

Common Goldeneye

Bucephala clangula



The animated courtship displays of the male Common Goldeneye are a familiar winter sight in Vermont. Christmas Bird Counts record 3000 to 7000 goldeneyes in the state (NAS 2009), but most leave for more remote northern nesting grounds by mid-April. Vermont lies at the southeastern rim of the Common Goldeneye's circum-boreal breeding distribution. Individuals that remain to breed prefer wooded wetlands, riparian forests, and lake-shores close to trees that are large enough to provide cavity nest sites (Eadie et al. 1995).

Although the earliest record of Common Goldeneye eggs during the second atlas was 19 May, females with young were observed as early as 21 May, suggesting that incubation may begin as early as mid to late April. A late record on 16 June of a nest with eggs may have been a re-nest. About 75 percent of 60 breeding records (N = 21) were observations of females with young.

The species' stronghold was in the northern portion of Lake Champlain (Sandbar Wildlife Management Area north to Missisquoi National Wildlife Refuge) with a smaller population from Shelburne Bay south to northern Addison County. Nearly 90 percent of all Common Goldeneye observations were in the Champlain Valley. Although breeding was confirmed in the Northeastern Highlands and the Northern Green Mountains, these isolated observations represent a thinly distributed population outside of the Champlain Valley. Nest-box data from the Vermont Fish and Wildlife Department corroborates this distributional pattern: breeding activity is concentrated along Lake Champlain and absent near inland marshes (W. Crenshaw pers. comm.).

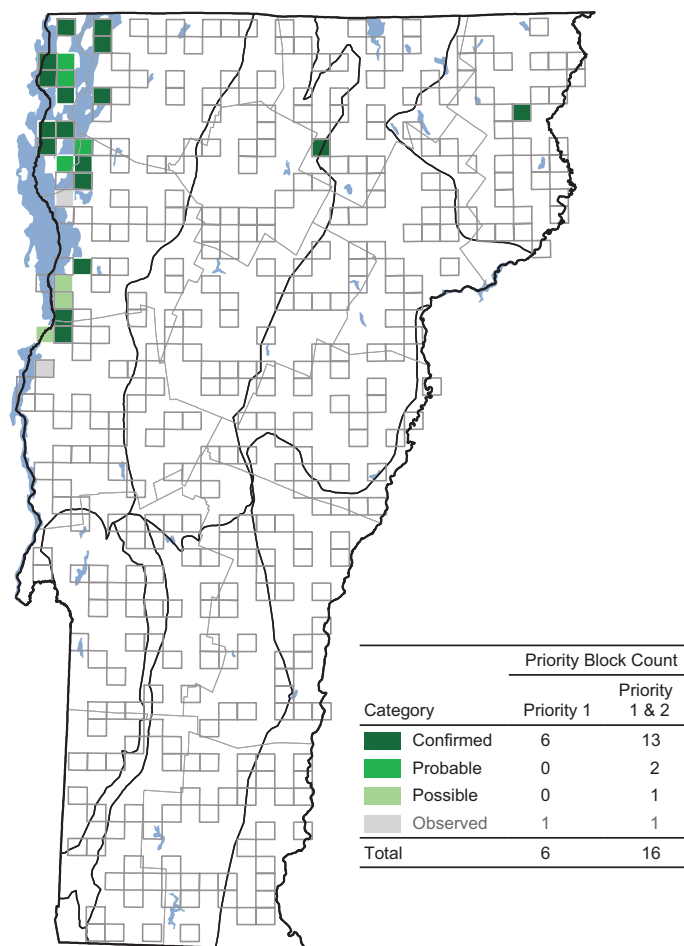
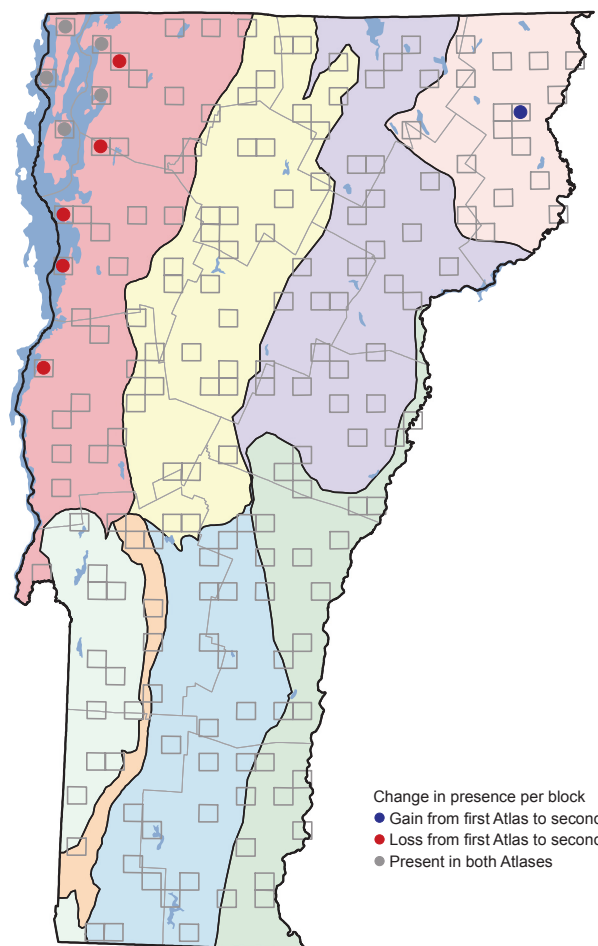
The number of Priority 1 blocks in which the Common Goldeneye was reported decreased by 40 percent between atlases, driven by a 50 percent decrease in block occupancy in the Champlain Valley. However, nest-box data from Vermont Fish and Wildlife Department show relatively constant numbers of Common Goldeneye nests between the first and second atlases (W. Crenshaw pers. comm.). Combined population estimates for both species of goldeneyes (Common and Barrow's) have been

relatively stable at 350,000 to 450,000 individuals in the eastern survey region since 1990 (USFWS 2008). New York found a 29 percent increase in the distribution of the Common Goldeneye in their second atlas (McGowan and Corwin 2008), with many new records occurring along Lake Champlain. Ontario showed a province-wide, non-significant increase (Cadman et al. 2007).

The reason for the decline in the species' distribution in Vermont is not known, but changes to the lake and the surrounding terrestrial ecosystems—including lakeshore development, the elimination of nesting snags, and increases in human activity—are possibilities (Eadie et al. 1995). Several studies have shown competition between fish and goldeneye for invertebrate prey (e.g., Mallory et al. 1994). Although they presumably provide a food source for Common Goldeneye, zebra mussels can also disrupt trophic-level dynamics of aquatic ecosystems through their action as filter feeders, potentially reducing food resources.

Although Common Goldeneyes typically defend territories aggressively, they may be outcompeted by Wood Duck and Hooded Mergansers for available nest cavities (Eadie et al. 1995). Both species have increased significantly since the first atlas: Wood Duck by 87 percent and Hooded Merganser by 188 percent. Compared to both species (Hepp and Bellrose 1995, Dugger et al. 2009), Common Goldeneyes have smaller clutch sizes and, unlike Wood Ducks, do not nest until their second year (Eadie et al. 1995). It is also possible that the apparent decline of the Common Goldeneye is an artifact of changes in protocols between the first and second atlas. In the first atlas, standard safe dates were not employed, leaving some possibility of recording late migrants as PO or PR. Three of the five blocks in which the species was lost in the Champlain Valley were recorded as PO in the first atlas.

Common Goldeneye populations are stable or even



CHANGE IN DISTRIBUTION BETWEEN ATLASES

Biophysical Region	First Atlas	Second Atlas	Change	% Change
Champlain Valley	10	5	- 5	- 50
Northeastern Highlands	0	1	+ 1	+ 100
Northern Green Mountains	0	0	+ 0	+ 0
Northern Vermont Piedmont	0	0	+ 0	+ 0
Southern Green Mountains	0	0	+ 0	+ 0
Southern Vermont Piedmont	0	0	+ 0	+ 0
Taconic Mountains	0	0	+ 0	+ 0
Vermont Valley	0	0	+ 0	+ 0
Totals	10	6	- 4	- 40

DISTRIBUTION IN CURRENT ATLAS

Biophysical Region	% of region species occupies	% of all records for this species found in region
Champlain Valley	19	88
Northeastern Highlands	2	6
Northern Green Mountains	1	6
Northern Vermont Piedmont	0	0
Southern Green Mountains	0	0
Southern Vermont Piedmont	0	0
Taconic Mountains	0	0
Vermont Valley	0	0

increasing continentally. With the introduction of zebra mussels as a winter food resource, this duck will likely remain common during the non-breeding season. However, the decrease in occupied blocks in Vermont warrants further investigation to determine the causes of this change.

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