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# Contribution of surface, underground and vertical hydrological fluxes to the maintenance of saturated areas in a diked island of the Lower Danube Floodplain (Big Island of Braila)

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The Big Island of Braila (BIB) is the largest island of the Danube floodplain. Currently BIB is diked and used as agricultural land, but it is planned to be partly restored into a multifunctional complex of terrestrial and wetland ecosystems. In this context, the purpose of our study was to estimate the differential contribution of hydrological fluxes to the soil saturation in the island. The surface fluxes have been characterized by network modeling of the natural and anthropic channels. The underground fluxes were characterized by grid based modeling, using a DEM and a georelational database previously developed. The basic soft used was ArcView and ArcInfo. The validation was done by field measurements of groundwater level and identification of water bodies' distribution on LANDSAT TM and ETM images. The contribution of vertical fluxes has been estimated using the Beaven and Kirkby method. Results were expressed as distribution of saturated areas in function of the Danube water level. Evaporation has been always greater than precipitations and did not contribute significantly to the soil saturation. In the current state of the system the distribution of saturated areas is controlled mainly by underground fluxes. The future intensive restoration activities should be located in these most saturated areas of the island.