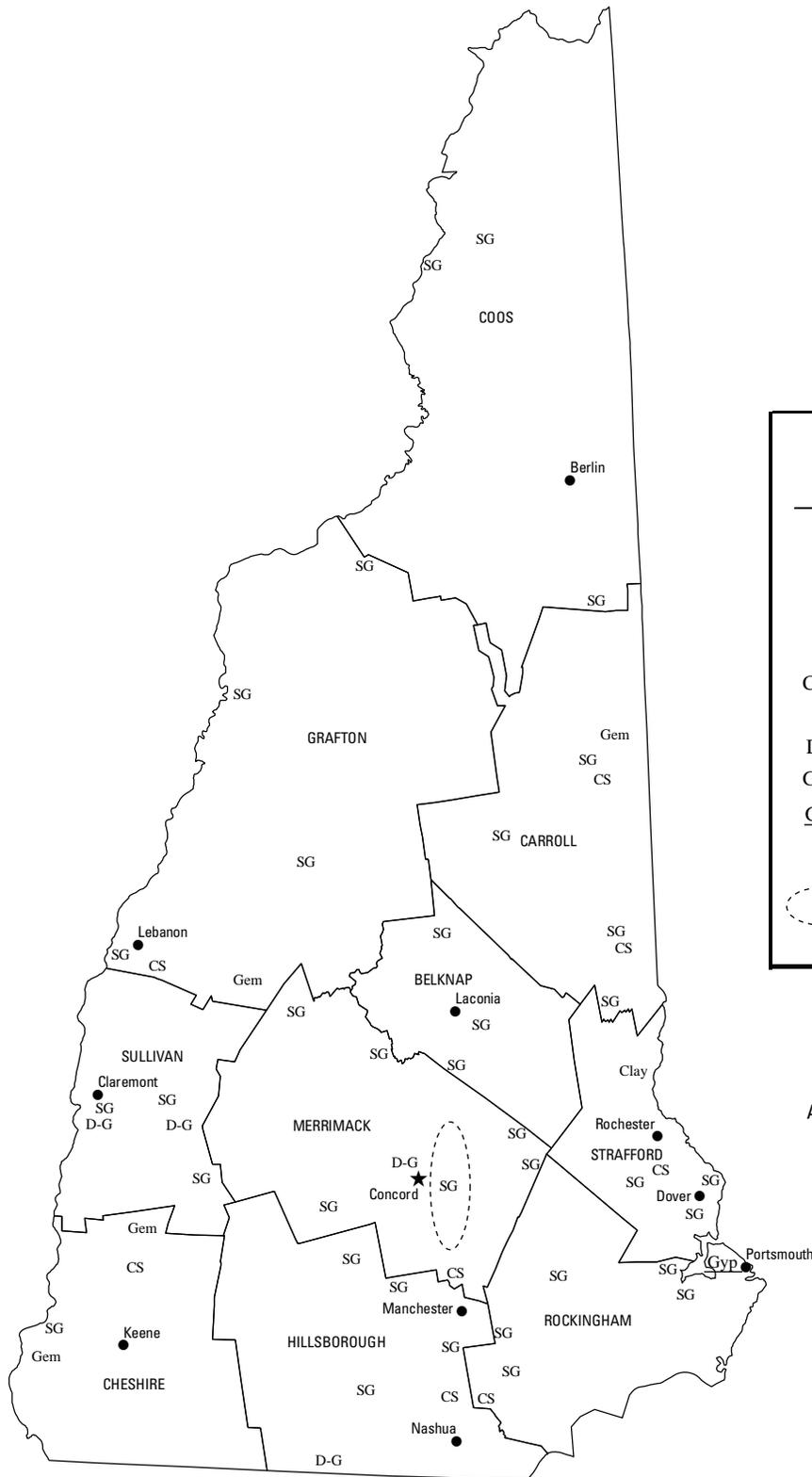




2007 Minerals Yearbook

NEW HAMPSHIRE [ADVANCE RELEASE]

NEW HAMPSHIRE



LEGEND

— County boundary

★ Capital

● City

**MINERAL SYMBOLS
(Major producing areas)**

Clay Common clay

CS Crushed stone

D-G Dimension granite

Gem Gemstones

Gyp Gypsum plant

SG Construction sand and gravel

○ Concentration of mineral operations

0 10 20 40 Kilometers



Albers equal area projection

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 2007, New Hampshire's nonfuel raw mineral production¹ was valued at \$118 million, based upon annual U.S. Geological Survey (USGS) data. This was a \$1 million increase from the State's total nonfuel value of 2006, following a nearly 33% increase in value from 2005 to 2006. Because data for dimension granite have been withheld (company proprietary data), the State's actual total nonfuel mineral values for 2005–07 are higher than those reported in table 1.

Despite a 19% decrease in its production, crushed stone replaced construction sand and gravel (a high-volume, though lower-unit-value mineral commodity) as New Hampshire's leading nonfuel mineral commodity in 2007, accounting for 58% of the State's nonfuel raw mineral production value. Crushed stone's increase of more than \$13 million led to the State's total increase in value in 2007, as the mineral commodity's annual average unit value rose by 53%. A 16% decrease in the quantity of construction sand and gravel produced in tandem with a relatively small decrease in its average unit value resulted in a \$12.6 million decrease in its value from that of 2006. With only a marginal decrease in unit value, the production and the production value of dimension stone (granite) each rose by about 6%, while that of gemstones remained unchanged (table 1).

New Hampshire continued to produce significant quantities of dimension stone in 2007, and remained 12th among 34 dimension stone-producing States.

The following narrative information was provided by the New Hampshire Geological Survey² (NHGS).

Exploration

In 2007, exploration continued for economic deposits of sand, gravel, and stone to crush for aggregate, although at a slower pace than that of recent years. In part helped by increases in prices for natural resources and mineral commodities, mineral collecting from New Hampshire's many pegmatite locations continued. Interest in panning for gold in northern New Hampshire appeared to be increasing, based upon a significant increase in the number of inquiries at the NHGS and a growing number of visits online to the NHGS Fact Sheet page entitled Gold in New Hampshire.

¹The 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 2007 USGS mineral production data published in this chapter are those available as of June 2009. All USGS Mineral Industry Surveys and USGS Minerals Yearbook chapters—mineral commodity, State, and country—can be retrieved over the Internet at URL <http://minerals.usgs.gov/minerals>.

²Lee Wilder, Public Outreach Coordinator for the New Hampshire Geological Survey, authored the text of the State's mineral industry information provided by that agency.

Commodity Review

Industrial Minerals

Aggregates (Sand and Gravel, Construction, and Stone, Crushed).—In 2007, demand for construction sand and gravel and crushed stone remained constant for the first half of the year, but began to decrease in the third and fourth quarters in response to sharply higher diesel fuel and liquid asphalt costs and the effects these higher prices had on projects that were ongoing and in future planned projects.

The number of public projects declined sharply as the State's highway and public works construction project lists were reduced. The private project market remained more-or-less stable because of ongoing work. Applications for building permits and other regulatory authorizations for new projects also began to decrease in the second half of the year in response to these same influences and as the availability of relatively inexpensive credit increasingly became hard to find. At yearend, a tentative base rate of construction activity was underway in the State, with no pickup in this rate of activity expected until fuel and construction material prices could begin to return to more feasible levels.

Prices for sand, gravel, and stone-based aggregates remained stable or increased slightly, particularly in the second half of the year, in response to the higher diesel fuel costs. However, producers were unable to increase their prices sufficiently to completely offset these higher costs as demand began to weaken at about the same time. The only users of these mineral commodities not significantly affected were the very small-project contractors whose pricing and quoting procedures were much more flexible than those otherwise subject to detailed scrutiny by State, such as the New Hampshire Department of Transportation or local agencies.

Resources of construction sand and gravel continued to become depleted, although the speed of such depletion was slowing as exploitation and utilization rates also decreased. Resources of stone-based aggregates, however, remained abundant and largely unexploited on a Statewide basis, and the trend away from exploiting granular aggregate resources in favor of these stone-based sources continued, albeit more slowly than in recent years. Applications for new pit excavations and quarries remained steady during the year, as also did the rate of complaints about blasting, dust, noise, and trucks.

Looking forward, the industry was expected to remain stable at a relatively low level of activity and output until the demand markets improve, most likely will start to occur as fuel and value-added materials costs, such as that of liquid asphalt, begin a return to more manageable levels.

Clays and Glacial Till.—New Hampshire's extensive marine and lacustrine clays were only being used as an ondemand local resource, as borrow material for the base of land fills, the lining

of ponds, and the core of dams. Some glacial tills that were rich in silt and clay were also used for the same purposes.

Construction demands for glacial till lessened. An existing sand, gravel, and aggregate operation in the west central portion of the State continued processing till from a large exposure, near the company's aggregate pit. This processed till continued to find a market as a resurfacing material for dirt roads and in highway shoulder work because it compacted well. Clay-rich tills were used where material of low permeability was needed.

Stone, Dimension.—The demand in 2007 for the State's quarried dimension stone increased slightly from that of 2006. The stone removed was largely cut into curbing and landscape stone. Dimension stone quarries continued to operate in Concord, Milford, and Sunapee. These operations quarried the fine-grained, gray Concord granite. An operation, recently operating in the southwestern part of the State in the town of Alstead, cut a granite gneiss, which the company marketed as "Green Mountain Granite." The granite was produced primarily as a veneer stone; large slabs and blocks of the stone were very suitable for polished or thermaled architectural dimension stone.

Government Programs and Activities

Federal and State Cooperative Mapping

The NHGS continued to be active in the STATEMAP component of the National Cooperative Geological Mapping Program with various map projects in the works. STATEMAP is a component of the congressionally mandated National Cooperative Geologic Mapping Program (NCGMP), through which the USGS distributes Federal funds to support geologic mapping efforts through a competitive funding process. The NCGMP has three primary components: (1) FEDMAP, which funds Federal geologic mapping projects, (2) STATEMAP, which is a matching-funds grant program with State geological surveys, and (3) EDMAP, a matching-funds grant program with universities that has a goal to train the next generation of geologic mappers. In 2007, as part of STATEMAP, the surficial geology of the Gilmanton Ironworks (Tile 125) and Weare (Tile 163) quadrangles were mapped at the 1:24,000 scale. The bedrock geology of the Dublin (Tile 176), Marlborough (Tile 175), Monadnock Mountain (Tile 192), Peterborough North (Tile 177), Peterborough South (Tile 193), and the Troy (Tile 191) 1:24,000 quadrangles were also mapped.

State Government

Groundwater.—As was the case with many other States, New Hampshire was realizing the need to increasingly protect existing and future groundwater supplies from the effects of development. With the continued increase in rural housing and the commercial demands for bottling and processing water, the need for protecting groundwater aquifers was reaching critical proportions. Many of the State's best aquifers underlay housing or infrastructure, as these aquifers were located under and near to stream valleys, where building is particularly convenient and relatively easy. Demand continued for NHGS geologic mapping products that provided reliable aquifer information. Registered groundwater users increased by 14 new users in 2007. The NHGS database had 880 registered users.

In 2007, the NHGS continued the planning of its expansion of the groundwater monitoring network. This included the planned drilling of a series of additional bedrock wells, the current network contained only one well. By adding additional bedrock wells, an expanded network could better serve as an indicator of regional hydrologic conditions, in the bedrock as well as in the overburden. In addition to expanding the geographic coverage of the network, the NHGS hoped to gather long-term data on the ambient conditions in the State's major bedrock formation aquifers.

NHGS Outreach.—The NHGS continued public outreach by answering inquiries regarding the State's bedrock, general geology and geologic information, groundwater, minerals, and surficial materials. Geologic inquiries came in the form of emails, telephone calls, and visitors. Outreach and education efforts included classroom presentations and public lectures; participation in conferences, field days, and workshops; participation in Earth Science Week; and staff working with State and local governments. All inquiries may be sent to geology@des.state.nh.us.

The Survey's Lunchtime Lecture Series continued to increase in popularity. Lectures were focused on areas of current geologic interest, often featuring prominent speakers. Increasingly, NHGS publications and maps are being scanned and are intended to be made available in electronic format. Publications on the State's minerals, bedrock, surficial geology, and groundwater resources may be obtained by contacting the Public Information Center of the Department of Environmental Services at: <http://des.nh.gov/organization/commissioner/pip/publications/geologic/index.htm>.

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN NEW HAMPSHIRE^{1,2}

(Thousand metric tons and thousand dollars)

Mineral	2005		2006		2007	
	Quantity	Value	Quantity	Value	Quantity	Value
Gemstones, natural	NA	6	NA	6	NA	6
Sand and gravel, construction	8,400	47,400	9,500	61,600	7,940	49,000
Stone:						
Crushed	5,100	40,900	6,440 ^r	55,400 ^r	5,210	68,600
Dimension, granite	W	W	W	W	W	W
Total	XX	88,200	XX	117,000 ^r	XX	118,000

^rRevised. NA Not available. W Withheld to avoid disclosing company proprietary data. XX Not applicable.

¹Production as measured by mine shipments, sales, or marketable production (including consumption by producers).

²Data are rounded to no more than three significant digits; may not add to totals shown.

TABLE 2
NEW HAMPSHIRE: CRUSHED STONE SOLD OR USED, BY TYPE¹

Type	2006			2007		
	Number of quarries	Quantity (thousand metric tons)	Value (thousands)	Number of quarries	Quantity (thousand metric tons)	Value (thousands)
Granite	11 ^r	3,090 ^r	\$27,400 ^r	8	1,910	\$27,000
Traprock	7	3,300	27,600	7	3,260	41,100
Miscellaneous stone	1	50	474	1	45	590
Total	XX	6,440 ^r	55,400 ^r	XX	5,210	68,600

^rRevised. XX Not applicable.

¹Data are rounded to no more than three significant digits; may not add to totals shown.

TABLE 3
NEW HAMPSHIRE: CRUSHED STONE SOLD OR USED BY PRODUCERS IN 2007, BY USE¹

(Thousand metric tons and thousand dollars)

Use	Quantity	Value
Construction:		
Coarse aggregate (+1½ inch):		
Riprap and jetty stone	W	W
Filter stone	W	W
Other coarse aggregate	39	4,090
Coarse aggregate graded:		
Bituminous aggregate (coarse)	W	W
Other graded coarse aggregate	202	2,050
Fine aggregate (¾ inch):		
Stone sand, bituminous mix or seal	W	W
Other fine aggregate	52	260
Coarse and fine aggregates, other	101	700
Unspecified: ²		
Reported	3,310	43,700
Estimated	716	9,400
Total	5,210	68,600

W Withheld to avoid disclosing company proprietary data; included in "Total."

¹Data are rounded to no more than three significant digits; may not add to totals shown.

²Reported and estimated production without a breakdown by end use.

TABLE 4
 NEW HAMPSHIRE: CONSTRUCTION SAND AND GRAVEL SOLD OR USED IN 2007,
 BY MAJOR USE CATEGORY¹

Use	Quantity (thousand metric tons)	Value (thousands)	Unit value
Concrete aggregate (including concrete sand)	246	\$2,030	\$8.26
Asphaltic concrete aggregates and other bituminous mixtures	251	2,440	9.71
Road base and coverings ²	1,040	6,390	6.16
Fill	584	2,040	3.49
Snow and ice control	66	439	6.65
Other miscellaneous uses ³	46	516	11.22
Unspecified: ⁴			
Reported	783	4,630	5.91
Estimated	4,900	30,500	6.19
Total or average	7,940	49,000	6.17

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

²Includes road and other stabilization (lime).

³Includes filtration.

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