

THE GUAYAS RIVER BASIN

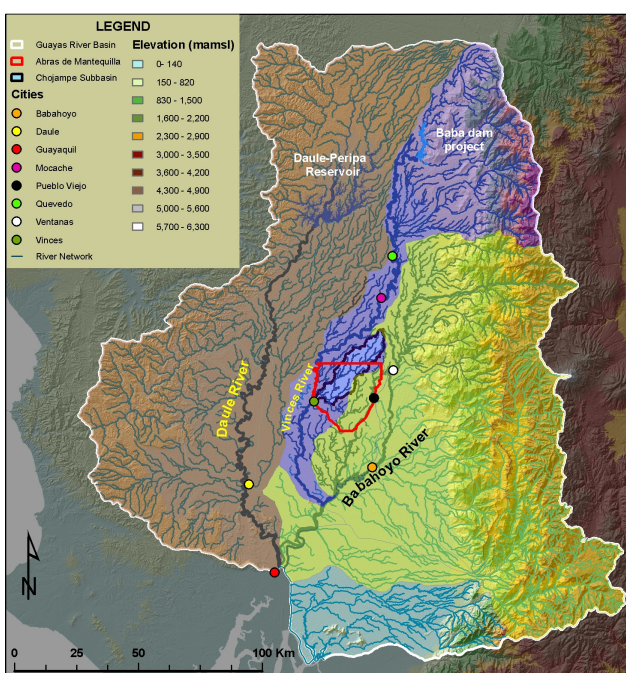
The Guayas River Basin (~34.000 km²) is completely situated within the Republic of Ecuador. Located in the central-western part of the country, the Guayas River Basin drains through the Guayas River into the Pacific Ocean (Gulf of Guayaquil), just south of the city of Guayaquil (Ecuador's biggest city). Most of the Guayas River Basin is located in the "Region Costa" (Coastal Region), while the eastern part of the Basin drains part of Ecuador's western Andean Slope, which belongs to the "Region Sierra". The basin is covering 9 provinces out of the 24 in total in Ecuador.

SOCIO-ECONOMIC DESCRIPTION

The basin has a population of 4,8 million inhabitants. The majority of the population living in the basin is settled in urban and semi-urban areas. The Guayas River Basin has many water uses of which hydropower, drinking water, sanitation, agriculture, among the most important. The basin is located in one of the most important agricultural zones in the country. The most important crops grown in the area are: sugar cane, followed by rice, banana, cacao, African palm, citrics and other fruits and vegetables.

WATER MANAGEMENT ORGANISATIONS

The Guayas River and the Santa Elena Peninsula are under the jurisdiction of one River Basin organization: CEDEGE (Commission for the studies and development of Guayas River Basin) which is a public institution currently under the jurisdiction of SENAGUA (National Secretary of Water).



WETWIN PROJECT

Abras de Mantequilla wetland situated in the Guayas river basin is one of seven cases studied in the WETwin project.

The main research question for the wetland and its basin are:

A "fully integrated wetland model", as the physically-based representation which includes land uses, soil types, and water quality in a catchment scale, with surface – groundwater interactions, is to be developed. How this kind of composed model can improve forecasting and simulation of future scenarios on Abras de Mantequilla wetland and its adjacent catchments? How this integrated wetland model can enrich the formation of the wetland and (sub) catchment analytical framework?

In addition, around this main question there are several issues that lead to complementary research questions, as follows:

Water dynamics modelling issues: What is the influence that Abras de Mantequilla wetland and its adjacent river (sub) catchment have on each other? What is the effect of groundwater on surface water (and viceversa) on the wetland ecosystem? What is the potential of the wetland as water storage element or as buffer zone for pollution control?

Management issues: What are the most probable scenarios (e.g. land use variations) and best management strategies for the wetland and river catchments in a near future? How the wetland-river catchment system might respond in case of these events or whether the present conditions remain?

Data-modelling issues: How high is the uncertainty that potential missing data gaps and model selection may introduce on a wetland-catchment model? How to reduce the uncertainty with inter/extrapolation techniques and 'black-box'-stochastic methods?

(ADDITIONAL INFO ON WWW.WETWIN.NET)

ABOUT TWIN2GO

Twin2Go reviews, consolidates, and synthesises research on adaptive and integrated water resources management in basins around the world. The aim is to draw insights relevant to policy and research on issues around adaptive water governance in the context of climate change, and to make them transferable to other basins. Twin2Go further promotes sharing of research results with practitioners and high level decision makers through effective dialogue.