

# MINK *will* MINGLE

Research update: Laurentian mink project expands across Ontario and into Nova Scotia

Oh, it's easy enough to make human comparisons and crack jokes: Wild female minks prefer their partners to be domesticated. But all kidding aside, the mingling of farm-raised mink with the wild mink population has serious ramifications, as researchers at Laurentian and the Ontario Ministry of Natural Resources have discovered. Now their study is expanding, thanks to a NSERC strategic grant of \$170,000.

Farm-raised mink are bred around the world and used for a host of products – from fur to cosmetics. Canada represents 4.5 per cent of the world's mink farm production. Farmed mink differ from their wild relatives: In size, they are nearly one-third longer; personality-wise, they are more subdued. As well, the domestic mink have been genetically manipulated to produce different shades of fur.

The two types of mink (wild and domesticated) remain distinct until farmed mink escape their cages and flee into the bush. And once in the wild, problems arise.

Anne Kidd (M.Sc. 2008) wrote her master's thesis on the consequences of mink escapees: the hybridization of wild mink. She worked under the supervision of Albrecht Schulte-Hostedde, a Laurentian biology professor and research scientist, and Jeff Bowman (M.Sc. 1996) of the Ontario Ministry of Natural Resources in Peterborough. Laurentian professor David Lesbarrères was a co-author.

Their research identified security and inadequate regulations for mink farms as significant concerns. Farmed mink escape during regular day-to-day handling, from holes in their cages, or, sometimes, when animal rights activists do a mass release at a farm.

When domesticated mink mate with wild mink they weaken the overall wild population. The release of domesticated mink into natural populations may adversely affect wild populations through predation, resource competition, hybridization, and the introduction of disease. This leads to a decline in the wild mink population. Mingling the two gene pools goes beyond natural selection in a species, says Schulte-Hostedde.

"Yes, there is selection and adaptation happening, but it's being overwhelmed – this is the hypothesis – by the genes that are coming in from integration by the farms. Certainly the data we have indicates there is a tremendous number of hybrids and domestic mink in the natural context."

Worse still, farmed mink are prone to Aleutian disease, which can spread to wild mink, as well as other wildlife.

Now, the research team can broaden their work. Their strategic grant of \$170,000 means research on three different fronts. They will expand the genetic study to more sites in Ontario and add Nova Scotia, where there is a large concentration of mink farms.

Anne Kidd's role is to genotype the mink sampled from the various arms of the project and identify the mink as farm, wild, or hybrid. Secondly, Helene Filion, a first-year master's biology student at Laurentian, is examining how hybridization occurs.

"The idea is that big, domestic males are at an advantage when it comes to mating," says Schulte-Hostedde.

Do females prefer the larger male mink from the farm? Researchers will examine whether the farmed male mink, with the larger organs and glands, are more successful at mating and sperm competition, says Schulte-Hostedde.

Larissa Nituch, a researcher at Trent University, which has partnered with Laurentian on the mink project, will analyze Aleutian disease carried by the mink. The disease is already showing up in skunks.

Schulte-Hostedde and Bowman have met with the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) to share their findings and express their concerns. "I don't know how quickly this will happen, but certainly the ball has started rolling for sure in terms of policy changes," says Schulte-Hostedde.

To read the complete paper, recently published in the journal *Molecular Ecology* (2009), go to: [www3.interscience.wiley.com/cgi-bin/fulltext/122210955/PDFSTART](http://www3.interscience.wiley.com/cgi-bin/fulltext/122210955/PDFSTART)

– By *Laura E. Young*