

# Executive Summary

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*A.D. Makepeace Cranberry Co.,  
46 Federal Road, Carver MA*

**Cranberry agriculture?  
Or sand and gravel  
mining?**

# Part I: Executive Summary

This report is an investigation into the sand and gravel mining industry and its impacts on drinking water supplies, waterways, forests, biodiversity, the health and wellbeing of residents, and Indigenous Native American history and culture. It calls for a complete moratorium on sand and gravel mining, a thorough assessment of the damage caused to date, enforcement of environmental laws and remediation.

Sand, gravel and aggregates are the second most extracted resource on earth after water by volume. These materials, especially silica sand, are used in concrete, glass, silicon chips and endless consumer projects. There is a global shortage of this commodity. Southeastern Massachusetts has significant deposits of this global commodity and large landowners who are exploiting this resource.

The sand and gravel industry operates behind a veil of secrecy made possible by political corruption and weak regulatory oversight. For decades, local governments have allowed companies to evade regulations. An interconnected network of individuals and mining operators carry out projects that cause significant damage to the environment and communities. In recent years, the pace of mining has accelerated due to skyrocketing prices and a global shortage of sand. Local residents are exposing the regulatory failures and the damage. The scope and scale of the mining demands that state and federal officials step in to address the issues.

The serious environmental impacts include permanent removal of forests, sand and gravel that filter and protect the region's underground drinking water aquifer. At least 110 mining sites are in the Plymouth-Carver Aquifer area. This aquifer is the only drinking water supply for seven towns and more than 200,000 people. There are no environmental impact reviews. Some operations dredge in the aquifer to extract sand and gravel, exposing it to contamination.

The report's key findings are:

- Since about 1990 more than 110 sand and gravel mining operations have:
  - Stripped 2,600 acres of forested land down to bare soil or below and into the aquifer and irreversibly leveled topography,

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- Extracted at least 61 million cubic yards of sand and gravel,
  - Exported at least 2.5 million truckloads of sand and gravel, enough to circumnavigate the globe 1.3 times<sup>1</sup>,
  - Destroyed some of the state's most significant areas of biodiversity including globally rare Pine Barrens forests, one of three on Earth, and impacted wetlands, rivers and streams,
  - Harmed the public health and well being, and
  - Destroyed evidence of Native American Indigenous use and occupation of the land.
- Sand and gravel mining extraction is regulated only on the municipal level. Cranberry landowners and developers exploit zoning and land use exemptions for “cranberry agriculture” or “subdivision preparation.”
  - The region's cranberry industry is responsible for about 71% of the mining extraction, conducted under the claim that this is protected “agriculture.”
  - The state's largest landowner, A.D. Makepeace Cranberry Co. and its subsidiary Read Custom Soils, LLC, are responsible for about half of the total volume of sand and gravel mined by the cranberry industry.
  - As of the date of this report, sand mining projects for an additional 6.7 million cubic yards of sand are proposed in Wareham, Kingston, Plymouth, Halifax, and Carver.
  - The global shortage of sand has driven profits up 5-fold in the last 5 years.

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<sup>1</sup> A tractor trailer truck holds 20 to 24 cubic yards. A truck is 70 to 80 feet long. A line of trucks to hold 61 million cubic yards is at least 31,700 miles long. The circumference of the globe is generally considered to be 24,885 miles. The line of trucks that have exported sand and gravel from Southeastern Massachusetts since about 1990 would circle the globe once and then at least another third of the way around.

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- State and federal agricultural and solar energy subsidies play a key role in incentivizing sand and gravel mining.
- Remedial measures must address damage and future risks to the Plymouth-Carver Aquifer and other resources including public health impacts.

The report's estimate of 110 mining sites and approximately 61 million cubic yards of mined sand is very likely an underestimate. Inadequate oversight by local boards and committees and the absence of state level regulation allows much of the mining to go undetected and unreported. Further investigation is necessary.

The web based version of the report and the research behind it is at the website [sandwarssoutheasternma.org](http://sandwarssoutheasternma.org)

The report is summarized in a ten minute film *Cranberry Country Sand Wars* available on YouTube: Save the Pine Barrens Southeastern Massachusetts.

**Appendix 1** lists over 110 mining sites

**Appendix 2** has a Site Profile for each location

Find the Appendices at:

[www.sandwarssoutheasternma.org](http://www.sandwarssoutheasternma.org)

with an interactive map

**“Earth: all forms of soil, including but not limited to clay, gravel, hard pan, loam, peat, rock or sand”**

*-Town of Carver Earth Removal Bylaw, Definitions*

Watch drone footage of many sites on

**You Tube:** *Save the Pine Barrens  
Southeastern Massachusetts.*

Searchable playlists will locate a site,  
public hearing, or town meeting.

**Find photos at**

[www.jonesriver.smugmug.com/  
communitylandandwatercoalition](http://www.jonesriver.smugmug.com/communitylandandwatercoalition)

Read more in depth about the issues at

[www.communitylandandwater.org](http://www.communitylandandwater.org)

**Sand mining is “silently creating a major  
environmental crisis”**

*-United Nations Environment Program*