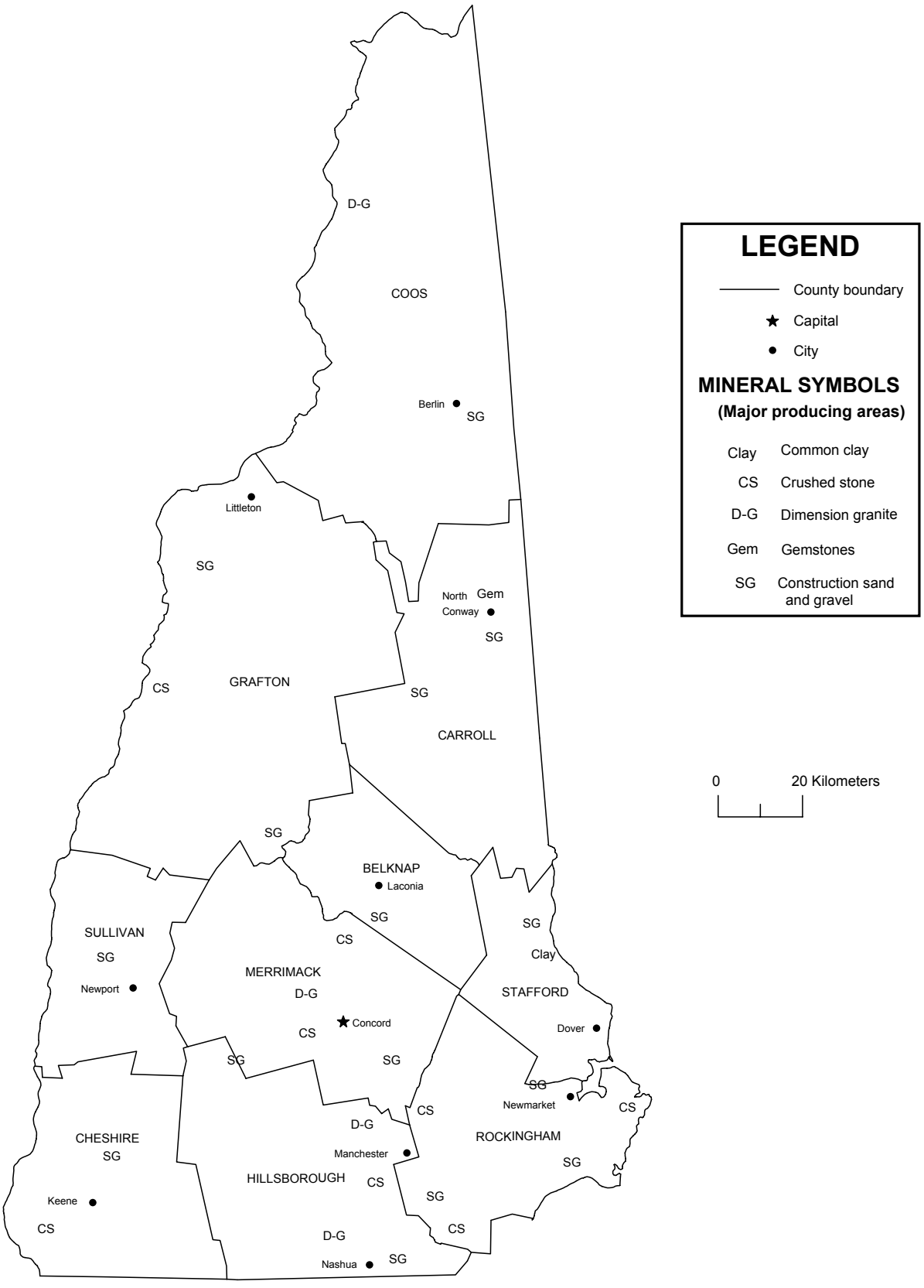
NEW HAMPSHIRE



Source: New Hampshire Geological Survey/U.S. Geological Survey (2002)

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 2002, the estimated value[1] of nonfuel mineral production for New Hampshire was about $68 million, based upon preliminary U.S. Geological Survey (USGS) data. This was about an 11% increase from that of 2001[2] and followed nearly an 8% increase from 2000 to 2001. Because data for crushed sandstone and dimension granite have been withheld to protect company proprietary data, the actual total values for 2000-2002 are higher than (while following the same trend as) those reported in table 1.

Construction sand and gravel, a high-volume, low-value mineral commodity, remained New Hampshire's leading nonfuel mineral commodity in 2002, accounting for about 68% of its nonfuel mineral production value. Crushed stone was the State's second leading nonfuel mineral. The State's rise in value in 2002 resulted from increases in the production and values of these two nonfuel mineral commodities (table 1). From 2001 to 2002, dimension granite showed an 8% increase in production with a slightly less than 5% increase in its value. Based upon USGS estimates of the quantities of minerals produced in the United States in 2002, New Hampshire's dimension stone quarries produced a significant quantity of dimension granite, rising to 12th from 14th among 34 dimension-stone-producing States.

In 2001, a $2.5 million increase in the value of crushed stone and a nearly $2 million rise in that of construction sand and gravel led the State's increase for the year (table 1). Dimension granite production was down slightly, whereas its value had a small increase; the production and value of crushed sandstone dropped off by about 45%.

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

[1]The terms "nofuel mineral production" and related "values" encompass variations in meaning, depending upon the minerals or mineral products. Produciton 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 2002 USGS mineral production data published in this chapter are preliminary estimates as of July 2003 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 Mineral Industry Surveys—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 2001 may differ from the Minerals Yearbook, Area Reports: Domestic 2001, Volume II, owing to the revision of preliminary 2001 to final 2001 data. Data for 2002 are preliminary and are expected to change; related rankings may also 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.

Commodity Review

During 2002, most mineral exploration and collection was conducted by and for amateur mineral collectors, some of whom turn their better finds into gemstones. Amethyst, apatite, beryl, epidote, fluorite, garnet, smoky and clear quartz, and topaz were the most common minerals collected. A small quantity of muscovite and some commercial beryl continued to be mined for resale by educational science supply houses. Some interesting research was done on rare phosphate minerals recently found in a New Hampshire pegmatite. Several inactive copper and lead mines in the Milan District have shown a high silver content.

The demand trend for aggregate/sand and gravel in 2002 remained flat. The recession curtailed private construction significantly. New Hampshire's aggregate in 2002 was used mainly for asphalt and concrete, stone for riprap and drainage, roadway subgrade material, and general construction products. The outlook (short-and long-term) for aggregate/sand and gravel are cautiously positive, depending almost exclusively on economic activity and domestic security.

The local aggregate/sand and gravel industry faced two problems in 2002—difficulty permitting expansions in new locations and a shortage of qualified, motivated workers. Quality deposits of aggregate/sand and gravel continued to be in demand. Thus, most operations found processing (crushing and screening) necessary to meet the wide variety of specifications.

Approximately 14% of New Hampshire's land area was covered by stratified-drift deposits. The majority of these deposits were located mainly in stream valleys and lowlands. Because of New Hampshire's rugged topography, most urban centers, commercial/industrial parks, and transportation corridors were located in valleys underlain by stratified drift. 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. Increasingly, "valley conflicts" arise between the demand for water supplies and the need for sand and gravel or space for urban growth.

All of the State's bedrock was either igneous or metamorphic. There were numerous crushing operations in New Hampshire, with some crushing quarried bedrock and others crushing the stones found in native gravels to various dimensions (½ inch, 1 inch, 2 inches, etc.). Operations crushed the Bethlehem gneiss, Massabesic gneiss, Concord-type granite, Kinsman quartz monzonite, and Winnipesauke granite.

Several operations that were using marine clays ceased production in 2002. There was still no significant clay mining activity. Raw clay was currently an on demand resource and was locally supplied as needed (borrow material for the base of landfills, ponds, and the core of dams).

Demand for the Concord two-mica granite for curbing remained very strong in 2002. The John Swenson Granite

Works in Concord and the Fletcher Granite Co. in Milford and Mason continued to be the State's largest producers of dimension stone. Both quarries cut the Concord gray, two-mica granite. The Granite State has several other smaller, independent operations also quarrying the Concord granite, which was used mostly for landscaping stone.

The John Swenson Granite Works was contracted in 2002 to supply pink granite to replace the steps at the Pentagon in Washington, DC. The steps were cut from previously quarried Columbia pink granite from its quarry in Columbia, NH.

Government Programs

The NHGS offered a number of publications on the bedrock, surficial geology, and ground water resources of New Hampshire. Publications can be obtained by contacting the Public Information Center of the Department of Environmental Services. A current listing of available publications can be accessed at URL http://www.des.state.nh.us/geo1link.htm#Maps.

The NHGS continued to be active in the STATEMAP component of the USGS National Cooperative Geologic Mapping Program (NCGMP). Under STATEMAP 2002, the surficial geology of the New Boston, Enfield, and Northfield quadrangles were scheduled to be mapped at the 1:24,000 scale. NHGS staff cooperated with a high school teacher who was using surficial geologic mapping as an inquiry-based learning tool in her science classes. Moreover, several of the students with a keen interest in learning the field methods involved in mapping volunteered to collect data that assisted NHGS mappers. This collaborative effort was funded by a Toyota Corp. Tapestry Grant.

As part of the EDMAP component of the NCGMP, students and their faculty mentors from the University of New Hampshire mapped the bedrock geology of the Sandown area and in contiguous sections of the Northwood/Barrington/Mt. Pawtuckaway area. Researchers from Keene State University continued bedrock geologic mapping in the Lake Sunapee region. Also, geology students of Bates College in Maine continued mapping the bedrock geology of New Hampshire's famous Mt. Washington.

Water well drillers continued to supply useful subsurface data for resource evaluation. "Depth to bedrock" information was especially valuable for estimating the thickness of overburden deposits and was useful in the surficial geologic mapping program. The NHGS often responded to public inquiries for domestic drilled well information such as well yield, depth, and water quality.

The NHGS continued to answer public inquiries in the form of e-mails, phone calls, and personal visits. Outreach and education efforts included staff participation at classroom presentations, conferences, public lectures, and workshops.

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

(Thousand metric tons and thousand dollars)

Mineral	2000		2001		2002[p]	
	Quantity	Value	Quantity	Value	Quantity	Value
Gemstones	NA	6	NA	8	NA	6
Sand and gravel, construction	8,660	41,400	8,630	43,300	9,000	46,100
Stone, crushed	3,740 [3]	15,700 [3]	4,230 [3]	18,200 [3]	5,000	21,900
Combined values of stone [crushed sandstone (2000-01), and dimension granite]	XX	(4)	XX	(4)	XX	(4)
Total	XX	57,100	XX	61,500	XX	68,000

[p]Preliminary. NA Not available. 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]Excludes certain stones, values which must be concealed to avoid disclosing company proprietary data.

[4]Value excluded to avoid disclosing company proprietary data.

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

Kind	2000 Number of quarries	2000 Quantity (thousand metric tons)	2000 Value (thousands)	2000 Unit value	2001 Number of quarries	2001 Quantity (thousand metric tons)	2001 Value (thousands)	2001 Unit value
Granite	10	1,820	$7,200	$3.95	10	2,010	$8,130	$4.04
Traprock	7	1,920	8,460	4.41	6	2,220	10,000	4.51
Sandstone	1	(2)	(2)	(2)	1	(2)	(2)	(2)
Total or average	XX	3,740	15,700	4.19	XX	4,230	18,200	4.29

XX Not applicable.

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

[2]Withheld from total to avoid disclosing company proprietary data.

TABLE 3
NEW HAMPSHIRE: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2001, BY USE[1, 2]

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Construction:			
Coarse aggregate (+1 1/2 inch), riprap and jetty stone	W	W	$3.00
Coarse aggregate graded, other graded coarse aggregate	W	W	3.63
Unspecified:[3]			
Reported	2,930	$13,200	4.52
Estimated	1,300	4,900	3.78
Total or average	4,230	18,200	4.29

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]Includes granite and traprock; excludes sandstone from total to avoid disclosing company proprietary data.

[3]Reported and estimated production without a breakdown by end use.

TABLE 4
NEW HAMPSHIRE: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2001, BY MAJOR USE CATEGORY[1]

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregates (including concrete sand)[2]	1,520	$7,710	$5.07
Concrete products (blocks, bricks, pipe, decorative, etc.)	1	10	10.00
Asphalt concrete aggregates and other bituminous mixtures	410	2,530	6.17
Road base and coverings	858	4,250	4.95
Fill	759	3,590	4.73
Snow and ice control	294	1,150	3.93
Other miscellaneous uses[3]	94	755	8.03
Unspecified:[4]			
Reported	1,410	5,730	4.08
Estimated	3,300	18,000	5.33
Total or average	8,630	43,300	5.02

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

[2]Includes plaster and gunite sands.

[3]Includes railroad ballast.

[4]Reported and estimated production without a breakdown by end use.