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Bass Management Symposia: Managing Ponds and Lakes for Better Fishing

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Abstract: Texas contains more than one million privately owned ponds and reservoirs comprising some one-half million surface acres. Interest in managing these ponds for recreational fishing, especially for largemouth bass is high. In order to respond to this educational need, a series of symposia designed to provide information on intensive largemouth bass management was conducted. Symposia were conducted in Athens (2001), San Marcos (2003), and Conroe (2005). The fee-based programs ($50 pre-registration, $75 at the door) attracted 601 participants from Texas and several other states. Each participant received a copy of the symposia proceedings. Exhibitors providing private water management products and services were accommodated at each event. A participant survey revealed that problems with aquatic weed control was their primary concern of the majority (51%) of participants. One quarter of the survey respondents were willing to spend $51-$100 per surface acre in order to improve fishing, where 9% would spend in excess of $1,000 per surface acre. Most participants learned about the symposium they attended through direct mailing via their county Extension agent. Pre and post testing revealed individual knowledge gains of 75% (Athens), 65% (San Marcos), and 44% (Conroe). The Conroe symposium survey respondents were asked to provide economic impact and practices adopted information. They placed a mean value of $644 on the information they received and planned to adopt an average of 4.5 management practices as a result of what they learned.

Key Words: bass, education, fishing, impact evaluation, lakes ponds, pond management, private landowners, recreational fishing, symposia, Texas

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Introduction

Beginning in 1993, Texas Cooperative Extension has sponsored a number of statewide educational symposia targeting private landowners interested in managing their wildlife resources. However, no organized educational effort had been conducted that specifically targeted private water impoundment owners on a statewide basis. This effort was perceived as being particularly important because Extension is the lead agency for private water fisheries management information in Texas.

Methods

To address this need, Texas Cooperative Extension (formerly Texas Agricultural Extension Service) initiated a statewide programming effort in Athens during 2001. The initial event was conducted over 1½ days and was co-sponsored by Texas Parks and Wildlife (TPW) and the Natural Resources Conservation Service (NRCS). Followup statewide symposia were also conducted in San Marcos and Conroe in 2003 and 2005, respectively (Figure 1).

Program formats and contents were determined by a planning committee consisting of Extension Fisheries Specialists, the local County Extension Agent and representatives from TPW and NRCS. Numerous agency personnel and fisheries consultants were invited to make presentations at each symposia. Participants at the three symposia were provided with a brief survey and pre- and post-tests. These data were used to calculate knowledge gains, educational needs and economic impact of program efforts. A pre-registration fee of $50 was charged to all participants with the fee increasing to $75 at the door. Exhibitors were charged $250 each for booth space which included two registration fees.

A conference proceedings was provided to each symposia registrant. Additional copies were made available on a fee basis. In addition, a variety of vendors were invited to exhibit their aquatic management-related products and services. Each symposium was advertised via traditional Extension methods. Co-sponsors also advertised via their respective agency outlets. Additional local sponsorship and support for advertising were solicited from local Chambers of Commerce and conference and visitors bureaus.

Program formats included indoor presentations and TPW hatchery tours (Athens and San Marcos

symposia) over 1½ days and indoor presentations only over 1 day (Conroe symposium). Hatchery tours were excluded from the Conroe symposia since no hatchery facilities were available in close proximity to the program site.

All speakers were required to make a PowerPoint type presentation. Participants were provided a copy of all presentations in a companion binder to facilitate note-taking and provide additional reference material to the proceedings. Exceptions included "Ask the Experts" panel, where a sub-set of speakers fielded general questions from the participants.

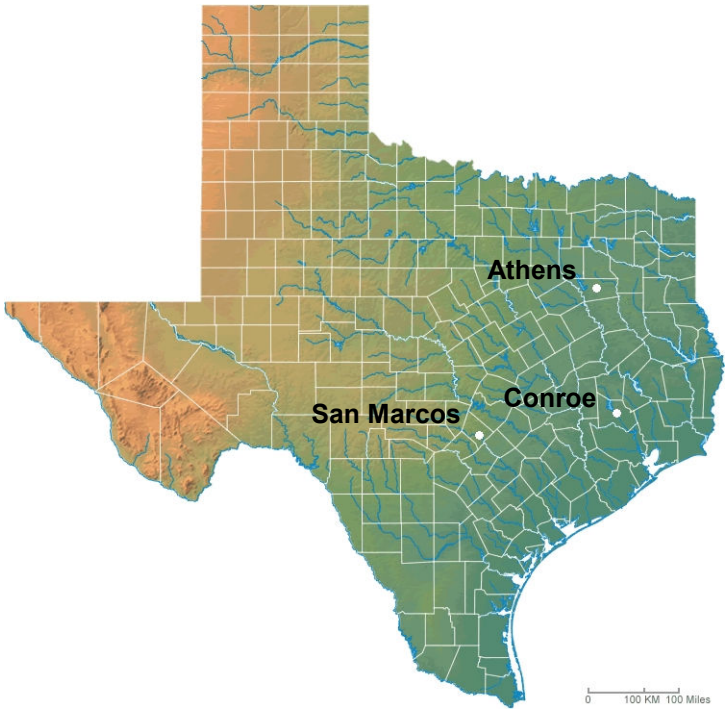

Figure 1. Location of three statewide bass management symposia in Texas.

Results and Discussion

Program content varied slightly between the three symposia. General categories of presentations included pond construction and habitat, water quality, stocking, evaluation and corrective management of fish populations, aquatic weed identification and control, nuisance wildlife control and "Ask the Experts" panels (Table 1).

Table 1. Program content by topic of three largemouth bass management symposia.

	Number of Presentations		
Topic	**Athens**	**San Marcos**	**Conroe**
Pond Construction and Building	4	3	0
Pond Ecology	0	1	1
Water Quality Issues	3	4	1
Stocking & Management Strategies	3	3	3
Assessing & Improving Ponds	3	2	1
Aquatic Vegetation Management	3	3	2
Troubleshooting Problems	2	2	2
Ask the Experts Panel	1	1	1
Fish Hatchery Tours	Yes	Yes	No

A total of 601 participants attended the symposia. As expected, attendance was highest for the initial symposium and declined thereafter (Table 2). The participants owned or controlled an average of 31.3 surface acres of water. Survey results revealed that 85% of the attendees were pond/reservoir owners. Over half (51%) of the participants identified aquatic weeds as the biggest problem they encountered, followed by poor fishing and "other" (14% each), water quality problems (13%) and improper pond design (8%).

When asked what they would be willing to spend on a *per surface acre* basis in order to improving fishing, 25% would spend $51-$100, 22% would spend $50 or less, 22% would spend $101-$250, 15% would spend $251-$500, 9% would spend $1,000 or more and 7% would spend $501-$1,000.

When asked how they learned about the Bass symposium they attended, 46% were made aware by direct mailout by county Extension agents (host and surrounding counties) mailing lists, 21% by newspaper articles, 21% by "other", 7% from an insert in *Texas Wildlife* magazine, and 5% from the "calendar of events" sections of various outdoor (hunting and fishing) magazines.

Pre- and post-testing revealed knowledge gains by participants at all three events (Table 2). Program content modifications at each event precluded calculation of an overall knowledge gain. Additional survey information was collected from the Conroe symposium participants. When asked to assign a value to the information they received during the one-day event, the survey respondent mean estimate was $644 per landowner. With a pre-registration fee of $50, this return on investment was approximately 13 to 1 (benefit to cost ratio).

Lastly, Conroe symposium participants were asked to identify the management practices they are most likely to adopt as a result of their participation. The most frequently identified practice was aquatic weed control (17), followed by fish stocking (16), implementing harvest records (14), adopting harvest regulations to alter bass population structure and water quality improvements (13 each), control of nuisance animals (12), and initiating a supplemental feeding program (9). On average, survey respondents indicated they would adapt 4.5 new management practices each.

Additional symposia are planned in future years. However, program content and format must be continually assessed and modified to meet the needs of participants. Presentations containing new research-based information and emerging topics are essential. Lastly, efforts to move the symposia to various geographical locations on no more than a biennial or triennial frequency are recommended.

Table 2. Attendance, test results, and knowledge gained at three bass management symposia.

Location	*# of Participants*	*Mean Pre-Test Score*	*Mean Post-Test Score*	*% Knowledge Gained*
Athens	350	36%	63%	75%
San Marcos	190	37%	61%	65%
Conroe	61	46%	66%	44%

Appendix 1. Sample Program/Agenda

AGENDA

BASS 101 - Managing Ponds and Lakes for Better Bass Fishing

Friday, March 16, 2001
Cain Center - Athens, TX

8:00 - 1:00PM	Booth Set Up
1:00 - 5:00PM	Registration and Exhibits Open
3:00-3:15PM	Welcome and Purpose (Michael Masser)
Session 1 -	Build It Right and They Will Grow - Gary Valentine {Moderator}
3:15-3:45	Pond Construction Basics (Bill Deauman - NRCS)
3:45-4:05	Sealing Leaky Ponds and Clearing Muddy Ponds (Paul Dorsett - Total Lake Management)
4:05-4:25	Installing Drains in Existing Ponds (Ken Mayben - NRCS)
4:25-4:45	Habitat Improvement - Artificial Reefs and Aquatic Plantings (Mark Webb - TPWD)
5:30-9:00	**Social and Dinner** - Freshwater Fisheries Center Tour and Panel Discussions Concurrent Panel Discussions (each offered twice) - Improving Fishing Success in Small and Large Ponds (Bob Waldrop, Mark McDonald, Barry Smith, and Rich Noble) {Billy Higginbotham -Moderator} - Marketing Fishing Opportunities (Kenny Zwahr, Barry Austin, Derrick Stratton, and Bob Lusk) {Michael Masser - Moderator}

Saturday, March 17, 2001
Cain Center - Athens, TX

Session II -	Water Quality Issues - Dale Prochaska {Moderator}
8:30-9:00	Water Quality Basics (Andrew Labay - TPWD)
9:00-9:30	Liming and Fertilization of Ponds (Stan Smith - Aquatic Management Services)
9:30-10:00	Oxygen and Aeration (Bill Wingo - Magnolia Fisheries)

BREAK 10:00-10:30

Session III -	Stocking and Management Strategies for Success - Michael Masser {Moderator}
10:30-11:00	Small Ponds (Bob Lusk - Texoma Hatchery)
11:00-11:30	Large Ponds (Barry Smith - American Sportfish)
11:30-12:00	Non-traditional Management Strategies for Trophy Bass (Rich Noble - NCSU)

LUNCH 12:00-1:20 (on your own)

Session IV-	How to Improve Existing Ponds and Lakes - Dave Terre {Moderator}
1:20-1:40	What is a Lake Survey? (Billy Higginbotham - TAEX)
1:40-2:00	Use of Nursery Ponds for Supplemental Stocking (Joe Lock - Angelina Fish Farm)
2:00-2:20	Operation World Record (Allen Forshage - TPWD)

BREAK 2:20-2:40

Session V -	Aquatic Vegetation Management - Earl Chilton {Moderator}
2:40-3:00	Identification and Chemical Control Options (Michael Masser - TAEX)
3:00-3:20	Biological and Mechanical Control Options (Malcolm Johnson - Johnson Lake Management)
3:20-3:40	Control of Hydrilla and Restoration of Native Plants and Game Fish at Lake Bellwood (Rick Ott -TPWD)
Session VI -	Troubleshooting Problems - Allen Forshage {Moderator}
3:40-4:10	Fish Diseases and Parasites (Patricia Varner - TVMDL)
4:10-4:40	Controlling Predators and Nuisances (Jan Loven - WMS) Double Crested Cormorants (David Haukos - USFWS)
Session VII -	Ask the Experts - A Panel
4:40 - 5:30	Billy Higginbotham {Moderator} Harrell Arms, Malcolm Johnson, Dave Terre, Gary Valentine, Michael Masser, Rich Noble

(Please list the last 4 digits of your SSN: ___ ___ ___ ___)

BASS 101

Survey

1. I am primarily a: (check one)

   A. Pond or lake owner
   B. Agency/university biologist
   C. Fish farmer
   D. Fisheries consultant
   E. Other (please list)_____

2. The biggest problem I have with my pond or lake is: (check one)

   A. Aquatic weed problems
   B. Poor fishing
   C. Poor pond design
   D. Water quality problems (i.e., stays muddy, too acid)
   E. Other (please list)_____

3. What would you be willing to spend on your pond per year to enjoy good bass fishing?

   A. $50 per surface acre
   B. $51-100 per surface acre
   C. $101-250 per surface acre
   D. $251 - 500 per surface acre
   E. $501 - 1000 per surface acre
   F. $1000+ per surface acre

4. How did you learn about this conference?

   A. Direct mail-out
   B. TWA magazine flyer
   C. Outdoor magazine calendar of events
   D. Newspaper article
   E. Other (please list)_____

Appendix 3. Sample of pre-test
(Post-test was identical)

Pre-Test

1. In order to maintain near constant water levels in lakes without water wells, spring or stream flows, the ratio of drainage acres to surface acres should be at least a _____ratio.
   A. 1:1
   B. 2:1
   C. 3:1
   D. 4:1
   E. 5:1

2. Which principle spillway has the most potential of being the most beaver resistant?
   A. Hooded inlet
   B. Siphon pipe spillway
   C. Hooded drop inlet
   D. Low head drop inlet

3. Which of the following products is commonly used to clear muddy ponds?
   A. Aluminum sulfate and gypsum
   B. Gypsum and anhydrous ammonia
   C. Hydrated lime and rotenone
   D. None of the above

4. Aquatic vegetation is a necessary component of any well managed pond.
   True
   False

5. After a couple of unusually rainy/cloudy days during the summer, you do down to your 1-acre lake that is filled with trophy catfish, bass and bluegill for an afternoon of fishing. To your dismay, you find several big catfish and some 5+ pound bass floating dead. Even though there is an abundance of small fish, including minnows, none were found dead. What was the likely cause of this fish kill?
   A. The fire ant poison you put on your lawn washed into the lake during the rain and killed the fish.
   B. Oxygen in the pond got too low due to the previous cloudy weather, warm temperatures, and too many big fish.
   C. There was a toxic algae bloom due to waste the fish and catfish feed generated.
   D. Your envious neighbor probably poisoned it with rotenone.

6. Which of the following is most important in determining when a pond or lake should be limed?
   A. pH
   B. Total hardness
   C. Total alkalinity
   D. Water clarity

7. If you suspect low oxygen in your pond, the best time to check it is:
   A. Noon
   B. Dusk
   C. Midnight
   D. Daylight

8. What is the backbone of the forage base for largemouth bass in small impoundments?
   - A. Hybrid sunfish
   - B. Bluegill
   - C. Redear sunfish
   - D. Threadfin Shad
   - E. Fathead minnows

9. Managing bass on lakes larger than 10 acres you should:
   - A. Practice "catch and release" by returning all bass caught
   - B. Keep water clarity greater than 3 feet so that the bass can see lures better
   - C. Add 8 to 10 pounds of fathead minnows per acre each year to keep bass fat
   - D. All of the above
   - E. None of the above

10. A liability of using Florida largemouth bass to produce trophy-size bass is that they:
    - A. Grow too slowly
    - B. Don't reproduce well enough
    - C. Can be hard to catch
    - D. Die at an early age

11. The most important part of a lake survey is the assessment of:
    - A. The habitat
    - B. The fish population
    - C. The user group

12. The purpose of a nursery pond is:
    - A. To provide supplemental forage for stocking
    - B. Improve genetics of existing fish populations
    - C. Grow-out of small fingerlings to stocker size fish
    - D. All of the above

13. Operation World Record
    - A. Has already resulted in one state record bass caught in private waters
    - B. Replaces the "Share a Lunker" program
    - C. Allows the public to fish for trophy largemouth bass in private waters
    - D. Allows the state to stock and monitor certain strains of largemouth bass in private impoundments over time
    - E. Is a program where 13 pound or larger bass are fed all they can eat to try and break the current world record

14. What's the most common problem encountered during the post-treatment period of herbicide applications?
    - A. Removal of all vegetation
    - B. Low oxygen
    - C. Phytoplankton bloom
    - D. No cover for forage fish

15. Which of the following herbicides is not labeled for the control of aquatic vegetation?
    A. Aquathol
    B. Rodeo
    C. Karmex
    D. Reward
    E. None of the above

16. Anglers debate the relative benefit of aquatic plants to largemouth bass populations. Why are native aquatic plant communities assumed to be more beneficial in the long term than exotic species?
    A. Exotic species frequently form monocultures that may displace native plant communities.
    B. Exotic plant species can become dense enough to limit angler access.
    C. Exotic plant species can limit the ability of sport fishes to capture prey.
    D. Exotic plant species are not as pretty as native species
    E. All of the above.
    F. None of the above.

17. Texas Parks and Wildlife assures that grass carp won't reproduce in Texas because they:
    A. Are inspected by Texas Parks and Wildlife for tripoloidy
    B. Are inspected by the USFWS for triploidy
    C. Require that barriers are placed on pond spillways
    D. Require that only diploid grass carp enter the state

18. You have noticed both live and dead fish near the water surface. Some fish have visible sores on their skin. You decide to get help in identifying the problem.
    A. You send one of the dead fish to the diagnostic lab for evaluation, because a dead fish will provide the best lesions to detect what killed it.
    B. You send both a dead fish and a water sample to the diagnostic lab, so both the environment and the diseased animal can be evaluated to detect the disease problem.
    C. You send 1-2 live "affected" fish and a "midday" water sample to the diagnostic lab, because they will be more representative samples for evaluation of an ongoing problem.
    D. You send 1-2 live "affected" fish and an "early morning" water sample to the diagnostic lab, since they will provide the best information to evaluate an ongoing disease problem.

19. Which of the following control techniques is NOT legal for beaver control?
    A. Snares
    B. Shooting
    C. Toxicants
    D. Traps
    E. Snares and shooting

20. Which of the following choices is <u>false</u>? The double-crested cormorant, or water turkey:
    A. Nests in the Great Lakes region and migrates south in the winter
    B. Has tremendously increased in population over the past 20 years
    C. Feeds on both forage and game fish
    D. Feeds at the surface
    E. Are currently protected by law