



Environmental education campaigns at schools inspire civic pride in conservation.



“Because we do not manage a specific protected area, we are in a unique position to collaborate across protected and unprotected areas to achieve species and habitat protection.”

What are some of the accomplishments you are most proud of to date?

Following my research at New Mexico State University on Scarlet Macaws in 2010 and 2011, our partners Friends for Conservation and Development documented an increase in poached Scarlet Macaw nests that peaked at 90% along the Chalillo Reservoir. We began collaborating in 2012 to reverse this trend. Within a single year we reduced the poaching to 30% and in 2015 we kept poachers from stealing any chicks in that area. We are really proud of this collaborative effort. There is still a lot of work ahead of us but we're moving in the right direction. We have also been working with several organizations to increase nest monitoring and protection of Yellow-headed Parrots. It has been great to see these organizations improve their programs and now join us in a national effort. We still have a lot of work to do before we can call it a success but the momentum is there and we are all working hard, together, to make this an effective national program.

Is there anything else about the Scarlet Six Biomonitoring Team that you think our readers would find interesting?

The Scarlet Six Biomonitoring Team is a grassroots effort to conserve the amazing biodiversity in Belize. I really think this is a successful example of national and international partners coming together with a single vision and bringing the best they can offer into a synergistic effort. Because we do not manage a specific protected area, we are in a unique position to collaborate across protected and unprotected areas to achieve species and habitat protection. In many instances we see ourselves as bridging the gap. One new development is our plan to expand our organization by merging with another avian-focused NGO, Belize Raptor Research Institute. This organization has been involved in raptor research and conservation efforts for several years. Research includes establishing an annual Raptor Watch, an ongoing Solitary Eagle nest monitoring program, and Snail and Hook-billed Kite research. You can check them out on Facebook or their website: <http://www.belize-raptor-research.com/>. This merger will likely happen by the end of the year, so we definitely have bigger and better plans for the future of avian conservation in Belize!

Is there an opportunity for interested readers to become involved?

Absolutely! Our conservation efforts rely heavily on the assistance of volunteers in the field. Our Scarlet Macaw nest monitoring and protection efforts begin in May and continue into August. Our Yellow-headed Parrot nest monitoring and protection effort begins in April and continues to mid-June. If you are interested in joining our conservation efforts, then please message us through our Facebook page:

<https://www.facebook.com/ScarletSixBiomonitoringTeam>.

Young Wildlifers Contribute to Polar Bear Conservation

By Claire Crow

While checking out the posters at The Wildlife Society's annual conference in October, I found some emerging young wildlife scientists standing with a poster explaining their polar bear research. These high school students from the USA and Canada were participants in the International Student-led Arctic Monitoring and Research Program (ISAMR), an international group of students and instructors who monitor the effects of global climate change in the greater Churchill/Wapusk ecosystem (Canada). ISAMR's focus is primarily on permafrost and polar bears.

The students examined the level of symmetry in whisker patterns in polar bears, comparing 29 bears for which photographs of both sides of the face were available. The level of similarity in whisker patterns between the two sides of the face was not significantly different from the similarity in whisker patterns between two different individuals. Whisker patterns in different photos of the same side of the same individual's face (control) scored as matches. Asymmetry measures in whisker pattern were significantly lower in photos taken 2003-2005 than in photos taken 2012-2014. The increase in asymmetry over the past decade may indicate an overall decrease in body condition from environmental stresses during gestation and pre-puberty. These environmental stresses may be linked to climate change.

Julia Miiles (Winnipeg, Manitoba) and Cory Silver (Baltimore, Maryland) shared their experiences by answering some interview questions:



Melissa Gilbert (Winnipeg, Manitoba), Julia Miles (Winnipeg, Manitoba) and Cory Silver (Baltimore, Maryland) with their poster at The Wildlife Society's 22nd Annual Conference, October 2015. Photo by Claire Crow.

What was the most surprising thing you learned about doing scientific research?

Julia: I didn't expect to become so passionate about the project the first time I went to Churchill. Also, the amount of data that we collect that ends up not being usable was surprising... I had no idea how much trial and error was present in the research process.

Cory: I learned that, however cliché, I, as an individual, can contribute to scientific research. Research is often something reserved for those in the upper echelons of academia, and the experiences that I have had have been incredibly empowering in this regard, learning that I can make meaningful contributions to such an advanced field at such a young age.

What was the most difficult part of the process?

Julia: As we always have such a large amount of data being collected in a relatively short period of time, it can be hard to keep track of it all and keep everything in order. The distance between us also presents some difficulties because communication is always more challenging when you are not face to face. We find that we are much more productive in Churchill when we are all working together than when we are in our respective cities.

Cory: Collecting data in the field can be challenging. There's often a small window of time where we have a clear view of a bear at the angle we need, so we needed to be able to take quality data in a short period of time.

What part did you like best?

Julia: While doing the research, we also had the opportunity to learn about the culture and history of the people in northern Manitoba. We had the chance to make mittens from moose hide and fur and listen to a talk given by one of the elders in the community. I also really like the fact that the research is relevant. As global warming will be one of the biggest issues to plague my generation in the near future I think it is very important to find many ways to observe its impacts, whether they be obvious and visible or subtler but equally important.

Cory: The data analysis process... I've found that there's no better feeling than discovering the trends and relationships that make our data meaningful, that validates those hours upon hours in the field.

How do you feel about contributing to the conservation of polar bears with your study?

Julia: Even when you are very young, you understand that polar bears are being affected by global warming. The polar bear has become the face of the detrimental effects of global warming and is a worldwide symbol of the need for conservation efforts. Having the opportunity to study the iconic animal you have known and cared about ever since you were a kid is an incredible experience.

Cory: I'm thrilled that our research may contribute to the conservation of polar bears. Although we're still in the early stages of our research, it's a wonderful feeling to know that we're involved in something as critical as polar bear conservation, and I'm excited to see what new findings we'll come across in the future.

Is there anything else you would like our readers to know about the program?

Julia: Far too often the ideas, opinions and contributions of youth are overlooked by society. We tend to be brushed away and told that we don't understand what's going on, that we are too young and inexperienced to be capable of developing opinions, that we are too idealistic and will someday be crushed by reality. I strongly believe that this is untrue. The consideration of the contributions of youth is vital in the process of creating a sustainable and innovative future, whether the focus is environmental, economic or social. We do have valid contributions to make, and we would like to be given the opportunity to make them. ISAMR provides us with an opportunity to showcase the fact that we do care and that we are capable. It is an incredible initiative and I will be forever grateful for my opportunity to be a part of it.

Cory: I'm incredibly grateful for these research opportunities and cannot thank the teachers and professors that have supported this program enough.

"It was incredibly empowering to learn that I can make meaningful contributions at such a young age."



In addition to the polar bear research, Julia particularly enjoyed interacting with the local community in northern Manitoba and learning to make mittens from moose hide and fur. Photo courtesy of Julia Miles.

"There is no better feeling than discovering the trends and relationships that make our data meaningful."

"Global warming will be one of the biggest issues to plague my generation... The consideration of the contributions of youth is vital in the process of creating a sustainable and innovative future."