

2000 Report to the Vermont Monitoring Cooperative
An Investigation of Mercury Levels in Bicknell's Thrush
and other Montane Forest Birds

Submitted by:

Christopher C. Rimmer and Kent P. McFarland
Vermont Institute of Natural Science
27023 Church Hill Road
Woodstock, VT 05091
802-457-

insect prey both by foliage gleaning and fly-catching. Long-distance migrants to the Caribbean Greater Antilles and northern South America, respectively, Myrtle Warbler and White-throated Sparrow are short- to medium-distance migrants, wintering primarily in the southeastern U.S. These four species thus represent a diverse array of habitat specialization, foraging guilds, and migration strategies.

Methods

We collected blood and/or feather samples from a total of 89 individuals of the four species in 2000 (Table 1). Birds were captured in mist nets both passively and by using tape playbacks. Each individual was banded, aged, sexed, measured, and weighed. The fifth secondaries on both wings were clipped just above the follicle and stored in plasticine envelopes. A small blood sample (c. 50 μ l) was collected in a heparinized capillary tube, refrigerated in vacutainers in the field, and frozen within 12-48 hours. Samples were analyzed in two sets: blood samples ($n = 15$ individuals) and feather samples ($n = 14$ birds) from Mt. Mansfield ($n = 12$), the White Mountains ($n = 2$), and Whiteface Mt. in the Adirondacks ($n = 3$). The Sawyer Laboratory at the University of Maine Orono conducted these analyses, using cold-vapor atomic absorption (CVAA) spectroscopy. Because four blood samples had weights too low to permit accurate readings using CVAA, these were reanalyzed using the more sensitive cold-vapor atomic fluorescence (CVAf) technique. This set of samples was analyzed only for total Hg.

Additional blood samples ($n = 23$ birds), Blackpoll Warbler ($n = 6$), Myrtle Warbler ($n = 6$), and White-throated Sparrow ($n = 6$). These samples were analyzed by element-specific CVAA at the Texas A&M University Trace Element Research Laboratory. All blood samples were analyzed for both total Hg and MeHg, while feathers were

