

Researchers will be diving HEAD-first into the wetlands of the western boreal forest this summer. Literally.

Dr. Kevin Devito, an assistant professor of environmental biology and ecology at the University of Alberta, will lead a four-scientist research team of fellow U of A professors Suzanne Bayley, biological sciences, and Lee Foote, renewable resources, as well as University of Western Ontario plant sciences/geography professor Irena Creed, into the abundant wetlands of Utikuma Lake, an eight million acre swath of boreal forest in north central Alberta, to determine the hydrology, ecology and disturbances (HEAD) affecting the region.

"The rate of development in the western boreal forest is happening at a tremendous pace, more so than anywhere else in the world," said Devito. "But very little is known of about the ecological and hydrological factors controlling the character and productivity of wetland complexes and the potential impacts of related disturbances of the region. Our study will provide new insights to the linkages between waterbird abundance and the biological, physical and chemical functions of these western boreal forest wetlands."

The HEAD research proposal became reality last January after the National Sciences and Engineering Research Council of Canada (NSERC) matched \$800,000 put forth by progressive conservation-minded companies, Alberta-Pacific Forest Industries Inc., Weyerhaeuser Canada Ltd., and Syncrude Canada Ltd. Ducks Unlimited was instrumental in bringing the industry partners to the table, and also sweetened the pot by providing an additional \$638,000 in satellite landcover mapping, waterbird surveys and Geographic Information System (GIS) expertise, through its Western Boreal Forest Initiative (WBFi).

The end result is a well-timed four year \$2.2 million dollar giant leap toward a better understanding of the Western Boreal Forest, a vast and extremely important ecological region. Gary Stewart, manager of conservation programs for DU's Western Boreal Region, said the development and application of this research will be used to enhance DU's conservation program planning and delivery across this broad forest which is second only to the prairies in terms of its continental importance to migratory waterbirds.

"DU has identified the western boreal forest as one of the highest priority landscapes in North America," said Stewart, who has been at the helm of the WBFi since its inception in 1997. "An ability to measure the importance of specific wetlands or wetlands types and determine the factors influencing the productivity of these sites is crucial to program implementation and will ultimately affect our ability to achieve habitat conservation goals for the region."

DU plans to use Devito's findings at Utikuma to help understand WBFi projects such as Pasquia, a 13 million acre area rich in wetlands straddling the border of Manitoba and Saskatchewan near The Pas, Manitoba.

Chris Smith is the WBFI's Pasquia project leader in The Pas, Manitoba. Smith recently returned to DU after working in the forestry industry for ten years. He says Devito team's research will provide DU and industry with critical information to integrate wetland conservation objectives into land management decisions.

"Determining how these systems function and learning how associated land use activities influence wetlands will greatly assist industry in developing land-use plans and associated practices that minimize impacts on boreal wetlands," said Smith.

But it is not just the water of the boreal wetlands that will be used to draw conclusions. Landcover mapping using satellite imagery is the foundation of all DU's inventory work across this vast region.

"The landcover mapping product is a critical component of the study because it identifies the various wetland and upland features, such as type, location, size and distribution," said Al Richard, GIS manager for Western Boreal Region. " This information will help Devito's group understand what drives these wetland systems as far as productivity and if the various disturbances, both man made and natural, are influencing these systems in any way. "

According to Stewart, Utikuma was strategically selected for the HEAD research because results can be broadly applied across the southern boreal forest.

" We estimate our current level of knowledge and understanding of wetlands and waterbirds across the Western Boreal Forest is comparable to what we knew about the prairies twenty five or thirty years ago," Stewart said. " And because of this lack of knowledge there is a pressing need to identify ecological characteristics of specific wetlands and quantify the value of wetland productivity so we can direct our conservation efforts by using sound science and state of the art GIS technology."

But, Smith also quickly points out that by becoming proactively involved with this research, the industry partners have identified wetland conservation as an important link to achieving sustainable resource management.

" The underlying beauty of this research project is the leadership role industry has taken in helping fund the science that is so crucial to the delivery of DU's conservation programs in the western boreal forest," Smith said. "It demonstrates a recognition of the importance of wetlands, the value of partnerships and a commitment to the goal of achieving sustainable resource management."