

## THE ENVIRONMENT AND HIGH VOLTAGE POWER LINES

### The Myth:

*Overhead high voltage power lines and associated electromagnetic fields (EMFs) have no effect on the environment.*

### The Facts:

- The first effect is the clearing of tree, shrub and other plant growth for the power line right-of-way. This growth is never allowed to recover to its original state, especially trees, due to safety issues for the power line. This means a permanent loss of habitat for wildlife.
- Fernie and Reynolds (2005) conducted an extensive review of the scholarly literature on the effects of power line EMFs on birds. EMF exposure, either in the field or in laboratories, has negatively altered the behavior, physiology, gland secretion, and the immune system of birds, which resulted in negative effects on their reproduction and development. Such effects were observed in perching birds, birds of prey, and chickens. The authors also reported that EMF exposure resulted in significantly reduced egg size, eggshell thinning, reduced egg laying and reduced hatching success (supported by Fernie et al. 2000).
- Because EMFs cause a reduction in the concentration of melatonin (a hormone produced in the brain), Fernie and Reynolds (2005) suggested that the timing of bird reproduction, mate selection, several aspects of migration, feeding and sleeping patterns, and overall stress levels would be negatively affected. Given the similarity in the functioning of some life processes between birds and humans, the authors discussed how these studies on birds could help in understanding how EMF exposure also negatively affects humans.
- Tree swallows nesting under high voltage power lines had significantly lower reproductive success than swallows nesting elsewhere (Doherty and Grubb 1998). (Many tree swallows nest along the 4 potential routes for the Heartland Transmission Line.)
- In addition to birds, many other animals are negatively affected by high voltage power lines. Nicholls and Racey (2007) found significantly reduced bat activity in areas with higher EMF levels. Bats are not only an important element of a healthy ecosystem, but they also eat large numbers of insect pests. (Many bats live along the 4 potential routes for the Heartland Transmission Line.)
- AltaLink and EPCOR (2009) indicate, "After construction is complete, the transmission line will produce a low frequency hum." See Fact Sheet No. 18 for a discussion on how this sound affects humans. This hum or buzz is bound to have an even greater impact on animals in the wild which have significantly more sensitive hearing than humans. For example, transmission line noise is considered an obstacle for migrating reindeer (Reimers et al. 2000).

Tree Swallows



PHOTO: JOHN KRISTENSEN

For information  
on what you can do  
go to [www.reta.ca](http://www.reta.ca)

**RETA**  
Responsible Electricity  
Transmission for Albertans