

***Trinity River Literature  
Review Project***

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# Project History

- Funded by TRA/TCEQ
- Initial CRP Study – preliminary literature compilation and analysis of historical fish population study 2007-2009. Expected completion date June 09
- Current study (2008-2009) – compilation of remaining water quality, hydrology, and geomorphology data. Expected completion date – August 09

# Goals Project

- The primary goal of this project is to compile and organize existing historical information on the hydrology, biology and physical habitat, physical processes (geomorphology) and water quality of the Trinity River watershed.
- This will be used to produce a synthesis and summary report documenting past and present conditions and trends in the watershed for these variables.

# Current Products

1. An Access® ODBC compliant database AND an EndNote® annotated bibliography has been created for future use. Ongoing updates occurring. Key Word searchable (e.g. fish, invertebrates, flow, water quality, geomorphology)
2. These files and associated formats will allow future utilization of this data in scientific analyses and reports.

# Sources

- Electronic – journals, thesis, dissertation,
- Electronic Gray Literature: agency reports
- DEEP GRAY literature: Contacted agency staff in USGS, TCEQ, TPWD Inland Fisheries, River Studies, some University (UNT).
  - TPWD inland fisheries assessments (reservoirs mainly, some river)
  - TCEQ RWA's
- Mainstem, reservoirs, major tribs.

FishData : Database (Access 2000 file format)

Open Design New

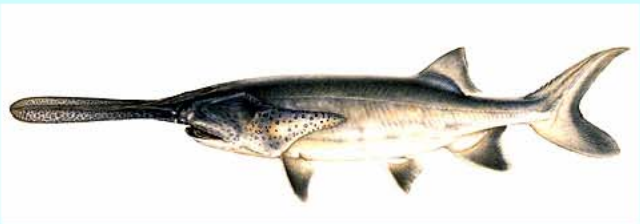
Objects

- Tables
- Queries
- Forms
- Reports
- Pages
- Macros
- Modules
- Groups
- Favorites

Create form in Design view  
 Create form by using wizard  
 Fish species query  
 Trinity River Data Entry Form  
 Trinity River Fish Data Entry Form

Trinity River Fish Data

### TRINITY RIVER FISH STUDY DATABASE ENTRY V.1



Record Number: [AutoNumber] Lat: [ ]

Literature Citation: [ ] Long: [ ]

Year Started: [ ] Duration (yr): [ ] Reservoir Y/N

Species Name: [ ] Estimated river mile: [ ]

Catch: [ ] CPUE: [ ] Waterbody Name: [ ]

Number of Species: [ ] Waterbody Code: [ ]

Collection Method: [ ] County: [ ]

Effort: [ ] Comments: [ ]

Temp. (C): [ ] Sp. cond. (uS): [ ]

pH: [ ] DL DO: = [ ] DO (mg/l): [ ] DL SD: = [ ] Secchi (cm) [ ]

DL Vel: = [ ] Velocity (f/s): [ ] DL Flow: = [ ] Flow (cfs): [ ]

Record: [ ] of 1

# Bibliography

- Each of the references in EndNote is accompanied by a minimum description including: year, author, title, call #, reference type, and abstract (Figure 1).
- In addition to having each reference hard copy and entered into EndNote all references have been scanned into PDF format files.

# Bibliography

- NOTE: Copyright rules, articles from journal sources.
- May not be able to be distribute widely without the parent journals permission.
- Largest value – gray literature compilation, historical agency studies (pre-1970's).



Call Number	Author	Year	Title	Journal	Ref Type	URL
511	Wellmeyer	2005	Quantifying downstream impacts of impoundment on flow regime and channel planform, lower Trinity River, Texas	Geomorph...	Journal Arti...	http://www.science...
512	Wen	2008	The role of organic carbon, iron, and aluminium oxyhydroxides as trace metal carriers: Comparison between the Trinity River and the Colorado River	Marine Che...	Journal Arti...	http://www.science...
513	Warnken	2004	Biogeochemical behavior of organic carbon in the Trinity River downstream of a large reservoir lake in Texas	Science of ...	Journal Arti...	http://www.science...
514	Tang	2002	Distribution and partitioning of trace metals (Cd, Cu, Ni, Pb, Zn) in Galveston bay waters	Marine Che...	Journal Arti...	<Go to ISI>://0001...
515	Hill	1987	Seston Dynamics in Two Texas Prairie Streams	American ...	Journal Arti...	http://links.jstor.org/...
516	Atkinson	2001	Assessing Atrazine Pollution Potential to a Drinking Water Reservoir Using Remote Sensing and Geographical Information Systems	Aquatic Ec...	Journal Arti...	
517	Simon	1992	Description of Eggs, Larvae, and Early Juveniles of the Bigscale Logperch, <i>Percina macrolepidia</i> Stevens, from the West Fork of the Trinity River Basin, Texas	The Southw...	Journal Arti...	<Go to ISI>://A199...
518	Neck	1990	Geological Substrate and Human Impact as Influences on Bivalves of Lake Lewisville, Trinity River, Texas	Nautilus	Journal Arti...	<Go to ISI>://A199...
519	Moon	2004	Stream flow estimation using spatially distributed rainfall in the Trinity River Basin, Texas	Transaction...	Journal Arti...	<Go to ISI>://0002...
520	Elder	1997	Grass carp ( <i>Ctenopharyngodon idella</i> ) in the Trinity River, Texas	Journal of F...	Journal Arti...	<Go to ISI>://A199...
521	Davis	1997	Revitalization of a northcentral Texas river, as indicated by benthic macroinvertebrate communities	Hydrobiolo...	Journal Arti...	<Go to ISI>://A199...
522	Blackwell	1995	Suitability of Food Resources and Physicochemical Parameters in the Lower Trinity River, Texas for Paddling	Journal of F...	Journal Arti...	<Go to ISI>://A199...
523	Walker	1973	PHYSICAL AND CHEMICAL LIMNOLOGY OF THE TRINITY RIVER, TEXAS, AND THE EFFECTS IMPOSED BY MAN		Thesis	http://proquest.umi...
524	Hubbs	1997	Changes in Fish Assemblages in East Texas Streams From 1953 to 1986	Texas Jour...	Journal Arti...	
525	Garnett	2008	Methods for sediment budgeting along the middle Trinity River		Thesis	http://proquest.umi...
526	Hagos	2007	Ground water level studies at Lagrave field monitoring wells and their sensitivity to recharge from rainfall and streamflow		Thesis	http://proquest.umi...
527	Williams	2003	Modeling shallow autocompaction in coastal marshes using cesium-137 fallout: Preliminary results from the Trinity River Basin	Journal of ...	Journal Arti...	<Go to ISI>://0001...
528	Phillips	2008	Antecedent alluvial morphology and sea-level controls on form-process transition zones in the lower Trinity River Basin	River Rese...	Journal Arti...	<Go to ISI>://0002...
529	Phillips	2003	Alluvial storage and the long-term stability of sediment yields	Basin Rese...	Journal Arti...	<Go to ISI>://0001...
530	Todd	2008	An assessment of Ground Penetrating Radar as a technique in quantifying sediment accumulation on the Trinity River Basin		Thesis	http://proquest.umi...
531	Adrian	2005	Local TV Investigates Who Is Polluting the Water	Nieman Re...	Journal Arti...	http://search.ebsco...
532	Ford	1995	PC-Based Decision-Support System for Trinity River, Texas	Journal of ...	Journal Arti...	http://search.ebsco...
533	VanMetre	1996	Identifying water-quality trends in the Trinity River, Texas, USA, 1969-1992, using sediment cores from Lake Lewisville	Environmen...	Journal Arti...	<Go to ISI>://A199...
534	Wen	1997	Colloidal and particulate silver in river and estuarine waters of Texas	Environmen...	Journal Arti...	<Go to ISI>://A199...
535	Alan Plumm...	1986	Trinity River Fish Kills Mitigation Study		Report	
536	Flicker	2008	Audubon View	Audubon	Journal Arti...	http://search.ebsco...
537	Arnold	1989	Effects of water quality, instream toxicity, and habitat variability on fish assemblages in the Trinity River, Texas		Thesis	http://proquest.umi...
538	Bolling	2003	Use of geographic information system and remote sensing technologies to describe mosquito population in the Trinity River Basin		Thesis	http://proquest.umi...
539	Celeste	2007	The Trinity War	DMagazine...	Magazine ...	

Simon, T. P. and J. B. Kaskey (1992). "Description of Eggs, Larvae, and Early Juveniles of the Bigscale Logperch, *Percina macrolepidia* Stevenson, from the West Fork of the Trinity River Basin, Texas." *The Southwestern Naturalist* 37(1): 28-34.

Specimens of larval and early juvenile *Percina macrolepidia* from Eagle Mountain Lake, Trinity River drainage, were examined with emphasis on meristic, morphometric, and pigmentary characteristics. Adhesive eggs, 1.1 to 1.4 mm in diameter, were found attached to stems or leaves of aquatic macrophytes. Larvae hatched at 4.9 mm total length and had between 22 and 26 preanal and 17 to 20 postanal myomeres. In these characteristics, the bigscale logperch resembles other members of the darter subgenus *Percina*. Aspects of the early life history are summarized and compared with literature accounts of other sympatric percid species.

# Progress to Date

- A total of 314 references.
- 156 references contain some kind of fish data and have been entered into the access database.
- The remaining 158 references contain other data on the Trinity River Basin such as: hydrology, geomorphology, etc and will be used in a more comprehensive Trinity River data compilation project.
- Published journal articles, magazine and website articles, state agency reports, thesis, and dissertations

# Trinity River Biological Data

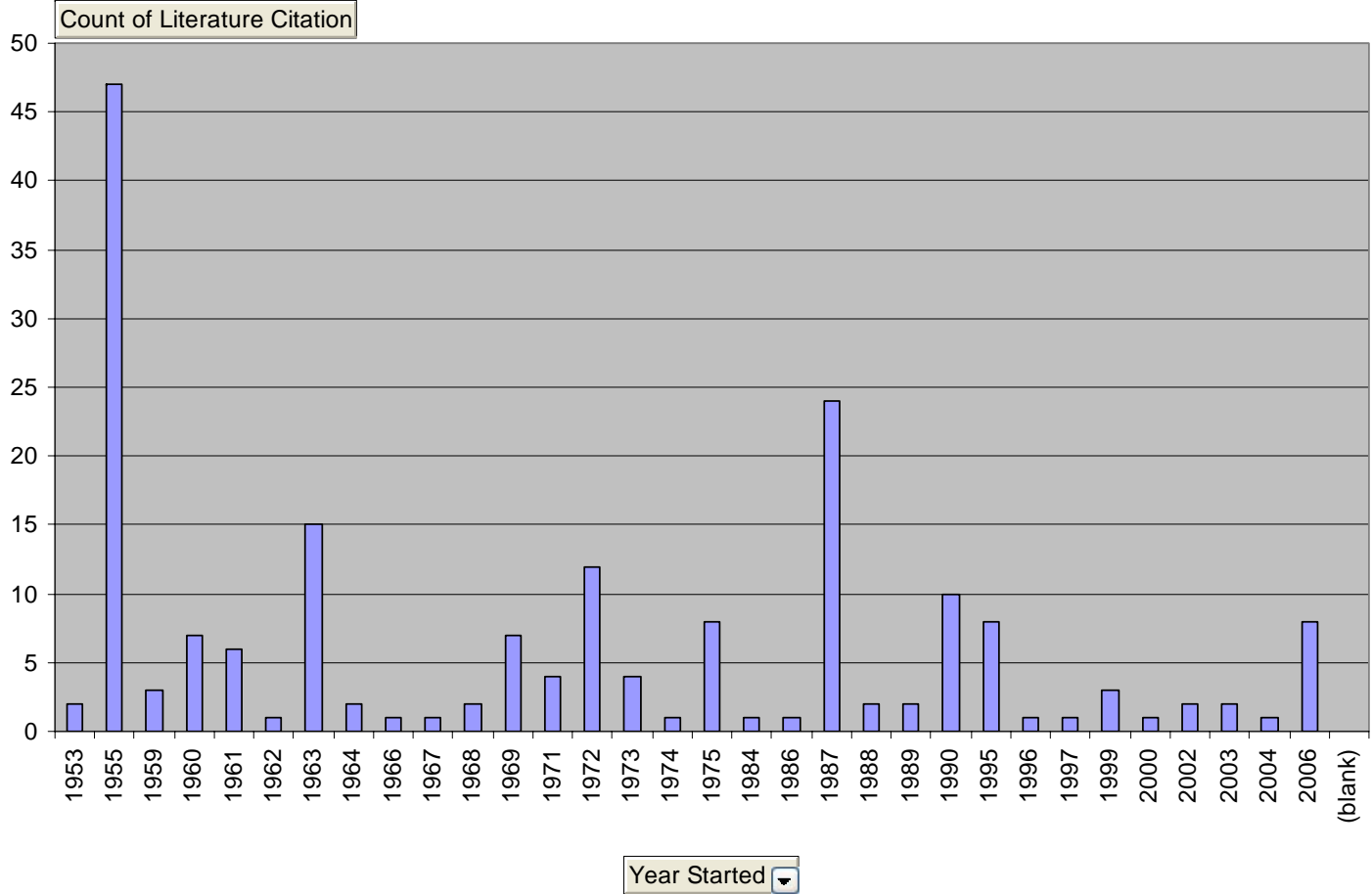
- To date we have 3705 unique records in the Access database.
- EIH is continuing in its efforts to get all fish and respective water quality data entered into the database, and QCed for final analysis.

# Trinity River Biological Data

- Each record in the Access database will contain (when available):
- reference, pub year, year study conducted, duration of study, species, catch, CPUE, # of species, collection method, effort, temp, Sp Cond., pH, D.O., selected water quality, secchi, velocity, flow, source of flow, meso habitat, ecoregion, lat., long., river mile, TCEQ segment, reservoir/waterbody, county, comment

# Individual Fish Collection Studies: (not complete list)

Graph illustrating the number of sites sampled by year on the Trinity River



# Some initial observations

- Many TPWD studies pre-1970's fisheries management – NOT community studies
- Water Quality related studies
- Little associated mesohabitat data
- Some with limited little flow data
- Flow vs. water quality vs. biota - limited
- Some jewels – Hubbs study (pre and post impoundments) – snap shots

# Current Work

- Complete compilation
- Conduct analysis of fish data
  - Due to different gear types will focus on species occurrence
  - Species occurrence vs. river mile, flow regime, mesohabitat, ecoregion, major water quality variables.
- Attempt to link to other data sources (flow, water quality, habitat) where possible.
- Create flow relationship

# Other Deliverables

- Compilation of:
  - water quality, flow data – CRP/TCEQ/USGS
  - Hydrology studies Geomorphology studies
  - Benthic invert studies
  - Limited GIS layers – existing agencies, working with TRA
- GIS map linked to bibliography/access database literature citations.



# Service

- Recent requests – Dr. Lester
- Presented preliminary database at TCAFS meeting
- Preliminary fish database provided to TRA, TCEQ for review last year.