



## Feature

**Colorado River Delta Project Inventory:** We thank all the members of the RCN for their participation in answering the survey and creation of a database of projects in the Colorado River Delta. **A total of 45 individual projects were documented.**

Most of these projects are being implemented in the Mexican portion of the Delta ( fig.1) and close to 20 different topics are being studied in the projects. (fig 2)

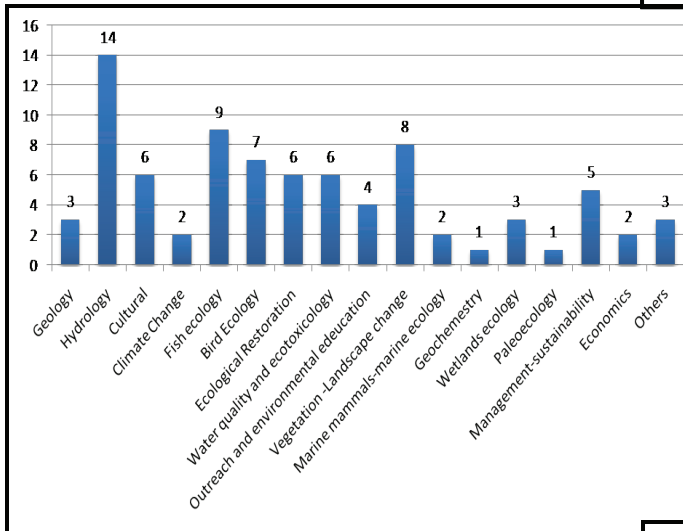
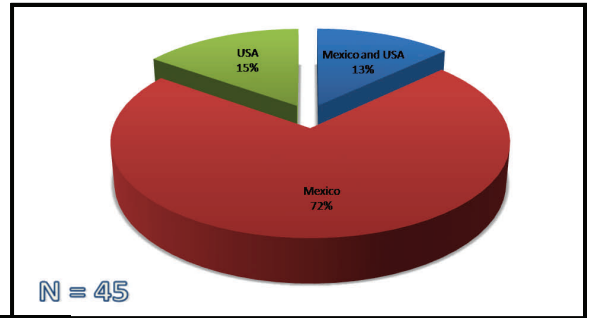


Figure 1: Number of projects that are being physically implemented (by country).

It is important to note that most of the ongoing projects involve several institutions and partners and some even with binational partnerships. (fig. 3)

Figure 2: Number of projects by type of research theme. (most projects included in more than one theme)

[You can find the complete database with the responses here](#)

*This database is posted at the RCN-CRD Web-page and we can maintain it updated if you keep sending us updates information about your projects at: [brambila@email.arizona.edu](mailto:brambila@email.arizona.edu)*

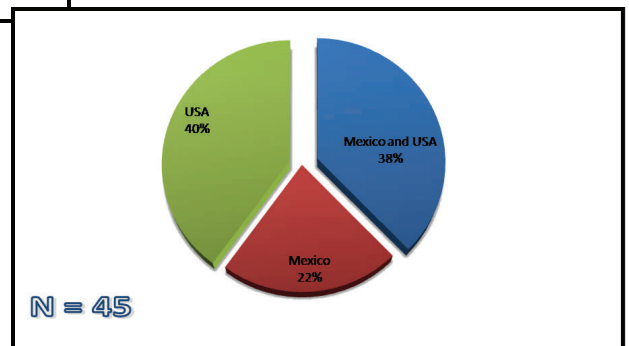


Figure 3 Origin of institutions participating in the implementation of projects

## News from the RCN—CRD

Up to date the RCN has granted 2 **scholarships for professional meetings** and 2 **Exchange Visit Fellowships for collaborative research**. We have a few more scholarships available. If you would like to apply for a scholarship, [please read this document](#) and follow the simple rules to apply.

The RCN sponsored a meeting of several of its members for the preparation of the research proposal for expanding estuarine : The organizations participating included Pronatura, UABC, CICESE, UA, and Sonoran Institute. The RCN also contributed to the preparation of another proposal with Pronatura, AEURHYC, CIAD, and Sonoran Institute for expanding efforts in conservation in private lands, the Eco-camp, and water Quality Monitoring in the Delta.

# What's Going on in the Delta?

## A great Loss for the Water and Delta community

The RCN-CRD would like to give tribute to IBWC Commissioners Carlos Marin and Arturo Herrera and express our deepest sympathies to their families and friends.

We have lost friends dear to all in the water community of the Colorado River Delta. Commissioners Marin and Herrera were well known in our Delta community for their efforts and achievements in the management of the Colorado River and in the conservation and restoration of its Delta. We will keep many good memories of both commissioners to share in times ahead. They lived their lives by doing good for others. We will miss them!!

### 🐟 The ichthiofauna composition and presence of estuarine and marine species of the Hardy Colorado River and its estuary. By Alejandra Calvo Fonseca (UABC)

Scarcity of fresh water flows into the Lower Colorado River Wetlands has originated changes in aquatic habitat characteristics. Some of them have been observed in the fish community.

The Hardy River was once a tributary of the Colorado River and is located in the southern part of the Mexicali valley, traveling 26 km downstream connecting with the Colorado River. The Hardy is now a channel fed by agricultural return flows and is part of the confluence area with the Colorado River.

In 2005, Pronatura Noroeste and Sonoran Institute collected important data about ecological indices such as species richness, abundance, biomass, community structure, and habitat parameters to characterize the fish communities.

Overall, the study found that fish abundance is higher in the lower Hardy River, but fish are larger in the upper Hardy. In reference with average abundance and biomass, there were marked differences between seasons: summer values were higher than winter and significant abundant during spring, especially in the lower Hardy River. The species related to the Upper Rio Hardy were Stripped Bass (*Roccus saxatilis*), Channel Catfish (*Ictalurus punctatus*), White Catfish (*Ameiurus catus*), and Common Carp (*Cyprinus carpio*). The species related to the Lower Hardy River included Longtail Goby (*Gobionellus sagittula*), Longjaw Mudsucker (*Gillichthys mirabilis*), Gulf Corvina (*Cynoscion golfina*) Yellow-fin Corvina (*C. xanthula*), Bigeye Croaker (*Micropogonias megalops*), and Mazatlan Sole (*Achirus mazatlanus*) (Hinojosa Huerta-; 2006).

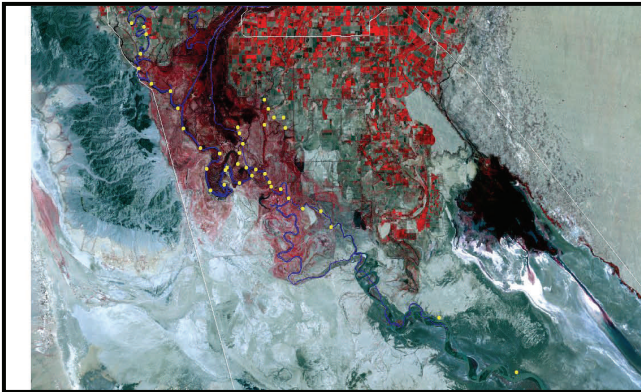


Fig.1 Study area showing the 41 sites.

drains in the Mexicali valley.

The goals of the project are to compare ecological attributes (Fish community structure and habitat parameters) in all survey sites in Hardy River and to determine the connectivity between the river and the estuary. This is being done by analyzing the hydro period (the action of tides and water from agricultural return flows as well as from the wastewater treatment plant “Las Arenitas” in Mexicali) and by analyzing stomach content in mullets (*Mugil cephalus*).

**Most recent data shows that:** the distribution of several estuarine and marine fish species along the river, which were detected during the fish monitoring study of 2005-2006 and 2008, was influenced by the presence of large tides coupled with strong winds. These factors seem to allow seawater to travel upstream over a sand bar that has been formed due to the lack of fresh water flows.

In July 2008, the tides events and winds permitted individuals of Pacific Ladyfish to move along the Hardy River, even into the Ayala Drain area. Juveniles migrate to fresh water and brackish rivers to feed often after floods. In the middle of July we collected 17 individuals of Pacific Ladyfish upstream from El Tapon. Analysis of their stomach content indicates that 80% of the individuals were feeding on carps and mosquito fish.

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The study continues and has been expanded to include additional surveys upstream and downstream in the estuarine zone and close to the river mouth and in the drain Ayala (fig. 1) the main drain that captures agricultural return water from the 17



Jose Juan Butron y Juan Butron setting the fish equipment at El Tapon

## What's Going on in the Delta? Continue...

### 🌀 **Vaquita Autonomous Acoustic Monitoring Development Cruise:**

In the continuous efforts to protect the Vaquita, an upcoming international research cruise will be conducted in the Upper Gulf of California this coming fall. The goal of the cruise is to develop autonomous acoustic monitoring technologies for the Vaquita. The work involves three research vessels, an international group of acousticians, and data will be collected on marine mammals and oceanography during the expedition. For more information [click here](#):

## Upcoming Meetings; Scholarships and Funding Opportunities

🌀 **2008 Colorado River Basin Science and Resource Management Symposium - Coming Together: Coordination of Science and Restoration Activities for the Colorado River Ecosystem**. November 18-20, 2008. Doubletree Resort Hotel in Scottsdale, Arizona. [More information here](#)

🌀 **Post-doc available: USGS Mendenhall Postdoctoral Research Fellowship Program Opportunity (#16) Seasonal Moisture Source Variability for the Colorado River Basin during the Late Holocene from Lake and Marine Sediment Archives**. Research Advisor(s): Lesleigh Anderson, (303) 236-1296, [land@usgs.gov](mailto:land@usgs.gov); John Barron, (650) 329-4971, [jbarron@usgs.gov](mailto:jbarron@usgs.gov). [More information here](#)

🌀 **North American Wetlands conservation Act (NAWCA) Small Grants** (Fish and Wildlife Service). Funding priority will be given to projects from new grant applicants (individuals or organizations who have never received a NAWCA grant) with new partners where the project ensures long-term conservation benefits. This does not preclude former NAWCA grant recipients from serving Small Grants Funding. Amount: \$75,000. **DEADLINE :December 31.** [Details here](#)

🌀 **The Bureau of Reclamation** is requesting proposals for soil and moisture conservation. This funding opportunity will provide assistance in developing effective water management and conservation plans; encourage and promote implementation of water efficiency measures; demonstrate conservation technologies; and promote support water education within the Yuma area. **DEADLINE: October 10,2008** . [Details here](#)

## New Publications, Thesis and Reports

🌀 **Accumulation of As, Pb, and Cu Associated with the Recent Sedimentary Processes in the Colorado Delta, South of the United States-Mexico Boundary**. L. W. Daesslé., K. C. Lugo-Ibarra., et. al. Springer Science. 2008 August 2008 13pp., [Abstract](#)

🌀 **Collaboration in Mexico: Renewed Hope for the Colorado River Delta**. Francisco Zamora, Osvel Hinojosa, et. al, Nevada Law Journal. Vol. 8, Num. 3. Spring 2008. pp 871-889. [Abstract](#)

🌀 **Conservation Biology: Can the Vaquita Be Saved?**. Virginia Morell. August 2008. Science Vol 321. [No. 5890,p 767](#) DOI: 10.1126science.321.5890.767

🌀 **Pertinencia de las ANP como política de conservación y mejoramiento de la calidad de vida. Análisis de percepción en la Reserva de la Biosfera del Alto Golfo de California y del Delta del Río Colorado**. Gerardo Rodríguez Quiroz, Álvaro Bracamonte Sierra. Revista de Investigación Científica. Estudios Sociales. CIAD. Julio Diciembre 2008. Vol., XVI. No.32. Hermosillo Sonora . pp. 37. [Download publication](#)

🌀 California. Department of Water Resources Released it's **Report: "Water and Border-Area Climate Change, An Introduction"** in the recently U.S. – Mexico Border Governors' Conference. Held in Hollywood, California from August 13-15, 2008  
Download Report [in English y en Español](#)

🌀 **Bilingual report addresses water supply needs in U.S.-Mexico borderlands** A new, quarterly report is available today that provides citizens, resource managers, and policy makers in the United States-Mexico border areas with climate summaries and forecasts—essential information for making decisions about water supply and agriculture in a time of climate change and rapid growth July 9, 2008. By Stephanie Doster. [Download report](#)

🌀 **The Global Water System Project Newsletter No. 7.** [Download newsletter](#)

🌀 **The Lower Colorado River Multi-Species Conservation Program** . John Swett, Laura Vecerina, and Terry Fulp July/ August 2008. Southwest Hydrology 7: 26-27; 33.[Download publication](#)