



April 28, 2023

Dave Coppes
Chief Operating Officer
Massachusetts Water Resources Authority
Charlestown Navy Yard
100 First Avenue
Boston MA 02129

RE: Transmittal of Quarterly Progress Report
Third Quarter, FY2023 (January 1 – March 31, 2023)

Dear Mr. Coppes:

Pursuant to the provisions of Section 2.4 of the Memorandum of Understanding (MOU) between our agencies, executed and effective as of April 27, 2004, enclosed please find the Quarterly Progress Report for the third quarter of Fiscal Year 2023 covering the period from January 1 – March 31, 2023. This progress report highlights FY2023 Work Plan activities for the quarter. Copies of the Quabbin/Ware and Wachusett/Sudbury reports from Smartsheet are attached. In addition, the quarterly ranger interaction tables are included with this submittal.

Staff worked through the quarter to implement the tasks in the FY2023 Work Plan. This includes stream and reservoir sampling, watershed monitoring, and forest management activities in the watersheds, wildlife control activities on all watersheds including management of hunting across the watersheds with a controlled hunt on Prescott Peninsula, and ranger oversight of public access activities.

In addition to the attached work plan updates, some highlights from activities in the quarter are outlined below.

- Staff continued development of the next Watershed Protection Plan (FY24-28) and have shared the completed draft of the plan with MWRA staff. The plan draft will be submitted to DEP in early May, with completion by the end of FY2023 for implementation on July 1, 2023.
- Monitoring of wildlife in the watersheds continued. The active Gull Programs wrapped up at both Quabbin and Wachusett Reservoirs, with water quality continuing to meet drinking water standards.



- DWSP has an ongoing project to collect monofilament fishing lines at the reservoirs, to limit the potential for impact to loons and other wildlife. DWSP collected 13.1 miles of line for recycling in 2022.
- Staff continued water quality monitoring in the reservoirs and tributaries. This included phytoplankton sampling in both reservoirs, nutrient sampling in the reservoirs and tributaries, in-person and Mayfly water quality measurements in tributaries, and collection of groundwater quality samples.
- Foresters began work on development of proposed FY24 forestry lot proposals, which will complete internal reviews in the fourth quarter.
- Forestry staff worked on boundary marking in two watersheds over the winter.
- Staff worked to hire summer seasonal positions. Two forestry assistant positions were included in this year's roster. These staff will work with watershed foresters to pilot some forest stand improvement projects to enhance species diversity in the watershed forest.
- A new ArcGIS online database was developed to replace the old Environmental Quality database. This database tracks activities on parcels in the watershed and related DCR actions.
- New GIS map for hunting/fishing opportunities is under development. Phase 1 will show where hunting is allowed and any requirements. Phase 2 will add fishing to this publicly available map.

Wachusett/Sudbury Region

- Rangers continued to monitor public access across the watershed. Rangers logged 1,551 visitor contacts through the quarter, and recorded 92 violations.
- Interpretive staff and ranger offered 25 public programs in the quarter for 812 people.
- The process continued for the update of the Wachusett Watershed Public Access Management Plan. After an initial public listening session in October, staff worked to develop a draft of the plan. A public meeting to present the plan occurred on April 26, 2023, which will be followed by a 30-day public comment period.
- Staff worked with MWRA on revisions to the Reservoir Phytoplankton Sampling Plan to reduce unnecessary sampling efforts. Revised plan for Wachusett moves away from the numerical monitoring trigger for taste and odor algae to an alert threshold. This is more appropriate given changes in treatment technology and increased monitoring frequency in the reservoir provided by the buoys that collect profiles four times per day.

Quabbin/Ware Region

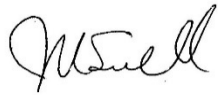
- Rangers continue to patrol actively in the Quabbin and Ware River watersheds. Staff reported 5,197 visitor contacts across both watersheds and 107 recorded violations.

- Forestry staff worked to identify sites for Forest Diversity Enhancement work to be completed this summer with seasonal staff.
- Staff worked on a number of infrastructure projects, including contracts for Administration Building window replacement, small shed demolition, asbestos abatement work, and paving at Gate 43 to Fishing Area 3 using a legislative earmark for much of the project cost.
- Whitewater Inc. has assumed responsibility as the certified water system operator for Quabbin facilities. Staff continue to work with MRA of the completion of the new well at the Administration building, which is scheduled to go online in late April.

Watershed staff continue to work diligently on the hiring process to fill vacancies in our staffing. It has been challenging to raise the FTE count, with promotions and departures creating new vacancies. The FTE count was at 139 at the end of the quarter. Staff are working to fill the remaining positions to meet the goal of being fully staffed.

Please let me know if there are any questions.

Sincerely,



John M. Scannell
Director, Division of Water Supply Protection

Cc: Rebecca Tepper, Secretary, EOEEA
 Brian Arrigo, Commissioner, DCR
 Priscilla Geigis, Deputy Commissioner, DCR
 Fred Laskey, Executive Director, MWRA
 Vandana Rao, EOEEA Water Policy
 Lou Taverna, Water Supply Protection Trust
 William J. Meehan, Water Supply Protection Trust
 Fred Heyes, Water Supply Protection Trust
 Joseph Favaloro, Director, MWRA Advisory Board
 Valerie Moran, MWRA Waterworks Director
 Stephen Estes-Smargiassi, MWRA Planning
 John Gregoire, Reservoir Operations, MWRA
 Kathy Baskin, DEP
 Yvette DePeiza, DEP
 Dan Clark, Regional Director, Quabbin/Ware
 Kelley Freda, Regional Director, Wachusett/Sudbury
 Ken MacKenzie, Natural Resources Director

Wachusett/Sudbury FY 23 Third Quarter Report



Work task accomplishments from January 1, 2023 to March 31, 2023

Task No.	Description	Jan. 1 - March 31 Accomplishments
A. Land Acquisition		
A1	Acquire land. Coordinate due diligence and other tasks/services from DCR and private contractors to complete survey, appraisal, title, engineering, and environmental assessments for proposed acquisitions. Negotiate WPR language, purchase prices and conditions of sale with sellers of property.	No projects went to record this quarter. Many projects are currently underway at various stages of due diligence. About 8-10 projects are on schedule to close by the end of Q4.
A2	Develop individual parcel presentation materials and meet with MWRA Board for approval.	No projects went before the MWRA Board this Quarter
A3	Communicate with and convene LAP meetings to review parcels and prioritize land purchases.	No LAP meetings were held this Quarter.
A4	Use the LAP Prioritization Model to identify priority parcels in the watersheds.	Work to identify priority parcels is ongoing.
A5	Continue to solicit and work with landowners in donating conservation interests in land and assist in advising landowners on the tax incentives available when donating conservation interests.	3 parcels that have applied for the MA Conservation Land Tax Credit (CLTC) Program were signed by the Commissioner and submitted to EEA for approval.
A6	Establish regularly scheduled land/legal meetings to address attorney assignments and project logistics.	Meetings with legal are ongoing.
B. Watershed Preservation Restriction Monitoring		
B1	Monitor WPRs on a regular basis, following monitoring procedures	Regional Monitor completed 2 WPR visits this quarter. WPR Coordinator began preparing for spring WPR monitoring. WPR Coordinator reviewed Regional Monitor's monitoring reports. WPR Coordinator worked with GIS Coordinator to update monitoring apps.
B2	Complete baseline documentation reports for new WPRs prior to acquisition or within a reasonable time after acquisition, following EOEEA specifications. Baselines will be done in-house or through appropriate contracts.	No baseline reports completed this quarter. One draft baseline report is in process (waiting on information from landowner-Thorell 2 WPR).
B3	Meet with Restriction Stewardship Working Group and confer with legal to respond to enforcement issues and requests to exercise reserved rights.	Restriction Stewardship Working Group met once this quarter. WPR Coordinator worked with DCR-Parks stewardship staff on updating the Enforcement Procedure.
B4	Track changes in landownership for WPRs.	WPR Coordinator and Regional Monitors continued to track changes in landownership for WPRs. WPR Coordinator and Regional Monitors continued to track changes in landownership for WPRs.
B5	Explore additional ways to reach out to landowners through the use of social media and web-based content.	WPR Coordinator continued planning for spring E-news.
B6	Implement WPR records procedure with DCR records manager	WPR Coordinator spent 1-2 days/week at the Boston office culling DWSP land files as part of the File Digitization Project. WPR Coordinator worked on updating the WPR information in the LIS database.
C. Land Management		
C1	Implement the system-wide comprehensive Land Management Plan (LMP).	Review of LMP ongoing this quarter.
C2	Prepare forest harvest proposals for next fiscal year including data on proposed harvest areas, characteristics of stands, soils, cultural resources, wetlands, wildlife, unique features, and priority habitats. Proposals shall also include information on lot layout, landings, stream crossings, wetland crossings, and stonewall crossings.	All narratives for FY24 lot proposals were completed. Stream crossing locations, landing locations and haul roads were added to the appropriate GIS layers. There are 7 seven forest management operations being proposed for FY24 that cover a combined 352 acres. The areas chosen for management were based on an analysis of the forest age structure of the subwatersheds that make up the larger Wachusett Reservoir watershed as well as the age structure of the individual management units. Attention is focused first on subwatersheds that have proportionately less young forest and then the management units within those subwatersheds that have a relative deficit of young forest.
C3	Plan and conduct an internal review of proposed logging operations for the coming year, including assessments of silviculture, water quality, wildlife, and other potential impacts/benefits Review lots to ensure consistency with aspects of the CLMP, including wildlife, forestry objectives, and environmental quality.	Work this quarter consisted of continued updating to web map for eventual public presentation, development and distribution of a Word form for FY24 lot proposal narratives (replacing the database version in place since the 2000s), and updating GIS data from forestry staff in preparation for creation of new static maps. Full reviews will be completed in Q4.
C4	Present annual forest harvest proposals a public meeting. Publish Online Public Review document/story map. Accept public comment and respond as needed.	No activity this quarter.
C5	Plan, lay out, mark products for removal, prepare maps and permits, establish photo monitoring points, file Forest Cutting Plans, seek bids, award permits, and properly advertise and post forest management operations consistent with the Forest Cutting Practices regulations, the LMP, and approved harvest proposals.	Prepared two lots on a combined 117 acres. Due to the Commissioner-imposed ban on putting out new forest management operations, neither lot was shown at the March showing.
C6	Provide supervision and oversight of all forest harvesting operations on DWSP property. Assure compliance with applicable DCR and NHEHP regulations and restrictions, approved BMPs, and all Permit conditions. Maintain adequate site visit records. Monitor post-harvest and collect photo point images consistent with internal policy.	Supervised five lots on 273 acres of which two lots on 87 were completed.
C7	Monitor water quality (turbidity) at active harvesting stream crossing sites to measure effectiveness of BMPs.	Short-term forestry sampling program suspended. Memo presenting analysis and rationale for ending monitoring program was submitted to Division Director, RD.
C8	Continue to implement long-term paired watershed monitoring to assess impact of DWSP forest management on tributary water quality.	All sampling put on hold after January sample collection. Sampling will resume when the timber harvest has been completed.
C9	Conduct periodical regeneration and invasive species surveys to monitor forest health and development resulting from silvicultural activities or other natural disturbances and processes.	No activity this quarter.
C10	Conduct periodic reviews and monitoring of land management activities and forest conditions to assure compliance and consistency with Land Management Plan.	Ongoing review of CFI data.

Task No.	Description	Jan. 1 - March 31 Accomplishments
C11	Collect data and maintain GIS datalayers related to forest structure, composition, regeneration, roads, boundary information, stone walls, wetlands, streams, and other data to guide the land management program. Maintain GIS data documenting the location, extent, and intensity of all silvicultural operations.	Ongoing as needed.
C12	Assess all new fee land acquisitions, documenting existing conditions of forests, access roads, bridges and culverts, boundary markings, and restoration needs. Integrate these lands into existing GIS datasets and land management, public access, and other watershed management programs.	Ongoing as needed.
C13	Locate, mark, and maintain property boundaries periodically and as needed.	2.0 miles were completed in the Sudbury watershed bringing the total for the season to 15.1 miles. 9.0 miles were completed in the Wachusett watershed starting in Clinton behind the Wilson St. yard and continuing south into Boylston.
C14	Develop scope of work and manage contracted property boundary survey work.	Surveyors have been working on projects. They are ahead of their typical schedule and I expect them to finish early in Q4.
C15	Document and pursue resolution of all property boundary encroachments.	Internal meeting was held to discuss encroachment process. Existing encroachments will be separated by level of severity and ease of resolution.
C16	Identify, plan, and oversee non-forest or other unique habitat restoration, field reclamation, and maintenance work.	Q3 work consisted of development of updated contractor bid sheets for projects at Wachusett. We also reviewed language for DCR contracting office related to an updated contract for invasive plant control.
C17	Identify, prioritize, and implement terrestrial invasive plant (TIP) control projects in line with the expanded Terrestrial Invasive Plant Management Plan. Respond as needed to newly discovered and controllable TIP populations.	TIPMP development resumed in Q3. Internal draft potentially distributed by end of Q4. No control work this quarter. Invasive plant control work included in job posting for LTS Forestry Assistant positions that were advertised this quarter.
C18	Collect data and maintain datasets, GIS datalayers, and related maps and reports of rare and listed plants and communities.	No new work in Q3.
C19	If available, use unmanned aerial system (UAS) to document forest conditions, map openings, identify invasive plant populations, assess internal road conditions, or conduct other activities.	Although UAS flights have been done to monitor gull roost activity, we have not received approval from EEA to expand the UAS flights to other projects for forestry.
C20	Continue to work with DCR Asian Longhorned Beetle Program and USDA to oversee beetle eradication in watershed areas.	No activity this quarter.
C21	Hazardous Tree Removal	Responded to numerous potentially hazardous tree inquiries from abutters in both Wachusett and Sudbury watersheds. The dead elm adjacent to Rt. 85 in Southboro was removed.
C22	Maintain deer exclosures and sample vegetation periodically to assess impacts of herbivore browsing.	Ongoing as needed. No repairs this quarter.
C23	Conducts field inspections of mapped sensitive resource areas, review YOPs and VMPs, and provides comment for ROW Management projects.	No activity this quarter.
C24	Organize, inventory, and categorize permit, lease, and easement information and enter information into the database.	Continued organizing permits and lease agreements.
C25	Participate in process to transfer lands surrounding Framingham Reservoirs 1 and 2 to DCR Parks.	There has been no discussion on this land transfer.
D. Wildlife Management		
D1	Continue the active harassment of gulls within the Pathogen Control Zone at Wachusett Reservoir, using human presence, boats, pyrotechnics, passive scare devices, and other techniques. Continue to identify and test new harassment techniques.	The active evening program continued through January and February utilizing two shore staff and a boat crew while operating 2 days per week excluding weekends and holidays. Harassment, primarily by boat, was successful in moving birds from the North Basin almost every evening. The use of boats was dropped on March 9th while the program continued for another two weeks before concluding for the season on March 16th. Overall the program was considered a success in that federal regulatory thresholds for bacteria were not exceeded and that there were no safety issues. Depredation permitting system has seen some recent changes and the expiration date has changed. Permit now expires in September of FY 2024.
D2	Observe and document the nocturnal roost of gulls on the reservoir weekly during the months of September-March.	Roost counts continued during quarter. Numbers ranged from 0 (3/29) to 1,800 (1/11) with an average of ~990. Observations through the first half of the quarter continued to indicate that roost numbers were highest when BHP was operating. When BHP not in operation, NR observed some gulls fly past the roost or leave the roost later in the evening to join a different roost in the north basin. NR regularly communicated with EQ about observations. DOT Aeronautics Program flew drones three times during this quarter (1/11, 2/2 and 3/6). Several dates were rescheduled due to inclement weather. We tested out methods of flight to try to best photograph large groups of birds when they don't fit all in one view of the camera.
D3	Control Canada geese populations at Wachusett Reservoir by treating eggs during nesting season to prevent hatching.	No activity this quarter.
D4	Identify places in MA where human derived food is available for gulls and work to prevent feeding through educational signage, interaction and enforcement.	Surveys continued through the quarter. Numbers continued to be high at regular feeding locations. No new "problem" areas were discovered.
D5	Aquatic Mammal Control: Remove beaver and muskrat in the Aquatic Wildlife Pathogen Control Zone at Wachusett.	No activity this quarter.
D6	Respond to problems of burrowing animals on dams and dikes; take appropriate action.	No activity this quarter.
D7	Research and manage for common loons on DWSP waterbodies; provide nesting platforms, capture and sample birds for contaminants.	The annual report is attached. Attended the annual NELSWG meeting, continue to attend monthly NELSWG subgroup meetings and attended a loon necropsy session. A DCR-DWSP banded loon was found dead on the coast of Rhode Island. A necropsy was completed and no obvious cause of death identified. Samples from the loon have been sent for testing and results are pending.
D8	Continue long-term wildlife resource monitoring program.	No activity this quarter.
D10	Plan for the White-tailed Deer Management Program on DWSP lands at Wachusett and Sudbury; Administer the applications, permits, and orientations for the Wachusett Reservoir Zone Deer Hunt	Hunting occurred at both the Wachusett and Sudbury Reservoirs beginning with archery season in October and ended on Dec. 31st, 2022. Analysis of the harvest data is ongoing and the Annual Deer Report will be completed in Quarter 4.

Task No.	Description	Jan. 1 - March 31 Accomplishments
D11	Coordinate with the Massachusetts Natural Heritage and Endangered Species Program concerning rare species occurrences and protection	Worked with Engineers on a prospective plan for restoring rare turtle nesting habitat on Kush property. Also checked the old buildings for any sign of bats (none found).
E. Public Access Management		
E1	Proactively patrol watershed lands to ensure compliance with DCR regulations and policies. Tally visitor contact and produce quarterly and annual summary reports. Conduct trend analysis on visitor statistics and rule violations.	Rangers continue to proactively patrol all watershed lands. Rangers are addressing violations by education and if necessary eviction. For the third quarter of FY23, we had 1551 Visitor contacts, 92 violations reported and 4 Parking tickets written.
E2	Continue to cooperate with state, environmental, and local police for help with enforcement when required.	Ranger supervisors and staff continue to work with Massachusetts State police, Environmental police and all local Law Enforcement teams in the watershed. Rangers continue to communicate and make proper notifications to all law enforcement when necessary. Rangers provided assistance to MSP and Marlborough PD with a search for a missing adult male. Coordinated and planned patrols with Environmental Police for Opening Day of Fishing.
E3	Continue to use DCR social media accounts for advertisement of interpretive programs, including general or emergency information (such as closings).	Salt reduction message posted on Instagram Stories before storm on 3/3. World Water Day 3/22 Twitter post. Salt Sleuth citizen science press release approved.
E4	Develop public outreach regarding allowed uses on DCR Wachusett lands.	Rangers continue to inspect conditions and placement of all the rules and regulation signage throughout the watershed. Rangers posted seasonal updates for regulatory hunting and the closing of fishing season where appropriate.
E5	Continue updates and improvements to access points with signs, gates and improved parking areas. Conduct regular inspections of gates and access barriers.	Rangers while proactively patrolling will inspect gates, barriers and access points for improvements. Rangers continue to fill out work orders when necessary. Signage at the Foss Reservoir was updated to reflect changes in current access plan to open up previously No Trespass areas to the public.
E6	Regularly evaluate and modify policies within the current Public Access Plan and publish annual appendices with policy modifications or to regulate new proposed uses on DWSP lands.	Internal discussions on Public Access policies ongoing.
E7	Continue to conduct "special operations" such as night operations, ATV, and snowmobile operations, as needed.	All ranger staff utilize the equipment provided to ranger staff for various patrols. Rangers use boats when able to and can patrol shoreline perimeter efficiently. Rangers use ATV/UTV to patrol for areas when necessary.
E8	Enforce rules and regulations of 313 CMR 11.09 through the use of citations. Issue written warnings and/or non-criminal citations for repeat offenders and serious violations.	Rangers will continue to document all violations that occur and provide enforcement through education to gain compliance. If compliance is not attained then rangers may request law enforcement for removal.
E9	Update the Wachusett Public Access Plan	Draft plan is 100% complete with no major changes proposed. Public meeting on the Draft Plan is scheduled for April 26, 2023 (Q4).
F. Watershed Security		
F1	Maintain an active presence in the watershed. Monitor watershed lands, roadways, and railways for unusual or suspicious activities; provide appropriate response.	All ranger staff are out proactively patrolling and reporting any type of suspicious person, vehicle or activity to appropriate authorities.
F2	Continue ongoing communication and coordination with local, state, and federal emergency responders; coordinate with MWRA on all security issues.	Rangers continue to communicate with MWRA staff and Security group on any issues that a response is needed.
F3	Continue program of enhancing security infrastructure around Wachusett Reservoir.	Rangers continue to make suggestions for improvements to infrastructures around the reservoir.
F4	Inspect, maintain, and monitor gates, barways, and signage throughout the watersheds for security and access control.	Rangers continue to fill out work requests when repairs are needed to any gate, sign or pipe gates to maintain access and control points.
G. Infrastructure		
G1	Assess Wachusett and Sudbury dams, spillways, and dikes monthly, monitor conditions and maintenance activities, and prepare work requests as necessary. Forward all significant issues to the Regional Director and the MWRA. Coordinate with MWRA on biannual dam safety inspections for compliance with 302 CMR 10.00.	Continued to perform monthly inspections.
G2	Assess DWSP smaller dams semi-annually, monitor conditions and maintenance activities, and prepare work requests as necessary. Coordinate DCR's role in dam removal projects.	Check beaver activities at Unionville dam and Tenney's-Pond-Dam and continued to perform inspections on small dams..
G4	Conduct annual inspection/evaluation of Wachusett internal roads, drainage structures and shoreline access points; update GIS data layers as needed and develop list of maintenance and repairs needs.	On-going - perform full inspection next quarter
G5	Develop annual plan for internal road repair/reconstruction projects.	Due to inability to complete road inspection, work plan to be reviewed/developed next quarter
G6	Conduct road, stormwater BMP's, and dam maintenance/repair projects using in-house staff and resources. Provide oversight to ensure protection of water resources.	On-going. Road work continues inside Gate 28
G7	Conduct regular inspections of all DWSP BMPs, monitor conditions and maintenance activities, prepare work requests and plans for maintenance and repair projects.	Spot checked BMPs as necessary. Semi-annual inspection next quarter.
G8	Evaluate Sudbury watershed access, internal roads and develop work plan, as necessary.	No work done
G10	Provide supervision, coordination, oversight, and technical support or assistance for all engineering, construction, and renovation work in Section.	Ongoing
G11	Maintain records and plans regarding property lines, reservoir and facility construction, and maintenance operations.	On-going
G12	Implement annual Major Projects	
G13	Coordinate with WM to provide access to water quality monitoring stations and perform occasional maintenance activities at stream gages	Coordinated as needed. Station access maintained on a fixed schedule with WM.
G14	Evaluate and coordinate the monitoring of facilities for compliance with state and federal regulations. Develop and update required documents, as necessary	Revised spill training presentations; rescheduled multiple times, training to take place in 4th quarter.

Task No.	Description	Jan. 1 - March 31 Accomplishments
G15	Maintenance of forest roads, dams, dike, fields, parking areas, drainage structures, snowplowing, boat launch areas, and other management activities.	Ongoing
G16	Prioritize and schedule online workorders for division staff and add to daily work plan.	Watershed Maintenance completed 43 work requests in the third quarter.
G17	Assist division staff with specific workorders as needed.	Ongoing
G18	Maintenance of grounds at MWRA facilities as needed. Clinton (Cosgrove), Oakdale (Shaft One)	Ongoing.
G19	Conduct building maintenance activities, including painting, carpentry, cleaning, minor repairs, and other routine maintenance	Building Maintenance completed (20) work requests in the third quarter.
G20	Inspect all Wachusett facilities, buildings, related structures and building utility systems. Determine needed costs of materials for maintenance, repair and replacement of parts as needed.	Maintained heating systems, multiple minor maint. projects, installed new gutters on storage garage @ Clinton yard, repaired fire extinguisher box @ 77 Lancaster St., replaced Scully fitting on diesel tank @ 77 Lancaster St., re-secured broken door @ Stillwater Farm, installed new kitchen faucet @ JAH, installed 2 new on-demand water heaters @ JAH, installed new kitchen faucet @ Ranger station, installed new garbage disposal @ Ranger station, started gate painting project, painted offices and hallways @ JAH, boarded up broken windows @ Salem End Road, repaired split rail fence @ gate 8, replaced (5) 4' fluorescent light fixtures @ JAH with new LED fixtures.
H. Watershed Protection Act		
H1	Continue implementation of the WsPA.	Staff reviewed and processed 8 new Requests for Advisory Rulings and Applicability Decisions. The WsPA database was updated to reflect all new applications and updated information such as changes to status of projects, new construction, and ongoing decisions. Letters were sent to property owners for potential WsPA violations (tree cutting at two separate locations within WsPA jurisdiction, hobby farming activities near the Stillwater River). Site visits and/or meetings were conducted with the property owners or their representatives to explain purpose of WsPA and determine best course of action to come into compliance. In the case of the hobby farming activities, a copy of the Guide "Hobby Farming with Water Quality in Mind" was also given to the property owners to help them understand their role in keeping the Stillwater River free from pollutants. All active WsPA construction sites were monitored to determine compliance with WsPA decisions. Erosion/sedimentation controls were monitored on a weekly basis or more at active construction sites. Failures of E/S controls were found twice this quarter at an active 8-lot residential subdivision project, the developer was notified and DCR performed follow-up site inspections to determine the E/S controls had been fixed and were functioning properly.
H2	Convene the Watershed Protection Act Working Group regularly to discuss policy and address specific problems related to the WsPA	No formal WsPAWG meeting, but WsPA staff interacted regularly via phone calls and Teams to discuss implementation of regulations.
H3	Review permits for watershed towns on a monthly basis with letters sent to property owners of affected parcels.	Building permits were reviewed on a monthly basis to determine if any projects required WsPA review. Watershed Building Departments also contacted DCR whenever they received a building permit application that was located within WsPA jurisdiction. Staff contacted these applicants to file WsPA applications with DCR.
H4	Review property transfers for seven towns on a monthly basis with letters sent to new property owners of affected parcels informing them of the WsPA and how they may obtain additional information.	Staff reviewed property transfers to determine if they were located in WsPA jurisdiction.
H5	Review files from previous year on an ongoing basis, including contact with owners and site visits as needed. Emphasis placed on monitoring active variances.	Staff continues to monitor the status of construction projects in the field and determine compliance with DCR decisions. Applicants are contacted as needed to obtain any information necessary to ensure compliance with the WsPA Regulations and DCR decisions.
H6	Provide Town Halls with WsPA maps, brochures and applications on a regular basis.	New digital WsPA Maps were created by GIS staff for watershed towns. Any updated FY2022 Affected Parcel data was included. These pdfs are being sent to various departments in the watershed towns for their records. Some towns are choosing to use the digital format while others prefer to print out the maps and display at their town offices.
I. Education and Outreach		
I1	Review, implement, and amend the Wachusett Interpretive Services Plan.	Conducted interpretive programming and presentations. Interpretive Services and Ranger staff offered several well-attended evening programs. Updated lesson plans for field trips and school visits highlight the water supply, cultural and natural history of the properties. Created Winter Ecology Winter Water Supply Protection video for Sterling Garden Club, with over 70 attendees. Vernal Pool video completed and posted on DCR YouTube https://youtu.be/ClkpJqa5Z3Q
I2	Coordinate Educational and Outreach programs	Interpretive Services and Watershed Rangers offered 25 programs with an attendance of 812 participants. Salt reduction message posted on Instagram Stories before storm on 3/3. World Water Day 3/22 Twitter post. Salt Sleuth citizen science press release approved. Spoke with entire 2nd grade at Thomas Prince School about watershed management and water supply protection. Visited each 5th-grade class at Columbus Park School for Watershed Model lessons and activities. Participated in DCR Initiatives: First Day Hike with over 150 participants, February Vacation Programming Cabin Fever Hike and Owl Pellet Dissection 43 participants. Contributed to Universal Access Program presentation on Partnering for Outdoor programs.
I3	Maintain and enhance kiosks and bulletin boards throughout the watershed.	Watershed Education brochures were updated with coming events and distributed.
I4	Perform inventory of signage and make recommendations for improvements and additions of stewardship signs	Rangers have recommended and replaced many signs throughout the watershed. We continue to update signs at the reservoirs to reflect the changes in the public access plan.
I5	Analyze and update current brochures. Determine need for new brochure topics and develop as needed.	No updates to current brochures are required as information and web links remain valid. No new brochures needed at this time. Pool brochure distributed to Southborough Conservation Commission.
I6	Partner with other organizations on watershed programs	Collaborated with local hiking groups on guided hike offerings and cross-promoted events with a shared mission of stewardship and water conservation. Collaborated with local hiking groups on guided hike offerings. Collaborated with local libraries and Recreation Departments on new program offerings and promotion of Winter Hiking Series. Updated history PowerPoint for a World Water Day theme, presented to over 75 people for Clinton Historical Society 3/22
I7	Provide educational materials, teacher training, and support for Mass Envirothon	Attended Steering Committee Meetings. Provided Water Workshops at High Schools, Broad Meadow Brook, and Alden Research Laboratory.

Task No.	Description	Jan. 1 - March 31 Accomplishments
I8	Maintain and update website with relevant news and information	Website updated regularly. Wachusett programs listed in timely manner. Alert banners posted for short-term information. Meeting information for Wachusett related events, including Water Supply Protection Trust, Wachusett Access Plan, and annual fishing season, published in required time frame.
I9	Organize existing photographs and develop an inventory of new photos for Sudbury Watershed	New folders have been created on the DWSP Sharepoint file; addition of photos has begun as they are taken. Older photos found at the Ranger Station have been scanned in.
J. Water Quality and Hydrologic Monitoring		
J1	Perform routine tributary sampling twice per month (bacteria, turbidity, field parameters) (WATTRB)	Sampling completed as expected, twice per month.
J2	Perform Nutrient, Chloride and TSS sampling every month at 10 tributaries, including field parameters (and Shaft 1 when Quabbin transfer is active.) (WATMDC)	Sampling completed as expected, once per month.
J3	Conduct reservoir profile and plankton sampling at least weekly from April - September and bi-weekly from October - March when ice conditions permit. Conduct additional sampling as necessary and when nuisance taxa increase beyond established thresholds. Use remote sensors (MWRA Buoys) to inform sampling program.	A total of 14 phytoplankton samples, 2 per sampling event, were analyzed during Q3. 3 profiles were collected at Basin North and 4 profiles were collected at Cosgrove Intake. Sampling was conducted every other week, following the Reservoir sampling plan. No phytoplankton thresholds were exceeded during this period, and the MWRA buoys remain undeployed for the winter season.
J4	Conduct quarterly reservoir nutrient sampling	No activity this quarter.
J5	Conduct reservoir bacteria transect sampling monthly or more frequently in conjunction with gull harassment program.	Transects collected three times in January, once in February and once in March
J6	Produce annual water quality report and document changes to sampling plan in the report.	Draft mostly completed.
J7	Maintain continuous stream flow gages in all four watersheds through USGS contract. Coordinate with USGS to ensure proper performance of all gages, and accurate and timely reporting of data.	All gages operational for entirety of Q3.
J8	Augment hydrologic data in Wachusett watershed through monitoring of stream flows, groundwater levels, and precipitation. Take snow pack measurements. Develop and maintain accurate rating curves.	All 6 Mayfly stations operational. 3 have no telemetry due to modem failures. Boards updated to version 1.1 at MD83, MD02, and MD06. Five snowpack surveys completed.
J9	Generate solute loading estimates for flow monitored tributaries. Expand to include smaller tributaries and Quabbin transfer when sufficient data has been collected.	No progress this quarter.
J10	Continue contract to work with UMass to use results of water quality models and other watershed/water quality analyses to help to make watershed management decisions. Project will include topics in Quabbin/Ware watersheds as appropriate.	EQ staff met with UMass in February to receive progress updates on research topics. Dr. Lily Jeznach was the lead author on a paper published in the journal Case Studies in Chemical and Environmental Engineering titled "Modeling the effects of reservoir operation on algal dynamics" which simulated effects of changing reservoir operation scenarios on chlorophyll concentrations in Wachusett Reservoir. Earlier initiation of the Quabbin transfer resulted in predicted lower chlorophyll concentrations in summer months. Later transfer start dates predicted higher chlorophyll concentrations in summer but lower in the early fall.
J11	Identify and outline system-wide water quality issues and challenges. Bring to ResOPs and/or WQSAT for discussion and integrate into water quality modeling work with UMass.	Worked with MWRA on revisions to the phytoplankton sampling plan to reduce unnecessary sampling effort. Revised plan for Wachusett moves away from the numerical monitoring trigger for taste and odor algae to an alert threshold. This is more appropriate given changes in treatment technology and increased monitoring frequency in the reservoir provided by the buoys that collect profiles four times per day. These changes were presented at Res Ops and will be put into place for this season. A spring WQSAT meeting was held to discuss sampling arrangements, logistics, and materials for this year.
J12	Work with local DPWs, massDOT, UMASS, MWRA, and others to reduce applications of road salt in the watershed and prevent additional increases in chloride concentrations in tributaries and the reservoir.	Provided comments on DOT's Snow and Ice control program ESPR through the MEPA review process.
J12.5	Investigate legal mechanism used by NH to remove liability from trained commercial applicators	The interagency salt working group jointly presented at the DEP BWR meeting in March. DWSP's salt reduction efforts were presented. The frequency of oversalting on commercial parking lots was emphasized and the NH approach of limited liability was outlined as a potential solution. NH staff were contacted prior and DEP was offered to have NH staff present and discuss their program with the DEP BRW group.
J13	Continue reservoir-wide data collection to increase understanding of reservoir dynamics including stratification, interflow, and distribution of phytoplankton.	No activity this quarter
J14	Continue monitoring stormwater basins at Rt 12/140 intersection for water quality, algae, invasive species, and mosquito larva.	A single monitoring event on 3/17 was completed during this Quarter. Water quality data were collected. A sample was analyzed under microscopy no mosquito larvae or phytoplankton of concern, including cyanobacteria, were observed. No aquatic invasive plants were observed.
J15	Continue to develop and maintain database backed tools and applications (R, GIS, MS Access, SQL Server) to facilitate data management, review and analysis, writing reports and modeling efforts.	Updates to MWRA data import script to account for new QA/QC samples. Modifications to TribTools for conductivity corrections. Minor fixes for Stage/Turbidity Survey123
J16	Complete data compilation/interpretation for 30+ Year Water Quality Report (1988-2018) and publish. Include assessment of impacts of climate change on water quality and hydrology.	No progress. This effort has been postponed.
J17	Ongoing field/lab equipment/supply management (including maintenance and calibration)	Received second quatro cable assembly from YSI and 1 pH probe under warranty replacement. Started developing sensor tracking and replacement protocols. Revisions began for SOP for YSI ProQuatro maintenance and calibration.
J18	Update and maintain water quality and hydrologic monitoring SOP documents	WATTRB and WATMDC SOP updates finalized
J19	Develop Quality Assurance Project Plan (QAPP) for Water Quality and Hydrologic Monitoring Programs	Draft QAPP sent to MADEP - QA/QC officer (Sue Flint) Comments reviewed - minor adjustments made to calibration protocols. QAPP ready for D/RD review in Q4.
J20	Continue to work with MWRA, Quabbin EQ, NEIWPCC and other stakeholders to characterize cyanobacteria and cyanotoxins in the reservoir.	Biologists continued to screen for cyanobacteria during routine plankton sampling. No elevated concentrations were detected this quarter.
J21	Initiate development of a plan for HAB response in the watersheds.	A draft Wachusett Cyanobacteria Response Plan was produced and distributed internally on 1/24. The draft is under review and the protocols within will be tested during FY23/FY24 phytoplankton growing season.
J22	Conduct benthic macroinvertebrate sampling, continue identification and assessment of historic samples.	No activity this quarter.

Task No.	Description	Jan. 1 - March 31 Accomplishments
J23	Continue cooperative study of current population status, life history, and sustainable yield of lake trout.	Lake Trout plots and summary updated for the Annual Water Quality Report.
J24	Conduct basic fish monitoring in the reservoir and watershed in collaboration with MA DFW. Assess goals and explore optimal sample methods with MA DFW.	DCR assisted DFW with Reservoir access for stocking Rainbow Trout at Quinapoxet River, the Narrows, South Basin, and Old Stone Church. Confirmed stocking truck had been decontaminated prior to entry.
J25	Conduct creel survey during the 2022 fishing season (April – November) and begin Creel Report.	Creel Survey Presentation given during 2023 NAB conference. Data quality analysis is underway.
J26	Develop a study to identify trends in the long-term phytoplankton and water quality data sets and identify variables influencing these dynamics.	Phytoplankton action plan draft completed and introduced to MWRA-EnQual for review. Includes updated phytoplankton alert levels based on algal density and remote sensing tools. Will be utilized during 2023 phytoplankton growing season.
J27	Determine needs for stormwater sampling based on analysis of historical data. Sample storm events as determined necessary.	No activity this quarter
J28	Investigate the use of eDNA for water quality applications including bacteria source tracking and invasive species.	No activity this quarter
K. Watershed Monitoring and Assessment		
K1	Continue to review local records and conduct watershed surveillance to identify potential issues in the Wachusett and Sudbury watersheds that could impact water quality. Work with local boards and land owners when problems are identified. Document all work in EQ database.	EQ staff investigated the following:(no water quality issues or has been resolved) Water line rupture Main Street in Holden, road work on Beaman Street West Boylston, animals near the Stillwater River, and West Boylston Department of Public Works snow blowing snow into Reservoir from Rt12 Causeway sidewalk. The following have been passed along to WsPA staff: A new house lot in Rutland in the WsPA zone, work in the Walmart parking lot near the piped section of Scarlett Brook, and tree removal on Rt 12 in WsPA zone. The following needs to be watched: Excessive salt use in the West Boylston movie theater parking lot.
K2	Provide technical assistance to state and municipal boards and commissions.	EQ staff distributed a pool brochure to Southborough Conservation Commission. Plan review and guidance was also provided for 2 trail projects: Peninsula Trail, Southboro and reconstruction of a section of Central Mass Rail Trail.
K3	Review files in EQ database and resolve any inconsistencies with paper records. Maintain records of all water quality related issues and EQ actions taken in EQ database. Make improvements to structure and data as needed	A new AGOL EQ database is now online, and the previous Access database is now a static historical reference. Migration of historic files was completed in X, and as of Jan. 1, 2023 all new EQ files are entered and tracked in the new database.
K4	Manage the Wachusett Watershed Hydrology Mapping Project. Project proceeds within selected subwatersheds and subbasins.	Field work was initiated in March. Desktop editing in ArcGIS Pro began during March as well. Subbasins in the Quinapoxet Reservoir were targeted. Participation in the EEOA internship program commenced.
K5	Complete Gates Brook District EQA and use recommendations to develop tasks for FY24 Work Plan.	Gates Brook EQA in process; on track to be completed by the end of Q4.
K6	Monitor hazardous materials spills and releases until considered complete for Wachusett and Sudbury watersheds. Compile and update hazardous materials sites, USTs and ASTs. Follow up with DEP as needed.	Three new releases in Sudbury Watershed. One new release in Wachusett Watershed. All are being monitored.
K7	Inspect all agricultural operations in Gates Brook District and continue to compile an inventory of agricultural sites in Wachusett/Sudbury using iPad app	Agriculture app and dashboard have been updated. No Agricultural sites have been monitored this quarter. Two new agricultural sites added to the AG app. EQ staff visited agricultural site in Sterling. Staff provided hobby farm guidance manual and educated homeowner on BMP's.
K8	Develop and implement outreach strategies and programs for topics identified through EQAs	EAll position was filled in February and review has begun on prior 2 EQAs.
K9	Monitor placement and additions of turf fields in both watersheds and remain up to date on all research and studies of PFA concentrations resulting from turf fields	Research has been conducted for updates on turf field PFAS as a project is being proposed in the watershed utilizing artificial turf. Request for information to DEP; awaiting a response from their research lab.
K10	Continue to communicate with MassDOT on roadway projects. Emphasize need for contractor to maintain safe conditions at all times. Investigate possibility of requiring contractor to have absorbent materials at work area for the duration of the project.	Not yet accomplished. No MassDOT projects within the watershed this quarter. Regularly review/check of MassDOT ProjectInfo.
L. Aquatic Invasive Species		
L1	Prioritize and conduct surveys of watershed/local waterways to inspect reservoirs, lakes, ponds, and tributaries for presence of aquatic invasive species.	Survey schedule for watershed ponds created.
L2	Conduct surveys, gather information, and make recommendations for management actions on an individual basis if/when new infestations are found in accordance with the Wachusett AIS management plan.	Asian Clam presence in Sudbury Reservoir confirmed in TRC Reservoir wide Survey Report. Ecological impact research started and provided to MWRA. Survey recommendations made for 2023 growing season.
L3	Administer AIS control contracts as appropriate and conduct aquatic vegetation surveys in conjunction with management of the Lily Ponds, South Meadow Pond complex, and Clamshell Pond.	RFQ for AIS surveys and control for South Meadow Pond revised and distributed. RFQ for Lily Pond and Clamshell as-needed treatment revised and distributed for review.
L4	Continue to use appropriate methods to prevent the spread of Phragmites along the reservoir shoreline.	Management results from Q1 and Q2 updated in the Annual Water Quality Report. Survey and management days scheduled for Q4. No additional management effort in Q3.
L5	Perform aquatic vegetation surveys prior to reservoir AIS management projects. Provide results to MWRA and contractors to guide plant removal efforts.	Biovolume results from 2022 re-processed. No additional work this quarter.
L6	Monitor, advise, and assist contractors with plant removal operations as necessary, including boat decontamination inspections and data management through ArcGIS Online apps.	No work done this quarter.
L7	Enforce the decontamination procedures for all watercraft entering the reservoir by inspecting each vessel and collecting completed decontamination certification forms.	No watercraft external to DCR launched this quarter.
L8	Continue to educate ranger and interpretive staff on AIS and other water quality topics for incorporation into routine education program.	Summary statistics provided to Ranger staff for History of Fishing at Wachusett Programs.
L9	Monitor beaver activity; if necessary make recommendations to NR for removal where contributing to spread of invasive plants or causing water quality impacts due to flooding abutting property.	No new observations of beaver activity were made this quarter.
L10	Update DWSP AIS web pages	Updates are forthcoming and will be ongoing in conjunction with development of the divisional AIS plan.
M. Wastewater Management		

Task No.	Description	Jan. 1 - March 31 Accomplishments
M1	Provide plan review and interpretation, if requested, to Boards of Health.	Ongoing. No requests from any BOHs this quarter.
M2	Compile septic system information (installation date, repair date, location, etc) from watershed communities in wastewater database. Include linked electronic plans where available.	Ongoing. Regularly reviewed minutes and communication with BOHs /Town Clerks to obtain septic inspection info in order to update wastewater database. Entered information compiled into Sewer/Septic Tracking Database.
M3	Obtain sewer connection information from Holden and West Boylston; add to Wastewater database and GIS datalayer	Obtained new sewer connection data from Holden and updated the wastewater database. Requested sewer connection data from West Boylston (via multiple emails and phone call) but no response yet.
M4	Continue to provide management support, with the MWRA, of the Rutland-Holden trunk sewer and Rutland Holden Relief trunk sewer. Coordinate inspections and maintenance projects for the sewer lines. Prepare and submit quarterly bills to the user communities in a timely manner.	Partial payments have been received from two communities; one community paid in full. One community has remitted no payments. New laser meter still being evaluated. Working on trying to get meeting with City of Worcester officials to discuss sewer use agreements and billing issues.
M5	Research and provide sewer management information for legal issues regarding the Trunk and Relief sewer lines, as necessary. Work with legal and MWRA to research the option of transferring ownership of sewer lines to MWRA or the communities (would require legislative action).	Bills were issued, no payments received. Issues are still not resolved.
M6	Evaluate and manage new trunk line connections. Monitor trunk line for encroachments; resolve any problems.	No new requests for sewer connections. No new encroachments have been reported. MWRA crews performed extensive clean up of storm debris throughout the quarter.
M7	Address I/I issues within trunk and relief sewers per DEP requirements (this is dependent upon DEP acceptance of our I/I submittal).	Working on obtaining all info from MWRA, updating GIS info to include all requested info from DEP.
N. Stormwater Management		
N1	Treat direct discharges at Rt 110 Sterling	Tighe & Bond are developing 75% design plans and anticipate completion by May 1st. Will be looking to collect hydrologic data to model infiltration rates of the receiving pond.
N2	Continue to work with towns and private landowners for regular maintenance of BMPs to ensure proper performance, inspect BMPs on a 5 year rotating basis and recommend maintenance or repairs as needed.	Work commenced in March in the Quinapoxet Subwatershed.
N3	Work with watershed towns to ensure compliance with MS4 requirements. Provide details of DWSP activities that indirectly support town MS4 requirements (education, sampling, inspections) and provide technical assistance or training of requested.	Letters and information will be shared with towns in advance of the MS4 submittal deadline in the 4th quarter.
N4	Create geometric network in ArcGIS to route stormwater flows through drainage network.	No activity this quarter
N5	Modify subbasin lines in ArcGIS based on results of Wachusett Watershed Hydrology Mapping Project.	Work commenced in March in the Quinapoxet Subwatershed.
N6	Conduct regular inspections of all construction sites greater than one acre.	Ongoing. Regularly monitor CGP sites for site compliances and check NPDES site monthly for status of permits.
N8	Conduct culvert assessments for culverts identified in Gates Brook District and add information into NAACC database	No culvert assessments were conducted this quarter. Information from database used to provide letter of support for Town of West Boylston DER culvert Replacement Grant application
O. Emergency Response		
O1	Provide and coordinate ICS, emergency response and safety trainings to appropriate staff. Work with other agencies to provide trainings and exercises	Moran Environmental Recovery conducted an HAZWOPER 8hr FROPS class for 19 attendees from Wachusett and Quabbin.
N7	Continue work with local DPWs to identify locations of concern, evaluate options for BMP installation, and ways to cooperatively implement recommendations.	Initial discussions with WB DPW Director for implementation of BMPs along road gutter of Prescott Street
O2	Update information in the Comprehensive Emergency Management Plan, Training & Exercise Plan, EAPs, and other emergency response plans.	The draft Wachusett Reservoir RR Exercise AAR-IP was sent out for review. Completed draft Unionville Pond Dam TTX AAR and sent out for review. Updated Emergency Notification Sheet. Updated Dam EAPs.
O3	Organize and maintain emergency response supplies and services.	MWRA is replacing the Regional Response trailer WRA717 and will surplus it to DCR. The old trailer will be utilized as a fire response trailer.
O5	Provide and coordinate ICS, emergency response and safety trainings to appropriate staff. Work with other agencies to provide trainings and exercises	IS-100 and IS -70 classes were conducted for approximately 12 Wachusett staff.
O6	Evaluate, monitor and oversee spill clean-ups that impact or threaten water resources of DWSP property. Work with appropriate local, state and federal agencies to ensure that containment, cleanup, and mitigation of the spill are proceeding in a manner that protects drinking water quality	None occurred.
P. Support		
P1	Prepare and submit to MWRA and the Water Supply Protection Trust Annual Work Plans, budgets, progress reports, and program goals and objectives. Track Section progress in meeting program goals.	Provided program accomplishments and required information for MWRA Trust Board meeting. Ongoing program review to meet section goals and mission.
P2	Administer the Payment in Lieu of Taxes (PILOT) program.	Final PILOT calculated and all paperwork sent to towns for payment. Total FY23 PILOT is \$8,479,324.48. This is the first time since legislation passed that there was no increase in PILOT. The total "Hold Harmless" amount (the amount calculated vs the amount paid because payment can never be less than previous year, was \$2,305,499. Total amount paid to Wachusett towns was \$3,564,910, or 42% of total. The amount paid to Sudbury towns was \$855,461, or 10% of total PILOT.
P3	Configure and maintain both internal and externally facing ArcGIS Online applications. Work with staff to generate field data collection tools using Survey123 and/or Field Maps for ArcGIS. Maintain existing field data collection tools for staff; maintenance includes archiving of data (as needed) and ensuring that Surveys and Maps remain functional through upgrades to ArcGIS Online and mobile apps.	New EQ database deployed to Wachusett EQ staff; Quabbin/Ware EQ staff will begin to use this new database at the beginning of next FY (July 1). Migrated additional EQ workflows into AGOL - Ag Site Monitoring, Sewer/Septic Parcel Tracking, and Construction General Permitting. CGP is still in process, but will be finished during next quarter. The existing Wachusett CGP workflow will be deprecated and deleted in favor of the new workflow being developed. All historic Wachusett CGP data previously collected will be migrated over. Additional work remains to create additional tools for reporting on EQ database and other migrated data. Ideally, these solutions can/will also be used by Quabbin/Ware EQ staff as needed. Working on data and app development for new "Sportsman" map. Phase 1 will be hunting focused, and phase 2 will add in fishing opportunities. Working with staff from both regions on mapping locations of fishing opportunities in our watersheds. A new Pool Vehicle Reservation System was developed using Survey123, Power Automate and SharePoint; the system prevents conflicting reservations and reservations longer than 5 consecutive days. Next quarter improvements will be made to facilitate less work for Jussara when an existing reservation needs to be changed.

Task No.	Description	Jan. 1 - March 31 Accomplishments
P4	Publish hosted feature layers, tile layers and tile packages on an as-needed basis to support projects. Ensure that all public-facing data has proper metadata added as per the EEA ArcGIS Online Best Practices.	Data published and updated as needed. Sportsman map work has resulted in many new layers being published and developed. These will eventually be available to staff via Data Store group and Data Inventory.
P5	Provide staff with training in desktop, mobile and online GIS applications.	Training materials developed as-needed.
P6	Train staff in GIS on an as-needed basis to provide knowledge needed to complete basic GIS-related tasks.	Development of 4 ArcGIS Pro training sessions in progress. Training will be offered once per week in June.
P7	Assist staff with GIS-related projects by providing maps, data analysis, data exports and data collection.	GIS provided Land Cover/Land Use calculations (and maps) for Watershed Protection Plan. GIS-W completed all other maps for Wachusett/Sudbury for plan. GIS-W assisting with EQAs as needed.
P8	Maintain and update GIS data hosted in ArcGIS Online for divisional staff use; ensure all data is current and available to staff via that 'DWSP - Data Store' group, and has updated FGDC-compliant metadata. Ensure newly publish data are added as a new record to the DWSP Data Inventory spreadsheet, which is shared with users via MS Teams. Ensure that a layer file is created for ArcGIS Pro and added to the appropriate location in the DWSP-GIS Team.	Maintenance to Data Inventory & Online data available to staff completed as necessary.
P10	Create parcel maps for Land Acquisition Coordinator meetings with landowners and MWRA board. Create and maintain one Story Map per Land Acquisition Panel meeting, with one section per potential property.	There were no Land Acquisition panel meetings this period.
P11	Complete GIS-related special projects	GIS-W updated all Wachusett WsPA town maps.
P12	Operate administrative offices including answering phones, greeting visitors, scheduling interviews, receiving orders for office supplies, updating emergency contacts and other documents as needed. Managing the BHP unit 2 & 3 weekly schedules.	Continued providing general administrative duties for the department. Answered phone calls and checked voice messages daily. Provided reception for visitors and others using the building for meetings/trainings. Processed daily mail including letters/parcels metered and delivered to the post office. Picking up, sorting and distributing daily incoming mail to staff/department. Completed mandatory trainings and participated in a Microsoft Excel training offered through Mass Achieve. Continued to assist staff members with requests for room reservations at JAH and also vehicle reservations. Updated information on the portal for new hires, former employees, vehicle information, forms, etc. Participated in the interview process for the Tractor Driver. Completed sorting and organizing an inventory of staff clothing and office supplies. Received and recorded monthly mileage reports.
P13	Provide payroll assistance and personnel services for all Section employees.	Continued providing payroll assistance and personnel services for all section employees. Performed onboarding activities for seasonal staff.
P14	Provide contract administration, financial management, record-keeping, purchasing of goods and services, and other financial support services.	A total of 49 encumbrances were submitted and a total of 244 invoices were paid for Wachusett. Notable purchases in the 3rd quarter include a Vibratory Roller, Hopper Sander, Construction Forks and Mustang Dry Suit Liners. Repairs were done to the John Deere Tractor and the Backhoe. Also done was the encumbrance for Survey Services on Exhibits B, D & E as well as the multi-year encumbrance for Dam Safety Inspections & Trainings. A total of 4 encumbrances were submitted and a total of 7 invoices were paid for NR.
P15	Coordinate with EEA IT to provide local MIS support for the Section. Update IT Plan as required addressing technology needs for the coming year.	Continued to assist and support staff with IT issues as needed. Initial stages of building-wide Wi-Fi installation.
P16	Training to Administer Logging Permit program, including mailings, bid openings, financial management, database management, permit and key issuance, etc.	Continued providing office support for the department to include processing correspondence for review and approval by RD, submitting payments for processing and recording. Reviewing and updating files.
P17	Plan and implement vehicle and equipment purchases and leases.	Received new single-drum roller. Received new stainless-steel sander. Received new 2022 Ford F-150 Hybrid. Completed list of vehicles, (5), that will be turned in as the result of OSD's Rightsizing exercise.
P18	Inspect, provide regular maintenance, and repair vehicles, boats and other motorized equipment, utilizing Fleet Wave system. Maintain up-to-date records of all vehicles and equipment in Fleet Wave system.	Garage staff completed 31 work requests in the third quarter.
P19	Complete watershed-wide vulnerability assessment to identify potential impacts of climate change on the water supply	No work has been completed on this task; waiting for state-wide guidance to complete. We should have a better idea of what we need to take into consideration once Protection Plan Update is completed with a new section regarding climate change and new Administration.
P20	Develop the new 5 year Watershed Protection Plan	Work completed on full draft of Plan, with target to submit draft to MWRA in first week of April. After MWRA review, draft will be sent to MassDEP in early May.

Quabbin/Ware FY 23 Third Quarter Report



Update on selected tasks in Quabbin/Ware workplan for January 1 to March 21, 2023.

Task #	Task Description	Quarterly Progress
A. Land Acquisition		
1	Acquire land. Coordinate due diligence and other tasks/services from DCR and private contractors to complete survey, appraisal, title, engineering, and environmental assessments for proposed acquisitions. Negotiate WPR language, purchase prices, and conditions of sale with sellers of property.	No projects went to record this quarter. Many projects are currently underway at various stages of due diligence. About 8-10 projects are on schedule to close by the end of Q4.
5	Continue to solicit and work with landowners in donating conservation interests in land and assist in advising landowners on the tax incentives available when donating conservation interests.	3 parcels that have applied for the MA Conservation Land Tax Credit (CLTC) Program were signed by the Commissioner and submitted to EEA for approval.
B. Watershed Preservation Restrictions		
1	Monitor WPRs on a regular basis, following monitoring procedures, to meet schedule of monitoring WPRs every 1-3 years.	No WPR monitoring visits completed this quarter. WPR Coordinator began preparing for spring monitoring. WPR Coordinator reviewed Regional Monitor's reports for visits completed in Q2. WPR Coordinator worked with GIS Coordinator to update monitoring apps.
3	Meet with Restriction Stewardship Working Group and confer with legal to respond to enforcement issues and requests to exercise reserved rights.	Restriction Working Group met once this quarter. WPR Coordinator worked with DCR-Parks stewardship staff on updating the Enforcement Procedure.
5	Implement WPR records procedure with DCR records manager.	WPR Coordinator spent 1-2 days/week at the Boston office culling DWSP land files as part of the File Digitization Project. WPR Coordinator worked on updating the WPR information in the LIS database.
C. Land Management		
3	Prepare forest harvest proposals for next fiscal year including data on proposed harvest areas, characteristics of stands, soils, cultural resources, wetlands, wildlife, unique features, and priority habitats. Proposals shall also include information on lot layout, landings, stream crossings, wetland crossings, and stonewall crossings..	The foresters completed field work and write ups for 15 forestry lot proposals for FY24. Internal review will begin shortly.
4	Plan and conduct an internal review of proposed logging operations for the coming year, including assessments of silviculture, water quality, wildlife, and other potential impacts/benefits. Review lots to ensure consistency with aspects of the CLMP, including wildlife, forestry objectives, and environmental quality.	Work this quarter consisted of continued updating to web map for eventual public presentation, development and distribution of a Word form for FY24 lot proposal narratives (replacing the database version in place since the 2000s), and updating GIS data from forestry staff in preparation for creation of new static maps. Full reviews will be completed in Q4.
6	Plan, lay out, mark products for removal, prepare maps and permits, establish photo monitoring points, file Forest Cutting Plans, seek bids, award permits, and properly advertise and post forest management operations consistent with the Forest Cutting Practices regulations, the LMP, and approved harvest proposals.	No lots were allowed to be put out to bid this quarter. Foresters have four lots marked and ready to go out as soon as permission is granted by the administration.
7	Provide supervision and oversight of all forest harvesting operations on DWSP property from sale until final service forester sign-off and bond return. Assure compliance with applicable DCR and NHESP regulations and restrictions, approved BMPs, and all Permit conditions. Maintain adequate site visit records. Monitor post-harvest and collect photo point images consistent with internal policy.	Five forestry lots were successfully completed this quarter. Two lots are being actively supervised.
9	Continue to implement long-term paired watershed monitoring to assess impact of DWSP forest management on tributary water quality.	A draft of the calibration period result was circulated for internal review and is currently undergoing revision. Planning for final report is underway with input from multiple DCR sections. EQ met sampling goals for quarterly event-based sampling and monthly routine samples. We continue to coordinate closely with partners at MWRA on sample collection, shipping, and analysis, as well as with DCR-WM staff on road access and conditions. Timelines for reporting are currently delayed due to current staffing levels (multiple vacancies in EQ).
10	Conduct periodical regeneration and invasive species surveys to monitor forest health and development resulting from silvicultural activities or other natural disturbances and processes.	A protocol for prioritization of sites for the Forest Diversity Enhancement project was developed. Foresters have begun using the protocol to evaluate and prioritize sites in anticipation of the upcoming field season for two seasonal positions that will be dedicated to the project.
13	Complete assessments on all new land acquisitions, including descriptions of fire/access roads, bridges, restoration needs, and forest conditions. Integrate these lands into land management, public access, and other watershed management programs.	Assessments were done on the Keller property that was recently acquired in Quabbin.
14	Locate, mark, and maintain property boundaries periodically or as needed.	Some property lines and corners were located as part of the FY24 forestry lot proposal process. 1000 ft of boundary lines were maintained.
17	Identify, plan, and oversee non-forest or other unique habitat restoration, field reclamation, prescribed fire implementation and maintenance work.	Q3 work consisted of development of updated contractor bid sheets for projects at Ware River. We also reviewed language for DCR contracting office related to an updated contract for invasive plant control. 85% of the fields on Prescott have been mowed/cleaned up. Installed kestrel box for NR staff. A new Statewide contract was developed and approved. New vendors were solicited for FAC120. The new contract replaces FAC103 and goes into effect on April 1st (Q4). DWSP hopes to award bidders several habitat and restoration contracts in Q4.

Task #	Task Description	Quarterly Progress
18	Maintain the non-silvicultural lands described in the land management plan (e.g., viewsheds, gravel pits).	Whitney pit was in operation screening material. Barre heath off line till fall due to restrictions. Viewscapes from Pelham and N.Salem were cleared. Actively working on the Barre heath road. Started tree removal at the hospital at Prison camp
23	Update and Implement Quabbin Park Operation and Maintenance Plan	Hover mower has arrived. We will utilize on steep banks where the zero turn mowers are not allowed. Training with the new mower and collection unit & new hover mower will be done in the next few weeks. Will request for a hydroseeder to spray bare areas on the dam and dike slopes after the holiday Continue to monitor drains and clean out leaves and debris when needed.
24	Implement Quabbin and Ware River Road Management Plan	Assuming that snow season is over. We've had countless trees and limbs come down in the roads. Cleanup is ongoing. Currently grading gate 8 road in preparation for the opening of fishing season. Approximately 6 miles of roadside brush and small tree cutting was preformed and on going.
D. Wildlife Management		
1	Continue the active harassment of birds within the Bird Harassment Zone at Quabbin Reservoir, using human presence, boats, pyrotechnics, passive scare devices, and other techniques. Continue to identify and test new harassment techniques.	After reaching a maximum gull count of 818 on 1/26/23, both gull and bacteria counts decreased through Q3. Bacteria results remained below 20 MPN/100 mL at all times. Based on the low counts, active harassment ceased at the end of March. All weekly reports were submitted for the 26-week season.
2	Observe and document the nocturnal gull roost on Quabbin Reservoir.	Gull roost observations continued weekly utilizing drones to photograph and document the nocturnal roost on the Quabbin Reservoir. There were 12 drone flights this quarter with roost numbers from 307 to 966 gulls.
4	Identify places in MA where human derived food is available and work to prevent feeding through educational signage, interaction and enforcement.	Monthly regional gull surveys continued into this quarter. The range of the survey area was expanded. There were no new areas with high gull numbers were identified. The final survey of the season took place on March 23rd. Surveys will begin again in the fall of 2023.
5	Remove beaver and muskrat in the Aquatic Wildlife Pathogen Control Zone at Quabbin. Address beaver concerns outside the control zone.	There was no new beaver activity within the pathogen zone this quarter. A beaver was observed in boat cove. The area was surveyed and the beaver had moved on. One beaver was removed from the northern section of Beaver Brook at the toe of the dike. Beaver were blocking the spillway at Wax Pond in the Ware River watershed compromising the integrity of the structure. Beaver removal began this quarter and will continue into next until complete.
7	Research and manage for common loons on DWSP waterbodies; provide nesting platforms, capture and sample birds for contaminants.	The annual report is attached. Attended the annual NELSWG meeting, continue to attend NELSWG subgroup meetings and attended a loon necropsy session. A Quabbin banded loon was found dead on the coast of Rhode Island. A necropsy was completed and no obvious cause of death identified. Samples from the loon have been sent for testing and results are pending. Lead tackle and monofilament line collection was tallied. A total of 2.44 pounds of lead tackle and 13.1 miles on monofilament line was collected to be recycled.
10	Administer the applications, permits, and orientations for the annual Quabbin Controlled Deer Hunt; analyze results of hunt.	Results of Deer harvest are underway. Waiting on harvest data in Watershed towns from MassWildlife to confirm DCR harvest. Pellet Surveys were completed in Quabbin Park. Pelham pellet surveys are underway and will be completed in the beginning of the 4th quarter. A total of 49 total transects averaging 1 mile were walked and over 2,300 plot will be sampled. Results will be published in the Annual Deer Report next Quarter.
12	Finalize, get approval, and implement the deer management plan for Quabbin Park	Still pending Commissioner approval. Pellet Surveys were done in this section again in 2022 and this area is still well over the 20 deer /mi2 threshold.
E. Public Access Management		
1	Proactively patrol watershed lands to ensure compliance with DCR regulations and policies. Tally visitor contacts and produce quarterly and annual summary reports. Conduct trend analyses on data collected (e.g., rule violations, access permits, encounters).	Watershed Rangers proactively patrol watershed lands to ensure compliance with DCR regulations and policies 7 days a week. Watershed Rangers tallied a total of 5,197 visitor contacts and 107 violations for third quarter. Quabbin Rangers tallied a total of 3,837 visitor contacts and 51 violations. Ware river tallied a total of 1,360 visitor contacts and 56 violations.
2	Continue to cooperate with state, environmental, federal, and local police for help with enforcement when required.	Watershed Rangers continue to cooperate with state, environmental, federal, and local police for help with enforcement when required. Rangers completed the HAZWOPER FROPS training. Ranger English completed the 40-hour First Responder training provided through the Ranger Bureau. No training coordinated in the WRW this quarter. Rangers completed BLA and terrestrial Spill Training.
4	Continue to implement Quabbin and Ware River Public Access Management Plans. Enforce rules and regulations of 313 CMR 11.09 through the use of citations. Issue written warnings and/or non-criminal citations for repeat offenders and serious violations. Complete semi-annual Compliance and Enforcement Reporting to MassDEP.	New, larger signage regarding park closure times was installed at various, high visitation locations in Quabbin Park. Signs working group working on signage for QP and watershed boundaries.
5	Regular meetings of the Signage Committee.	Quarterly meeting was conducted in March to review projects completed, underway and planned. Specifically, a Quabbin Park signage report was presented as it relates to DEP suggestions. Also, changes/updates to Public Access signs at gates and Quabbin Park were discussed and planned installation schedule for Summer 2023 was outlined.
7	Operate the boat fishing program in designated portions of Quabbin Reservoir in a manner that minimizes threats to water quality and accommodates visitors with accessibility needs.	Area three docks repaired (beaver damage).BLA season starts 4/15.Areas follow BMP in place. Completed. Fishing guide for 2023 has been updated; website has been updated and copies have been printed for visitor center and BLAs. Telephone message has been updated.
8	Oversee data management for Quabbin Boat Seal Program	Preparations for 2023 fishing season have been underway in Q3. Coordination on workflow adjustments related to boat decontamination and seal record collection, as well as boater contact information, are ongoing among applicable sections (e.g. EQ, GIS, Rangers, Admin, VC). Technical assistance has been provided to admin staff on routine workflow troubleshooting and development.
9	Provide ongoing support and consultation to DCR's Division of Parks regarding Comet Pond beach. Maintain boat ramp launch at Long Pond and boat ramp launch and parking lot at Comet Pond.	All Winter measures remained in place for most of the quarter. MEO staff removed the jersey barrier at the Comet Pond boat ramp at the end of March, preparing for Fish &Wildlife to put the dock back in place. Rangers replaced the broken info box on the Comet Pond kiosk that holds the AIS self-certification forms. AIS self-certification forms were restocked at both Comet and Long Ponds. "Ice Thickness Not Tested" signs removed from all of the WRW ponds.

Task #	Task Description	Quarterly Progress
12	Continue to control and monitor research and other public access through an internal review process and permit system. Maintain electronic databases for permit issuances, access notification, and any problems.	Ten Research permits were approved for 2023.
F. Watershed Security		
1	Continue regular ranger patrols to provide watershed security. Perform regular security checks at key access points and MWRA facilities. Use daily logbooks to record all encounters and violations. Produce periodic reports.	Watershed Rangers continue regular ranger patrols to provide watershed security. Perform daily security checks at key access points and MWRA facilities. Use daily e-logs to record all encounters and violations. Produce periodic reports.
2	maintain gates, barways, bollards and signage throughout the watersheds. Install barriers (such as guardrails or fences) as needed to protect properties and control public access.	Gates regularly checked. Signage being updated/ replaced regularly/ongoing due to new language and vandalism. Maintenance is ongoing for gates barways. New gate at boundary line near Hardwick/Barre/Petersham. Several gates repaired in Ware River.
4	Work with local state and federal responders to ensure current agency emergency contact information.	The FY23 SOP for Extreme Weather at BLAs was updated for distribution in Q4 when BLAs open. Emergency Spill response training at each BLA in April was confirmed (new vendor this year). Video surveillance monitor was relocated to new Ranger Section office in the Quabbin Administration Building.
G. Infrastructure		
1	Conduct monthly inspections and issue findings on Winsor Dam and spillway and Goodnough Dike. Coordinate inspections with MWRA and consultants. Plan for or conduct dam repair work as called for in dam inspection reports.	DCR staff provided review and comment on Phase I Report on Quabbin Reservoir Dams prepared by GZA Consultants. DCR staff provided planning and logistical support to the MWRA on future Masonry Repairs being planed for the Winsor Dam Intake Building. The masonry repair project is anticipated to start in April and will involve cleaning of exterior stone, repointing, removal of exterior window caulking/sealants, and removal and resetting of large rip rap stone set against the building.
2	Conduct periodic inspections and issue findings on DCR's bridges and small dams in the Quabbin/Ware Region. Assure compliance with all dam safety requirements for small dams on DWSP lands, including the review of new or updated Emergency Action Plans.	Partial collapse of SE spandrel wall of Keystone Bridge discovered in late March. DCR staff have reached out to DCR SP Engineering for contractor assistance and support. DCR Cultural Resource staff have been alerted to the collapse and precarious fate of this historic structure. ODS updated on beaver trapping and dam removal efforts ongoing at the Wax Factory Pond Dam in Hubbardston.
4	Provide oversight and technical support for engineering, construction, and renovation work in the Quabbin/Ware Region.	DCR staff met with HKT Architects and BEC Consulting on multiple occasions to review QAB window replacement project needs and constraints. BEC performed partial demo to expose lintels and tested and confirmed building materials for presence of asbestos. HKT developed plans detailing replacement using windows manufactured by Universal Windows as the basis of design. Submittal of updated construction costs pending. T Ford Construction and GES Environmental began building demolition and removal of hazardous building material on the Quonset Hut and Metal Shed structures located at the Stockroom site. Removal of the two buildings will clear the site for future construction of the Quabbin Maintenance Building currently under design. SMI Inc visited QAB facility to scope out asbestos abatement work being targeted for Visitor Center, Hangar garage bays, and office spaces. Cost proposal submitted and award of Task Order pending. NE Paving visited Gate 43 (Hell Huddle Road) in Hardwick to scope out road improvement and rersurfacing work being targeted for late spring. DCR staff preparing RDA and Natural Heritage Review submittal to permit planned road reclamation and reconstruction effort. Updated cost proposal pending and permit submittals pending.
5	Maintain records regarding reservoir and facility construction, as well as maintenance and repair operations. Provide surveying and drafting services, maintain records, and respond to in-house and other requests for information related to land ownership, property lines, buildings, and construction projects.	Carlin Rosen was hired as an Intern for the CE section to aid in the organization and digitization of records in the CE Office. Efforts are focused initially on the Real Estate/Property boundaries in the Quabbin/Ware Regions. FY23 Surveys - Two projects were awarded for survey contract, due 6/30/2023. >2303 - Healdville Road, Hubbardston (G&H) >2304 - Narrow Lane, Petersham (Hannigan) Ongoing in-house work for roads and boundaries. Review and recon of future prospective survey projects.
6	Conduct building maintenance activities, including painting, carpentry, cleaning, minor repairs, and other routine maintenance.	Painting improvements on going including entire Hangar, 2 offices, and repaired walls and repainted portions of Visitor Center. Renovations for offices that will be occupied by Rangers over at admin; Renovations at stockroom; Renovations for hybrid workers switching over from personnel offices to hybrid work stations. New storage room in hangar built to maintain N.R. related items. Dock maintenance at Area 3. Elderly assist bars installed on docks. Many new renovations for Ranger offices including desks, racks, and bench. Visitor center work ongoing.
7	Conduct periodic inspections of drinking water sources and septic systems at the various Regional office buildings. Assure compliance with applicable state and federal regulations.	Whitewater Inc assumed role of Certified Drinking Water Operator for the QAB water system. Whitewater Inc also assumed responsibility for compliance monitoring and laboratory testing, effective March 2023. Repairs to backflow prevention device and plugged strainer on boiler feed line completed in January. DCR staff updated PWS O&M, Emergency Action and Coliform Sampling Plans to reflect system changes with new well source and 2-inch transmission line.
9	Develop specifications, bid packages and contracts for facility and infrastructure projects identified in the Major Projects List for FY23.	Sprinkler Work scheduled for end of April. Did not make FEMA Grant List for Generators. Generator Service Contract in place for 2023 -2024. Repairs to QAB generator fuel line and fittings completed in January restored operation to the unit. Septic Service Contract in Place. Issuing New Ready Mix Concrete Contract. Working with HKT on Admin Window Replacement Project.
11	Continue to conduct routine maintenance and burial activities in the Quabbin Park cemetery.	Currently removing winter decorations and spring cleanup. 2 full burials and a cremation scheduled for the week of 4/10/23

Task #	Task Description	Quarterly Progress
13	Continue to conduct road maintenance activities on DWSP lands.	Roadwork this quarter was limited due to conditions. Graded and rolled gate 8 rd. for season. Fallen tree and limb clean up ongoing. Working on Gate 8 road in preparation for the fishing season. Successfully roadside cut almost all interior roads. Made minor improvements to Prescott brook road in support of forestry/logging.
14	Continue to collect data on road conditions and culvert locations.	Gate 40 Culvert - Certificate of Compliance was recorded on 1/4/2023 in WCRD on Book 68684 Page 123. Project is complete. Camel Brook Bridge - Design Plans and permitting efforts. Gate 43 Road (BLAIII) - Working with Catherine (DCR-SP) for execution of a contract. Scope and timing to be determined. Funding outside of normal operating budget and we are waiting on the release of the monies. Other RIME: Completed inspections on <X> culverts. Completed inspections on <X> bridges. Ongoing collaboration with WM and Forestry to focus efforts. These discussions highlight the need for the Roads Working group to be re-established for better project coordination and to understand the expectations of the Road Infrastructure Management Experience (RIME).
H. Watershed Protection Act		
1	Implement the Watershed Protection Act regulations in 14 Quabbin Reservoir and Ware River Watershed towns. Review and process all WsPA applications, and track the status of applications and associated projects using an Access database. Inspect sites throughout the duration of any activity to ensure compliance. Investigate and resolve violations of WsPA regulations.	Received 1 incomplete case in the Ware River Watershed. Received and processed 1 in the Quabbin Watershed. Investigated and resolved several violations in both watersheds. Conducted multiple site inspections in the Ware and Quabbin watersheds. Fielded numerous calls from town boards, consultants, and homeowners.
2	Continue to review or evaluate public notices, local board agendas and minutes, and information provided by local sources for additional jurisdictional activities or enforcement actions.	Reviewed agendas and minutes for all the towns in both watersheds. Contacted towns regarding projects and violations within WsPA jurisdiction.
4	Educate and interact with local boards and officials in the watersheds about watershed protection regulations. Educate local officials, realtors, prospective buyers, land development consultants, and homeowners on WsPA regulations and procedures.	Fielded calls from town officials, developers, engineering firms, and homeowners and assisted them with the Watershed Protection Act.
6	Modernize the current Access database into a web-based platform.	SOP completed. Located approximately 200 files to their correct parcels. Scanned several years of files into sharepoint.
I. Education and Outreach		
1	Develop an Interpretive Services Plan for the Ware River Watershed	While we wait for the Access plan to be approved, IS staff has been reviewing the public comments to better understand the communities view of the watershed area. We also have begun out reach to schools and community groups in that area.
2	Staff and operate the Visitor Center at Quabbin to educate visitors about watershed management and related topics.	In the 3rd quarter the Visitor Center had 643 visitors on weekends. We offered 7 fully remote and 1 hybrid program. The programs were very well attended with over 100 people at the Quabbin Myths and Mysteries presentation. On average we had about 35-45 people per program. Although we struggled with some technical difficulties with our hybrid program (namely volume) we were able to set up a system of reservations for the in person portion that worked well. Next winter, Quabbin IS staff hope to offer more hybrid programs as there is definitely interest in that. As well it brings people into the Visitor Center at a time of year when it can be quiet. All but one of the presentations were recorded and shared on the DCR Youtube channel https://www.mass.gov/info-details/quabbin-reservoir-watershed-education-programs#videos--quabbin-visitor-center-presentations - We also offered 3 outdoor programs and all together 436 visitors participated in one of our programs. Our upcoming programs are available here https://www.mass.gov/doc/quabbin-visitor-center-events/download
3	Continue established programs of public education, including school programs and field trips on DWSP properties.	In the 3rd quarter of FY23, Quabbin IS staff offered 5 school programs to 103 students. All of these programs were remote and were in water user communities. This program has a definite potential to growth. Currently we offer three programs to schools. A general Introduction to Quabbin that focuses on watershed protection, a history of the Swift and Ware River Valley and a program that focuses on wildlife. Quabbin IS staff have created a quick suggested hikes list that will be shared to the website. As well, they have begun creating trail specific scavenger hunts.. (see attached document and link for examples) https://www.mass.gov/doc/quabbin-spring-ramble/download
4	Collaborate with other organizations and watershed communities to reach more diverse audiences. Identify specific groups and their educational needs.	Continuing our outreach to local communities, Quabbin IS staff will present as part of the Athol Library Smithsonian Crossroads traveling exhibit and to the Holden Grange. We are also looking for opportunities to connect with residents in water user communities.
5	Maintain self-guided Quabbin Park interpretive trails focusing on natural resource management and water quality protection.	Quabbin IS staff plans to walk the Quabbin Park trails to review condition and location of trail markers and trail heads. Plans are in place to finalize a stewardship agreement with the Pioneer Valley Hiking Club to help us maintain trails in Quabbin Park. The group will probably organize 1-3 trail days throughout the year where their volunteers will use hand tools to help maintain our trails in Quabbin Park by cutting back overgrowth and reporting larger concerns to Interpretive Services staff. Justin has lead group hikes once a month on Saturdays to introduce visitors to trails in the park and forest roads throughout the larger reservation.
9	Continue to support and participate in the Envirothon, America's leading natural resource education program for high school students.	2023 Envirothon will be held on Thursday, May 25 at Blackstone River and Canal Heritage State Park in Uxbridge, MA. Final preparations are being made.
J. Water Quality and Hydrologic Monitoring		
1	Conduct routine and non-routine water quality sampling and analysis. Evaluate need for sampling before/during Quabbin transfers.	Routine and non-routine sampling and analysis continues. No needs identified for sampling before/during transfers.
2	Perform Shaft 8 Intake Zone Inspections prior to MWRA diversions.	Completed one sanitary survey inspection on 1/05/2023. No additional requests received.

Task #	Task Description	Quarterly Progress
3	Monitor plankton in Quabbin Reservoir. Evaluate need for sampling before/during Quabbin Transfers.	Monitoring plankton continued on a monthly basis. Starting in May monitoring frequency of site 202 will increase to weekly, while monitoring frequency for site 206 and Den Hill will remain monthly. Revised for the 2023 growing season, the phytoplankton action plan states that if any of the taxa of concern exceed the alert levels, monitoring frequency will increase to twice weekly for site 202 and twice a month for site 206 and Den Hill. The action plan also states that once populations stabilize, monitoring will shift to investigative monitoring to better understand trends in phytoplankton dynamics across the reservoir.
4	Collect, interpret, and manage data on reservoir elevations, water transfers and releases. Share data with DWSP staff and MWRA.	Ongoing daily activity. The reservoir elevation trended upwards throughout the quarter. The elevation climbed upwards most days, as only four daily observations were lower than the previous day's (all four days taking place in February, which saw below average precipitation this year). Quabbin Reservoir elevation at the start of the quarter (January 1, 2023) was 523.48 ft, and the quantity of water in storage was 362,700 MG (88.0%) - this was the lowest it was recorded at during the quarter. The Reservoir elevation at the end of the quarter (March 31, 2023) was 527.10 ft, and the quantity of water in storage was 389,860 MG (94.6%) - this was the highest it was recorded at during the quarter. Ware River Diversion from Shaft 8 to Shaft 11A at Quabbin was active 1/9/2023 – 1/12/2023. A total of approximately 600 MG diverted.
5	Monitor water quality at active harvesting stream crossing sites to measure effectiveness of BMPs.	Water quality monitoring at sites was ended in January 2023.
6	Continue improvements to database app for compiling of water quality, quantity, and other relevant data for data and trend analyses.	New staff are being trained on data management practices. Historic data and new workflows continue to be incorporated into the database system at a regular interval. This quarter saw the organization, standardization and database import of stream temperature, storm event field parameter, and USGS groundwater data. EQ staff are coordinating on efforts to document historical data flags, a significant QA/QC effort important to data integrity.
7	Implement streamflow monitoring at selected sites. Coordinate flow monitoring with annual water quality sampling plan.	Routine (quarterly) data download at stream sites is ongoing. Preliminary stream temperature analyses have been completed by EQ/NR seasonal intern. EQ launched a collaborative effort with USGS this quarter to better integrate rating-curve development workflows at select Quabbin stream gauge sites. Technical efforts to improve Mayfly performance and maintain Mayfly sensors is ongoing. Further progress on hydrologic monitoring program is limited due to current EQ staffing levels and multiple vacancies within the section going into the busy summer field season.
9	Implement ISA with UMass for Research	Attended Feb 2023 project review meeting. Coordinated logistics on Total Coliform project.
K. Watershed Monitoring and Assessment		
1	Complete Environmental Quality Assessments in the Quabbin Reservoir and Ware River watersheds according to a prescribed schedule. Present EQAs to RD and DRD.	Inspections, data analysis, and draft report writing underway for EQAs in each watershed. Preparations underway for AIS surveys, coordinated with EQAs as appropriate.
3	Conduct routine inspections of the Winsor basin/CVA intake area. Inspect MWRA CVA screen washing when necessary. Report debris and aquatic organisms trapped on screens.	Inspections conducted when needed. Limited staffing for task reassignment.
4	Coordinate with other agencies to exchange information and review projects in watershed.	MEPA Environmental Monitor was reviewed regularly for projects in watersheds.
8	Use site inspections, environmental quality assessments, local board meetings, and information from Watershed Rangers to identify and mitigate possible violations of state and federal regulations. Monitor progress and pursue enforcement if needed.	Established a new relationship with a member of the Hubbardston Open Space Committee. Collaborated with rangers and new contact to address improper trail use on DWSP land adjacent to public space managed by the town. Provided trail improvement grant program information to town.
L. Aquatic Invasive Species		
2	Continue program to monitor AIS in the Reservoir.	AIS monitoring program for 2023 includes conducting macrophyte surveys and zooplankton monitoring. Fourteen sites have been selected for the macrophyte surveys, including BLAs, Pottapaug Pond, and O'Loughlin Pond. Field Maps and Quick Capture will be used for data collection. The macrophyte surveys are scheduled to start in May 2023.
4	Continue the Quabbin Boat Seal program to minimize the risk of AIS infestation of Quabbin Reservoir.	Boat Decon dates were finalized and publicized, and scheduling has begun. Staffing and logistics have been coordinated. Database has been prepared for new season. Boater database is up to date. Between 3/1/2023-4/12/203, 76 boat decon appointments were taken.
5	Work in conjunction with MWRA contractors to survey areas of the Reservoir. Evaluate and make changes in program as needed.	Received & reviewed consultant reports. Provided comments on draft report and draft scope of work for 2023 survey.
6	Conduct public education in coordination with DCR Lakes and Ponds and MWRA.	Rangers replaced the broken Info Box at the Comet Pond kiosk, for AIS self-certification forms. AIS self-certification forms have been restocked at both Comet and Long Pond.
M. Wastewater Management		
1	Identify potential problem sites or areas through review of local records, water quality data, and other pertinent information.	Staff reviewed local records to identify issues in BCN and FB sanitary districts.
N. Stormwater Management		
2	Monitor stormwater management in the watersheds.	Continued monitoring potential stormwater issues through field investigations.
O. Emergency Response (Preparedness)		
5	Develop and implement spill response plans for all timber harvesting operations on DWSP lands.	No spill plans needed to be created this quarter.

Task #	Task Description	Quarterly Progress
	P. Support	
3	Provide contract administration and related procurement	Renewed DCR 766 Dry Clean and Tailor Ranger Uniforms contract through April 2025. Published Request for Response for a contract to purchase fishing boats to replace current fleet over 5 years. To be awarded in April 2023. Waiver requested for a new contract for ready-mix concrete. Approval is pending. Working in conjunction with other sections, completed the following major procurements: purchase of mini excavator, surveying services, and access signs.
4	Keep records and assist in purchasing of goods and services.	Requisitions through COMMBUYS by the Storekeeper IV, from 1/3/23 to 4/3/23, has been \$59,702.32 for section purchases in FY23. Total amount of purchases to date \$142,573.72.
6	Coordinate with EOEEA IT to provide local MIS support for the Quabbin/Ware Region.	8 replacement iPads ordered, received, set up and distributed to staff. iPad transfers made as-needed with staffing changes.
9	Plan and implement vehicle and equipment purchases in coordination with WA.	Only HE was ordered in FY23. Delivery of Mini excavator and 6 wheel dump scheduled for Q4 (mid May). FY24 passenger vehicle order was submitted to OSD in Q3 - no response as of Q4. FY23 resizing project completed and submitted to Division Director. Plan is on hold with new Administration coming up to speed.
11	Administer the Payment in Lieu of Taxes (PILOT) program	Final PILOT calculated and all paperwork sent to towns for payment. Total FY23 PILOT is \$8,479,324.48. This is the first time since legislation passed that there was no increase in PILOT. The total "Hold Harmless" amount (the amount calculated vs the amount paid because payment can never be less than previous year, was \$2,305,499. Total amount paid to Quabbin towns was \$2,920,964, or 34% of total; the amount of that Quabbin total paid to five towns as "Annexed Lands" was \$662,153, which is 23% of the Quabbin total or 8% of total PILOT. The amount paid to Ware River towns was \$1,066,310, or 13% of total PILOT.
13	Configure and maintain both internal and externally facing ArcGIS Online applications. Work with staff to generate field data collection tools using Survey123 and/or Field Maps for ArcGIS. Maintain existing field data collection tools for staff; maintenance includes archiving of data (as needed) and ensuring that Surveys and Maps remain functional through upgrades to ArcGIS Online and mobile apps.	New EQ database deployed to Wachusett EQ staff; Quabbin/Ware EQ staff will begin to use this new database at the beginning of next FY (July 1). Migrated additional EQ workflows into AGOL - Ag Site Monitoring, Sewer/Septic Parcel Tracking, and Construction General Permitting. Ideally, these solutions can/will also be used by Quabbin/Ware EQ staff as needed. The existing Ware River CGP workflow will be deprecated and deleted in favor of the new workflow being developed. All Ware CGP data previously collected will be migrated over. Worked with Aquatic Biology staff to develop new AIS/Native monitoring tool for use when conducting reservoir and pond surveys. Quabbin has a custom front end built in QuickCapture, but all data collected will write to joint Quabbin/Wachusett database (hosted feature layer). Working on data and app development for new "Sportsman" map. Phase 1 will be hunting focused, and phase 2 will add in fishing opportunities. Working with staff from both regions on mapping locations of fishing opportunities in our watersheds.
15	Provide staff with training in desktop, mobile and online GIS applications.	Development of 4 ArcGIS Pro training sessions in progress. Training will be offered once per week in June.
18	Provide GIS and GPS services and associated mapping for all Regional plans, reports and projects, as needed. Keep GIS datalayers updated as new information becomes available.	Assistance has been provided by GIS and GIS-Q for completing the current round of EQA reports.
20	Encourage staff to participate in professional development opportunities, including professional memberships, meetings, trainings, webinars, and field trips.	DCR Hosted three college class field trips with approximately 60 students total- Westfield State Natural Resource Management class, UMass Amherst Silviculture class, and UMass Amherst Forest Management class. Each class visited recent or active forestry lots to discuss management of DWSP forests for diversity to protect water quality.
21	Budget development, maintenance, monitoring, and forecasting (e.g., Operating, Capital when available, Major Projects, other)	Monitored the budget through monthly reporting of Budget vs. Encumbered and Spent, Encumbrance Balance, and Project Status Reporting. Met monthly with the Major Projects Working Group to monitor project status and spending. Met with RD and DRD on March 29, 2023 to review fiscal year to date spending and adjusted line-item budget for changes in the environment.
22	Begin developing the new 5-year Watershed Protection Plan.	Work completed on full draft of Plan, with target to submit draft to MWRA in first week of April. After MWRA review, draft will be sent to MassDEP in early May.

Summary of Wachusett Watershed Ranger Interactions

3rd Quarter FY2023

Visitor Contacts: 1,551

Violations: 92

Parking Tickets: 4

313 CMR 11.09	CONDENSED CMRs	# of Violations
<i>Wachusett</i>		
2a1	Entrance/Exit only through gates or designated areas.	0
2a2	Allowed on Watershed land 1 hour before sunrise to 1 hour after sunset	2
2a3	No powered boats except in designated areas.	0
2a4	No acts which may pollute the water system. No litter thrown or left. Must use sanitary facility.	0
2a5	All acts injuring the property are prohibited. No person shall injure, deface, destroy remove or carry off any property, including historic artifacts and natural materials. No removal of gravel, topsoil, stones, boulders or other material. No building or constructing any object or structure on property. Collection of berries and mushrooms is allowed for personal use only.	1
2a6	No cooking or fires.	0
2a7	No wading or swimming in reservoir except wading while using boots to launch boats in designated areas.	0
2a8	No wading or swimming in Tributary or Surface Waters, except in designated areas.	0
2a9	No organized sport activities.	0
2a10	Division and employees of are not responsible for damage to or loss of property sustained by fishermen, or for any loss of life which may be incurred in connection with public use of the reservoirs and watershed system	0
2a11	No profanity or other disorderly conduct offensive to general public. No possession or drinking alcoholic beverages	0
2a12	No Motorized Vehicles. No recreational vehicles, except snowmobiles in designated areas. Motor vehicle parking in designated areas only. Operators of motor vehicles shall obey all regulatory signage unless otherwise directed. No willfully obstructing the free passage of vehicles or persons within the system.	4
2a13	No animals, except for horses and dogs at Ware River designated areas.	49
2a14	Bicycles, skis and other non-motorized transportation permitted in designated areas only.	3
2a15	No landing aircraft or causing to descend except in an emergency.	1
2a16	No parades, games, fairs, bazaars, carnivals, fishing derbies, gifts or solicitation for raising funds without written approval.	0
2a17	No lotteries, raffles, gambling or games of chance. No possession of machinery for the former.	0
2a18	No groups of more than 25 people without written permit.	0
2a19	No engaging in business, sale or display of goods or wares without written permit.	0
2a20	No commercial signs or advertising.	0

313 CMR 11.09	CONDENSED CMRs	# of Violations
2a21	No persons (unless authorized by law, license, or permit) shall have possession of or discharge any weapon, firearm, fireworks or other explosive on or within the watershed system except at times and areas designated. All forms of target shooting are prohibited.	0
2a22	No hunting, shooting, or trapping animals except at designated times and areas.	0
2a23	All persons within the watershed system shall obey the lawful directions of regulatory signs, police officers, DCR Rangers, or persons in charge, or of Federal or Commonwealth wardens or enforcement officers.	7
2a24	Any part of the watershed lands may be closed for the public access at any time by the commissioner.	2
2a25	The possession of all types of metal detectors or similar devices is prohibited on all of the Watershed System property.	0
2d1	Persons in compliance with Commonwealth Fish and Game Laws and Regulations will be allowed to fish from shore of Wachusett Reservoir in areas designated by the commission or its designee.	5
2d2	Boating is prohibited in Wachusett Reservoir.	0
2d3	Fishing from the shoreline of the Reservoir shall be allowed only during a season designated by the Commission or its designee.	9
2d4	Any violation of 313 CMR 11.09 will be deemed sufficient cause for revocation of fishing privileges for not less than one year	0
<i>Sudbury</i>		
2e1	Persons in compliance with Commonwealth Fish and Game Laws and Regulations will be allowed to fish from shore of Sudbury Reservoir in areas designated by the commission or its designee.	9
2e2	Boating is prohibited on Sudbury Reservoir.	0
TOTAL VIOLATIONS		92

Summary of Quabbin Watershed Ranger Interactions

3rd Quarter FY2023

Visitor Contacts: 3,837

Total Violations: 51

Parking Tickets: 0

313 CMR 11.09	CONDENSED CMRs	Verbal Warnings
1a	No Taking/Diverting Water.	0
1b1	No construction, filling, dredging, altering land w/out provisions to prevent erosion.	0
1b2	No construction, establishing, maintaining agricultural facilities or animal manure without adequate provision to prevent manure/other pollutants from entering Waters of Watershed System.	0
1b3	No engaging in any other activity that could degrade water quality.	0
1c	No person's property condition should result in discharge of any Pollutants into waters of Watershed system.	0
1d	Records of board of health or health agent concerning Watershed open to inspection by DCR/DEP.	0
1e	Person's causing incident/situation threatening pollutants to watershed shall notify DCR/DEP.	0
2a1	Entrance/Exit only through gates or designated areas.	0
2a2	Allowed on Watershed land 1 hour before sunrise to 1 hour after sunset (with permitted night fishing exception).	0
2a3	No powered boats except in designated areas.	0
2a4	No acts which may pollute the water system. No litter thrown or left. Must use sanitary facilities.	0
2a5	All acts injuring the property are prohibited. No person shall injure, deface, destroy remove or carry off any property, including historic artifacts and natural materials. No removal of gravel, topsoil, stones, boulders, or other material. No building or constructing any object or structure on property.	0
2a6	No cooking or fires.	0
2a7	No wading or swimming in reservoir except wading while using boots to launch boats in designated BLAs.	0
2a8	No wading or swimming in Tributary or Surface Waters, except in designated areas.	0
2a9	No organized sport activities except by written permission.	0
2a10	DCR/DWSP and employees are not responsible for damage to property, injury, or loss of life sustained by fishermen while using the reservoirs within the watershed system	0
2a11	Breach of peace, profanity or other disorderly conduct offensive to general public. No possession or drinking alcoholic beverages	0
2a12	No Motorized Vehicles. No recreational vehicles, except snowmobiles in designated areas. Motor vehicle parking in designated areas only. Operators of motor vehicles shall obey all regulatory signage unless otherwise directed. No willfully obstructing the free passage of vehicles or persons within the system.	0
2a13	No animals, except for horses and dogs at Ware River designated areas.	6

313 CMR 11.09	CONDENSED CMRs	Verbal Warnings
2a14	Bicycles, skis and other non motorized transportation permitted in designated areas only.	4
2a15	No person shall bring land or cause to descend any aircraft within the Watershed except in an emergency.	3
2a16	No parades, games, fairs, bazaars, carnivals, fishing derbies, gifts or solicitation for raising funds without written approval.	0
2a17	No lotteries, raffles, gambling or games of chance. No possession of machinery, instruments or equipment for the former.	0
2a18	No groups of more than 25 people without written permit.	0
2a19	No engaging in business, sale or display of goods or wares without written permit.	0
2a20	No commercial signs or advertising.	0
2a21	No persons (unless authorized by law, license, or permit) shall have possession of or discharge any weapon, firearm, fireworks or other explosive on or within the watershed system except at times and areas designated. No target shooting.	0
2a22	No hunting, shooting, or trapping animals except at designated times and areas.	0
2a23	All persons within the watershed system shall obey the lawful directions of regulatory signs, police officers, DCR Rangers, or persons in charge or of Federal or Commonwealth wardens or enforcement officers.	36
2a24	Any part of the watershed lands may be closed for the public access at any time to protect the lands and waters.	0
2a25	The possession of all types of metal detectors or similar devices is prohibited on all of the Watershed property.	2
<i>Special Regulations for Quabbin</i>		
2b1	Persons in compliance with Commonwealth Fish and Game Laws and Regulations will be allowed to fish from shore in areas designated by the Commission or its designee. A valid state fishing or sporting license is required by any person renting or launching a boat at any commission facility subject to 313 CMR 11.09. Reasonable fees for the use of boats, for rental of outboard motors for fishing purposes, or use of Commission facilities including parking and boat ramps, may be charged by the Commission.	0
2b2	Persons permitted to fish from boats shall at all times be responsible for the sanitary conditions of the boat. Persons under 16 years of age must be accompanied by a person possessing a valid fishing license in order to boat on Quabbin Reservoir.	0
2b3	Only boats of a minimum length of 12 feet, and of a type considered safe by the Commission representative in charge, shall be used. No inboard motors, collapsible boats, sailboats, pontoon boats, square stern canoes, or similar craft will be permitted in the water except in areas designated for boating by the Commission or its designee. Outboard motors shall have a rating of not more than ½ the BIA or OBC rated horsepower for the boat and shall not exceed 20 horsepower, except that outboard motors for Commission boats less than 14 feet six inches shall not exceed 10 horsepower. Boats less than 14 feet shall be limited to 3 occupants, and boats of that length and in excess thereof may be licensed to carry 4 occupants. No boats shall carry more than 4 occupants. Canoes and Jon boats of a minimum of 12 feet, and a type considered safe by the Commission representative in charge, shall be used only in areas designated for boating by the Commission on	0

313 CMR 11.09	CONDENSED CMRs	Verbal Warnings
	Pottapaug Pond above the regulating dam and at Gate 31 above the regulating dam. Canoes less than 16 feet and Jon boats less than 14 feet six inches in length will be limited to 2 occupants, and canoes and Jon boats in excess thereof may be licensed to carry 3 occupants. All boats must be in compliance with current Commonwealth Boating Laws. All boats must be clean and contain no refuse of any kind. Commission personal shall have the right to inspect all private boats launched at Commonwealth facilities and may deny access in order to protect water quality or safety of occupants. Chock blocks must be used on vehicles when removing boats from the reservoir.	
2b4	No person shall operate a motor boat at a speed other than responsible and proper or in such a manner as to annoy or endanger the occupants of other boats.	0
2b5	All privately owned boats, motors and other equipment must be removed from the property of the Commission each day.	0
2b6	Boats shall not leave the mooring areas before dawn and must at the time posted at each mooring area. The beaching of boats at any point except at the designated mooring and landing areas is strictly prohibited except in cases of extreme emergency.	0
2b7	Any violation of 350 CMR 11.09 can result in loss of fishing privileges for not less than one year	0
<i>Special Regulations for Ware River</i>		
2c1	WRW Fishing Designated Areas	0
2c2	WRW PWR Boats/PWR Canoes Prohibited	0
2c3	WRW Boat Motor Restrictions	0
2c4	WRW Revocation of Fishing License	0
TOTAL VIOLATIONS		51

Summary of Ware River Watershed Ranger Interactions

3rd Quarter FY 2023

Visitor Contacts: 1,360

Total Violations: 56

Parking Tickets: 0

313 CMR 11.09	CONDENSED CMRs	Verbal Warnings
1a	No Taking/Diverting Water.	0
1b1	No construction, filling, dredging, altering land w/out provisions to prevent erosion.	1
1b2	No construction, establishing, maintaining agricultural facilities or animal manure without adequate provision to prevent manure/other pollutants from entering Waters of Watershed System.	0
1b3	No engaging in any other activity that could degrade water quality.	0
1c	No person's property condition should result in discharge of any Pollutants into waters of Watershed system.	0
1d	Records of board of health or health agent concerning Watershed open to inspection by DCR/DEP.	0
1e	Person's causing incident/situation threatening pollutants to watershed shall notify DCR/DEP.	0
2a1	Entrance/Exit only through gates or designated areas.	1
2a2	Allowed on Watershed land 1 hour before sunrise to 1 hour after sunset (with permitted night fishing exception).	0
2a3	No powered boats except in designated areas.	0
2a4	No acts which may pollute the water system. No litter thrown or left. Must use sanitary facilities.	12
2a5	All acts injuring the property are prohibited. No person shall injure, deface, destroy remove or carry off any property, including historic artifacts and natural materials. No removal of gravel, topsoil, stones, boulders, or other material. No building or constructing any object or structure on property.	10
2a6	No cooking or fires.	4
2a7	No wading or swimming in reservoir except wading while using boots to launch boats in designated BLAs.	0
2a8	No wading or swimming in Tributary or Surface Waters, except in designated areas.	0
2a9	No organized sport activities except by written permission.	0
2a10	DCR/DWSP and employees are not responsible for damage to property, injury, or loss of life sustained by fishermen while using the reservoirs within the watershed system	0
2a11	Breach of peace, profanity or other disorderly conduct offensive to general public. No possession or drinking alcoholic beverages	6
2a12	No Motorized Vehicles. No recreational vehicles, except snowmobiles in designated areas. Motor vehicle parking in designated areas only. Operators of motor vehicles shall obey all regulatory signage unless otherwise directed. No willfully obstructing the free passage of vehicles or persons within the system.	15
2a13	No animals, except for horses and dogs at Ware River designated areas.	0

313 CMR 11.09	CONDENSED CMRs	Verbal Warnings
2a14	Bicycles, skis and other non motorized transportation permitted in designated areas only.	0
2a15	No person shall bring land or cause to descend any aircraft within the Watershed except in an emergency.	0
2a16	No parades, games, fairs, bazaars, carnivals, fishing derbies, gifts or solicitation for raising funds without written approval.	0
2a17	No lotteries, raffles, gambling or games of chance. No possession of machinery, instruments or equipment for the former.	0
2a18	No groups of more than 25 people without written permit.	0
2a19	No engaging in business, sale or display of goods or wares without written permit.	0
2a20	No commercial signs or advertising.	0
2a21	No persons (unless authorized by law, license, or permit) shall have possession of or discharge any weapon, firearm, fireworks or other explosive on or within the watershed system except at times and areas designated. No target shooting.	4
2a22	No hunting, shooting, or trapping animals except at designated times and areas.	0
2a23	All persons within the watershed system shall obey the lawful directions of regulatory signs, police officers, DCR Rangers, or persons in charge or of Federal or Commonwealth wardens or enforcement officers.	2
2a24	Any part of the watershed lands may be closed for the public access at any time to protect the lands and waters.	0
2a25	The possession of all types of metal detectors or similar devices is prohibited on all of the Watershed property.	1
<i>Special Regulations for Quabbin</i>		
2b1	Persons in compliance with Commonwealth Fish and Game Laws and Regulations will be allowed to fish from shore in areas designated by the Commission or its designee. A valid state fishing or sporting license is required by any person renting or launching a boat at any commission facility subject to 313 CMR 11.09. Reasonable fees for the use of boats, for rental of outboard motors for fishing purposes, or use of Commission facilities including parking and boat ramps, may be charged by the Commission.	0
2b2	Persons permitted to fish from boats shall at all times be responsible for the sanitary conditions of the boat. Persons under 16 years of age must be accompanied by a person possessing a valid fishing license in order to boat on Quabbin Reservoir.	0
2b3	Only boats of a minimum length of 12 feet, and of a type considered safe by the Commission representative in charge, shall be used. No inboard motors, collapsible boats, sailboats, pontoon boats, square stern canoes, or similar craft will be permitted in the water except in areas designated for boating by the Commission or its designee. Outboard motors shall have a rating of not more than ½ the BIA or OBC rated horsepower for the boat and shall not exceed 20 horsepower, except that outboard motors for Commission boats less than 14 feet six inches shall not exceed 10 horsepower. Boats less than 14 feet shall be limited to 3 occupants, and boats of that length and in excess thereof may be licensed to carry 4 occupants. No boats shall carry more than 4 occupants. Canoes and Jon boats of a minimum of 12 feet, and a type considered safe by the Commission representative in charge, shall be used only in areas designated for boating by the Commission on	0

313 CMR 11.09	CONDENSED CMRs	Verbal Warnings
	Pottapaug Pond above the regulating dam and at Gate 31 above the regulating dam. Canoes less than 16 feet and Jon boats less than 14 feet six inches in length will be limited to 2 occupants, and canoes and Jon boats in excess thereof may be licensed to carry 3 occupants. All boats must be in compliance with current Commonwealth Boating Laws. All boats must be clean and contain no refuse of any kind. Commission personal shall have the right to inspect all private boats launched at Commonwealth facilities and may deny access in order to protect water quality or safety of occupants. Chock blocks must be used on vehicles when removing boats from the reservoir.	
2b4	No person shall operate a motor boat at a speed other than responsible and proper or in such a manner as to annoy or endanger the occupants of other boats.	0
2b5	All privately owned boats, motors and other equipment must be removed from the property of the Commission each day.	0
2b6	Boats shall not leave the mooring areas before dawn and must at the time posted at each mooring area. The beaching of boats at any point except at the designated mooring and landing areas is strictly prohibited except in cases of extreme emergency.	0
2b7	Any violation of 350 CMR 11.09 can result in loss of fishing privileges for not less than one year	0
<i>Special Regulations for Ware River</i>		
2c1	WRW Fishing Designated Areas	0
2c2	WRW PWR Boats/PWR Canoes Prohibited	0
2c3	WRW Boat Motor Restrictions	0
2c4	WRW Revocation of Fishing License	0
TOTAL VIOLATIONS		56

2022 DCR DWSP Common Loon (*Gavia immer*) Summary



February 2023

Massachusetts Department of Conservation and Recreation
Division of Water Supply Protection
Office of Watershed Management
Natural Resources Section



This report was written by Jillian Whitney, Wildlife Biologist, of the Division of Water Supply Protection's Natural Resource Section. Review provided by Ken MacKenzie, Hillary Siener and Elise Stanmyer. John Scannell is the Director of the Division of Water Supply Protection.

The DWSP wildlife staff would especially like to thank, Emily Eaton, Margaret McCandless and George Dresser, Dale Monette, Katrina Moulton, Beverly and Richard Renaud, and Clayton Sydla for sharing their loon observations and photographs throughout the season.

Suggested Citation:

Department of Conservation and Recreation, Division of Water Supply Protection, Natural Resources Section. 2023. 2022 DCR DWSP Common Loon (*Gavia immer*) Summary. Belchertown, MA.

The summer of 1975 marked the official return of the Common Loon (*Gavia immer*) to Massachusetts. Loons were extirpated from the state in the early 1900s until a nesting pair on the Quabbin Reservoir successfully produced two chicks in 1975. Today, the lakes and reservoirs in the Massachusetts Department of Conservation and Recreation (DCR), Division of Water Supply Protection (DWSP) watersheds support the largest concentration of breeding Common Loons in Massachusetts. DWSP has an active monitoring and assessment program in cooperation with MassWildlife and Biodiversity Research Institute (BRI). DWSP wildlife staff monitor Common Loon activity on Quabbin Reservoir, O'Loughlin Pond in New Salem, Pottapaug Pond in Hardwick (Fig.1), Wachusett Reservoir (Fig.2), Hycrest Pond in Sterling (Fig.3), Paradise Pond in Westminster (Fig.4), and Sudbury Reservoir (Fig.5). Currently, there are active nesting pairs on Quabbin Reservoir, Wachusett Reservoir, Hycrest Pond and Pottapaug Pond. Historically, a nesting pair fledged chicks on Paradise Pond. O'Loughlin Pond and Sudbury Reservoir have no record of nesting pairs but because of suitable habitat they are included in our survey efforts.

The official loon monitoring period ran from April into October of 2022. This report summarizes the 2022 DWSP wildlife staff survey data. Observational data from additional DWSP staff and volunteers were also collected to supplement the monitoring efforts.

Eighteen nesting pairs successfully hatched 13 chicks (11 fledged). Two nests appeared to have hatched chicks however, no chicks were confirmed and have not been included in the totals. Refer to Table 1 for a summary of survey areas and nesting activity.

DWSP loon management efforts in 2022 included raft repair and maintenance, raft deployment, nesting observations (i.e., success and failures), collecting leg band returns to identify banded individuals, and nighttime capture efforts to band loons in collaboration with BRI. Twenty-seven loons were identified during the 2022 survey season (Table 2). DWSP contracts with BRI for annual loon capture and banding and the analysis of blood and feather samples. Four nights of banding resulted in the capture of 1 adult and 1 chick.

Raft deployment began May 5th, and all rafts were deployed by May 30th. In addition to the traditional cedar log rafts, PVC rafts were deployed in 2022. Though the PVC design is not as sturdy as the cedar rafts, they are well suited for calm, protected coves and are light enough to easily transport and deploy. In 2021 one pair prepared a nest bowl using the PVC raft but no loons utilized the PVC rafts in 2022. Eleven rafts were deployed on Quabbin and 8 at Wachusett Reservoir; 8 were used for nesting (4 at Quabbin, 4 at Wachusett). In 2021, there were a high number of non-territorial loons documented on the Quabbin reservoir and again in 2022. Several of these loons disrupted the nesting efforts of established territorial pairs which may be an explanation for failed nest attempts, as well as the low number of hatched and fledged chicks.

Egg fragments (from hatched or predated nests) and 5 whole eggs were collected (Table 3). These specimens were sent to BRI for contaminant testing. When a pair of loons successfully hatched chick(s), the fledging date was determined using the Loon Preservation

Committee's (LPC) Standard Operating Procedure. Chick(s) observed six weeks or more after hatching were considered fledged. The attached maps display survey areas, territories and nesting locations (Fig.1-5).

Monitoring efforts are reflected in minutes spent at each territory and number of survey days (Table 4). If DWSP wildlife staff and volunteer effort was not recorded during an observation period, a conservative time of five minutes was used. The total hours shown does not include time associated with banding efforts.

In June, the DWSP wildlife staff observed an adult loon on the water at Wachusett reservoir that appeared to be unwell. The wildlife staff captured the loon and transported it to Tufts Wildlife clinic where it was treated for lead poisoning. The loon recovered and was released at the Sudbury Reservoir by DWSP and BRI staff. In late November a loon carcass was discovered at Wachusett reservoir. DWSP wildlife staff located the loon and identified it by its band combination as the 2022 South Bay male banded in 2016. The loon was too decomposed to submit for necropsy and was recorded as an unknown cause of death.

Lead tackle and fishing line recycling efforts continued in 2022 throughout the Quabbin, Ware River and Wachusett Watersheds using collection canisters (Fig.6). Informational posters are placed at kiosks throughout the watersheds. The lead tackle and monofilament line collection are reflected in the figure 6 graphs. DWSP staff created a lead tackle and monofilament line recycling program video that is available on the DWSP natural resource section website and the DCR YouTube channel. Efforts to educate the public regarding the importance of monofilament line and lead tackle recycling will continue.

Figure 1. Quabbin Reservoir, Pottapaug Pond and O'Loughlin Pond Common Loon distribution and nesting activities, 2022.

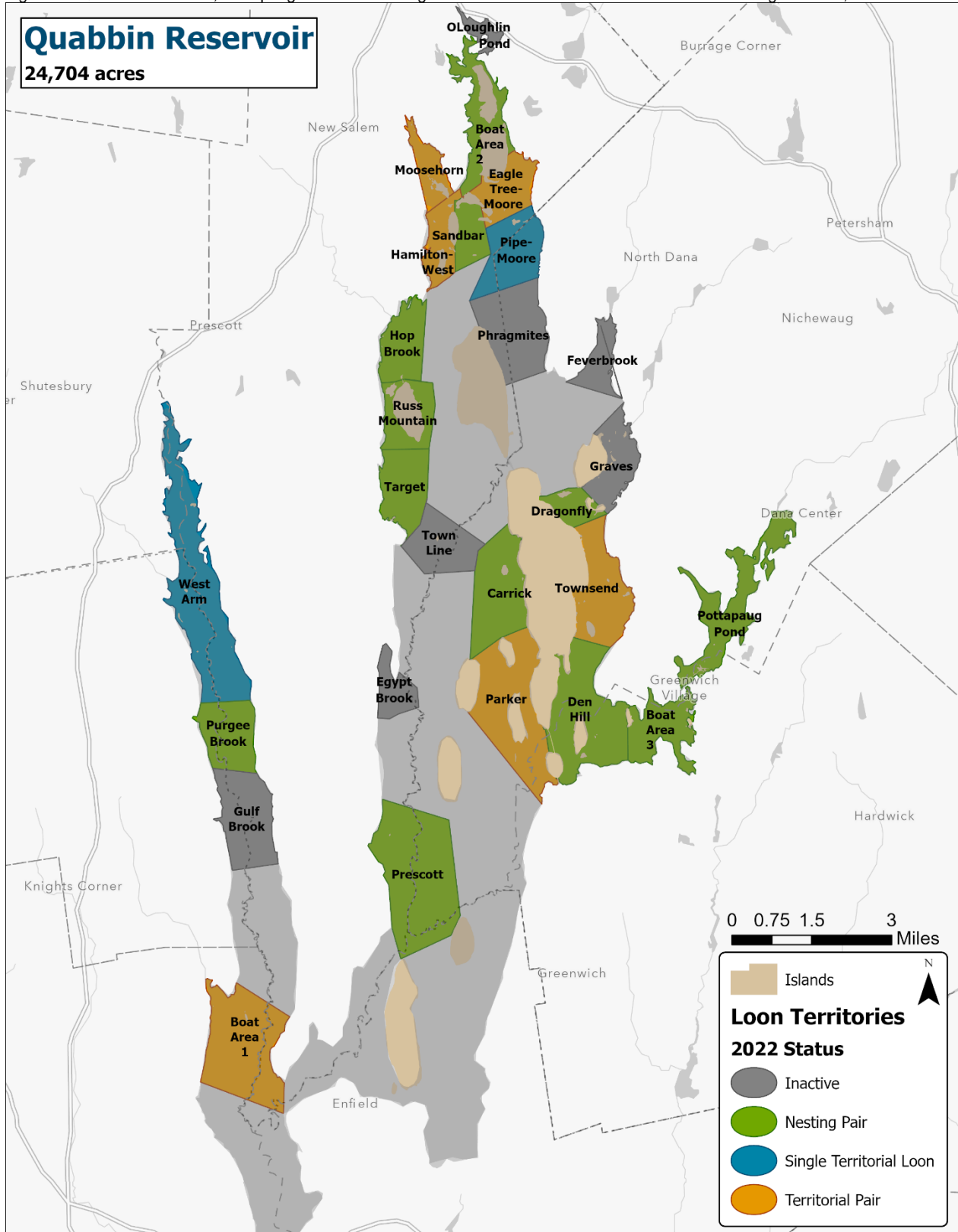


Figure 2. Wachusett Reservoir Common Loon distribution and nesting activities, 2022.

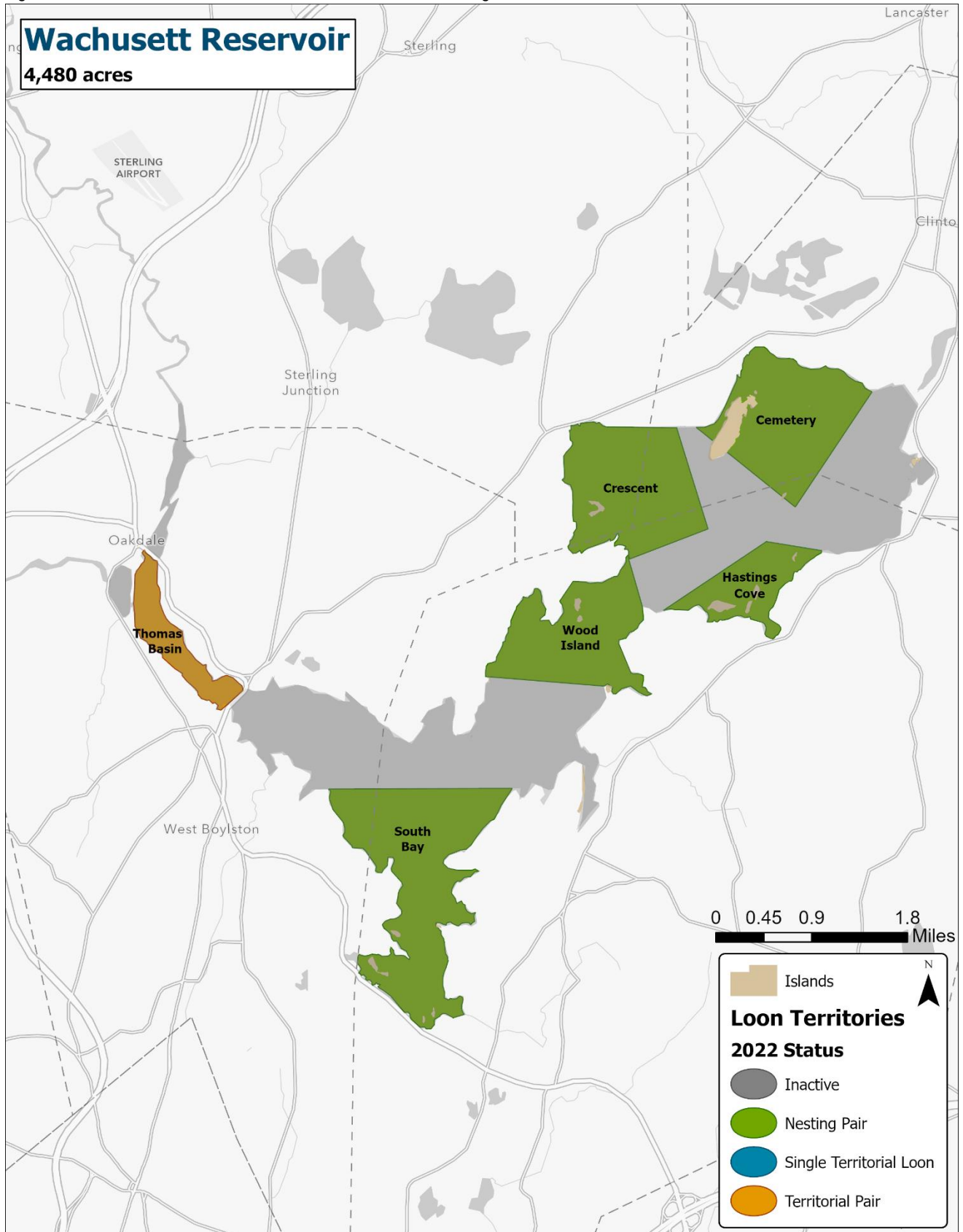


Figure 3. Hycrest Pond in Sterling, Common Loon distribution and nesting activities, 2022.

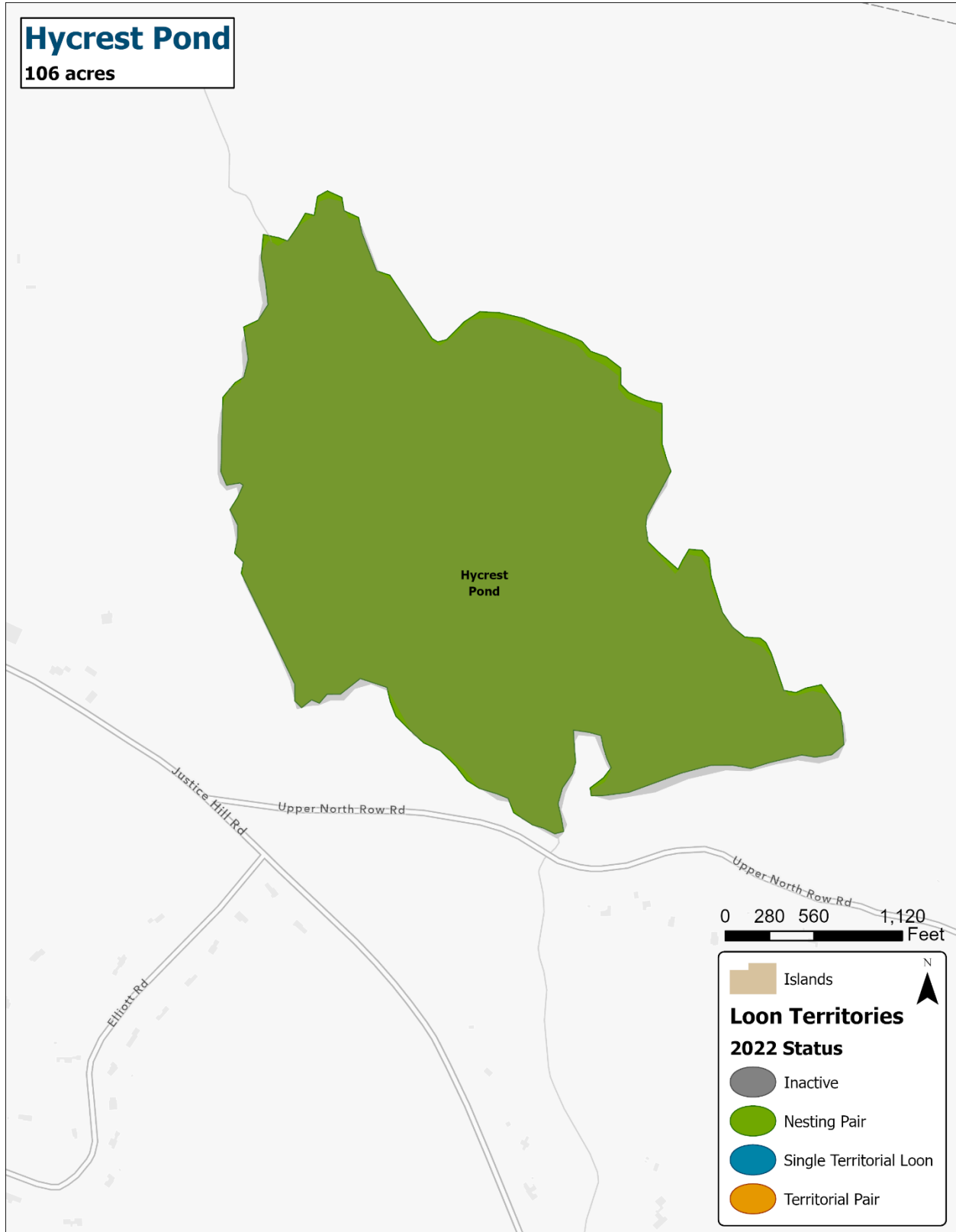


Figure 4. Paradise Pond in Westminster, Common Loon survey areas and nesting activity, 2022.

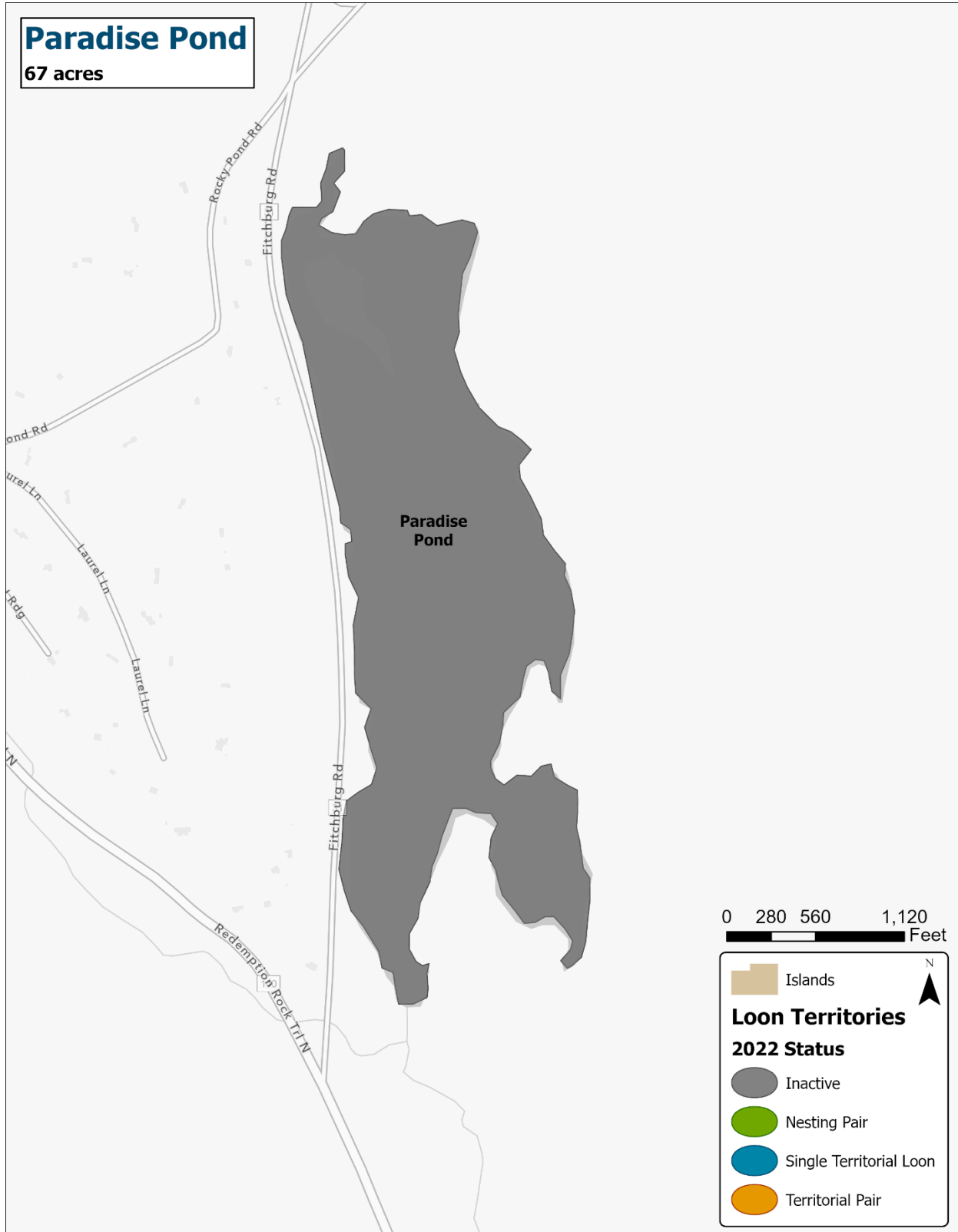


Figure 5. Sudbury Reservoir Common Loon survey area, 2022.

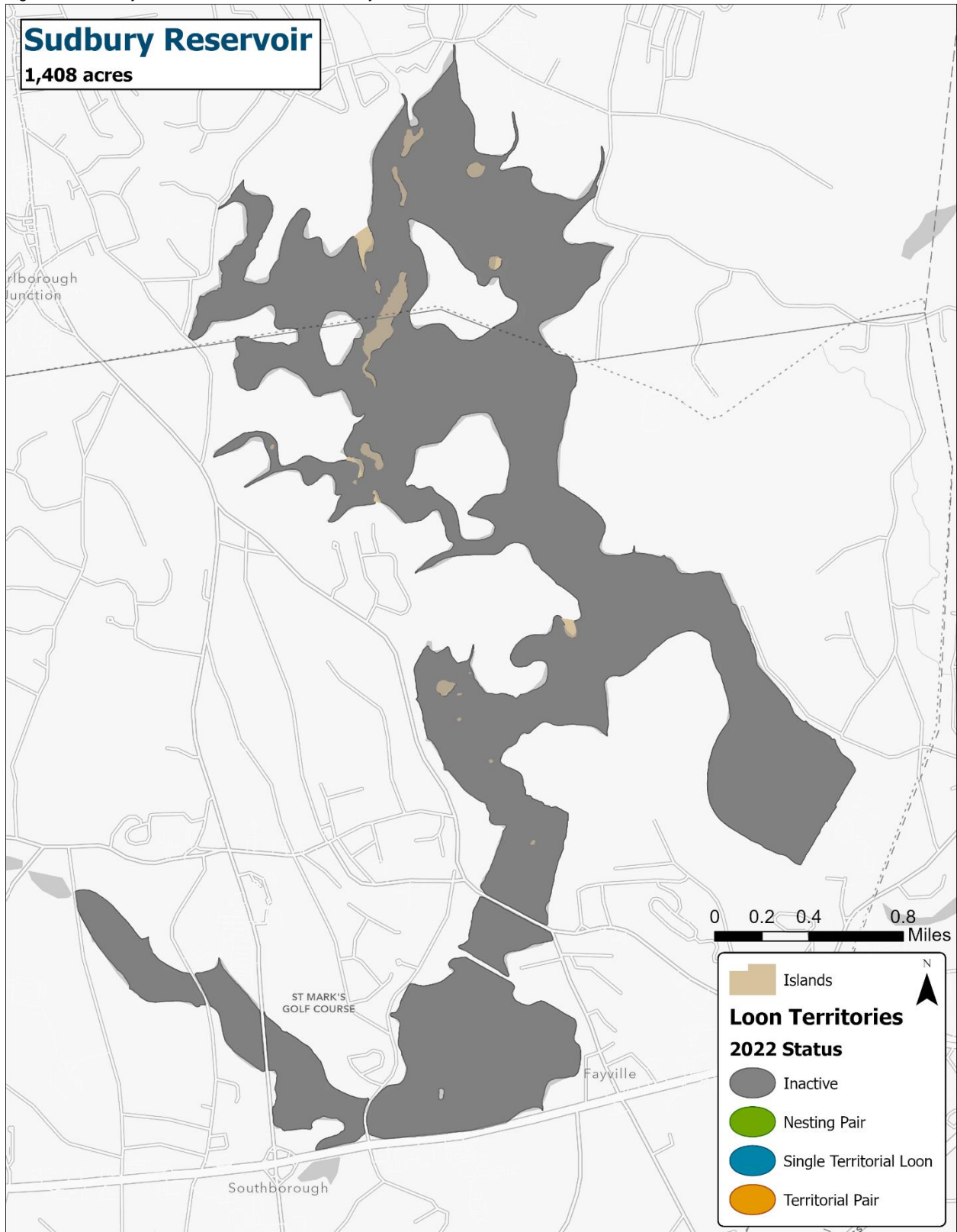


Table 1. Common Loon Summary of survey areas, 2022.

Wachusett									
Territory	Raft Deployed	Nest Location	Nest Type	#Eggs	Successful	Failure Description	Chicks Hatched	Approx. Hatch Date	Chicks Fledged
Cemetery	Yes	Island	Bowl	2	Yes		1	7/9/2022	1
Crescent	Yes	Raft	Bowl	2	Yes		1	7/5/2022	1
Hastings	Yes	Raft	Bowl	2	Yes		2	6/18/2022	2
South Bay	Yes*	Raft	Bowl	2	Yes		2	6/19/2022	2
Wood Island	Yes	Raft	Bowl	2	Yes		2	6/12/2022	2
Thomas Basin	Yes	Territorial Pair							
Andrews Harbor	Yes**	No Territorial Pair							
Quabbin									
Territory	Raft Deployed	Nest Location	Nest Type	#Eggs	Successful	Failure Description	Chicks Hatched	Approx. Hatch Date	Chicks Fledged
Carrick	No	Island	Scrape	Unk	Yes		1		1
Den Hill	No	Island	Bowl	2	Yes		1		1
Purgee	Yes	Raft	Bowl	Unk	Yes		1		1
Prescott	No	Island	Bowl	2	Yes		1		0
Dragonfly	No	Island	Scrape	Unk	Unk		Unk	Possible Hatch	0
Hop Brook	Yes	Raft	Bowl	Unk	Unk		Unk	Possible Hatch	0
Boat Area 2	Yes	Raft	Bowl	Unk	No	Unknown		Nest Failure	
Boat Area 3	No	Island	Bowl	Unk	No	Abandoned		Nest Failure	
Russ	Yes	Raft	Bowl	2	No	Abandoned		Nest Failure	
Sandbar	No	Island	Scrape	2	No	Predation		Nest Failure	
Target	Yes	Island	Scrape	Unk	No	Unknown		Nest Failure	
Boat Area 1	Yes**	Territorial Pair							
Eagle-tree Moore	No	Territorial Pair							
Hamilton-west	No	Territorial Pair							
Moosehorn	Yes	Territorial Pair							
Parker	Yes	Territorial Pair							
Townsend	No	Territorial Pair							
Pipe-Moore	No	Single Territorial Loon							
West Arm	Yes**	Single Territorial Loon							
Egypt Brook	Yes**	No Territorial Pair							
Feverbrook	Yes	No Territorial Pair							
Graves	No	No Territorial Pair							
Gulf Brook	No	No Territorial Pair							
Phragmites	No	No Territorial Pair							
Townline	No	No Territorial Pair							
Other DCR									
Territory	Raft Deployed	Nest Location	Nest Type	#Eggs	Successful	Failure Description	Chicks Hatched	Approx. Hatch Date	Chicks Fledged
Hycrest	No	Island	Bowl	2	Unk	Unk	Unk		0
Pottapaug	No	Island	Bowl	2	Yes		1		0
O'Loughlin		No Territorial Loons							
Paradise		No Territorial Loons							
Sudbury		No Territorial Loons							

*two rafts deployed in this territory, **PVC raft

Table 2. Colored band returns, 2022.

BAND RETURNS 2022					
QUABBIN					
CURRENT TERRITORY	PREVIOUS TERRITORY	SEX	BAND YEAR	LEFT LEG	RIGHT LEG
Boat Area 2		F	2001	white/green	orange/silver
Boat Area 2		M	Unbanded		
Boat Area 3	Multiple Loons in this territory; 3 confirmed unbanded				
Carrick	Target	F	2003	blue/white	silver/blue stripe
Dragonfly	Townsend	M	2005	white/green	silver/green stripe
Eagle Tree Moore		F	2021	red stripe/red stripe	silver/orange dot
Moosehorn		F	Unbanded		
Moosehorn		M	Unbanded		
Parker	Carrick	M	2007	red/white	white stripe/silver
Parker		F	Unbanded		
Phragmites		Unk	Unbanded		
Pipe Moore	Feverbrook	F	2016	white stripe/red	orange/orange dot
Russ	Boat Area 2	M	2001	blue/red	silver/orange
Sandbar		F	2015	red dot/red	orange stripe/silver
Sandbar		M	2015	yellow stripe/yellow	white/silver
WACHUSETT					
CURRENT TERRITORY	PREVIOUS TERRITORY	SEX	BAND YEAR	LEFT LEG	RIGHT LEG
Cemetery		F	2020	red stripe/yellow	white/silver
Cemetery		M	2002	silver	green F
Crescent		F	Unbanded		
Crescent		M	2018	yellow/orange	silver/red
Hastings		F	2021	red stripe/white	silver/yellow
Hastings		M	2013	blue/yellow dot	white dot/silver
South Bay		F	2020	yellow stripe/red	white/silver
South Bay		M	2016	green stripe/orange dot	red/orange dot
Wood Island	Crescent	F	2000	orange/orange	green stripe/silver
Wood Island		M	2018	yellow stripe/red	red/silver
OTHER DCR-DWSP LOON SURVEY WATER BODIES					
CURRENT TERRITORY	PREVIOUS TERRITORY	SEX	BAND YEAR	LEFT LEG	RIGHT LEG
Pottapaug Pond		F	Unbanded		
Pottapaug Pond	Boat Area 3	M	2014	blue/white	silver/orange

Table 3. Common Loon egg and egg fragment collection, 2022.

2022 Quabbin Watershed Egg and Fragment collection			
COLLECTION DATE	TERRITORY	NUMBER OF EGGS COLLECTED	SHELL FRAGMENTS
6/22/2022	Den Hill		X
6/30/2022	Boat Area 3	1	
6/30/2022	Dragonfly		X
7/2/2022	Hop Brook		X
7/6/2022	Carrick		X
7/6/2022	Pottapaug Pond	1	
8/1/2022	Russ	2	
2022 Wachusett Watershed Egg and Fragment collection			
COLLECTION DATE	TERRITORY	NUMBER OF EGGS COLLECTED	SHELL FRAGMENTS
Unknown	Wood Island		X
Unknown	South Bay		X
6/23/2022	Hastings		X
7/7/2022	Crescent		X
7/15/2022	Cemetery	1	X
7/21/2022	Hycrest Pond		X

Table 4. DCR staff survey effort, 2022.

Effort by Hours			
Quabbin	Wachusett	Other	Total
44.66	39.2	12.8	96.66
Effort by Days			
29	49	23	101

Figure 6. Monofilament line and lead tackle recycling canisters with signage and collection totals, 2022.

