USES, <i>continued</i>	
<p>Production of Food and Fiber and Water Withdrawals (Core National Indicator, p. 58)</p>	<p>The <i>National Marine Fisheries Service</i> provided new fish landings data for 2003–2004 (see “Commercial Fish and Shellfish Landings”), with slight revisions to 2000-2002 data; the <i>U.S. Geological Survey</i> released new data on water withdrawals for 2000; and the <i>U.S. Census Bureau</i> released new data on the U.S. population.</p> <p>These new data essentially did not alter existing national trends: the U.S. population continues to grow; since the late 1970s marine fish landings have increased in the Pacific Coast region and decreased in the Northeast/Mid-Atlantic and Southeast regions, while landings for all U.S. waters combined have decreased since the mid 1990s; and total water withdrawals have increased slightly following a 10% decline in the mid-1980s, although trends show water withdrawals have tracked increasing population in the Southeast, Southwest, and to a lesser extent the Midwest regions, while not keeping pace with increasing population in the Northeast/Mid-Atlantic, Pacific Coast, and Rocky Mountain regions.</p>
<p>Water Withdrawals (Fresh Waters Indicator, p. 150)</p>	<p>The <i>U.S. Geological Survey</i> released the <i>2000 Estimated Use of Water in the United States</i>, providing data on water withdrawals for 2000.</p> <p>Since 1960, thermoelectric, self-supplied industrial, and irrigation water withdrawals increased, reaching a peak in 1980, Demand for municipal and rural use has grown steadily over the past few decades, with municipal demand increasing more rapidly. Total water withdrawals declined about 10% between 1980 and 1985, and then grew slightly from 1985-2000, equaling about 345 billion gallons per day in 2000.</p>
<p>Waterborne Human Disease Outbreaks (Fresh Waters Indicator, p. 152)</p>	<p>The <i>Centers for Disease Control and Prevention</i> released new data for 2001–2002 as part of its ongoing data collection program. In addition, slightly revised data were released for 2000.</p> <p>Waterborne disease outbreaks vary from year to year. Overall, outbreaks associated with drinking water have declined since the 1970s and early 1980s, when it was common to have more than 20 reported outbreaks per year. Recent levels have been lower, although figures for 1999 and 2000 were higher than for any year since 1992. Outbreaks associated with recreational contact, which were historically less common than those associated with drinking water, have continued to increase since the 1980s; in recent years both types have been about equally common.</p>