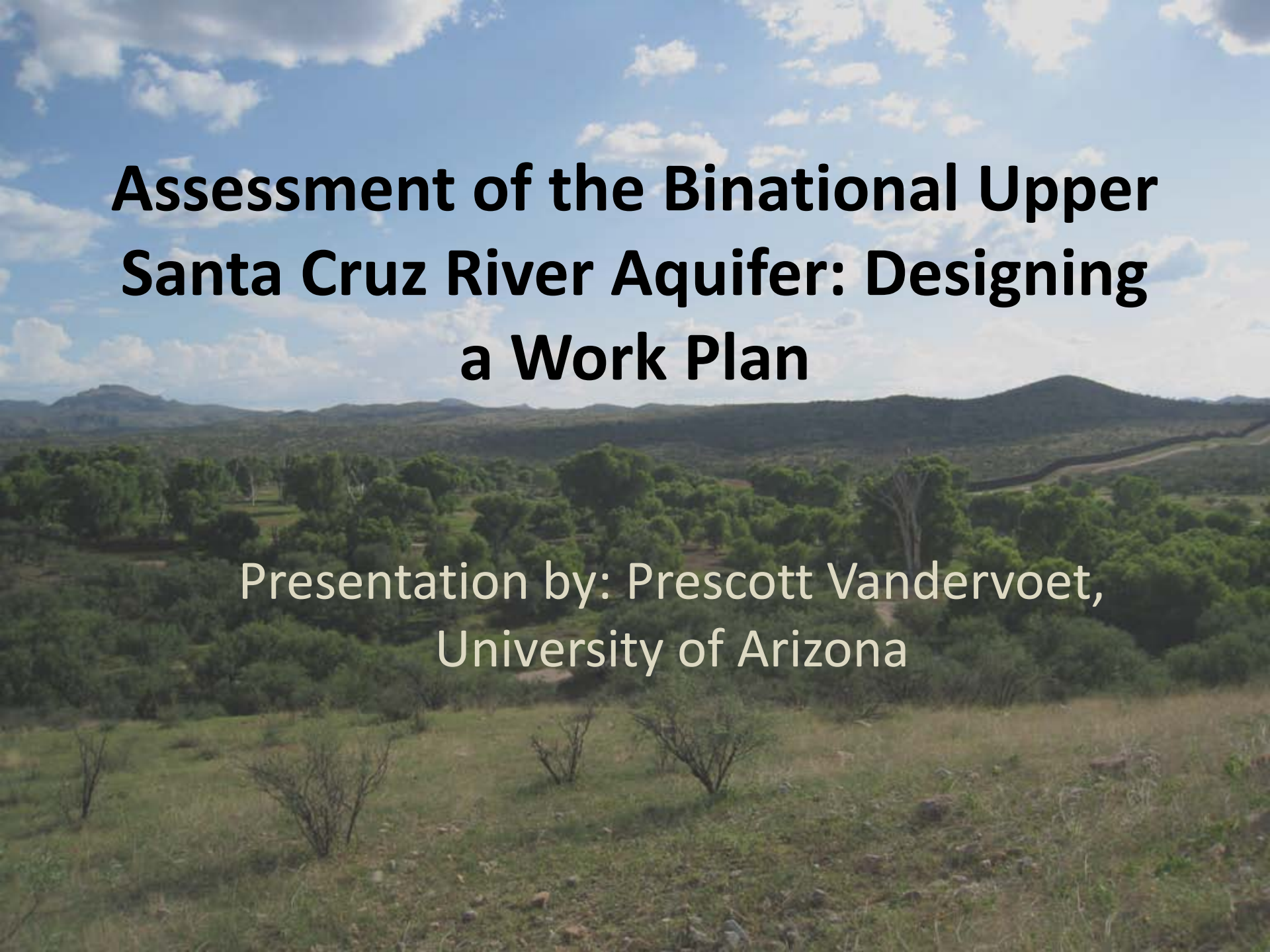




Assessment of the Binational Upper Santa Cruz River Aquifer: Designing a Work Plan

Presentation by: Prescott Vandervoet,
University of Arizona

Background

- Transboundary Aquifer Assessment Act signed as Public Law 109-448 by the President on December 22, 2006
- (a) In General- The Secretary, in consultation and cooperation with the Participating States, the water resources research institutes....., and other appropriate entities in the United States and Mexico, and the IBWC, as appropriate, shall carry out the United States-Mexico transboundary aquifer assessment program to **characterize, map, and model priority transboundary aquifers** along the United States-Mexico border at a level of detail determined to be appropriate for the particular aquifer

Progress

- August 19, 2009- Principal Engineers of US and Mexican sections of the IBWC sign “Joint Report of the Principal Engineers Regarding the Joint Cooperative Process United States – Mexico for the Transboundary Aquifer Assessment Program” (handout)

The IBWC, United States and Mexican Sections, are aware of the interest on both sides of the border to preserve and understand the aquifers used by both countries, whereby it is considered necessary to develop a team of binational experts to assess transboundary aquifers, exchange data, and if needed, develop new datasets.

The objective of the joint cooperative process for groundwater research is to improve the knowledge base of transboundary aquifers between the United States and Mexico.

INTERNATIONAL BOUNDARY AND WATER COMMISSION
UNITED STATES AND MEXICO

El Paso, Texas
August 19, 2009

**JOINT REPORT OF THE PRINCIPAL ENGINEERS
REGARDING THE JOINT COOPERATIVE PROCESS
UNITED STATES-MEXICO FOR THE TRANSBOUNDARY AQUIFER
ASSESSMENT PROGRAM**

To the Honorable Commissioners,
International Boundary and Water Commission,
United States and Mexico,
El Paso, Texas and Ciudad Juarez, Chihuahua.

Sirs:

We respectfully submit for your consideration this Joint Report recommending the joint cooperative process between the United States and Mexico to implement an assessment program for the transboundary aquifers shared by both countries.

I. Background

Since the decade of the 1970s, there exists within the framework of the International Boundary and Water Commission (IBWC), a process for the exchange of information on groundwater along the border between the United States and Mexico. Any issues of data or studies have been addressed on a case by case basis through mutual consultation as established in Resolution 6 of IBWC Minute No. 242.

By way of example, on December 2, 1997, the IBWC issued the "Joint Report of Principal Engineers Regarding Information Exchange and Mathematical Modeling in the El Paso, Texas and Ciudad Juarez, Chihuahua Area Aquifer." The IBWC arranged for the exchange of groundwater data between both countries and the development of a bilingual publication that was produced jointly under this effort.

On December 22, 2006, United States Public Law 109-448, the "United States-Mexico Transboundary Aquifer Assessment Act" was passed, establishing a program to evaluate transboundary aquifers between the United States and Mexico, which included the possibility of applying United States funds for assessment activities in Mexico.

II. International Boundary and Water Commission's Position and Process Framework

The IBWC, United States and Mexican Sections, are aware of the interest on both sides of the border to preserve and understand the aquifers used by both countries, whereby it is considered necessary to develop a team of binational experts to assess transboundary aquifers, exchange data, and if needed, develop new datasets.

Initiatives that include transboundary water resources are traditionally coordinated through the IBWC using the customary binational cooperation process used by both

COMISIÓN INTERNACIONAL DE LÍMITES Y AGUAS
ENTRE MEXICO Y LOS ESTADOS UNIDOS.

El Paso, Texas, 19 de agosto de 2009

**INFORME COMÚN DE LOS INGENIEROS PRINCIPALES
REFERENTE AL PROCESO DE COOPERACIÓN CONJUNTA
MÉXICO – ESTADOS UNIDOS PARA EL PROGRAMA DE EVALUACIÓN DE
ACUÍFEROS TRANSFRONTERIZOS**

A los Honorables Comisionados,
Comisión Internacional de Límites y Aguas entre
México y los Estados Unidos,
Ciudad Juárez, Chihuahua y El Paso, Texas.

Señores:

Respetuosamente sometemos a su consideración este Informe Común recomendando el proceso de cooperación conjunta entre México y Estados Unidos para la realización de un programa de evaluación de los acuíferos transfronterizos entre ambos países.

I. Antecedentes

Desde la década de los 1970's ha tenido lugar en el seno de la Comisión Internacional de Límites y Aguas (CILA) un proceso de intercambio de información sobre aguas subterráneas en diferentes zonas de la frontera entre México y Estados Unidos. Cualquier asunto de información o estudios sobre esta materia se ha atendido caso por caso sobre la base de la consulta recíproca establecida en la Resolución 6 del Acta 242 de la CILA.

Como ejemplo, el 2 de diciembre de 1997, la CILA emitió un "*Informe Común de los Ingenieros Principales relativo al Intercambio de Información y Modelo Matemático del acuífero en la zona de Ciudad Juárez, Chihuahua – El Paso, Texas*", en el marco del cual, la CILA coordinó el intercambio de información de datos de aguas subterráneas entre los dos países, así como la elaboración y publicación bilingüe del documento conjunto generado como resultado de dicho informe.

El 22 de diciembre de 2006, se aprobó la Ley Pública de Estados Unidos 109-448, relativa al "Acta sobre Evaluación de Acuíferos Transfronterizos México-Estados Unidos", estableciendo un Programa de Evaluación de Acuíferos Transfronterizos entre México y Estados Unidos, el cual incluye la posibilidad de aplicar recursos estadounidenses para actividades de evaluación en México.

II. Marco de la Posición y Proceso de la Comisión Internacional de Límites y Aguas

Las Secciones mexicana y estadounidense de la CILA, están conscientes del interés en ambos lados de la frontera en entender y preservar los acuíferos compartidos por ambos países, para lo cual se considera necesario establecer un grupo de expertos binacionales para evaluar los acuíferos transfronterizos, intercambiar información y según se requiera, desarrollar nuevas series de datos.

Las iniciativas que incluyen recursos de aguas transfronterizas, tradicionalmente son coordinadas a través de la CILA aplicando el proceso acostumbrado de cooperación

Progress (continued)

- November 3 and 4, 2009- Transboundary Aquifer Assessment Program-Arizona / Sonora (TAAP-A/S) hosts workshop “Developing a Work Plan for the Santa Cruz and San Pedro Aquifers” (handout)



Workshop

Work plans drafted by the TAAP-A/S coordinating team, in consultation with regional stakeholders, were **reviewed and modified** by workshop participants. Two breakout groups identified priority work plan themes for the binational Santa Cruz River aquifer.

Thematic areas for assessment activities include:

- Data collection of land use, zoning, economic and population growth, infrastructure, etc.
- Urban growth characterization and effect on watershed land use and hydrology
- Binational water balances and supply / demand analysis
- Groundwater vulnerability assessment
- Water quality assessments including anthropogenic impairments
- Assessment of institutional asymmetries and binational cooperation frameworks
- Improved linkages with international best practices (via ISARM)

Workshop

Breakout Group #1

- Increased and secured (funding) monitoring sites, such as currently functioning or potentially new surface flow gages.
- The rate of recharge and coordinated monitoring efforts of such are important for a thorough understanding of the binational watershed.
- Watershed “health” and status, including riparian and ecosystem health.
- Refined hydrologic models which transcend the international boundary.
- Cross-border coordination of data collection and monitoring efforts are crucial to utility and application of data.



Workshop

Breakout Group #2

- Increased and refined monitoring of precipitation, pumpage, streamflow, and water quality.
- Analysis of existing and future data sources.
- Diffusion of compiled data and other outputs to a large group of stakeholders, and continued engagement of interested parties



Workshop

- The TAAP-A/S workshop, “Developing a Work Plan for the Assessment of the Santa Cruz and San Pedro Aquifers” brought together a wide variety of stakeholders from the U.S. and Mexico to discuss priorities for Santa Cruz and San Pedro aquifer resource assessment. The workshop identified several next steps for TAAP-A/S.
- First, although numerous studies, models, and reports exist for the aquifers on each side of the border, additional work by binational teams is required for improved assessment of the aquifers on both sides of the border.
- Second, understanding of physical aquifer processes must be complemented by assessment of both countries’ management and policy of groundwater, including laws, institutions, and regulations.
- Third, although the preparatory phase of TAAP-A/S builds on other binational initiatives for U.S.-Mexico collaboration, the improved coordination resulting from IBWC/CILA’s role in the program will be indispensable for shared aquifer resource assessment.
- Finally, while funding support for TAAP has increased in FY 2010, significant additional resources will be required to meet the objectives identified in the work plan.

Next Steps

- FY2010 (March '10 – March '11) funding has been secured and initial activities have been identified
 - Support for continued monitoring by Friends of the Santa Cruz River
 - Exploring cost sharing via CONAGUA and IBWC for assessment activities within Mexico
 - Support for U of A Research Analysts and Graduate Research Assistants
 - Geophysical studies (details with presentation by James Callegary)

Contacts

- **TAAP-A/S Contacts**: For more information please visit <http://ag.arizona.edu/azwater/programs/taap/index>

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