

## Satellite-based Study of Water Quality of Chilko Lake

ASL Environmental Sciences Inc. has successfully completed the LakeView Project, which was funded by the Canadian Space Agency (CSA) Earth Observation Application Development Program (EOADP) between 2011 and 2014. Lakeview's objective was to apply advanced remote sensing technologies to improve our understanding of factors that control freshwater survival of Sockeye salmon.

The project team led by ASL also included scientists from Fisheries and Oceans Canada, University of Victoria, and C-CORE. Historical archived environmental and satellite data were used in conjunction with *in situ* data to understand the present and historical water quality of Chilko Lake. Chilko Lake sockeye constitute one of the largest salmon stocks in the Pacific Northwest, for which Fisheries and Oceans Canada (DFO) has maintained a 55-year record, including partitioned freshwater and marine survival. The lake was also the site of fertilization experiments in the 1970s-1990s. ASL

examined the use of spaceborne data from MERIS and LANDSAT satellites collected over Chilko Lake for the purpose of generating long time series of lake chlorophyll and water temperature, including testing and validating standard chlorophyll algorithms against *in situ* measurements. ASL also assessed the state of glaciers in the watershed using LANDSAT and RADARSAT data and performed comparisons of Sockeye survival with lake variables.

The end product of LakeView is a valuable collection of new spatial data products useful for a wide range of scientists and managers. The project also demonstrated the use of historical satellite time series data for limnology and salmon biology. The methods and data products developed during the project will continue to support ongoing research.

ASL will be presenting this work at the upcoming joint symposium: IGARSS 2014 & 35<sup>th</sup> Canadian Symposium on Remote Sensing in Québec City, July 13-18. Eduardo Loos and Leslie Brown of ASL will be in attendance. For more information please contact [remotesensing@aslenv.com](mailto:remotesensing@aslenv.com)

ASL carries out similar studies in marine and coastal waters for scientific research and as input to environmental assessment programs.

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