

## Virginia Department of Environmental Quality

"Celebrating Our Success"

April 2013



In the 20-year history of the Department of Environmental Quality, Virginians have seen a series of environmental successes that cover a wide range of natural resource protection efforts in the Commonwealth.

### Virginia's population growth

DEQ has helped bring about significant improvements for Virginia's environment. This has happened at the same time that other challenges have evolved. For example:

- Increasing population – in the past 20 years Virginia's population has increased 25 percent

### More rules from EPA

- The number of rules affecting Virginia and other states from the U.S. Environmental Protection agency has increased steadily in the past several years. At the same time, the amount of federal funding has been declining. This means increased demands on DEQ staff and resources.

### DEQ employees

- Reduced staff – DEQ staffing levels have declined 30 percent since 1993.

### Goals for the 1993 merger of Virginia's environmental agencies

- DEQ was formed April 1, 1993, to provide streamlined and coordinated environmental services to the public. One of the main goals was to strengthen Virginia's ability to protect the environment.
- DEQ's operating principles include the "7 C's": customer service, communication, commitment, closure, consistency, collaboration and certainty.
- Specific goals are outlined in the DEQ strategic plan.

### Air is cleaner

The definition of "clean" appears to be a moving target as the standards for clean air become more stringent. But Virginia's air is cleaner; we have reduced pollutants.

### Ozone levels are declining

- Over the last 30 years ozone levels have dropped, and they continue to decline. The number of high-ozone days statewide has dropped by 71 percent.
- The ozone standard was set in 1979 at 0.12 parts per million, averaged over a one-hour period. In 1997, this was revised to 0.08 ppm, eight-hour average. The current national standard is 0.075 ppm, eight-hour average.

### Downward trends for sulfur dioxide and fine particles

Sulfur dioxide emissions, a contributor to acid rain, are on a steep downward trend and now are well below the national air quality standard. The same holds true for emissions of fine particles across the state.

### Major air pollutant emissions are down more than 40 percent

The Clean Air Act set national standards for six common air pollutants: particle pollution, ground-level ozone, carbon monoxide, sulfur oxides, nitrogen oxides and lead.

- As a result of efforts across the state to control emissions from stationary and mobile sources, air pollution in Virginia has decreased by 42 percent since 1980.

### **Waterways are cleaner**

Though cleanup of polluted waters is a long-term process, Virginia is seeing key indicators of success in pollution reduction efforts.

### **Investments in clean water**

Improvements have been made to municipal wastewater treatment plants, sanitary sewers, storm water sewers, failing septic systems, animal waste structures, and other aquatic and agricultural management systems.

To reduce pollutants in Virginia's rivers, lakes and the Chesapeake Bay, significant resources have been spent. This includes:

- More than \$2.5 billion since the 1980s for the Clean Water Revolving Loan Fund.
- More than \$750 million since 1997 for the Water Quality Improvement Fund.

### **Nitrogen into Chesapeake Bay from point sources is down**

The amount of nitrogen entering the Chesapeake Bay and its tributaries from point sources has decreased below Virginia's 2011 target of 21.4 million pounds, and is close to the long-term target. Reasons include expedited installation of nitrogen removal facilities, and better-than-expected operation of these new facilities.

### **Pollution from bacteria is down**

The most common cause of impairment in state waters is bacteria contamination. However, a trend detected from long-term water quality monitoring results is that the concentration of bacteria has declined in the last 20 years at select stream locations.

- More than 100 water quality stations with matching flow were analyzed for trends, and 20 of them showed significant declines in counts of bacteria.
- None of the 107 stations showed a statistically significant increase in bacteria levels. Improvements ranged from 1.7 percent to 6.4 percent annually.

### **Water quality restoration progress in Virginia**

Fully and partially restored waters can be found all over Virginia. The streams and waterways that DEQ monitors and assesses are reported every two years in the integrated waters report.

- As of 2012, 51 waterways, 264 miles of rivers and streams, 2,710 acres of lakes and reservoirs, and 4 square miles of estuary have been classified as "fully restored."

### **Streams are preserved**

Since 2005 there have been 29 waters designated as "exceptional state waters." These are streams that provide exceptional environmental settings, aquatic communities and recreational opportunities. They are afforded protection by prohibition of new or increased permitted point source discharges.

### **Water supplies are protected**

Virginia is doing a better job of protecting water resources. Water supply planning became a necessity after the serious drought of 2002. Since then, Virginia:

- Partnered with the State Water Commission to develop the Commonwealth's first comprehensive local and regional water supply planning legislation in 2003.
- Achieved 100 percent compliance with the regulatory submission deadlines for the required local and regional water supply plans.
- Achieved significant regionalization of water supply planning with 97 percent of all localities participating in a regional plan.
- Developed the Commonwealth's first Drought Assessment and Response Plan.
- Issued the first "drought watch advisory" under the response plan (for the Appomattox River basin) in 2012.

### **Wetlands are protected and conserved**

Since 2002, Virginia has been meeting the goal of "no net loss" of wetlands.

- About 2,000 acres of wetlands have been lost in permitted activities.
- At the same time, more than 3,500 acres have been protected through conservation and other means required in permits.

### **2,870 acres acquired through DEQ and partners**

Land is preserved through programs like the Virginia Coastal Zone Management Program. DEQ is the lead agency for the program and works with other agencies and local governments on a variety of policy and projects, including land preservation.

Conservation authorities have described the Crow's Nest peninsula in Stafford County as the most ecologically significant tract of unprotected land in the national capital area. The property supports a large expanse of unfragmented and regionally significant coastal plain hardwood forest, hundreds of acres of tidal and non-tidal wetlands, and miles of streams and riparian habitat. It contains some of the best remaining wetland habitat on the Potomac River. The protection of Crow's Nest has been one of Virginia's highest land conservation priorities for more than a decade.

Virginia CZM awarded a \$3 million grant to the Virginia Department of Conservation and Recreation to purchase the Crow's Nest area with supporting funds from other partners. This purchase constituted phase 2 of a two-part effort to acquire the Crow's Nest property. Coupled with the phase 1 purchase of 1,770 acres at Crow's Nest, DCR has added 2,870 acres to the Virginia Natural Area Preserve System.

### **Land is cleaner**

DEQ has several programs that govern solid waste management, including reuse, recycling, storage, treatment and disposal. One area that has seen improvement is older waste management facilities, which do not meet modern design standards and have leaked contaminants into soil and ground water. Landfill standards have since been heightened and designs have been improved, making waste management facilities safer and more protective.

- Since 1999, the number of annual waste site cleanups has steadily increased from less than 20 to more than 100.

### **Fewer leaking petroleum tanks**

The petroleum tank program has seen a significant decline in the number of leaking petroleum storage tanks – and in the need for tank cleanups.

- The number of leaking tanks reported annually has declined from 1,342 in 1993 to 163 in 2011.
- The number of leaking tank sites being cleaned annually has declined from 1,461 in 1993 to 244 in 2011.
- The number of sites cleaned is now more than 30,000.

### **3,400 acres at 275 sites cleaned up through VRP**

The Voluntary Remediation Program encourages revitalization of contaminated land throughout the state. The goal is to improve these brownfields and protect against contaminants. Sites have been converted from abandoned scrap yards and rail yards into office complexes, medical facilities and other projects that enhance communities around the state. Since 1996 more than 3,400 acres at 275 sites have been cleaned up through VRP.

### **103 hazardous waste site cleanups**

DEQ assesses the human health and environmental impacts at 120 hazardous waste facilities and requires cleanup where necessary. Working jointly with the federal government, DEQ has ensured that 103 of these facilities (85 percent) meet human health standards under current land-use and ground water-use conditions, and 92 facilities (77 percent) have controlled the contamination of ground water.

### **Recycling increases; more waste diverted from landfills**

Annual reporting has shown that Virginia's recycling programs are maturing and continue to grow. The state's recycling rate has increased from 32.2 percent in 2005 to 43.5 percent in 2011.

- The recycling program works closely with recycling program managers, as well as with local governments and solid waste planning units to ensure that their recycling programs meet or exceed the state's mandated recycling rates.
- In 1989, Virginia established a 25 percent recycling rate target for communities. This was modified in 2006 with the establishment of a two-tiered recycling mandate of 15 percent and 25 percent.

### **More than 23 million tires removed**

- Since 1993, the number of tire piles has dropped significantly because of an aggressive cleanup effort. Abandoned tire sites, which once numbered more than 1,300 statewide, have declined to less than 130, all of which are relatively small piles
- An estimated 95 percent of the current flow of tires is being collected, transported, and processed for beneficial use and recycling.
- Virginia's waste tire processing network has been successful in marketing Virginia-generated waste tire material for tire-derived fuel, civil engineering uses and product manufacture.

### **Coastal resources preserved**

Over its 25-year history, the Coastal Zone Management Program has seen a 5,000-acre increase in eelgrass habitat on Virginia's Eastern Shore, hundreds of acres of restored and productive oyster reef habitat in the Rappahannock River, better protection for all Virginia's secondary dune systems, dozens of new and enhanced public access locations, and habitat restoration sites on more than 3,500 acres of newly acquired land. Other improvements include:

- More access to public lands
- Improved shoreline management
- Globally important habitat saved
- Ecology and economy of the Eastern Shore

### **Consistent enforcement**

Enforcement at DEQ is a joint effort of the DEQ regional offices and the central office Enforcement Division. In most cases, the regional staff inspects facilities, or reviews records and identifies potential non-compliance with Virginia's environmental laws, regulations and permit conditions. Unless an immediate enforcement response is needed, the compliance staff works with the responsible party to help the facility return to compliance.

- Since 2006, DEQ has issued 1,071 consent orders, which included total civil penalties of \$16.1 million. Of those consent orders issued, nearly 10 percent (102) included a "supplemental environmental project." The value of the SEPs totaled more than \$3.1 million, or about 20 percent of the total civil charges assessed in consent orders.
- Between 2007 and 2011, a total of 1,548 cases were referred to enforcement staff for further action – an average of 310 cases per year. In a typical year there are 140 consent orders, and 160 informal referrals and/or letters of agreement.

### **More than 1,350 businesses involved in Virginia Green**

Virginia Green is the statewide program that works to reduce the environmental impacts of Virginia's tourism industry. It is run as a partnership among DEQ, the Virginia Tourism Corporation, and the Virginia Hospitality and Tourism Association.

- In five years, participation has more than tripled. Participants include lodging facilities, conventions and conferences, restaurants, attractions, wineries and breweries, campgrounds, and welcome centers.

### **More businesses voluntarily reducing their footprints**

DEQ is helping businesses by promoting the adoption of environmental management systems. Efforts are recognized in the Virginia Environmental Excellence Program and Virginia Green.

VEEP drives environmental excellence by encouraging facilities that have strong environmental records to go above and beyond their legal requirements. Results for VEEP participants in 2011 include:

- Total savings of \$32 million.
- 99 percent less hazardous waste disposed of than in 2010 (1,440 tons versus 192,600 tons).
- An increase of 19 percent in the amount of hazardous waste recycled over 2010 (3,859 tons versus 3,238 tons in 2010).
- A reduction in total water use of 5 percent over 2010 (2.645 billion gallons versus 2.795 billion gallons in 2010).
- The use of 357 billion gallons of reclaimed or recycled water, an increase of 19 percent (301 billion gallons in 2010).
- The use of 30 percent less hazardous material (309 tons versus 440 tons in 2010).
- Restoration of 38 acres of land.

### **Environmental success comes from:**

- Strong and effective permits
- Monitoring and enforcement
- Consistent policies
- Improved tools and technology
- Dedicated staff

### **Conclusion**

Virginia's environmental successes in the past 20 years have been significant.

- We have cleaner air, land and water.

- More pollution is being treated and prevented through permitting, inspections, enforcement, resource management and planning.
- Despite increasing demands and dwindling resources, DEQ continues to protect the environment for the health and well-being of Virginia citizens.