Geographic Scope of Instream Flow Recommendations

Kathy Alexander

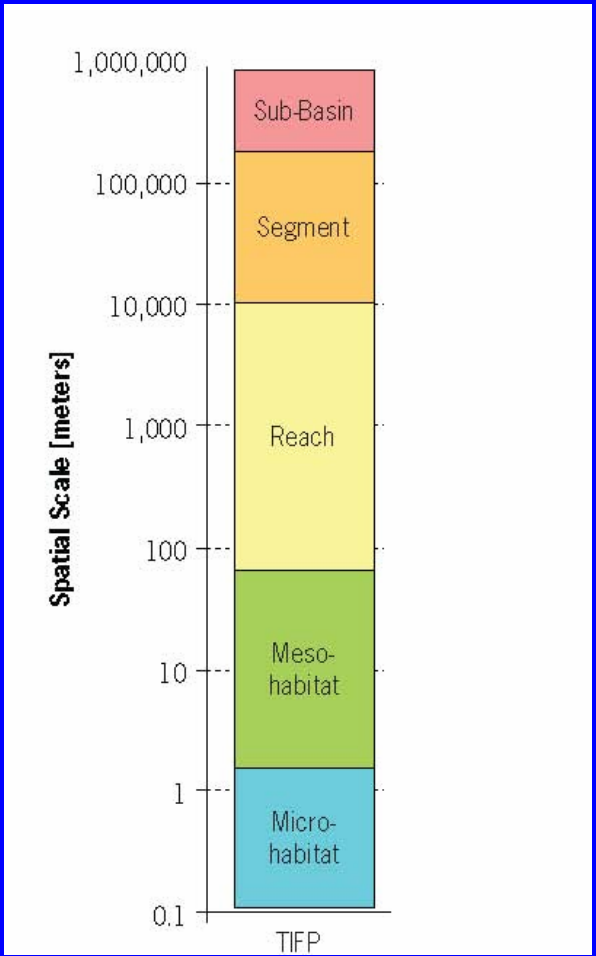
TCEQ

April 8, 2008

Topics

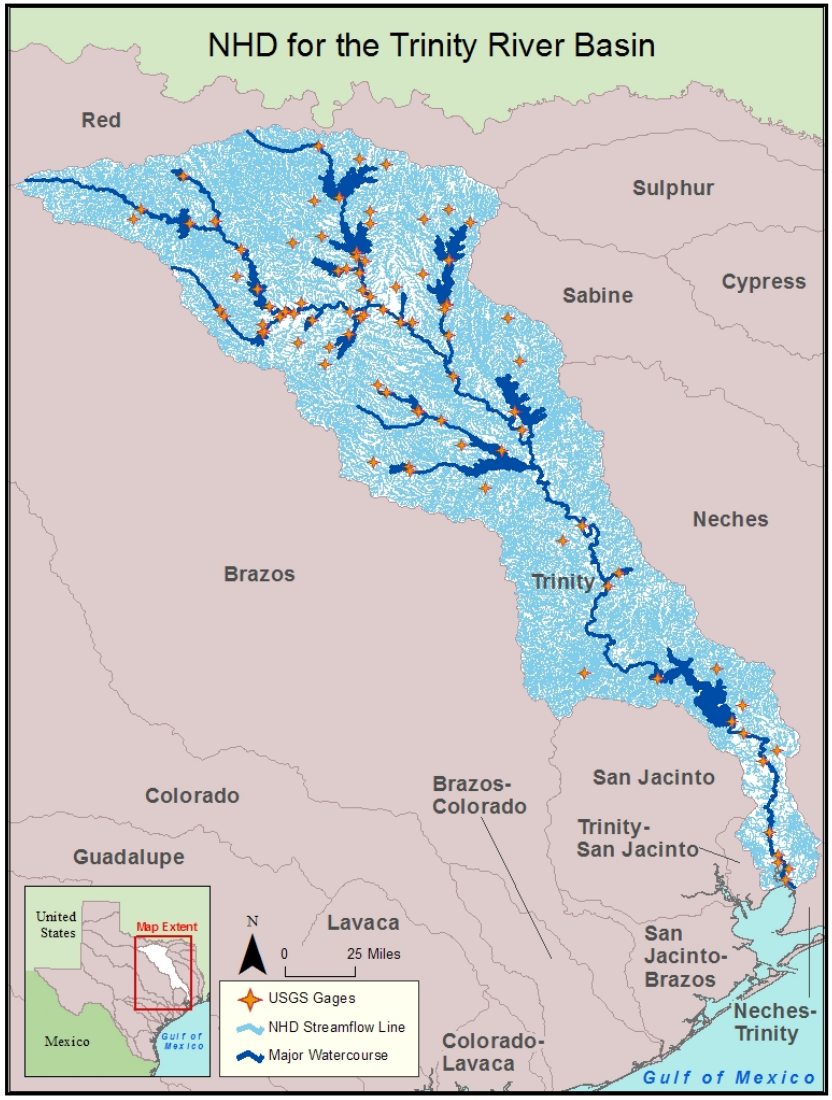
- General Information
- Specific Information
- Example Application
- Summary

TIFP Spatial Scale Units



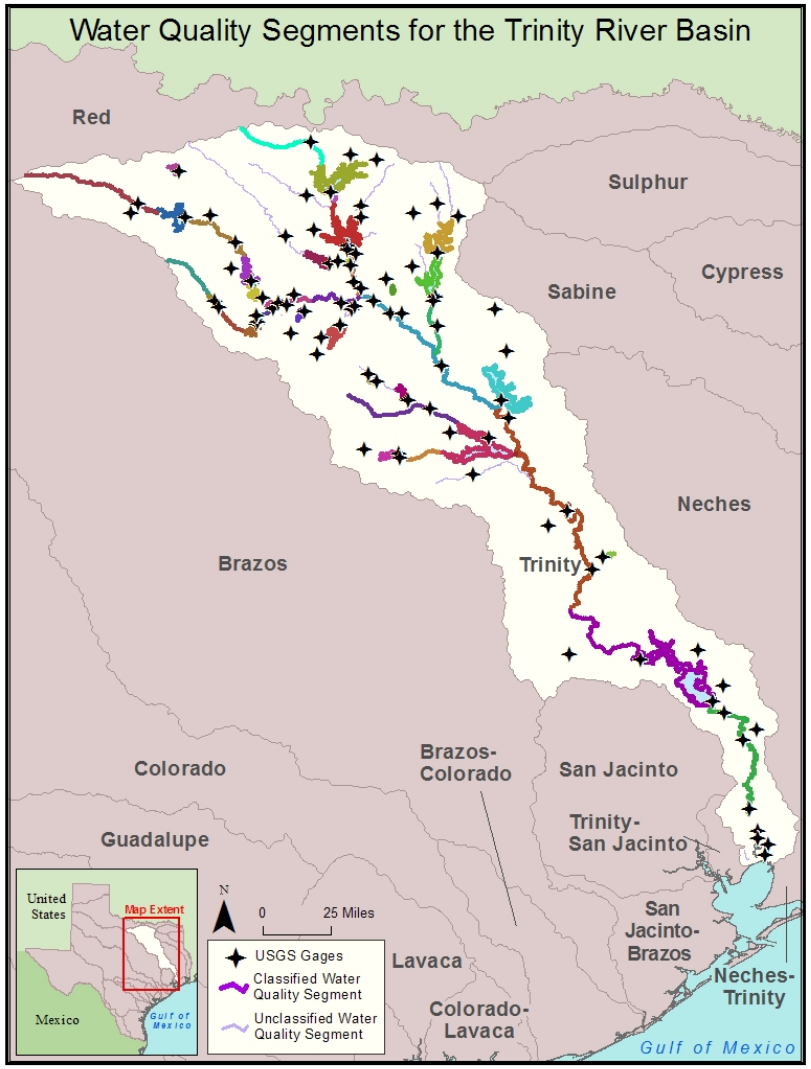
- Promote consistent nomenclature for SB 2 studies
- Limited information available for most scales at this time
- Hydrologic data is most readily available

National Hydrography Data Set (NHD)



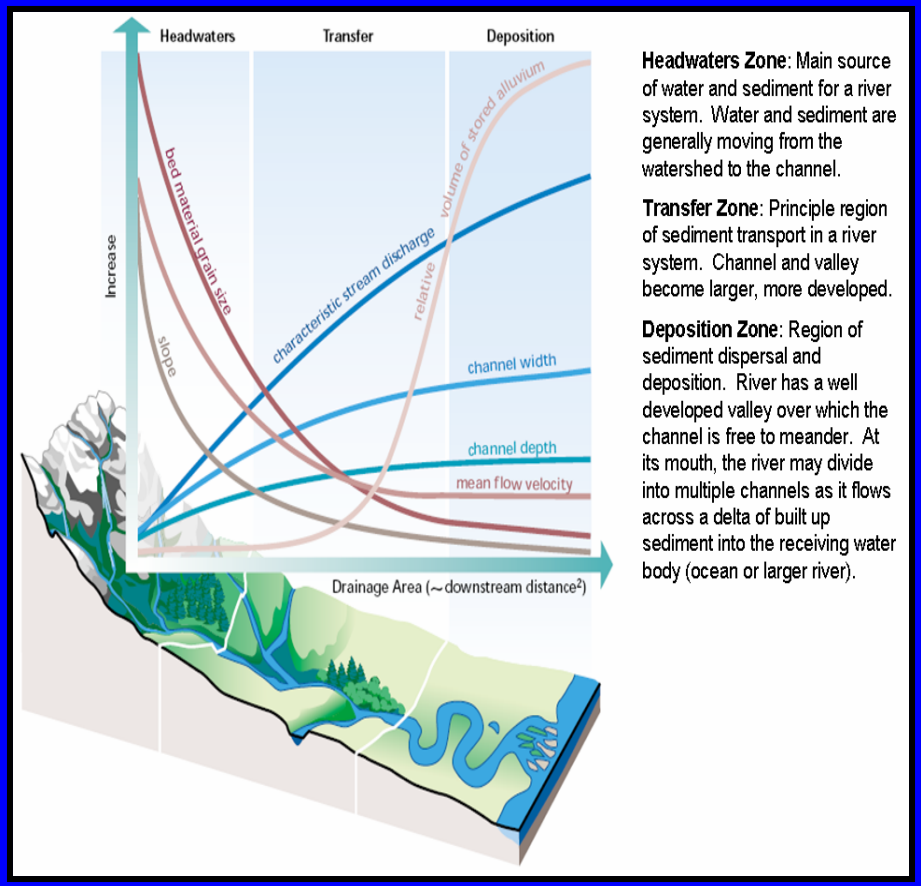
- Consistent with State Watercourses
- Attributes linked to line coverages
- Network Density

TCEQ Classified Segments



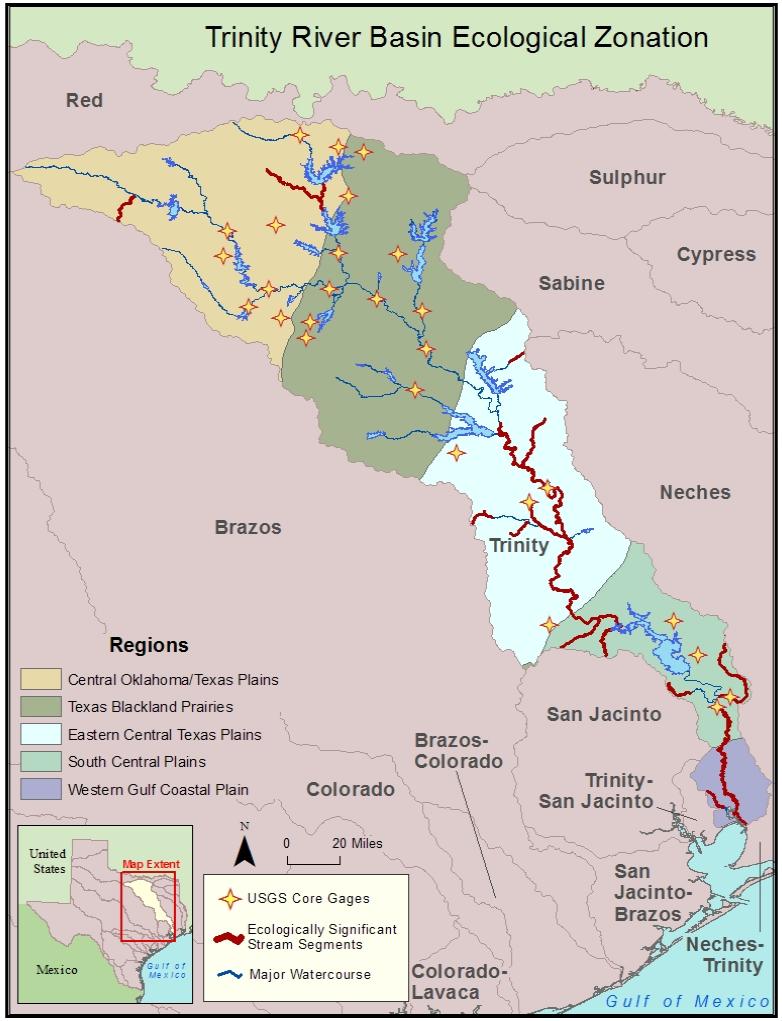
- Assignment of segments has some basis in geographic and hydrologic diversity
- Segments include the impounded areas of reservoirs

Geomorphic Zonation



- Absent site-specific data, site selection should include at a minimum the major process zones
- Even where geomorphic data is available, USGS Gages will be used to represent the zones

Ecological Zonation

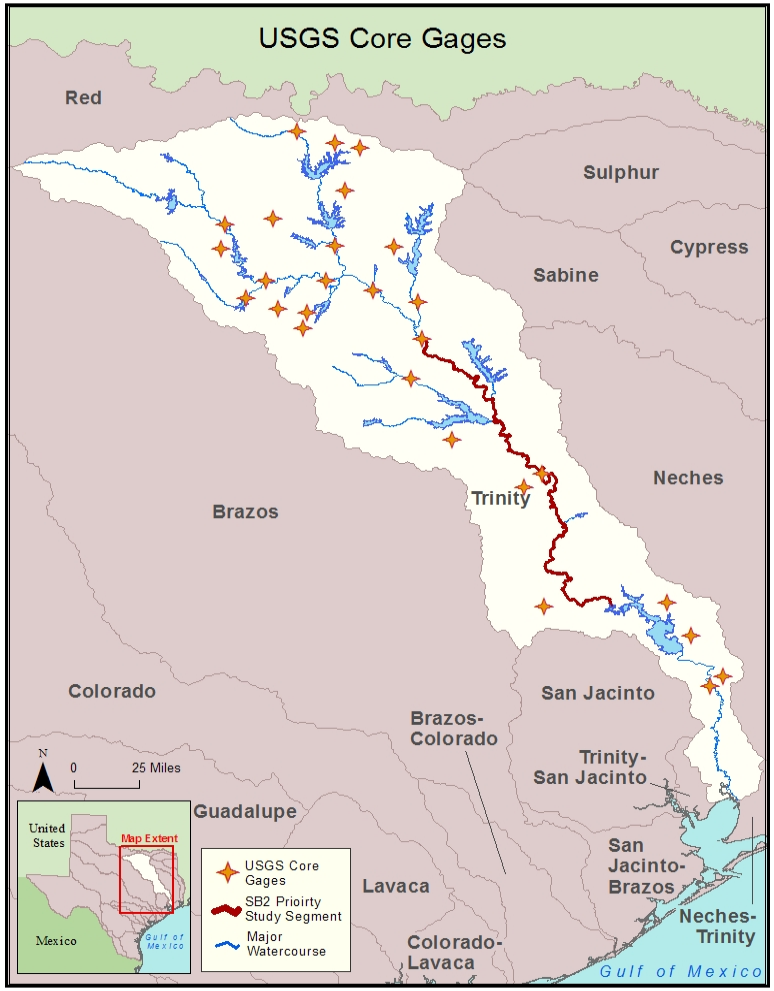


- GIS data and descriptions of Ecoregions are available at several scales
- Ecologically significant stream segments
- SB 2 study information

Hydrological Zonation

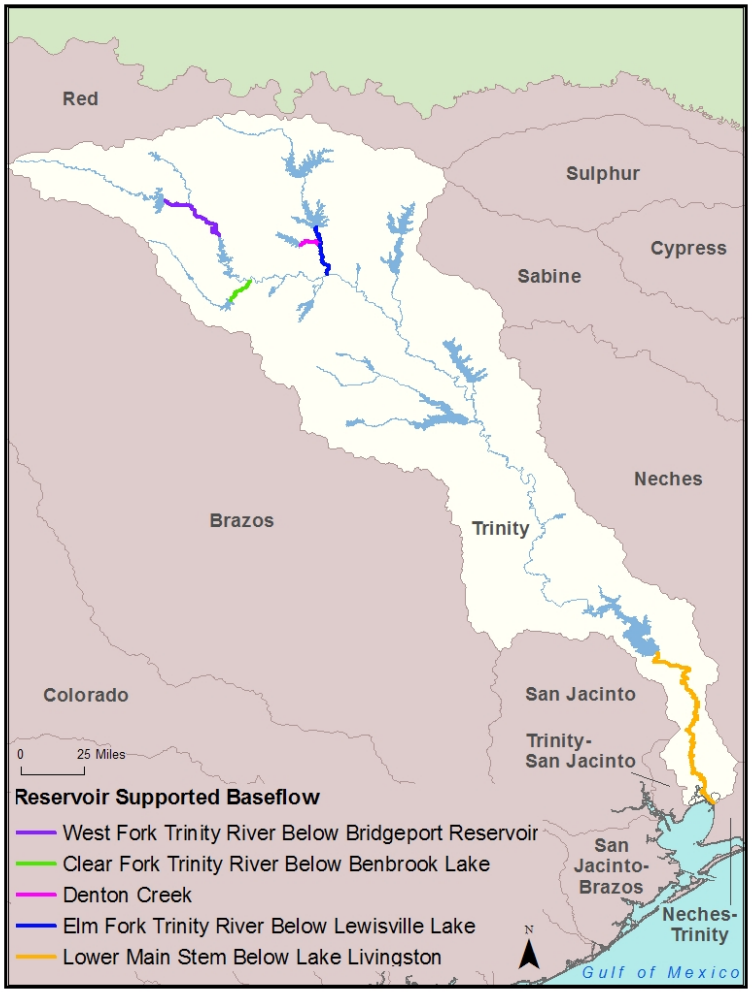
1	Basin Outflow/Bay Inflow 08066500 Trinity River at Romayor
3	Main Stem General Process Zones • Headwaters Zone of Trinity River • Transfer Zone of Trinity River • Deposition Zone of Trinity River
4	Main Stem Core Network Gages • 08057410 Trinity River below Dallas : : • 08066500 Trinity River at Romayer
12	Main Stem and Major Tributaries Core Gages • 08049500 West Fork Trinity River at Grand Prairie : : • 08066500 Trinity River at Romayer
27	Active Core Network Gages in Basin • 08044500 West Fork Trinity River near Boyd : : • 08066500 Trinity River at Romayer
60	Active USGS Gages in Basin • 08042800 West Fork Trinity River near Jacksboro : : • 08067000 Trinity River at Liberty

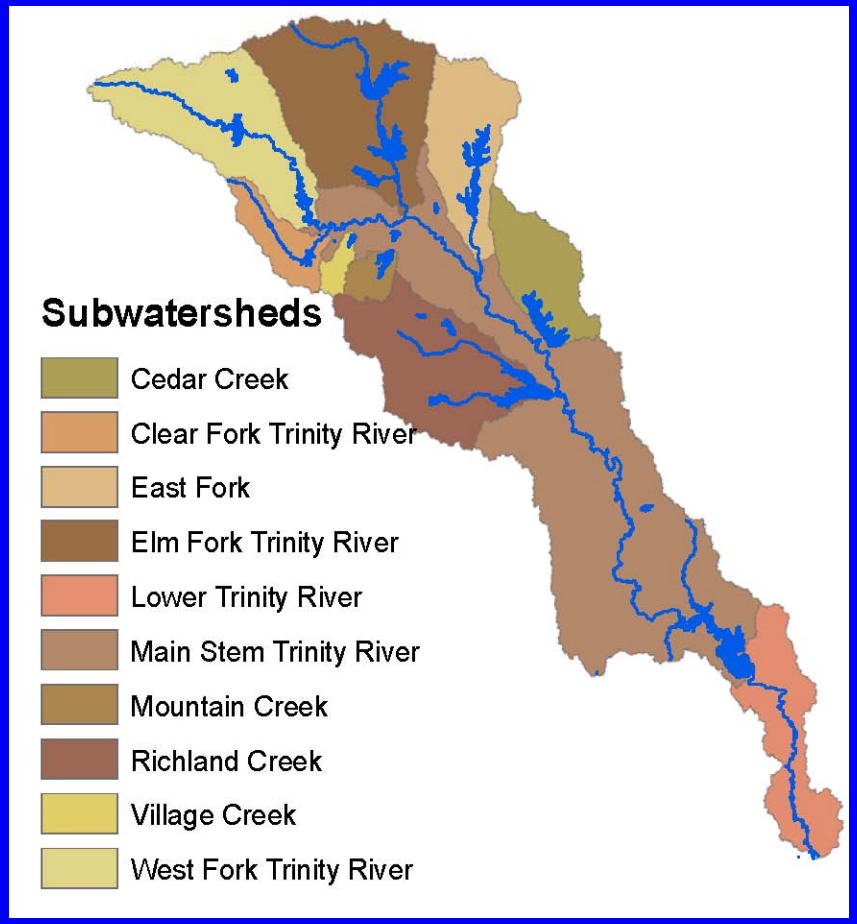
Hydrologic Zonation (cont.)



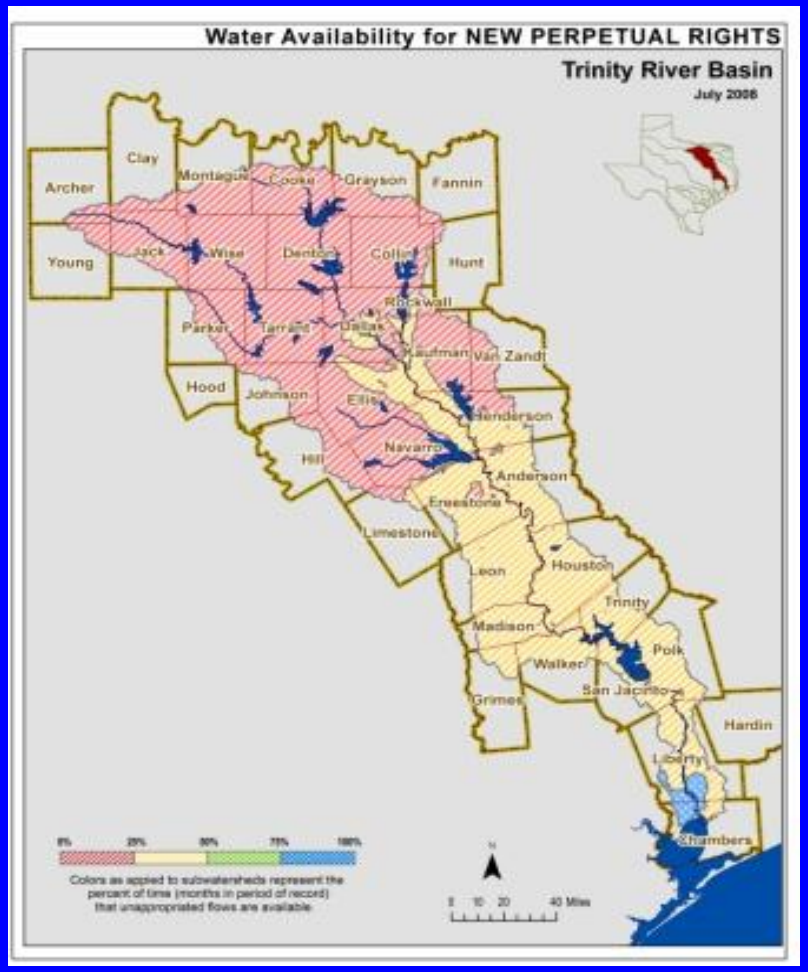
- USGS Core Network Gages
  - Regionalization
  - Major Flow
  - Streamflow Conditions

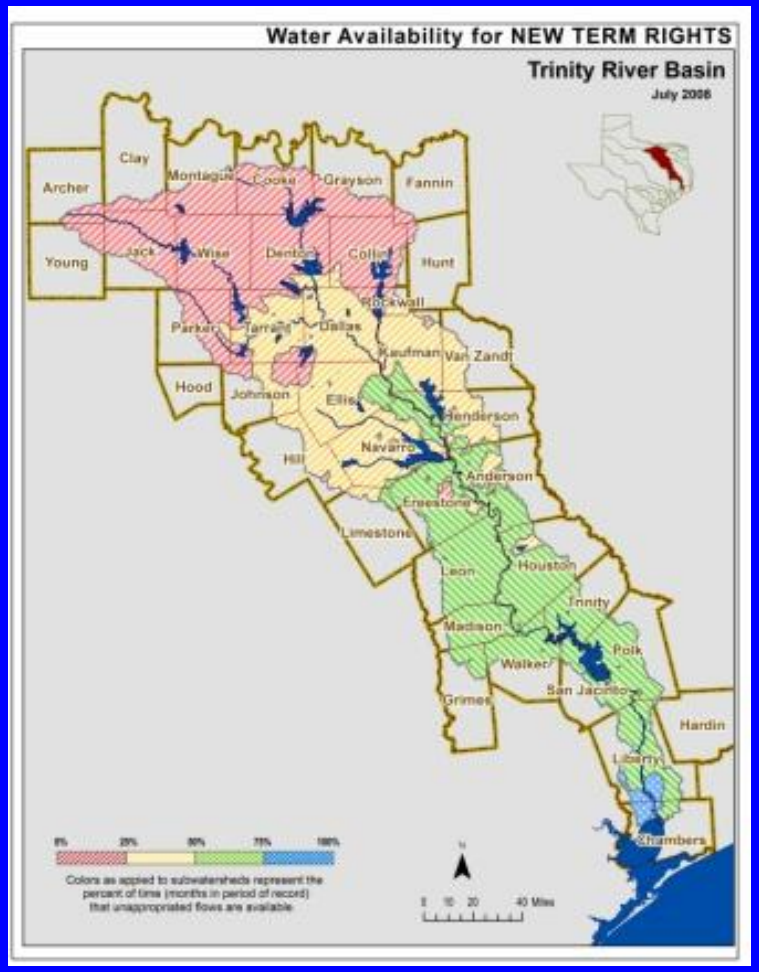
Additional Information



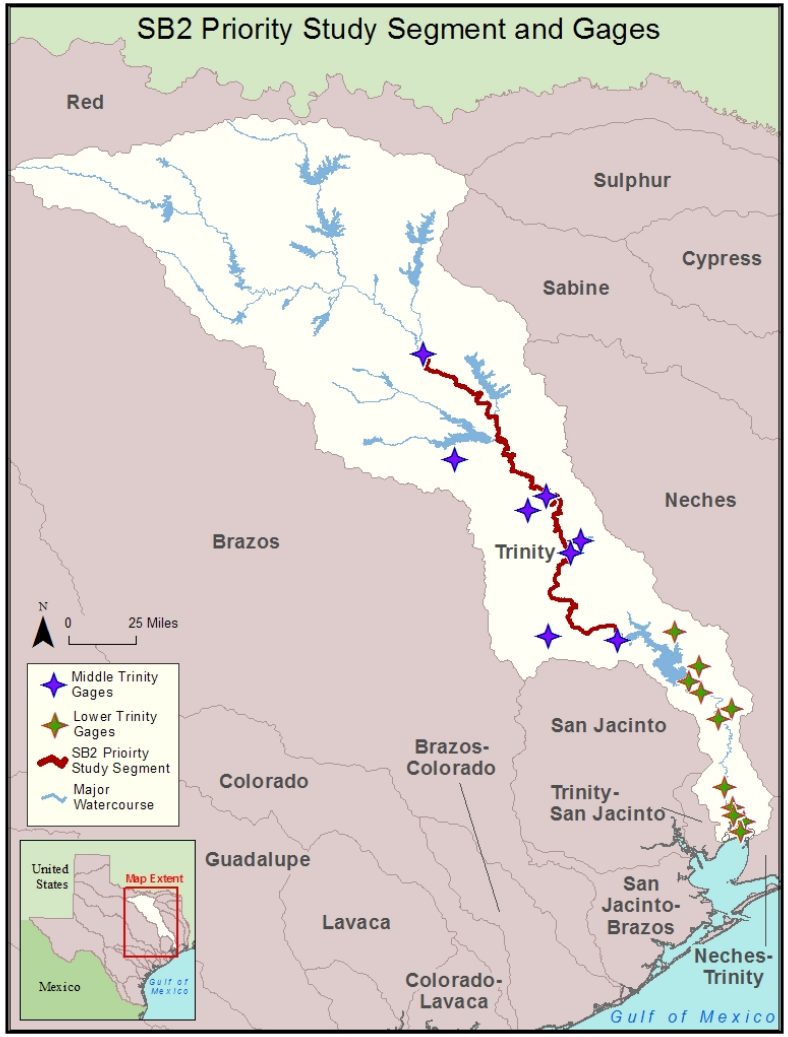


Additional Information (cont.)



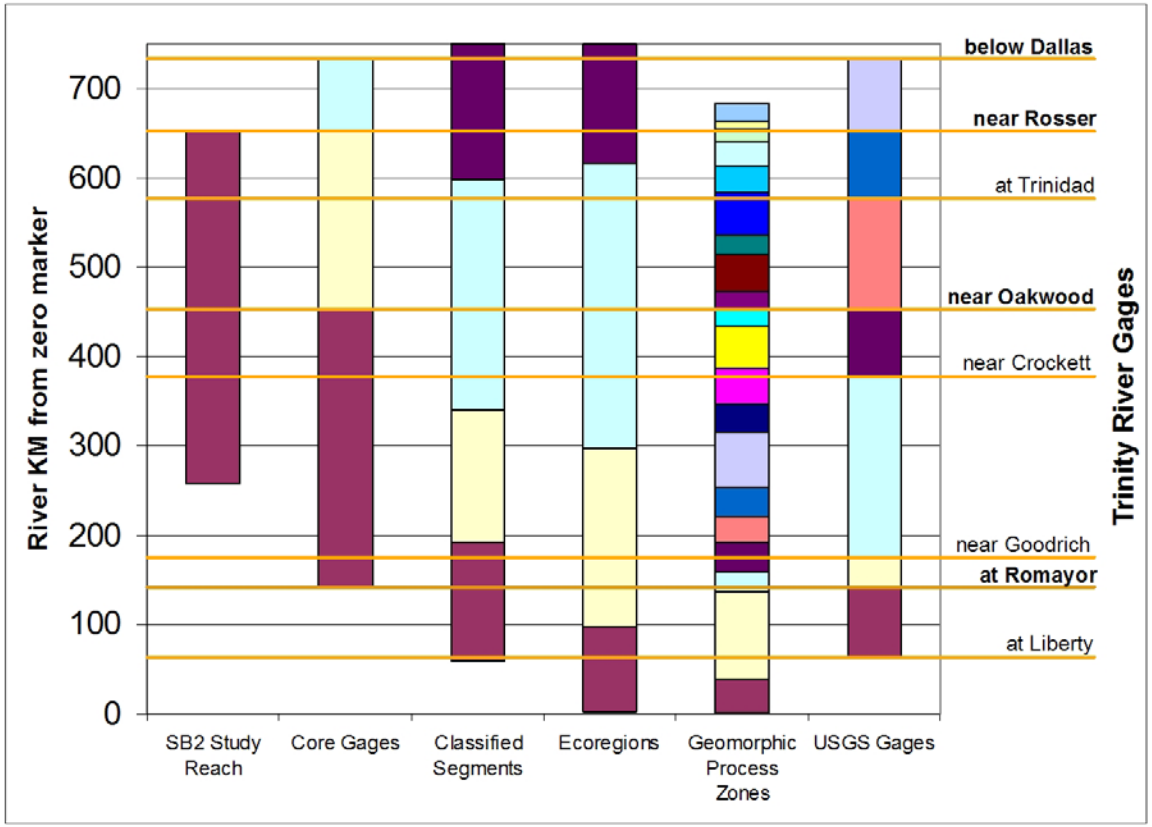


Incorporating the SB 2 Segment



- SB 2 segment should be considered
- Data from the SB 2 studies can inform adaptive management envisioned by SB 3.

Segmenting a Reach



Summary

- Hydrology
  - Do the USGS Core Network Gages have a sufficient period of record?
  - Are there redundant gages?
  - Can the most downstream gage represent both instream flows and freshwater inflows?
  - Are segments that include unique hydrologic features represented?

Summary (cont.)

- **Biology**
  - Are all ecoregions represented?
  - Are ecologically or biologically significant streams accounted for?
- **Water Quality**
  - Are water quality considerations accounted for?
  - Are stream segments with exceptional aquatic life use accounted for?

Summary (cont.)

- Geomorphology
  - Are the dominant geomorphic zones represented?
  - Are unique or problematic features or zones accounted for?
- Other Factors