

THE MINERAL INDUSTRY OF PUERTO RICO AND THE ADMINISTERED ISLANDS

This chapter has been prepared under a Memorandum of Understanding between the U.S. Geological Survey and the Department of Natural Resources, Commonwealth of Puerto Rico, for collecting information on all nonfuel minerals.

In 1997, the estimated value¹ of nonfuel mineral commodities produced in Puerto Rico² was \$217 million, according to the U.S. Geological Survey (USGS). Portland cement and crushed stone by value were the Commonwealth's leading nonfuel mineral commodities. If ranked in comparison with the 50 States, Puerto Rico would rank 39th in total nonfuel mineral production value. Of the U.S. Administered Islands, only crushed stone companies from the island of Guam have of late reported raw mineral production to the USGS. In 1997, portland cement, common clays, and lime values increased; industrial sand and gravel dropped in value. All other nonfuel minerals remained the same. In 1996, the major cause of the drop in Puerto Rico's nonfuel mineral value was a \$54.5 million decrease in the value of crushed stone (*table 1*).

Construction sand and gravel is produced on Puerto Rico, but production data do not appear in *table 1*. The collection and compilation of production data for construction sand and gravel mined in the Commonwealth was discontinued in 1973 by the U.S. Bureau of Mines (the Federal Government agency then responsible for the collection of domestic raw nonfuel mineral production data). This data collection ceased because of low level response by the industry (Sikich and Alonso, 1993). Regarding the U.S. Administered Islands, companies only from the Pacific Island Possessions of Guam and American Samoa have reported production to the USGS during the last several years (*table 1*).

A team of scientists from the U. S. Department of the Interior's Minerals Management Service (MMS) learned that the Commonwealth of Puerto Rico is running out of land-based sand and gravel resources and is moving towards a crisis situation for construction aggregate supplies. Island officials estimated that

¹The terms "nonfuel mineral production" and related "values" encompass variations in meaning, depending on the minerals or 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 1997 USGS mineral production data published in this chapter are estimates as of January 1998. Crushed stone and portland cement estimates are updated periodically. To obtain the most current information, please contact the appropriate USGS mineral commodity specialist. Call MINES FaxBack at (703) 648-4999 from a fax machine with a touch-tone handset, and request Document # 1000 for a telephone listing of all mineral commodity specialists, or call USGS information at (703) 648-4000 for the specialist's name and number. This telephone listing may also be retrieved over the Internet at <http://minerals.er.usgs.gov/minerals/contacts/comdir.html>. All Mineral Industry Surveys—mineral commodity, State, and country—also may be retrieved by way of MINES FaxBack or over the Internet at <http://minerals.er.usgs.gov/minerals/>.

²While a memorandum of understanding (MOU) was officially made between the U.S. Geological Survey (USGS) and the Commonwealth of Puerto Rico, MOU's were not established with the Commonwealth of the Northern Mariana Islands, U.S. Caribbean and Pacific Island Possessions, or the U.S. Trust Territory of the Pacific Islands. Nevertheless, data on nonfuel mineral production were reported to the USGS for the islands of American Samoa and Guam of the Pacific Island Possessions. These data appear in *table 1*.

land-based deposits will be exhausted by the year 2000 (People, Land, and Water, 1997-98).

The Commonwealth is currently permitting sand and gravel extraction from coastal sand dunes and parts of beaches. Alternative sources include dredging offshore deposits, manufacturing sand from crushed rock, and importing aggregates from other islands.

Because of MMS's offshore mineral expertise, the Puerto Rico Department of Natural and Environmental Resources (DNER) officially requested that the Service review the island's sand and gravel supply situation, assess the feasibility of developing the island's offshore sand resources for construction aggregate materials, and recommend environmental studies to assess potential adverse impacts on the environment should the Commonwealth decide to proceed with offshore mineral development.

MMS subsequently prepared a report which details recommendations on how best to proceed with leasing and development of three of the island's largest offshore sand deposits. The report focused on physical oceanographic and biologic studies needed to assess the environmental consequences associated with the mining of the deposits, including cost estimates and length of time to complete.

The costs of such studies would be borne by the Government of Puerto Rico. However, MMS expressed its willingness to serve as a consultant to the island's DNER and to help in contracting for the recommended studies. Commonwealth officials are currently reviewing the MMS report and evaluating the options for mining the island's offshore sand and gravel deposits.

Metals have not been mined in Puerto Rico since the Juncos iron mine closed in 1953; prospects for resuming metal mining in the near future do not appear to be likely. However, as noted in a publication of the former U.S. Bureau of Mines regarding the Commonwealth of Puerto Rico, metal occurrences are common on the island and the possibility of future development of an economic metal deposit should not be completely discounted.

References Cited

- Sikich, S. W., and Alonso, R. M., 1993, The Mineral Industries of Puerto Rico, Northern Marianas, Island Possessions, and Trust Territory: U. S. Bureau of Mines Minerals Yearbook 1992, v. 2, p. 467-468 and 470.
- People, Land, and Water, 1997, Working With America: Evaluating Puerto Rico's Sand and Gravel Resources, The U.S. Department of the Interior, December 1997-January 1998, p. 25.

TABLE 1
NONFUEL RAW MINERAL PRODUCTION IN THE COMMONWEALTH OF PUERTO RICO AND ISLANDS ADMINISTERED BY
THE UNITED STATES 1/ 2/

(Thousand metric tons and thousand dollars unless otherwise specified)

Mineral	1995		1996		1997 p/	
	Quantity	Value	Quantity	Value	Quantity	Value
Puerto Rico:						
Cement, portland	1,410	W	1,550	W	1,580	W
Lime	23	2,970	38	5,050	38	5,080
Salt	--	--	45	1,500	45	1,500
Stone, crushed	15,300	107,000	13,200	52,500	13,200	52,500
Combined value of clays (common), sand and gravel (industrial), stone (dimension marble), and values indicated by symbol W	XX	146,000	XX	153,000	XX	158,000
Total	XX	256,000	XX	212,000	XX	217,000
Administered Islands:						
American Samoa: Stone, crushed	(3/)	(3/)	--	--	--	--
Guam: Stone, crushed	2,060	17,400	1,660	13,800	1,600	13,800
Total 4/	XX	17,400	XX	13,800	XX	13,800

p/ Preliminary. W Withheld to avoid disclosing company proprietary data; value included with "Combined value" data. XX Not applicable.

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

2/ Data are rounded to three significant digits; may not add to totals shown.

3/ Withheld to avoid disclosing company proprietary data.

4/ Total does not include values of items withheld.