2005 New York Mined Reclamation Program At a Glance

Active Mines
2,249

Approx. Value
$1.1 Billion

Affected & Reclaimed Land

Net Affected Acreage	48,859
Life-of-Mine Acreage	112,658
Reclaimed, 2005	1,331
Reclaimed Since 1975	24,450

Owner Type

Industry	1,759
Government	490
- Local Govt.	474
- State Govt.	16

U.S. Quantity Rank

Wollastonite	1st
Garnet	1st
Salt	3rd
Talc	4th

Common Mine Types

Sand & Gravel	1,869
Limestone (dolostone)	98
Bluestone	59
Sandstone	23

Financial Security
For Reclamation
$107,514,079

Annual Regulatory Fees
$2,821,800

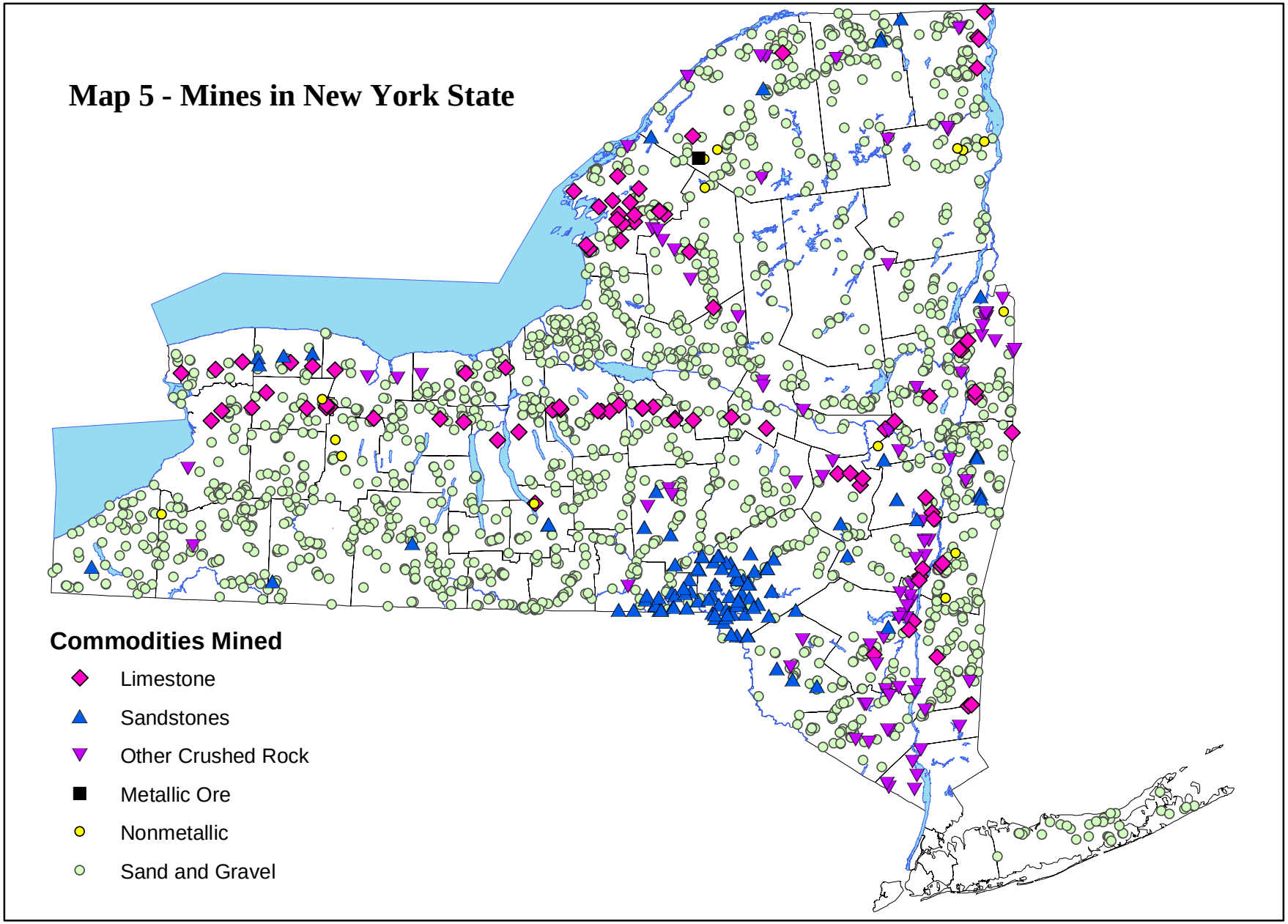
Regulated Vs. Unregulated Mines

DEC's statistics in this Annual Report cover only mines regulated under the Mined Land Reclamation Law as described at the right. New York also has many unregulated mines (active & abandoned) that fall outside the law's jurisdiction. Most of these are small mines and/or mines that predate the 1975 law.

Mines need a permit under the Mined Land Reclamation Law if they remove:

- More than 1,000 tons or 750 cubic yards of minerals in 12 consecutive months.
- More than 100 cubic yards of minerals in or adjacent to any waterbody not classified as "protected" by ECL Article 15.

Lands affected by mining before 1975 and not re-affected by later mining are exempt from the Mined Land Reclamation Law.


Map 5 - Mines in New York State
Commodities Mined
Limestone
Sandstones
Other Crushed Rock
Metallic Ore
Nonmetallic
Sand and Gravel

Mined Land Program Overview

Types of Mines in New York

In 2005 New York had 2,249 active mines. The vast majority of these mines produce sand and gravel or other surficial deposits such as glacial till, clay or topsoil. However, New York has roughly 250 hardrock mines that produce materials ranging from limestone, shale and salt, to less common products such as wollastonite and talc. Most of the State's hardrock mines are surface quarries, but there are also a few active underground mines.

Permits Issued 2005

In 2005 staff issued 66 permits for new mines and 345 renewals or modifications, for a total of 411 permits (see Table 6). Table 7 shows the top types of new mines permitted.

Mining permits are issued for a term of five years or less and must be renewed. A renewal permit simply authorizes continued operation of the mine.

A modification permit allows changes such as expansion of the mine's surface area, mining deeper, or addition of processing equipment. Permit modifications always involve extra review and frequently require an environmental impact statement and public hearing.

Geographic Distribution of Mines

Map 5 on page 24 shows that mines can be found statewide; in 2005 there were active mines in 56 of New York's 62 counties. However, the map does not convey the relatively small percentage of the State's land surface devoted to mining.

The wide variation in county size means comparisons of the acreage under permit in each county can be misleading. For example, St. Lawrence, the State's largest county at 1,718,848 square acres, is 15 times larger than Rockland County. While St. Lawrence County had a relatively high total of 2,097 net affected acres under mining permit in 2005, that represented just 0.12% of the County's land area.

Therefore, Table 8 ranks counties by the percent of their land surface under permit. This table shows that mining activity is concentrated near heavily populated areas which require larger quantities of mineral resources for roads and buildings. In 2005 just 7 counties had more than 0.30% of their land surface under a mining permit (Albany, Dutchess, Genesee, Onondaga, Ontario, Rensselaer, Rockland) with a range of 0.36 to 0.44%. For most of the counties with active mines, less than 0.25% of their land is covered by mining permits.

Table 6 - Permits 2001 to 2005

	2001	2002	2003	2004	2005
New Permits	71	56	51	55	66
Renewals & Modifications	307	367	538	420	345
Total Permits	378	423	589	475	411

Table 7 - Commodity Type New Mines Permitted, 2005

Sand & Gravel	53
Shale	6
Bluestone	4
Granite	1
Limestone	1
Slate	1

Owner Type

In 2005 industry operators owned 1,759 mines or roughly three-fourths of the mines in New York State. Most of the government mines belong to highway departments that use the material for road maintenance.

In 2005 there were 56 county-owned mines and 418 belonging to towns, villages and other small local government entities.

In addition to owning roughly one quarter of the mines in New York State, government agencies at all levels purchase significant quantities of sand, gravel and other aggregates from commercial mines.

Annual Regulatory Fees

In 2005 the Division collected $2,604,850 in annual regulatory fees. Acreage-based fees are collected for individual, industry and state-owned mines. County, town, village and other local government mines are exempt. The fees support the mined land regulatory program. Database enhancements now allow staff to more closely monitor payment histories, review compliance and conduct fee enforcement.

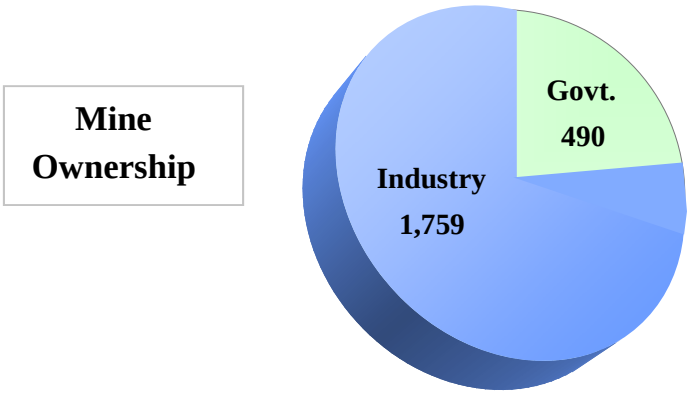


Table 8 - Counties with Highest Percentage of Land Under Mining Permit, 2005

County	Population Ctr. Nearby	Active Mines	Net Affected Acreage	Land Percent
Rockland	New York City	4	493	0.44%
Onondaga	Syracuse	44	2,022	0.41%
Genesee	Buffalo	25	1,260	0.40%
Dutchess	New York City	60	1,944	0.38%
Ontario	Rochester	43	1,583	0.38%
Rensselaer	Capital/ Tri-City	57	1,569	0.37%
Albany	Capital/ Tri-City	18	1,213	0.36%

Table 9 - Number of Permits and Acreage by County

County	2005 New Permits[1]		Total Permits[1]	
	Number	Acres[2]	Number	Acres[2]
Albany	0	0	18	1213
Allegany	3	14	51	503
Broome	2	8	42	791
Cattaraugus	1	3	73	1820
Cayuga	1	12	29	394
Chautauqua	0	0	57	443
Chemung	0	0	28	490
Chenango	2	16	44	712
Clinton	2	8	60	842
Columbia	0	0	38	1010
Cortland	0	0	20	378
Delaware	4	27	84	803
Dutchess	0	0	60	1944
Erie	0	0	52	1948

County	2005 New Permits[1]		Total Permits[1]	
	Number	Acres[2]	Number	Acres[2]
Essex	0	0	45	653
Franklin	1	10	71	632
Fulton	1	6	27	323
Genesee	0	0	25	1260
Greene	0	0	23	1005
Hamilton	1	4	22	122
Herkimer	1	15	53	1227
Jefferson	2	36	89	1744
Lewis	8	44	53	560
Livingston	0	0	26	1163
Madison	2	96	25	452
Monroe	0	0	14	793
Montgomery	0	0	9	535
Niagara	0	0	19	717

1 Includes new, renewal and modified permits
2 Net affected acreage

Table 9 - Number of Permits and Acreage by County, (continued)

County	2005 New Permits[1]		Total Permits[1]	
	Number	Acres[2]	Number	Acres[2]
Oneida	1	31	65	1260
Onondaga	0	0	44	2022
Ontario	0	0	43	1583
Orange	0	0	50	827
Orleans	0	0	20	630
Oswego	4	36	109	1581
Otsego	3	17	36	505
Putnam	0	0	4	70
Rensselaer	2	11	57	1569
Rockland	0	0	4	493
Saratoga	2	19	66	1414
Schenectady	0	0	8	222
Schoharie	2	12	19	480
Schuyler	0	0	11	266

County	2005 New Permits[1]		Total Permits[1]	
	Number	Acres[2]	Number	Acres[2]
Seneca	0	0	6	365
St. Lawrence	5	27	117	2097
Steuben	3	84	82	1883
Suffolk	2	14	39	1127
Sullivan	1	12	30	955
Tioga	4	35	39	932
Tompkins	0	0	15	519
Ulster	2	14	49	691
Warren	1	1	36	551
Washington	3	45	53	764
Wayne	0	0	47	1062
Westchester	0	0	1	4
Wyoming	0	0	26	181
Yates	0	0	13	185

1 Includes new, renewal and modified permits
2 Net affected acreage

Trends in Mine Size and Number

Mine renewal and modification permits issued in 2005 ranged in size from 1 to 939 acres. In contrast, roughly 75 percent of new mines permitted in 2005 were 10 acres or less in size. The largest new mine was the 78-acre Smith Gravel mine in Steuben County belonging to Dalrymple Gravel and Contracting Company, Inc.

Table 10 gives 2000-2005 size range information for all active mines based on net affected acreage. The table shows that the number of large mines has been increasing over time while the number of small mines has been decreasing.

The minor projects in the first row of the table are always less than five acres in size. They are subject to a simpler review process, but must comply with very strict criteria: minimum setbacks from homes and surface waters; a maximum 20-foot mine depth; no mining below water table; no hardrock (consolidated material) mining; and no on-site processing equipment, such as washing or crushing machines.

Mine Acreage Types and Statistics

Net Affected Acreage - Net affected acreage is the total affected acreage ever covered under a mined land permit minus the acreage reclaimed over the years. In 2005 the total affected land that mine operators were authorized to extract minerals from under their current permits was 48,859 acres.

Life-of-Mine Acreage - Operators must indicate the total area that they expect to mine under past, current and future permits for a site. In 2005 this total life-of-mine area, which also includes past reclaimed acreage, was 112,658 acres.

Reclaimed Acres - In 2005 Mined Land staff approved final reclamation of 803 acres at 91 closed mines and concurrent reclamation of 528 acres at 52 operating mines. Table 11 on page 32 summarizes 2005 reclamation by County. Since 1975 a total of 24,450 acres of mined land have been reclaimed. This was an increase of 1,331 acres over the previous year.

Table 10 - Range of Existing Mine Sizes, 2000-2005*

	2000	2001	2002	2003	2004	2005
Minor Projects	85	87	82	80	78	81
0-5 Acres	901	852	814	751	712	683
6-10 Acres	603	605	584	549	532	531
11-20 Acres	436	441	449	446	442	439
21-30 Acres	155	166	178	172	179	179
>30 Acres	295	308	310	319	329	336
Total Mines	2,475	2,459	2,417	2,317	2,272	2,249

* Net Affected Acres

Reclamation and Financial Security

Reclaimed Land Uses

Final uses of mined land can vary considerably depending on location, size and depth of the site, surrounding land uses and local zoning. Farmland and pasture are two of the most common reclamation objectives in New York State, but mined land is also reclaimed to residential, forestry, wildlife, recreational, commercial and industrial uses.

Reclamation takes two forms based on timing of the work - concurrent or final. Concurrent reclamation is reclamation of an affected or mined-out area while resources are still being extracted from other parts of the mine site.

The Division of Mineral Resources strongly promotes concurrent reclamation, particularly for mines over 10 acres. Concurrent reclamation is almost always economically feasible and has a number of advantages. Chief among these are the reduced potential for negative environmental impacts (dust, erosion, sedimentation) and the improved standing of the mine in the eyes of the surrounding community.

Financial Security

At the end of 2005 the Division held $107.5 million in financial security posted by mine operators to guarantee the reclamation of mined land. This was an increase of $8.5 million from 2004.

If an operator fails to reclaim a mine, DEC claims the financial security and uses it to reclaim the land. However, recent reclamation experiences show that posted bond amounts have not kept pace with rising costs over the years. The Division started a detailed analysis of financial security on file in 2004 and found the average $2,334 per acre was insufficient to cover complete reclamation in most cases. The law authorizes DEC to increase financial security requirements if necessary.

DEC Mine Reclamation

In 2005 the Divisions of Mineral Resources and Operations worked on reclaiming two mines with seized financial security. The mines were in Chautauqua and Chenango counties. The Chautauqua County 5-acre site had been abandoned in 2004. The 26-acre Chenango County site was the largest mine reclamation project undertaken to date by the Department.

2005 NYS Mined Land Reclamation Award

A mine in the Town of Dix, Schuyler County called It's Greener Now won the 2005 New York State Mined Land Reclamation Award. The company voluntarily reclaimed 60 acres mined by someone else across the road from their Padua Ridge sand and gravel facility.

The graded and revegetated mine now supports a herd of 32 elk. The elk farm will eventually be open to the public and its close proximity to Watkins Glen State Park should help make it a popular tourist destination.

The attractive entrance to the elk farm is just a small part of this award winning reclamation effort.

2005 Reclamation Highlights

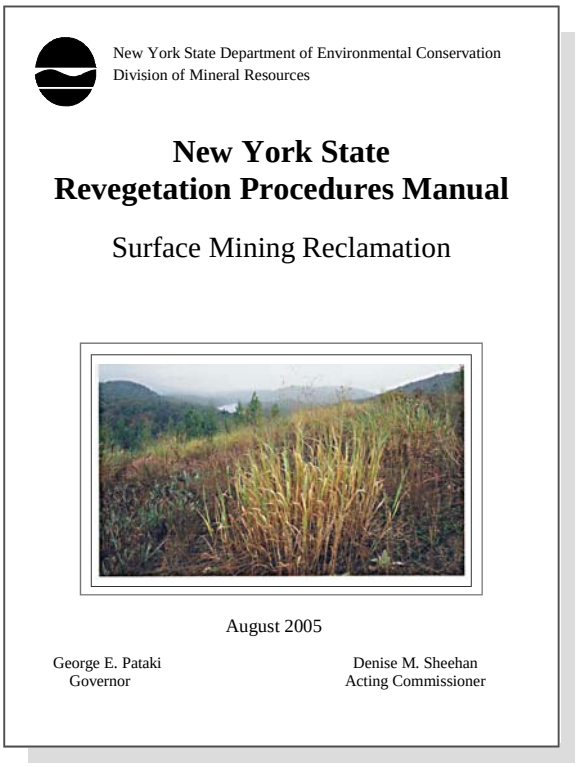
New Revegetation Manual

The Division released a Revegetation Procedures Manual in 2005 (posted at http://www.dec.state.ny.us/website/dmn/mines/revegindex.html).

This 91-page guide will help mine operators tailor planting decisions to the specific features of their site and the final intended use of the reclaimed land. This publication reflects the combined experience of Mined Land staff statewide plus information from the U.S. Department of Agriculture (USDA) Plants database, various Cornell University web sites (Forages, Horticulture, Entomology), the New York State Museum, the U.S. Forest Service, the USDA Natural Resource Conservation Service and roughly 40 additional academic and web sources.

The manual discusses how to minimize the adverse impacts of mining on important soil properties that affect revegetation success.

The appendices give information on the growth rate, lifespan, uses (reclamation, wildlife, livestock) and growth requirements of the recommended plants. There are also warnings about common pitfalls that hinder reclamation and invasive species that should be avoided.


New York State Department of Environmental Conservation
Division of Mineral Resources

New York State
Revegetation Procedures Manual

Surface Mining Reclamation

August 2005

George E. Pataki
Governor

Denise M. Sheehan
Acting Commissioner

The manual is aimed at mine operators, but will also be useful to other landowners, land-use planners and consultants who want to restore disturbed land.

Other Notable Reclamation

Lafarge's Freedom Butterfly Project at its mine in Cattaraugus County won the company's 2005 Environmental Excellence Award. The Region 9 mine topped the competition from other mines in Lafarge's North American Division which covers over 1,000 facilities in 32 states, Canada and Mexico. The project also won a national award from the Wildlife Habitat Council for its protection of butterfly and other pollinator species.

Country Side Sand & Gravel dedicated a new public fishing site on a reclaimed portion of its mine in Cattaraugus County. The company held a picnic and an all-day fishing event on the 400 acres of excavated lakes at the mine.

Fisherman enjoying Country Side's public fishing site.

Table 11 - Reclamation Acreage Summary, 2005*

County	Concurrent	Final	Total
Albany	-	5.0	5.0
Allegany	-	110.1	110.1
Broome	49.0	6.0	55.0
Cattaraugus	-	11.0	11.0
Cayuga	-	12.0	12.0
Chautauqua	-	23.0	23.0
Chemung	55.5	4.9	60.4
Chenango	4.0	15.0	19.0
Clinton	2.0	19.0	21.0
Columbia	-	6.0	6.0
Cortland	25.3	1.0	26.3
Delaware	2.0	-	2.0
Dutchess	19.5	20.0	39.5
Erie	3.5	-	3.5
Essex	-	27.9	27.9
Franklin	7.0	-	7.0
Fulton	6.5	5.0	11.5
Genessee	-	24.5	24.5
Herkimer	2.0	9.0	11.0
Jefferson	8.9	1.0	9.9
Lewis	-	26.6	26.6
Livingston	39.7	-	39.7
Madison	-	10.0	10.0
Monroe	59.5	-	59.5

County	Concurrent	Final	Total
Montgomery	-	26.0	26.0
Niagara	-	134.0	134.0
Oneida	4.8	-	4.8
Onondaga	-	1.0	1.0
Ontario	64.7	41.0	105.7
Orange	16.5	38.0	54.5
Orleans	4.0	0.0	4.0
Oswego	18.0	5.0	23.0
Putnam	6.9	-	6.9
Rensselaer	2.0	-	2.0
Saratoga	10.1	23.5	33.6
Schuyler	-	7.3	7.3
St. Lawrence	6.7	29.1	35.8
Steuben	38.0	-	38.0
Suffolk	54.0	71.0	125.0
Sullivan	-	18.5	18.5
Tioga	-	12.0	12.0
Tompkins	-	-	4.0
Ulster	5.0	8.0	13.0
Warren	-	14.0	14.0
Washington	9.0	26.0	35.0
Wayne	3.5	-	3.5
Wyoming	-	7.4	7.4
Statewide	**527.6**	**802.8**	**1,330.4**

* Figures rounded so totals may not be exact

Compliance and Enforcement

Inspections

In 2005 Mined Land staff performed 1,982 mine inspections and traveled 210,279 miles. Staff inspect mine sites:

- during permit application review,
- during the operating phase for general compliance,
- to ensure that violations are remediated as required,
- to ensure that reclamation complies with requirements, and
- to investigate complaints.

Violations and Fines

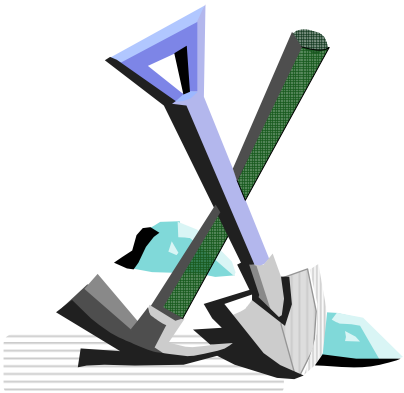
Violations are handled with a mixture of enforcement tools, remediation requirements and penalties. In 2005 the Mined Land Program collected $116,825 in fines and penalties.

At right is an example of severe erosion and slumping caused by a mine operator's failure to install adequate erosion control measures. As required by the Department, the operator restored and revegetated the area.

Remediation After Violation

Before

After



For More Information on the Mined Land Reclamation Program See the FLASH presentation at

http://www.dec.state.ny.us/website/dmn