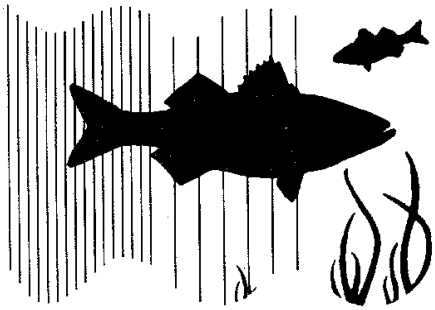

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Statement on: **CLEAN WATER FOR NEW JERSEY**
New Jersey Clean Water Council &
New Jersey Water Supply Advisory Council

Date: **31 October 2005**
Analysts: **Ella F. Filippone, Ph.D., Executive Administrator &**
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The most critical issue that the people of New Jersey need to consider with respect to water resources for New Jersey is whether or not there will be sufficient water supplies for millions of people at affordable costs in the future. The Passaic River Coalition (PRC) recommends that the Councils focus on three interdependent aspects of this issue. These aspects address (1) quantity, (2) quality, and (3) cost.

First and foremost is the need to reevaluate the "safe" or sustainable yields of clean water supplies available to the people of New Jersey. The 1996 New Jersey Statewide Water Supply Plan states that "there is a need to reanalyze the definition and the methods the NJDEP employs to quantify water availability to avoid overuse."[1] Almost ten years have passed, and this recommendation has not been followed. It must be the number one recommendation coming from these hearings. Ground water is being over pumped in some areas, so stream base flows are declining in the Highlands, and salt water is intruding in the coastal plain. Development of the land has reduced recharge and increased flooding. Consumptive uses of water in the Passaic River Basin have led to a 32% decrease in flow in the Passaic River at Little Falls over the past 80 years. In the Hackensack River below the Oradell dam, the decrease in flow has been about 70%, and sometimes there is no flow of fresh water into the Hackensack Meadowlands. How much water should we leave in our streams for fish and birds and other life that depends upon fresh water to survive? At present ground water and surface water are regulated separately, but as the Chief Hydrologist of the US Geological Survey (USGS) notes "effective land and water management requires a clear understanding of the linkages between ground water and surface

[1] New Jersey Department of Environmental Protection, Office of Environmental Planning. 1996. The Vital Resource, New Jersey Statewide Water Supply Plan. Page 155.

water."[2] Calculations of "safe" yield need to be based on a holistic, ecologic view of the availability of water for consumptive uses that reflects current and future conditions of the land, and that is conceptually consistent for all of New Jersey. A study to develop a new Statewide Water Supply Plan is critical, and a core component of this study should be the evaluation of sustainable yields on clean water supplies.

The second critical issue is how to keep our water clean enough to drink, fish, and swim. "Current research on the effects of urban and agricultural runoff in raw water sources on public health and recognition of the high costs and limitations of technological fixes has lead water supply and watershed managers to revisit two principles that were taken for granted a century ago: (1) the public's water supply should be reasonably clean to begin with; (2) forests and natural lands are critical to the quantity and quality of water supplies."[3] A recent survey of water supply facilities indicates that water treatment costs increase as forest cover in the watershed that is the source of the water decreases.[4] Much of this increase in treatment costs can be attributed to increased levels of dissolved organic matter that comes from decomposing algae and other plant material in the water. We are currently struggling with how best to address the problems of hyper-eutrophication in reservoirs, lakes, rivers, and estuaries. Under the watershed management program, considerable evaluation was given to the issue of nutrients. A variety of approaches were discussed, which would require NJ DEP to interact with treatment facilities and establish new processes within the regulatory system. Unfortunately, these efforts never moved forward toward a solution. The regulatory approaches to nutrients should be coordinated so that those processes which work do not become entangled in a legal and bureaucratic morass. Public funding to rehabilitate water supply distribution systems, upgrade sewage treatment plants, reduce combined sewer overflows, and retain and improve our "green infrastructure", which would include improving recharge, repairing our riparian buffers, Green Acres and Blue Acres activities, and protecting the Highlands and the Pinelands, should be made available. Perhaps it is time for a new, comprehensive, ecologically sensitive bond act.

Third, the biggest problem to implementing programs for clean water in New Jersey frequently revolves around the question of who pays. Natural environmental processes help to store and cleanse water that is used for water supplies. Nature provides these services for "free", and the value of these services is usually not included in the economic costs for water supplies. Attached to this statement is an excerpt from the journal *Science*, which expands on the lack of inclusion of natural "free" ecosystem services in economic evaluations.[5] The ecosystem capital that now helps to supply plentiful, clean water supplies in New Jersey is being threatened by inappropriate development of the land. As land is developed, used by people, the natural ability of the land to store water often decreases, and water quality frequently deteriorates. This results in increased economic and environmental costs for the storage, treatment, and delivery of water supplies to users.

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[2] Hirsch, Robert M., Chief Hydrologist, US Geological Survey. 1998. Ground Water and Surface Water: A Single Resource. USGS Circular 1139. Website: <http://water.usgs.gov/ogw/gwsw.html>

[3] Ernst, Caryn, Richard Gulick & Kirk Nixon. 2004. Protecting the Source: Conserving Forests to Protect Water. *Opflow*, American Water Works Association, vol. 30, no. 5, May 2004, page 4.

[4] Ernst, Caryn, Richard Gulick & Kirk Nixon. 2004. Protecting the Source: Conserving Forests to Protect Water. *Opflow*, American Water Works Association, vol. 30, no. 5, May 2004, page 4.

[5] Daily, Gretchen S., *et al.* 2000. The Value of Nature and Nature of Value. *Science*, volume 289, 21 July 2000, page 395.

The Councils should address the question of how to pay for clean and plentiful water for New Jersey in the 21st century. Recognizing that technology exists to modify discharges of nutrients from wastewater treatment plants, for example, should be addressed as to their costs, their benefit to receiving waters and ecosystems, and to public health. Utilizing the goals developed under the Watershed Management program (see attached document), the State should seek adoption by local and county governments to pursue such goals, and make financial resources available to do so. Integration of state functions with these goals is of primary importance. The importance of water resources management must become a more legally defensible component of land use in New Jersey. Thus, the establishment of a new bond act coupled with a greater recognition of the functions of the natural system and the needs of this ecosystem becomes a paradigm that closes the circle identified at the beginning of this statement.

For too many years, the issue of "who pays" has been the stumbling block to getting solutions to the requirements of the clean water initiative. All stakeholders should be encouraged to seek solutions instead of taking legal actions. The Passaic River Coalition has been vitally interested in improving water quality and assuring clean and plentiful water supplies for the future. We urge that the Councils take definitive actions to make the goals established under the Watershed Management Program become a part of the governments of New Jersey and that adequate funding be provided to reach and maintain these goals.

The Value of Nature and Nature of Value

An article in the journal *Science* makes the following observations:[6]

> The world's ecosystems are capital assets. If properly managed, they yield a flow of vital services, including the production of goods (such as seafood and timber), life support processes (such as pollination and water purification), and life-fulfilling conditions (such as beauty and serenity). Moreover, ecosystems have value in terms of the conservation of options (such as genetic diversity for future use). Often the importance of ecosystem services is widely appreciated only upon their loss. ... Worldwide, ecosystems are being protected or restored to control floods, to filter water, to enhance soil fertility, to stabilize climate, to offer human enjoyment, ... These developments all involve putting a price tag on nature, an act seen by many as risky at best. To be sure, individuals and societies already assess the value of nature implicitly in their collective decision-making, too often treating ecosystem services as "free." Until recently, this was generally safe to do; relatively speaking, ecosystem capital was abundant, and the impacts of economic activity were minimal. Ecosystem capital is becoming ever scarcer, however, so that it is now critical to understand both how to value ecosystems and the limitations of such valuations.

The Maintenance and Restoration of the Water Resources in Watershed Management Area 6[7]

Mission

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[6] Daily, Gretchen S., *et al.* 2000. The Value of Nature and Nature of Value. *Science*, volume 289, 21 July 2000, page 395.

[7] Public Advisory Committee, Watershed Management Area 6. 2002. Statement of Mission, Goals, and Objectives. Adopted in 2002.

To maintain, and to restore, as needed, a watershed that is valued for the many environmental, economic, and aesthetic benefits it provides, including clean and available ground and surface water supplies, environmentally responsible economic activities, maintenance of aquatic ecosystem health, and recreational opportunities.

Goal 1: *To recognize that public health protection is fundamental to watershed management.*

Objective 1: Maintain and improve the health of the watershed to protect public health.

Goal 2: *To have active participation in water resource management.*

- Foster local government's role in watershed management.
- Foster all stakeholder's roles in watershed management.
- Promote public education of the beneficial uses of water resources.

Objective 2: Increase environmental awareness through education for government, schools, stakeholders and the general public

Goal 3: *To have a better understanding of the dynamic interactions between the activities of people and the functioning of the ecosystems within the watershed.*

- Continue to monitor and assess the quantity and quality of surface and ground water.
- Continue to monitor and assess the interrelationships of water quality, water quantity and ecosystems.
- Continue to monitor and assess impacts of existing and proposed human activities on water resources.
- Continue to monitor and assess existing conditions by quantitative chemical, physical and biological indicators.
- Coordinate and improve data collection and evaluation and integrate research efforts within the watershed.
- Inform stakeholders about findings.

Objective 3: Foster research and assessment of the natural resources of the watershed

Goal 4.1: *To maintain and preserve the quality and quantity of current water resources within the watershed*

- *To improve the livability and habitat for people and other biota in the watershed.*
- *To protect quantities of surface and ground water for water supplies.*

Objective 4: Increase, or at a minimum, maintain recharge to ground water and ground water levels.

Objective 5: Maintain stream base flows.

Objective 6: Reduce consumptive uses of water.

Objective 7: Increase reuse of water within WMA 6.

Objective 8: Strive to sustain water supplies by considering reducing reliance on sources of water from outside WMA 6.

Goal 4.2: *To protect the quality of surface and ground water supplies.*

- Maintain or improve the existing water quality to protect it from degradation.
- Safeguard the watershed's assimilative capacity of waterborne pollutants.

- Protect the quality of existing and future wells.
- Reduce nonpoint source pollution of ground and surface waters.

Objective 9: Reduce contamination of surface and ground water.

Objective 10: Reduce, or, at a minimum, maintain existing loadings of nitrogen and phosphorus to ground water and surface water, to the extent feasible, given applicable technical, economic, social and ecologic constraints, until appropriate target levels can be established through scientific investigation.

Goal 4.3: *Improve stormwater management*

- Retrofit existing stormwater infrastructure to protect water quality and the integrity of stream corridors.
- Prevent increases in stormwater runoff volume from new development.
- Reduce, where possible, excessive runoff from existing development.
- Inventory and evaluate existing stormwater structures
- Maintain and improve existing stormwater structures.
- Maintain or decrease existing stormwater peak flows and volumes.
- Promote the use of non-structural methods of stormwater management and BMPs, including bioengineering.
- Promote use of BMPs in design of new development and redevelopment to prevent degradation of water resources.

Objective 11: Utilize BMPs to protect and improve water quality.

Goal 4.4: *Promote efforts to reduce flooding and the damage caused by flooding.*

- Promote protection of the riparian corridor from filling, vegetation loss and structures and placement of pollutants within the floodplain.
- Promote removal of old fill from the regulated flood plain.
- Promote restoration of natural systems that reduce flooding.

Objective 12: Reduce damages from flooding.

Goal 4.5: *Improve both the quantity and quality of water supplies by restoring ecosystem health.*

- Restore adversely affected areas of streams to a condition of stable, non-eroding streams.
- Maintain and restore the diverse, native vegetation in natural areas to maintain ecological and wildlife functions.

Objective 13: Improve ecological functioning of wetlands and stream corridors.

Objective 14: Maintain or improve aquatic communities and their habitats, including wetland communities.

Goal 4.6: *Promote a balance among land uses to protect water resources.*

- Sustain a balance among competing uses, anthropogenic and ecological, of water resources.
- Maintain and improve recreational capabilities of the water resources (lakes, rivers and streams).
- Preserve land through various methods, including acquisitions and easements.
- Promote the use of model environmental ordinances.

Objective 15: Develop improved guidelines for land use utilizing smart growth and sustainable development practices.

Goal 5: *To develop and implement a watershed management planning process and plan that achieves the goals cited in 1 through 4.*

- Promote coordination, reconciliation and integration of those elements of federal, state and local laws, regulations, ordinances and plans that relate to water resource management in the watershed with the watershed management plan.
- Provide processes to continue information gathering, including monitoring, planning and implementation into the future.
- Create and implement viable processes to maintain and improve water resources, both quality and quantity.
- Continually investigate adequate sources of funding to implement the goals.
- Respond collectively to issues of common interest.
- Promote government's role as a responsible partner in implementing the watershed management plan, through compliance, monitoring, enforcement, technical assistance and economic support.

Objective 16: Develop a Watershed Management Area 6 Management Plan!

The Value of Nature and Nature of Value

An article in the journal *Science* makes the following observations:[8]

> The world's ecosystems are capital assets. If properly managed, they yield a flow of vital services, including the production of goods (such as seafood and timber), life support processes (such as pollination and water purification), and life-fulfilling conditions (such as beauty and serenity). Moreover, ecosystems have value in terms of the conservation of options (such as genetic diversity for future use). Often the importance of ecosystem services is widely appreciated only upon their loss. ... Worldwide, ecosystems are being protected or restored to control floods, to filter water, to enhance soil fertility, to stabilize climate, to offer human enjoyment, ... These developments all involve putting a price tag on nature, an act seen by many as risky at best. To be sure, individuals and societies already assess the value of nature implicitly in their collective decision-making, too often treating ecosystem services as "free." Until recently, this was generally safe to do; relatively speaking, ecosystem capital was abundant, and the impacts of economic activity were minimal. Ecosystem capital is becoming ever scarcer, however, so that it is now critical to understand both how to value ecosystems and the limitations of such valuations.

[1] Daily, Gretchen S., *et al.* 2000. The Value of Nature and Nature of Value. *Science*, volume 289, 21 July 2000, page 395.

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[8] Daily, Gretchen S., *et al.* 2000. The Value of Nature and Nature of Value. *Science*, volume 289, 21 July 2000, page 395.