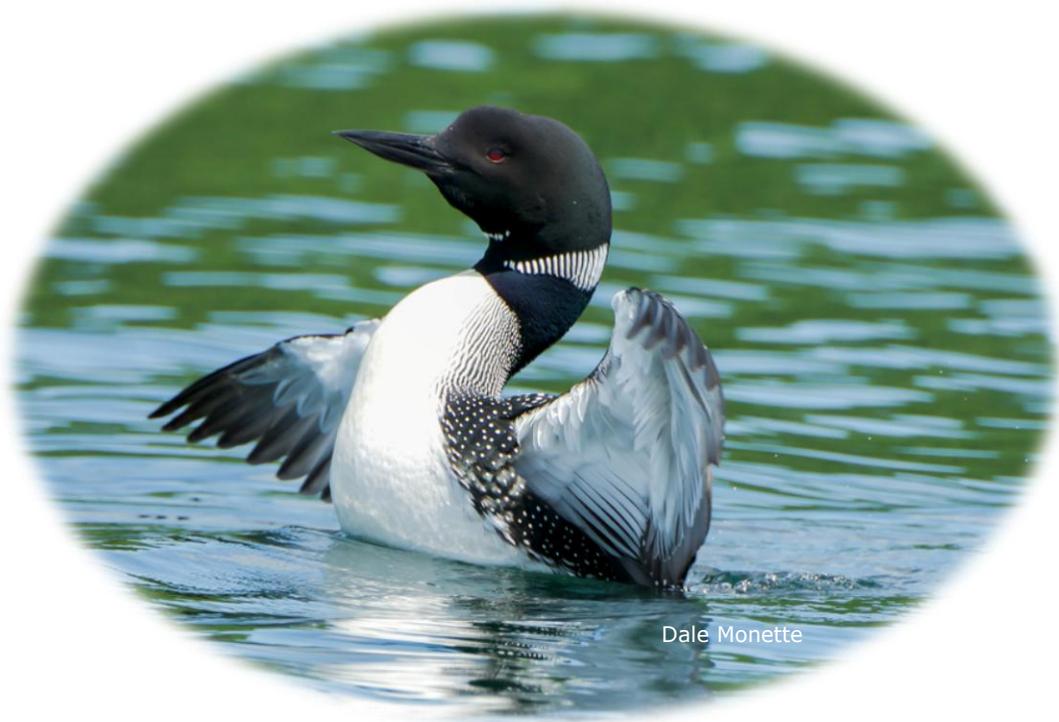




2015 DCR-WSP Common Loon (*Gavia Immer*) Summary



December 2015

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

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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 2 chicks in 1975. Today the Massachusetts Department of Conservation and Recreation (DCR) watersheds support the largest breeding concentration of Common Loons in Massachusetts. The DCR has an active monitoring program in cooperation with MassWildlife and Biodiversity Research Institute (BRI). DCR wildlife staff, with assistance from BRI staff, monitors Common Loon activity on Quabbin Reservoir (Fig.1), Wachusett Reservoir (Fig.2), Hycrest Pond in Sterling, Paradise Pond in Westminister (Fig.3), O'Loughlin Pond in New Salem (Fig.4) and Pottapaug Pond in Hardwick (Fig.5). The Sudbury Reservoir (Fig. 6) located in the Metrowest was added to the survey efforts in 2015.

The official loon monitoring period ran from late April to September 2015; a few later observations were recorded after September. This report summarizes the 2015 DCR wildlife staff survey data. Observational data from additional DCR staff, BRI, and volunteers was also collected to supplement the monitoring efforts. Refer to Table 1 for a summary of territories and nesting activity.

The 2015 nesting season was the most successful nesting year and had the highest chick survival on DCR monitored water since surveys began in 1999. Sixteen of 22 nesting pairs successfully hatched at least 25+ chicks. Two loon pairs, each with 1 chick, were discovered later in the season (Phragmites and Gibbs territories) and therefore an exact number of hatched chicks could not be determined. One new territory (Gibbs) on Quabbin Reservoir was discovered in 2015. A second new territory was suspected (Dragonfly) but will require further observations in 2016 to confirm whether it is a new pair or an already existing pair expanding their territorial range.

DCR Loon management efforts in 2015 included raft construction and maintenance, raft deployment, nesting observations (i.e., success and failures), collecting leg band returns to identify already banded individuals (Table 2), and night time capture efforts to band loons in collaboration with BRI. The DCR contracts with BRI for annual loon capture and banding. Five nights of banding resulted in the capture of 8 adults (2 of them recaptures) and 1 chick. BRI attached Geolocators on 5 adults (4 Quabbin loons, 1 Wachusett loon).

In 2015, BRI continued a loon nesting camera project at Wachusett Reservoir and successfully monitored the Hastings Cove pair throughout their nesting activities. Additionally, 2 DCR wildlife cameras monitored three Wachusett loon territories (South Bay, Wood Island and Cemetery) for various periods over the season. The cameras revealed nesting activity, predation and helped identify individual loons.

This year, most rafts were deployed as early as 2 weeks prior to Memorial Day Weekend. Raft deployment began May 14th and all rafts were deployed by May 21st. Eighteen rafts were deployed on Quabbin and Wachusett (12 at Quabbin, 6 at Wachusett) Reservoirs and 7 were used for nesting (5 at Quabbin, 2 at Wachusett).

Egg fragments (from hatched or predated nests), whole eggs (from abandoned nests) and one chick (unknown cause of death) were collected (Table 3). These

specimens were sent to BRI for contaminate testing. When a pair of loons successfully hatches chick(s), the fledging date is determined using the Loon Preservation Committee's (LPC) Standard Operating Procedure. Chick(s) observed 6 weeks or more after hatching are considered fledged chicks. The attached maps display survey areas, territories and nesting locations.

In 2015, monitoring efforts are reflected in minutes spent at each territory and number of survey days and is summarized in Table 4. If DCR wildlife staff effort was not recorded during an observation period, a conservative time of 5 minutes was recorded. Additionally, the data collected includes observations from other DCR staff and non-DCR observers, but their effort (time) was not recorded and therefore is not reflected in the table. The total hours shown does not include time associated with banding efforts.

Figure 1. Quabbin Reservoir Common Loon distribution and nesting activities, 2015.

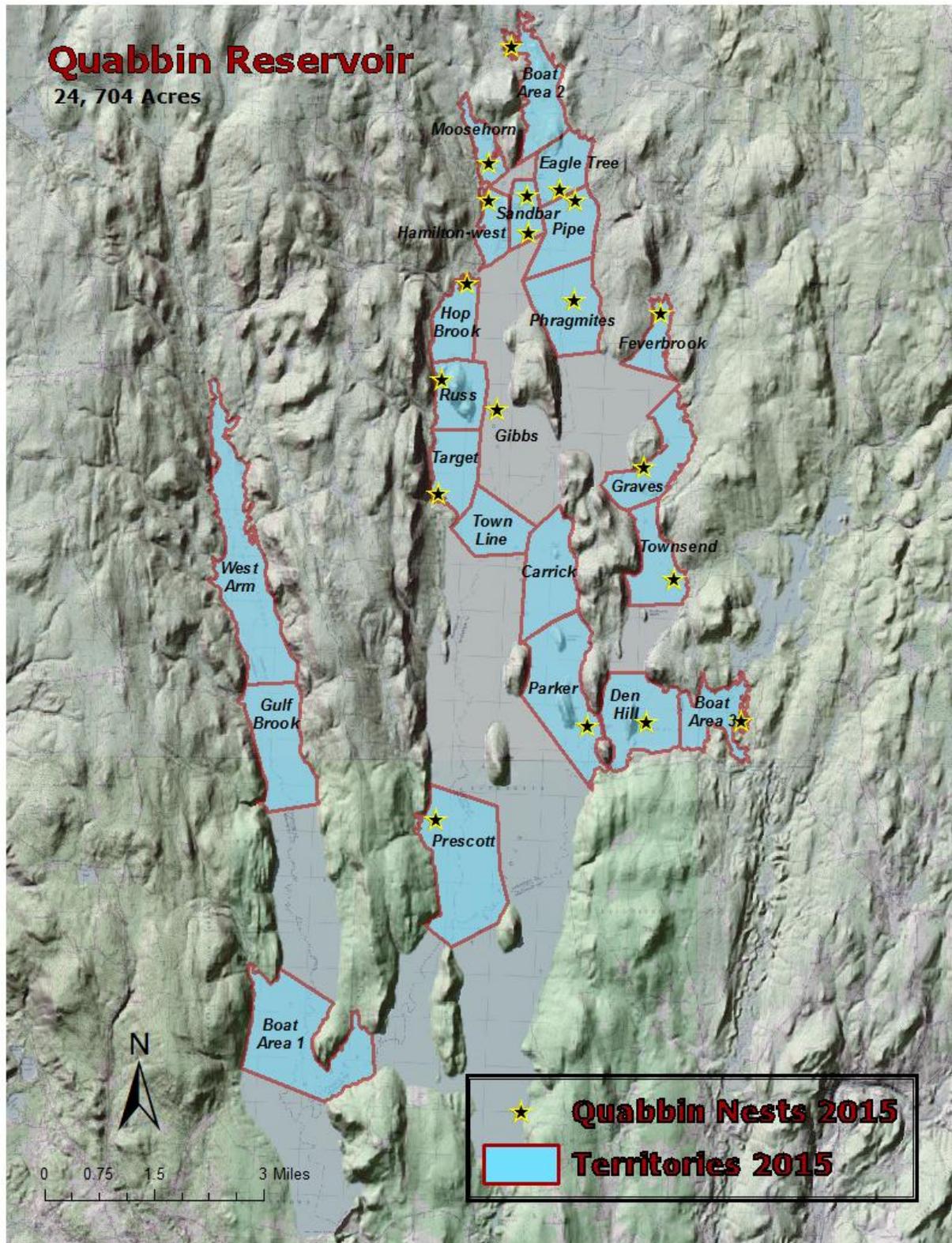


Figure 2. Wachusett Reservoir Common Loon distribution and nesting activities, 2015.

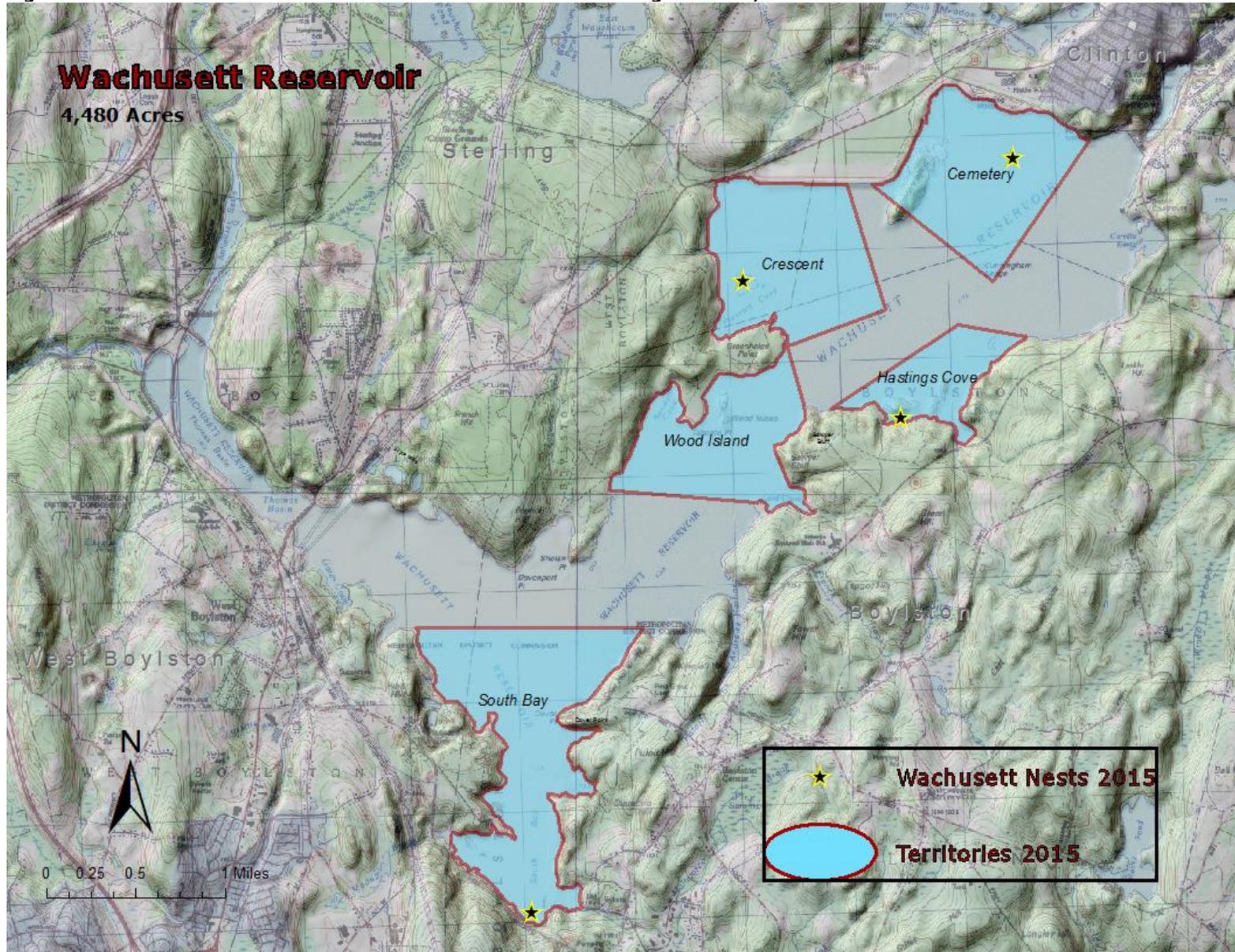


Figure 4. O'Loughlin Pond, New Salem, Common Loon survey area.

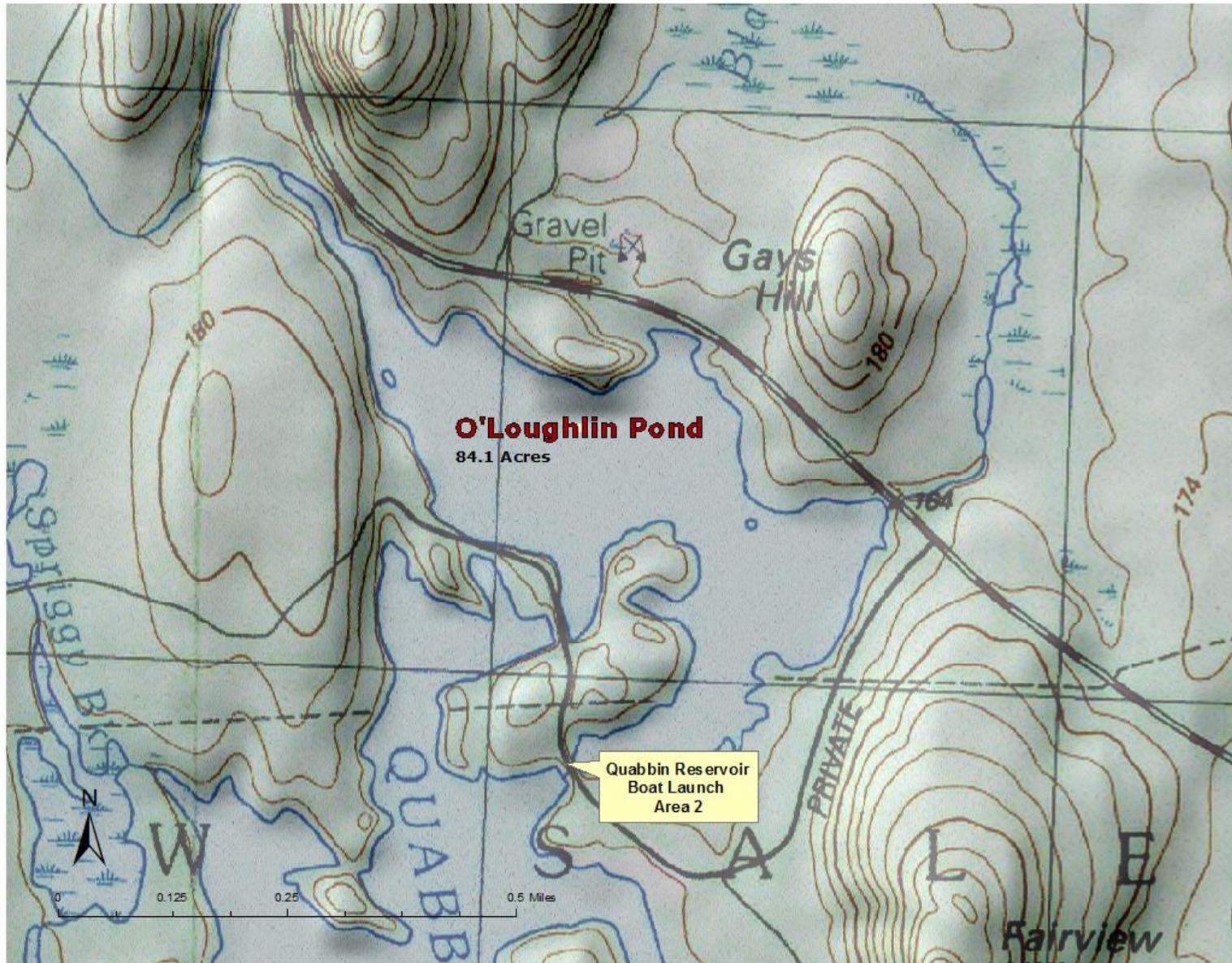


Figure 5. Pottapaug Pond, Hardwick, Common Loon survey area.

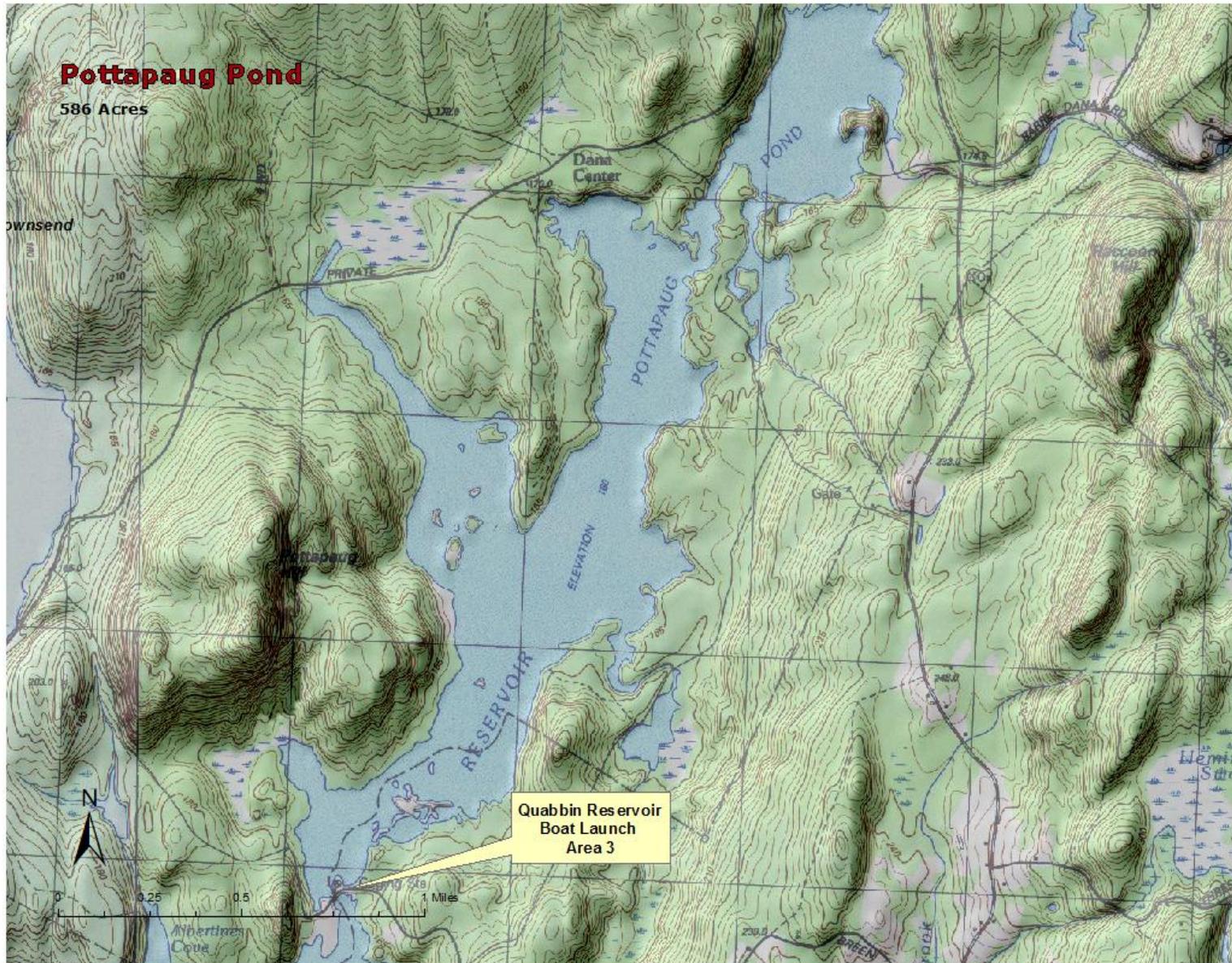


Figure 6. Sudbury Reservoir Common Loon survey area.



Table 1. Common Loon summary, 2015

Quabbin Reservoir									
Territory/Potential Territory	Raft Deployed	Nest Location	Nest Type	#Eggs	Successful	Failure Description	Chicks Hatched	Approx. Hatch Date	Chicks Fledged
Boat Area 2	18-May	Raft	Bowl	2	Yes		2	7/21/2015	1
Hop Brook	15-May	Raft	Bowl	2	Yes		2	7/2/2015	2
Sandbar 1st attempt	No	Island	Scrape	?	No	Predation			
Sandbar Renest	No	Island	Scrape	?	Yes		1	7/29/2015	1
Phragmites	No	Unknown	Unknown	?	Yes		1+	Unknown	1
Pipe-Moore	No	Island	Bowl	?	Yes		1	7/29/2015	1
Eagle Tree-Moore	No	Island	Bowl	?	Yes		1	7/29/2015	1
Boat Area 3	No	Island	Bowl	2	Yes		2	7/29/2015	2
Den Hill	18-May	Island	Scrape	2	Yes		2	7/29/2015	2
Dragonfly/Graves	No	Island	Bowl	?	Yes		1+	7/6/2015	1
Feverbrook	18-May	Island	Bowl	?	Yes		1	6/26/2015	
Parker	15-May	Raft	Bowl	2	Yes		2	7/9/2015	2
Target	15-May	Raft	Bowl	2	Yes		2	6/26/2015	1
Gibbs	No	Unknown	Unknown	?	Yes		1+	Unknown	1
Russ	15-May	Raft	Bowl	1	No	Unknown			
Moosehorn	15-May	Island	Bowl	?	No	Unknown			
Hamilton-West	No	Island	Bowl	?	No	Unknown			
Townsend	18-May	Island	Scrape	?	No	Unknown			
Prescott	No	Island	Bowl	2	No	Unknown			
Carrick	No	Pair present but did not nest							
Boat Area 1	21-May	Pair present but did not nest							
Gulf Brook	21-May	Only 1 loon present this year - no nesting activity							
West Arm	21-May	Pair present but did not nest							
Townline	No	Pair present but did not nest							
Wachusett Reservoir									
Territory/Potential Territory	Raft Deployed	Nest Location	Nest Type	#Eggs	Successful	Failure Description	Chicks Hatched	Approx. Hatch Date	Chicks Fledged
Hastings Cove 1st attempt	14-May	Raft	Bowl	2	No	Predation/Raccoon			
Hastings Cove Renest		Raft	Bowl	2	Yes		2	7/10/2015	1
Cemetery 1st attempt	14-May	Island	Bowl	2	No	1 egg predated/2nd abandoned			
Cemetery Renest		Island	Bowl	2	No	Predation/Weasel			
Crescent 1st attempt	14-May	Island	Bowl	?	No	Nest Flooded			
Crescent Renest		Raft	Bowl	2	Yes		2	7/10/2015	2
South Bay	14-May	Island	Bowl	2	Yes		2	6/16/2015	1
Wood Island	14-May	Pair present but did not nest							
Thomas Basin	14-May	No loons observed							
Other Survey Areas									
Territory/Potential Territory	Raft Deployed	Nest Location	Nest Type	#Eggs	Successful	Failure Description	Chicks Hatched	Approx. Hatch Date	Chicks Fledged
O'Loughlin Pond	No	No loons observed							
Pottapaug Pond	No	No loons observed							
Hycrest Pond	No	Pair present but did not nest							
Paradise Pond	No	Pair present but did not nest							
Sudbury Reservoir	No	No loons observed							

Table 2. Colored band returns, 2015.

BAND RETURNS						
QUABBIN						
CURRENT TERRITORY	PREVIOUS TERRITORY	SEX	BAND YEAR	LEFT LEG	RIGHT LEG	Mortality
Boat Area 2		F	2001	white/green	orange/silver	
Boat Area 2		M	2014	orange dot/orange	silver/blue	
Moosehorn	Boat Area 2	M	2005	blue/red stripe	green stripe/silver	
Moosehorn	Massabesic, NH	F	2006	orange stripe/silver	green stripe/green stripe	
Hamilton-West	Hop Brook	M	2002	green	silver/orange stripe	
Hamilton-West		F	2014	green/red	blue/silver	
Hop Brook		F	2012	red/white	green stripe / silver	
Hop Brook	Carrick	M	2010	orange/blue stripe	silver/red stripe	
Gibbs	Den Hill	F	2011	red stripe/yellow	white/silver	
Russ	Boat Area 2	M	2001	blue/red	silver/orange	
Russ		F	?	silver or white	Yellow and white or silver	
Sandbar		F	2015	red dot/red	orange stripe/silver	
Sandbar		M	2015	yellow stripe/yellow	white/silver	
Phragmites		F	2009	white/blue stripe	red dot/silver	
Phragmites		M	2009	orange/green stripe	silver/red dot	
Pipe-Moore		F	2015	blue stripe/yellow stripe	orange stripe/silver	
Pipe-Moore		M	2015	red stripe/red	white/silver	
Eagle Tree-Moore		M	2014	orange/blue	blue/silver	
Eagle Tree-Moore	Hamilton-west	F	2009	white stripe/white	red stripe /silver	
Boat area 3		M	2014	blue/white	silver/orange	
Boat area 3		F	2011	yellow/green stripe	red stripe /silver	
Den Hill	BA3	F	2006	red "x"/blue	yellow stripe/silver	
Den Hill				UNBANDED		
Townsend		M	2005	white /green	silver /green stripe	
Graves-Dragonfly		M	2014	green/white	blue/silver	
Graves-Dragonfly		F		UNBANDED		
Target		F	2003	blue / white	silver / blue stripe	
Target		M	2008	white/green	Green Dot / Silver	
Town Line		M		UNBANDED		
Town Line		F		UNBANDED		
Fever Brook		M	2009	red/yellow stripe	red dot/silver	
Fever Brook		F		UNBANDED		
Fever Brook		F	2014	yellow/red	orange/silver	4/23/2015
Carrick		M		UNBANDED		
Carrick		F		UNBANDED		
Parker		F	2015	green/yellow stripe	orange stripe/silver	
Parker		M	2007	red/white	pink/silver	
West Arm		F		UNBANDED		
West Arm		M	2014	Yellow/Green	Orange/Silver	
WACHUSETT						
CURRENT TERRITORY	PREVIOUS TERRITORY	SEX	BAND YEAR	LEFT LEG	RIGHT LEG	Mortality
Hastings Cove		M	2013	Blue/Yellow Dot	White Dot/Silver	
Hastings Cove	Wood Island	F	2005	orange /green	green stripe /silver	
South Bay		F	2014	blue/white	blue/silver	
South Bay		M	2015	UNBANDED		
Crescent		M	2015	white stripe/green	orange/silver stripe	
Wood Island		F		UNBANDED		
Wood Island		M	2007	yellow/silver	yellow/white	
OTHER DCR-WSP LOON SURVEY WATER BODIES						
CURRENT TERRITORY	PREVIOUS TERRITORY	SEX	BAND YEAR	LEFT LEG	RIGHT LEG	Mortality
Hycrest Pond		F		UNBANDED		
Hycrest Pond		M	2005	white /orange	red stripe /silver	

Table 3. Common Loon egg and egg fragment collection.

2015 Quabbin Watershed Egg and Fragment collection			
COLLECTION DATE	TERRITORY	#OF EGGS COLLECTED	SHELL FRAGMENTS
6/10/2015	Sandbar		X
6/18/2015	Hamilton-west		X
7/29/2015	Sandbar-renest		X
6/18/2015	Prescott	1 fully developed unhatched chick	X
7/2/2015	Hop Brook		X
7/14/2015	Parker		X
7/29/2015	Boat Area 2		X
7/29/2015	Boat Area 3		X
7/29/2015	Den Hill		X
7/29/2015	Moore-Pipe		X
2015 Wachusett Watershed Egg and Fragment collection			
COLLECTION DATE	TERRITORY	# OF EGGS COLLECTED	SHELL FRAGMENTS
6/19/2015	S.Bay		X
7/10/2015	Crescent		X
7/24/2015	Cemetery	1 whole egg	

Table 4. DCR Wildlife staff survey effort, 2015.

Effort by Hours		
	Quabbin	Wachusett
	50.28	26.75
Total		77.03
Effort by Days		
	Quabbin	Wachusett
	26	23
Total		49