The Edwards Aquifer Authority's Junior – Senior Program & Critical Habitat Proposal for Comal & Other Springs

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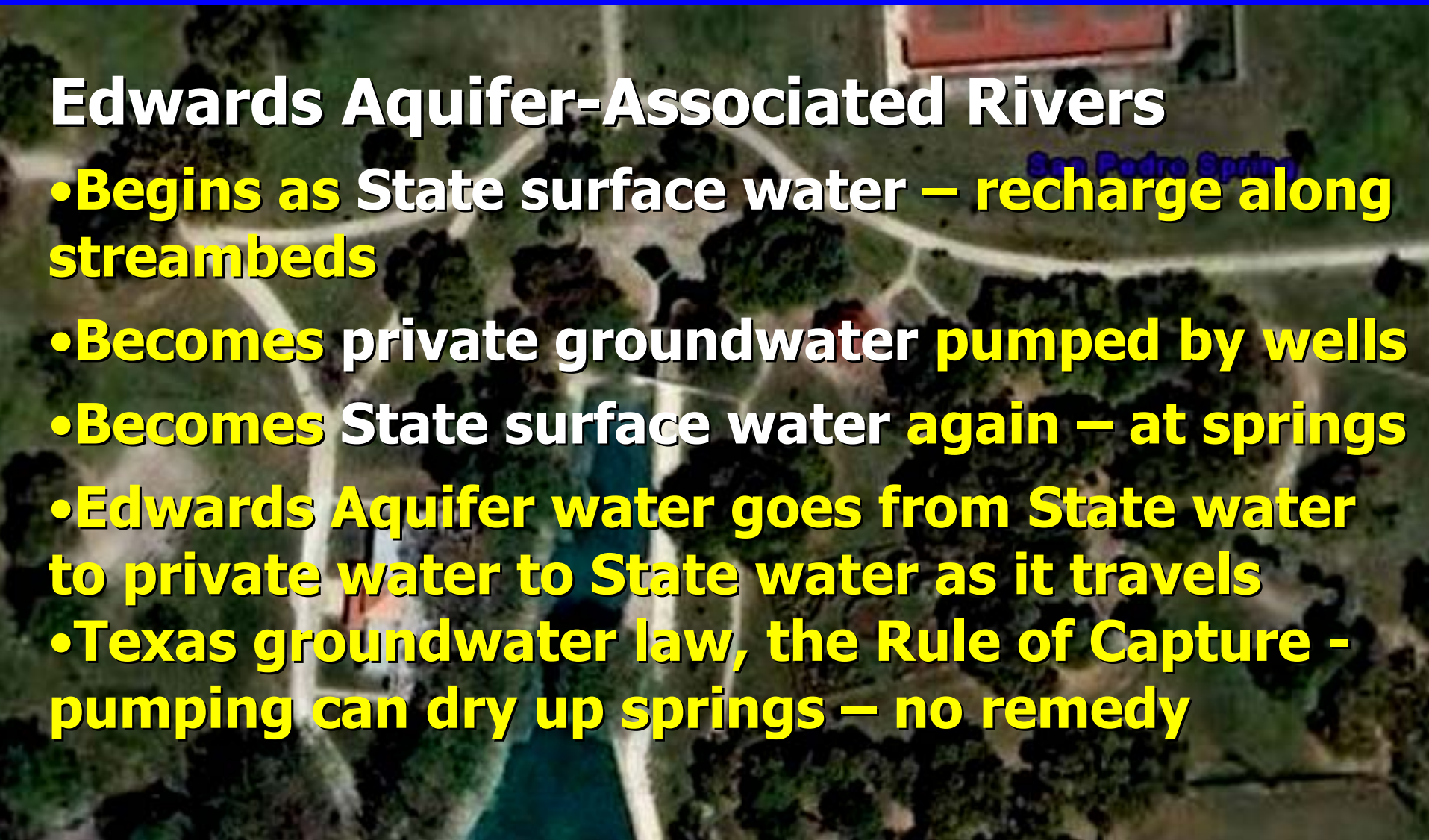
Texas Water Law



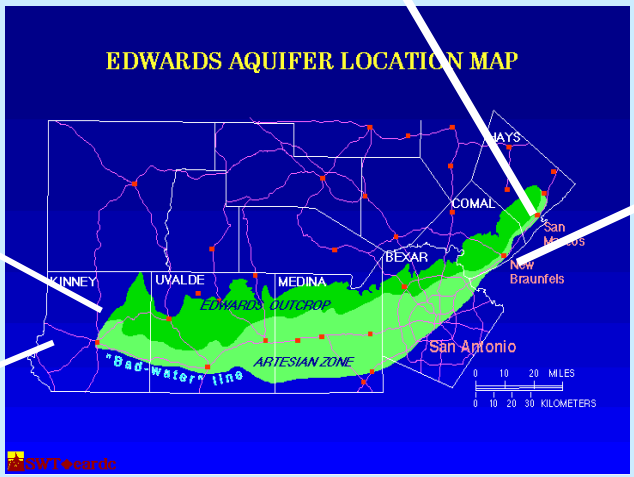
Edwards Aquifer-Associated Rivers

- **Begins as State surface water – recharge along streambeds**
- **Becomes private groundwater pumped by wells**
- **Becomes State surface water again – at springs**
- **Edwards Aquifer water goes from State water to private water to State water as it travels**
- **Texas groundwater law, the Rule of Capture - pumping can dry up springs – no remedy**

All of the Largest Springs in Texas Originate from the Edwards Aquifer…

San Felipe
Del Rio

San Marcos
San Marcos

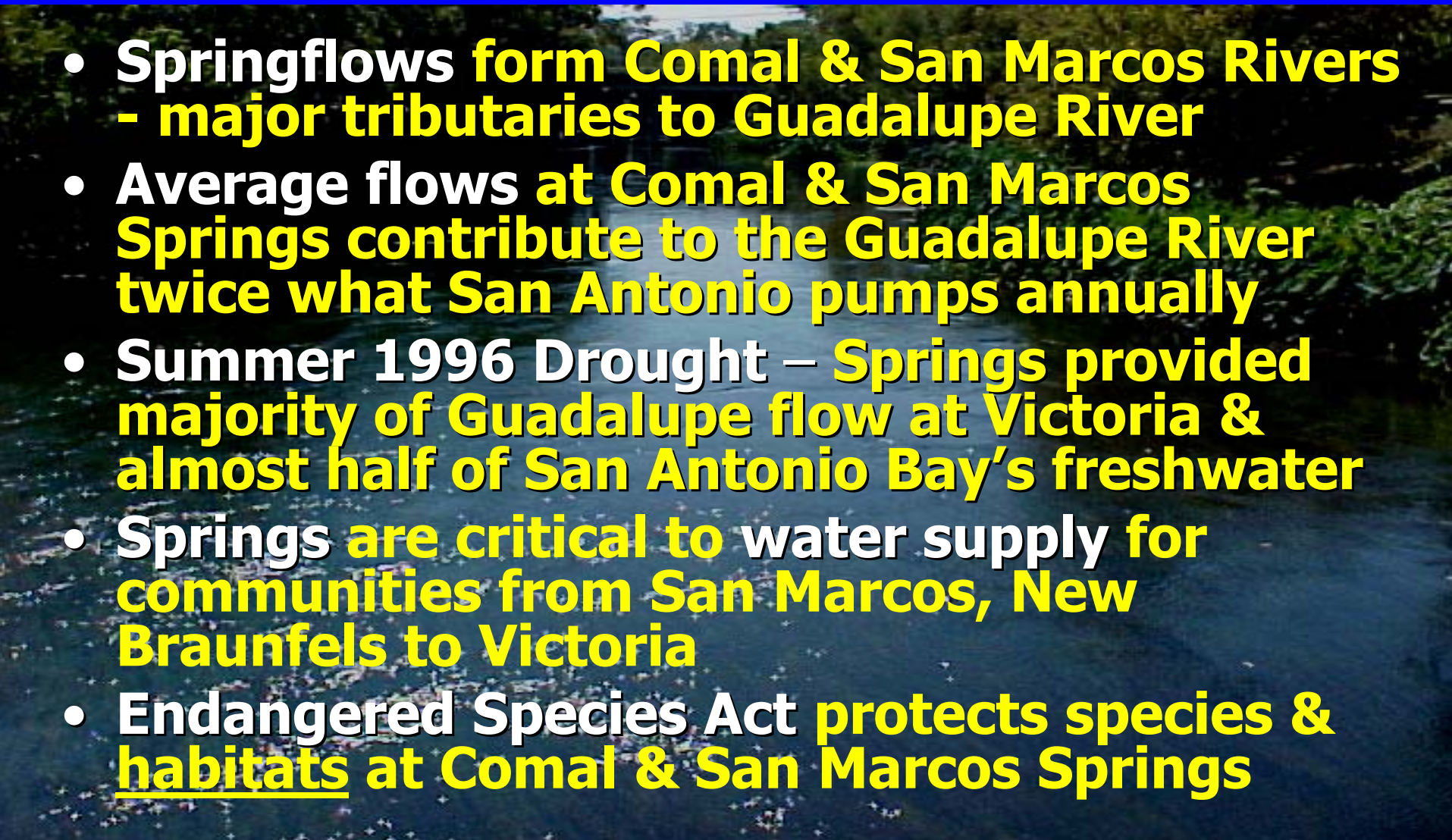


Comal
New Braunfels

Las Moras Springs
Brackettville

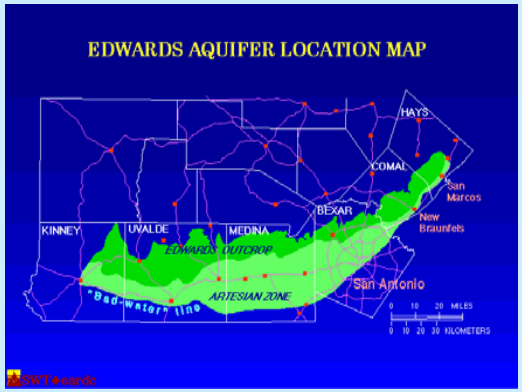
Most Have Endangered Species

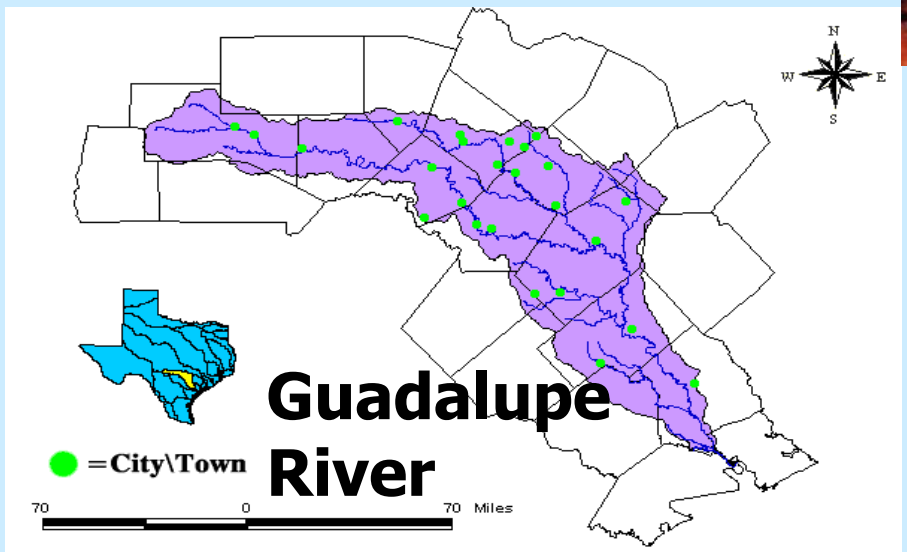
Why are the Springs Important to the Guadalupe Basin?



- Springflows form Comal & San Marcos Rivers - major tributaries to Guadalupe River
- Average flows at Comal & San Marcos Springs contribute to the Guadalupe River twice what San Antonio pumps annually
- Summer 1996 Drought – Springs provided majority of Guadalupe flow at Victoria & almost half of San Antonio Bay's freshwater
- Springs are critical to water supply for communities from San Marcos, New Braunfels to Victoria
- Endangered Species Act protects species & habitats at Comal & San Marcos Springs

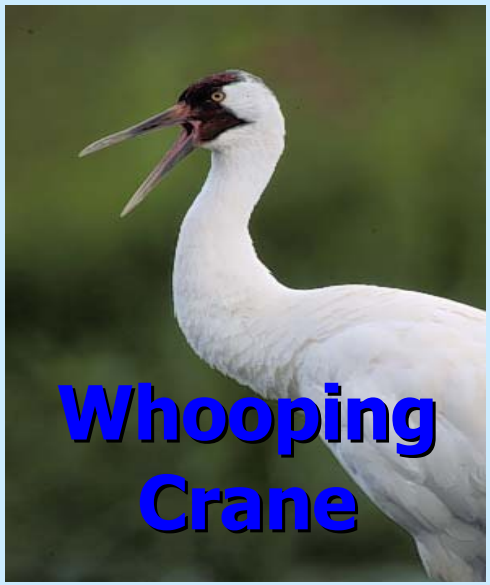
The Guadalupe River is the Primary Source of Freshwater Inflows to San Antonio Bay…

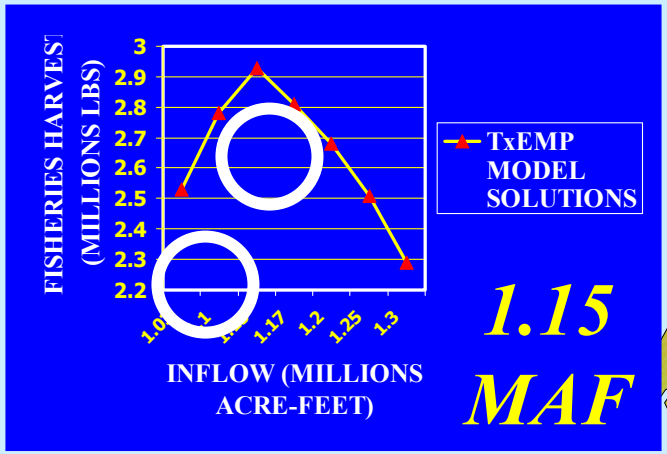


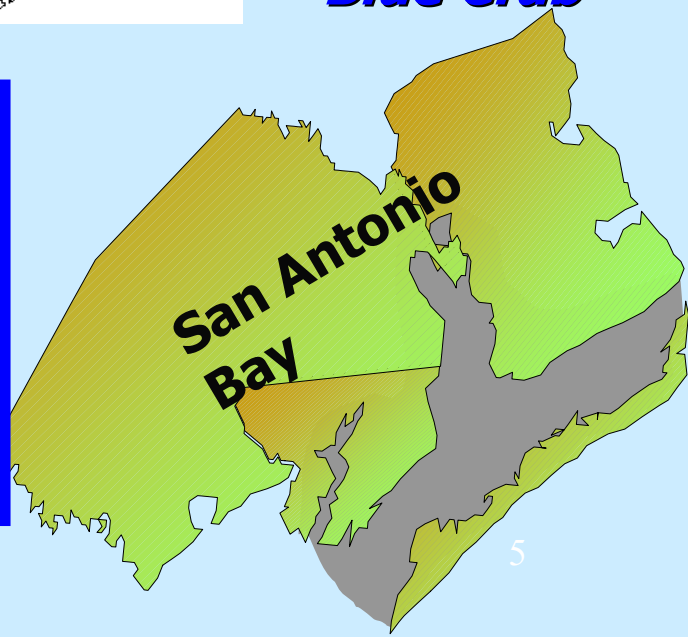


Brown Shrimp

Blue Crab







Edwards Aquifer: Who is Involved?

- EAA - Edwards Aquifer Authority
- SCTWAC - South Central Texas Water Advisory Committee
- SAWS – San Antonio Water System
- Irrigators – Mostly west of San Antonio
- GBRA – Guadalupe-Blanco River Authority
- GBC- Guadalupe Basin Coalition
- Region L – South Central Texas Regional Water Planning Group; 20 & 1/2 counties
- TCEQ – Texas Committee on Environmental Quality
- USFWS – U.S. Fish & Wildlife Service
- Environmental/Recreational Organizations

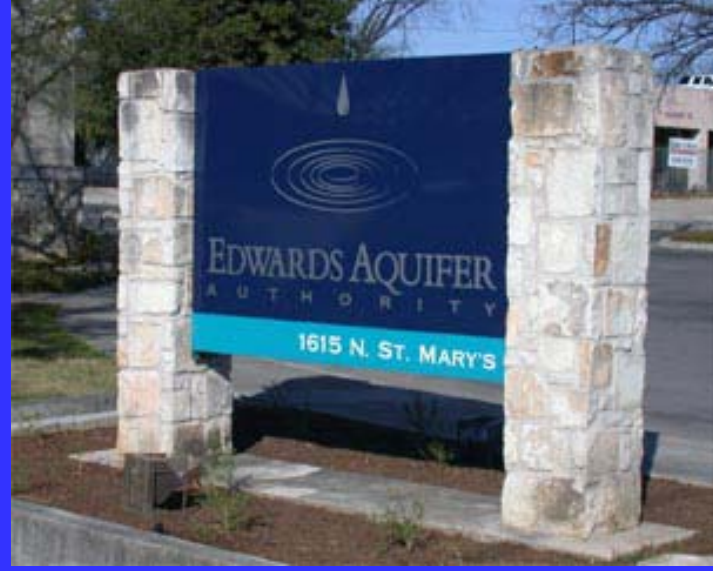
Edwards Aquifer Characteristics

Record Edwards Aquifer Pumping - 1989	542,500 acft/yr
Average Edwards Irrigation: 1993-2003	121,500 acft/yr
Average Edwards M/I Use: 1993-2003	288,000 acft/yr
Average Comal/San Marcos Spring Discharge - 1993-2003	436,600 acft/yr
Record High Edwards Recharge - 1992	2.49 M acft
Edwards Recharge - 2004	2.2 M acft
Record Low Recharge - 1956	43,700 acft

Edwards Aquifer Litigation

- In 1992, TCEQ declared the Edwards Aquifer an underground stream to regulate it like surface water – a State Court overturned the ruling
- In 1993, Sierra Club v. Babbitt Endangered Species Act lawsuit was decided;
  - USFWS ordered to set springflow minimums to protect the Comal & San Marcos Springs species
  - Federal Court gives State an ultimatum: regulate aquifer or the Court will regulate it

In 1993 the Texas Legislature replaces the Edwards Under-Ground Water District with the *Edwards Aquifer Authority*



The Act requires EAA to:

- **Issue permits & regulate pumping**
- **Permits based on historical use**
- **Permit cap @ 450,000 acft/yr**
- **2008 cap is 400,000 acft/yr**
- ***Requires continuous minimum springflows to preserve endangered species habitats by 2012***
- **Adopt pumping drought rules**

The "Catfish Farm," World's Largest Artesian Well

Edwards Aquifer Issues

- **450,000 acft/yr until 2007; 400,000 acft/yr in 2008 – yet permits currently total 549,000 acft/yr, some 99,000 acft/yr over the limit**
- **Caps on Annual Aquifer Pumping**
  - **Issue: What to do about excess permit rights above 450,000 acft/yr?**
  - **State legislation in 2005 to increase cap to "sum of all permits" did not pass**
- **EAA solution is to make the portion of permits above cap "Junior" rights – can be accrued when aquifer is above certain levels**

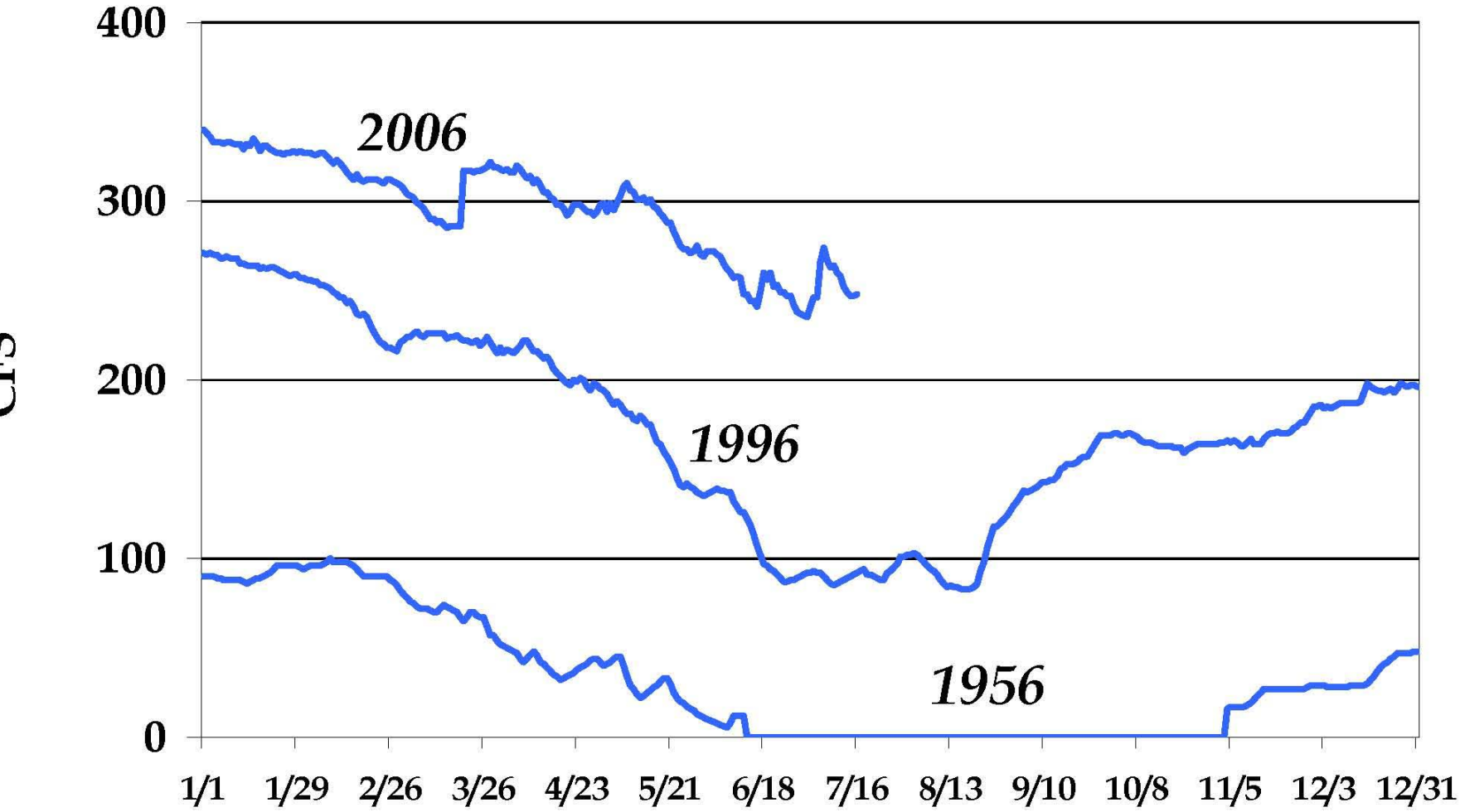
Junior-Senior Rights

- Bifurcated ("Junior-Senior") permit rules allow the portion of permits above cap - "junior" rights to be accumulated when J-17 is above 665 ftmsl and used when aquifer is below 665, but 650 is where Stage I of the Critical Period Management Plan is triggered
- Junior rights can be sold apart from senior rights

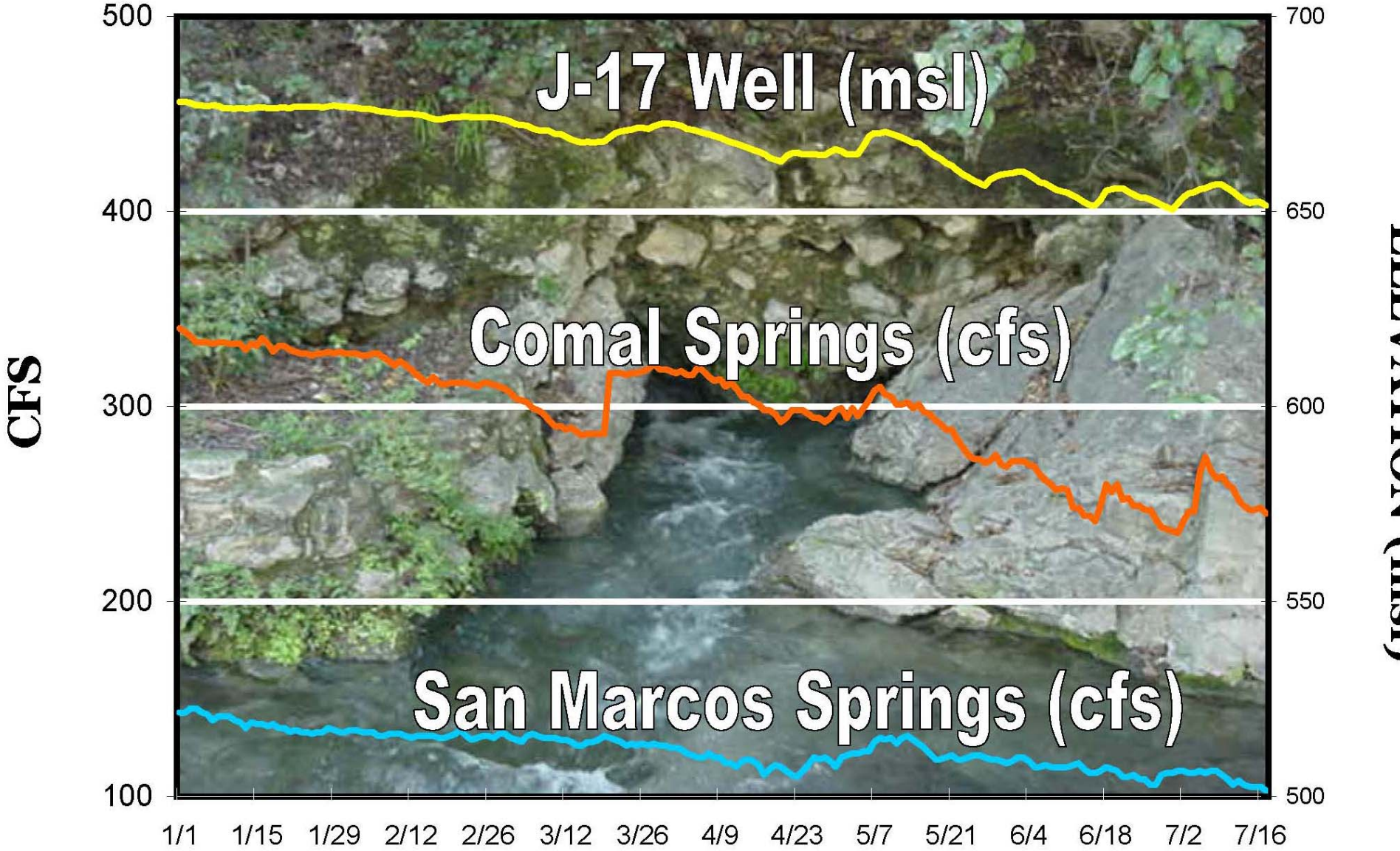
Junior-Senior Rights

- Junior rights were available from January 1st to April 15th this year.
- The aquifer plummeted during that time.
- Is 2006 the kind of year in which more water should be pumped out of the Edwards Aquifer than is allowed under the 450,000 acft cap?

COMAL SPRINGS
NEW BRAUNFELS, TX



2006



Prepared for and by the Guadalupe-Blanco River Auti

The Evolution of Junior Senior Issue

YEAR	EVENT
12-16-03	EAA Board adopts junior – senior program. Chairman Mike Beldon resigns & Doug Miller elected Board Chair.
2-12-04	SCTWAC requests that EAA reconsider Junior – Senior program because it is prejudicial to downstream interests.
5-11-04	EAA Board rejects request from SCTWAC to reconsider junior – senior program.
5-18-04	SCTWAC requests that TCEQ review Junior – Senior program and order EAA to rescind junior-senior program.

The Evolution of Pumping Limitations

YEAR	EVENT
2-23-05	TCEQ considers SCTWAC resolution, but don't send issue to SOAH. TCEQ staff to work with TWDB to study the impacts and file recommendations within 6 months.
9-1-05	TCEQ staff determines that junior-senior rights would have a measurable effect on Guadalupe water rights, but Executive Director recommends that the program is "contrary to an action of the Commission affecting downstream interests."

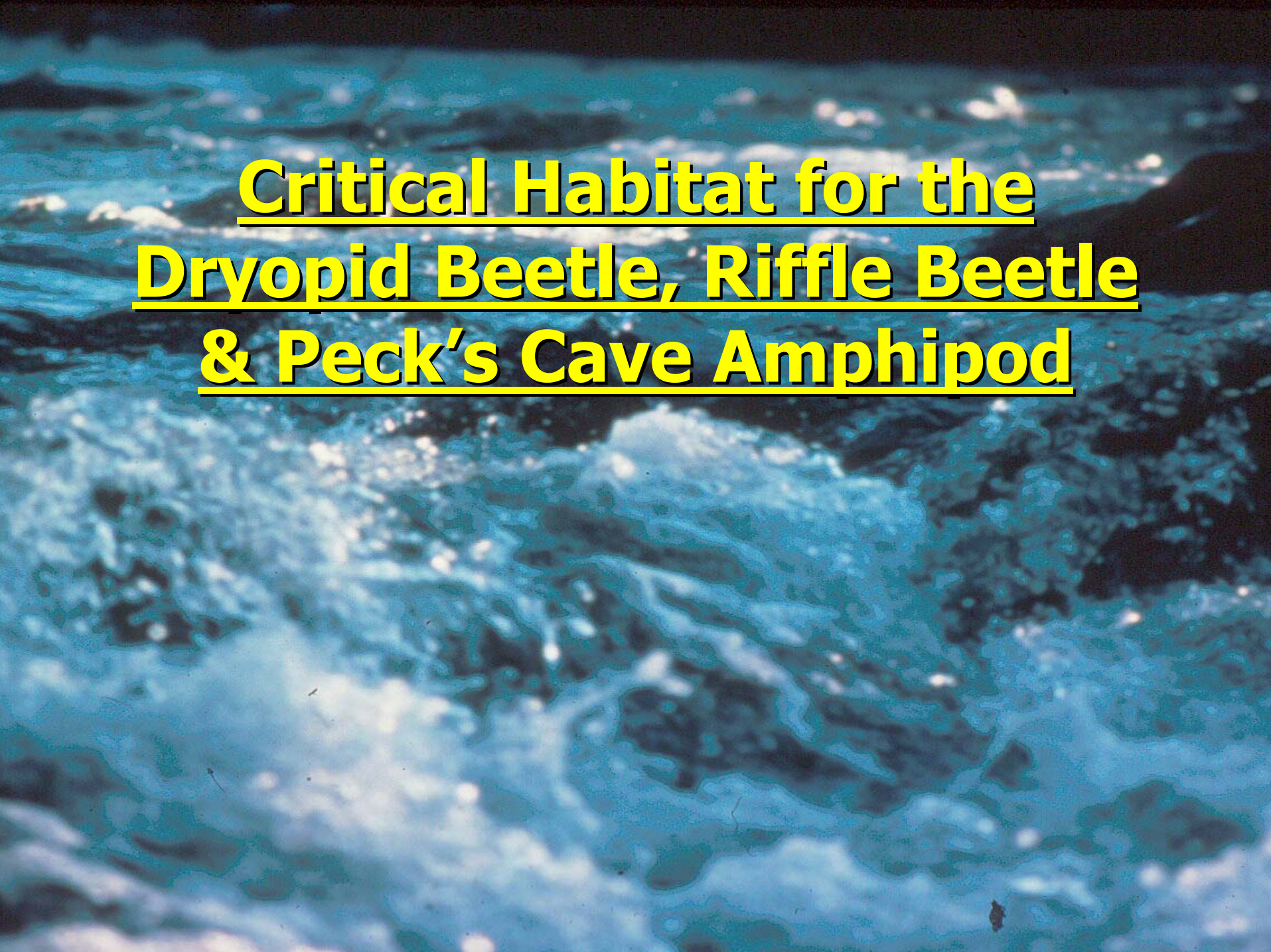
The Evolution of Junior Senior Issue

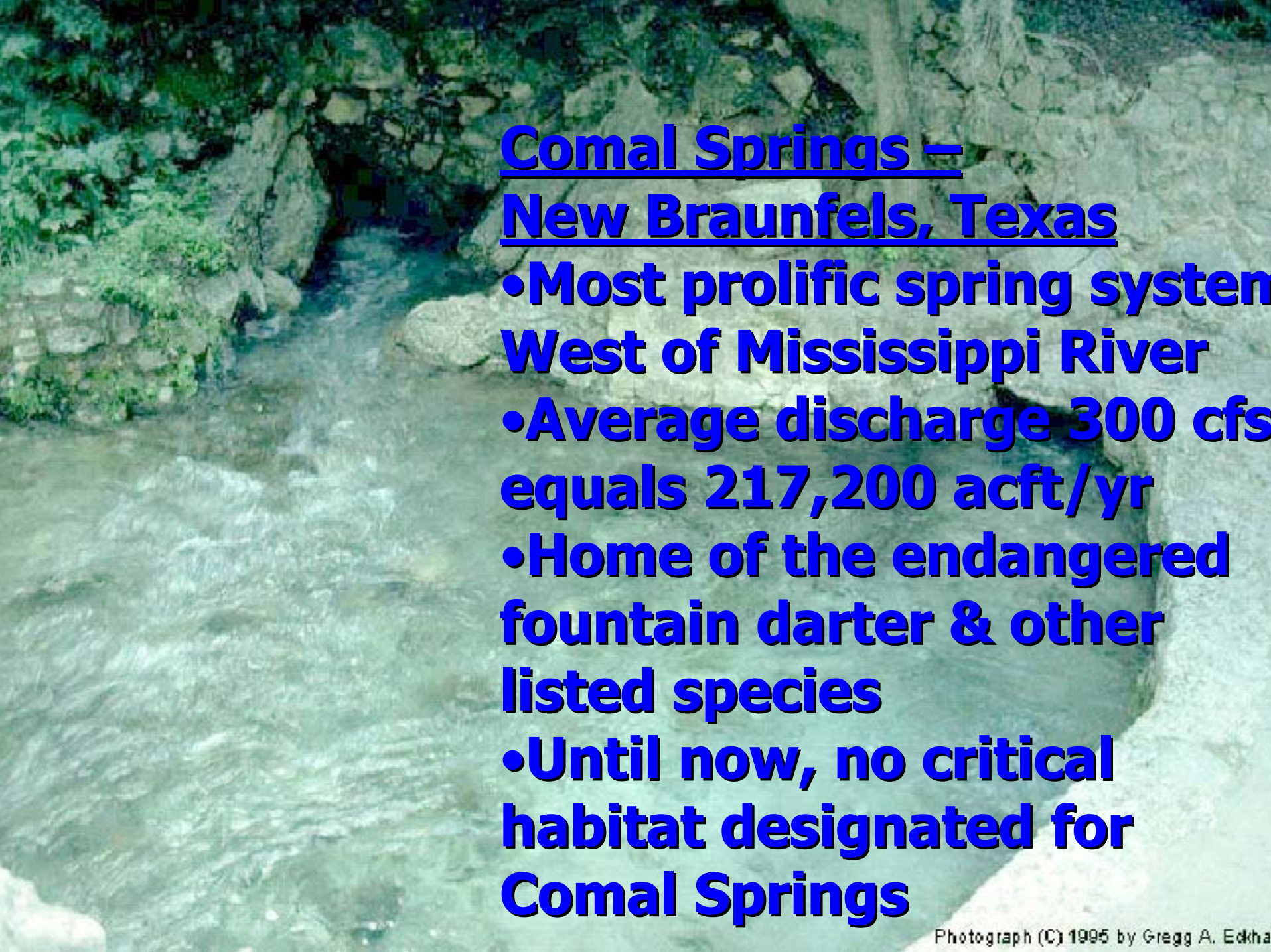
YEAR	EVENT
1-11-06	TCEQ unanimously finds in favor of SCTWAC. Commissioners find that junior rights impact downstream interests on the Guadalupe, particularly water right holders. TCEQ finds that the EAA's rules are contrary to actions by TCEQ regarding downstream interests on the Guadalupe, particularly water right holders.
7-11-06	Without responding to TCEQ, EAA Board adopts final junior-senior rules.

TCEQ Resolution on Junior/Senior Water Rights , Essentially a Recommendation ...

- "[T]he EAA's Junior/Senior permit rules will have a measurable effect on downstream water interests, particularly surface water right holders." Permits from Kerrville to Victoria are impacted; and
- "[T]he EAA's Junior/Senior permit rules are contrary to the [TCEQ's] actions affecting downstream interests because they could measurably deprive downstream water right holders of a portion of river flows . . . under permits and certificates of adjudication . . . and also could otherwise measurably deprive flows for instream uses."

Questions?


Critical Habitat for the
Dryopid Beetle, Riffle Beetle
& Peck's Cave Amphipod


Comal Springs –
New Braunfels, Texas
•Most prolific spring system
West of Mississippi River
•Average discharge 300 cfs
equals 217,200 acft/yr
•Home of the endangered
fountain darter & other
listed species
•Until now, no critical
habitat designated for
Comal Springs
Photograph (C) 1995 by Gregg A. Edkha

What is Critical Habitat?

Under the Federal Endangered Species Act, critical habitat is defined as "the specific areas within the geographic area occupied by a species on which are found those physical and biological features essential to the conservation of the species, and that may require special management considerations or protection; and specific areas outside the geographic area occupied by a species at the time it is listed, upon determination that such areas are essential for the conservation of the species."

How is Critical Habitat Designated?

The appropriate Secretary must designate critical habitat on the basis of the best scientific data available and after taking into consideration the economic impact, and any other relevant impact, of designating a particular area as critical habitat. The Secretary may exclude an area from designation if the Secretary determines that the benefits of such exclusion outweigh the benefits of specifying an area as part of critical habitat, unless he or she determines, based on the best scientific and commercial data available, that the failure to designate the area will result in the extinction of the species concerned. Actions of the Secretary in designating critical habitat are judicially reviewable.[23]

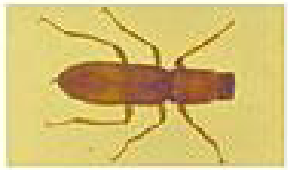
Origin of Critical Habitat Designation

- The Comal Springs riffle beetle, Comal Springs dryopid beetle & Peck's cave amphipod were listed as endangered on December 18, 1997.
- Critical habitat was not designated.
- The Center for Biological Diversity (CBD) sued the U.S. Fish & Wildlife Service under the Endangered Species Act in 2003 to force the designation for these species as well as many others.
- USFWS settled with the CBD.
- Critical habitat would be established at Comal & Hueco Springs in Comal County, and Fern Bank & San Marcos Springs in Hays County. Critical habitat already exists at San Marcos Springs.

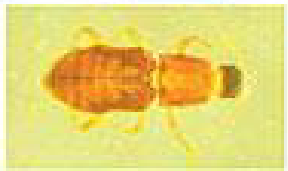
Identifying critical habitat

The Fish and Wildlife Service recently identified habitat critical to three endangered species that are unique to springs in Comal and Hays counties.

- All are small (1/8-inch long or less), eyeless and unpigmented aquatic invertebrates.
- Threatened by decreasing water quantity and quality caused by water withdrawal and other human activities in the San Antonio segment of the Edwards Aquifer.
- Critical habitat will include lakes and spring openings and a 50-foot buffer zone around water's edge.



Comal Springs dryopid beetle, a subterranean beetle. Proposed habitat: 38.1 acres at Comal Springs, 1.4 acres at Fern Bank Springs.



Comal Springs riffle beetle, a surface-dwelling beetle. Proposed habitat: 19.8 acres of Landa Lake and 10.5 acres of Spring Lake.

Peck's cave amphipod, a subterranean crustacean. Proposed habitat: 38.1 acres at Comal Springs, 4 acres at Hueco Springs.

Proposed critical habitat units

Critical habitat units provide special protections for the creatures

- Comal Springs dryopid beetle
- Comal Springs riffle beetle
- Peck's cave amphipod

Source: Fish and Wildlife Service; Photos - Edwards Aquifer Authority

Comal Springs riffle beetle

Comal Springs riffle beetle is only about 1/8 inch long.

- Habitat: The Comal Springs aquatic ecosystem.
- Lives nearby the spring openings, and in the Comal River very close to the springs.
- The riffle beetle is dependent upon the constant flow of water from the springs, the purity of this water and constant temperature.

Comal Springs dryopid beetle

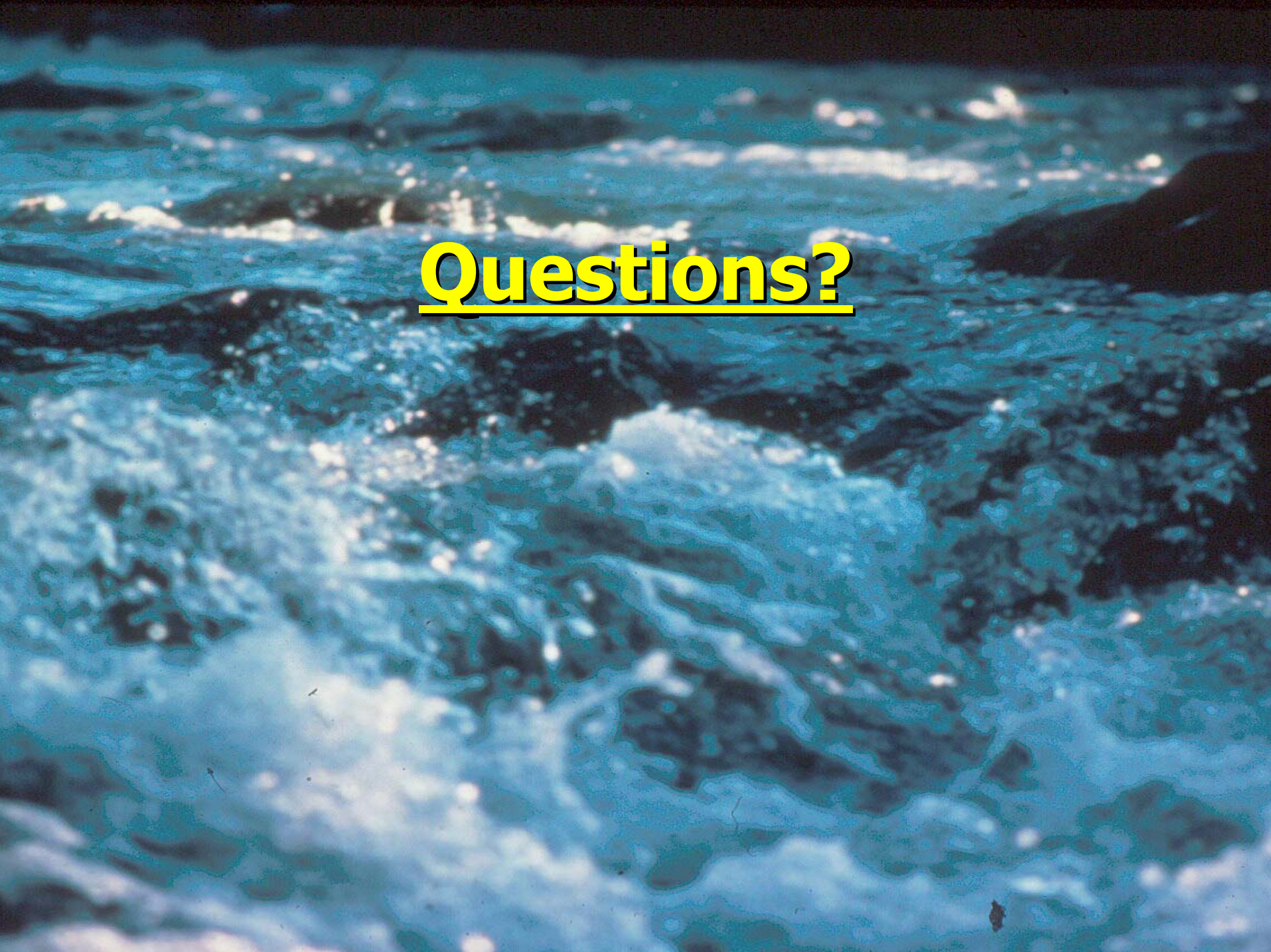
The Comal Springs dryopid beetle is only about 1/8 inch long.

- Habitat: The Comal Springs aquatic ecosystem.
- Lives underground in the Edwards Aquifer, near the Comal Springs openings and in the Comal River close to the springs.
- Requires the constant, pure flow of water from the springs for survival.

Peck's Cave amphipod

The Peck's Cave amphipod is only about 1/8 long.

- Habitat: Comal Springs Ecosystem.
- The Peck's Cave crustacean amphipods mostly live in the Edwards Aquifer in the Comal Springs area.
- Since the specie lives totally underground (where there is no sunlight), it has no color to its skin.
- Since it only lives underground in dark caves, it has no eyes.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