

## Water Overuse

Human Health Risk

Ecological Risk

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Socioeconomic Risk

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When more water is used than can be replenished through precipitation, a water supply deficit occurs. As ground water levels are depleted, the risk of salt water intrusion increases, which can contaminate drinking water. Depletion of underground aquifers can also affect stream flows and lake levels, resulting in decreased water quality and associated impacts to the ecological community. Eight of the 21 water planning regions in New Jersey are currently experiencing water supply deficits and while there is not yet a statewide deficit, one is projected to develop by 2040 if population growth continues.

### What's at risk?

Water supply deficits are experienced in several portions of the state. Areas include Camden/Delaware tributaries, Mullica River, South River, Metedeconk Creek/Toms River, Maurice River, Hackensack River, Cape May coastal area, and lower Passaic/Rahway rivers. Deficits range from less than 10 million gallons per day (MGD) to 56 MGD in the Mullica River region. Both marine (estuarine) and freshwater systems are at risk, and wetlands are particularly vulnerable to ecological impacts.

### What are the ecological impacts in New Jersey?

Water overuse can lead to loss or reduction in stream flow, saltwater intrusion, and changes in estuarine salinities. Consumptive use or diversions of water impact downstream ecosystems as freshwater stream flows are reduced from natural levels. Flow conditions and salinity levels greatly influence the suitability of habitat for amphibians and aquatic organisms, and the magnitude of the impact varies depending on the duration of the reductions. Potential impacts include loss of specific habitat (such as pools), along with changes in the ecological community that result from the differential abilities of various species to adapt to changes in flows or salinities. Data documenting direct impacts to New Jersey ecosystems are limited—a survey of instream flow requirements and comparison with seasonal flows is needed to assess the impacts of water use on New Jersey streams.

### What are the socioeconomic impacts in New Jersey?

Costs required for capital improvements to address current and projected shortages are expected to total over \$300 million. Major improvements are planned for the Raritan/South River region (\$128 million), Camden/Delaware (\$170 million), and Cape May (\$10 million). Higher water rates could potentially affect property values, but there is little evidence to demonstrate this. Water scarcity could also have a localized impact on employment in sectors such as agriculture which are highly dependent on water. Again, there is little evidence available to evaluate this possibility. If left unremediated, large-scale saltwater intrusion could create additional impacts. Since 1940, more than 120 wells in Cape May County have been abandoned because of saltwater intrusion.

### What's being done?

The New Jersey State Water Supply Plan was formulated to guide water use management over the next 20 years. In addition to capital improvement projects designed to increase available supplies, the Plan also calls for water conservation and sustainable use. Water diversion is regulated by DEP, however, there are currently no requirements to protect ecological quality. Policies designed to encourage conservation could reduce long-term demand for water, and such measures could potentially be more cost effective than new construction. Research is currently underway to develop ecological flow goals and methodologies for New Jersey streams.