

K&C Product Delivery Report and Schedule for 2010/2011

Maycira Costa
University of Victoria, Canada

Main deliverable!!!



Science Team meeting #14
JAXA RESTEC HQ, Tokyo, June 16-18, 2010

K&C deliverables

Papers and Reports

1. Published (please provide PDF file)

- *K&C Phase-1 report*
- *“J. Aquatic Cons., 2007, special K&C issue (Pantanal and data resolution)*
- *Wetlands International Conference, 2008 (Brazil)*

2. Submitted/in preparation

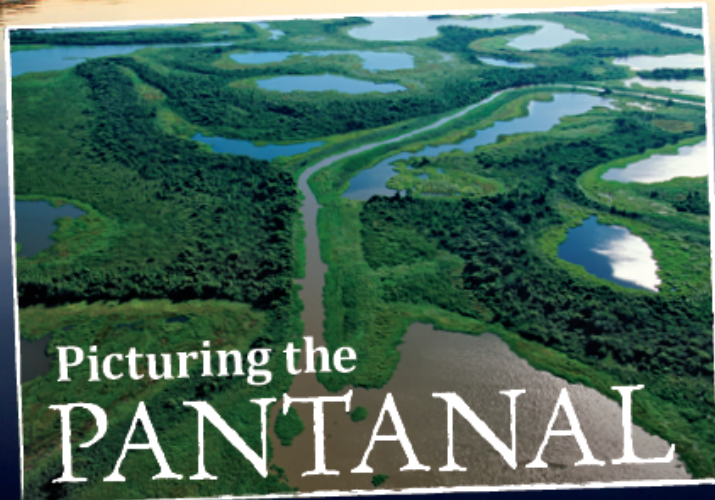
- *JSTARS, 2010, special K&C issue (Land cover and inundation of the Pantanal with ScanSAR)*
- *National Geographic Book “Reach 2011” for grades 3 and 5 students in the US*
- *Radarsat 2 workshop, Sept 2010, Canada (Mapping the Pantanal: multi-SAR approach)*
- *Radarsat 2 Special issue of the Canadian Journal of Remote Sensing: Seasonal backscattering variability of Pantanal habitats. (Dec, 2010)*

National Geographic



Connect Across Texts Read about a scientist who is studying one of the greatest wetlands on the planet.

Genre A science article is nonfiction. It gives facts about a topic related to the natural world.



Picturing the PANTANAL

by Lisa Berti

Imagine a place that is ruled by the rain. From October to April, it falls almost endlessly from the sky. It flows into rivers, which become large and fast moving. It patters and pours on hundreds of small lakes. It floods across the land, creating a giant water world.



▲ These caimans and this capybara are supported by plants, which form the base of Pantanal food chains.



Image courtesy of JAXA

Studying Water from the Skies

Are the waters of the Pantanal changing? Many scientists want to know. Because water connects all living things in the Pantanal, any changes to it have far-reaching effects. One scientist who is looking for answers is Dr. Mayra Costa. Like most scientists, Mayra goes into the field to collect information. However, she also studies water in a different way.

Mayra studies images taken from satellites high above Earth. The images are created by special detectors inside the satellites. The detectors sense the sun's energy as it hits Earth. They capture that energy in an image. Then scientists convert the information in the image into colors that human eyes can see.

This modified satellite image shows different water levels in the Pantanal at different times of the year. ▶

- = rising water
- = low water
- = high water



©JAXA and METI. Research was conducted under the ALOS ERSI led by the project of JAXA/IGRIC. Maps created by Teresa Sears and Maycira Costa



Tracking a Changing Ecosystem

The information Maycira is gathering is important for another reason. By knowing what the wetlands are like today, she can watch for changes over time. She can see how changes in climate, or average weather over time, affect the Pantanal. In addition, her work will help answer questions about how changes in the pattern and amount of floodwater affect the plants, animals, and people that call the Pantanal home.



▶ Dr. Maycira Costa's work helps people understand what the Pantanal is, and why it is important.

Through her work, Maycira is giving people a big "picture" of the Pantanal. She is showing how the area is, in fact, a single, interconnected ecosystem—one that is worth protecting. ◆

Science Through Satellite Images

Studying satellite images shows Maycira many things. Different colors show her how large the flooded areas are. They also show where the vegetation is, and how much sediment is in the water. In addition, the images can give Maycira an idea of how much light is penetrating, or going down into the water.

The baseline, or basic information Maycira gathers in her work, is important. She and others can use it to compare unspoiled parts of the Pantanal with parts that are influenced by human activities, such as building dams, farming, logging, and mining. This way, she can see how changes in the water affect the plants, animals, and people who depend on it.



K&C deliverables

Data sets and Thematic products (mosaics, classification maps etc.)

1. Completed and Delivered to JAXA

- *Land cover map of the Pantanal based on ScanSAR multitemporal imagery, 2007*
- *K&C Booklet contribution with latest results*

2. Completed, but not yet delivered (please deliver ASAP)

- *Spatial distribution of lakes in the Necholandia region of the Pantanal*

K&C deliverables

Data sets and Thematic products (mosaics, classification maps etc.)

3. To be completed during 2010/2011

- *Improve low res land cover 2007 v2 (improved accuracy and temporal resolution with 2008 data)*
- *High resolution (FB – PALSAR, RADARSAT 2 and ASAR - and mosaics) classification of the sub-regions of the Pantanal*
- *Combine spatial temporal distribution of marsh deer and the high resolution maps with EMBRAPA. – Conservation of habitats*