This document contains the National Water Quality Inventory: Report to Congress, 2002 Reporting Cycle: Findings, Rivers and Streams, and Lakes, Ponds and Reservoirs.

The report can be downloaded from:

http://www.epa.gov/305b/

File 3 of 6

October 2007

Findings

Photo courtesy of Charlie Rahm, Natural Resources Conservation Service

Rivers and Streams

The 2002 National Assessment Database summarizes river and stream designated use support information reported by the states by overall use support and by individual categories of uses.

Waters are rated for overall use support as follows:

- **Good**—if they fully support all their designated uses;
- **Threatened**—if they fully support all uses, but exhibit a deteriorating trend; or
- **Impaired**—if they are not supporting one or more designated uses.

Overall for 2002, states assessed 695,540 miles of rivers and streams, or 19% of the nation's approximately 3.7 million stream miles (Figure 1). This is about 4,400 fewer stream miles than in the previous reporting cycle. States identified 45% of the assessed miles as being impaired, or not supporting one or more of their designated uses. The remaining 55% of assessed miles fully supported all uses, and of these, 4% were considered threatened (i.e., water quality supported use, but exhibited a deteriorating trend).

Individual use support assessments also provide important details about the nature of water quality problems in rivers and streams. Table 1 shows the top five assessed uses in rivers and streams. States evaluated support of the Fish, Shellfish, and Wildlife Protection and Propagation use most frequently, assessing a total of 596,433 stream miles (or 16% of U.S. stream miles) and reporting that 41% of assessed stream miles were impaired for this use. States assessed 321,750 stream miles for Recreation uses (primary and secondary contact) and found recreation to be impaired in 33% of these waters.

The National Assessment Database also reports the sources and causes of impairments, but it is important to note that the information about specific sources and causes of impairment is incomplete. States do not always report the pollutant or source of pollutants affecting every impaired river and stream. Although states may recognize that water quality does not fully support a designated use, they may not have adequate data in some cases to document the specific pollutant or source responsible for the impairment. In past national reports, unknown or unspecified causes and sources were included only

Figure 1. Water quality in assessed river and stream miles.

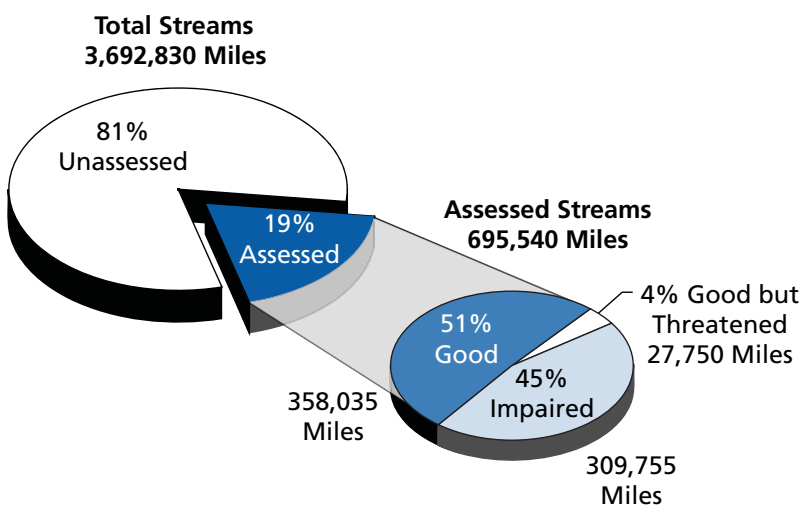


Table 1. Individual Use Support in Assessed River and Stream Miles[a].

Designated Use	Assessed Miles	Percent of Total U.S. Stream Miles	Percent of Waters Assessed		
			Good	Threatened	Impaired
Fish, Shellfish, and Wildlife Protection/Propagation	596,433	16%	55%	4%	41%
Recreation	321,750	9%	64%	3%	33%
Agricultural	189,332	5%	92%	<1%	7%
Aquatic Life Harvesting	186,721	5%	57%	16%	27%
Public Water Supply	150,492	4%	81%	2%	18%

[a] Waterbodies can have multiple designated uses, resulting in overlap of Assessed Miles.

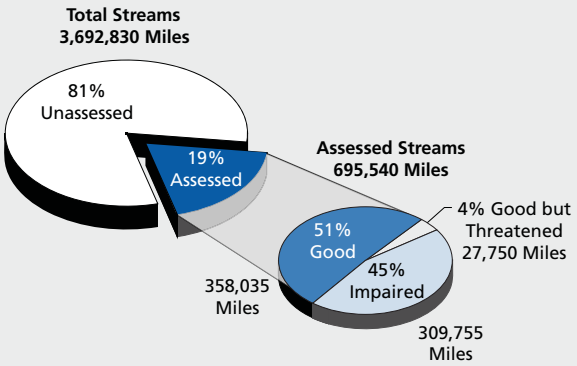
as footnoted material to summary statistics. For the first time, this 2002 report includes unspecified causes and sources in all summary statistics to more clearly represent what states are reporting to EPA.

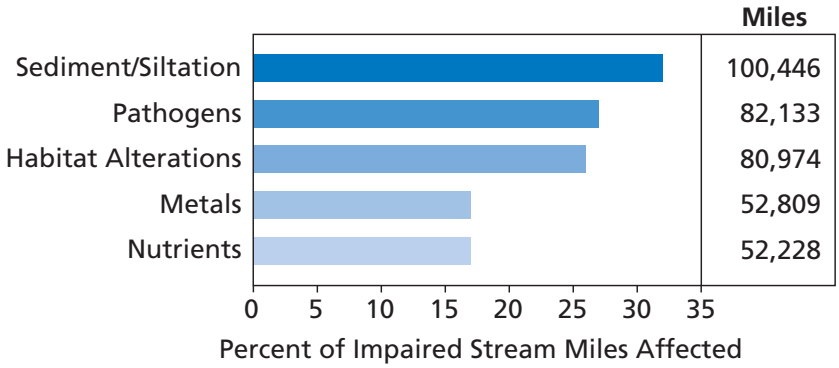
Table 2 shows the top reported causes of impairment in assessed rivers and streams. According to the states, the top causes of river and stream impairment regardless of designated use were the following:

- **Sediment or siltation**, which can smother stream beds, suffocate fish eggs and bottom-dwelling organisms, and interfere with drinking water treatment and recreational uses
- **Pathogens** (bacteria), which indicate possible fecal contamination that may cause illness in people
- **Habitat alterations**, such as disruption of stream beds and riparian areas.

Excess sediments, pathogens, and alterations to habitat are the leading reported causes of impairment in rivers and streams (Photo courtesy of Tim McCabe, National Resources Conservation Service).

Table 2. Top Causes of Impairment in Assessed Rivers and Streams*.





*Percents do not add up to 100% because more than one cause or source may impair a waterbody.

More information on state-reported causes and sources of impairment is available from the National Assessment Database at http://www.epa.gov/waters/305b.

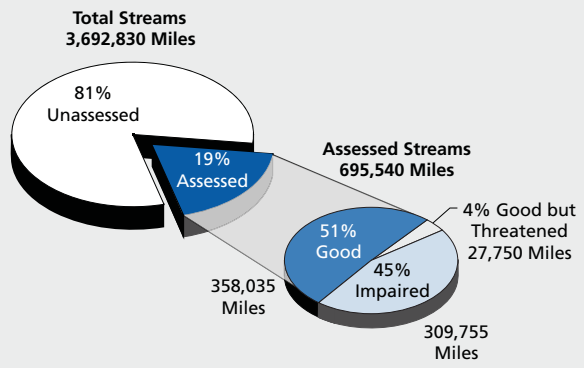
States also reported other leading causes of impairments of rivers and streams, including metals (primarily mercury), nutrients, thermal modifications (e.g., water heated by factories or by runoff from paved areas), organic enrichment/low dissolved oxygen (i.e., organic materials such as plant matter, food processing waste, and sewage consume oxygen when they degrade in water), and flow alterations.

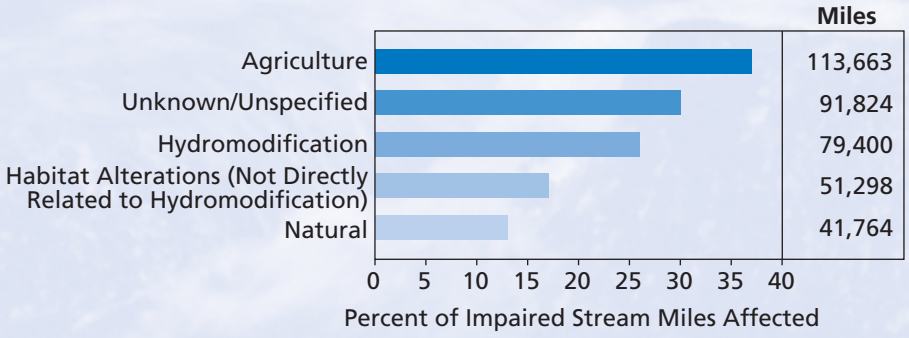
Table 3 shows the top reported sources of impairment in assessed rivers and streams. According to the states, the top sources of river and stream impairment included the following:

- **Agricultural activities**, such as crop production, grazing, and animal feeding operations
- **Unknown or unspecified sources** (i.e., the states could not identify specific sources)
- **Hydrologic modifications**, such as water diversions, channelization, and streambank destabilization.

Other leading sources of impairment in streams included habitat alterations (e.g., loss of streamside habitat), natural sources (e.g., floods, droughts, and wildlife), urban runoff and storm water, and municipal permitted discharges (e.g., sewage treatment plants).

Table 3. Top Sources of Impairment in Assessed Rivers and Streams*.





*Percents do not add up to 100% because more than one cause or source may impair a waterbody.

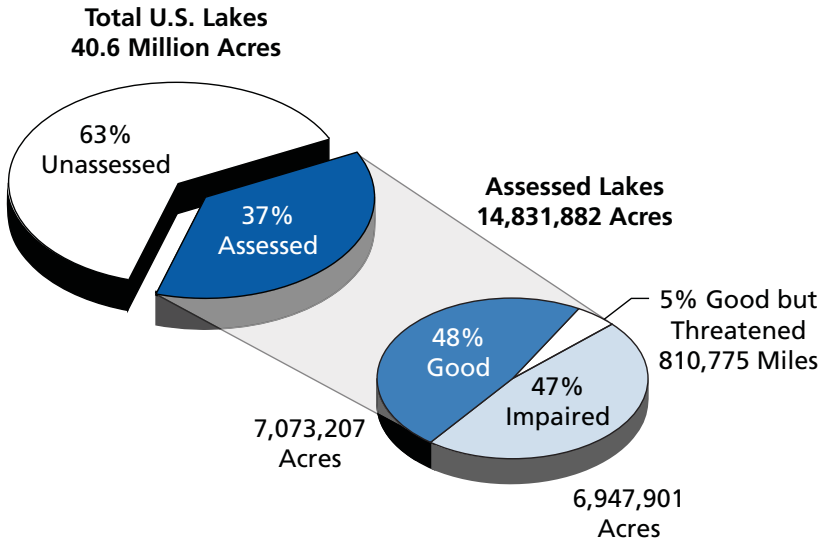
Lakes, Ponds, and Reservoirs

The 2002 National Assessment Database summarizes designated use support information reported by the states for lakes, ponds, and reservoirs by overall use support and by individual categories of uses.

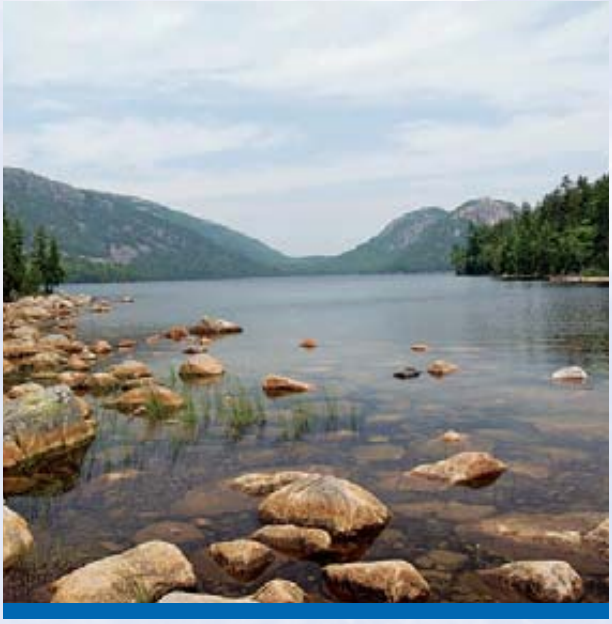
Overall, states assessed approximately 14.8 million acres of lakes, ponds, and reservoirs (excluding the Great Lakes), or 37% of the nation's total 40.6 million lake acres for the 2002 reporting cycle (Figure 2). This is 2.5 million fewer acres than were assessed in the previous reporting cycle. States identified 47% of assessed acres as impaired, or not supporting one or more of their designated uses (e.g., fishing, swimming). The remaining 53% of assessed acres fully supported all uses, and of these, 5% were considered threatened.

Excess nutrients, such as nitrogen and phosphorus, can disrupt lake ecosystems by stimulating growth of algae and aquatic weeds (Photo courtesy of Brad Ashbaugh).

Figure 2. Water quality in assessed lake acres.



Individual use support assessments provide important details about the nature of water quality problems in lakes, ponds, and reservoirs. Table 4 shows the top five uses assessed in lakes, ponds, and reservoirs. States assessed about 9.7 million lake acres for support of the Fish, Shellfish, and Wildlife Protection and Propagation use, of which 47% were found to be impaired. Thirty-six percent of the approximately 9.6 million lake acres assessed for Recreation uses (e.g., swimming and boating) were impaired. States assessed about 5.7 million acres of lakes and reservoirs for support of the Public Water Supply use and identified 22% as impaired. The Aquatic Life Harvesting use (primarily fish consumption) was assessed in approximately 4.6 million acres; of these, 48% were impaired and 11% were considered threatened (i.e., water quality is deteriorating).



The states assessed 37% of the nation's total lake acres (Photo courtesy of Jeffrey Cole).

The National Assessment Database also reports the sources and causes of impairments, but it is important to note that the information about specific sources and causes of impairment is incomplete. The states do not always report the pollutant or source of pollutants affecting every impaired lake, pond, and reservoir. In some cases, states may recognize that water quality does not fully support a designated use; however, they may not have adequate data to document the specific pollutant or source responsible for the impairment. The states may then simply report the cause or source of impairment as "unknown" or "unspecified."

Table 4. Individual Use Support in Assessed Lake, Pond, and Reservoir Acres[a].

Designated Use	Assessed Acres	Percent of Total U.S. Lake Acres	Percent of Waters Assessed		
			Good	Threatened	Impaired
Fish, Shellfish, and Wildlife Protection/Propagation	9,738,351	24%	46%	7%	47%
Recreation	9,564,367	24%	60%	4%	36%
Public Water Supply	5,669,057	14%	75%	3%	22%
Aquatic Life Harvesting	4,562,746	11%	41%	11%	48%
Agricultural	2,931,970	7%	71%	13%	16%

[a] Waterbodies can have multiple designated uses, resulting in overlap of Assessed Acres.

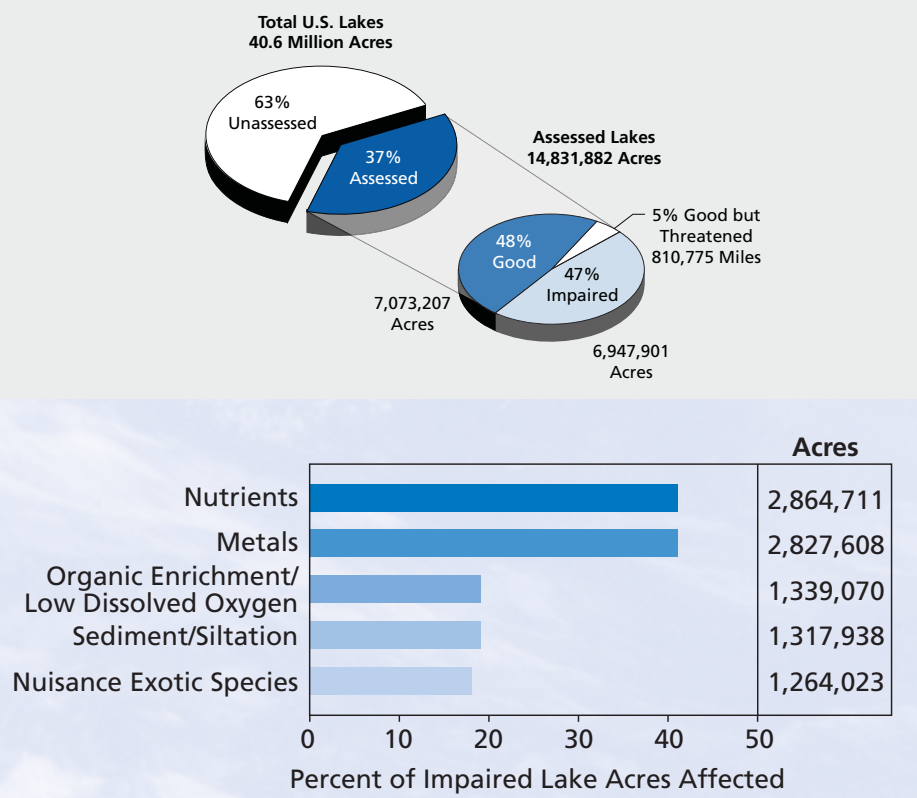
Table 5 shows the top reported causes of impairment in assessed lakes, ponds, and reservoirs. According to the states, the top causes of impairment were the following:

- **Nutrients**, such as phosphorus and nitrogen, which disrupt lake ecosystems by stimulating growth of undesirable algae and aquatic weeds
- **Metals**, such as mercury, which have been widely detected in fish tissue, where they may pose a health risk to people and animals who eat fish
- **Organic enrichment/low dissolved oxygen**, which can adversely affect aquatic life and cause foul odors.

States also reported sediment or siltation, nuisance exotic and invasive species (e.g., non-native plants, fish, and shellfish), toxic organics (e.g., polychlorinated biphenyls [PCBs]), harmful algal blooms, salinity, and flow alterations as other leading causes of impairment.

More information on state-reported causes and sources of impairment is available from the National Assessment Database at http://www.epa.gov/waters/305b.

Table 5. Top Causes of Impairment in Assessed Lakes, Ponds, and Reservoirs*.



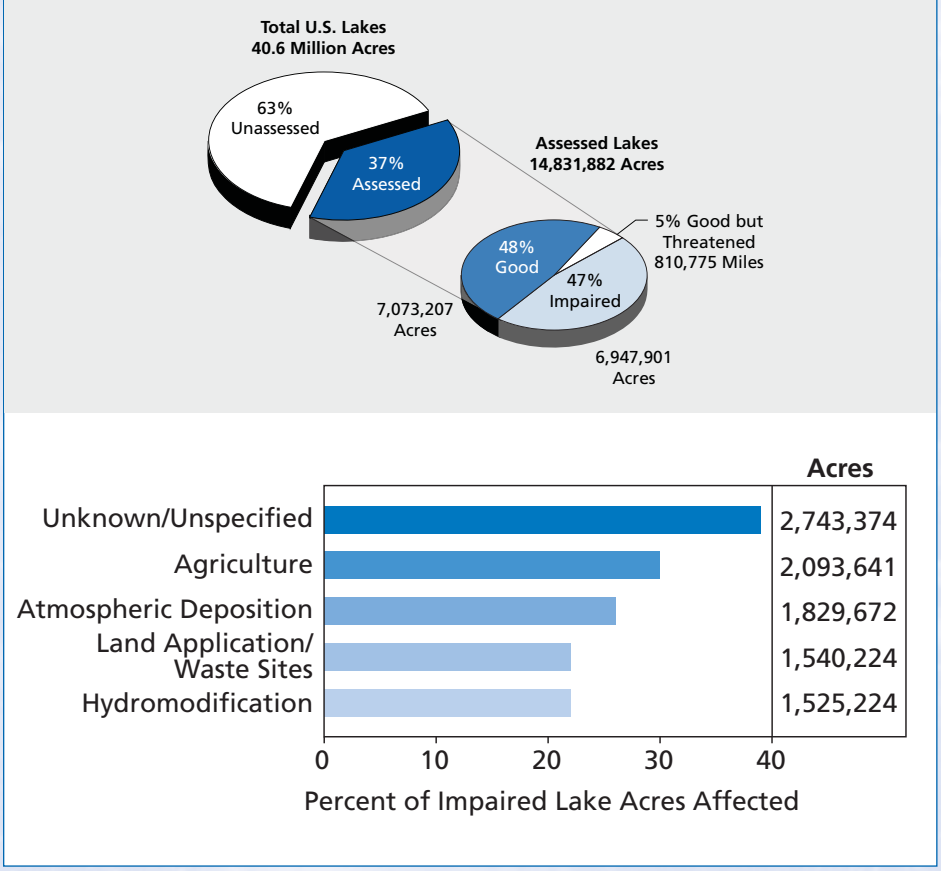
*Percents do not add up to 100% because more than one cause or source may impair a waterbody.

Table 6 shows the top reported sources of impairment in assessed lakes, ponds, and reservoirs. According to the states, the top sources of lake impairment included the following:

- **Unknown or unspecified sources** (i.e., the states could not identify specific sources)
- **Agricultural activities**, such as crop production, grazing, and irrigation
- **Atmospheric deposition** from both local and long-range sources.

Other leading sources of impairment were land application of wastes (e.g., septic systems and landfills), hydrologic modifications (e.g., water diversions and flow regulation), and "other" sources (a catch-all category, including such things as out-of-state sources and exotic species).

Table 6. Top Sources of Impairment in Assessed Lakes, Ponds, and Reservoirs*.



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