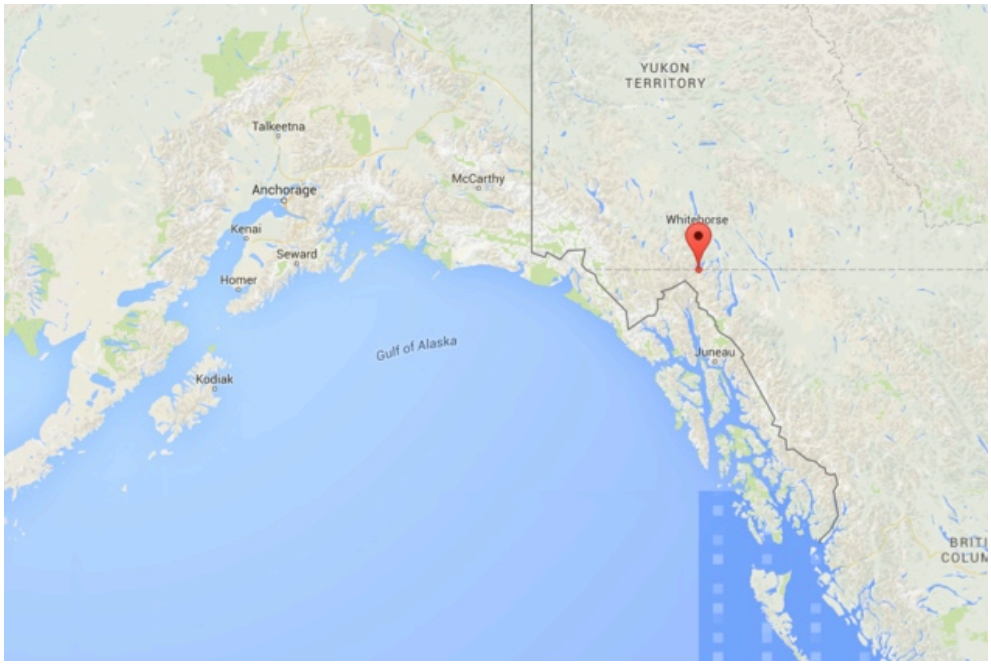
Wolf Creek Research Basin

Nested hydrometeorological catchment with instrumented subbasins of 195, 71, 14.5 and 7.8 km^2 providing continuous data since 1992. The basin has three meteorological stations at elevations of 750 (boreal forest ecosystem), 1250 (subalpine taiga ecosystem) and 1615 m (alpine tundra ecosystem) operating continuously since 1993, each recording 20 to 30 parameters. A groundwater monitoring well has operated since 2003. There is also other specialized instrumentation running continuously for specific projects.



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Owner
Government of Yukon

Membership
Regular Member

Latitude
60

Longitude
135

Location
15 km south of Whitehorse

Nearest Community
Whitehorse

Territory/ Province
Yukon

Aboriginal Government/ Homeland
Kwanlin Dun / Ta'an Kwach'an

Facility Type
Year-Round Research Station

Research Hinterland
Alpine, Mountain, Sporadic Permafrost, Streams, Taiga / Boreal forest, Tundra

Main Research Disciplines
Climatology, Environmental Sciences, Geocryology, Hydrology, Isotopic Chemistry, Limnology, Mapping/GIS, Soil Science, Terrestrial Biology/Ecology

Research History
The Wolf Creek Research Basin was established in 1993 to primarily carry out water related studies. In 1994 the site was adopted as a Canadian Global Energy and Water Cycle Experiment (GEWEX) Program site, linked with the World Climate Program. Many research projects took place at the Basin since.

Current Projects
WMO Solid Precipitation Intercomparison Experiment site; understand, diagnose & predict changing land, assessing connections among changing climate, ecosystems & water in Sub-arctic, Boreal Forest, Western Cordillera, and Prairies regions; Special Observation & Analysis Period project.

Power
N/A

Communications
Cell Telephone (available in lower half), Satellite phone

Local Transportation
N/A

Equipment Storage
Whitehorse

Dormitory/Sleeping Facilities
N/A

Dining/Kitchen Facilities
N/A

Laboratory Facilities
Whitehorse

Fuel Availability
Fuel available at McRae on Alaska Highway approximately 5 km NW of Wolf Creek

Research Requirements
Research permits available from Heritage Branch, Yukon Department of Tourism and Culture

Special Rules and Regulations
N/A

Local External Resources
N/A

Nearest Medical Service
Whitehorse

Safety Considerations
N/A

Cost
N/A

Other Information
In 1997, Wolf Creek was added to the list of about a hundred stations making up Canada's Ecological Monitoring and Assessment Network (EMAN). A Smithsonian Institute, Man and the Biosphere biodiversity plot was established in 1998. International Tundra Experiment (ITEX) sites were also established the same year.

In 2002 the University of Wales received funding from the UK government's National Engineering and Scientific Research Council (NERC) to participate in a 3 year international study at Wolf Creek. The objectives of the Snow - Vegetation Interaction project, were to assess the influence of this interaction on hydrological and atmospheric exchanges. Other partners in the study were the University of Saskatchewan, Simon Fraser University and Environment Canada's National Water Research Centre, who received additional funding from the Canadian Foundation for Climate and Atmospheric Sciences (CFCAS). In addition the US Department of Agriculture and Idaho State University received funding through the GAPP program (GEWEX [Global Energy and Water Cycle Experiment] America Prediction Project) to participate in the project.

In 2006 further funding was provided by CFCAS for the Improved Processes and Parameterisation For Atmospheric And Hydrological Prediction In Cold Regions (IP3). The three year study had a focus of advancing the understanding and description of land surface hydrometeorological processes in cold regions and on improving the predictive capacity of Canadian atmospheric, cryospheric and hydrological models in cold regions. To this end studies was carried out in 7 existing research watersheds in western and northern Canada including Wolf Creek.

In 2007 an International Polar Year (IPY)project was initiated. Entitled Polar Terrestrial Freshwater: State and Flow to the Arctic Ocean, with 13 partners the project was funded over 5 years. The objectives of the IPY project were to assess the state of Canadian polar hydrosphere including of streamflows and nutrient inflows to the system. The approved IPY project has strong linkages to the associated CFCAS-IP3 project.

In 2010 a study was initiated to upscale Wolf Creek hydrometeorological parameters and processes to the Yukon River basin for the purposes of developing a streamflow forecasting model. Partners in the project include Environment Canada's National Hydrology Research Centre, the US National Oceanic and Atmospheric Agency (NOAA), University of Saskatchewan's Hydrology Research Centre, Russia's State Hydrological Institute and Yukon Water Resources.

In 2012 funding was provided by AANDC to carry out a climate change hydrologic response impact study. The project included a detailed sensitivity assessment of hydrological response to climate warming and associated permafrost thawing using the Cold Regions Hydrological Model (CRHM) at the Wolf Creek Research Basin, followed by the application of CRHM to other Yukon regions and communities to provide the necessary climate warming sensitivity information to develop sectoral adaptation strategies.

Last Updated
2015-05-30