# conferenceseries.com

## World Conference on

# Climate Change

### October 24-26, 2016   Valencia, Spain

## Climate change impact assessment on artificial wetlands

**Carla Idely Palencia-Aguilar**
Lund University, Sweden

Remote sensing has been widely used for determining climate changes characteristics, also in wetland studies. Aster images from 2002 and 2008 demonstrated that the water surface in a wetland located at Guasca Municipality in Colombia increased from 3934m2 to 126403m2 respectively at 15m resolution. Modis images 13A3 allowed calculation of Normalized Difference Vegetation Index (NDVI) on a monthly basis from June to November 2008 with a resolution of 1 km. The results showed how variables such as Net Radiation, Temperature and Rain explained 83 percent of the NDVI monthly changes (data obtained from the meteorological stations HOBO and Campbell placed close to the wetland). In addition, Potential Evapotranspiration was calculated with formulas and compared with the ILWIS software with similar results with averages of 7.7 mm/day. Groundwater level fluctuations on a daily basis were studied as well as data from a Piezometer placed next to the wetland during the same time period. Data was fitted with Rain changes with multiple regression analysis and time series, with R2 of 0.98. Groundwater temperature and conductivity changes were also analyzed; no significant changes over the studied time were noticed. However, conductivity changes were influenced by NDVI, Rain and Evapotranspiration with polynomial fittings greater than 90%. November was characterized by increasing NDVI, meaning that more agriculture took place. Agricultural runoff could increase conductivity due to additional phosphate and nitrate ions. Surface water quality analysis was performed to determine the possible contaminants. The results show that Coliforms were the most significant contaminants.

### Biography

Carla Idely Palencia-Aguilar is a Manufacturing Engineer. She has completed 4 Masters, 4 Specializations and multiple short courses in various engineering and management fields worldwide. She is a PhD candidate at Lund University in Sweden under the supervision of Dr Magnus Persson. She has participated as speaker in various conferences around the world for many years. She has published various papers in topics such as agriculture, remote sensing, modeling and land use optimization, among others. She has been a consultant for various companies in Colombia and at international level. She has been also widely involved in social work and sustainable development.

carlapalencia@hotmail.com

**Notes:**

J Earth Sci Clim Change
ISSN: 2157-7617 JESCC, an open access journal

**Climate Change 2016**
October 27-29, 2016

Volume 7, Issue 9(Suppl)

Page 39