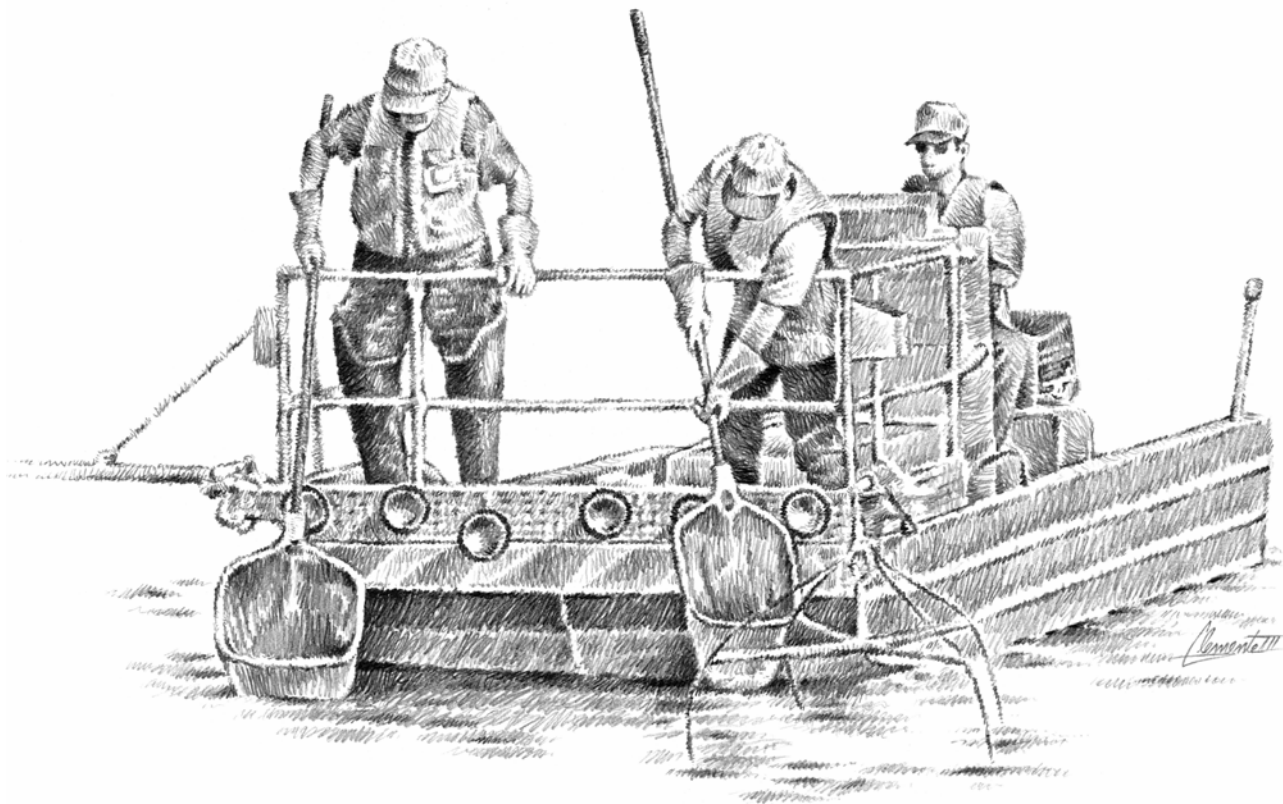


# INLAND FISHERIES ANNUAL REPORT 2005



IMPROVING THE QUALITY OF FISHING

Robert L. Cook  
Executive Director



Philip P. Durocher  
Director, Inland Fisheries



# INLAND FISHERIES ANNUAL REPORT 2005



# TEXAS PARKS AND WILDLIFE DEPARTMENT

## Commissioners

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Chairman, San Antonio

Alvin L. Henry  
Vice-Chair, Houston

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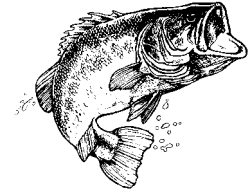
Mark E. Watson, Jr.  
San Antonio

Lee M. Bass  
Chairman-Emeritus  
Ft. Worth

The policy of Texas Parks and Wildlife is to fully comply with the intent of Title VI of the Civil Rights Act of 1964. Title VI provides that no person in the United States shall, on grounds of race, color, or national origin, be excluded from participating in, denied the benefits of, or subjected to discrimination under any program or activity receiving federal financial assistance.

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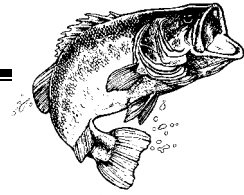
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# INLAND FISHERIES OVERVIEW

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## Mission

To provide the best possible fishing in Texas while protecting and enhancing its freshwater aquatic resources.

## Scope

The Inland Fisheries Division is responsible for managing the fishery resources in approximately 800 public impoundments and about 191,000 miles of rivers and streams together totaling 1.7 million acres. Over 2 million anglers, whose fishing activities result in at least \$2 billion in trip and equipment expenditures, use these resources.

## Responsibilities

To assess annually the status, utilization and value of freshwater fishery resources in all public waters in order to develop and evaluate management strategies to prevent resource depletion and to optimize yield.

To maintain or enhance existing fish stocks and species diversity by regulating means and methods of capture and harvest regulation of sport fishes, and by stocking public waters with hatchery-produced fishes.

To inform the Legislature, Commission, resource agencies and resource users of the status of the resource by publishing and presenting results of management and research assessments and the best scientific information available.

To conduct studies and assessments to enhance the protection and conservation of aquatic resources.

To conduct investigations and assessments on fish kills and pollution events to protect, mitigate, and restore impacted natural resources and habitats.

To provide recommendations to local, state and federal resource and regulatory agencies to protect and conserve aquatic resources and habitats.

To enhance annually the amount of quality aquatic habitat available to fish, and to anglers, by managing overabundant aquatic vegetation or increasing the habitat where deficiencies exist.

To increase outreach efforts and establish urban fishing programs to increase fishing opportunities for children, the elderly, and the physically or mentally challenged.

To expand fishing and other recreational opportunities in public waters.

To optimize the State's fishing opportunities in State parks and other state-owned facilities.

To restore and protect stocks of endangered or threatened native species.

To increase the State's fish production efficiency by maintaining and renovating existing hatcheries.

## Staff

Inland Fisheries has 219 permanent positions assigned to management, hatchery, research, outreach and administrative branches.

## Funding and Allocation

In FY 05, \$12,421,734 (not including fringe benefits, worker's compensation, or capital construction) was budgeted for Inland Fisheries. Federal Aid grants are expected to reimburse the Department \$6,285,446 on eligible Inland Fisheries activities. The allocation of Federal Aid monies was \$1,592,899 for Fish Hatchery and Research Facilities, \$803,663 for Research, \$3,479,659 for Management, and \$409,225 for Education and Outreach.

The budget is allocated for personnel, operation, and capital costs to implement three goals from the Department's Strategic Plan "Natural Agenda: A Strategic Plan for Texas Parks and Wildlife 1999 – 2008."

Acquire, improve, or access additional public fisheries and wildlife and their habitat. [Agency Goal #1, Objective #1, and Strategy #1.] \$4,488,819

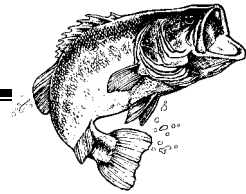
Design and implement outreach programs to expand fishing, hunting and wildlife-viewing opportunities for targeted user groups. [Agency Goal #2, Objective #2, and Strategy #1.] \$230,602.

Protect and manage Texas fish and wildlife resources by determining the status and condition of their habitats, monitoring and assessing their populations, and by undertaking scientific research to address ecosystem- and species-level issues. [Agency Goal #3, Objective #3, and Strategy #1.] \$7,702,313



# ADMINISTRATION

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## Goal

To direct all Inland Fisheries Division activities within Commission policy and budget, based on the results of Inland Fisheries monitoring and research programs, and to recommend management, operating, and funding strategies to the Executive Director, Texas Parks and Wildlife Commission and Legislature.

## Rationale

The Inland Fisheries administrative staff is responsible for providing program direction to achieve the mission and goals of the Department as expressed in the Texas Parks and Wildlife Department "Natural Agenda: A Strategic Plan for Texas Parks and Wildlife 1999 – 2003." The administrative staff, in concert with field units, guides the collection and interpretation of all information from fisheries survey, research, and evaluation efforts.

## Offices

### *Administrative Addresses*

Headquarters  
4200 Smith School Road  
Austin, Texas 78744  
Phone: (512) 389-4864

Research  
5103 Junction Hwy.  
Ingram, Texas 78025  
Phone: (830) 866-3356

Region I Management  
3407-B S. Chadbourne  
San Angelo, Texas 76903  
Phone: (325) 651-4846

Region I Hatcheries  
(A. E. Wood & Jasper)  
507 Staples Road  
San Marcos, Texas 78666  
Phone: (512) 353-0572

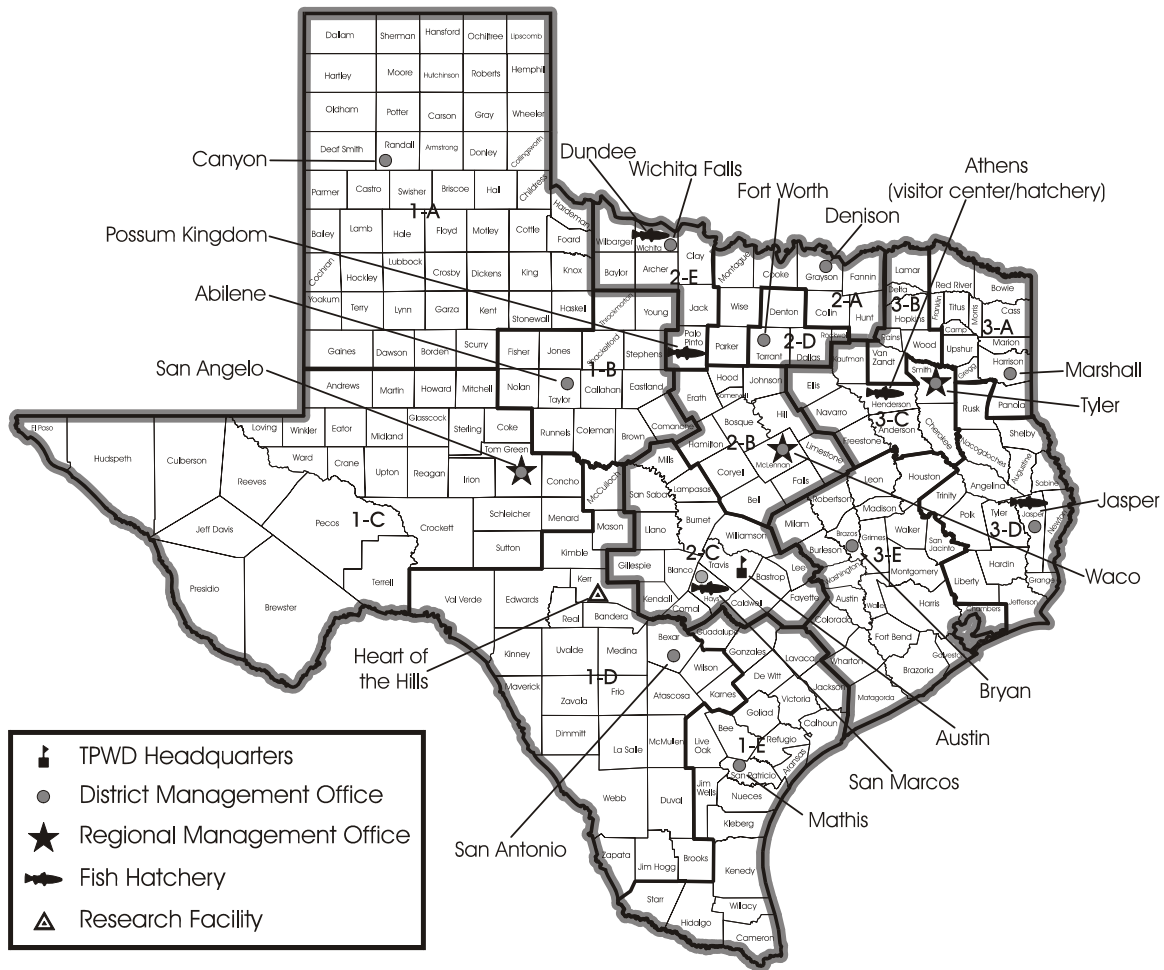
Region II Management  
1601 E. Crest Dr.  
Waco, Texas 76705  
Phone: (254) 867-7874

Region II Hatcheries  
600 S. HWY 16  
Grayford, Texas 76449  
Phone: (940) 779-2301

Region III Management  
11810 FM 848  
Tyler, Texas 75707  
Phone: (903) 566-1615

Education & Outreach  
5550 FM 2495  
Athens, Texas 75752  
Phone: (903) 670-2224

## Facility Locations Map



## Program Costs

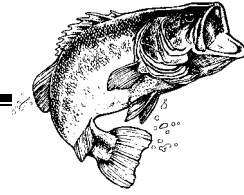
Total administrative cost for FY 05 was \$1,571,283.

## Organization

Administration organizational flow chart is located in *Appendix, Organization Charts*, page 61.

# RESOURCE MANAGEMENT – FISHERIES AND HABITAT MANAGEMENT

---



## Goal

To develop plans and conduct applied management activities for all freshwater impoundments, rivers, and streams.

## Rationale

Effective management of the freshwater resource depends on knowledge of the habitat available, the dynamics and structure of populations and their utilization. Standardized monitoring based on scientifically accepted techniques and survey procedures was begun in 1975 and is updated periodically whenever new procedures to improve the timeliness and precision of estimates are found. Data obtained from these surveys are used to monitor fish populations, habitat, and angler use of fisheries. They provide the foundation for the development of management plans/strategies aimed at improving and protecting recreational fisheries. Statewide management activities supported and evaluated through monitoring data include development of fish stocking plans, fish harvest regulations, and habitat improvement and mitigation. Public support of management activities is obtained through a variety of outreach activities that are designed to educate and inform the public about on-going management programs and fishing opportunities.

## Responsibilities

Monitor public freshwater fisheries resources, including habitat.

Monitor the activities of freshwater fishery users.

Recommend, implement, and evaluate fisheries management plans to protect, increase, or make better use of the fisheries resources.

Formulate and propose regulation for the means and methods of take and bag limits of sport fishes designed to maintain or enhance existing fish stocks.

Recommend, implement, and evaluate activities that enhance the amount of quality habitat available to fish and anglers.

Report on significant findings and results.

Educate and inform the public about Division programs and activities.

Coordinate and/or conduct fishing clinics, rodeos, etc., for young people, as well as for people not usually involved in fishing.

## Methodology

Standardized procedures are detailed in the Inland Fisheries Assessment and Aquatic Enhancement procedure manuals. These manuals provide staff with specific sampling procedures and minimum survey requirements for reservoirs, rivers, and streams. Current staffing does not allow for annual monitoring of all state fresh waters. All major public reservoirs are surveyed at least once every four years. Small reservoirs, rivers, and streams are surveyed on an "as needed" basis and on a schedule determined by local biologists. Listed below are the categories of water bodies sampled and their basic sampling requirements:

### *General Survey Reservoirs*

- Includes all major public reservoirs that are greater than 500 acres in size and are sampled on a four-year rotation basis.
- Sampling activities: Gill netting (spring), structural habitat and aquatic vegetation surveys (summer), electrofishing and trap netting (fall), access survey (year-round), and creel survey (optional).

### *Small Reservoirs*

- Includes all public reservoirs that are less than 500 acres in size. Reservoirs in this category include designated "Community Fishing Lakes" and most state park lakes.
- Sampling activities: Sampling methods typically follow general survey reservoir guidelines; however, choice of sampling methods is determined by local biologists.

### *Rivers and Streams*

- Includes all unimpounded segments of rivers and streams.
- Sampling activities: boat, backpack, and low-pulse DC electrofishing, seining, habitat survey, hoop netting, gill netting, access surveys and creel surveys. Choice of sampling methods is determined by local biologists.

## Program Costs

The total cost for the Management Program for FY05 was \$3,635,193.

## Accomplishments

### *Regulation Changes*

The following changes in fishing harvest regulations recommended by staff were adopted by the TPW Commission to improve angling quality, optimize angling opportunity, and protect fisheries resources.

- Lake Nasworthy (Tom Green County) - Harvest regulations for red drum were changed from the current 20-inch minimum length limit and daily bag limit of three fish to no length or bag limits.
- North and South Concho Rivers (Tom Green County) - Regulations were changed to:
  - The South Concho River above Lone Wolf Dam is under statewide regulations (12-inch minimum and 25 fish bag for channel and blue catfish, and all legal means and methods can be used).
  - The North Concho River from O.C. Fisher Dam to Bell Street Dam and the South Concho River from Lone Wolf Dam to Bell Street Dam has the following regulations: no minimum length limit and 5-fish daily bag limit in any combination for channel catfish and blue catfish, and pole and line angling only.
- Toledo Bend Reservoir - The minimum length limit on spotted bass in (Newton, Panola, Sabine, and Shelby Counties) was change from the current 12-inch minimum length limit to no minimum length limit.

### *Fish Stocking*

A total of 28,299,003 fish were stocked at management's recommendation into 409 locations from January 1, 2005 through December 31, 2005 (see *Appendix, Stocking Records*, page 101).

## *Fish Monitoring*

### **General Survey Texas Reservoirs**

Reservoir	Size	Creel	Angler Access	Electrofishing	Gill Net	Habitat Survey	Veg Survey	Seine	Water Quality	Trap Net
Toledo Bend	162,476	X		X	X		X			
Sam Rayburn	111,422	X		X	X		X			
Falcon	83,654		X	X		X	X			X
Texoma	74,686			X	X					
Amistad	63,680			X						
Richland-Chambers	41,356	X			X					
Tawakoni	37,879				X		X			
Caddo	27,472			X			X			
Lake Fork	27,264	X		X	X		X			X
Choke Canyon Reservoir	25,989	X		X	X		X			X
Ray Roberts	25,600	X		X						
Palestine	23,434	X		X			X			X
Whitney	22,180			X						X
Ray Hubbard	21,671	X		X	X		X			
Wright Patman	20,143				X					
Conroe	20,118	X		X			X			X
O. H. Ivie	19,149	X		X		X	X			X
Lake Corpus Christi	18,256				X		X			
Meredith	16,411	X		X	X					
Possum Kingdom	15,588			X	X					
Kemp (Baylor County)	15,104		X	X	X	X			X	
Arrowhead	14,969									X
E. V. Spence	14,640			X					X	X
Belton (Bell County)	12,385						X			
Bridgeport	11,954		X	X		X	X		X	X
Limestone	11,785	X			X		X			
Somerville	11,456				X		X			
Red Bluff	11,193				X				X	
Houston	10,459	X								
B. A. Steinhagen	9,719		X				X			
Bob Sandlin	9,116	X	X	X			X			
Twin Buttes	9,080			X						X
Eagle Mountain	8,505				X					
Granbury	8,310			X						X
Waco	7,173			X			X			X
Grapevine	6,684			X						
Brownwood	6,509				X					X
Joe Pool	6,469			X		X	X			X
Lyndon B. Johnson	6,449				X		X			
Stillhouse Hollow	6,429			X			X			X
Kickapoo	6,028		X	X		X			X	X
Pat Mayse	5,865		X		X					
O. C. Fisher	5,440			X	X					X
Medina	5,410		X		X	X	X			

General Survey Texas Reservoirs – January 2005 thru December 2005

Reservoir	Size	Creel	Angler Access	Electrofishing	Gill Net	Habitat Survey	Veg Survey	Seine	Water Quality	Trap Net
Martin Creek Reservoir	4,981	X	X	X		X	X			
Navarro Mills	4,336				X					
Fort Phantom Hill	4,213			X	X					X
Granger	4,009	X			X					X
Benbrook	3,635					X				X
Cypress Springs	3,461		X				X			
Murvaul	3,397				X		X			
Bardwell	3,138				X					
Diversion (Baylor County)	3,133				X					
Calaveras	3,110	X		X	X					
Coleto Creek Reservoir	3,100	X		X		X	X			X
Alan Henry	2,884	X		X						X
Mountain Creek Lake (Dallas County)	2,493				X					
Palo Duro Reservoir	2,413				X					X
Graham	2,396			X						X
Fayette County	2,394	X		X			X			
Aquilla	2,366						X			
Tyler East	2,276	X		X			X			
Tyler West	2,224	X		X						
Nacogdoches	2,212	X		X	X		X			
Gibbons Creek Reservoir (Grimes County)	2,110						X			
Fairfield	2,034				X					
Greenbelt	2,025			X						X
Monticello	2,001	X		X						
Coleman City (Coleman County)	2,000				X					
Arlington	1,939			X						
Athens	1,799			X			X			X
Tradinghouse Creek	1,793				X		X			
Colorado City	1,612				X			X		
Austin	1,599			X	X		X			
Buffalo Creek	1,576			X						X
Amon G. Carter	1,540			X	X					
Sulphur Springs	1,478		X	X		X	X			X
White River Reservoir	1,418				X					
Lone Star	1,397				X					
Nasworthy	1,380				X					
Welsh	1,334			X						
Houston County	1,330				X					
Nocona	1,323			X	X					
Victor Braunig	1,298	X	X	X	X	X	X			
Lake Georgetown	1,297			X						
Walter E. Long Reservoir	1,269	X		X	X		X			
Brandy Branch	1,257			X			X			
Sheldon	1,230				X					
Wichita	1,224	X			X					
Jacksonville	1,208				X		X			

General Survey Texas Reservoirs – January 2005 thru December 2005

Reservoir	Size	Creel	Angler Access	Electrofishing	Gill Net	Habitat Survey	Veg Survey	Seine	Water Quality	Trap Net
White Rock Lake	1,088	X		X						
Casa Blanca	1,055				X					
Cisco	1,050			X						
Bonham City	1,020				X					
Gilmer Reservoir	1,010	X	X		X		X			
Mackenzie	896				X					
Bastrop	865						X			
Quitman	799			X		X	X			X
Inks	768			X		X	X			
Kirby	740	X		X	X					X
Lake Bryan	737			X			X			X
Kurth	726						X			
H-4	696			X						X
Coffee Mill	650		X	X		X	X		X	X
Holbrook	650		X		X					X
Hawkins	634			X			X			
Baylor Creek	610			X						X
Abilene	595			X						
Marble Falls	573			X		X	X			
Balmorhea	573			X		X			X	X
Waxahachie	553			X			X			X
Hords Creek	510			X						X
New Ballinger	500			X	X				X	X
Gladewater City	481		X	X			X			
Town Lake	469			X			X			
Pinkston	447						X			
Alvarado Park	437			X						X
Dunlap	410			X		X	X			X
McQueeney	396			X		X	X			X
Davy Crockett	355		X	X		X	X		X	X
Purtis Creek State Park	349			X	X					
Buffalo Springs	241				X					
Mill Creek	237		X	X	X		X			
Lake Wood	229			X						X
Raven	204	X		X						
San Augustine City	200						X			
Placid	198			X	X					X
Averhoff	174		X		X	X	X			
<b>Totals</b>	<b>1,204,326</b>	<b>31</b>	<b>19</b>	<b>79</b>	<b>60</b>	<b>21</b>	<b>59</b>	<b>0</b>	<b>10</b>	<b>46</b>



**Small Texas Reservoirs**

Reservoir	Size	Creel	Angler Access	Electrofish	Gill Net	Habitat Survey	Veg Survey	Seine	Water Quality	Trap Net
Marine Creek (Ft. Worth)	250			X			X			
Lake Findley	247				X					
Timpson	223						X			
Moss Creek City	160								X	
Bellwood	160						X			
Clark	150			X						
Bachman Lake (Dallas)	132			X						
TXU Contract Lake #1	110			X						
Canyon Lake Project #6	82			X						
75-Acre Lake	75			X						
Meadow Lake (Round Rock)	59			X						
Coleman (Hopkins County)	56			X						
Waterloo Lake	52			X						
Christoval	50		X	X		X				
Meridian State Park	50			X						
Lower Waterworks	32			X						
Wolf Creek	28			X						
Canyon Lake Project #2	22			X						
Old Coleman	21			X						
Maxey Park	21			X						
Upper Waterworks	21			X						
Bright Lake	18			X						
Canyon Lake Project #1	17			X						
Nelson Park	15			X						
Elmore City Park	14			X						
Buster Long	10			X						
Medical Center South	7	X		X						
Mackenzie Park Lake	6			X						
Seymour Golf Course	6									X
Higginbotham Park	6			X						
Mary Joe Peckham Park	5	X								
Casey Park	5			X						
Palmetto State Park	5			X						
Guy Park Lake	4			X						
McCullough	4			X						
Huneke Park Lake	3			X						
Ribble Park	3			X						
Central Park Pond #1	3	X								
Comanche Trails Park (Odessa)	1								X	
C. J. Kelly Park Pond	1								X	
Beal Park Lake	1								X	
Mahon Park	1			X						
Elm Creek Buffalo Wallow	1			X						
Credit Lake	1			X						
<b>Totals</b>	<b>2,138</b>	<b>3</b>	<b>1</b>	<b>34</b>	<b>1</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>4</b>	<b>1</b>

## Texas Stream Surveys

River	Miles	Creel	Angler Access	Electrofish	Gill Net	Habitat	Veg. Survey	Seine	Water Quality	Hoop Net	Trap Net
Canyon Tailrace	40	X		X							
Wichita River	19					X		X	X	X	
Beals Creek	0.1								X		
Totals	59.1	1	0	1	0	1	0	1	2	1	0

## *Habitat Enhancement*

### Vegetation Planting

Wichita

### District

2E

### Acres (3)

3

### Brush Shelter Installation

Arrowhead  
Brandy Branch  
Canyon  
Corpus Christi  
Texoma  
Wichita

### District

2E  
3A  
2C  
1E  
2A  
2E

### Acres (9.60)

2  
3  
1  
2.50  
0.10  
1

### Lake Fertilization

Bastrop State Park  
Buescher State Park  
Cleburne State Park  
Meridian State Park

### District

2C  
2C  
2B  
2B

### Acres (181)

6  
25  
107  
50

### Shoreline Improvements

Wichita Barrow Pit

### District

2E

### Acres (2)

2

### Vegetation Control (Mechanical)

Athens  
Kurth  
Palestine

### District

3C  
3F  
3C

### Acres (1)

0.25  
0.50  
0.25

### Vegetation Control (Biological)

Caddo  
Choke Canyon  
Coletto Creek  
Jacksonville  
Lake Fork  
Lake O' The Pines  
Plum Lake  
Purtis Creek State Park  
Sheldon  
Texana  
Toledo Bend  
Tyler Nature Center Pond

### District

3A/3F  
1E  
1E  
3C  
3F  
3A  
2E  
3C  
3E  
1E  
3F  
3C

### Acres (1,666.50)

60  
40  
40  
5  
10  
50  
5  
5  
1200  
40  
210  
1.50

<u>Vegetation Control (Chemical)</u>	<u>District</u>	<u>Acres (863.43)</u>
Armand Bayou	3F	5
Athens	3F	0.50
Caddo	3F	308
Conroe	3E	93
Fairfield	3F	6
Joe Pool	3F	10
Lake Fork	3F	54
Lyndon B. Johnson	1E	44.80
Purtis Creek State Park	3F	2
Quitman	3F	1
Sheldon	3E	75
Steinhagen	3F	53.75
Tawakoni	3F	4
Toledo Bend	3F	206.38

### *Outreach Events*

Inland Fisheries staff members were event leaders at 412 outreach events for targeted user groups (youth under 17, minorities, women, and physically challenged) in which 25,567 individuals participated.

#### Events Summary:

	Youth 17 & under	Adults	Total
Males (1)	11,262	2,186	13,448
Females (2)	9,290	2,829	12,119
Minorities	7,770	929	8,699
Phys. Challenged	900	194	1,094
Total (1+2)	20,552	5,015	25,567

### *General Activities*

- Management and habitat staff conducted 372 surveys on 173 reservoirs covering 1,206,464 surface acres of water. Staff conducted 7 additional surveys on 3 rivers and streams (59.1 miles).
- Management and Habitat Staff conducted habitat improvement activities that impacted 2,717 surface acres on 30 public reservoirs.
- Recommendations from management staff resulted in the stocking of 22,282,979 fish of 14 different species in 401 different water bodies
- Inland Fisheries staff investigated 84 fish kills on 73 public water bodies.
- Management staff issued 306 news releases and published 60 popular articles dealing with TPWD management programs and activities.
- Management staff met with Louisiana Department of Wildlife and Fisheries to discuss standardization of fishing regulations, giant salvinia, and joint sampling operations on Toledo Bend and Caddo reservoirs.

- Management and hatchery staff continued participation in an on-going nationwide effort to study the largemouth bass virus (LMBV). We collaborated with other state/federal governmental agencies, universities, and laboratories on various research projects.
- New Genetic Analysis procedures/data forms were developed and approved (effective 10-12-05). These procedures replaced our existing electrophoresis procedures. Staff reviewed our 4-year sampling rotation (effective 10-12-05). Minor rotational changes were made in District 3D (Jasper) to increase sampling and operating efficiency.
- Management staff continued work with the Lake Fork Sportsman's Association and the Lake Fork Chamber of Commerce to monitor trophy bass catches at Lake Fork Reservoir. Over the past three years (March 2003 – February 2006), anglers from 42 different states have reported catching 5,227 trophy-size largemouth bass ( $\geq 7$  lbs). Over 16% of these fish were larger than 10 lbs and 32% were longer than the current size limit (24 inches). A presentation was given to the TPW Commission on this project during 2005.
- Management staff updated and improved our standardized Federal Aid Project F-30-R Performance Report format (annual DJ Management Report). Updates included the addition of various statistical measures in response to recommendations coming from our Division's Science Review and automated generation of figures, and population indices, directly from the FMF database.
- Extensive training was provided to fisheries management staff on GIS technology in fisheries management and habitat related work.
- Management staff organized and participated in a "Bass Management in Texas" symposium sponsored by the Texas Chapter of the American Fisheries Society.
- Inland Fisheries staff worked members of the Texas Chapter of the American Fisheries Society and Southern Division of the American Fisheries Society (SDAFS) to plan and organize a SDAFS Spring Meeting to be held in San Antonio, TX in February 2006. Staff also attended the Annual Meeting of American Fisheries Society in Anchorage Alaska and made a proposal to host the 2009 Annual Meeting in San Antonio, Texas.
- Management staff prepared a comprehensive Integrated aquatic vegetation management plans for lakes Conroe and Cypress Springs. A similar plan is being carried out at Lake Austin in Central TX. These plans required extensive work with local controlling authorities, property owners, angling groups, media, political representatives, and the general public.
- Management and habitat staff continued intensive work on Sheldon Reservoir in cooperation with the Lake Sheldon Environmental Learning Center Project and TPW Commissioner Alvin Henry.
- Inland Fisheries staff assisted TPW offices and TPW staff (all Divisions) with damages and needs arising from Hurricane Rita. Damage was incurred to the Jasper Fish Hatchery and our Fisheries Management and Habitat Office's near Jasper.
- Management and habitat staff controlled 854 acres of nuisance aquatic vegetation on 14 public water bodies statewide. Giant salvinia, water hyacinth and hydrilla remain a significant threat to public water bodies statewide. Inland Fisheries continued cooperative work in this area with the State of Louisiana, river controlling authorities, local government entities and public organizations. A presentation was given to the TPW Commission on giant salvinia issues during 2005
- Construction of the new Inland Fisheries Region 3 Office was completed in June, 2005.
- Region 3 administrative staff continued work with the East Texas Woods and Waters Foundation to raise funds for and do cooperative projects at the Tyler Nature Center. The Tyler Nature Center serves as a major focal point for fisheries-related outreach in the NE Texas area.

- Management staff continued active involvement with Houston Outreach Initiative. Staff took a leadership role in a "Best Practices Evaluation" for fisheries improvement projects in the Houston MSA.
- Management staff continued participation in a statewide fish tissue monitoring program; a cooperative program conducted by Texas Parks and Wildlife Department, Texas Commission on Environmental Quality, and Texas Department of Health. This 3-year project is aimed at collecting data on fish tissue contaminants from 81 reservoir and river sites throughout the state.
- Completed 5-year annual renewal documents and a Section 7 review for statewide survey work performed under Federal Aid Project F-30-R, Sport Fish Restoration Grant for Fisheries Survey and Management work in Texas. The grant was renewed for an additional 5 years.
- Management and Research staff joined forces to complete fieldwork associated with a major catfish study on Lake Livingston. This study, aimed at describing and comparing river and reservoir population of all three catfish species and evaluating sampling procedures, is probably the largest catfish study ever undertaken by a state agency. Results will be beneficial to the management of these species in the Southern U.S.
- Management, research, and hatchery staff initiated a field study to examine performance of offspring produced from selectively bred Sharelunker largemouth bass (13 lb or larger). Advanced-size fingerling bass were stocked into three reservoirs to examine the growth and trophy characteristics of these unique fish. This project is an evaluation component of our Division's "Operation World Record Program".
- Management staff worked in cooperation with the City Public Service Board of San Antonio to obtain \$20,000 for the purchase of advanced fingerling largemouth bass to stock in Lake Braunig and initiated a special study to evaluate the impacts of the stocking.
- Management staff assisted the Corps of Engineers and the United States Department of Agriculture with the collection and monitoring of water hyacinth weevil, hydrilla fillies and giant salvinia weevils in several South Texas reservoirs.
- Management staff continued a long term golden algae monitoring program at three West Texas reservoirs that have experienced catastrophic kills.
- Management staff co-sponsored a Mini-Expo in El Paso and provided a fishing tank and channel catfish.
- Management staff organized one state-wide biologist meeting to review regulation proposals and all special projects.
- Management staff initiated a project to investigate the promotion of carp fishing as an alternative species including economic impact studies and attitude and opinion studies.
- Management staff initiated a Tackle Loaner Program in Amarillo in cooperation with the Amarillo Discovery Museum that will serve as a pilot program for other Texas Urban Fishing sites.
- Management staff created bathymetric maps of six small reservoirs in the Abilene area utilizing GIS technology to aid anglers on water bodies where no commercial maps were available.
- Inland Fisheries Kills and Spills staff along with management staff continued long term monitoring of Golden Algae on 6 Central Texas reservoirs.
- Management staff continued to coordinate and partner with the Oklahoma Department of Wildlife Conservation to sample the fisheries and monitor Golden Algae blooms on Lake Texoma.
- Management, research and hatchery staff all worked together on the continued development of the Texas Urban Fishing program.

- Management staff continued partnering with the Guadalupe River Chapter of Trout Unlimited to stock rainbow trout as well as secure access for anglers.
- Inland Fisheries staff led 412 outreach events to provide fishing opportunities and education to targeted user groups and reached 25,567 individuals.
- Management and research staff participated in a science review of our division, conducted by the American Fisheries Society. The results of this review were highly favorable but they also identified some areas needing improvement. Efforts were initiated to address the results of this review.
- Wetlands Conservation staff coordinated with the Corps of Engineers, U.S Fish and Wildlife Service and other resource agencies on over 375 projects reviewed for various permits, planning or grants to assess the impacts to State fishery resources, including Corps 404 permits, FEMA Hazard Mitigation grants and Department permits and grants.
- Wetlands Conservation staff coordinated with Wildlife Division on updating a Memorandum of Understanding with Texas Department of Transportation covering advance review of transportation projects and the commitment to mitigate for highway impacts to both regulated and unregulated habitats.
- Wetlands Conservation staff coordinated with federal, State, and local authorities and planners on developing plans for:
  - Lake Ralph Hall, a proposed 7000-acre reservoir on the North Sulphur River, would affect, in part, the Ladonia Unit of the National Grassland.
  - Fastrill Reservoir, a proposed 14,000-acre reservoir on the Upper Neches River, would overlap a major portion of the proposed Upper Neches National Wildlife Refuge. It is proposed as a part of the future water supply plan for the Dallas-Fort Worth area.
  - Hearts Bluff Mitigation Bank, a proposed 1387-acre mitigation area within the flood plain of the Sulphur River in Titus County within the footprint of a future proposed Marvin Nichols Reservoir
  - Bunker Sands Mitigation Bank, a proposed 3500-acre bank lying along, and cycling water from the Trinity River just southeast of Dallas. This project would restore overbank flooding and riparian vegetation to an area converted to agriculture in the 1920s.
  - Castle Drive Mitigation Bank would establish a small, 75-acre bank within the City of Garland, to enhance the riparian aquatic functions to an area previously mined for aggregates.
  - The Middle Neches Mitigation Bank (Pineywoods Mitigation Bank) would establish a bank on 33,000 acres adjacent to and including the Neches River between two national forests to compensate for loss of wetland functions due to construction of a new Interstate Highway 69 through the Pineywoods Ecoregion in East Texas. As a partner with Texas Department of Transportation, Department staff have performed a major part of the field work for this effort.
- Wetlands Conservation staff coordinated with the Corps of Engineers and other agencies on ongoing, multi-year River Basin Studies for Flood Damage Reduction and Ecological Restoration in the Nueces River basin (including several tributary rivers in the Hill Country and the Nueces Estuary), the Colorado River basin in Austin and Wharton, San Antonio River basin in San Antonio, and the Trinity River basin at Dallas.
- Wetlands Conservation staff assisted with siting studies for the proposed East Texas Fish hatchery near Jasper.
- Wetlands Conservation staff coordinated, edited and published the Wetlands Newsletter, distributed twice a year to a list of over 800 readers, featuring articles on conservation efforts by agencies and private landowners in Galveston Bay and East Texas, hydrologic studies at Armand Bayou, and Master Naturalist classes.

- Wetlands Conservation Staff performed field investigations and made recommendations relative to the issuance of Department "Sand and Gravel" permits for disturbance or taking of substrate materials in the Nueces, Frio, Sabinal, Guadalupe, San Marcos, Blanco, Llano, Colorado, Brazos, Sabine and North Sulphur Rivers; Camp Wood Creek, Onion Creek, and other smaller streams to assure that the activity would not harm the fishery.

### *Special Projects*

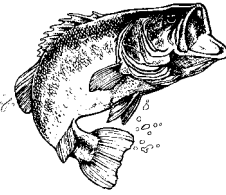
Special projects are included in the **Fisheries Research** section on page 22. These activities are research oriented and are coordinated through fisheries research biologists.

### **Organization**

Fisheries Management flow chart is located in Appendix, Organization Charts, pages 62 - 65.

# RESOURCE MANAGEMENT – FISHERIES RESEARCH

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## Goal

To provide scientifically sound information leading to the understanding and management of aquatic resources, their production, improvement and utilization.

## Rationale

The scope of fisheries research includes statewide investigations ranging from short-term studies for the purpose of immediate decisions to long-term studies for better understanding of fisheries resources and evaluation of management programs. Communication of basic study findings through publications, press releases and special presentations, as well as providing technical assistance to other functions within Inland Fisheries is the product of this function. Fisheries research is a cooperative function maintaining close liaison with private and governmental entities for information needed to solve common problems of fisheries management programs.

## Facility

### *Description of Heart of the Hills Fisheries Science Center*

- Location – Heart of the Hills Fisheries Science Center is located on an old state fish hatchery approximately 17 miles northwest of Kerrville, Texas on State Highway 27.
- Construction Date – Original construction was completed in 1925. Following subsequent land acquisitions in 1927 and 1942 and additional pond construction, the facility contained 44 hatchery ponds and associated buildings on approximately 56 acres of land.
- Renovation History – A major renovation effort occurred beginning in 1969 when the existing fish hatchery was converted into the current fisheries research station. The 44 hatchery ponds were consolidated to form 25 research ponds ranging in size from approximately 0.5 to 2.0 acres. In 1970, a combination office building and wet laboratory was constructed. Also at that time, an existing 4,800-ft<sup>2</sup> storage building was converted into a wet laboratory. In 1978, a pole barn was constructed to house various field equipment. In 1980, a vehicle maintenance building was constructed, and in 1982 a metal shop building was constructed. An artificial stream system was installed in 1998 and enlarged in 2001. A 30' x 60' metal shop building was constructed in 2004.

## Responsibilities

Conduct special investigations on unique problems identified through management surveys.

Develop new techniques to enhance fisheries resources.

Evaluate new techniques and procedures to monitor resources and resource users.



Provide assistance to other functions regarding literature searches and statistical data analyses.

Evaluate biological means of eradication of harmful or potentially harmful exotic plants and management of indigenous plants.

Aid in identification and management of exotic fish, shellfish and aquatic plants.

## Program Costs

The total cost for the Research Program for FY05 was \$838,151.

## Accomplishments

### *State-Supported Research Studies*

Work was conducted on the following State-supported research studies:

Title: **Golden Alga Taskforce**

Principal Investigators: Aaron Barkoh and numerous members of Inland Fisheries

Objective: To explore ways of management and control of golden alga in Texas.

Completion Date: Ongoing

Title: **Inland Fisheries Creel Procedures Workshop**

Principal Investigators: Warren Schlechte, John Prentice, John Taylor, Randy Myers and Fred Janssen

Objective: To provide training on technical aspects of current creel procedures to assist all Inland Fisheries personnel with efficient use of the creel tools.

Completion Date: 2005

Title: **Determining Sample Size Requirements for Age Estimation**

Principal Investigators: David Buckmeier and Warren Schlechte

Objective: To determine sample size requirements for calculating growth, age structure and mortality.

Completion Date: 2006

Title: **Texas Urban Fishing Program**

Principal Investigators: Bob Betsill, Rafe Brock, David Buckmeier, Jason Henegar, Jeff Henson, Mark Howell, Tom Hungerford, John Tibbs, and Brian Van Zee

Objective: To develop and evaluate a program that provides fishing opportunities in all urban areas and emphasizes youth participation.

Completion Date: Ongoing

Title: **Establishment of Reservoir Nutrient Criteria for Texas**

Principal Investigators: Research biological staff, along with Resource Protection staff

Objective: To draft a proposed approach for monitoring and evaluating nutrient levels in Texas reservoirs that will maintain current water quality and prevent further degradation.

Completion Date: 2005

**Title: Statewide Freshwater Mussel Status Evaluation**

**Principal Investigator:** Robert Howells

**Objective:** To document reports about the status of Texas freshwater mussel resources, perform occasional field surveys on an approved case-by-case basis, prepare annual summaries of these data, and provide mussel-related information as requested.

**Completion Date:** Ongoing

**Title: Fishes of Texas Book**

**Principal Investigator:** Gary Garrett

**Objective:** Produce a comprehensive listing of the fishes of Texas, their biology and distribution.

**Completion Date:** Ongoing

**Title: Life History Requirements of the Devils River Minnow**

**Principal Investigator:** Gary Garrett

**Objective:** Determine life history requirements of Devils River minnow in order to aid in implementation of the Devils River Minnow Conservation Agreement.

**Completion Date:** 2006

**Title: Guadalupe Bass Restoration Project**

**Principal Investigator:** Gary Garrett

**Objective:** Restore hybridized populations of Guadalupe bass to genetic purity.

**Completion Date:** Ongoing

**Title: Channeled Applesnail Status Survey**

**Principal Investigator:** Robert Howells

**Objectives:** 1) To assist the U.S. Department of Agriculture's Mollusk Action Plan Working Group in developing a plan to address problems related to these harmful exotic snails; and 2) To assist ongoing academic research on these snails at two Texas universities.

**Completion Date:** Ongoing

**Title: Exotic Species Identification and Evaluation**

**Principal Investigator:** Robert Howells

**Objective:** To provide species identification, technical information, and regulation advice to the public, biologists, and law enforcement personnel concerning exotic species that may be harmful or potentially harmful to Texas natural resources.

**Completion Date:** Ongoing

## ***Sport Fish Restoration Federal Aid-Supported Studies***

Work was conducted on the following Federal Aid-supported (Sport Fish Restoration) studies:

Title: **Catfish Gear Selectivity Evaluation**

Principal Investigator: David Buckmeier

Objective: To determine a preliminary evaluation of the effectiveness and bias of gears used to sample catfishes with the intent of developing a formal evaluation in future years.

Completion Date: 2007

Title: **Reducing Short-term Predation and Movement of Stocked Fingerling Largemouth Bass**

Principal Investigators: David Buckmeier and Warren Schlechte

Objective: To estimate effects of habituation and habitat on predation and movement of stocked largemouth bass fingerlings.

Completion Date: 2005

Title: **Contribution of Stocked Northern Largemouth Bass in Selected Texas Reservoirs Composed Largely of Florida Largemouth Bass.**

Principal Investigators: John Prentice and Gary Garrett

Objective: To determine if stocking 10,000 fingerling NLMB every 2 km of a 6-km length of shoreline in a reservoir containing a resident population  $\leq$  1% NLMB genotype can increase the proportion of NLMB to 10% with 1, 2 or 3 years of consecutive stocking.

Completion Date: 2006

Title: **Efficacy of Mass Fluorescent-chemical Double Marking in Largemouth Bass**

Principal Investigators: John Prentice, Robert Howells and Robert Betsill

Objective: To determine mass marking efficacy, relative survival and mark retention beyond one year when applying double marks with oxytetracycline and calcein to largemouth bass.

Completion Date: 2005

## ***Land Owner Incentive Program (LIP) Study***

Work was conducted on the following Federal Aid-supported (Landowner Incentive Program) study:

Title: Restoration of Pecos Pupfish Habitat

Principal Investigator: Gary Garrett

Objective: Restore existing habitat and create new habitat for Pecos pupfish as called for in the Pecos Pupfish Conservation Agreement.

Completion Date: Ongoing

## ***State Wildlife Grant (SWG) Study***

Work was conducted on the following Federal Aid-supported (State Wildlife Grant) studies:

Title: Freshwater Mussel Survey

Principal Investigator: Robert Howells

Objective: To direct field surveys conducted by two academic institutions in Texas to examine the status of freshwater mussel populations (1) in the Webb County area of the Rio Grande and (2) at other selected sites statewide where mussel assemblages were known to occur.

Completion Date: 2006

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- Glass, J. 2005. Workshop: Making cell counts of *Prymnesium parvum* and general questions on identification of *P. parvum*. Joint Meeting of OTARG-TRRMS. University of Oklahoma Biological Station, Willis, OK.
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- Glass, J. 2005. Golden alga in Texas. Arizona HAB Meeting. Arizona Game and Fish Department. Phoenix, AZ.

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- Lutz-Carillo, D.J. 2005. Operation World Record: genetic analyses. Presented at the Annual Meeting of the Texas Chapter of the American Fisheries Society, Grapevine, Texas, January 23.
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- Mayes, K. et al. 2005. Overview of the Texas Instream Flow Program. SB2 Instream Flow Studies Public Meeting – San Antonio River. Goliad, TX.
- Mayes, K. et. al. 2005. Overview of the Texas Instream Flow Program. SB2 Instream Flow Studies Public Meeting – San Antonio River. Floresville, TX.
- Mayes, K. 2005. Reconnaissance level efforts for SB2 Instream Flow Studies. Texas Water Conservation Association. Galveston, TX.
- Mayes, K. et al. 2005. Overview of the Texas Instream Flow Program. SB2 Instream Flow Studies Public Meeting – Sabine River. Orange, TX.
- Mayes, K. et al. 2005. Overview of the Texas Instream Flow Program. SB2 Instream Flow Studies Public Meeting – Brazos River. Waco, TX.
- Mayes, K. 2005. Biological data collection for Instream Flow Studies. Texas River and Reservoir Management Society. Waco, TX.

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- Ott, R.A. 2005. Influence of native macrophytes and herbivory on establishment and growth of *Hydrilla verticillata* in pond-scale mesocosms. Presented at the Annual Meeting of the Midsouth Aquatic Plant Management Society, Robinsville, Mississippi, October 12.
- Ott, R.A., R.M. Smart and H.M. Williams. 2005. Use of native macrophytes to reduce growth and radial spread of *Hydrilla verticillata* in pond-scale mesocosms. Presented at the Annual Meeting of the Aquatic Plant Management Society, San Antonio, Texas, July 13.
- Parker, M. 2005. Luling – Zedler Mill Paddling Trail. Zedler Mill Steering Committee Public Meeting. Luling, Texas.
- Pitts, D. 2005. A tale of two assessments: The Alcoa Lavaca Bay NRDA story. Southeast/Gulf Region Natural Resource Damage Assessment Workshop. Savannah, GA.
- Sager, D. 2005. Toxic golden alga research sponsored by the Texas Parks and Wildlife Department. Presented at the Annual Meeting of the Aquatic Plant Management Society, San Antonio, Texas, July 12.
- Saul, G. 2005. Fisheries on the edge: an American perspective. Presented at the Annual Conference of the Institute of Fisheries Management, Salford, England, November 15.
- Singhurst, L., J. Glass, J. Ralph, D. Sager, and D. Buzan. 2005. Assessment of historical golden alga (*Prymnesium parvum*) events. Golden Alga Researchers' Workshop. Golden Alga Task Force. Texas Parks and Wildlife Department. Austin, TX.
- Singhurst, L. 2005. *Prymnesium parvum* fish kills in Colorado River basin, Texas, from October 2001 to February 2002. Joint Meeting of the Oklahoma-Texas Aquatics Research Group

and Texas River and Reservoir Management Society. University of Oklahoma Biological Station. Willis, OK.

Smith, D. and G. Southard. 2005. Control of golden alga in Texas fish hatcheries. Arizona HAB Meeting. Arizona Game and Fish Department. Phoenix, AZ.

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Storey, K.S. 2005. The Lake Fork trophy bass survey. Presented at the Annual Meeting of the Texas Chapter, American Fisheries Society, Special Symposium: Bass Management in Texas, Grapevine, Texas, January 23.

Strenth, N.E., A. Correa-Sandoval and R.G. Howells. 2005. A review of the genus *Popenaias* (Bivalvia: Unionidae) in north-eastern Mexico. Presented at the Annual Meeting of the Texas Academy of Science, Edinburg, March 4.

Taylor, J.B., and R.A. Myers. 2005. Increases in voluntary release rate of largemouth bass of legally-harvestable size from Texas creel surveys over 1985-1999. Presented at the Annual Meeting of the Texas Chapter, American Fisheries Society, Grapevine, Texas, January 22.

Terre, D.R. 2005. Introduction: symposium purpose and scope. Presented at the Annual Meeting of the Texas Chapter, American Fisheries Society, Special Symposium: Bass Management in Texas, Grapevine, Texas, January 23.

Webb, M.A., R.M. Smart and R.A. Ott, Jr. 2005. Establishment of native vegetation in seven Texas reservoirs. Presented at the Annual Meeting of the Aquatic Plant Management Society, San Antonio, Texas, July 11.

### ***Special Projects – Fisheries and Habitat Management***

District

1A Charles Munger

Title: Evaluation of a Regulation Allowing Harvest of 2 Walleye Under 16 Inches.

Objectives: To evaluate the effects of a walleye regulation of 5 fish per day bag limit with no more than 2 fish under 16 inches imposed in September 1999. The evaluation will include determination of changes of walleye relative abundance, population size structure, growth and condition, and angler catch and harvest rates. Approval Date: 2/14/01.

Completion Date: 2007.

- 1C Craig Bonds  
Title: Investigation of Adult White Crappie Movement in Two Texas Reservoirs with Implications for Improving Frame Net Sampling Efficiency. Objectives: 1) Monitor seasonal and diel crappie movement in two Texas reservoirs; 2) Estimate adult white crappie home range as a function of season, sex, and size; and 3) Test whether new information can improve frame net catch rates of adult white crappie. Approval Date: 2/14/01. Completion Date: 2005.
- 1D John Dennis  
Title: Expenditures, Economic Impact, Economic Surplus, Attitudes and Management Preferences of Black Bass Tournament and Non-Tournament Anglers at O.H. Ivie Reservoir, Texas. Objectives: 1) Estimate the number of "Open" type bass tournaments and "Club" type bass tournaments conducted at O.H. Ivie and the number of participants during 1 year; 2) estimate the direct expenditures, economic impact and recreational value of bass tournaments to the local counties surrounding O.H. Ivie Reservoir and to the state of Texas during 1 year; 3) estimate the direct expenditures, economic impact and recreational value of non-tournament anglers to the local counties surrounding O.H. Ivie and to the state of Texas; 4) measure the attitudes, management preferences and socio-demographics of tournament and non-tournament anglers at O.H. Ivie Reservoir; and 5) estimate contribution to total number of angler days and total fishing expenditures by "Club" tournament anglers, "Open" tournament anglers, and non-tournament anglers at O.H. Ivie Reservoir for 1 year. Approval Date: 6/8/01. Completion Date: 2006.
- R1 Bobby Farquhar  
Title: Investigations in the Use of Triploid Florida Largemouth Bass in a Newly Renovated Reservoir. Objectives: 1) To compare the relative contribution of stocked triploid Florida largemouth bass and northern largemouth bass to each year class in a newly renovated reservoir; 2) To compare the growth of stocked triploid Florida largemouth bass to northern largemouth bass in a newly renovated reservoir; and 3) To compare the relative vulnerability of triploid Florida largemouth bass to northern largemouth bass to angling in a newly renovated reservoir. Approval Date: 2/18/01. Completion Date: 2005.
- 2A Bruce Hysmith  
Title: Evaluation and Genetic Identification of Striped Bass in Lake Texoma and the Red River, Texas-Oklahoma. Objectives: 1) To determine if inbreeding is occurring in striped bass in Lake Texoma, Texas-Oklahoma and the Red River below Denison Dam; and 2) To identify possible subpopulations of striped bass in Lake Texoma, Texas-Oklahoma. Approval Date: 3/3/00. Completion Date: 2006.
- 2A John Moczygemba  
Title: Effects of Guides and Bait Types on Angler Catch and Harvest in Texas Reservoirs. Objectives: 1) To document how much of the sport fish harvest and catch can be attributed to anglers using professional guides on sixteen Texas reservoirs; and 2) To document how much of the sport fish harvest and catch can be attributed to bait type (natural or artificial). Approval Date: 11/28/95. Completion Date: 2005 (*In Press*).



- 2B John Tibbs  
Title: Factors Related to the Fishing Quality and Trophy Potential of Largemouth Bass Fisheries in Texas Reservoirs. Objectives: 1) Determine the relationships among selected biotic and abiotic factors and selected indicators of quality and trophy bass fisheries; and 2) Evaluate criteria for stocking Florida largemouth bass. Approval Date: 9/1/98. Completion Date: 2006.
- 2B Michael Baird  
Title: Stress-Induced Post Stocking Mortality of Red Drum, *Sciaenops ocellatus*, and Effects of Acclimation Time and Stocking Season on Survivorship. Objective: Test the effects of two different acclimation times, and stocking season on red drum post-stocking mortality using current hatchery rearing and hauling procedures. Approval Date: 8/5/02. Completion Date: 2006.
- 2B Michael Baird et al.  
Title: An Evaluation of Growth of Selectively Bred Largemouth Bass in Six Texas Reservoirs. Objective: Compare mean length and weight of age-4 Sharelunker and resident largemouth bass in six Texas reservoirs. Approval Date: 10/31/05. Completion Date: 2017.
- 2C Steve Magnelia  
Title: Survival and Growth of Rainbow Trout Fingerlings Stocked into the Special Regulation Zone of the Canyon Reservoir Tailrace. Objectives: 1) Evaluate survival for micro-tagged rainbow trout fingerlings stocked in the special regulation area of the Canyon Reservoir tailrace and 2) Evaluate growth for micro-tagged rainbow trout fingerlings stocked in the special regulation area of the Canyon Reservoir tailrace. Approval Date: 6/06/05. Completion Date: 2006.
- 2D Rafe Brock  
Title: Selection of Potential Texas Urban Fishing Sites. Objective: To develop a set of criteria and a ranking system to help select future TUF sites. Approval Date: 4/01/05. Completion Date: 2006.
- 2E Mark Howell  
Title: Wichita River Monitoring Plan in Response to Microfiltration/Reverse Osmosis Plant Discharge. Objectives: 1) Determine if there are changes in fish and benthic assemblages in a segment of the Wichita River in response to point source discharge of reject water from the City of Wichita Falls new microfiltration/reverse osmosis treatment plant; 2) Determine if there are changes in Wichita River water chemistry that could affect fish and other aquatic resources during the study period; and 3) Determine if there is any enhancement of golden alga risks in the study area as a result of potential changes in water chemistry. Approval Date: 02/18/05. Completion Date: 2007.

- 2E Robert Mauk  
Title: Examination of Fingerling Hybrid Striped Bass 24-h Boat Stocking Mortality and OTC Marking. Objectives: 1) Determine if boat stocking increases 24-h hybrid striped bass mortality because of extra handling and hauling stress; and 2) Evaluate mark effectiveness in terms of mortality and marking success/retention for hybrid striped bass fingerlings marked with oxytetracycline hydrochloride (OTC) immersion at 500 and 700 ppm. Approval Date: 4/04/03. Completion Date: 2006.
- R2 Brian Van Zee  
Title: Saugeye Stocking Evaluation. Objective: To determine, in selected reservoirs, if stocking saugeye will create an additional sport fishery, increase total fishing pressure, and/or increase the abundance of crappie  $\geq$  10 inches. Approval Date: 1/15/93. Completion Date: 2006.
- R2 Brian Van Zee  
Title: Evaluation of the Gizzard Shad Standard Weight Equation and Development of a Redbreast Sunfish Standard Weight Equation. Objectives: 1) To develop a new standard weight (Ws) equation for gizzard shad using the regression-line-percentile (RLP) technique and data sets that represent the entire geographical range of the species; 2) to use the new gizzard shad Ws equation to evaluate the current gizzard shad Ws equation for length-related biases and based upon the results recommend use of the proper equation by fisheries managers in calculating relative weight (Wr); and 3) to develop a Ws equation for redbreast sunfish using RLP technique and data sets from the entire geographical range of the species. Approval Date: 5/1/98. Completion Date: 2006.
- 3A Tim Bister  
Title: Largemouth Bass Population Trends in Two Texas Reservoirs with LMBV-attributed Die-offs. Objective: Determine if largemouth bass relative abundance, growth, relative weight, and angling success changed in Lake Fork and Sam Rayburn Reservoirs after the occurrence of largemouth bass virus associated die-offs. Approval Date: 10/27/04. Completion Date: 2006.
- 3A Mike Brice  
Title: Florida Bass Introgression Following Annual Supplemental Stockings. Objective: To determine changes in genetic composition of a largemouth bass population following annual supplemental stockings of Florida largemouth bass at Caddo Lake, TX. Approval Date: 10/16/97. Completion Date: 2006.
- 3B Kevin Storey  
Title: The Lake Fork Trophy Bass Survey. Objectives: 1) To annually monitor angler catches of trophy-size largemouth bass ( $\geq$  7 pounds and/or 24 inches) at Lake Fork Reservoir through a volunteer angler reporting program held in cooperation with the Lake Fork Sportsman's Association and Lake Fork Chamber of Commerce; 2) Foster cooperative work relationships between sponsoring organizations, area businesses, local fishing guides, and Lake Fork anglers; 3) Use angler catch data to help publicize, promote, and educate anglers about trophy bass fishing opportunities at Lake Fork Reservoir; and 4) Use angler catch data, in conjunction with results of standardized population and creel

surveys, to monitor trends in Lake Fork's largemouth bass fishery and to help evaluate management programs. Approval Date: 11/13/02. Completion Date: 2007.

- 3C Richard Ott  
Title: Use of Native Macrophytes to Reduce Growth of Radial Spread of *Hydrilla verticillata* in Pond-scale Mesocosms. Objective: Determine if established colonies of 3 native macrophyte species resist growth (measured as radial expansion) of hydrilla for a 2-year period following introduction of hydrilla to the colonies and, if so, is there is any difference among the 3 native species in the ability to resist hydrilla growth. Approval Date: 5/02/02. Completion Date: 2006.
- 3D Todd Driscoll  
Title: Annual Exploitation of Largemouth Bass at Sam Rayburn Reservoir: Incorporating the Tournament-Related Mortality Component. Objectives: 1) Determine largemouth bass exploitation adjusted for delayed tournament mortality at Sam Rayburn Reservoir; and 2) Evaluate the effect of delayed tournament mortality on exploitation at Sam Rayburn Reservoir. Approval Date: 7/28/03. Completion Date: 2006.
- 3D Todd Driscoll  
Title: Use of a Largemouth Bass Tournament Monitoring Program at Sam Rayburn Reservoir. Objectives: 1) Supplement largemouth bass population information currently collected from standardized electrofishing and creel surveys at Sam Rayburn Reservoir with tournament results via an annual tournament monitoring program; 2) Evaluate utility of program by comparing associated costs/man-hours of obtaining information to similar data from electrofishing and creel surveys; and 3) Utilize program to characterize bass tournaments at Sam Rayburn Reservoir (i.e., frequency, type, participation level, and seasonality of tournaments). Approval Date: 3/14/03. Completion Date: 2006.
- 3E Mark Webb  
Title: Texas Parks and Wildlife Habitat Establishment Initiative. Objectives: 1) Determine aquatic plant species suitable for habitat enhancement efforts in Texas reservoirs; 2) Develop techniques for establishing founder colonies in Texas reservoirs; and 3) Monitor survival, growth and spread of founder colonies. Approval Date: 4/24/98. Completion Date: 2006.
- 3E Jeff Henson  
Title: Implications of Using a Catch-and-Release-Only Regulation in a Declining Largemouth Bass Population at Gibbons Creek Reservoir, Texas. Objectives: 1) To determine if the relative abundance of 11 to 21 inch largemouth bass increased after imposing a catch-and-release-only regulation at Gibbons Creek Reservoir; and 2) To examine the entire data history from Gibbons Creek Reservoir (TPWD electrofishing data and TMPA visitation and catch data) to gain insight into other implications of implementing such a drastic management tactic on a popular bass fishery. Approval Date: 2/14/01. Completion Date: 2005 (*In Press*).

3F Howard Elder  
Title: Exotic Vegetation Annual Report. Objective: To document all information relative to exotic species of aquatic vegetation in Texas, including locations and treatments. Approval Date: N/A (ongoing). Completion Date: Annually (ongoing).

Austin Fred Janssen  
Title: A Comparison of Population Indices for Fishes Collected from Subjectively and Randomly Selected Sampling Sites at Twelve Texas Reservoirs. Objectives: 1) To compare catch rates and structural indices for target species captured at subjectively and randomly selected sampling sites; and 2) To compare effort (man-hours) required to conduct three survey techniques (frame nets, gill nets and electrofishing) at subjectively and randomly selected sampling sites. Approval Date: 9/22/94. Completion Date: 2006.

### *Special Projects – Education and Outreach*

#### **Texas Freshwater Fisheries Center**

Jim Matthews and Tony Owens  
Title: Refinement of Alkalinity Adjustment Strategies for a Recirculating Raceway System. Objective: To determine the amount of sodium bicarbonate required to optimize nitrification in a recirculating system at the Texas Freshwater Fisheries Center. Approval Date: 9/06/01. Completion Date: 2006.

Deborah Wade  
Title: The Effect of Ozone on Largemouth Bass Fry Production in a Re-circulating System. Objective: To determine if ozone treatment of incubation water for largemouth bass eggs improves fry production. Approval Date: 2/11/04. Completion Date: 2006.

Juan Martinez and Tony Owens  
Title: Efficacy of Pond Inoculation and Supplemental Feeding with Zooplankton to Increase Growth and Survival of Florida Largemouth Bass Fingerlings. Objective: To increase production of Florida largemouth bass fingerlings. Approval Date: 11/05. Completion Date: 2007.

### *Special Projects – Fish Hatcheries*

#### **A. E. Wood Hatchery**

Dijar Lutz-Carrillo  
Title: Admixture Analysis of Florida Largemouth Bass and Northern Largemouth Bass Using Microsatellite DNA Loci. Objective: To investigate the robustness and reliability of the microsatellite DNA technique for identifying the northern and Florida subspecies of largemouth bass. Approval Date: 8/2001. Completion Date: 2005.

Dijar Lutz-Carrillo

Title: *Micropterus* Species-specific Microsatellite Markers. Objective: To identify species-specific microsatellite markers by optimization of PCR reactions and amplification in a subset of individuals from each of the following species (*M. salmoides floridanus*, *M. s. salmoides*, *M. punctulatus*, *M. dolomieu* and *M. treculii*), and develop multiplex protocols for the most efficient screening of individual micropterids, particularly hybrids. Approval Date: 1/05. Completion Date: 2005.

Dijar Lutz-Carrillo

Title: Cross-species Amplification of Microsatellite Loci in Blue Catfish and Channel Catfish. Objective: Identify and optimize channel catfish microsatellite primers in blue catfish in order to develop species-specific microsatellite libraries and provide the lab with polymorphic microsatellite loci for use in evaluating blue catfish populations. Approval Date: 1/05. Completion Date: 2005.

Jamie Dixon et al.

Title: Pseudogene Gene Family Members and Their Application to Subspecies Identification within Largemouth Bass. Objective: To find diagnostic DNA-based markers to distinguish between northern and Florida largemouth bass. Approval Date: 2/28/03. Completion Date: 2005.

Loraine Fries and Greg Southard

Title: Statewide Survey of Texas for Golden Alga *Prymnesium parvum*. Objective: To collect baseline statewide prevalence, environmental, and genetics data for *P. parvum*. Approval Date: 9/28/03. Completion Date: 2006.

Greg Southard and Loraine Fries

Title: Evaluation of Seasonal Differences and Detection of Largemouth Bass Virus in Two Texas Reservoirs. Objectives: 1) Determine if there are seasonal differences in prevalence rates of largemouth bass virus (LMBV); 2) Determine if there are tissue affinities associated with detection of LMBV. Approval Date: 5/01. Completion Date: 2006.

Chris Thibodeaux

Title: Intensive Spawning and Mass Production of Koi Carp Fry. Objective: To document the techniques developed at the A. E. Wood Hatchery for mass production of koi carp fry. Approval Date: 11/98. Completion Date: 2006.

Chris Thibodeaux, Ted Engelhardt, Glen Alexander and Deborah Wade

Title: Forage Culture Manual. Objective: Document standard procedures for the culture of forage fish. Approval Date: 1/05. Completion Date: 2006.

Hugh Glenewinkel

Title: Effects of Two Stocking Densities on Advanced Catfish Production and Water Quality in Earthen Rearing Ponds. Objectives: 1) To compare growth, harvest length, feed conversion, condition ( $W_r$ ), and percent return of advanced catfish fingerlings reared at two stocking densities in earthen ponds; and 2) Compare select water quality variables between the two stocking densities. Approval Date: 7/3/01. Completion Date: 2006.

Hugh Glenewinkel, Tony Owens, Lee Hall and John Paret

Title: Black Bass Culture Manual. Objective: Document standard procedures for the culture of black basses. Approval Date: 1/05. Completion Date: 2006.

Jake Isaac, Jr.

Title: Production Performance of Wild Stock and Imperial Stock Channel Catfish Fingerlings in Hatchery Ponds. Objective: Determine differences in growth rate, feed conversion and survival between wild stock and imperial stock channel catfish for the 75-225-mm production period.

Approval Date: 07/28/98. Completion Date: 2006.

Aaron Barkoh, Steve Hamby and Gerald Kurten

Title: Effects of Rice Bran, Cottonseed Meal and Alfalfa Meal on pH and Zooplankton in Pond Water. Objective: To determine if rice bran promotes lower pH and higher densities of zooplankton than cottonseed meal or alfalfa meal in pond water. Approval Date: 5/02.

Completion Date: 2005.

### **Jasper Fish Hatchery**

Reese Sparrow

Title: Smallmouth Bass Culture in Texas. Objective: Document the techniques developed at the Dundee State Fish Hatchery for the smallmouth bass program. Approval Date: 11/98. Completion Date: 2006.

### **Possum Kingdom Hatchery**

Dale Lyon and Aaron Barkoh

Title: Enumeration of Florida Largemouth Bass Fry: an Index for Gravimetric Estimation of Numbers. Objectives: 1) Evaluate the accuracy of the Jensorter fry counter for Florida largemouth bass fry enumeration; 2) Develop an index (fry/g) for estimation of numbers of Florida largemouth bass fry and determine influence of water temperature, fish age and fish length on estimation of fry numbers by weight; and 3) Compare the index from this study with the index (275 fry/g) developed several years ago. Approval Date: 03/24/00. Completion Date: 2005.

Dale Lyon, Aaron Barkoh and Warren Schlechte

Title: Effects of Time-of-Feeding on Raceway Culture of Channel Catfish. Objectives: 1) Determine if night feeding improves growth, survival, feed conversion, and size uniformity of channel catfish; and 2) Evaluate the effect of night feeding on attaining channel catfish of 250 mm or greater between July and November. Approval Date: 06/29/00. Completion Date: 2006.

Dale Lyon, Lee Hall and Steve Hamby

Title: Effects of Water Hardness on Egg Hatch Rate of Florida Largemouth Bass. Objective: Determine if egg hatch rate increases with increasing water hardness. Approval Date: 2/20/04. Completion Date: 2006.

Aaron Barkoh, John Paret, Dale Lyon and Steve Hamby

Title: Effects of Barley Straw and Liquid Live Micro-Organisms on Density and Ichthyotoxicity of *Prymnesium parvum* in Hatchery Ponds. Objectives: 1) Determine if decomposing barley straw inhibits *P. parvum* population growth and ichthyotoxicity; 2) Determine if the Liquid Live Micro-Organisms system inhibits *P. parvum* density and ichthyotoxicity; 3) Determine effects of decomposing barley straw on water quality, nutrient levels, phytoplankton community structure, zooplankton community structure and fish production; and 4) Determine effects of the Liquid Live

Micro-Organisms system on water quality, nutrient levels, phytoplankton community structure, zooplankton community structure and fish production. Approval Date: 6/2/04. Completion Date: 2005.

Aaron Barkoh, John Paret and Dale Lyon

Title: Effects of the Liquid Live Micro-Organisms System on Sludge, Water Quality and Koi Carp Production in Hatchery Ponds. Objectives: 1) Determine if the Liquid Live Micro-Organisms System reduces sludge; and 2) Determine if Liquid Live Micro-Organisms System improves water quality and koi carp production in hatchery ponds. Approval Date: 6/1/04. Completion Date: 2006.

Dale Lyon, Dennis Smith and Drew Begley

Title: Striped Bass and Hybrid Striped Bass Culture Manual. Objective: Document standard procedures for the culture of striped bass and their hybrids. Approval Date: 1/05. Completion Date: 2006.

### **Dundee Hatchery**

Dennis Smith

Title: Evaluation of Hydrogen Peroxide to Control Fungus During Intensive Incubation of Smallmouth Bass Eggs and Fry. Objective: Determine an effective dosage of hydrogen peroxide for control of fungus on smallmouth eggs and fry. Approval Date: 3/31/00. Completion Date: 2005.

Aaron Barkoh, Drew Begley and Dennis Smith

Title: Effects of Barley Straw on Density and Ichthyotoxicity of *Prymnesium parvum* and Water Quality in Hatchery Ponds. Objectives: 1) Determine if decomposing barley straw inhibits *P. parvum* population growth and ichthyotoxicity; and 2) Determine effects of decomposing barley straw on water quality. Approval Date: 12/13/04. Completion Date: 2005.

Aaron Barkoh, Thomas Wyatt and Dennis Smith

Title: Ammonia Tolerance by Striped Bass Fry and Fingerlings in Hard Water. Objectives: 1) Determine the maximum concentrations of un-ionized ammonia that striped bass (*Morone saxatilis*) fry and fingerlings can tolerate for 96 h at selected pH and temperature; 2) Estimate the 96-h LC<sub>50</sub> (median lethal concentration that will kill 50%) of un-ionized ammonia for striped bass fry and fingerlings; and 3) Estimate the no-effect-level of un-ionized ammonia nitrogen to striped bass fry and fingerlings. Approval Date: 4/6/2005. Completion Date: 2007.

Gerald Kurten, Aaron Barkoh, Loraine Fries and Drew Begley

Title: Combined Nitrogen and Phosphorus Fertilization for Controlling *Prymnesium parvum* Toxicity in Fish Culture Ponds. Objective: To determine efficacy of two fertilization regimes of nitrogen and phosphorus (300 N: 40 P and 300 N: 60 P, three times weekly). Approval Date: 8/4/05. Completion Date: 2006

Tom Wyatt, Reese Sparrow and Juan Martinez

Title: Channel Catfish and Blue Catfish Culture Manual. Objective: Document standard procedures for the culture of channel and blue catfish. Approval Date: 1/05. Completion Date: 2005.

Aaron Barkoh and Loraine Fries

Title: Management of Prymnesium parvum at Texas State Fish Hatcheries. Objective: Document current strategies for control of P. parvum in hatchery ponds. Approval Date: 8/04. Completion Date: 2005.

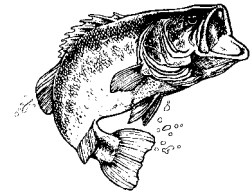
## Organization

Fisheries Research Organization flow chart is located in **Appendix, Organization Charts**, page 66.



# ECOSYSTEM/HABITAT ASSESSMENT

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## Goal

To conduct ecological risk and injury assessments; to determine water quality and quantity requirements to maintain, protect, and enhance state aquatic ecosystems; and to restore habitats to mitigate injuries to ecosystems.

## Rationale

To protect and enhance aquatic ecosystems it is necessary to understand the basic requirements of the ecosystems and to take actions to see that these requirements are provided and if possible improved. Various research studies and environmental assessments are undertaken using scientifically accepted methods to gain this knowledge with an emphasis on water quality and quantity requirements for the various ecoregions and watersheds of the state. These studies range from in-stream flow assessments, water quality and contaminant impact assessments, to harmful algal bloom issues. Fish kill and pollution investigations are coordinated statewide to assess impacts and seek compensation from responsible parties for injuries to state natural resources under state and federal laws. Coordination and cooperation with state, federal, and local agencies is critical for addressing possible adverse impacts to aquatic ecosystems. Information and recommendations are provided to applicable stakeholders (especially regulatory agencies) to help protect and enhance aquatic ecosystems. Where possible habitat restoration projects, or other suitable environmental projects, are undertaken with other stakeholders to restore and protect the resources impacted.

## Facilities

### *Texas Rivers Center*

- Location – The Texas Rivers Center is located on the Texas State University campus in San Marcos. The facility is located at the Aquarena Center complex at the spring flow headwaters of the San Marcos River.
- Renovation History – A major renovation effort was completed in 2006 that converted an historic inn into the current Texas Rivers Center. The Center houses offices of the Inland Fisheries Freshwater Resources Program and Contaminants Assessment Team, the University's Rivers Institute, and the National Park Service. Conference and exhibit space provides educational presentations on spring and rivers systems of Texas.

### *A.E Wood Fish Hatchery*

- Offices, laboratory, and shop facilities are provided at the state fish hatchery in San Marcos. Staff of the Freshwater Resources Program and Kills and Spills Team are housed at this facility.

### *Fountain Park Plaza*

- Offices are provided at the Fountain Park Plaza office complex in Austin for staff of the Kills and Spills Team, Trustee Program, and branch administration.

## Responsibilities

Conduct instream flow assessments for permitting, water planning, river management, etc. to determine the water quantity and quality needed to support aquatic ecosystems.

Conduct water quality assessments for permitting, water quality standards, and planning to determine water quality needed to support aquatic ecosystems.

Determine the cause, extent of injury, and value of losses resulting from kills and pollution incidents that affect state fish and wildlife resources and their habitats.

Pursue compensation for injuries to natural resources that result from oil discharges and hazardous materials releases through the Natural Resource Damage Assessment (NRDA) process under federal and state statutes and rules.

Seek compensation or restoration for injured fish and wildlife resources through state civil restitution actions and by the design, implementation, and oversight of habitat and resource restoration projects through state and federal laws.

Participate in the Ecological Risk Assessment process under the TCEQ Texas Risk Reduction Program for the cleanup of waste sites to ensure that cleanup goals are protective of fish and wildlife resources.

Design and implement contaminant and toxicological studies of aquatic ecosystems to evaluate impacts and provide information regarding conditions to maintain healthy communities.

Review and comment on regulatory agency assessments for permits, rules, and regulations to insure appropriate protection of state fish and wildlife resources.

Represent the agency in interagency committees such as for SB1 (regional water planning), SB2 (State Instream Flow Program), and SB818 (clean rivers) to promote actions to protect state fish and wildlife resources.

## Methodology

Standardized procedures are employed for all investigations, assessments, and studies. The methods used are determined by the task being undertaken and the goals of this effort. The procedures are detailed in the Kills and Spills Team (KAST) Standard Operating Procedures Manual, the interagency Texas Instream Flow Program (TIFP) Technical Overview Document, and the Texas Commission on Environmental Quality's Surface Water Quality Monitoring Procedures Manual. The manuals noted provide specific sampling procedures and requirements for instream flow, water quality, pollution, and fish kill assessments to provide data acceptable within the state regulatory processes that is legally defensible for court and/or regulatory hearings. The procedures used for actions as a federal natural resource trustee for the State of Texas exist under the rules, regulations, and guidelines established under federal law for conducting natural resource injury and damage assessments and restoration projects.

The KAST procedures and the TIFP Technical Overview Document underwent a critical review process during the year as part of the department's Science Review effort. The KAST procedures were reviewed

by a committee of the American Fisheries Society and the TIFP procedures were reviewed by a committee directed by the National Academy of Science. Both reviews were favorable for the procedures being used but made some recommendations for improvement. These recommendations have been reviewed and are being implemented in revised procedure documents as appropriate.

## Program Costs

The total cost for the Ecosystem/Habitat Assessment Branch for FY05 was \$ 796,809

## Accomplishments

### *State-Supported Studies*

Work was conducted on the following state-supported studies:

Title: **State Instream Flow Study.**

Principal Investigators: Kevin Mayes, Gordon Linam, Tim Jurgensen, Doyle Mosier, Leroy Kleinsasser, Kenny Saunders, Karim Aziz, Praveen Kokkanti, and staff from the Texas Water Development Board, Texas Commission on Environmental Quality, Brazos River Authority, Sabine River Authority, and San Antonio River Authority

Objective: To determine instream flows necessary to maintain a sound ecological environment in Texas rivers and streams initially focusing on the Brazos, San Antonio, and Sabine rivers.

Completion Date: 2010

Title: **Wichita River Reverse Osmosis Water Treatment Plant Discharge Study.**

Principal Investigators: Mark Howell, Leroy Kleinsasser, Kevin Mayes, and Joan Glass

Objective: To determine potential adverse effects of the plant discharge on the aquatic ecosystem of the Wichita River.

Completion Date: 2008

Title: **Wichita River Reverse Osmosis Water Treatment Plant Discharge Contaminants Study.**

Principal Investigators: Roxie Mills and Mark Luedke

Objective: To determine potential uptake of contaminants associated with the plant discharge into the aquatic food-web of the Wichita River and its potential ramifications.

Completion Date: 2008

Title: **Interagency Statewide Fish Tissue Contaminants Survey.**

Principal Investigators: David Klein, Ken Kurzawski and David Sager plus staff from the Texas Commission on Environmental Quality and the Department of State Health Services.

Objective: To determine contaminant concentrations in selected fish species of reservoirs and rivers across Texas to address potential problems for fish health (and human health by the other agencies) and the environment.

Completion Date: 2008

Title: **Mercury concentrations in East Texas finfish.**

Principal Investigators: Roxie Mills and Mark Luedke

Objective: To determine mercury uptake and concentrations into East Texas finfish of selected rivers and reservoirs with potential fish health and control issues examined.

Completion Date: 2007

Title: Trace element concentration in aquatic resources of minimally impacted streams.

Principal Investigators: Mark Luedke and Roxie Mills

Objective: To determine trace element concentrations in aquatic resources that can serve as reference levels expected in Texas aquatic ecosystems for future comparison with data from impacted sites and remediation planning.

Completion Date: 2006

### ***Federal Aid-Supported Studies***

Work was conducted on the following Federal Aid-supported studies:

#### **Sportfish Restoration Funding**

Title: Freshwater Game Fish Environmental Assistance and Technical Guidance. F-139-T

Principle Investigators: David Sager, Doyle Mosier, Cindy Loeffler, Patricia Radloff

Objective: To perform studies and field assessments which identify the extent of man's impact upon water and sport fish in freshwater and to provide technical advice and recommendations to private entities and local, state, and federal regulatory agencies.

Completion Date: Ongoing

#### **State Wildlife Grant Funding**

Title: Toxic Golden Alga. T-14-P

Principle Investigators: David Sager, Loraine Fries, Gerald Kurten

Objectives: The Golden Alga (*Prymnesium parvum*) State Wildlife Grant is composed of several projects addressing issues related to golden alga management and assessments in Texas. The projects objectives are:

Project A (Historical Data Assessment of Golden Alga (*P. parvum*) Fish Kills): Gather and assess available data related to past documented fish kill events caused by golden alga blooms to determine possible underlying conditions or parameters promoting the occurrence of these events.

Project B (Statewide Survey of *P. parvum* Distribution): Determine the level and breadth of *P. parvum* distribution in Texas and collect environmental data and *P. parvum* nucleic acids from representative Texas water bodies.

Project C (Molecular Investigations of the Golden Alga): 1) Construct and characterize a *P. parvum* cDNA library to develop species-specific tests for the organism, 2) Develop a real-time PCR assay to accurately detect and quantify *P. parvum* in raw water samples, and 3) Make the information gained available to the public and researchers using publicly accessed databases.

Project D (Scientific Workshop and Meetings to Coordinate Management Efforts): Conduct a scientific workshop to examine existing information on the golden alga and potential areas for management of the alga and also conduct coordination and information sharing with other stakeholders, researchers, and regulators.

Project E (Nutrient and Oxidative Compound Affects on the Golden Alga): Conduct studies to determine the affects of nutrient manipulations and oxidative compound treatments on the golden alga as potential management options.

Project F (Develop Toxin Standards): Conduct efforts to isolate and purify standards of the prymnesin toxins released by the toxic golden alga.

Completion Date: Ongoing

Title: Toxic Golden Alga Research. T-23-P

Principle Investigator: David Sager

Objective: To fund research and information development to address specific topics identified by the department, through the TPWD Golden Alga Task Force and planning efforts being undertaken for the toxic golden alga, as critical for developing treatments and management strategies for the toxic alga.

Completion Date: Ongoing

Title: Geomorph Monitoring of the Upper San Marcos River.

Principal Investigators: Roy Kleinsasser

Objectives: The five-year project involves continued monitoring of the geomorphology of the upper San Marcos River in the area where dredging is occurring and adjacent river reaches. Baseline data was collected prior to the dredging project and further work is anticipated during and after disturbance to evaluate changes in the channel form.

Completion Date: 2010

### ***General Activities***

Many activities have been undertaken during the year. Numerous publications, reports, and presentations have been made and are listed in the **Resource Management – Fisheries Research** section of the report, pages 5 - 42. Additionally, several stream assessments were conducted and are listed in the table below followed by a listing of selected activities.

### **Texas Stream Surveys - January, 2005 thru December, 2005**

<u>River</u>	<u>Miles</u>	<u>Creel</u>	<u>Angler Access</u>	<u>Electrofsh</u>	<u>Gill Net</u>	<u>Habitat</u>	<u>Veg. Survey</u>	<u>Seine</u>	<u>Water Quality</u>	<u>Trap Net</u>	<u>Other</u>
Wichita River	15					X		X	X		X
Brazos River	10			X		X		X			
San Antonio River	40					X					X
Cibolo Creek	10			X		X		X	X		
Sabine River	50					X		X			X
Lavaca River	30			X		X		X	X		
Pine Island Bayou	20			X		X		X	X		
San Marcos River	2										X

### **Other selected activities**

- Kills and Spills Team (KAST) investigated 154 fish kill and pollution complaints.
- Negotiated a settlement with the San Antonio Water System for a 2004 fish kill caused by a illegal discharge of about 20 million gallons of raw sewage into Salado Creek for environmental projects totaling about \$135,000.
- Staff were the regional point of contact for IF representation/coordination at the many Regional Water Planning Groups within the state.
- KAST staff were the regional point of contact for IF representation/coordination at the Clean Rivers Coordinated Monitoring meetings.
- Participated in watershed planning efforts funded by U.S. Environmental Protection Agency through the Texas State Soil and Water Conservation Board and other groups including for the San Antonio River, Plum Creek, and Caddo Lake.
- Coordinated the TPWD Golden Alga Task Force activities to coordinate research efforts and funding on the toxic golden alga.
- Staff revised the golden alga web pages to meet new department web site guidelines.
- Participated in the interagency Harmful Algal Bloom Committee to share information and coordinate efforts on harmful algae.
- Staff led TPWD efforts in the interagency Texas Instream Flow Program including revision of the Technical Overview Document based on suggestions from the National Academy of Science program review.
- Participated in the completion of the Texas Rivers Center at Texas State University in San Marcos including office space for the TPW Freshwater Resources Program.
- Coordinated development and implementation of the Luling Zedler Mill Paddling Trail on the San Marcos River.
- Natural Resource Trustee staff and other state and federal trustees reached a settlement for natural resource damages for the Lavaca Bay superfund site. Staff is the Lead Administrative Trustee for restoration, overseeing about \$9 million of restoration projects including the construction of 3 fishing piers, 3 boat ramps, 11 acres of oyster reef and 63 acres of wetlands and the preservation of 670 acres of freshwater wetland and coastal prairie.
- Natural Resource Trustee staff and other state and federal trustees reached a settlement for natural resource damages for the Old Gulf Refinery in Port Arthur. Staff is the Lead Administrative Trustee for restoration, overseeing the about \$4.6 million of restoration projects on the Lower

Neches and JD Murphree WMAs including the construction of about 120 acres of wetlands and water control structures to enhance management of about 600 acres of waterfowl habitat.

- Natural Resource Trustee staff continued as the Lead Administrative Trustee overseeing the construction of wetlands within Swan Lake adjacent to West Bay.
- Natural Resource Trustee staff and other state and federal trustees reached a settlement for natural resource damages by the Brio superfund site adjacent to Clear Creek for the preservation of about 200 acres of riparian habitat and construction of 6 acres of wetlands worth about \$500,000.
- Natural Resource Trustee staff is implementing a Natural Resource Damage Assessment with other trustees for an oil spill into an unnamed tributary of the Sulphur River in Titus County.
- Natural Resource Trustee staff initiated a Natural Resource Damage Assessment with other trustees for DDT contamination within Greens Bayou in Harris County.
- Natural Resource Trustee staff serve as the Lead Administrative Trustee for state and federal trustees with the Nature Conservancy of Texas to complete habitat restoration projects for wetlands, riparian, and native prairie habitats to compensate for injuries to Sayle Creek.
- Natural Resource Trustee staff continued to provide technical review of ecological risk assessments under the Texas Commission on Environmental Quality's (TCEQ) Texas Risk Reduction Program.
- Natural Resource Trustee staff participated with industry and Federal Trustee representatives on the planning committee for the Southeast/Gulf Region Natural Resource Damage Assessment Workshop held in Savannah, GA.
- Staff assisted management staff with contaminant assessment of finfish from community fishing lakes.
- Management, laboratory, and E/HA staff participated in the interagency Statewide Fish Contaminants Monitoring Study with TCEQ and the Department of State Health Services (DSHS).
- Staff continued studies on mercury concentrations in fish of east Texas waters.
- Staff participated in the interagency Toxic Substances Coordinating Committee and its Finfish Sampling Subcommittee and Harmful Algal Bloom Subcommittee.
- Staff participated in department assessments of major proposed water rights permits such as the Brazos River Authority basin-wide permit and the Lower Colorado River Authority proposed transfer of water to San Antonio.
- Staff assisted in the department's support efforts for the legislative Environmental Flows Advisory Committee.

- Staff coordinated field reconnaissance and stakeholder meetings in the Brazos, Sabine, and San Antonio river basins to support developing instream flow study plans for subbasins in these rivers.
- Staff participated in an interagency meeting with an advisory group of stakeholders to solicit ideas for public involvement in developing the Texas Instream Flow Program.
- Staff participated in the instream flow assessment effort for Big Cypress Bayou and Caddo Lake.
- Staff performed an assessment of environmental impacts for renewed hydropower operations at A.H. Smith dam on the San Marcos River through a Federal Energy Regulatory Commission permitting process.
- Staff participated in an IF special study on the impact of a Microfiltration/Reverse Osmosis plant discharge on the Wichita River.
- Staff participated in the Tiered Aquatic Life Use Development for Texas effort involving the U.S. Environmental Protection Agency, TCEQ, universities, and river authorities.
- Staff continued working with TCEQ to develop guidance for biological and habitat sampling protocols and quality assurance.
- Staff coordinated support for the TPW Rivers Advisory Board.
- Staff coordinated and hosted two Golden Alga Research Workshops (one in Austin and one with the Harmful Algal Bloom subcommittee at TAMU-College Station) to coordinate discussions of research on the toxic golden alga and revise the list of priority topics of research funding.
- Continued development of division-wide database for golden alga data and interactive web Kills and Spills reporting tool with GIS Lab and Inland Fisheries division staff.
- Staff invited to and participated in Arizona Game and Fish Department meeting on golden alga problems and research.
- Staff continued to coordinate with Oklahoma state agencies to monitor Lake Texoma and to exchange information about golden alga.
- Staff assisted monitoring of Lake Whitney during spring golden alga research project.
- Staff communicated information on golden alga to public through news releases, appearance on local morning news show, 1-800 phone information line, and web updates on golden alga blooms and fish kills.
- Management and E/HA staff gave presentations and addressed questions at 7 public meetings concerning toxic golden alga issues in areas of the state impacted by the alga.



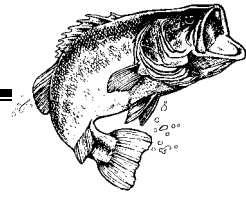
- Staff assisted with the TPWD co-sponsored Environmental Flows Conference held by the River Systems Institute at Texas State University.
- Staff instructed the continuing education course Processes for Determining Instream Flow Needs designed for non-scientists.
- Staff assisted with the Geomorphology Symposium at the Texas River and Reservoir Management Society Annual Meeting in Waco, TX.
- Staff participated in the Science Review Process on department scientific procedures by the American Fisheries Society for fisheries procedures and the National Academy of Science for instream flow procedures (and revising procedures based on the review findings).

## ORGANIZATION

The Ecosystem/Habitat Assessment flow chart is located in **Appendix, Organization Charts**, pages 67.

# EDUCATION AND OUTREACH

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## Goal

Dedicated to the understanding, celebration and conservation of freshwater sport fishing in Texas through excellence in education, aquaculture, interpretive exhibits, and community relations.

## Rationale

Provide individuals with an informative and exciting opportunity to observe and better understand aquatic life and its management in Texas. Exposure is provided to fisheries management surveys and inventories, fish hatchery operations, scientific research, applied fishery management, fishes and aquatic habitats, and the support anglers and boaters provide to conservation. The educational messages are designed to encourage sport fishing as a recreational activity with "hands-on" angling opportunities provided.

## Facility

### *Texas Freshwater Fisheries Center*

- Location – Texas Freshwater Fisheries Center (TFFC) is located in Henderson County, 4 miles east of Athens, Texas, on 106 acres of land close to Lake Athens.
- Construction Date – The 26,000 ft<sup>2</sup> Visitor Center, with 300,000 gallons of outside aquariums, 1.5-acre fishing pond, 3,000 ft<sup>2</sup> Anglers Pavilion, 150-seat theater with a 25,000-gallon aquarium, 24,656 ft<sup>2</sup> intensive culture building, water quality lab, genetic lab, and 2,788 ft<sup>2</sup> maintenance building, was completed on November 19, 1996. The extensive culture facilities, which include 45 lined ponds with a combined area of 37.3 acres, were completed on August 31, 1998.
- Renovation History – A 0.7 mile wetlands trail was completed in 2002. The project features an all-weather, ADA-compliant trail with interpretive stations about the plants and animals of Texas wetlands. The trail includes an observation beehive, an interactive nature communications center, duck blind, timber-framed pavilions, streams, ponds, pitcher plant bog, wildflower area, hunter education features and a fly fishing area.

## Responsibilities

### *Visitor Center*

Perform a vital public relations and education function through visitor center tours, hatchery tours, school visitation, public lectures, educational workshops, fishing pond experiences, and ShareLunker Program.

Increase public knowledge of Inland Fisheries Management, Research and Hatcheries.

Provide partners/sponsors with successful avenues to promote their conservation ethic.

Involve the public in the conservation and enhancement of trophy bass fishing in Texas through the ShareLunker Program.

Culture 42 different species of fish, reptiles, birds, and mammals for educational displays.

Manage project income and grants to help support the Visitor Center.

Maintain a volunteer program to assist with the daily operations of the Visitor Center.

Actively market and promote TFFC to increase visitation.

Maintain facilities and equipment for peak operation.

### ***Hatchery***

Culture three different species of fish and stock into public waters.

- Florida largemouth bass (including ShareLunker offspring)
- Channel catfish
- Rainbow trout

Conduct aquaculture research designed to increase hatchery productivity and efficiency.

Maintain facilities and equipment for peak operation and appearance.

### **Program Costs**

The total cost for the Education and Outreach and Hatchery Programs for FY05 was \$1,940,142.

# Accomplishments

## *Visitor Center*

- Open to the public for 306 days.
- Visitation to TFFC during FY05 was 63,083 of which 22,436 were youth. Visitor surveys indicated the most liked activity at the center was fishing. Visitor satisfaction has been rated excellent.
- Generated \$268,190 in project income.
- Hatchery Tram Tours – The extensive hatchery tram tour provided 25,488 visitors with information about freshwater fish production in the 45 production ponds.
- Intensive Hatchery Unit Tours- Gave 14 groups comprised of 238 visitors a tour of the intensive hatchery.
- Fishing Pond Activity - Adjacent to the Visitor Center is a 1.5-acre casting pond and Anglers Pavilion, which serves as a classroom and staging area for fishing. School age children receive instruction on basic fishing skills, equipment, angler ethics, catch-and-release conservation, and safety. Here, instructors also take the opportunity to reinforce the Visitor Center information on the Sport Fish Restoration Program and its importance to future anglers. Stocked with rainbow trout in winter and channel catfish during summer, the casting pond offers visitors an interactive opportunity to put their newly acquired knowledge to work and catch fish. Over 33,022 visitors fished in the casting pond. More than 398 children received a certificate for catching their first fish at the casting pond.
- Fly Fish Texas - Hosted by TFFC and Texas fly fishing clubs, Fly Fish Texas provided an interactive educational experience featuring seminars, demonstrations and hands-on experience. Most of the 1,147 attendees were new to the sport and desired inexpensive hands-on training and information. We certified 86 individuals for the TPWD's Flyfisher Program.
- Three flyfishing classes were conducted with approximately 40 adults attending.
- Junior Angler Adventure / National Fishing Week - TFFC, in partnership with the Freshwater Angler's Association, Dallas Woods and Waters Conservation Club, Athens Wal-Mart Supercenter, Bass Pro Shops Outdoor World, Gander Mountain and Skeeter Boats, kicks off National Fishing Week with a fishing festival. The primary goal is to introduce school-age children to a positive outdoor experience through hands-on activities and exhibits on wildlife, fishing, conservation, and law enforcement.
- Two pre-service teacher groups (81 pre-service teachers) were trained at TFFC through Stephen F. Austin State University.
- Two summer teacher training workshops were conducted with approximately 44 teachers attending.
- A teacher survey was distributed to youth group leaders in order to receive feedback about the TFFC educational experience. Of 279 distributed surveys, 162 were returned (58%). The three most-enjoyed items were fishing, dive show, and exhibits/fish feeding.

- Staff at the Center spoke before 14 clubs and organizations during the year. Additional educational outreach included exhibiting at the TPWD's Wildlife Expo in Austin, the state Conference for the Advancement of Science Teaching (CAST) in Houston, and the regional MiniCAST in Tyler, and two fishing and or youth oriented tradeshow.
- Five Boy Scout Fishing Merit Badge Programs were provided to 77 scouts. A TFFC staff person or volunteer was available for teaching or assisting the individual scouts in completing each of the activities. These activities included identifying fishing equipment and tackle along with demonstrating their individual uses, tying knots, identifying safety concerns, understanding fishing laws, catching fish, releasing and processing fish, and practicing good sportsmanship behavior.
- Digital photography workshop conducted by Canon, Inc, and Texas State Photographer Wyman Meinzer trained 25 professional and amateur photographers in the basics of digital photography.
- Forty volunteers donated 4,685 hours to the center's educational programs.
- Received \$47,395 in gifts, grants and endowment funds.

### *Hatchery*

- Had a successful ShareLunker year with 24 fish donated.
- Held and stocked 84,326 rainbow trout.
- Reared and stocked 52,128 channel catfish.
- Produced, reared, and stocked 2,881,381 Florida largemouth bass.

### **Special Projects**

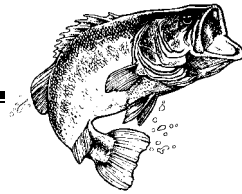
Special projects are included in the **Fisheries Research** section on page 18. These activities are research oriented and are coordinated through fisheries research biologists.

### **Organization**

The organizational flow chart for Texas Freshwater Fisheries Center, Athens, can be found on page 71 of Appendix, Organization Charts.

# FISH HATCHERIES

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## Goal

To meet the stocking needs for Texas public waters as determined by Inland Fisheries resource management teams.

## Rationale

Freshwater fish hatcheries are an important component of Inland Fisheries resource management. Hatchery-reared fish are used to establish new fish populations, enhance existing populations, support research efforts, and maintain put-and-take or put-grow-and-take fisheries in small urban reservoirs where natural production will not meet angling needs.

## Facilities

### *Dundee Fish Hatchery*

- Location – The Dundee Fish Hatchery is located directly below Lake Diversion approximately 23 miles southwest of Wichita Falls, Texas in Archer County.
- Construction Date – Original construction in 1927 included 44 earthen ponds totaling 32.9 acres. Water for the facility is acquired by gravity flow through 14- and 30-inch pipelines from Lake Diversion.
- Renovation History – Hatchery ponds were renovated in 1958 and expanded to 91 earthen ponds totaling 78.31 acres in 1977. In 1993, seventy-five percent of the production ponds received complete renovation including plastic liners and state-of-the-art harvest basins.

### *Possum Kingdom Fish Hatchery*

- Location – The Possum Kingdom Fish Hatchery is located below Possum Kingdom Reservoir Dam 10 miles north of Brad, Texas in Palo Pinto County.
- Construction Date – The original 44 earthen ponds totaling 28.98 acres were constructed in 1950.
- Renovation History – In 1993 an intensive incubation and rearing building (60'x 90') was constructed. Additionally, pond liners were installed in 75 percent of the production ponds in 1994. Repair of the hatchery water distribution and drain lines as well as the construction of an effluent screening and water re-use system was completed in 2002. Phase two of planned renovations including construction of an intensive rearing facility and a new administrative and laboratory building was completed in July 2005. Renovation and relocation of the facility effluent screening facility was completed in June 2006.

### *A.E. Wood Fish Hatchery*

- Location – The A. E. Wood Fish Hatchery is a state-of-the-art fish production facility located on the San Marcos River in San Marcos, Texas in Hays County.

- Construction Date – Original construction was completed in 1949 and consisted of 92 earthen ponds totaling 61.02 acres of water.
- Renovation History – The hatchery was completely renovated in 1989 to include 50 plastic lined ponds totaling 46.25 acres and a 33,000 square foot production building at a cost of \$14 million. Housed in the culture building are 8 concrete raceways (80'x8'x3') for intensive production and spawning, 22 fiberglass holding troughs (20'x2.5'x2'), a state-of-the-art incubation facility and laboratory. The culture building also houses a 19,000 square foot basement used as mechanical and storage areas. Additionally an effluent treatment and water re-use facility was constructed in 1999 at a cost of \$3,000,000. Pond liners and the facility intake screens were replaced in 2005.

### ***Jasper Fish Hatchery***

- Location – The Jasper Fish Hatchery is located 10 miles northwest of Jasper, Texas in Jasper County.
- Construction Date – The original 33 earthen ponds totaling 42.44 acres were constructed in 1932.
- Renovation History – Thirty additional earthen ponds totaling 21.5 acres were constructed in 1947. In 1993 an intensive incubation and rearing building (60'x 90') was constructed.

### ***Texas Freshwater Fisheries Center (TFFC)***

See Education and Outreach, page 52.

## **Responsibilities**

Support resource management needs by:

- Culturing requested species for stocking.
- Conducting aquaculture research designed to increase productivity and efficiency.
- Ensuring general health and genetic integrity of stocked species.
- Performing vital public affairs and education functions through hatchery tours, public lectures and school visitations.
- Maintaining facilities and equipment for peak operation.

## **Program Costs**

The total operating and salary cost for the TPWD freshwater fish hatcheries for FY05 (including culture operations at TFFC) was \$3,640,156.

## Accomplishments

### *Species Stocked in Public Waters*

There were 28,299,003 fishes stocked in State waters during 2005. These stockings are presented in the *Appendix* (page 86), 2005 Stocking Records. Largemouth bass (29%), striped bass (12%) and palmetto bass (35%) represent the majority of the fish stocked.

Blooms of golden algae (*P. parvum*) continue to significantly impacted culture activities at Dundee and Possum Kingdom Fish Hatcheries. Hatchery and research staff continue to conduct applicable research and revise management plans to control or mitigate the toxic effects of the algae in hatchery production ponds.

### *Special Project Activities*

Special projects are included in the **Fisheries Research** section on page 37. These activities are research in nature and are a by-product of routine hatchery operations. Study designs are coordinated through Fisheries Research biologists.

### *Other Activities*

A site below Sam Rayburn Reservoir in Jasper County was selected from 7 potential sites as the preferred location for a new fish hatchery in East Texas to replace the Jasper Facility in 2004. a Design and Engineering firm was selected and programming and design of the new facility has begun. Design is anticipated to take 12-18 months. Construction of the new facility is expected to take 3 years.

## Organization

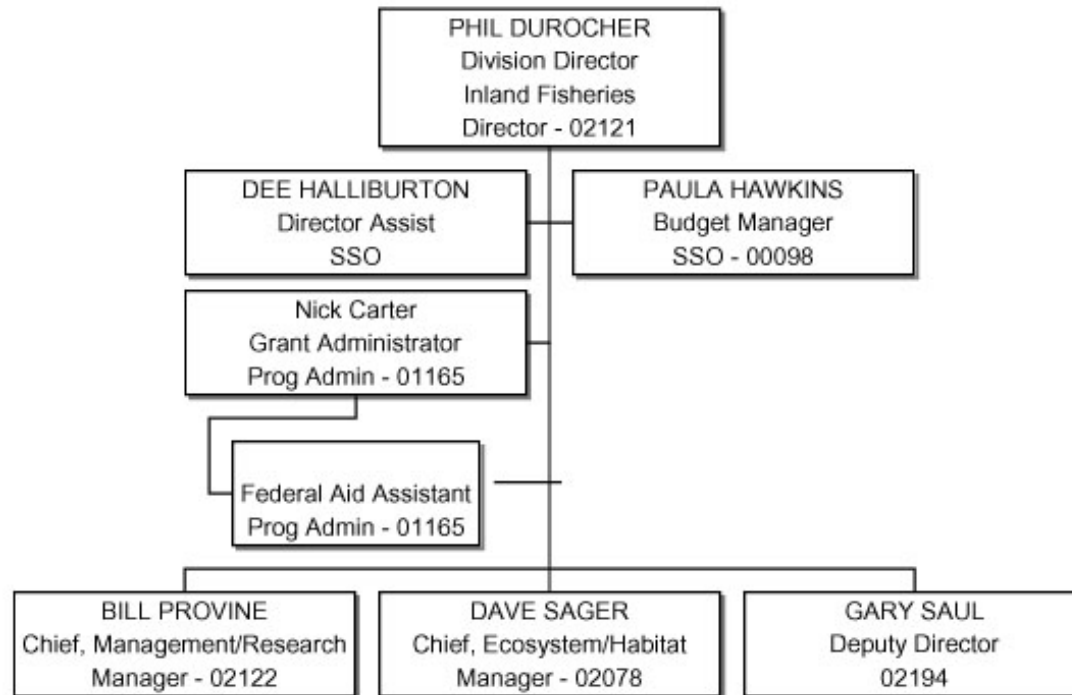
Inland Fisheries Hatcheries organizational flow chart is located on pages 72 through 74 of *Appendix, Organization Charts*.



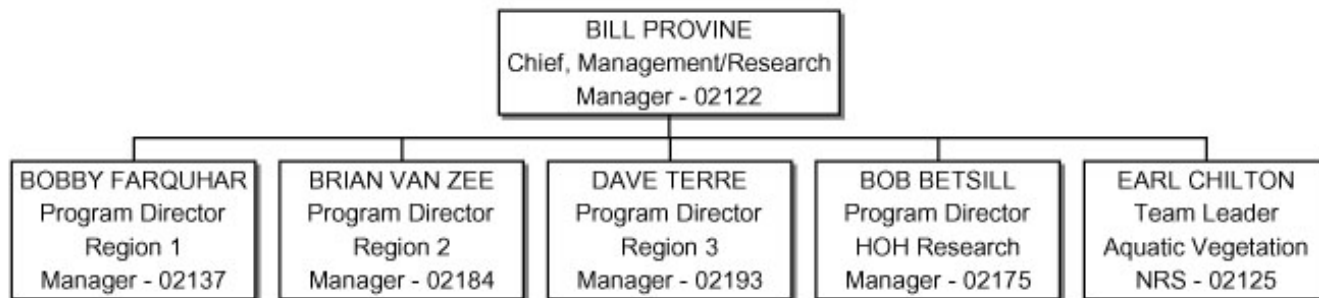
# Appendix

## **Organization Charts**

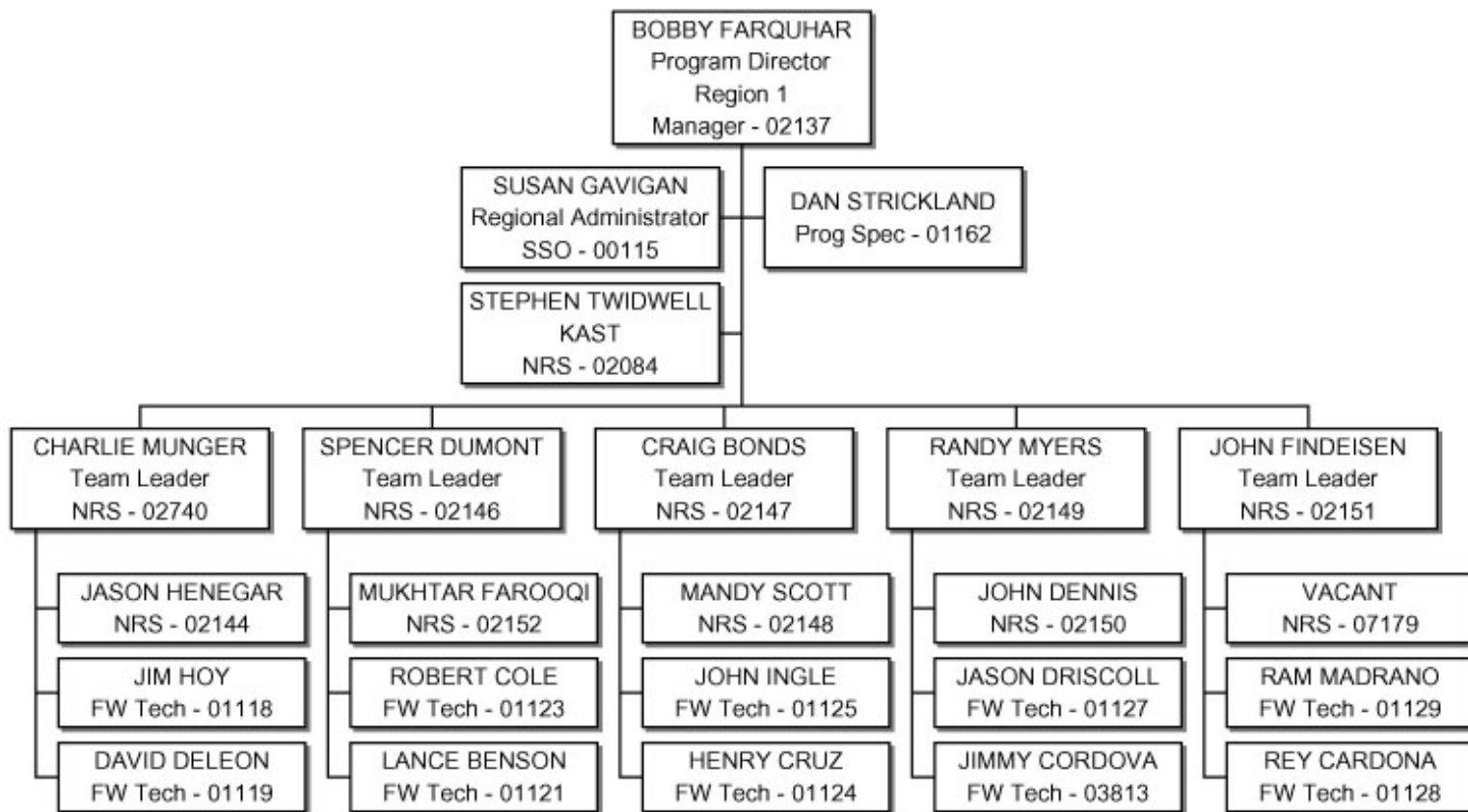
## INLAND FISHERIES DIVISION



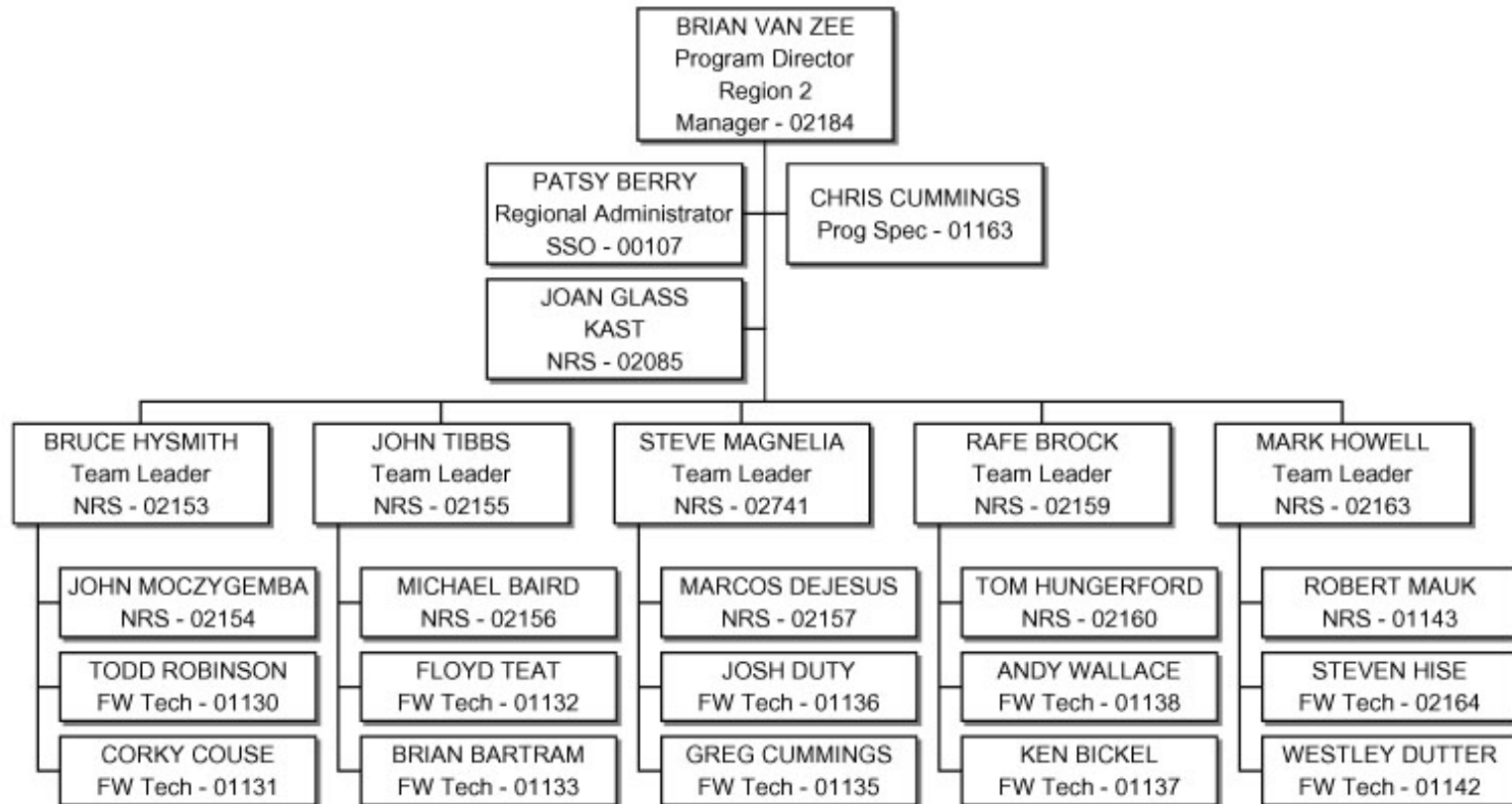
## MANAGEMENT AND RESEARCH



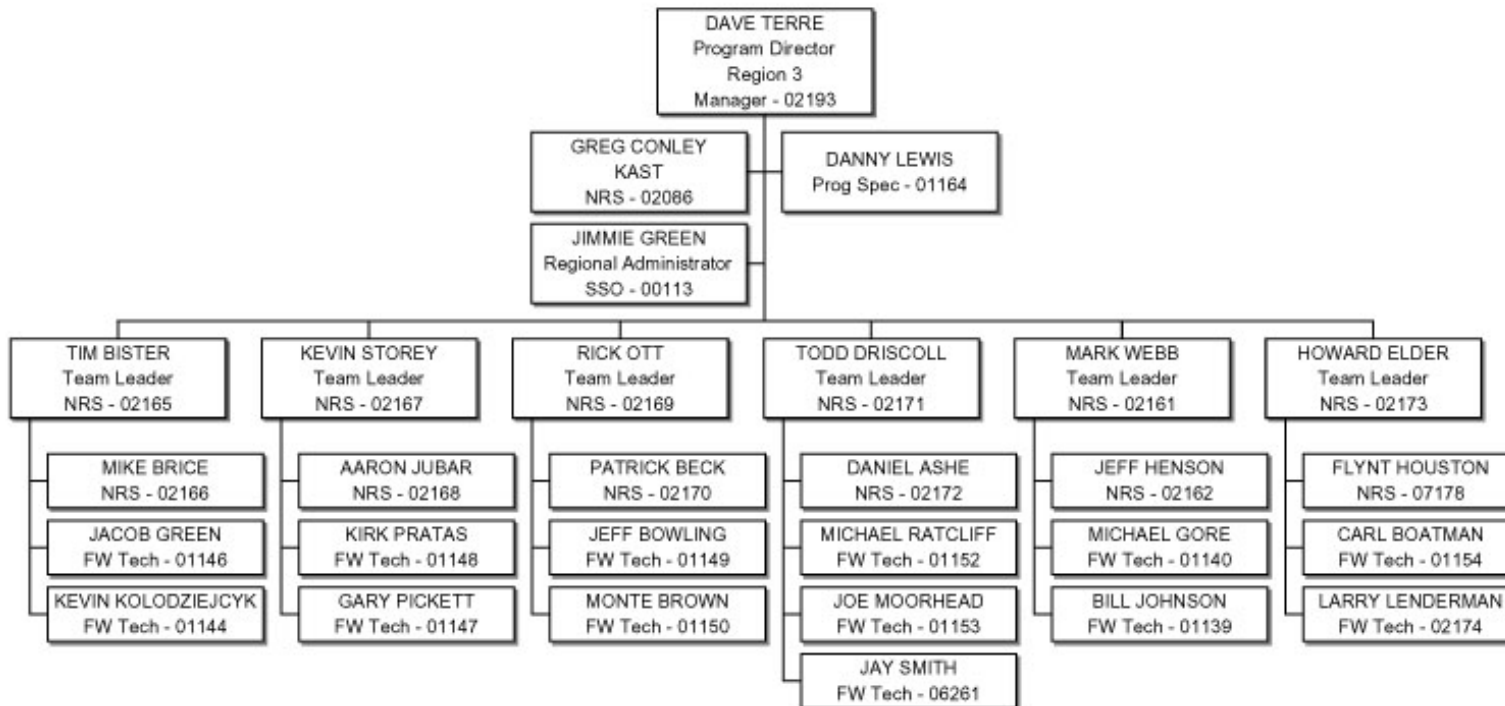
## MANAGEMENT REGION 1 - SAN ANGELO



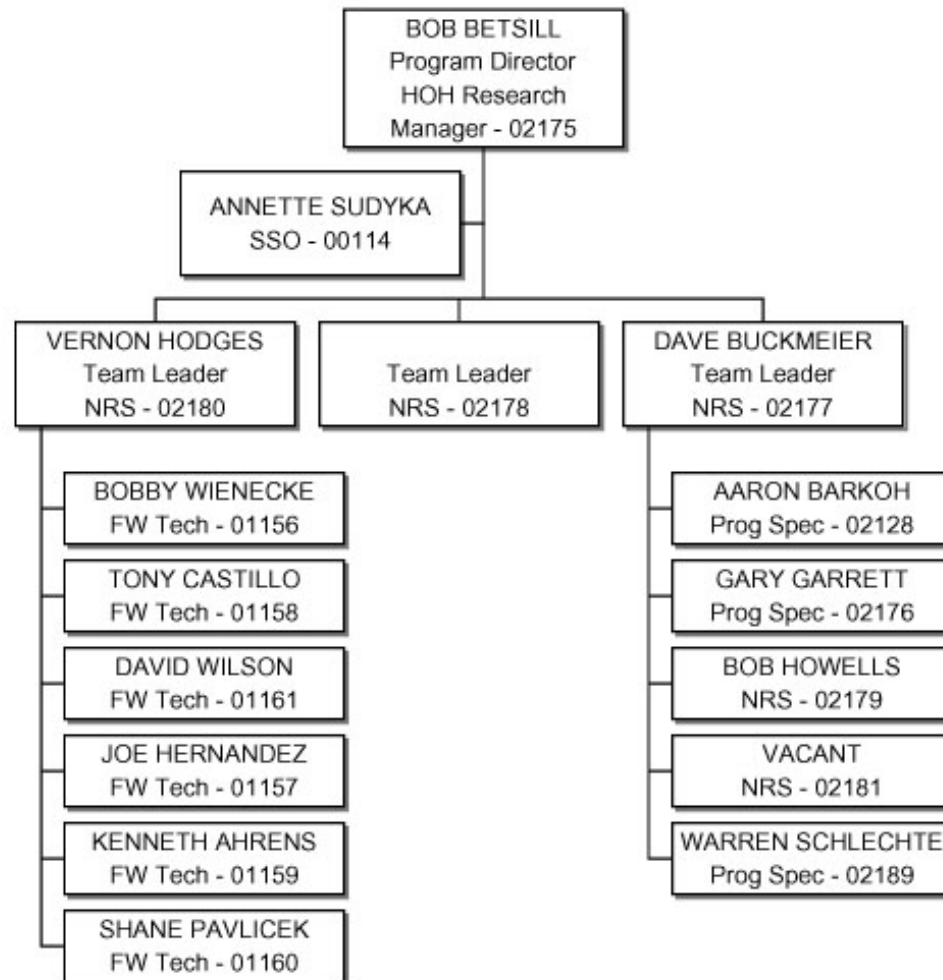
## MANAGEMENT REGION II - WACO



## MANAGEMENT REGION III - TYLER

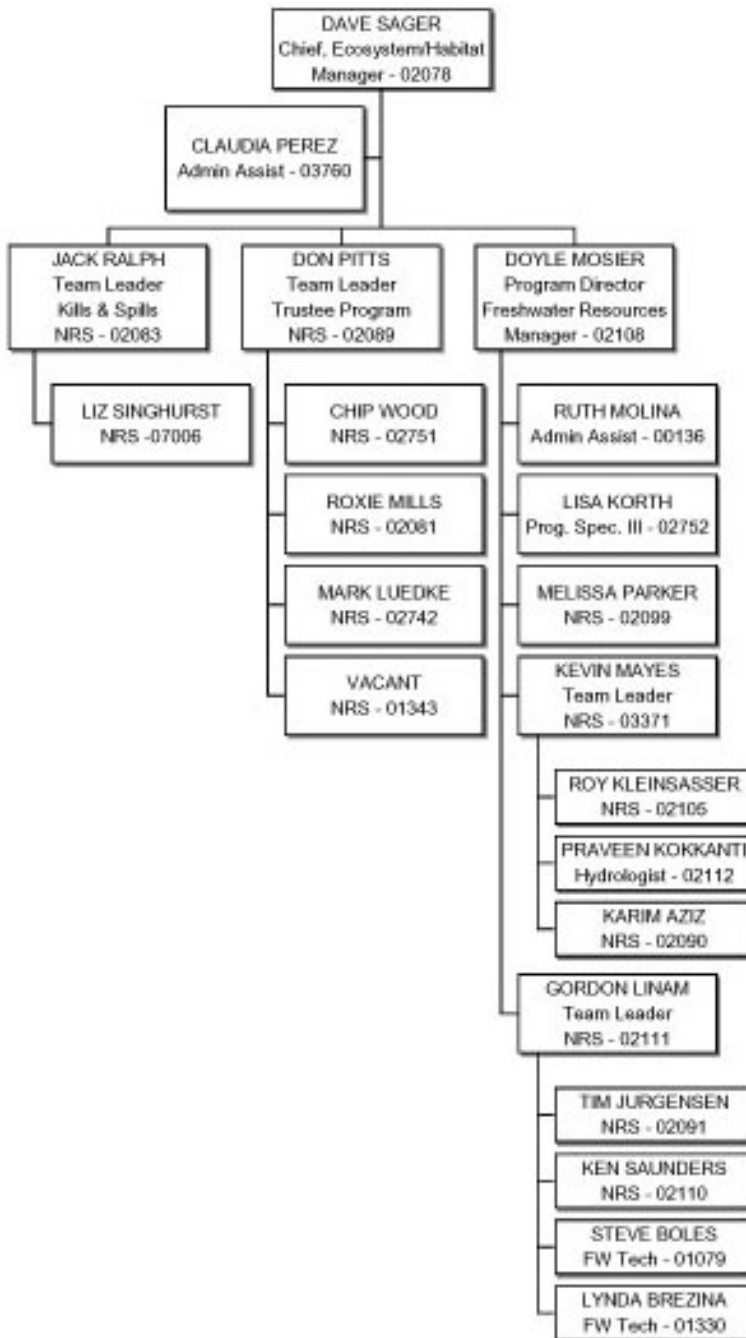


## FISHERIES RESEARCH - HEART OF THE HILLS

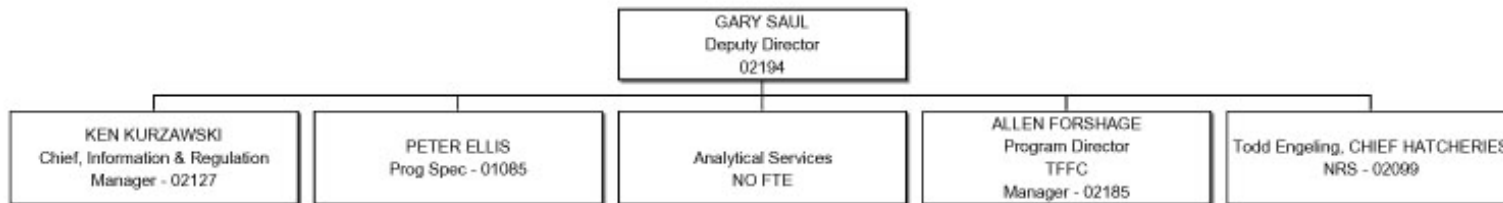




## ECOSYSTEM / HABITAT



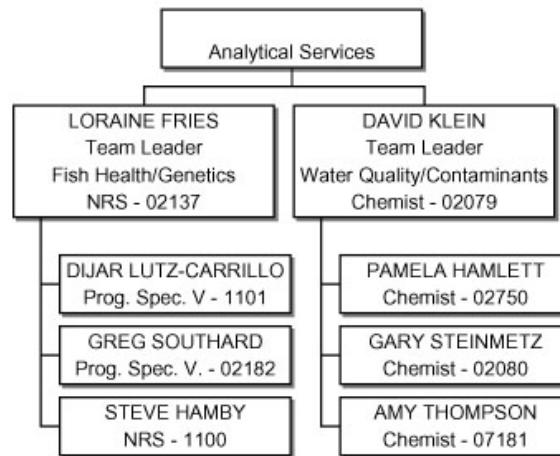
## SUPPORT SERVICES



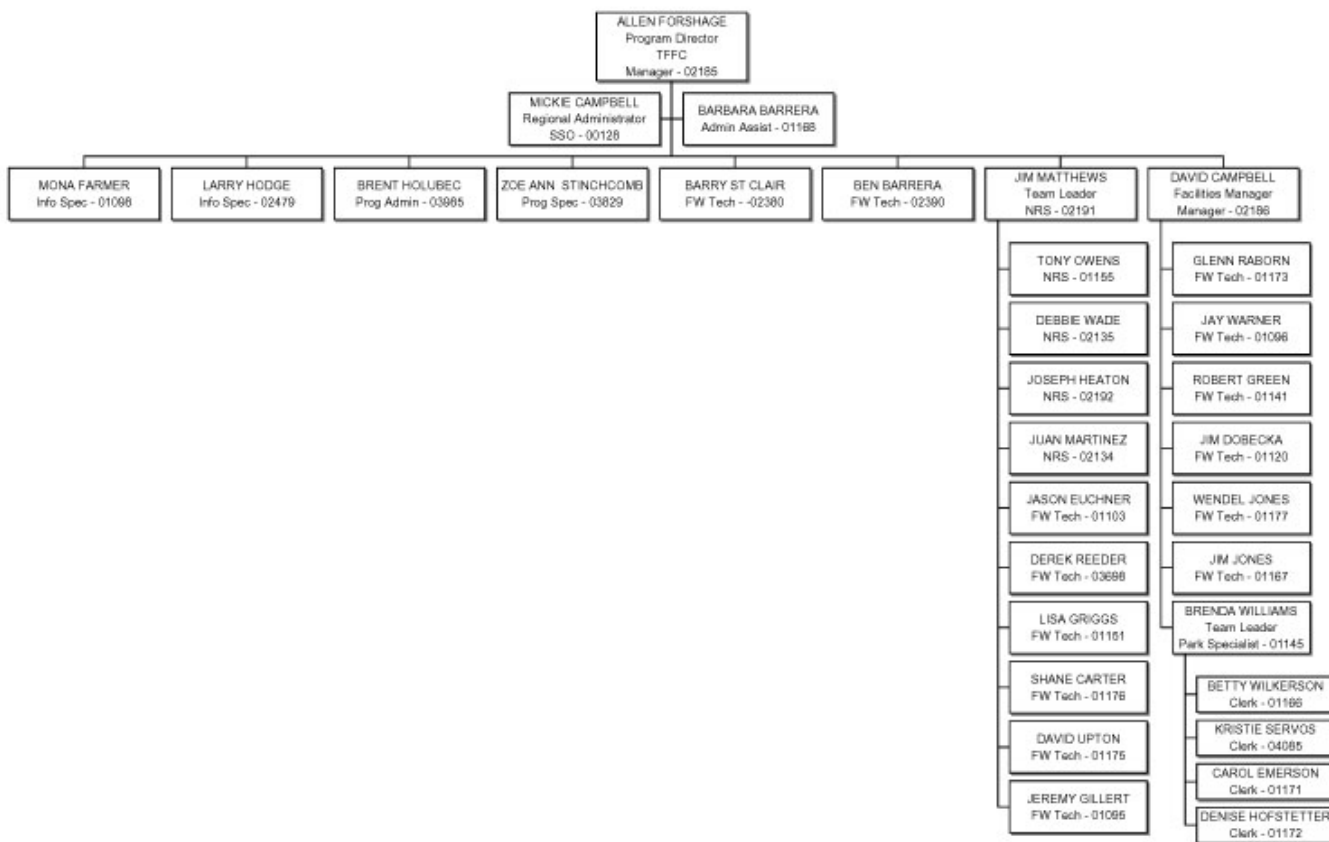
## INFORMATION AND REGULATION



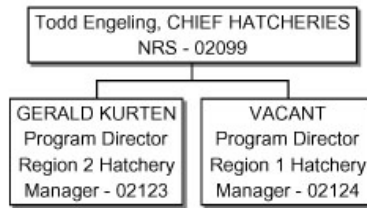
## ANALYTICAL SERVICES



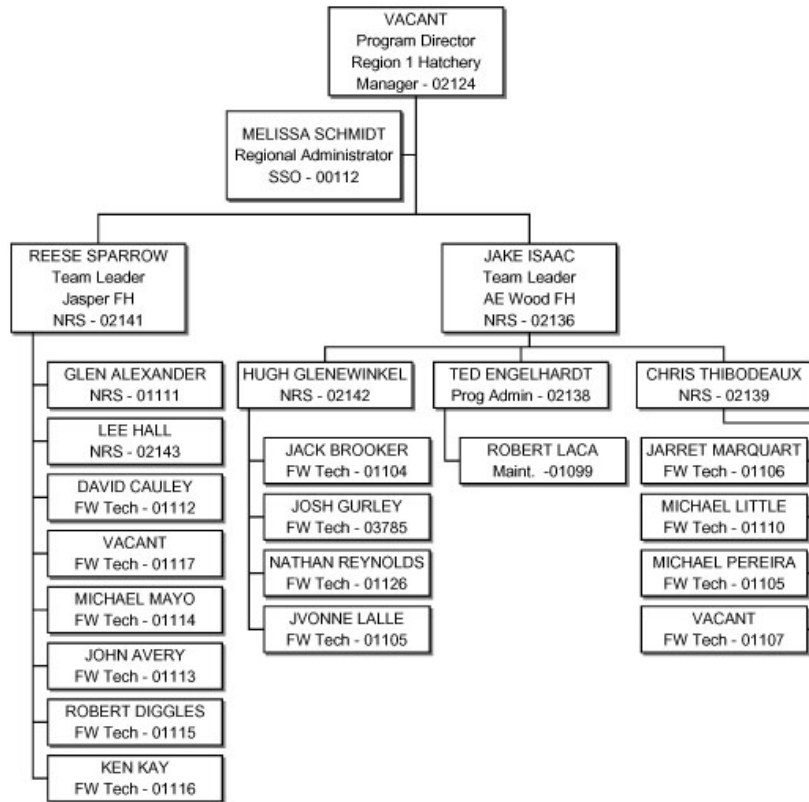
TEXAS FRESHWATER FISHERIES CENTER



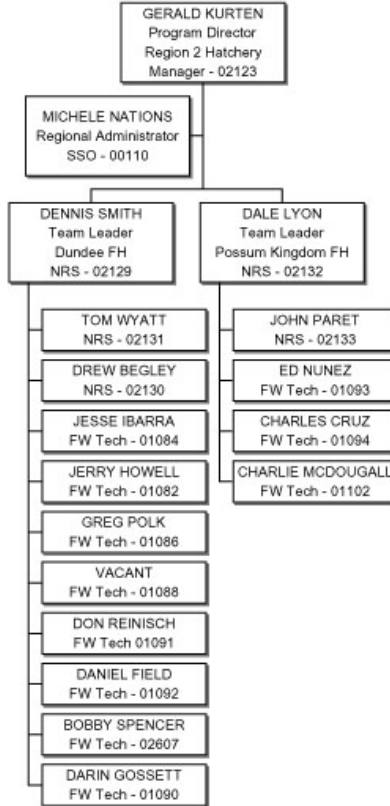
## HATCHERIES



## Hatcheries - Region I



## Hatchery - Region II





## **Division Personnel Directory**

### Inland Fisheries Division Directory

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B3221200019	Robinson, Todd P O Box 1446 Pottsboro, TX 75076-1446	District II - A Pottsboro	F&W Tech. IV		todd.robinson@tpwd.state.tx.us	Work: 903/786-2389 Fax: 903/786-9871
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### Inland Fisheries Division Directory

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### Inland Fisheries Division Directory

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B3221300115	Storey, Kevin Winston 2122 Henderson Hwy. Tyler, TX 75702-6400	District III - B Tyler	NRS VI	District Supervisor	kevin.storey@tpwd.state.tx.us	Work: 903/593-5077 Fax: 903/531-0109
B3221300115	Jubar, Aaron 2122 Old Henderson Hwy Tyler, TX 75702	District III - B Tyler	NRS IV	Mgmt. Biologist	Aaron.jubar@tpwd.state.tx.us	Work: 903 593-5077 Fax: 903 531-0109
B3221300115	Pickett, William G. 2122 Old Henderson Hwy. Tyler, TX 75702-6400	District III - B Tyler	F&W Tech. IV		Gary.pickett@tpwd.state.tx.us	Work: 903/593-5077 Fax: 903/531-0109
B3221300115	Pratas, Kirk S. 2122 Old Henderson Hwy. Tyler, TX 75702-6400	District III - B Tyler	F&W Tech. IV		Kirk.prates@tpwd.state.tx.us	Work: 903/593-5077 Fax: 903/531-0109
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B3221300128	Beck, Patrick 11810 FM 848 Tyler, TX 75707	District III - C Tyler	NRS IV	Mgmt. Biologist	Pat.beck@tpwd.state.tx.us	Work: 903 566-2161 Fax: 903 566-3542
B3221300128	Bowling, Jeffrey 11810 FM 848 Tyler, TX 75707	Region III - C Tyler	F&W Tech. IV		Jeffrey.bowling@tpwd.state.tx.us	Work: 903 566-2161 Fax: 903 566-3542
B3221300128	Brown, Monte 11942 FM 848 Tyler, TX 75707-5234	District III - C Tyler	F&W Tech. III		Monte.brown@tpwd.state.tx.us	Work: 903/566-2161 Fax: 903/566-3542
1B3221300179	Driscoll, Michael Todd Rt 2, Box 535 Jasper, TX 75951	District III - D Jasper	NRS VI	District Supervisor	Todd.driscoll@tpwd.state.tx.us	Work: 409 384-9572 Fax: 409 384-4984
B3221300179	Moorhead, Joe Rt 2, Box 535 Jasper, TX 75951	District III - D Jasper	FW Tech IV		joe.moorhead@tpwd.state.tx.us	Work: 409 384-9572 Fax: 409 384-4984



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B3221300317	Webb, Mark 1004 E. 26th Street Bryan, TX 77803-7800	District III – E Bryan	NRS VI	District Supervisor	mark.webb@tpwd.state.tx.us	Work: 979/822-5067 Fax: 979/823-5860
B3221300317	Gore, Michael Scott 1004 E. 26 <sup>th</sup> St Bryan, TX 77803	District III – E Bryan	F W Tech IV		mike.gore@tpwd.state.tx.us	Work: 979 822-5067 Fax: 979/823-5860
B3221300317	Henson, Jeffrey 1004 E. 26th St. Bryan, TX 77803-7800	District III – E Bryan	NRS V	Mgmt. Biologist	jeff.henson@tpwd.state.tx.us	Work: 979/822-5067 Fax: 979/823-5860
B3221300317	Johnson, Bill 1004 E. 26th St. Bryan, TX 77803-7800	District III – E Bryan	F&W Tech V		<a href="mailto:william.johnson@tpwd.state.tx.us">william.johnson@tpwd.state.tx.us</a>	Work: 979/822-5067 Fax: 979/823-5860
B3221000141	Elder, Howard Rt 2, Box 535 Jasper, TX 75951-9202	District III -Aquatic Vegetation Control – Jasper	Manager II	Habitat Enhanc. Superv.	howard.elder@tpwd.state.tx.us	Work: 409/384-9965 Fax: 409/384-4984
B3221000141	Houston, Michael Flynt Rt 2, Box 535 Jasper, TX 75951-9202	District III -Aquatic Vegetation Control – Jasper	NRS III		Flynt.houston@tpwd.state.tx.us	Work: 409/384-9965 Fax: 409/384-4984
B3221000102	Boatman, Carl E. Rt 2, Box 535 Jasper, TX 75951-9202	District III - Aquatic Vegetation Control – Jasper	F&W Tech V		<a href="mailto:carl.boatman@tpwd.state.tx.us">carl.boatman@tpwd.state.tx.us</a>	Work: 409/384-9965 Fax: 409/384-4984
B3221000102	Lenderman, Larry R Rt 2, Box 535 Jasper, TX 75951-9202	District III - Aquatic Vegetation Control – Jasper	FW Tech IV		Larry.lenderman@tpwd.state.tx.us	Work: 409/384-9965 Fax: 409/384-4984
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B3222300705	Matthews, James Hardy 5550 FM 2495 Athens, TX 75752-6381	TFFC-Athens	Mgr II	Hatchery Mgr.	jim.matthews@tpwd.state.tx.us	Work: 903/676-2277 ext. 337 Fax: 903/676-3474 Direct line: 903 670-2237
B3222300030	Barrera, Barbara 5550 FM 2495 Athens, TX 75752-6381	TFFC-Athens	Ad Tech III	Reservations/ Secretary	barbara.barrera@tpwd.state.tx.us	Work: 903/676-2277 Fax: 903/676-3474
B3222300030	Barrera, Ben 5550 FM 2495 Athens, TX 75752-6381	TFFC-Athens	F&W Tech. III	Education		Work: 906/676-2277 Fax: 903/677-2694
B3222300705	Campbell, David 5550 FM 2495 Athens, TX 75752-6381	TFFC-Athens	Program Specialist VI	Facility Manager/ ShareLunker Director	david.campbell@tpwd.state.tx.us	Work: 903/676-2277 ext. 230 Fax: 903/676-3474 Direct Line: 903 670-2226
B3222300030	Campbell, Mickie 5550 FM 2495 Athens, TX 75752-6381	TFFC-Athens	SSO I	Admn. Assistant	mickie.campbell@tpwd.state.tx.us	Work: 903/676-2277 ext. 226 Fax: 903/676-3474 Direct line: 903 670-2226
B3222300705	Carter, Stephen (Shane) 5550 FM 2495 Athens, TX 75752-6381	TFFC-Athens	F&W Tech. III	Hatchery/Exhibits	stephen.carter@tpwd.state.tx.us	Work: 903/676-2277 ext. 332 Fax: 903/676-3474
B3222300705	Euher, Jason M 5550 FM 2495 Athens, TX 75752-6381	TFFC-Athens	F&W Tech. III	Hatchery/Exhibits		Work: 903/676-2277 Fax: 903/676-3474
B3222300705	Dobecka, James 5550 FM 2495 Athens, TX 75752-6381	TFFC-Athens	F&W Tech. III	Maintenance	jim.dobeka@tpwd.state.tx.us	Work: 903/676-2277 Fax: 903/676-3474

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B3222300705	Gillert, Jeremy 5550 FM 2495 Athens, TX 75752-6381	TFFC -Athens	F&W Tech II	Hatchery	<a href="mailto:Jeremy.gillert@tpwd.state.tx.us">Jeremy.gillert@tpwd.state.tx.us</a>	Work: 903/676-2277 Fax 903/676-3474
B3222300030	Green, Robert 5550 FM 2495 Athens, TX 75752-6381	TFFC Athens	F&W Tech III	Maintenance	bob.green@tpwd.state.tx.us	Work: 903 676-2277 Fax: 903 676-3474
B3222300705	Griggs, Lisa M. 5550 FM 2495 Athens, TX 75752-6381	TFFC-Athens	F&W Tech. IV	Hatchery/Exhibits	lisa.griggs@tpwd.state.tx.us	Work: 903/676-2277 ext. 336 Fax: 903/676-3474
B3222300030	Heaton, Joseph (Wayne) 5550 FM 2495. Athens, TX 75752-6381	TFFC-Athens	NRS I	Exhibits Curator	Wayne.heaton@tpwd.state.tx.us	Work: 903/676-2277 ext. 339 Fax: 903/676-2694 Direct Line: 903/670-2239
B3222300030	Hodge, Larry 5550 FM 2495. Athens, TX 75752-6381	TFFC-Athens	F&W Tech III	Marketing	<a href="mailto:Larry.hodge@tpwd.state.tx.us">Larry.hodge@tpwd.state.tx.us</a>	Work: 903/676-2277 ext. 255 Fax: 903/676-2694 Direct Line: 903/670-2255
B3222300030	Hofstetter, Denise 5550 FM 2495 Athens, TX 75752-6381	TFFC-Athens	Clerk IV	Visitors Services		Work: 903 676-2277 Fax: 903 676-3474
B3222300705	Jones, Jim	TFFC-Athens	F& W Tech III	Maintenance	<a href="mailto:Jim.jones@tpwd.state.tx.us">Jim.jones@tpwd.state.tx.us</a>	Work: 903/676-2277 x 442 Fax: 903/676-3474
B3222300705	Jones, Wendel Wayne 5550 FM 2495 Athens, TX 75752-6381	TFFC-Athens	F&W Tech. IV	Maintenance	Wendel.jones@tpwd.state.tx.us	Work: 903/676-2277 X 443 Fax: 903/676-3474
B3222300705	Martinez, Juan 5550 FM 2495 Athens, TX 75752-6381	TFFC Athens	NRS I	Intensive Culture	Juan.martinez@tpwd.state.tx.us	Work: 903 670-2277 Fax: 903 677-2694 Direct line 678 2285

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B3222300030	Raborn, Glenn 5550 FM 2495 Athens, TX 75752-6381	TFFC-Athens	F&W Tech. IV	Maintenance	<a href="mailto:Glenn.raborn@tpwd.state.tx.us">Glenn.raborn@tpwd.state.tx.us</a>	Work: 903/676-2277 Fax: 903/676-3474
B3222300705	Reeder, Derek 5550 FM 2495 Athens, TX 75702-6381	TFFC-Athens	FW Tech II	Hatchery/Exhibits		Work: 903 676-2277 Fax: 903 676-3474
B3222300030	Servos, Kristie Renee 5550 FM 2495 Athens, Texas 75752-6381	TFFC-Athens	Clerk IV	Visitor Services		Work: 903 676-2277 Fax: 903 676-3474
B3222300030	St. Clair, Barry 5550 FM 2495 Athens, TX 75752-6381	TFFC-Athens	F&W Tech. III	Marketing/ Education	<a href="mailto:barry.stclair@tpwd.state.tx.us">barry.stclair@tpwd.state.tx.us</a>	Work: 903/676-2277 Fax: 903/677-2694 Direct Line: 903/676-2222
B3222300030	Stinchcomb, Zoe Ann 5550 FM 2495 Athens, TX 75752-6381	TFFC-Athens	Program Specialist IV	Education Specialist	<a href="mailto:Zoeann.stinchcomb@tpwd.state.tx.us">Zoeann.stinchcomb@tpwd.state.tx.us</a>	Work: 903/676-2277 x338 Direct line: 903/670-2238 Fax: 903/677-2694
B3222200705	Wade, Deborah 5550 FM 2495 Athens, TX 75751-6381	TFFC-Athens	NRS V	Lab	<a href="mailto:deborah.wade@tpwd.state.tx.us">deborah.wade@tpwd.state.tx.us</a>	Work: 903 670-2234 903 676-2277 Fax: 903/676-3474
B322300030	Warner, Alonzo (Jay) 5550 FM Athens, TX 75751-6381	TFFC-Athens	FW Tech III	Maintenance/ Custodian		Work: 903/676-2277 Fax: 903/676-3474
B3222300030	Wilkerson, Betty S 5550 FM 2495 Athens, TX 75751-6381	TFFC-Athens	Clerk IV	Visitor Services		Work: 903 676-2277 Fax: 903 676-3474
B3222300030	Williams, Brenda 5550 FM 2495 Athens, TX 75751-6381	TFFC-Athens	Staff Serv. Officer II	Visitor Service Director	<a href="mailto:brenda.williams@tpwd.state.tx.us">brenda.williams@tpwd.state.tx.us</a>	Work: 903/676-2277 ext. 232 Fax: 903/676-3474 Direct line: 903 670-2232

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B3222200036	Begley, Drew C Rt I, Box 123Aa Electra, TX 76360	Dundee Hatchery-Electra	NRS I	Hatchery Biologist	drew.begley@tpwd.state.tx.us	Work: 940/586-1203 Fax: 940-586-1540
B3222200036	Field, Daniel Wayne Rt I, Box 123A Electra, TX 76360	Dundee Hatchery-Electra	F W Tech III		daniel.field@tpwd.state.tx.us	Work: 940 586-1203 Fax: 940 586-0089
B3222100036	Ibarra, Jr., Jesse RR 1, Box 123-A Electra, TX 76360-9502	Dundee Hatchery-Electra-	F&W Tech. III		ibarra.jesus@tpwd.state.tx.us	Work: 940/586-1203 Fax: 940/586-1540
B3222100036	Nations, Michele A. 5550 FM 2495 Athens, TX 75751-6381	Possum Kingdom Fish Hatchery	SSO I	Admn. Assistant	michele.nations@tpwd.state.tx.us	Work: 940/779-2301
B3222100036	Polk, Gregory L. RR 1, Box 123-A Electra, TX 76360-9502	Dundee Hatchery-Electra	F&W Tech. IV		greg.polk@tpwd.state.tx.us	Work: 940/586-1203 Fax: 940/586-1540
B3222100036	Reinisch, Donald RR1, Box 123 A Electra, TX 76360-9502	Dundee Hatchery-Electra	F&W Tech III		don.reinisch@tpwd.state.tx.us	Work: 940 586-1203 ext 25 Fax: 940 586-1540
B3222200036	Wyatt, Tom Rt I, Box 123A Electra, TX 76360	Dundee Hatchery-Electra	NRS III	Hatchery Biologist	tom.wyatt@tpwd.state.tx.us	Work: 940 586-1203 Fax: 940 586-1540
B3222100036	Spencer, Bobby RR 1, Box 123-A Electra, TX 76360-9502	Dundee Hatchery-Electra	F&W Tech. II		Bobby.spencer@tpwd.state.tx.us	Work: 940/586-1203 Fax: 940/586-0089
B3222100036	Gosset, Darin RR 1, Box 123-A Electra, TX 76360-9502	Dundee Hatchery-Electra	F&W Tech. II		Bobby.spencer@tpwd.state.tx.us	Work: 940/586-1203 Fax: 940/586-0089

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B3222200208	McDougall, Charles Eugene 600 Hwy 16 South Graford, TX 76449	Possum Kingdom -Graford	F W Tech III			Work: 940 779-2301 Fax: 940 779-2670
B3222100208	Nunez, Eduardo 600 Hwy 16 South Graford, TX 76449	Possum Kingdom-Graford	F W Tech IV		eduardo.nunez@tpwd.state.tx.us	Work: 940/779-2301 Fax: 940/779-2670
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B3222200250	Avery, John RR 2, Box 535 Jasper, TX 75951-9685	Jasper Hatchery	F&W Tech. III			Work: 409/384-2221 Fax: 409/384-4984
B3222200250	Cauley, David RR 2, Box 535 Jasper, TX 75951-9685	Jasper Hatchery	F&W Tech. IV			Work: 409/384-2221 Fax: 409/384-4984
B3222200250	Diggles, Robert RR 2, Box 535 Jasper, TX 75951-9685	Jasper Hatchery	F&W Tech. III			Work: 409/384-2221 Fax: 409/384-4984
B3222200250	Hall, Belva Lee RR 2, Box 535 Jasper, TX 75951-9685	Jasper Hatchery	NRS IV	Hatchery Biologist	lee.hall@tpwd.state.tx.us	Work: 409/384-2221 Fax: 409/384-4984
B3222100250	Kay, Kenneth A. Rt 2, Box 535 Jasper, TX 75951-9685	Jasper Hatchery	FW Tech II			Work: 409/384-2221 Fax: 409/384-2221
B3222200250	Mayo, Michael C. RR 2, Box 535 Jasper, TX 75951-9685	Jasper Hatchery	F&W Tech. III			Work: 409/384-2221 Fax: 409/384-4984
B3222100250	Sparrow, Reese RR2, Box 535 Jasper, TX 75951-9685	Jasper Hatchery	Manger II	Hatchery Manager	reese.sparrow@twd.state.tx.us	Work: 409 384-2221 Fax: 409 384-4984

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B32221000568	Marquart, Jarret 507 Staples Road San Marcos, Texas 78666	A.E. Wood Fish Hatchery	F&W Tech. IV		Jarret.marquart@tpwd.state.tx.us	Work: 512/7353-0572 Fax: 512/353-0629
B32221000568	Vacant 507 Staples Road San Marcos, Texas 78666	A.E. Wood Fish Hatchery	Maintenance Tech IV			Work: 512/7353-0572 Fax: 512/353-0629
B32221000568	Brooker, Jack 507 Staples Road San Marcos, Texas 78666	A.E. Wood Fish Hatchery	F&W Tech. IV		Jack.brooker@tpwd.state.tx.us	Work: 512/7353-0572 Fax: 512/353-0629
B32221000568	Reynolds, Nathan 507 Staples Road San Marcos, Texas 78666	A.E. Wood Fish Hatchery	F&W Tech. III		nathan.reynolds@tpwd.state.tx.us	Work: 512/7353-0572 Fax: 512/353-0629
B32221000568	Pereira, Mike 507 Staples Road San Marcos, Texas 78666	A.E. Wood Fish Hatchery	F&W Tech. III		mike.pereira@tpwd.state.tx.us	Work: 512/7353-0572 Fax: 512/353-0629



### Inland Fisheries Division Directory

B32221000568	Little, Mike 507 Staples Road San Marcos, Texas 78666	A.E. Wood Fish Hatchery	F&W Tech. IV		Mike.little@tpwd.state.tx.us	Work: 512/7353-0572 Fax: 512/353-0629
B32221000568	Lalla, Jovonne 507 Staples Road San Marcos, Texas 78666	A.E. Wood Fish Hatchery	Maintenance Tech IV		Jovonne.lalla@tpwd.state.tx.us	Work: 512/7353-0572 Fax: 512/353-0629
B32221000568	Gurley, Josh 507 Staples Road San Marcos, Texas 78666	A.E. Wood Fish Hatchery	F&W Tech. IV		Josh.Gurely@tpwd.state.tx.us	Work: 512/7353-0572 Fax: 512/353-0629

**INLAND FISHERIES  
IFS PROJECT COST CODES**

### INLAND FISHERIES IFS PROJECT CODES

PROJECT	DESCRIPTION	TASK	DESCRIPTION	GRANT
FAAIF	General Administration - Inland Fisheries	XX	Unspecified	STATE
		HA	Hatchery General Administration	STATE
FRMIF	Inland Fisheries Resource Management	XX	Unspecified	STATE
		TT	Training	STATE
		CO	Computer Programming	STATE
		SY	Accident Prevention/Safety Training	STATE
		BB	Angler Awareness/Education	STATE
		FW	Applied Management Activities	STATE
		NN	Angler Recognition	STATE
		PA	Public Assistance / Presentations	STATE
		SES	Statewide Economic Study	STATE
		RBFF	Recreational Boating & Fishing Foundation	STATE
XRM	Risk Management	TT	Training	STATE
		XX	Unspecified	STATE
ACE	Security - Austin HQ Security	XX	Unspecified	STATE
XDR	Disaster Recovery	XX	Unspecified	STATE
XDS	Department Safety Program	TT	Training	STATE
		XX	Unspecified	STATE
XEM	Energy Management	XX	Unspecified	STATE
LEMA	Emergency Management Program Administration		Enter County Code	STATE
RSEN1	Senate Bill 1	XX	Unspecified	STATE
FAA22	General Administration – F22D	XX	Unspecified	F22D
FFD22	Heart-of-the-Hills Fisheries Research Station	NF	New Facilities Development	F22D
		HX	General Operations/Maintenance	F22D
		RF	Renovation of Facilities	F22D
FAS	Artificial Streams	XX	Unspecified	STATE
FAA30	General Administration – F30R	XX	Unspecified	F30R

### INLAND FISHERIES IFS PROJECT CODES

PROJECT	DESCRIPTION	TASK	DESCRIPTION	GRANT
FAM30	Office Maintenance	XX	Rent, utilities, telecommunications, any other expenses incurred at facility site	F133M
		HX	Maintenance	F133M
FRM30	Freshwater Fisheries Monitoring and Management	XX	Unspecified	F30R
		HX	Maintenance	F30R
		SM	Scoping Meetings	F30R
		DM	Data Management	F30R
		ES	Electrofishing	F30R
		FG	Gill Netting	F30R
		FJ	Frame Netting	F30R
		HM	Harvest Monitoring	F30R
		RA	Other Monitoring	F30R
		PL	General Planning	F30R
		SR	Survey	F30R
		FW	Applied Management Activities	F30R
		BC	Braunig-Calaeras Project	F30R
		SRES	Sam Rayburn Economic Study	F30R
		TBES	Toledo Bend Economic Study	F30R
		CT	Crappie Telemetry Project	F30R
		OHES	O H Ivie Economic Study	F30R
		SRFP	Sam Rayburn Fish Population	F30R
NVR30	Native Vegetation Restoration	XX	Unspecified	F30R
FRC30	River Recreation	XX	Unspecified	F30R
FAA31	General Administration - F31R	XX	Unspecified	F31R
IR066	Florida Largemouth Bass Growout Study	XX	Unspecified	F31R
IR094	Florida LMB Introgression	XX	Unspecified	F31R
IR095	FLMB Performance Comparison	XX	Unspecified	F31R
IR096	Short Term Mortality of Stocked FLMB	XX	Unspecified	F31R
IR097	Contribution of Stocked Northern LMB	XX	Unspecified	F145R

### INLAND FISHERIES IFS PROJECT CODES

PROJECT	DESCRIPTION	TASK	DESCRIPTION	GRANT
IR098	Efficacy of Mass Fluorescent-Chemical Double Marking in LMB	XX	Unspecified	F146R
FAA101	General Administration - F101D	XX	Unspecified	F101D
FFD101	A E Wood FH	NF	New Facilities Development	F101D
		HX	General Operations/Maintenance	F101D
		RF	Renovation of Facilities	F101D
FGB101	Guadalupe Bass - F101D	XX	Unspecified	F101D
FNC101	Florida Bass - F101D	XX	Unspecified	F101D
FNE101	Smallmouth Bass - F101D	XX	Unspecified	F101D
FNG101	Coppernose Bluegill - F101D	XX	Unspecified	F101D
FNL101	Trout - F101D	XX	Unspecified	F101D
FNM101	Walleye - F101D	XX	Unspecified	F101D
FNN101	Striped Bass - F101D	XX	Unspecified	F101D
FNO101	White X Striped Hybrid F101D	XX	Unspecified	F101D
FNQ101	White Crappie - F101D	XX	Unspecified	F101D
FNT101	Other Hybrids - F101D	XX	Unspecified	F101D
FOB101	Northern Largemouth Bass - F101D	XX	Unspecified	F101D
FOC101	Channel Catfish - F101D	XX	Unspecified	F101D
FOD101	Blue Catfish - F101D	XX	Unspecified	F101D
FOF101	Flathead Catfish - F101D	XX	Unspecified	F101D
FOR101	Forage - F101D	XX	Unspecified	F101D
FOS101	Native Sunfish - F101D	XX	Unspecified	F101D
FPF101	Paddle Fish - F101D	XX	Unspecified	F101D
FTR101	Trout – State	XX	Unspecified	STATE
FUR101	Red Drum - F101D	XX	Unspecified	F101D
FWB101	White Bass - F101D	XX	Unspecified	F101D
FNV101	Other Species - F101D	XX	Unspecified	F101D
FFCIF	Texas Freshwater Fisheries Center	MG	Gift Shop	STATE
		MA	Admissions	STATE
		MK	Marketing	STATE
		SL	Sharelunker program	STATE
		XX	Unspecified	STATE
FAA90	General Administration - F90D	XX	Unspecified	F90D
FFD90	Texas Freshwater Fisheries Center	NF	New Facilities Development	F90D
		HX	General Operations/Maintenance	F90D
		RF	Renovation of Facilities	F90D

### INLAND FISHERIES IFS PROJECT CODES

PROJECT	DESCRIPTION	TASK	DESCRIPTION	GRANT
		EX	Exhibits	F90D
FGB90	Guadalupe Bass - F90D	XX	Unspecified	F90D
FNC90	Florida Bass - F90D	XX	Unspecified	F90D
		SL	Sharelunker	F90D
FNE90	Smallmouth Bass - F90D	XX	Unspecified	F90D
FNG90	coppernose Bluegill - F90D	XX	Unspecified	F90D
FNL90	Trout - F90D	XX	Unspecified	F90D
FNM90	Walleye - F90D	XX	Unspecified	F90D
FNN90	Striped Bass - F90D	XX	Unspecified	F90D
FNO90	White X Striped Hybrid F90D	XX	Unspecified	F90D
FNQ90	White Crappie - F90D	XX	Unspecified	F90D
FNT90	Other Hybrids - F90D	XX	Unspecified	F90D
FOB90	Northern Largemouth Bass - F90D	XX	Unspecified	F90D
FOC90	Channel Catfish - F90D	XX	Unspecified	F90D
FOD90	Blue Catfish - F90D	XX	Unspecified	F90D
FOF90	Flathead Catfish - F90D	XX	Unspecified	F90D
FOR90	Forage - F90D	XX	Unspecified	F90D
FOS90	Native Sunfish - F90D	XX	Unspecified	F90D
FPF90	Paddle Fish - F90D	XX	Unspecified	F90D
FTR90	Trout – State	XX	Unspecified	STATE
FUR90	Red Drum - F90D	XX	Unspecified	F90D
FWB90	White Bass - F90D	XX	Unspecified	F90D
FNV90	Other Species - F90D	XX	Unspecified	F90D
FED125	Education Programs	XX	Unspecified	F125E
		VFT	Virtual Field Trip	F125E
FOM125	Facility Operating & Maintenance / Visitor Center	XX	Unspecified	F125E
		MK	Marketing	F125E
FCO125	Construction	XX	Unspecified	F125E
FAA95	General Administration - F95D	XX	Unspecified	F95D
FFD95	Dundee FH	NF	New Facilities Development	F95D
		HX	General Operations/Maintenance	F95D
		RF	Renovation of Facilities	F95D
		PARVM	Parvum / Golden Algae	F95D
FGB95	Guadalupe Bass - F95D	XX	Unspecified	F95D
FNC95	Florida Bass - F95D	XX	Unspecified	F95D
FNE95	Smallmouth Bass - F95D	XX	Unspecified	F95D
FNG95	coppernose Bluegill - F95D	XX	Unspecified	F95D
FNL95	Trout - F95D	XX	Unspecified	F95D
FNM95	Walleye - F95D	XX	Unspecified	F95D

## INLAND FISHERIES IFS PROJECT CODES

PROJECT	DESCRIPTION	TASK	DESCRIPTION	GRANT
FNN95	Striped Bass - F95D	XX	Unspecified	F95D
FNO95	White X Striped Hybrid F95D	XX	Unspecified	F95D
FNQ95	White Crappie - F95D	XX	Unspecified	F95D
FNT95	Other Hybrids - F95D	XX	Unspecified	F95D
FOB95	Northern Largemouth Bass - F95D	XX	Unspecified	F95D
FOC95	Channel Catfish - F95D	XX	Unspecified	F95D
FOD95	Blue Catfish - F95D	XX	Unspecified	F95D
FOF95	Flathead Catfish - F95D	XX	Unspecified	F95D
FOR95	Forage - F95D	XX	Unspecified	F95D
FOS95	Native Sunfish - F95D	XX	Unspecified	F95D
FPF95	Paddle Fish - F95D	XX	Unspecified	F95D
FTR95	Trout – STATE	XX	Unspecified	STATE
FUR95	Red Drum - F95D	XX	Unspecified	F95D
FWB95	White Bass - F95D	XX	Unspecified	F95D
FNV95	Other Species - F95D	XX	Unspecified	F95D
FAA96	General Administration - F96D	XX	Unspecified	F96D
FFD96	Possum Kingdom FH	NF	New Facilities Development	F96D
		HX	General Operations/Maintenance	F96D
		RF	Renovation of Facilities	F96D
FGB96	Guadalupe Bass - F96D	XX	Unspecified	F96D
FNC96	Florida Bass - F96D	XX	Unspecified	F96D
FNE96	Smallmouth Bass - F96D	XX	Unspecified	F96D
FNG96	coppernose Bluegill - F96D	XX	Unspecified	F96D
FNL96	Trout - F96D	XX	Unspecified	F96D
FNM96	Walleye - F96D	XX	Unspecified	F96D
FNN96	Striped Bass - F96D	XX	Unspecified	F96D
FNO96	White X Striped Hybrid F96D	XX	Unspecified	F96D
FNQ96	White Crappie - F96D	XX	Unspecified	F96D
FNT96	Other Hybrids - F96D	XX	Unspecified	F96D
FOB96	Northern Largemouth Bass - F96D	XX	Unspecified	F96D
FOC96	Channel Catfish - F96D	XX	Unspecified	F96D
FOD96	Blue Catfish - F96D	XX	Unspecified	F96D
FOF96	Flathead Catfish - F96D	XX	Unspecified	F96D
FOR96	Forage - F96D	XX	Unspecified	F96D
FOS96	Native Sunfish - F96D	XX	Unspecified	F96D
FPF96	Paddle Fish - F96D	XX	Unspecified	F96D
FTR96	Trout – STATE	XX	Unspecified	STATE
FUR96	Red Drum - F96D	XX	Unspecified	F96D
FWB96	White Bass - F96D	XX	Unspecified	F96D

### INLAND FISHERIES IFS PROJECT CODES

PROJECT	DESCRIPTION	TASK	DESCRIPTION	GRANT
FNV96	Other Species - F96D	XX	Unspecified	F96D
FAA98	General Administration - F98D	XX	Unspecified	F98D
FFD98	Jasper FH	NF	New Facilities Development	F98D
		HX	General Operations/Maintenance	F98D
		RF	Renovation of Facilities	F98D
FGB98	Guadalupe Bass - F98D	XX	Unspecified	F98D
FNC98	Florida Bass - F98D	XX	Unspecified	F98D
FNE98	Smallmouth Bass - F98D	XX	Unspecified	F98D
FNG98	coppernose Bluegill - F98D	XX	Unspecified	F98D
FNL98	Trout - F98D	XX	Unspecified	F98D
FNM98	Walleye - F98D	XX	Unspecified	F98D
FNN98	Striped Bass - F98D	XX	Unspecified	F98D
FNO98	White X Striped Hybrid F98D	XX	Unspecified	F98D
FNQ98	White Crappie - F98D	XX	Unspecified	F98D
FNT98	Other Hybrids - F98D	XX	Unspecified	F98D
FOB98	Northern Largemouth Bass - F98D	XX	Unspecified	F98D
FOC98	Channel Catfish - F98D	XX	Unspecified	F98D
FOD98	Blue Catfish - F98D	XX	Unspecified	F98D
FOF98	Flathead Catfish - F98D	XX	Unspecified	F98D
FOR98	Forage - F98D	XX	Unspecified	F98D
FOS98	Native Sunfish - F98D	XX	Unspecified	F98D
FPF98	Paddle Fish - F98D	XX	Unspecified	F98D
FTR98	Trout – STATE	XX	Unspecified	STATE
FUR98	Red Drum - F98D	XX	Unspecified	F98D
FWB98	White Bass - F98D	XX	Unspecified	F98D
FNV98	Other Species - F98D	XX	Unspecified	F98D
FGC	Grass Carp	XX	Unspecified	STATE
		IS	Grass Carp Inspection	STATE
		GR	Guadalupe River Study	STATE
RGGC	Rio Grande Grass Carp Project	XX	Unspecified	RGGC-1
FNH01	Hydrilla - Galveston Corps	XX	Unspecified	G
		VB	Aquatic Veg - Survey	G
		VC	Aquatic Veg - Chemical Treatment	G
		VE	Aquatic Veg - Biological Treatment	G



### INLAND FISHERIES IFS PROJECT CODES

PROJECT	DESCRIPTION	TASK	DESCRIPTION	GRANT
		VM	Aquatic Veg - Mechanical Treatment	G
FNH02	Hydrilla – Other	XX	Unspecified	STATE
		VB	Aquatic Veg - Survey	STATE
		VC	Aquatic Veg - Chemical Treatment	STATE
		VE	Aquatic Veg - Biological Treatment	STATE
		VM	Aquatic Veg - Mechanical Treatment	STATE
FNW01	Water Hyacinth - Galveston Corps	XX	Unspecified	G
		VB	Aquatic Veg - Survey	G
		VC	Aquatic Veg - Chemical Treatment	G
		VE	Aquatic Veg - Biological Treatment	G
		VM	Aquatic Veg - Mechanical Treatment	G
FNW02	Water Hyacinth – Other	XX	Unspecified	STATE
		VB	Aquatic Veg - Survey	STATE
		VC	Aquatic Veg - Chemical Treatment	STATE
		VE	Aquatic Veg - Biological Treatment	STATE
		VM	Aquatic Veg - Mechanical Treatment	STATE
FSV02	Salvinia – Other	XX	Unspecified	STATE
		VB	Aquatic Veg - Survey	STATE
		VC	Aquatic Veg - Chemical Treatment	STATE
		VE	Aquatic Veg - Biological Treatment	STATE
FSV03	Hydrilla - BOR - Rio Grande River	XX	Unspecified	SAV01-1
		VB	Aquatic Veg - Survey	SAV01-1
		VC	Aquatic Veg - Chemical Treatment	SAV01-1
		VE	Aquatic Veg - Biological Treatment	SAV01-1
		VM	Aquatic Veg - Mechanical Treatment	SAV01-1
FSV04	Salvinia - F&W Service (\$40K)	XX	Unspecified	SAV02-1
		VB	Aquatic Veg - Survey	SAV02-1
		VC	Aquatic Veg - Chemical Treatment	SAV02-1
		VE	Aquatic Veg - Biological Treatment	SAV02-1
		VM	Aquatic Veg - Mechanical Treatment	SAV02-1
FOV01	Other Vegetation - Galveston Corps	XX	Unspecified	G
		VB	Aquatic Veg - Survey	G
		VC	Aquatic Veg - Chemical Treatment	G
		VE	Aquatic Veg - Biological Treatment	G
		VM	Aquatic Veg - Mechanical Treatment	G
FOV02	Other Vegetation – Other	XX	Unspecified	STATE
		VB	Aquatic Veg - Survey	STATE
		VC	Aquatic Veg - Chemical Treatment	STATE
		VE	Aquatic Veg - Biological Treatment	STATE

### INLAND FISHERIES IFS PROJECT CODES

PROJECT	DESCRIPTION	TASK	DESCRIPTION	GRANT
FMI01	Watermilfoil - Galveston Corps	XX	Unspecified	G
		VB	Aquatic Veg - Survey	G
		VC	Aquatic Veg - Chemical Treatment	G
		VE	Aquatic Veg - Biological Treatment	G
FMI02	Watermilfoil – Other	XX	Unspecified	STATE
		VB	Aquatic Veg - Survey	STATE
		VC	Aquatic Veg - Chemical Treatment	STATE
		VE	Aquatic Veg - Biological Treatment	STATE
FNA01	Alligator Weed - Galveston Corps	XX	Unspecified	G
		VB	Aquatic Veg - Survey	G
		VC	Aquatic Veg - Chemical Treatment	G
		VE	Aquatic Veg - Biological Treatment	G
FNA02	Alligator Weed – Other	XX	Unspecified	STATE
		VB	Aquatic Veg - Survey	STATE
		VC	Aquatic Veg - Chemical Treatment	STATE
		VE	Aquatic Veg - Biological Treatment	STATE
RWDA	Water Data Access	XX		STATE

## **Stocking Reports**

Waterbody	Blue catfish	Bluegill	Channel catfish	Florida Largemouth bass	Gizzard shad	Largemouth bass	Palmetto Bass	Rainbow trout	Red drum	Redear sunfish	Striped bass	Walleye	Walleye X Sauger	White crappie	Grand Total
29th Street			822												822
75-Acre Lake			1,878												1,878
Abilene			401			63,695									64,096
Ablon Park Pond (Garland)			490												490
Alan Henry				10,000											10,000
American Legion Park Pond			736					2,000							2,736
Amistad						289,666					318,908				608,574
Amsler Park			400					1,655							2,055
Andrew Brown East Big (Coppell)			640												640
Archer City			1,366												1,366
Arrowhead				136,905											136,905
Ascarate			3,612					6,999							10,611
Athens				177,665											177,665
Atlanta City Park Lake			490												490
Auburn Springs South Pond			542												542
Austin				12,000											12,000
B.W. Patterson Park Lake			490												490
Bachman Lake (Dallas)			662												662
Balmorea	57,132	28,709				59,494								450	145,785
Bandera City Park Lake								2,006							2,006
Bane Park Lake			563					2,000							2,563
Bardwell							47,610								47,610
Bates Allen Park Pond 1			490					1,400							1,890
Baylor Creek		66,101	17,151	61,222											144,474
Beal Park Lake			403					1,749							2,152
Bear Creek Park (Keller)			552					5,714							6,266
Beaver Pond			765												765
Bedford Boys Ranch			736												736
Bell Street			1,124												1,124
Bellwood				9,000											9,000
Belton (Bell County)							124,081								124,081
Benbrook							54,628								54,628
Benjamin City			1,255												1,255
Bentsen State Park			885												885
Bethany Park Pond C								3,778							3,778
Bicentennial Park (Southlake)			490												490
Big Lake			552												552
Bishop City Lake			600												600
Black Creek Lake			1,127												1,127

Waterbody	Blue catfish	Bluegill	Channel catfish	Florida Largemouth bass	Gizzard shad	Largemouth bass	Palmetto Bass	Rainbow trout	Red drum	Redear sunfish	Striped bass	Walleye	Walleye X Sauger	White crappie	Grand Total
Blanco State Park #3			771												771
Blanco State Park #4			751					5,007							5,758
Blanco State Park #5			688												688
Blue Hole Park Lake			571					2,543							3,114
Blue Ridge Park Pond			581					1,400							1,981
Bluebonnet Park Lake			612												612
Bob Jones Park (Southlake)			677												677
Bob Sandlin State Park			1,060					2,800							3,860
Boerne City			579												579
Bonham State Park Lake			1,625												1,625
Borden City Lake			710												710
Bouton			1,116												1,116
Boykin Springs			828					3,548							4,376
Brackenridge Park			811					2,509							3,320
Bradfield Pond 2			655												655
Bridge Bob's Pond			300												300
Bridgeport							71,788								71,788
Bright Lake			865												865
Brothers Pond			413												413
Brownwood			304												304
Buchanan											150,100				150,100
Buck Lake			400												400
Buena Vista Park Lake			1,905					2,347							4,252
Buescher State Park			1,040					1,505							2,545
Buffalo Creek			24,059			38,460									62,519
Buffalo Springs			58	25,105							3,686				28,849
Burke-Crenshaw Lake			780					3,500							4,280
Burroughs Park Pond			713					2,006							2,719
Buster Long			780												780
Byers City			828												828
C. J. Kelly Park Pond			855					2,086							2,941
Calaveras						34,502	616,212								650,714
Canton City			1,250												1,250
Canyon											43,970				43,970
Canyon Lake Project #3			736												736
Canyon Southeast Park Lake			815					666							1,481
Canyon Tailrace								90,363							90,363
Capp Smith Park (Watauga)			672												672
Carl Barton Jr. Park Pond			552					2,001							2,553

Waterbody	Blue catfish	Bluegill	Channel catfish	Florida Largemouth bass	Gizzard shad	Largemouth bass	Palmetto Bass	Rainbow trout	Red drum	Redear sunfish	Striped bass	Walleye	Walleye X Sauger	White crappie	Grand Total
Carver Park Lake			925												925
Casa Blanca							16,061								16,061
Caudle			673												673
Cedar Creek Reservoir				496,806			215,660								712,466
Celebration # 1 Pond			372												372
Celebration # 2 Pond			388												388
Centennial Park Lake (Friendswood)			600												600
Center Municipal Park Lake			607			443									1,050
Central High			479												479
Central Park Pond #1			3,795					2,681							6,476
Challenger 7 Pond			705												705
Champion Creek			35,702	35,770											71,472
Chesapeake Park (Southlake)			600												600
Childress				2,500											2,500
Childress City Lake			600												600
Choke Canyon Reservoir						102,314									102,314
Claiborne West Park			669					2,513							3,182
Clark			3,752												3,752
Cleburne State Park			2,894												2,894
Cleburne-Hulen Park								1,683							1,683
Cliff Park (Dallas)			828												828
Clyde				45,398											45,398
Coleman (Hopkins County)			1,400												1,400
Coleto Creek Reservoir						31,249									31,249
Colleyville Nature Center Pond 4			400					1,500							1,900
Colorado							5,561,642				166,000				5,727,642
Colorado City		168,338	525,197	162,134											855,669
Comanche Trails (Big Spring)			1,128												1,128
Comanche Trails Park (Odessa)			406					7,610							8,016
Community Park Pond A (Rowlett)								2,001							2,001
Conroe							201,367								201,367
Cooper Reservoir							190,388								190,388
Copper Breaks State Park			1,154			5,230		1,704							8,088
Copperas Cove City			420												420
Corinth Community Park			490			225									715
Credit Lake			335												335
Crowley Pond			400												400
Cuero Park			835												835
Cy Miller Pond			417												417

Waterbody	Blue catfish	Bluegill	Channel catfish	Florida Largemouth bass	Gizzard shad	Largemouth bass	Palmetto Bass	Rainbow trout	Red drum	Redear sunfish	Striped bass	Walleye	Walleye X Sauger	White crappie	Grand Total
Dangerfield State Park			3,359												3,359
Derby Pond			400												400
Devine Lake			1,196												1,196
Diversion (Baylor County)			71,946	177,151											249,097
Doombos								550							550
Double			879												879
Dry Creek Lake						350									350
E. V. Spence		374,684	187,342	188,526		100,885					37,243			146	888,826
Eagle Pass City			973												973
Earl Scott Pond			578												578
Edinburg City Park Lake			756												756
Eisenhower Park Pond			600					3,456							4,056
Elder Lake			818												818
Eldridge Park Pond			205					1,950							2,155
Elkins Lake (Dalworthington <del>Dalworth</del> )			736					1,004							1,740
Ellen Trout Zoo			1,160												1,160
Elm Creek Buffalo Wallow								577							577
Elmendorf			805												805
Elmore City Park			918												918
Ennis Jaycee Park			1,065												1,065
Espada			958												958
Fair Park City Lake			560												560
Fairfield									208,440						208,440
Falcon				11,995											11,995
Faulkner Park Lake (Tyler)			707					2,830							3,537
Federal Fish Hatchery			300								539,334				539,634
First Capitol Park Pond			492					1,511							2,003
Fish Trap Lake (Dallas)			780												780
Five Mile Dam			1,180												1,180
Flat Creek								927							927
Flower Mound Rheudasil			672					3,171							3,843
Fort Boggy State Park								3,506							3,506
Fort Brown Resaca			1,524												1,524
Fort Phantom Hill							63,400								63,400
Fort Richardson State Park			672					1,872							2,544
Fort Worth Hatchery			400												400
Fox Hollow Park Lake (Dallas)			496												496
Frio County Regional Park Lake			558			350									908
Frisco Commons Pond								2,000							2,000

Waterbody	Blue catfish	Bluegill	Channel catfish	Florida Largemouth bass	Gizzard shad	Largemouth bass	Palmetto Bass	Rainbow trout	Red drum	Redear sunfish	Striped bass	Walleye	Walleye X Sauger	White crappie	Grand Total
Fryer								1,500							1,500
Gabbards Park Pond			406												406
Galveston State Park Pond #1			10,281												10,281
Garner State Park			780												780
Giddings State School			850												850
Gillam-Howell North Lake			400												400
Gillam-Howell South Lake			640												640
Glendover Pond			486												486
Gordon													1,720		1,720
Graham							12,867								12,867
Granbury											125,155				125,155
Greenbriar Park (Fort Worth)			552					763							1,315
Greenville Sports Park Pond			496												496
Hale			2,810												2,810
Hamilton Creek Park Lake (Burnet)			423					300							723
Harlingen Sports Complex			398					1,001							1,399
Harlow Pond #1			760												760
Harvey Lake			413												413
Hearne Eastside Park Pond			506					381							887
Hemphill County #1			405												405
Hemphill County #2			405												405
Hemphill County #3			405												405
Hereford City Lake			1,054												1,054
Heritage Park Lake			552												552
Herman Brown Park Pond			386					1,000							1,386
Higginbotham Park			672					601							1,273
Hi-Lions			781												781
Hill Country State Park			490												490
Holbrook				211											211
Hubbard City			803												803
Hubbard City #2			552												552
Hubbard City #3			828												828
Hubbard City #4			936												936
Hubbard City #5			674												674
Hurst Chisholm Park			4,746					6,213							10,959
Independence Retention Pond			800												800
IOOF Lake			828					830							1,658
Iowa Park		38,306	39,129												77,435
Irving Street			1,108												1,108



Waterbody	Blue catfish	Bluegill	Channel catfish	Florida Largemouth bass	Gizzard shad	Largemouth bass	Palmetto Bass	Rainbow trout	Red drum	Redear sunfish	Striped bass	Walleye	Walleye X Sauger	White crappie	Grand Total
Jacksonville				441,000											441,000
Jasper City Park Pond			1,000					1,325							2,325
Jasper Industrial Park Pond			493												493
Joe Pool				317,036											317,036
John Wiley Price Pond (Dallas)			496												496
Jones			835												835
Joseph Garcia Municipal Park Pond			550												550
Kemp (Baylor County)			297,239	194,404							149,771				641,414
Keneteso Pond			472					2,701							3,173
Kidd Springs Park (Dallas)			496					4,250							4,746
Kirby													15,806		15,806
Kitty Hollow Lake			780												780
Knierim			360												360
L.B.J. State Park			578												578
Lady Bird			941												941
Lake Corpus Christi								1,500							1,500
Lake Fork				705,986											705,986
Lake Georgetown							6,475								6,475
Lake Grady T. Wallace			707												707
Lake Independence			1,242												1,242
Lake Pflugerville		22,876	4,524	18,562											45,962
Lakeside Park (Duncanville)			5,632					6,249							11,881
Lakeview Park Pond			400					1,000							1,400
Lakeview Park Pond (Nacogdoches)								530							530
Lamesa 9th Street Park Lake			564					3,006							3,570
Landmark Inn State Park			520					1,025							1,545
Lavon				535,577							107,008				642,585
Lewisville							148,670								148,670
Little Chocolate Bayou Park Pond #1			600												600
Little Chocolate Bayou Park Pond #2			320												320
Live Oak City		18,907								10					18,917
Livingston											526,148				526,148
Llano City			1,750												1,750
Llano River								1,414							1,414
LNVA Barrier Pond			780					4,530							5,310
Lockhart City #1			380												380
Lone Star							14,328								14,328
Lost Maples - Lower			552												552
Louise Hayes Park								2,450							2,450

Waterbody	Blue catfish	Bluegill	Channel catfish	Florida Largemouth bass	Gizzard shad	Largemouth bass	Palmetto Bass	Rainbow trout	Red drum	Redear sunfish	Striped bass	Walleye	Walleye X Sauger	White crappie	Grand Total
Lower Overton			990												990
Lower Waterworks			1,088												1,088
Lufkin State School Pond			400												400
Mackenzie							9,214								9,214
Mackenzie Park Lake						700									700
Manning Park Plaza Pond			320												320
Mark Holtz Lake (Arlington)			828					3,661							4,489
Martin Plaza			226												226
Martin Road			720												720
Marvin Finn Pond-Sammon's Park #2			712												712
Mary Joe Peckham Park			9,365					3,191							12,556
Maxey Park			966												966
McClellan			8,000												8,000
McCullough			600					1,901							2,501
McGovern Lake			685												685
McQueeny				39,713											39,713
Medical Center North			552					1,879							2,431
Medical Center South			12,035					1,668							13,703
Medina				271,158			81,265								352,423
Meredith Stilling Basin								4,371							4,371
Meridian State Park			1,266	1,260				2,288							4,814
Mexia State School			715												715
Mexia State School #2			499												499
Mexia State School #3			499												499
Meyer Park Pond			558												558
Mike Lewis Park (Grand Prairie)								1,504							1,504
Mill Creek				5,949											5,949
Mill Creek Park			630												630
Miller Park Pond (Temple)			414					1,501							1,915
Miller's Pond			673			650									1,323
Mineral Wells			11,210	1,421											12,631
Missouri City C. P. L			557												557
Monahans Perch Pond			664					3,211							3,875
Morris Park Lake (Elgin)			420												420
Moss Creek City		18,932	24,015												42,947
Moulton Pond In Moulton			410												410
Mountain Creek Lake (Coke County)		11,043	2,379			10,400									23,822
Nassau			1,149												1,149
Nasworthy							6,933								6,933

Waterbody	Blue catfish	Bluegill	Channel catfish	Florida Largemouth bass	Gizzard shad	Largemouth bass	Palmetto Bass	Rainbow trout	Red drum	Redear sunfish	Striped bass	Walleye	Walleye X Sauger	White crappie	Grand Total
Nelson Park								1,483							1,483
New Ballinger		386	30,766	31,161	196	68						15,745		327	78,649
New Horseshoe			2,711												2,711
Nolan Creek								1,902							1,902
North Concho Park			736												736
Northwest Park			200												200
Northwest Park Pond (Irving)			646					2,500							3,146
O. C. Fisher	75,000	75,145	107,341	76,191	160									394	334,231
Oakes Street			7,159					2,828							9,987
Old Coleman			971												971
Old Newcastle						2,660									2,660
Oton City Lake			389												389
On-Site Private Water Delivery		9,677	500	5,013			7,081	7,059							29,330
Optimist Pond			400												400
Pair-a-Trees Pond			200					500							700
Palestine				589,360			101,117								690,477
Palmetto State Park			719					575							1,294
Palo Duro Reservoir												6,080			6,080
Pampa City			707					2,002							2,709
Paris Sports Complex Pond			748												748
Park Lake (Sachse)			368												368
Parrie Haynes Ranch Pond #1			200												200
Parrie Haynes Ranch Pond #2			374												374
Pedigo Park Pond #1			521												521
Pedigo Park Pond #2			511												511
Perch Pond - Lake Ray Roberts			490												490
Pickens Lake			1,080					5,543							6,623
Pittsburg City Lake			392					2,190							2,582
Placid			20,806	20,396											41,202
Plum Lake			10,637					6,307							16,944
Possum Kingdom						223,690					703,467				927,157
Possum Kingdom Tailrace								10,350							10,350
Proctor							67,524								67,524
Purtis Creek State Park			20,824												20,824
Ratcliff			1,271												1,271
Raven			12,084	5,901											17,985
Ray Hubbard							1,718,716								1,718,716
Ray Roberts				14,839											14,839
Red Hills			881												881

Waterbody	Blue catfish	Bluegill	Channel catfish	Florida Largemouth bass	Gizzard shad	Largemouth bass	Palmetto Bass	Rainbow trout	Red drum	Redear sunfish	Striped bass	Walleye	Walleye X Sauger	White crappie	Grand Total
Reeves Lake			1,124												1,124
Resaca De La Guerra			1,185												1,185
Resaca De La Palma			1,197												1,197
Resoft Park Lake			600					1,003							1,603
Ribble Park			552												552
Richards Park-Upper			810												810
Richland-Chambers							413,686								413,686
Ringling						2,050									2,050
Rita Blanca Kids Fishing Pond			368					3,944							4,312
River Park Clear Fork of the Trinity <small>Denton (East Mouth)</small>								1,551							1,551
Robinson City Park			1,400												1,400
Rogers City			788												788
Rose Park (Mansfield)			400					1,399							1,799
Round Rock City			798												798
Rusk City			756												756
Rusk State Park			960					500							1,460
Rustic Oaks Park			554												554
Sam Rayburn				1,026,943											1,026,943
Sammon's Park			1,080												1,080
Samuell Farm Pond #4 (Mesquite)			416												416
Samuell Farm Pond A (Mesquite)								2,003							2,003
San Antonio River								2,591							2,591
San Gabriel Park			901												901
Saxet Park Lake			1,300												1,300
Seabourne Creek Park			600					2,000							2,600
Searight Park Lake #1			798												798
Serenity Park Pond			200												200
Seymour Golf Course			1,224												1,224
Sheldon			17,908												17,908
Sheldon Prairie Pond			3,010												3,010
Sheldon State Park Children's #1			1,900												1,900
Sheldon State Park Children's #2			1,900												1,900
Shirley McDonald Park Pond			345												345
Sikes Lake		18,406	1,248			2,024									21,678
Somerville							100,175								100,175
South Lakes Park Pond (Denton)			400					1,825							2,225
South Lakes Park Pond North <small>(Denton)</small>								1,001							1,001
South Llano River State Park			796					2,608							3,404
Southeast Metropolitan Park Pond 1			515												515

Waterbody	Blue catfish	Bluegill	Channel catfish	Florida Largemouth bass	Gizzard shad	Largemouth bass	Palmetto Bass	Rainbow trout	Red drum	Redear sunfish	Striped bass	Walleye	Walleye X Sauger	White crappie	Grand Total
Southeast Metropolitan Park Pond 2			320												320
Southeast Metropolitan Park Pond 3			360												360
Southeast Metropolitan Park Pond 4			360												360
Southeast Park			834												834
Spring Lake Park			614					4,280							4,894
Springfield			421					1,202							1,623
Stamford City (Jones County)			948			2,672									3,620
Strickland Lake			560												560
Sulphur Springs City Park			639					2,084							2,723
Suncreek Pond			120												120
Sunshine Lake			1,400												1,400
Tawakoni							189,557				100,211				289,768
Taylor City			439												439
Taylor City #2			532												532
Taylor City #4			479												479
Teague Park (Gregg County)			416					4,181							4,597
Temple Lion's Park Lake								1,701							1,701
Temple V.A. Center			644												644
Tennessee				202,372											202,372
Texas & Pacific			1,237			5,470									6,707
TFFC Casting Pond			2,599					2,513							5,112
Theo (Caprock Canyon)						7,780									7,780
Tiawichi Creek			420			115									535
Toledo Bend				849,436											849,436
Tom Bass III			885					5,500							6,385
Towle Park			552												552
Town Resaca			1,028												1,028
Towne Lake								2,203							2,203
Tradinghouse Creek									345,238						345,238
Travis			457								96,000				96,457
Trinity River								1,704							1,704
Twin Buttes			154,733	150,152		295									305,180
Twin Lakes North Pond (Dallas)						225									225
Twin Lakes South Pond (Dallas)						225									225
Two - Acre Lake								2,523							2,523
TXU Contract Lake #1		46,408		4,900											51,308
Tyler Nature Center Pond								500							500
Tyler State Park			1,625					5,750							7,375
Tyler Water Department Rearing Pond			7,636												7,636

Waterbody	Blue catfish	Bluegill	Channel catfish	Florida Largemouth bass	Gizzard shad	Largemouth bass	Palmetto Bass	Rainbow trout	Red drum	Redear sunfish	Striped bass	Walleye	Walleye X Sauger	White crappie	Grand Total
Tyler West				112,507											112,507
Upper Kaufman			1,160												1,160
Valley Creek Lake		97	240,494												240,591
Victor Braunig			61,923				19,517								81,440
W. M. Brook Park Lake			766												766
Waldron Park			493												493
Walter E. Long Reservoir							6,073								6,073
Warren Park Lake			737												737
Waterloo Park Pond								7,254							7,254
West Guth Park Pond (Corpus Christi)			411												411
White River Reservoir												2,385,745			2,385,745
Whitney		13,747									332,999				346,746
Wichita						62,271	18,666								80,937
Wichita Borrow Pit			736			850									1,586
Wilson-Ledbetter Park Pond			506												506
Winniford Park Pond			400												400
Woldert Park Pond			648			175		1,003							1,826
Wolf Creek			1,064												1,064
Woodlawn			1,149												1,149
<b>Grand Total</b>	<b>132,132</b>	<b>911,762</b>	<b>2,200,709</b>	<b>7,173,625</b>	<b>356</b>	<b>1,049,183</b>	<b>10,084,701</b>	<b>366,434</b>	<b>553,678</b>	<b>10</b>	<b>3,400,000</b>	<b>2,407,570</b>	<b>17,526</b>	<b>1,317</b>	<b>28,299,003</b>



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