

The Siscowette

Profiling women in science in the Great Lakes

FEATURED RESEARCH

Dykstra, C.R., et al. 2010. Contaminant concentrations in Bald Eagles nesting on Lake Superior, the upper Mississippi River, and the St. Croix River. *J. Great Lakes Res.* 36:561-569.

Cheryl Dykstra and her colleagues measured contaminant concentrations in Bald Eagle nestlings collected from three regions over the past two decades. Their study documents a steady decrease in concentrations of the persistent organochlorines DDE and total

PCBs, as well as mercury, along the Lake Superior shoreline. Lake Superior nestlings had the highest concentrations of DDE. Concentrations of total PCBs were highest along the industrial areas of the Mississippi and Lower St. Croix rivers, and levels of mercury were greatest along the upper St. Croix River. Levels of all three contaminants were below those associated with significant impairment of reproduction, and observed reproductive rates were indicative

of a healthy population.

Cheryl Dykstra is an independent researcher and self-employed wildlife consultant in West Chester, Ohio. Her training in wildlife ecology includes a B.S. degree from Calvin College in Grand Rapids, MI and M.S. and Ph.D. degrees in Wildlife Ecology from the University of Wisconsin-Madison. Her work now focuses on evaluating the effects of urbanization on



Cheryl with a Red-shouldered Hawk

the ecology of raptors in suburban areas of southwestern Ohio.



Have you ever wondered what humans might do to reduce the negative effects of climate

FEATURED PROFESSIONAL

change? This is one of the newest challenges for climate change biology and a question that Dr. Jessica Hellmann and her students at the University of Notre Dame are tackling.

Jessica's work on "adaptation" to climate change has emerged from her studies on the ecological impacts of climate change. She feels that ecologists have spent many years diagnosing the effects of climate change on biodiversity, but now we need

to use this knowledge to design management strategies to live with climate change.

Specifically, the Hellmann Lab is studying the ecological and evolutionary factors that limit the ability of species to track climate as it shifts. These limitations include local adaptation of populations to local climates and specialized interactions between species. Humans might be able to overcome these limitations for some species by fa-

cilitating their movement and even putting some in new locations. Several species in the Great Lakes region are helping Jessica grapple with these issues, including the hybridizing Midwestern butterflies, *Papilio glaucus* and *P. canadensis*, and the endangered Karner blue butterfly.

For more information about Jessica Hellmann and her research group, see <http://www.nd.edu/~hellmann/>.

FEATURED STUDENT OR POSTDOC

Julie Marentette is a Ph.D. student working with Sigal Balshine in the Department of Psychology, Neuroscience and Behaviour at McMaster University in Hamilton, Ontario.

For Julie, a large part of growing up was fishing and swimming in Lakes St. Clair and Erie. Following a love of nature, she completed a B.Sc. in Biology at the University of Windsor. While there, she developed an interest in Great Lakes re-

search as an NSERC undergraduate research assistant, and later thesis student, in the laboratory of Lynda Corkum. With Lynda, Julie studied pheromone communication in the invasive round goby.

Julie's ongoing research with Sigal at McMaster University continues to focus on the reproductive biology of the round goby. Currently, she is examining the consequences of living in contaminated habitats. This

involves a comparison of physiological and behavioural biomarkers of pollutant exposure in fish from areas of varying contamination in Hamilton Harbour, an Area of Concern. She suspects that contamination will affect activity levels, foraging, and responses to predators. Her work will help determine how contaminants affect round goby population dynamics, and thus the transfer of toxicants through local foodwebs.



Julie Marentette