

Article 1 SB 3/HB 3 Environmental Flows 80th Texas Legislature



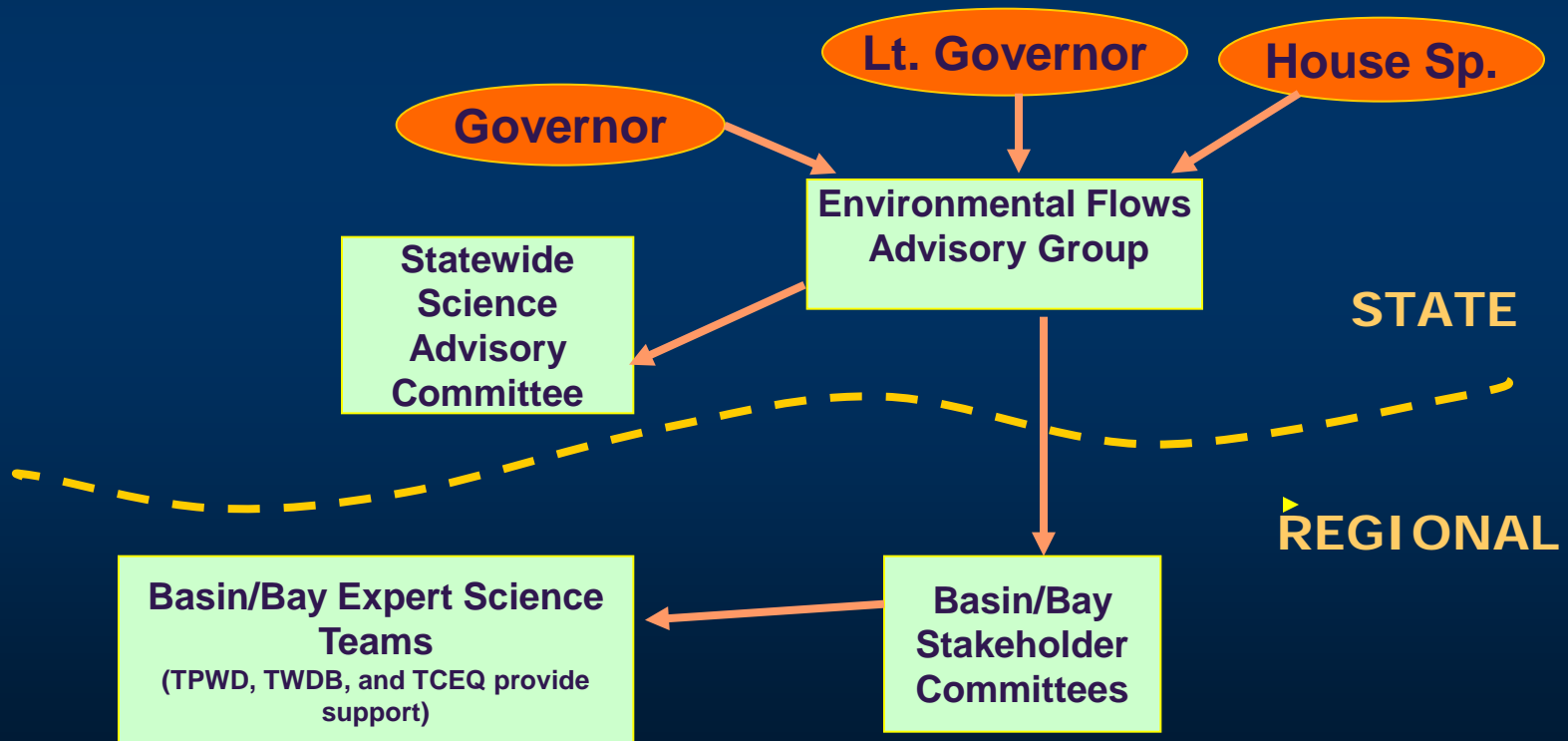
Senate Bill 3 and House Bill 3 set out a new regulatory system for protecting environmental flows; consensus-based regional approach involving a balanced representation of stakeholders

http://www.tceq.state.tx.us/permitting/water_supply/water_rights/eflows/group.html

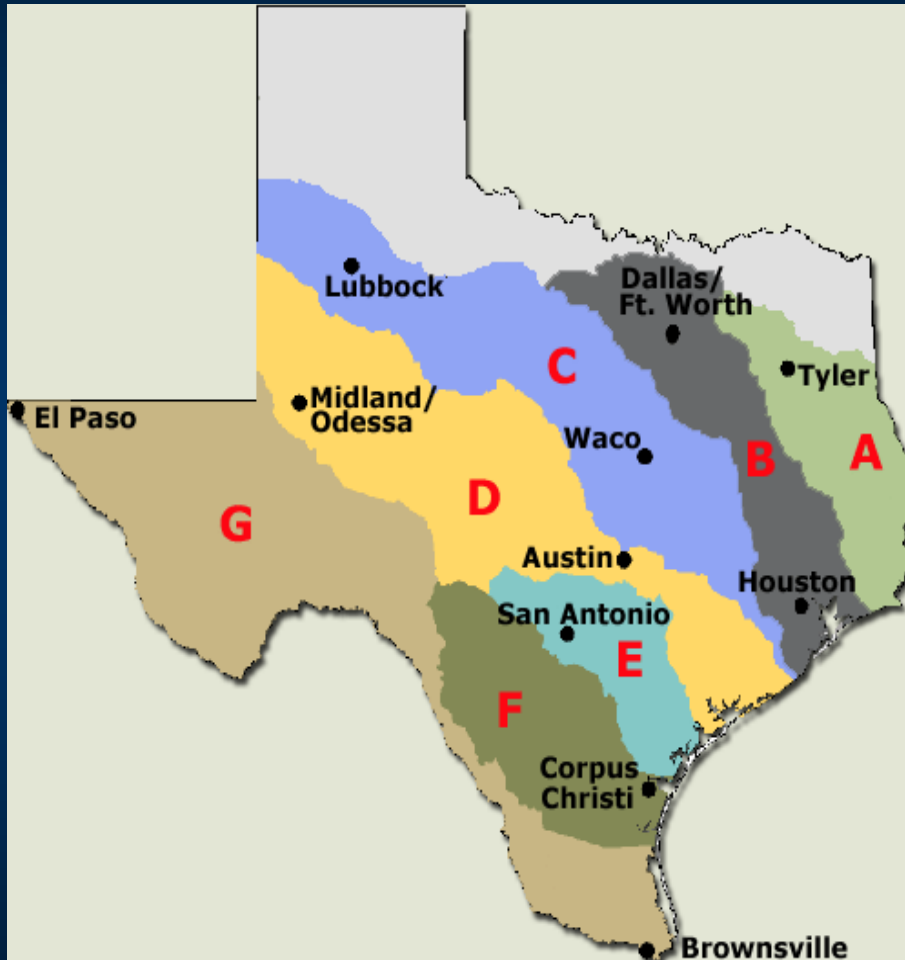
SB 3 Article 1

Process for Environmental Flows

the Players



Basin/Bay Areas



A. Sabine & Neches Rivers/Sabine Lake Bay Area (light green) 2008-2010

B. Trinity & San Jacinto Rivers/Galveston Bay Area (grey) 2008-2010

C. Brazos River/Bay & Estuary Area (blue) 2010-2013

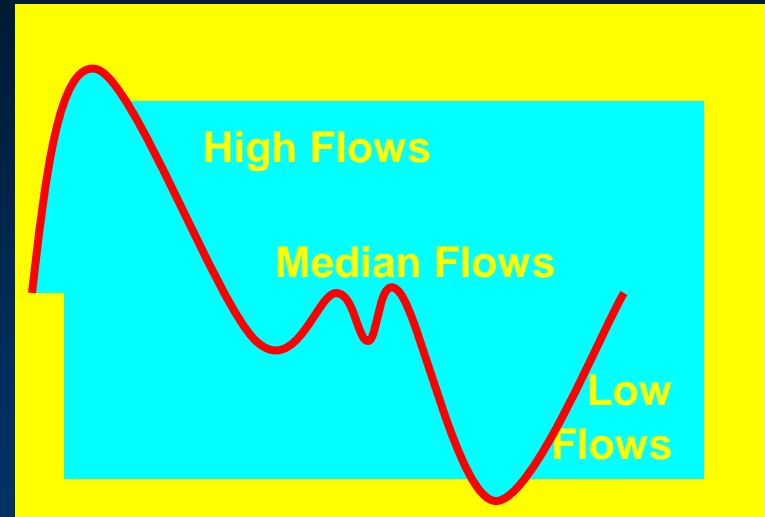
D. Colorado & Lavaca Rivers/Matagorda & Lavaca Bays Area (yellow) 2009-2012

E. Guadalupe, San Antonio, Mission, & Aransas Rivers/Mission, Copano, Aransas & San Antonio Bays Area (aqua) 2009-2012

F. Nueces River/Corpus Christi & Baffin Bays Area (dark green) 2009 – 2013

G. Rio Grande/Rio Grande Estuary & the Lower Laguna Madre Area (tan) 2010 -2013

Environmental Flow Regime Definition



“A schedule of flow quantities that reflects seasonal and yearly fluctuations that typically would vary geographically, by a specific location in a watershed, and that are shown to be adequate to support a sound ecological environment and to maintain the productivity, extent, and persistence of key aquatic habitats in and along the affected water bodies.”

Environmental Flow Regime Development



Environmental flow regimes are to be developed and recommended by the expert science teams working with technical support from state agencies and academic institutions; recommendations shall be based solely on best available science

Environmental flow regime recommendations are then adopted by the stakeholder committees and submitted to TCEQ for formal consideration in commission rulemaking

Environmental Flows Process



Each Basin/Bay Area Stakeholders Committee reviews findings of Expert Science Team and recommends environmental flow regimes to TCEQ

Through rulemaking, TCEQ adopts environmental flow standards and establishes an environmental flow “set aside” if unappropriated water is available; rulemaking process allows for broad public input

Environmental Flows Management



Environmental flow standards and implementation strategies are subject to “adaptive management,” meaning that the success and/or failure of management measures will be assessed and adjusted as new science and information becomes available. Flow standards will be subject to periodic review and revision.

Science Advisory Committee Guidance

“While recognizing the availability of freshwater inflow needs analyses performed by the State agencies for the principal bays of Texas...caution is recommended in interpreting the results as an appropriate basis for Senate Bill 3 environmental flows.”

“...intended to optimize the productivity for a set of key species...”

“...constraints set in the optimization model tend to dictate the monthly flows, and the resulting pattern of monthly flows does not occur in the historical inflow data record...”

“...these flow recommendations are not endorsed as satisfactory for the Senate Bill 3 objective of maintaining a sound ecological environment...”

“There are, however, many elements of the State Methodology and the Verification Methodology, stemming from the comprehensive and valuable studies performed by the TWDB and the TPWD over the years, that are of potential utility to the BBESTs in determining the flow regimes needed to meet Senate Bill 3 objectives.”

BBEST's approach to freshwater inflows

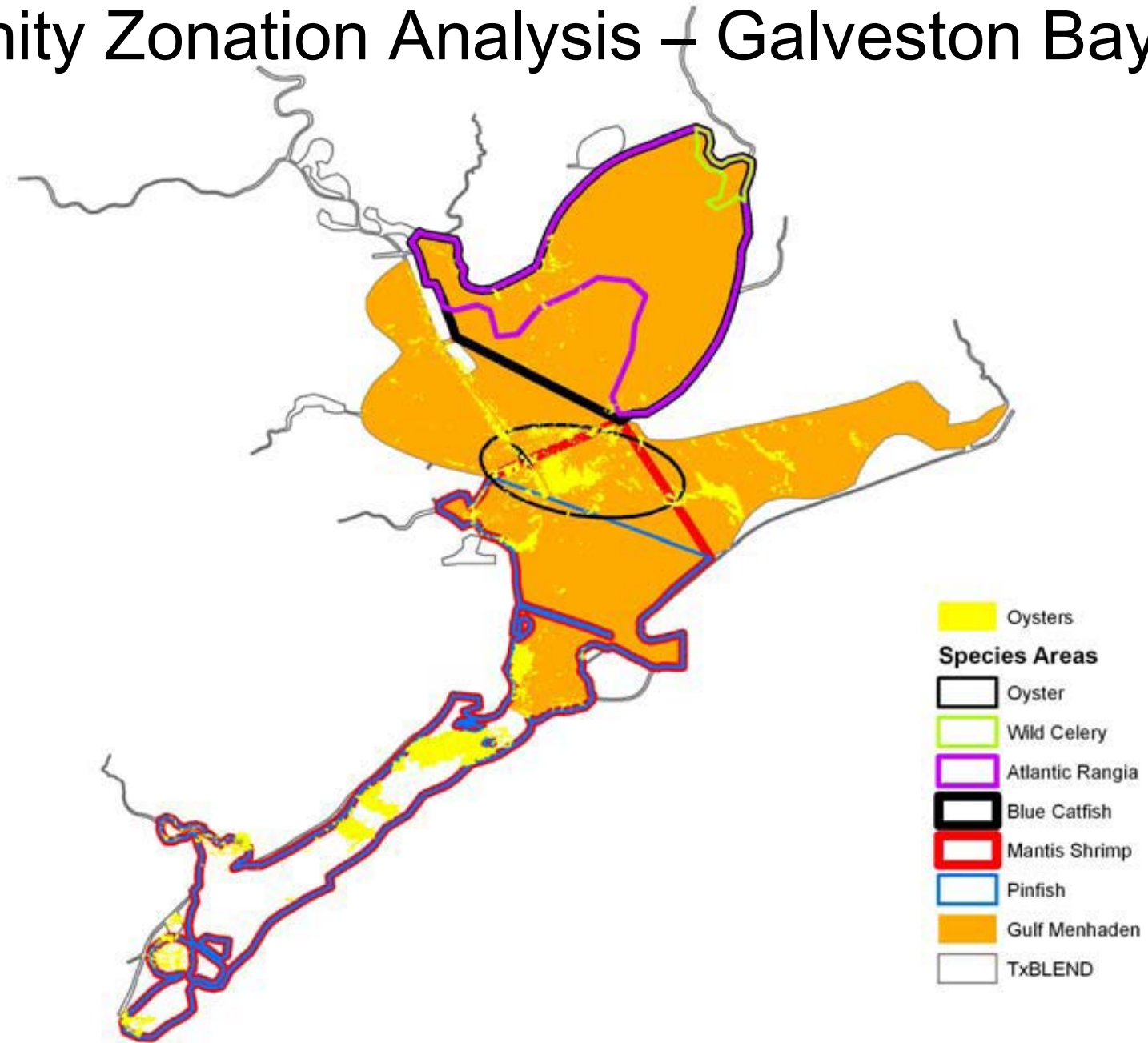
- Rely on experts to identify focal species and salinity requirements by season
- Contract with consultants to perform some or all of analyses, including generating candidate inflow datasets
- Rely on salinity vs. flow relationships (TxBlend or regressions) and other statistical relationships to identify inflows needed to maintain salinities
- Evaluate instream flow recommendations at most downstream location(s) as freshwater inflow recommendation for the estuary

Sessile* Biological Indicators for Galveston Bay

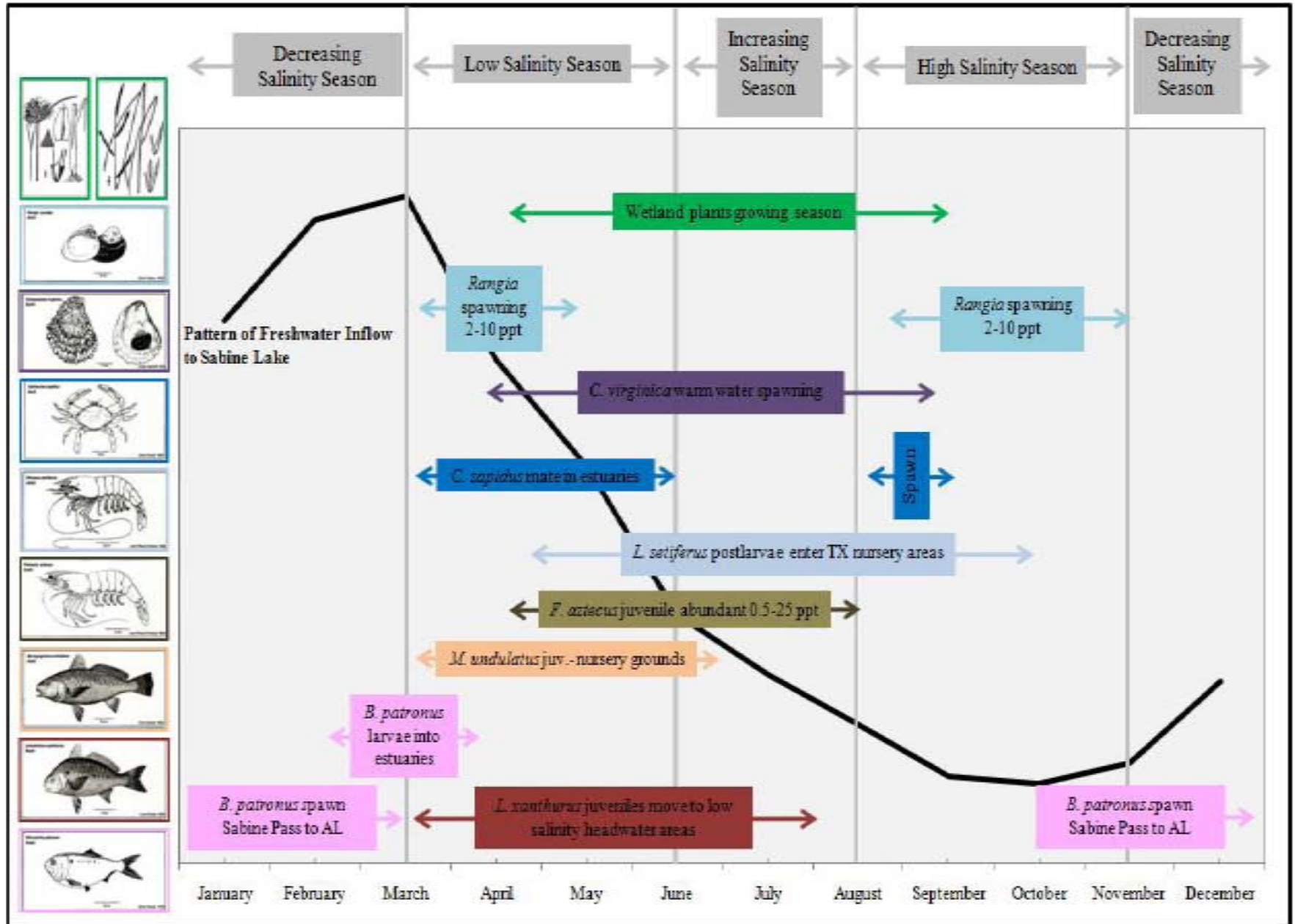
Indicator Species/Type	Taxonomic Classification	Salinity Range	Seasonality
Wild celery	<i>Vallisneria americana</i>	<5 psu for establishment	Spring – Summer-Fall
Atlantic Rangia	<i>Rangia cuneata</i>	2-10 psu for larval survival	Spring-Fall (spawning)
American Oyster	<i>Crassostrea virginica</i>	10-20 psu	Summer – Fall

* Non-sessile indicators also identified

Salinity Zonation Analysis – Galveston Bay



Sabine-Neches Estuarine Focal Species/Salinities



Lessons Learned

- Keep it Simple!
- *Try* to get buy in early and often
- Set realistic goals and keep expectations low
- Be patient – Texas has been working on this for decades and we're not done yet.

Freshwater Inflows: 2010 and Beyond



Corpus Christi, Texas
8-10 February 2010



The purpose of this conference is to highlight the importance of freshwater inflows and to identify water management questions and approaches that protect estuaries.

Join us to discuss values of inflows, indicators of estuarine health, threats to inflows, state and Regional issues, and methodologies to identify and protect freshwater inflows to estuaries.

www.freshwaterinflows2010.org