Treaties & Compacts

A. To do a good job of water management, each jurisdiction is aided by knowing how much water it can expect – so treaties & compacts are positive achievements.

B. There’s still the possibility of interstate reallocation to consider – rarely envisioned by treaties or compacts – but that’s not nearly so important as A above.

<table>
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<tr>
<th>Property form</th>
<th>Surface water</th>
<th>Ground water</th>
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<td>Common P.</td>
<td>Riparian</td>
<td>weak cp: Absolute ownership</td>
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<td>State P.</td>
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<tr>
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<td>Correlative shares</td>
<td>Smith 2-deed system</td>
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</table>
**SW: Riparian Doctrine**

- only *riparians* can use water
- water rights are not quantitatively specified
- each riparian’s use must be “reasonable”
- conflicts are judicially resolved
- “rights” are not transferable (except via land)
- not suitable for elevated water scarcity

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**SW: Eastern Permits**

- next-step reform of an ailing Riparian Doctrine
- water use requires a state-approved permit
- permits might be quantified
- permits expire (called term permits)
- permits are renewable (maybe)

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**SW: Prior Appropriations Doctrine**

- seniority: “first in time, first in right”
- quantified (on paper) as af/yr or cfs
- transferable, apart from land (severed)
- a two-fold opportunity for traders
  - trading for water quantity & reliability
SW: Prior Appropriations Doctrine

- long hailed in econ literature as efficient as long as these rights are transferrable
- originally, in many jurisdictions, trade of these rights was/is prohibited
- historically, these rights list allowed diversions rather than allowed consumptive use

SW: Prior Appropriations Doctrine

- commonly has associated, anachronistic attachments
  1. beneficial use requirements
  2. preference orderings
  3. forfeiture clauses for nonuse ★ “use it or lose it”
- all three are inefficient & dispensable

SW: Correlative Shares

- no seniorities
- annual flow uncertainty handled as ownership of shares: a ratio of flows
- transferable
SW: Correlative Shares

- seniorities vs. shares
- If you represented a city buyer?
- different trading behavior
- not so different when sales opportunities are complemented by leasing opportunities

SW: Streamflow Protection

- individual water users (i.e. diverters) are not especially interested in streamflow preservation
- neither are diversion-linked business interests
- what inst’s address the balance between water that is to be left instream and that is diverted?
- social interests can’t rely on self-interest or markets

SW: Streamflow Uses

- recreation
- fishing, floating, skiing
- camping, picnicking
- habitat, biodiversity
- hydropower
- waste assimilation/transport
SW: Streamflow Protection Policy

• Keeping some water instream is important
• Returning water rights to the stream may be difficult

Ground Water

• If an aquifer is not being regularly recharged, optimizing depletion is a goal.

\[ \frac{MNB_0}{(1 + d)} = \frac{MNB_1}{(1 + d)} \quad \text{not} \quad MNB_0 = 0 \]

a. Does a given legal rule invoke any depletion-attentive behavior by people?

b. Does this behavior go far enough with respect to social goals? [not if there’s Overdiscounting, for example]

GW: Absolute Ownership

other names
overlying land owners are allowed to pump
• almost no restrictions
constitutes private property in land, not water
not suitable for elevated water scarcity
• promotes MNB0 = 0 decision making unless underground flow is very slow
GW: Reasonable Use

- the common = overlying land owners
- water rights are not quantitatively established
- each use must be “reasonable” but not necessarily in relation to others’ use (like for riparian doctrine)
- reasonability tests don’t examine depletion
- not suitable for elevated water scarcity

GW: Correlative Rights

- the common = overlying land owners
- equitable shares allegedly based on safe yield
- absent or very limited transferability (water use is tied to land ownership)
- better than some other choices when water scarcity is elevated, but reallocation is difficult

GW: Prior Appropriations Doctrine

- As with SW, rights are quantified and have a specified seniority.
- may or may not be transferable
- little formalized attention to depletion
GW: Smith Two-Deed System

- not used anywhere
- distinct rights to 2 things are allocated
  - ★ 1. recharge (flow); 2. stored (stock)
- both transferable
- could/should utilize seniority for the flow deed
- highly suitable for elevated water scarcity

GW↔SW: Conjunctive Institutions?

- surface flows and ground flows are well linked, so why not link the laws tightly too?
- strong SW rules can be thwarted by weak GW rules and vice versa

Texas

Marketing

- Linked via cost-forwarding, accounting policy, demand responses

Pricing

- Surface Water
  - 1. Correlative Rights on the lower Rio Grande
  - 2. Canal companies in the upper Gulf Coast
  - 3. Appropriative Rights in the rest of Texas

- Ground Water
  - 4. Rule of Capture ranching & contracting
  - 5. Edwards Aquifer pumping rights