

DCR Watershed Protection Program Updates



2024 calendar year updates

MWRA ADVISORY BOARD MEETING

JANUARY 16, 2025

WATERSHED PROTECTION PROGRAM



Watershed Activities guided by the 5-year Watershed Protection Plan

- New Plan approved by DEP in June 2023
- Adopted July 2023
- Plan covers FY 24-28



Watershed Control Programs

Land Acquisition	Watershed Preservation Restrictions	Land Management	Wildlife Management	Public Access Management	Watershed Security
Infrastructure	Watershed Protection Act	Education and Outreach	Water Quality and Hydrologic Monitoring	Watershed Monitoring and Assessment	Aquatic Invasive Species
	Wastewater Management	Stormwater Management	Emergency Response	GIS	

CLIMATE CHANGE VULNERABILITY ASSESSMENT (CCVA)



- Assessing the vulnerability of natural assets--forests, wetlands, streams, and water bodies-- in its three active watersheds (Wachusett, Ware River and Quabbin) to the potential effects of climate change.
- This phased project aims to enhance long-term watershed resilience by identifying critical natural assets, evaluating their vulnerability under future climate scenarios, and developing adaptation strategies to protect the state's unfiltered drinking water supply.
- Phase one of the project, which was completed in 2024, involved creating a Natural Asset Inventory and a methodology for evaluating asset condition and vulnerability.

CLIMATE CHANGE VULNERABILITY ASSESSMENT (CCVA)



- The Natural Asset Inventory identified **29 critical natural assets** that are essential to maintaining high quality unfiltered drinking water.
- These assets were categorized into seven asset categories: forests, open water, water courses (river/streams), wetlands, groundwater, soils, and infrastructure.
- The project aligns with the state's ResilientMass plan for climate change adaptation
- Project findings will be incorporated into the DWSP's Land Management Plan to update policies and management practices, ensuring climate resilience considerations are included in all future decisions.

FORESTS AS CLIMATE SOLUTIONS



- Governor implemented a pause to look at whether Commonwealth's forestry practices were climate-friendly
- Climate Forestry Committee review practices and issued report January 2024
- EEA (with staff assistance) issued report outlining practices in June 2024
- DCR resumed forestry work in summer with some revisions
- Ongoing work to identify reserves, provide better public communication



CALENDAR YEAR 2024 BY THE NUMBERS

LAND ACQUISITION



- Permanently conserved over **317 acres** of land in the watersheds in 2024.
 - The program secured **30.3 acres** in fee ownership and **286.8 acres** under Watershed Preservation Restrictions (WPR),

WATERSHED PRESERVATION RESTRICTIONS



- Watershed Preservation Restriction (WPR) Monitoring Program continued its successful monitoring program, completing monitoring activities **for 95 WPRs**.
- Released **2 issues** of our landowner newsletter, *A Watershed Moment*
 - <https://www.mass.gov/info-details/a-watershed-moment-newsletter>

LAND MANAGEMENT



- Quabbin Forestry
 - **9 lots** sold in the Quabbin watershed, and **2 lots** sold in the Ware River watershed
 - **7 active lots** in the Quabbin and **1 active lot** in the Ware River
- Wachusett Forestry
 - **5 lots** on **261 acres** were sold. None of these have been worked yet.
 - **3 lots** on **218 acres** were supervised and completed

LAND MANAGEMENT



- Quabbin
 - **21 Miles** of boundary located and marked
 - **4 property line surveys** completed to locate missing markers, delineate unclear property lines, identify encroachments, etc.
- Wachusett
 - **23 miles** of boundaries were maintained
 - **6 property line surveys** were conducted to install monumentation
 - **69 hazard trees** were removed

LAND MANAGEMENT



- Habitat Restoration and Prescribed Fire Program had **5 prescribed burn days**, successfully burning **39.5 acres** on **5 sites**.
- The Forest Stand Improvement (FSI) Program fosters healthy and resilient forest ecosystems. **135 forest openings** were surveyed and strategically managed to enhance diversity and promote forest health. The program facilitated the release of **33 different tree species**, ensuring a balanced future forest community.
- Natural Resource Section's Vernal Pool Verification completed survey of **20 pools** leading to the verification of **13 new vernal pools**

WILDLIFE MANAGEMENT



- 2-day Controlled Deer Hunts at Quabbin was a resounding success, yielding a harvest of **142 deer**. Hunt saw participation from over **600 hunters** dedicated to these conservation efforts.
- Deer Density Monitoring Program utilized the pellet group method to assess deer populations within watershed lands. The program involved an impressive **90.8 miles** of survey effort, with staff sampling over **5,000 plots** to gather data on deer density.

WILDLIFE MANAGEMENT



- Bird Harassment Program

- Wachusett
 - Evening observations were conducted on **78 of the 180 consecutive days** with harassment on 47 evenings and was completely or partially successful 72% of the time.
 - Daily bacteria samples from CWTP were bacteria-free **54% of the time** and none were above the regulatory threshold of 20 CFU/100mL.
 - The reservoir did not ice over completely, and partial ice cover did not last long.
- Quabbin
 - Quabbin: program conducted on **64 nights**; largest bird count was 1005 gulls (3/11/2024); **0 dates** when fecal coliform exceeded 20 colonies/100mL. First night of the program was 10/2/2023 and the last night was 4/12/2024.

WILDLIFE MANAGEMENT



- Bird Harassment Program
 - NR staff conducted 31 roost counts at Wachusett Reservoir and 13 at Quabbin Reservoir, with the highest count reaching 2,250 gulls at Wachusett and 482 gulls at Quabbin.
- Canada Goose Control
 - program identified and managed **34** goose nests at Sudbury and **9** nests at Wachusett and **6** nests at Quabbin
 - **154 eggs** at Sudbury, **55 eggs** at Wachusett and **26 eggs** at Quabbin, were effectively added

WILDLIFE MANAGEMENT



- Aquatic Mammal Control Program
 - **162 beaver sites** (24 at Wachusett, 34 at Ware River and 104 at Quabbin)
 - **15 beavers** (7 at Wachusett and 8 at Quabbin) were removed
- Other Wildlife
 - Since 2001, DWSP Wildlife Biologists have been collecting baseline data on wildlife communities through long-term monitoring. Staff detected **47 breeding bird species, 10 herpetofauna species, 9 small mammal species, and 5 bat species**

WILDLIFE MANAGEMENT



- Loon Monitoring
 - In the Wachusett Watershed, **8 rafts** were floated to support nesting, with **7 territorial pairs** nesting.
 - In the Quabbin Watershed, the program floated **13 rafts** and biologists monitored **21 territorial pairs**. This year, **16 pairs** nested including **3** new territories.
 - Additionally, the Program collected over **10 miles** of fishing line and over **4 lbs.** of lead sinkers, which can pose significant risks to wildlife and pollute aquatic ecosystems.

PUBLIC ACCESS MANAGEMENT



- Wachusett
 - Watershed Rangers had **14,963 visitor contacts**
- Quabbin
 - Watershed Rangers had **25,610 visitor contacts** (14,997 at Quabbin and 10,613 at Ware River)

PUBLIC ACCESS MANAGEMENT



- Quabbin
 - **15 private boat decontamination events** held and **117 boats** cleaned/inspected
 - **61 private boats** participated in the cold weather quarantine program
 - **6,576 private boats** launched across the 3 Quabbin Boat Launch Areas (2,100 at BLA 1, 2,470 at BLA 2, and 2,006 at BLA 3)
 - **2,417 one-day fishing licenses** sold at the 3 Quabbin Boat Launch Areas (1163 at BLA 1, 730 at BLA 2, and 578 at BLA 3)
 - **19,467 people** visited the Quabbin Boat Launch Areas; 7,016 people rented a boat
 - **805 season passes** were sold for the Quabbin boat fishing program

WATERSHED SECURITY



- **365 days** of Rangers, MWRA and law enforcement protecting the critical infrastructure and reservoirs of the metropolitan Boston water supply reservoir system

INFRASTRUCTURE



- Quabbin
 - **214 watershed culvert inspections** completed (44% of the 1115 culvert records have been updated)
 - **11 bridge inspections** completed (96% of the 27 bridge records have been updated)
 - **1 EV charging station** installed at Quabbin Administrative Headquarters
 - Entrance road to **Boat Launch Area 3** (Gate 43) repaved
 - Photovoltaic system at **Boat Launch Area 3** upgraded
 - A Grave Marker feature layer for the Quabbin Park Cemetery was developed consisting of **5,223 markers**

INFRASTRUCTURE



- Wachusett
 - **123 tons of sediment** from BMPs was disposed of by contract
 - Phase I of the Old Stone Church project was completed, which included improved pedestrian access around the structure and landscaping.
 - Approximately **1,800 feet** of fencing was replaced on North Dike from Leominster Pump Station to Gate 38.
 - An ADA walkway at the Promenade was completed.
 - Grove Street garage in Clinton was demolished.

WATERSHED PROTECTION ACT



- Quabbin staff processed **30 Watershed Protection Act filings**
- Wachusett staff processed **32 Watershed Protection Act filings**

EDUCATION AND OUTREACH



- 1 successful but stormy Massachusetts Envirothon held at Wachusett Reservoir
- Quabbin
 - Over 6000 visitors to the Les and Terry Campbell Quabbin Visitor Center
 - Les and Terry Campbell Quabbin Visitor Center hosted 24 school programs to 1,255 students and 143 adults
- Wachusett
 - 78 interpretive programs were held: total attendance 3,513 (1,894 adults, 1,619 children)
 - 2 dam day events were held (attendance 4,920)

WATER QUALITY AND HYDROLOGIC MONITORING



- Quabbin
 - **234** different samples collected in the Quabbin tributaries and **260** different samples collected in the Ware River tributaries.
 - **1635** Quabbin Reservoir samples collected. Samples tested for temperature, chlorophyll, dissolved oxygen, pH, alkalinity, specific conductance, sodium, and chloride.
 - Phytoplankton samples were collected on Quabbin Reservoir on **29 days**.

WATER QUALITY AND HYDROLOGIC MONITORING



- Wachusett
 - **2,161 samples** from Wachusett Tributaries and Wachusett Reservoir Bacteria were analyzed at MWRA Labs
 - **4,465 field parameter measurements** from Wachusett Tributaries (Water Temperature, Dissolved Oxygen, Turbidity, Stage/Discharge, Specific Conductance)
 - **117 plankton samples** were analyzed on 37 sample days
 - **45 reservoir profiles** were collected

WATERSHED MONITORING AND ASSESSMENT



- **3 Environment Quality Assessments** (Sanitary surveys) were completed – one deep dive in each watershed
- At Wachusett, **24 new EQ files** were created, **145 status logs** were updated, and **63 site visits** took place

AQUATIC INVASIVE SPECIES



- Wachusett
 - **16,435 gallons and 2,843 individual invasive plants** were removed from all areas of Wachusett Reservoir
- Quabbin
 - **6 macrophyte surveys** for Aquatic Invasive Species conducted; no new invasive species located
 - **617 person-hours** of effort were expended controlling swollen bladderwort at Pottapaug and O'Loughlin ponds in the Quabbin watershed
 - **1,528 gallons** of swollen bladderwort were removed from these ponds

WASTEWATER MANAGEMENT



- DCR continues to work with MWRA to manage the Rutland Holden Sewer Trunkline
- Routine work with Boards of Health to look t septic system replacements and installations

STORMWATER MANAGEMENT



- **1,183 storm drains** in the Wachusett watershed were mapped in the hydro network.
- The Gate 27 BMP was rehabilitated to improve infiltration.
- Staff participated in several community events where stormwater pollution prevention materials were made available

EMERGENCY RESPONSE



- At Wachusett, **9 trainings** totaling **50 hours** with **100 participants** were held.
- Trainings included:
 - Basic Boom Deployment
 - Small Boat Operator Training
 - Terrestrial Spill Response
 - River/Small Water Body Spill Response Operations
 - Night Emergency Response Operations
 - A mock search and rescue drill designed to assess ranger response, communication capabilities and identify challenges took place.

GIS



- **550+ downloads** of the Hunting Map in Fall 2024
- **15,000 views** of the Public Access Maps since release in April 2024
- Training
 - **3 in-person ArcGIS Pro training sessions** held for 15 regional staff
 - **3 in-person ArcGIS Online training sessions** held for 15 regional staff
 - Facilitated 5 regional staff's attendance at 3-day in-person Esri-led ArcHydro training