

North American Transnational Ground Water: NAFTA, IJC, IBWC

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Outline

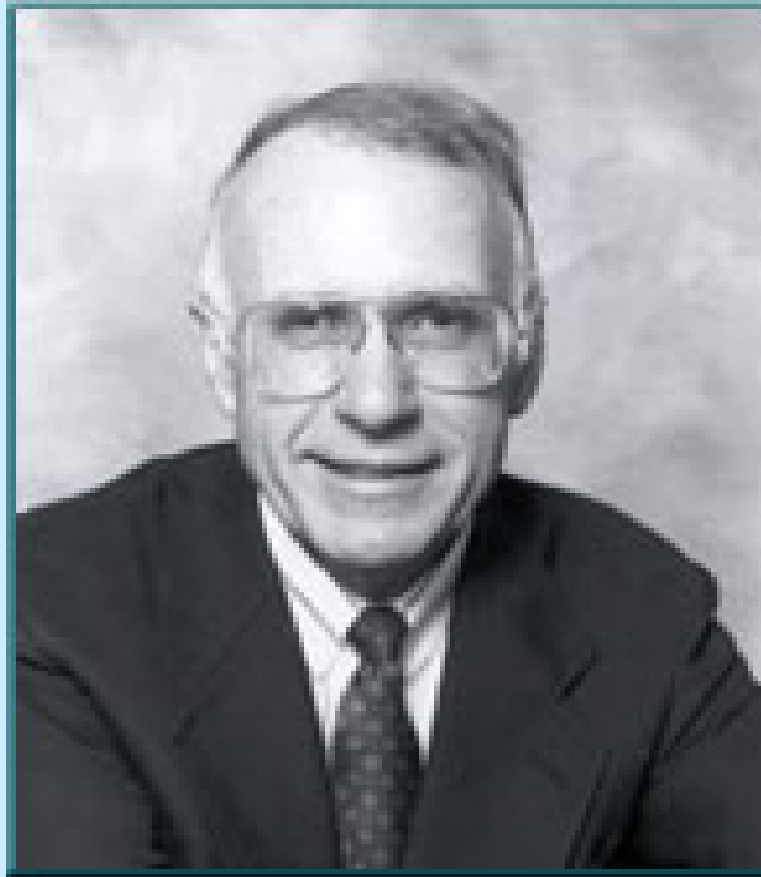
- **Introductory Material**
- **Tribute**
- **Definitions**
- **Hypotheses**
- **International Laws and Institutions – IJC, IBWC, NAFTA**
- **Case Studies of Transnational Ground Water**
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 - *Hermosillo Basin*
- **Summary and Conclusions**



Prescience?

“You are piling up a heritage of conflict and litigation over water rights for there is not sufficient water to supply the land.” – John Wesley Powell, 1893





Albert E. Utton, 1931-1998

“One hand washes the other, and both wash the face.” – Spanish proverb

Definitions

- **Hydrovulnerability** is a gage of the risk of conflict *if* a change occurs in a basin, which can be measured using the institutional capacity of the basin coupled with whether historical events in the basin indicate resilience
- **Resilience** is a characteristic that is based on a positive response to change—the institutional capability of a basin to absorb the disturbance



Hypotheses

- Resolution of North American transnational ground water issues is facilitated by the presence, jurisdiction, and strength of institutions
- The use of these institutions builds *resilience*



U.S.-Canada Border



8,000 kilometers

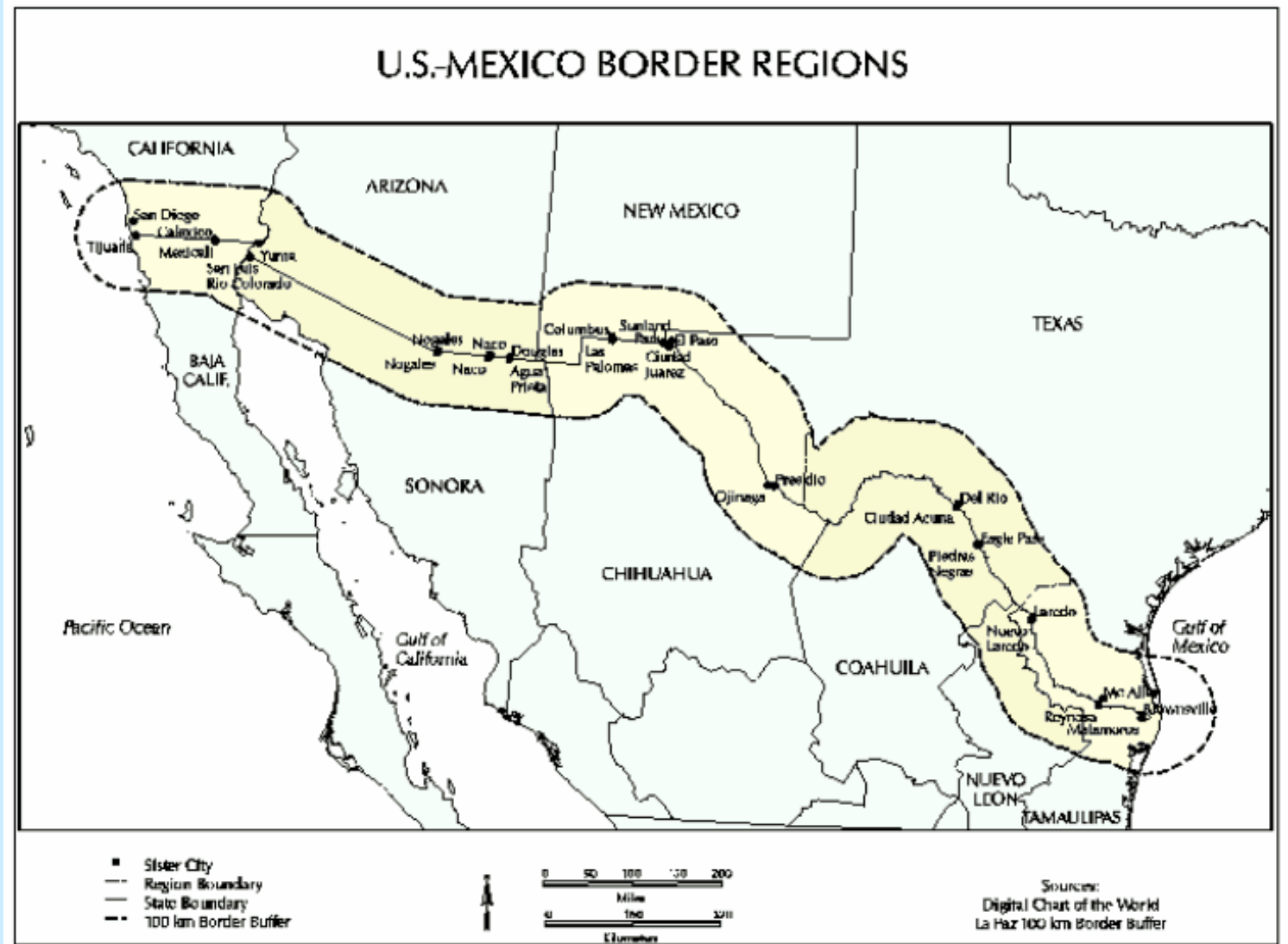
International Laws and Institutions

The International Joint Commission (IJC)

- **Created by Article IV of the Boundary Waters Treaty (BWT) of 1909 between the United States and Canada**
- **Harmon Doctrine in Article II**
 - Protects upstream development rights
- **Key Points**
 - Administrative, quasi-judicial, arbitral, and investigative aspects of conflicts
 - Both governments must agree to use the IJC
 - Ground water not specifically addressed



U.S.-Mexico Border



3,110 kilometers; rivers comprise 66% of border



International Laws and Institutions

International Boundary and Water Commission (IBWC)

- Created in 1889 by the U.S. and Mexico
- Water quality issues addressed through the passage of “Minutes”
- Key Points
 - Active participant in the apportionment and utilization of the transboundary water resources
 - Both governments must agree to use the IBWC



International Laws and Institutions

North American Free Trade Agreement (NAFTA)

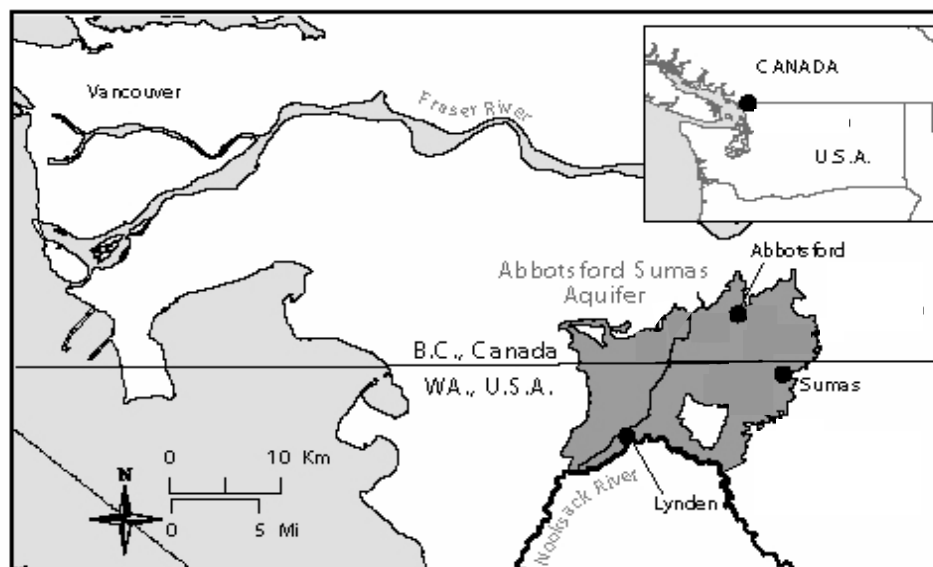
- **Adopted by Canada, the U.S., and Mexico in 1994**
- **Key Points**
 - Can resolve disputes on a more local level
 - Is an agreed-upon method or basis for dispute resolution
 - Ground water has the potential to be treated as an economic good and traded across borders
 - Places economic considerations above environmental considerations



Case Studies

Abbotsford-Sumas Aquifer

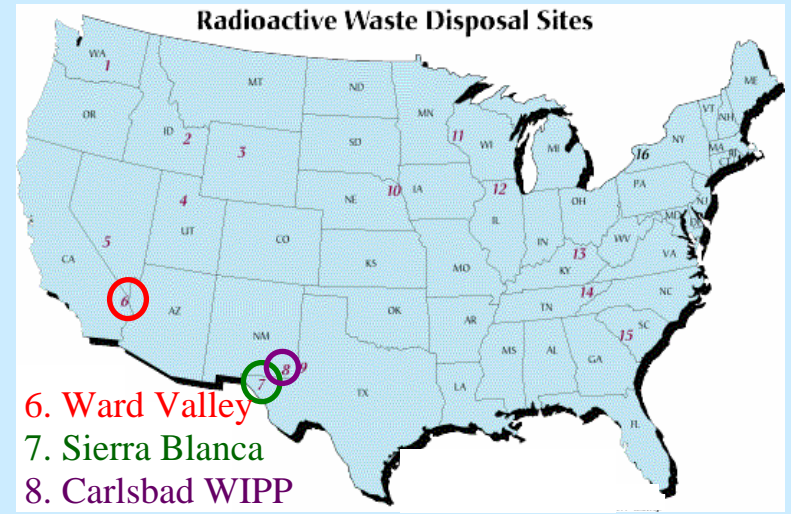
- Fraser River Basin, underlies British Columbia (Canada) and Washington State (U.S.)
- Abbotsford-Sumas Aquifer International Task Force from 1992 Agreement
- Example: Aldergrove Lake Regional Park
 - *Stakeholders worried about the effects that biosolids would have on the aquifer's water quality*
- Resilient





Case Studies

Sierra Blanca, Texas

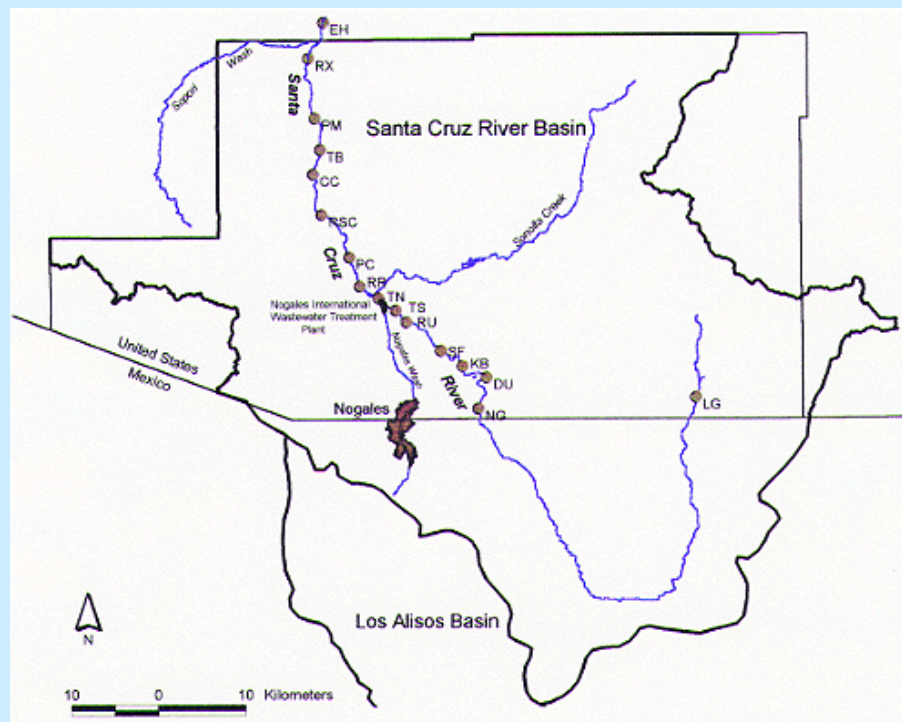


- 25 kilometers north of Mexico-USA border
- Opposed by U.S. and Mexican citizens using the 1983 La Paz Agreement
- Was to be located close to the international border in one of the most seismically active areas in Texas, right above an aquifer that discharges to the Rio Grande/Rio Bravo

Case Studies

Santa Cruz River Basin

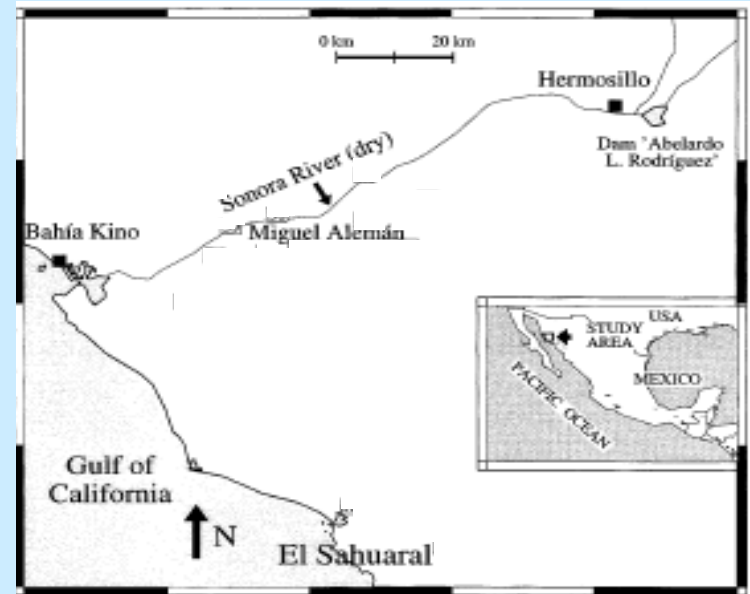
- Nogales, Arizona (U.S.) and Nogales, Sonora (Mexico)—ground water flows from Mexico to the U.S.
- Local, state, and federal water agencies developed a plan to mitigate wastewater runoff originating in Mexico and flowing into the U.S.
 - Binational ground water quality monitoring project
 - Fix leaky wastewater pipes on Mexico side



Case Studies

Hermosillo Basin

- Sonora, Mexico (not transboundary)
- Used for non-traditional agricultural production as a result of NAFTA
 - Sea-water intrusion threatening many wellfields
- Aquifer is vulnerable to over-exploitation due to the economic growth in the Hermosillo Valley
- The government knows the scientific and potential societal impacts of its decisions and must determine how to manage the aquifer in a “sustainable” manner so that the entire region does not suffer
- Demonstrates the “hydrovulnerability” associated with using NAFTA



Summary

Case Study

Resilient?

Abbotsford-Sumas

Yes

Santa Cruz River basin

Yes

Nuclear Waste Sites

Yes

Hermosillo Basin

Partly



Conclusions

- There is no predetermined process that clearly defines the role of government, science, and society in transboundary ground water management
- The IJC and IBWC generally function properly whenever ground water is an issue, thus effecting transboundary ground water management, if on an *ad hoc* basis. Both organizations are “resilience-builders”.
- NAFTA’s “economic good” focus can inject ***hydrovulnerability*** into the basin
- More attention needs to be paid to ground water and its unique characteristics and not try to “fit” ground water into existing surface water compacts and agreements



Thank You!

IJC-sanctioned Canada-USA discussion on water rights



Discussing Water Rights, A Western Pastime

More Information

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WaterWired blog:
aquadoc.typepad.com/waterwired



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