

“Hell’s Highway”

The Hidrovia Waterway on the Paraguay River

Geomorphology



Image Source: Waterland Research Institute www.pantanal.org/conference2001/overview.htm

The Paraguay River

- Approximately 2,670 km long, beginning in western Brazil and ending at the southern border of Paraguay (Quiros et al. 188)
- Slope between .04 m/km and .01 m/km for much of length—Alluvial River (Tucci 162)
- Drainage basin of 1.095 million km²; annual discharge of 2700 m³/s; specific yield of 2.47 m³ per 1000 km² (Tucci 162)

The Pantanal

- World’s largest tropical wetland
- Mostly in western Brazil
- Area of 140,000 km² (Tucci 162)
- Floods during the rainy season, from November to March (Hamilton et al. 258)
- Experiences a lag time of four months during floods
- Has a regulatory affect on river flows



Image Source: Science Daily <http://www.sciencedaily.com/releases/2008/07/080720150209.htm>



Image Source: Nat Photos <http://www.gettyimages.com/detail/200250789-001/Digital-Vision>

History

The Guarani

- Indigenous people; nomadic



Image Source: Povos Indigenas no Brasil http://img.socioambiental.org/d/210615-1/guarani_kaiowa_6.jpg

The Spanish

- Minimal explorations; focused on Peru



Image Source: Andries van Eertvelt, c. 1628 <http://www.sheppardsoftware.com/Europeweb/factfile/Unique-facts-Europe7.htm>

The Cattle Ranchers

- Low impact; move herds with floods



Image Source: Daniel Gilmore <http://www.travelblog.org/South-America/Brazil/Rio-de-Janeiro/Rio-de-Janeiro/Copacabana/blog-263018.html>

The Shippers

- Increasing interest, especially with growth of industrial agriculture



Image Source: NuestroMar http://www.nuestromar.org/imagenes/noticias/2009/270209_hidrovia.jpg

Hidrovia

The Plan

- The Intergovernmental Committee on the Hidrovia includes Brazil, Bolivia, Paraguay, Uruguay, and Argentina.
- In 1997, it proposed a plan to create a 3,440 km waterway from the Atlantic Ocean to Caceres, north of the Pantanal.
- Dredge the river to maintain a depth of at least 2.8 meters, even during the dry season (Gottgens, et al.)



Image Source: Diamante-Coronda www.diamante-coronda.com.ar/hidrovia.htm

The Consequences

- Damage to the Pantanal: Lowering the riverbed by even 25 centimeters could decrease the area of the Pantanal by 22% (Gottgens et al.).
- Increased flooding downstream: There is a loss of regulatory effects and evapotranspirative properties of the Pantanal.
- Encouragement of development in the floodplain: Both industrial agriculture and people will be drawn to the easy transport and increased industry.
- Continued cost of building and maintaining levees: Levees will be necessary to mitigate the effects of flooding.



Image Source: daylife <http://www.daylife.com/photo/0arpcGXbVe5S4>



Image Source: International Rivers <http://www.internationalrivers.org/en/latin-america/paraguay-paran%C3%A1-basin/paraguay-paran%C3%A1-hidrovia>

The Present

- In 1999, Brazil backed out due to pressure from environmental groups, and no news of official plans has surfaced since (Istvan).
- However, Argentina and Paraguay have begun selectively dredging sections of the river, and rumors of meetings behind closed doors are surfacing (Istvan).

Works Cited

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- Quirós, R., J. A. Bechara, and E. K. de Resende. "Fish diversity and ecology, habitats and fisheries for the un-dammed riverine axis Paraguay-Parana-Rio de la Plata (Southern South America)." *Aquatic Ecosystem Health & Management*. 10. 2 (2007): 187-200.
- Tucci, Carlos E. M., and Robin T. Clarke. "Environmental Issues in the la Plata Basin." *International Journal of Water Resources Development* 14.2 (1998): 157-173. *EBSCO MegaFILE*. EBSCO. Web. 1 Nov. 2009.
- Title Quote: Oscar Rivas—coordinator general and founder of Sobrevivencia, a Paraguayan environmental organization in Asuncion—when referring to Hidrovia in Istvan’s article

