

Eating Waterfowl, Game, and Other Animals from the South River Watershed

For some individuals, fishing and hunting waterfowl and game are important traditions that are passed on from generation to generation. In addition, eating fish, waterfowl, and game can be welcomed additions to these individuals' diets as well as anyone's diet. However, a fish consumption advisory exists on the South River because of potential health concerns from mercury exposure. Consequently, a study was conducted to determine if animals other than fish (waterfowl and game) have been exposed to mercury and have accumulated mercury in their tissues. The likely amount of each animal a person would eat was estimated (including weight of edible tissue and number of meals per year) to determine if eating these animals poses a potential risk to human health. *Results of the mercury study show that waterfowl, game, and other animals (other than fish) from the South River watershed may be safely eaten to some degree (see figure) over the course of one year without being a health concern.*

This Fact Sheet describes the study and summarizes the assessment results of the potential human exposure from eating waterfowl, game, and other animals from the South River watershed.

The Plan

This study spanned four years (2008-2011) and covered several hunting seasons. South River Science Team members collected a total of 160 samples from waterfowl, small and large game, and snapping turtles from various locations along the South River. Edible parts of these animals were analyzed for mercury, and a conservative evaluation of potential human exposure to these animals was performed. Several assumptions (such as those listed below) were incorporated into the evaluation and were used to ensure that the estimated mercury intake was not underestimated.

» It was assumed that all animals consumed were from contaminated areas of the South River watershed.



Although mercury is present in fish and other animals from the South River watershed, research conducted by the South River Science Team indicates that these animals (other than fish) may be safely eaten in the amounts shown each year without being a health concern.

- » The amount of each animal a person would eat in a single meal was assumed to be 8 ounces (½ pound or the size of your hand) before cooking.
- » Either the highest measured concentration or a high-end calculated average concentration (also based on measured concentrations) was assumed to be present in a particular animal.

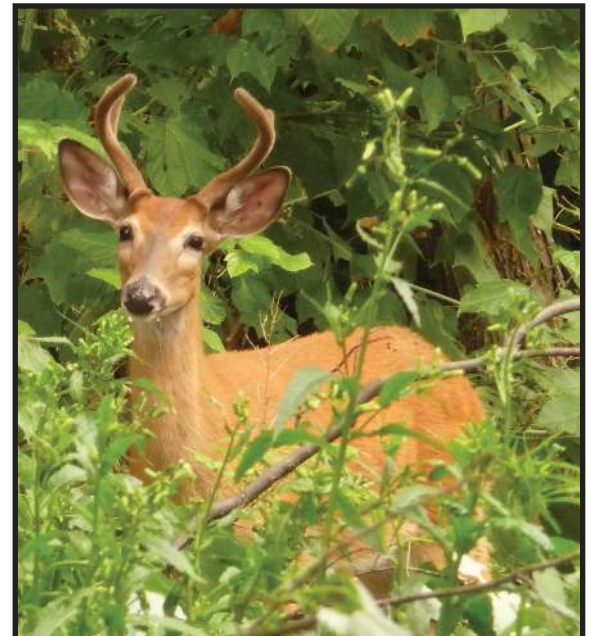
Then, the amount of mercury an individual would consume from eating a particular animal (mallard duck, for example) over an extended period of time was calculated using U.S. Environmental Protection Agency (USEPA) methods. This amount was compared to the amount of mercury considered acceptable for ingestion by the USEPA. This calculation was repeated for all of the animals collected during this four-year study.

The Results

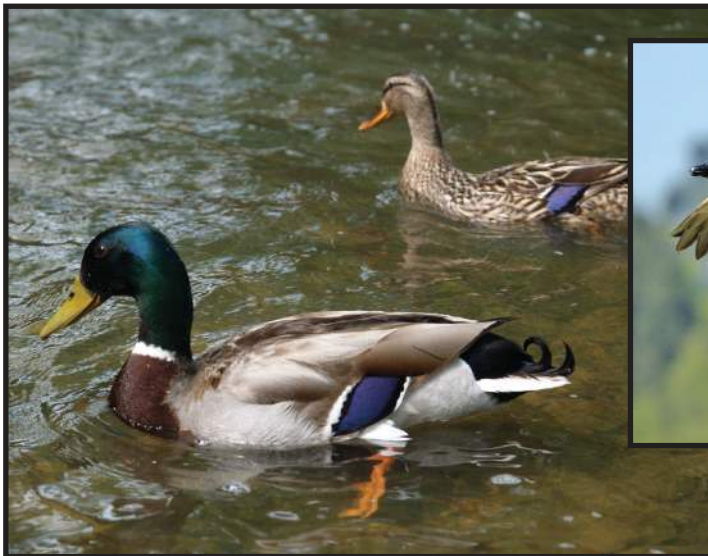
Results show that waterfowl, game, and other animals from the South River watershed may be safely eaten to some degree over the course of a year. Mercury was detected at low levels in muskrats, wood ducks, squirrels, Canada geese, and white-tailed deer and at higher levels in snapping

turtles and mallard ducks. As noted in the figure, animals with lower levels of mercury can be consumed more frequently than animals with higher concentrations of mercury. The number of 8-ounce meals that can be safely eaten within one year is shown in the figure. These numbers also apply to the amount of meals that can be eaten of each animal every year by a person over his/her lifetime. Just as portion sizes vary in a person's diet, the corresponding number of meals in the figure will vary if a meal size is greater or less than 8 ounces.

Adhering to these levels of consumption and the conservative estimates of mercury concentration, eating waterfowl, game, and other animals from the South River watershed is not expected to be a health concern.



White tail deer, mallard ducks, and Canada geese were included in the study.



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The Virginia Department of Environmental Quality and others have been monitoring mercury in fish, water, sediment, and soil in and along the South River and South Fork Shenandoah River since its discovery in the 1970s. Mercury was released to the South River as a result of past practices at the former DuPont plant in Waynesboro, where mercury was used from 1929 to 1950.

In 2001, the South River Science Team was formed to serve as a focal point for technical issues concerning mercury in the South River and downstream waterways. The Science Team is a cooperative effort between the Virginia Department of Environmental Quality, Department of Health, Department of Game and Inland Fisheries and representatives from academia, citizens groups, the USEPA, and DuPont.