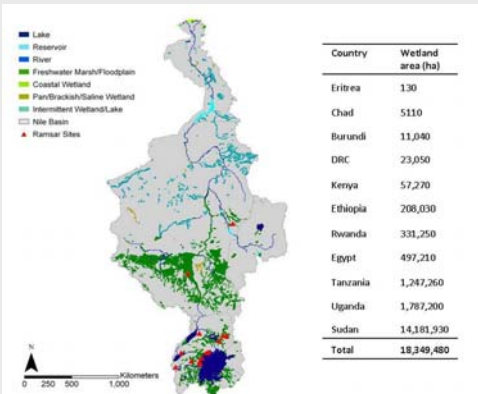# The Nile Basin: Wetlands of the upper White Nile

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[1] International Water Management Institute, Addis Ababa, Ethiopia

IWMI
International Water Management Institute

- ❑ Wetlands occur extensively across the Nile Basin
- ❑ Should be considered a key component in IWRM

| Country	Wetland area (ha)
Eritrea	130
Chad	5110
Burundi	11,040
DRC	23,050
Kenya	57,270
Ethiopia	208,030
Rwanda	331,250
Egypt	497,210
Tanzania	1,247,260
Uganda	1,787,200
Sudan	14,181,930
Total	18,349,480

Spatial distribution and areal extent of wetlands within the Nile Basin (Derived from Lehner and Döll, 2004, and Di Gregorio, 2002)
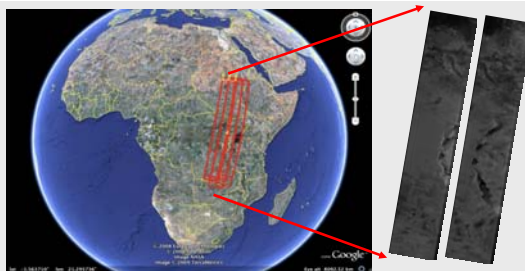

UPPER NILE BASIN		RSP				
		259	256	253	250	247
CYCLE	12	Jun 2007	Jun 2007	Jun 2007	Jun 2007	Jun 2007
	13	Aug 2007	Jul 2007		Jul 2007	
	14	Sep 2007	Sep 2007	Sep 2007		Sep 2007
	15	Nov 2007			Oct 2007	Oct 2007
	16	Dec 2007	Dec 2007	Dec 2007		Dec 2007
	17				Jan 2008	
	18			Mar 2008		
	19	May 2008	May 2008	May 2008	Apr 2008	Apr 2008
	20	Jun 2008			Jun 2008	Jun 2008

Mapping inundation extent using ALOS PALSAR (ScanSAR)

June 2007

September 2007

December 2007

December 2007

March 2008

May 2008
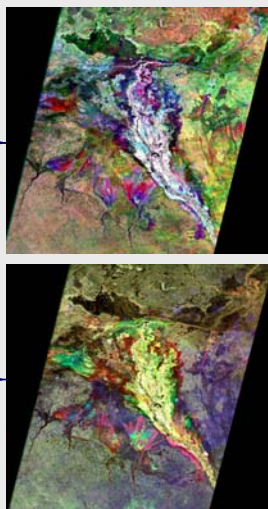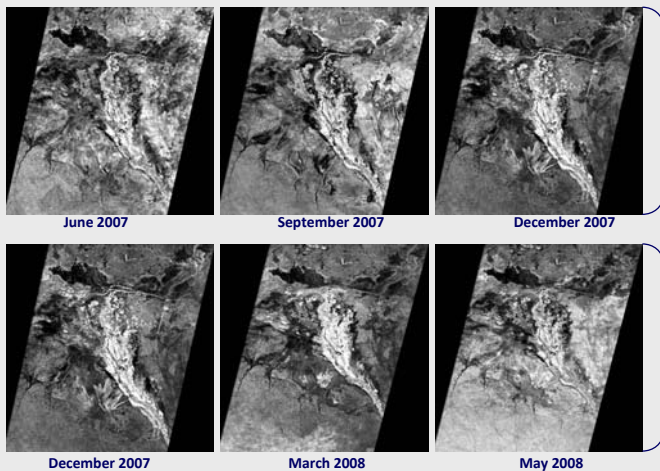
Principal Components Analysis showing temporal variance, i.e. how and when the water moves through the system
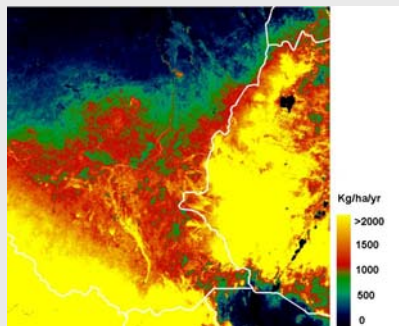
Burning and vegetation growth:

Month of burning
January
December
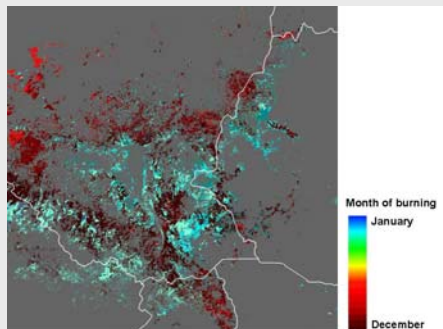
Daily burned area calculated from MODIS Aqua and Terra observations of surface reflectance.

Peak of burning occurs within the wetland between November and March each year.

For more information on the product see http://modis-fire.umd.edu

Kg/ha/yr
>2000
1500
1000
500
0

Dry Matter Productivity (kg/ha/yr):

Annual total for 2007 calculated from 8 day DMP data. DMP can be calculated by combining fAPAR, estimated from satellite imagery, with solar radiation and temperature information, as described by Monteith (1972).

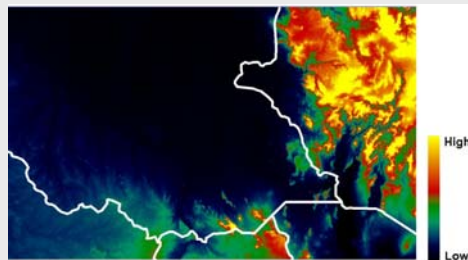The DMP data are derived from 1km SPOT VEGETATION as follows:

$DMP1 = R1 \cdot 0.48 \cdot fAPAR1 \cdot \varepsilon(T1)$

For more information see www.VGT4AFRICA.org

Water levels, evapotranspiration and DEM:

Altimetry derived water levels
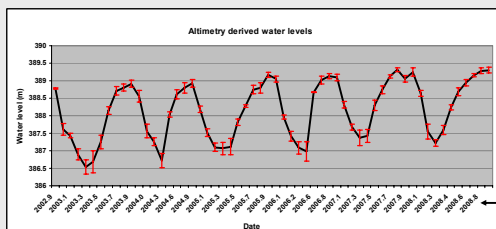
Envisat/ERS virtual stations, Nile Basin (http://www.legos.obs-mip.fr)

High
Low

30m Digital Elevation Model (ASTER GDEM is a product of METI and NASA)

All PALSAR images have been provided courtesy of JAXA, and acquired as part of the ALOS Kyoto and Carbon Initiative for Science Team product development: Prototype area, the Upper Nile