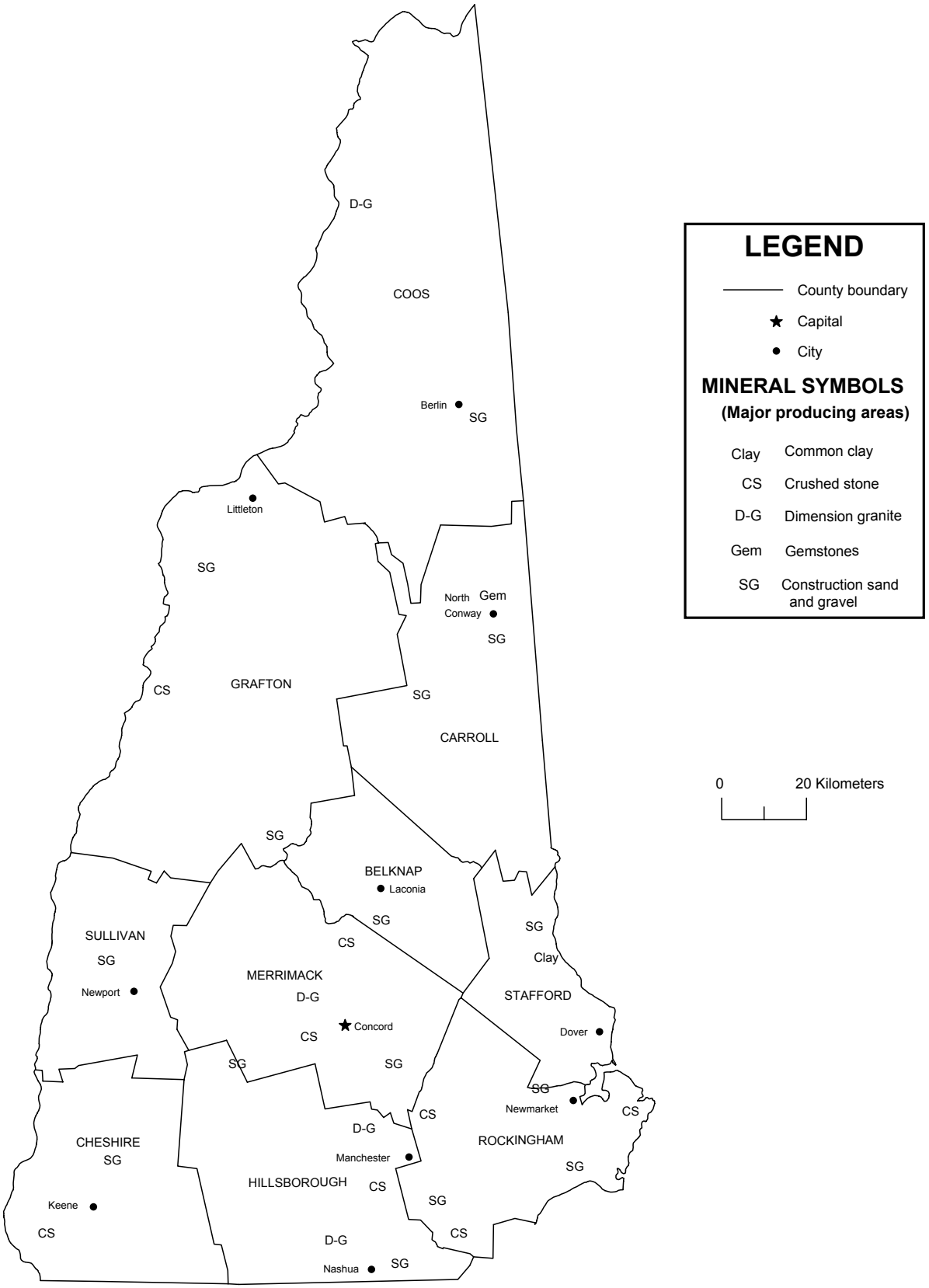
NEW HAMPSHIRE



Source: New Hampshire Geological Survey/U.S. Geological Survey (2003)

The Mineral Industry of New Hampshire

This chapter has been prepared under a Memorandum of Understanding between the U.S. Geological Survey and the New Hampshire Geological Survey for collecting information on all nonfuel minerals.

In 2003, the estimated value[1] of nonfuel mineral production for New Hampshire was about $63.9 million, based upon preliminary U.S. Geological Survey (USGS) data. This was about a 3% decrease from that of 2002[2] and followed a slight increase from 2001 to 2002. Because data for dimension granite have been withheld (company proprietary data), the actual total values for 2001-03 are higher than those reported in table 1.

Construction sand and gravel, a high-volume, low-unit-value mineral commodity, remained New Hampshire's leading nonfuel mineral commodity in 2003, accounting for about 69% of its nonfuel raw mineral production value. Crushed stone was the State's second leading nonfuel mineral. In 2003, the production and value of construction sand and gravel rose, the value being up by about $2.5 million; but this was offset by decreases in the production and value of crushed stone, the value of which was down about $4.7 million, resulting in an overall decrease for the year. Conversely, in 2002, an increase in the value of crushed stone of $2.4 million more than offset a decrease of $1.7 million in the value of construction sand and gravel, resulting in a net increase from that of 2001 (table 1). Based upon USGS estimates of the quantities of minerals produced in the United States in 2003, the State was 13th among 34 dimension-stone-producing States.

The following narrative information was provided by the New Hampshire Geological Survey[3] (NHGS).

Exploration

Amateur mineral collectors and hobbyists in the State continued to conduct most mineral exploration and collection. Gemstones of amethyst, apatite, beryl, fluorite, garnet, epidote, smoky and clear quartz, and topaz were the most common minerals collected. Commercial beryl and muscovite continued to be mined for resale by educational science supply houses. Most of these minerals were found in New Hampshire's abundant pegmatites.

Commodity Review

Clays.—New Hampshire's extensive marine clays were mined on demand from local resources and were only used as borrow material for the base of landfills, ponds, and the core of dams. Several operations that had produced marine clays ceased operation in 2002 (U.S. Geological Survey, 2004). Some New Hampshire glacial tills, rich in silt and clay, were also used for these same purposes.

Dimension Stone.—In 2003, markets continued to be strong for New Hampshire's two-mica granite for curbing and landscaping. The John Swenson Granite Works in Concord and the Fletcher Granite Co. in Milford and Mason continued to be the State's leading producers of dimension stone. Both quarries cut the Concord gray, two-mica granite. Several smaller, independent operators also quarry the Concord granite mostly for use as landscaping stone.

Sand and Gravel.—In 2003, the demand for sand and gravel and crushed stone increased hand-in-hand with housing and highway construction and was likely to continue. New Hampshire aggregate is mainly used for asphalt, concrete, stone for riprap and drainage, roadway sub-grade material, and general construction products. Although quality deposits of aggregate/sand and gravel continued to be in demand, local operations continued to face difficulty in obtaining permits to expand current operations.

With urban sprawl, prime aggregate sites are most commonly being identified in someone's backyard. Local resistance to such operations continued to be a factor in developing the material resources needed for economic growth. Approximately 14% of New Hampshire's land area is covered by stratified-drift deposits; the majority of these deposits being located mainly in stream valleys and lowlands and somewhat concentrated in the southern portion of the State. Because of New Hampshire's rugged upland topography, most urban centers, commercial/industrial parks, and transportation corridors are located in valleys underlain by stratified drift, the main source materials. These land-use patterns often limit access to quality sand and gravel deposits or limit recharge to stratified-drift aquifers that typically provide major water supplies. There are increased instances of "valley conflicts" between the demand for water supplies and the need for sand and gravel, or space for urban growth.

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[1]The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending upon the mineral products. Production may be measured by mine shipments, mineral commodity sales, or marketable production (including consumption by producers) as is applicable to the individual mineral commodity.

All 2003 USGS mineral production data published in this chapter are preliminary estimates as of July 2004 and are expected to change. Construction sand and gravel and crushed stone estimates are updated periodically. To obtain the most current information, please contact the appropriate USGS mineral commodity specialist. Specialist contact information may be retrieved over the Internet at URL http://minerals.usgs.gov/minerals/contacts/comdir.html; alternatively, specialists' names and telephone numbers may be obtained by calling USGS information at (703) 648-4000 or by calling the USGS Earth Science Information Center at 1-888-ASK-USGS (275-8747). All USGS Mineral Industry Surveys and USGS Minerals Yearbook chapters—mineral commodity, State, and country—also may be retrieved over the Internet at URL http://minerals.usgs.gov/minerals.

[2]Values, percentage calculations, and rankings for 2002 may differ from the Minerals Yearbook, Area Reports: Domestic 2002, Volume II, owing to the revision of preliminary 2002 to final 2002 data. Data for 2003 are preliminary and are expected to change; related rankings also may change.

[3]Lee Wilder, Public Outreach Coordinator for the New Hampshire Geological Survey, authored the text of State mineral industry information provided by that agency.

Government Programs

The NHGS commonly receives public inquiries for State and drilled-well information (such as well yield, depth, and water quality) and for other State water resource information. As the drought conditions of the past several years have been replaced with more than adequate precipitation, especially in the latter portion of 2003, New Hampshire, overall, continued to have adequate supplies of ground water in both quantity and quality. But, especially in the southern part of the State where there is the highest concentration of new home construction that relies on privately drilled wells, the NHGS continued to collect and be a resource for information regarding the State's water resources. The low permeability of some of the State's bedrock units caused some drilled wells to fail to provide the quantity of water that large modern homes need. Plans for a large water bottling facility in the Seacoast Region also posed the potential for further stress on the region's aquifers. Water well drillers continued to supply to the NHGS useful subsurface data for resource evaluation. With consumers demanding higher quality ground water, the installation of water filter/demineralization systems in the State increased.

The depth-to-bedrock information that the NHGS received from water well drillers was especially valuable for estimating the thickness of overburden deposits, which is useful in the State's surficial geologic mapping program. The NHGS continued to be active in the STATEMAP Cooperative Geologic Mapping Program. Under STATEMAP 2003, the surficial geology of four quadrangles—Hanover, West Alton, Parker Mountain, and Northwood—were in the process of being mapped at the 1:24,000 scale.

Erosion on a symbolically significant scale happened in 2003 when the State's famous bedrock symbol, "The Old Man of the Mountain," collapsed from high on the Conway Granite cliffs of Profile Mountain sometime during the night time hours of May 2-3, 2003. The New Hampshire State Geologist was appointed to the Governor's Task Force for the purpose of examining options for preserving the popular landmark rock structure. In another NHGS activity, its staff cooperated in a project with a New Hampshire teacher, who was the winner of the Christa McAuliffe Sabbatical Award. She was preparing a Web site and video on New Hampshire's geology.

The NHGS continued to answer public inquiries regarding the State's bedrock and surficial geology and ground water resources by way of e-mails, phone calls, and personal visits. Outreach and education efforts included staff participation at classroom presentations, conferences, public lectures, and workshops. Publications on the bedrock geology, surficial geology, and ground water resources of New Hampshire can be obtained by contacting the Department of Environmental Services' Public Information Center. A current listing of available State geologic publications can be accessed at URL http://www.des.state.nh.us/geo1link.htm.

Reference Cited

U.S. Geological Survey, 2004, The mineral industry of New Hampshire, *in* Area reports—Domestic: U.S. Geological Survey Minerals Yearbook 2002, v. II, p. 31.1-31.3.

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN NEW HAMPSHIRE[1, 2]

(Thousand metric tons and thousand dollars)

Mineral	2001		2002		2003[p]	
	Quantity	Value	Quantity	Value	Quantity	Value
Gemstones	NA	8	NA	6	NA	6
Sand and gravel, construction	8,630	43,300	8,640	41,600	9,100	44,100
Stone:						
Crushed	5,030 [r]	22,100 [r]	4,810	24,500	3,890	19,800
Dimension, granite	W	(3)	W	(3)	W	(3)
Total	XX	65,400 [r]	XX	66,100	XX	63,900

[p]Preliminary. [r]Revised. NA Not available. W Withheld to avoid disclosing company proprietary data. XX Not applicable.
[1]Production as measured by mine shipments, sales, or marketable production (including consumption by producers).
[2]Data are rounded to no more than three significant digits; may not add to totals shown.
[3]Value excluded to avoid disclosing company proprietary data.

TABLE 2
NEW HAMPSHIRE: CRUSHED STONE SOLD OR USED, BY KIND[1]

Kind	2001[r]				2002			
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Unit value
Granite	7	1,660	$7,770	$4.69	7	1,910	$8,890	$4.67
Traprock	12	3,380	14,300	4.25	8	2,910	15,600	5.36
Total or average	XX	5,030	22,100	4.39	XX	4,810	24,500	5.08

[r]Revised. XX Not applicable.
[1]Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.

TABLE 3
NEW HAMPSHIRE: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2002, BY USE [1]

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1 1/2 inch), riprap and jetty stone	W	W	$5.84
Coarse aggregate graded, other graded coarse aggregate	W	W	4.74
Fine aggregate (-3/8 inch), stone sand, bituminous mix or seal	W	W	9.09
Unspecified:[2]			
Reported	3,290	$14,900	4.52
Estimated	890	4,300	4.82
Total or average	4,730	24,100	5.09

W Withheld to avoid disclosing company proprietary data; included in "Total."
[1]Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.
[2]Reported and estimated production without a breakdown by end use.

TABLE 4
NEW HAMPSHIRE: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2002, BY MAJOR USE CATEGORY[1]

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	275	$1,780	$6.47
Asphaltic concrete aggregates and other bituminous mixtures	114	738	6.47
Road base and coverings	1,340	6,680	5.00
Fill	1,040	4,340	4.20
Other miscellaneous uses[2]	191	1,010	5.29
Unspecified:[3]			
Reported	3,270	14,900	4.57
Estimated	2,400	12,000	5.01
Total or average	8,640	41,600	4.82

[1]Data are rounded to no more than three significant digits, except unit value; may not add to totals shown.
[2]Includes snow and ice control, and railroad ballast.
[3]Reported and estimated production without a breakdown by end use.