FOTAS

Federation of Texas Aquarium Societies

Fish Tales

Volume 12 Issue 1

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On the Cover:
Box Turtle
Photo by Denny Rogers

Design and Layout
Gerald Griffin

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Fish Tales Submission Guidelines

Articles and Art Submissions:
Please submit all articles, photos and art in electronic form. We can accept most popular software formats and fonts. Email to herpchat@yahoo.com. Photos and graphics are encouraged with your articles! Please remember to include the photo/graphic credits. Graphics and photo files may be submitted in any format, however uncompressed TIFF, JPEG or vector format is preferred, at the highest resolution/file size possible. If you need help with graphics files or your file is too large to email, please contact me for alternative submission info.

Next deadline……
June 28th 2022

President's Message

Clay Trachtman
FOTAS President

Hello all,

What a month July was for fish keepers that like to travel to conventions. First, the Oklahoma Aquarium Association (OKAA) and the Oklahoma Betta Breeders Association (OBBA) stepped up at the last minute to host the annual Federation of Texas Aquarium Societies (FOTAS) Convention in Tulsa, Oklahoma. The FOTAS convention was held in conjunction with the annual convention of the International Betta Congress (IBC). A great time was had by all that attended.

The Federation gave out three awards at the conference. First, as thanks for all his help with a banking issue, Keith Arnold was awarded a Certificate of Appreciation. Second, as a thank you for his years of service as President of FOTAS, Greg Steeves was awarded a decorative clock. Finally, Gerald Griffin was awarded Raymond Head and Ernest May Altruism Award for his contributions to both FOTAS and his home clubs, the OKAA and the OBBA. The Altruism Award is currently the highest honor that is awarded by FOTAS.

Additionally, it was decided that FOTAS would begin offering up the Braz Walker award to a student whose studies have implications in aquatics. Dave Schumacher is currently in charge of gathering prospective awardees. $1500 was set aside for the award. The winner(s) of the award will have to write an article for FOTAS Fish Tales on the work that they have done.

Also in July, quite possibly the largest freshwater convention in history was held in Louisville, KY. For the first time, the American Cichlid Association (ACA), the American Killifish Association (AKA), the American Livebearer Association (ALA) and the North American chapter of the Australian New Guinea Fishes Association (NA ANGFA) all joined forces to host one giant convention. The convention was outstanding. I am sure that there will be an article summarizing it in either this issue or a future issue of FOTAS Fish Tales.

Until next time, happy fish keeping!!!

William "Clay" Trachtman

MY VISIT TO CHATUCHAK

ARTICLE AND PICTURES BY JIM VALENZUELA

Our recent visit to CHATUCHAK the largest market in Thailand was once again most memorable. I was here a couple of years ago and I definitely wanted to return. It was about a 30 minute taxi ride from our condo. Weather was bad, the streets were flooded. We wondered if we had made the right decision coming here? Chatuchak is in the Bangkok area. A world famous weekend market that you can buy literally anything. As I'm reading their website I found this info very interesting. It has become the largest Asian market! It opened in 1942 but has changed a few times both in locations and names. About 200,000 people come here each weekend. This market has over 15,000 stalls in 26 sections, which is spread out across 35 acres! Strangely, only about 30% are tourists who come here. My wife, Wandee could shop here for days. She's got that bartering down perfectly. She just walks away when they won't come down in price. As she's walking away, the vender will usually say something. Wandee turns around to pay for the items looking at me with a smile!! I didn't spend to much time other than in the livestock area. I was mainly looking for the fish, but was pleasantly surprised to see so many types of other livestock. I'm not a huge fan of caged birds, but there were hundreds here. Reading more info, on a recent survey. Researchers counted 1271 birds of 117 species for sale in 45 shops. Of the total, 9 species were listed as "Threatened " on the INCU Red List and 8 species as "Near Threatened". I did see quite a variety of birds from finches to parrots of various sizes. Birds were packed in cages and a few were not caged.

I saw many types of turtles. I did see a couple of huge 2-3 foot snapping turtles. Not sure of the species. I also saw a huge tortoise of some kind? Similar to something you would see at a zoo. I estimate over 200 lbs. It was in a large crate. Definitely not large enough for it to move 12 inches in any direction. Very sad. Quite a few of the baby Red-eared sliders and numerous small tortoises.

Again, this place is huge. There's large sections of dogs, cats, reptiles, birds, chickens, rabbits and other small mammals and of course the fish. The fish section had freshwater, pond, marine, live plants and dry goods. I was going through the areas rather fast, with so many people. So much to see and a whole lot to miss. My eyes were everywhere.

Now to get to the fun stuff. There were literally hundreds of fish venders here. It's hard for me to describe how large this fish area is overall, there were several hallways and paths very easy to get lost. I must say now, I compared this to the feeling you have when you're going into a new fish store, wholesaler or receiving a new fish shipment. To me it's just so exciting

not knowing what you might see! I felt like I did when I was in my teens going to all the local fish stores in the Los Angeles area. I had this same feeling while working in wholesale in Southern California. Always excited about new shipments. The feeling of not knowing what surprises you might find. This excitement I'll never forget!! Many of the hallways were dark, damp and wet. Most of the venders have very small areas. I would say roughly 20 by 30 feet. Some were larger and some were smaller. Some venders had only fish while others had only dry goods. A few had both. Some venders had a small area just on the sidewalks, right near the streets. The fish were in containers or small tanks. Many fish were already bagged on the ground. I must stop here and say, all fish I saw today were in crystal clear water throughout the market. This includes the venders on the sidewalks with bagged fish and the vender's tanks inside. I know what stressed fish look like as l have been to a few fish auctions. I didn't see any stressed or disease fish at no time throughout the market. By far, the Asian Arowana was the most popular fish here. As you know the Asians consider them to be Good Luck. Almost all venders with tanks had them on display. Ranging in size from 4 inches to about 25 inches. The colors are beautiful with natural or artificial lighting. Many were priced between 40,000 and 60,000 Baht- $1200-$1800 US dollars. This is what was marked. Many tanks were not marked. I did see a couple of tanks packed full of 3.5 inch South American Arowana's for sale. While I'm thinking about this, some of the vendors didn't allow pictures. I still managed to get a few by acting like an American tourist that doesn't understand Thai. I just had to get pictures! However, many of the venders were very happy allowing me to take pictures of their livestock. They seemed to be proud of their fish and displays. Many of the vendors can be seeing sitting or just lying around. I'm sure that the heat becomes brutal after awhile. Not much air circulation here. Another very popular fish was the common betta. There were hundreds, either in small tanks or already bagged. Regrettably, I have never appreciated the beauty in these fish. In the past I have been tempted a few times to work with them. Unfortunately, it never happened. After seeing these fish in Bangkok, I might just have to give them a try. Another very popular fish in the displays were the flowerhorns. I'm sure there's many different opinions on these man made fish. Without getting into all the likes and dislikes, all I will say is that they have color. Also a lot of parrot fish. Again the man made ones. My opinion, the

bright fluorescent coloring most likely from injected hormones and diet. I'm happy to say that I didn't see any painted, dyed or tattoo fish. I don't understand the desire to keep such monstrosities. Well, the demand is what keeps these fish plentiful.

Overall, there were many types of bread and butter varieties all with lots of color. Lots of guppies, platys, angelfish, rainbow fish, tetras, assorted shrimps, plecos etc.
There was one tank that had at least 150- 3 inch black ghost knives. Sort of a cool display. One vender had a few Channa sp that I would love to have. A few small colorful ones that I'm not sure of the ID's and a couple 10 inch Channa maculatus? As a kid I raised a pair of Channa micropeltes from 2 inch to about 14 inches. At the 2 inch size an absolutely beautiful fish. Colors faded as they got larger. I found they were brutal to keep with any fish I put in with them, forcing me to removed and leave by themselves. I recalled that while I fed live feeders only, I was 17 at the time. These two snakeheads would eat some feeders and then simply killed the rest. I guess a few species are aggressive. They definitely had large visible teeth. Today while taking pics, one species continued trying to attack me through the glass. Another species was very mellow while I was taking pictures. Later in the day, I saw in the market food area a tub full of live snakeheads that were pushing 12 inches. I saw many venders selling fried or dried snakeheads everywhere throughout the trip.

There was about a 1/2 dozen small containers with shrimp. Again, I'm not sure of the species. I recall, one type was bright red and another type was jet black. A few other colors as well. I did see a couple of containers full of some type of lobster or crayfish 3-5 inches that were colorful.

I must add now, that I saw many types of FW stingrays. Largest were about 2 feet in diameter. A few tanks had babies. Again, not familiar with some of the species or varieties. One of my favorite fish, I had a pair of motoros. Fascinating fish to keep.

I saw these fish with a written cost on tanks or on the bags.

20-Female betta for 50 Baht $1.51 bag
8-3-4 inch archer 950 Baht- $28.72 bag

20-GloFish for 50 Baht- $ 1.51 each
10-Fantail goldfish 3" 160 Baht-$4.84 bag
08-Neon tetra 100 Baht- $3.01 or .38 ea

There were many vendors with marine fish. Some were fish only and some were invertebrates only. I mostly passed all the marine venders as I had little time and I wanted to really see the odd ball freshwater fish. Just glancing they seemed to be well stocked in the marine sections.

There was a tank full of 2 inch datnoid sp. of some variety that was interesting.

Another tank that was very interesting had about 50, 3-4 inch Monodactylus sebae. One of my favorite fish. I also saw a tank of Monodactylus argenteus.

One container had 3/4" small spotted FW puffers. I'm not sure of the species?

Bags of 2 inch assorted male peacocks.

Strange how small and fully colored up they all were?

I must say now, if I ever lived in Thailand it would definitely open up a whole new door for me in fish keeping. Many of the fish are just not available in the US that interest me. It would be sort of nice not having to worry about temperatures or heaters. Just to keep the fish outdoors yearly would be fun! I'll go out on a limb here, I don't think they have any chemicals in their water. I saw venders filling up tanks, containers and bags of water from the hose. I also would imagine, there has to be plenty of breeders and fish farms! Maybe next time I'll check out the commercial breeders. I did notice at the market off on a side street a Betta business of some type? Possibly a breeder? I highly recommend if anyone is in the area to check out CHATUCHAK.

As I wrote that last sentence it made me smile. I know nobody just happens to be in Bangkok. This was my second trip in two years, I never imagined I would ever be going to Thailand. We never know where life will take us. Definitely a memorable experience.

IBC & FOTAS 2022 Convention Lineup of Events

This year Convention is going to be quite a bit different than previous years. This year the Federation of Texas Aquarium Societies will integrated into our yearly Convention. This Convention will have all of the things we have always had at the yearly IBC Convention however it will now have an all species show going on at the same time. The speaker lineup is going to be both Betta and non-Betta so it will be quite a departure from the typical IBC Convention.

The FOTAS specific events will be integrated into the Convention space making for a very unique experience. The clubs sponsoring this event are the Oklahoma Aquarium Association, Oklahoma Betta Breeders Association, and the Northwest Arkansas Aquarium Society. This is going to be a fun event for all! Our speakers will be Dave Schumacker, Peter DeSouza, Michael Gaines and Gerald Griffin. Hope you decide to join us and have some fun!

To Register for Convention go to;

https://forms.gle/V1hkNdRorVnscVb56

INTERNATIONAL BETTA CONGRESS®

FOTAS

Federation of Texas Aquarium Societies

International Betta Congress and Federation of Texas Aquarium Societies Joint Convention 2022 Schedule of Events

Thursday - July 07, 2022

8:00 am – 5:00 pm	Registration, walk-ins
Noon – 2:00 pm	Lunch
2:00 pm – 5:30 pm	Show room is open for viewing
6:30 pm – 7:30 pm	Dinner
8:00 pm – 9:30 pm	Seminar (Evolution of Fish Gerald Griffin)
10:00pm – Midnight	Presidents Reception (open), hospitality suite

Friday – July 08, 2022

7:00 am – 8:00 am	Breakfast
8:00 am – 11:00 am	Registration
8:00 am – 9:00 am	Judging Seminar 1
9:00 am – 10:30 am	Judging Seminar 2
9:00 am – 12:30 pm	Show room is open for viewing
10:30 am – 12:00	J-board meeting (open)
12:00 pm – 2:00 pm	Break for lunch
2:00 pm – 6:00 pm	Betta Show room is closed for judging
2:00 pm – 6:00 pm	Judging Seminar 3 (show judging)
6:30 pm – 8:00 pm	Dinner
8:00 pm – 9:30 pm	Show room is open for viewing
8:00 pm – 9:00 pm	Seminar (Mbuna Dave Schumacher)
10:00 pm – Midnight	Hospitality suite is open

Saturday – July 09, 2022

7:00 am – 8:00 am	Breakfast
8:00 am – 9:00 am (?)	IBC Written Judges Exam
9:00 am – 2:30 pm	Show room is open for viewing
9:00 am – 10:00 am	E-board meeting (open)
10:00 am – 11:00 am	Seminar (Cold Water Fish Rooms - Michael Gaines)
11:00 am – Noon	Seminar (Wild Bettas - Gerald Griffin)
Noon – 2:00 pm	Lunch (FOTAS Board Meeting)
2:00 pm – 3:30 pm	General Membership meeting (members only)
3:30 pm – 4:30 pm	Seminar (Collecting in Cameroon Peter DeSouza)
6:30 pm – 8:30 pm	AWARDS BANQUET
8:30 pm - ???	Show room disassembly
??? – Midnight	Hospitality room will open immediately following disassembly of showroom

Sunday – July 10, 2022

7:00 am – 8:00 am	Breakfast
8:00 am – 10:00 am	Auction set-up
10:00 am – 5:00 pm	Auction
5:00 pm--------	Convention pack-up

IBC & FOTAS All Species Auction
10 July 2022
Tulsa Midtown Hilton Garden Inn
4518 E Skelly Dr
Tulsa, OK 74135

Sunday Auction Rules
OKAA/OBBA/NWAAS will not accept responsibility for any item's safe keeping nor its condition before or after the sale.

SALES

- Cash only! 75%/25% Seller/Host Club
- IBC Auction Items will be the first to be Auctioned then the All Species

ITEMS

- Only fish or aquarium related products are allowed in the auction.
- All items must be properly bagged.
  - Proper fish bags must be used.
  - Zip-locks and baggies are unacceptable.
  - Live animals must be properly bagged with air and water. Please double bag.
  - Larger fish may be kept in buckets or other suitable containers, but the bucket becomes property of the buyer.
  - Items such as driftwood or decorations do not need to be bagged; however, they must be labeled appropriately.
  - Items not properly bagged will be rebagged by OKAA/OBBA/NWAAS volunteers. There will be a $2 fee for items that need to be rebagged. This is NON-NEGOTIABLE.

LABELS / SELLER SHEETS

- All Sellers must fill out a seller sheet.
- Your Seller ID are your initials. For example, if your name is Homer Jay Simpson, your Seller ID would be HJS.
- All items that you are selling must be listed on your seller sheet.
- All items must be labeled with your Seller ID and Item Number.
- Your labels should match the numbers on your seller sheet.
- You may put a reserve price on your item.
- Below are examples of acceptable labels:

EXAMPLES OF SELLER TAGS

HJS 007 (Sellers 3 Abr Code and Item number)
Pygmy Chain Sword (Item description)
(Echinodorus tenellus) (Species-helpful but not needed)
Reserve $5 (Not needed)

TIMES

- 9:00 am - 11:00 am Registration
- 11:00 am - 6:00 pm Auction

Notes: Species names can be vitally important and help your sales of particular species as well as location data if known. All IBC Items have a mininum of $5 unless waived.

IBC & FOTAS Convention 2022

July 07th to 10th

Hosted by OBBA, OKAA, & NWAAS

Hilton Garden Inn Tulsa Midtown

4518 E Skelly Drive

Tulsa, Oklahoma 74135

918-878-7777

(Code Betta for room discounts)

Room rates are $107 plus tax
Free parking
FULL CONVENTION PACKAGE INCLUDES:
Breakfasts with Registered Hotel Room.
3 Dinners (includes Awards Banquet, Thursday and Friday night)*
President's Reception/Hospitality Suite
Convention T-Shirt
All workshops, (including Judging Seminars I & II)
IBC General Membership Meeting (members only)
Open Executive and Judging Board Meetings
Convention Auction
ALL SPECIES AUCTION (Following IBC Convention Auction)

PACKAGE PRICING:
FULL PACKAGE $150.00
***Friday – Sunday FULL PACKAGE $130**
MEALS ONLY $110.00
BANQUET ONLY $ 60.00
WORKSHOPS ONLY $ 50.00
ADDITIONAL T-SHIRTS $15

CLASS SPONSORSHIPS $20.00 PER CLASS

ALL PRICES WILL INCREASE $20 AFTER MAY 1, 2022

Registration Payments can be made by PayPal to herpchat@yahoo.com
Checks can be mailed to;
Gerald Griffin
PO Box 143
Talala OK 74080

There is no Hotel Shuttle, if flying in contact us for arrangements!

**Details subject to change

Every few years or so Animal Rights Activists Groups try to pass legislation designed to destroy the pet trade. Sometimes their moves are bold and sometimes they are sneaky. This latest attempt was their sneakiest yet. After HR 4521 passed the House floor they snuck in some legislation (Sec. 71102) specifically targeting the Lacey Act. House Resolution 4521 is called the COMPETES Act and is designed to make the United States more competitive against China. Overall, this piece of legislation is not bad, except for that tiny bit that was slipped in after the act was passed in the House targeting the Pet Industry. This Sec. 71102 has absolutely nothing to do with the intentions of the COMPETES Act. You have a lot of people saying a lot of things from this is a good thing to it will totally destroy the Pet Industry. So, what is the truth? The truth is somewhat mid-road. Looking at other countries that have enacted similar legislation, they lost about 60% of their Pet Trades. In the United States that would translate into Billions of Dollars.

So why is it bad? First off what this legislation does is create a "whitelist" of species no longer able to be transported across "State Lines*". For those unfamiliar with a "whitelist" it means that if a species name does not appear on the approved list, it is illegal in the pet trade to be transported across State Lines. So that new species of Cichlid that was just discovered? You can't have it! As to the Betta side, Domestic Bettas would not be affected however many Wild *Betta* species would be. Amateur Conservation would be totally shut down unless you are determined to break the Law if this legislation passed. The enforcement of this would fall to the US Fish and Wildlife Department. They do not have a good track record with anything. The perfect example of this are Snakeheads. Basically 3 out of the 51 some species of *Channa* are invasive, however their take on this was to ban all imports of *Channa* and *Parachanna*. The vast majority of these species would be great Aquarium Fish and have been in the United States for years. My worst, or best example, depending on how you look at it was a Herpetologist who had legally obtained Gila Monsters. He was breeding these lizards and had quite a reputation being an expert and a popular Zoo Keeper of Reptiles. One day the Fish and Wildlife officers raided his place and confiscated all of his Gila Monsters and put them in a holding facility. This raid was 100% against the law!

At this point they expected him to fold and give up on his Gilas. He did not, he mortgaged his house to pay for a lawyer to fight the Government for his Gilas. The court ruled in his favor and ordered damages and the return of his Gilas. During the ending statements the Fish and Wildlife knew what they did was illegal however they stated that they did not believe anyone should own Gila Monsters, so they targeted him because he had the vast majority in captivity at the time. As a result of these Gilas being in Federal Custody over half of them died from lack of appropriate care. With first-hand knowledge of this event, why would I trust the Government with the enforcement and care of my animals? There have been a few states who have tried "whitelists" and have shown that they fail. The next thing about this "whitelist" is that any animal not on the published list is automatically listed as injurious which means invasive species. Here is what the legislation does;

- expand the authority of U.S. Fish and Wildlife Service to prevent interstate transport between states in the continental U.S. of species listed as injurious;
- create a whitelist of approved species that can be imported, where any animal not listed is treated as an injurious species by default and banned from importation into the U.S.
- grant the Secretary of the Interior emergency powers to use an "emergency declaration" to prohibit importation of a species found to be injurious to humans, agriculture, horticulture, forestry, wildlife, or wildlife resources for no more than 3 years. The "emergency declaration" would be effective immedi ately on publication in the Federal Register, unless extended up to 60 days.

So, when it comes to Government actions, this legislation is very overreaching! Currently the Pet Industry is actually quite well regulated despite what various Animal Groups might want you to believe. These are the current regulations on the Pet Industry;

- The responsible and legal U.S. pet trade is already well-regulated through federal and state permit requirements.
- Importation of certain species into the U.S. for use as pets is currently regulated and licensed activily by U.S. Fish and Wildlife Service under Title 50 CFR Parts 10, 13, and 14.
- State agencies continue to examine their state regulations on importation, possession, and sale of cer tain species based on injurious concerns specific to their state since the 2017 DC Circuit court interpreta tion of the Lacey shipment clause[1].
- Many state regulations, including Florida's Captive Wildlife Rules (68A-6 F.A.C.), include requirements such as:
    - o Animal and enclosure inspections for certain categories species;
    - o Permit requirements for possession, import/export, and transportation;
    - o Bio security requirements for enclosures and transport; and
    - o Federal and state license requirements depending on species and activity.

So, what would be legal if this legislation passed? Under the proposed guidelines those animals that are already established in the pet trade in sufficient numbers would not be affected. What does this even mean? Who decides what these numbers are? There are far more questions than answers and the legislators who slipped this legislation in cannot answer these questions. We have actually tried to get answers from them. The experts in the field conclude that the majority of the species you see at your Petco or PetSmart would be what would be allowed. This accounts for about 40% of the species in the Pet Trade. I personally do not keep a lot of the common stuff so this would have a drastic impact on the species I keep. So, what would a Lacey Violation look like? "Prosecution under the Lacey Act can be severe and heavy handed. Each violation can be prosecuted as a federal felony with a maximum punishment of $20,000 and/or five years imprisonment. Additional civil penalties could also be levied."[2] Another issue with a "Whitelist" would be enforcement by Fish and Wildlife Services. Officers are woefully equipped to understand and deal with species not listed on the approved species list. Many years ago, during the "Snakehead" ban we had a shipment of *Betta channoides* get seized and ultimately destroyed as they were convinced, we were trying to smuggle in Snakeheads. Had those officers understood what they were looking at, they would have been able to determine that Snakeheads have a long continuous dorsal fin whereas *Bettas* do not. So, you are on vacation and stop at a pet shop and see some really cute snails, you buy them and

take them home crossing a state line. Did you break the law? Probably-because of the status of various snails across the United States. This is how complicated these types of laws are. If for whatever reason you do get stopped, would the officer be able to tell what species it is? Probably not. Also, this legislation would now supersede all previous legislation which took years to establish. So, combined with the fact that this legislation was slipped into HR 4521 without any public discussion and the fact that the legislators who slipped this in cannot answer any meaningful questions about this legislation how can we trust it? There is no doubt that it was slipped in to avoid any public scrutiny and to bypass any congressional hearings.

Where we are. The House moved this legislation to the Senate on February 8th, 2022. It is up to the Senate to either reconcile this legislation with their own version USICA (S. 1260) or they can go with the House version or ignore the House and go with their version. So, what are the odds of this passing? Very hard to say, some industry insiders place it at 0% of passing while others put it at 25% of passing. Even at such low a percentage, this needs to be a wakeup call as this organization is not done with trying to destroy the Pet Trade. If this fails, you can be sure that they will try again in a few years with new pieces of legislation. We must be ever vigilant against these attacks. So, what can you do? Go to this website https://petadvocacy.org/lacey-act-campaign and follow the instructions. It will send your comments to your state Senators. However, the best course of action is to print off the talking points and call your Senators. Phone calls work much better as anyone can generate thousands of electronic messages. Legislators respond far more to actual phone calls.

In closing, this is just another phase in the war of these "Animal Rights" groups that are bent on destroying the ability for people to have pets. They might not be successful, this time but what about next time? They have shown their ability to change tactics and have proven by this Legislation that they are not above trying covert and underhanded legislative techniques. Their goal is obvious, and they have a lot of money and will play the long game to achieve their goals.

1 USFWS. "USARK_ruling_talking_points_and_Q_A_final.Pdf." U.S. Fish and Wildlife Service, 2017.

2 https://www.naiaonline.org/articles/article/federal-legislation-threatens-pets-zoos-and-aquariums-and-biomedical-research#sthash.bqHuCDvP.vbMpn8eV.dpbs

Other references;
https://www.reef2rainforest.com/2022/02/12/video-the-endangered-aquarium-trade/?fbclid=IwAR2_pi4ezx-oEZc6WFYVYU0vA2Hxq_vcqlP1TyDPBLQoY8jdsDbF7FpwYi9Y

https://www.clownfishcove.com/blogs/blog/america-competes-act-will-not-kill-reef-aquatics-trade

https://petadvocacy.org/

Turtle Races: An Overlooked Animal Welfare and Wildlife Conservation Crisis

By Alex Heeb
Director, Turtle Race Task Force
A project of the Colorado Reptile Humane Society

Introduction

When it comes to animal issues, there may be no topic more unusual or obscure than turtle racing in the United States. Turtle races – in which wild turtles are placed in a painted or chalked circle on the ground, with the first turtle exiting the circle declared the winner – have become extremely popular in the central United States. They are held at county fairs, Independence Day celebrations, and town festivals in rural areas, and are usually billed as children's events. These events raise significant animal welfare and environmental concerns but have largely escaped scrutiny.

As a high school freshman in 2005, I started a project to document the abuses that were occurring at turtle races. At the time – in large part due to my youth – I was unable to get the attention of officials to bring about change, in spite of documenting significant animal abuses and conservation issues.

Several colleagues familiar with my original work have recently encouraged me to revisit the project. As an experienced college graduate and former journalist, I believe that now is the ideal time for a fresh look at turtle races. We are currently gearing up for a major investigation in summer 2021, and an 200 person task force has formed to support the effort.

Severe abuses have occurred at all the turtle races I have personally attended over the years. Whether it is overcrowding, injuries caused by children dropping turtles, overheating, painting of turtle shells, poor husbandry, unsanitary conditions, the intentional relocation of turtles away from their original habitat (which is extremely harmful to wild turtles) or the use of endangered species, these problems are pervasive across races. My colleagues have reported similarly disturbing observations. These issues are detailed below.

Overcrowding, Unsanitary Conditions and Poor Husbandry

Turtles are environmentally sensitive creatures and their proper care requires the experience necessary to properly mimic their natural habitats. They need

Pictured: One heat of a turtle race at the Warren County Fair in Warrenton, Missouri. About 60 wild box turtles were entered in this race.

Photo by Alex Heeb.

a carefully curated diet, a certain temperature and humidity range, appropriate substrate, a large amount of space, and (very importantly) special lighting that mimics the spectral range of sunlight and allows them to absorb and synthesize Vitamin D.

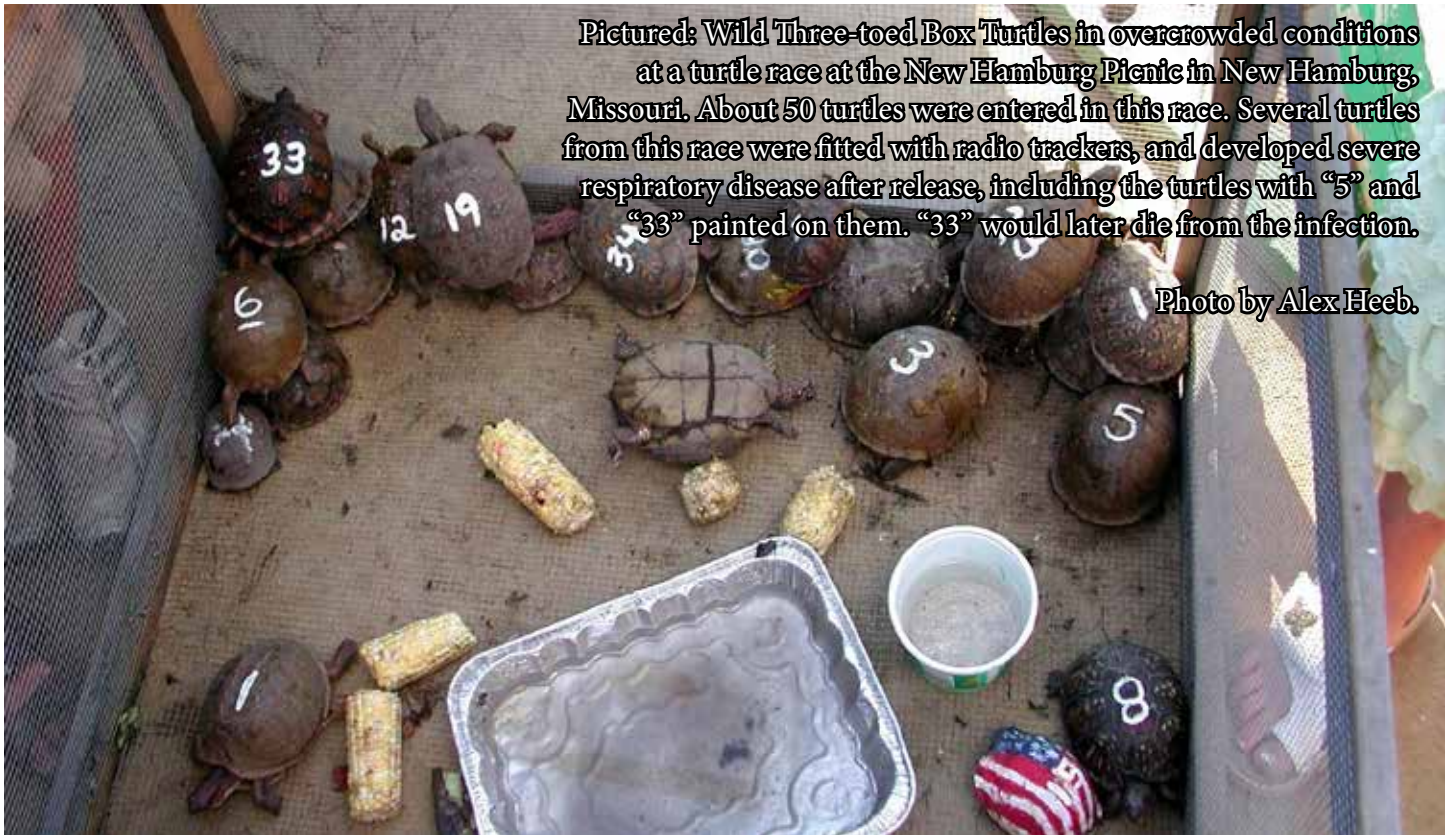
Organizers of and participants in turtle races have little to no knowledge of turtles, and in my experience are difficult to motivate to acquire such knowledge. They are encouraged to capture wild turtles weeks or months in advance of the race. Frequently, these turtles are kept in cramped and inappropriate conditions not even close to fulfilling their biological needs.

Turtles are often brought to races in five-gallon buckets or in plastic tubs, usually without appropriate substrate. The turtles frequently defecate in these enclosures and their plastrons (lower portion of the shell) become covered in each other's feces. Numerous turtles are often kept together in inappropriately small enclosures.

Painting of Turtle Shells, Injury and Disease

It is extremely common for people to paint turtles prior to the race. This not only destroys their natural camouflage making them vulnerable to predators, and exposes them to any toxins in the paint, it cuts off their ability to synthesize Vitamin D through their shell – which can lead to metabolic bone disease and other health issues. Shell rot can also occur through poor nutrition, overly wet conditions, and inappropriate temperatures, and is frequently observed in turtles from turtle races.

Officials in Maryland, before a 2016 ban took effect, had to confiscate numerous turtles brought to races with respiratory infections (Zumer and Butler 2013). It was the threat of disease that eventually led Maryland to ban turtle races (State of Maryland 2016). In locations across the country, box turtles die offs have been recorded due to Ranavirus and other diseases (Adamovicz et al. 2018). With large numbers of stressed animals held together in concentrations that would never happen naturally, the possibility of diseases spreading back to wild populations – and the development of novel diseases – is a dangerous possibility. In the light of what happened to the Desert Tortoise in California and the Gopher Tortoise in Florida, where a respiratory infection associated with the



Pictured: Wild Three-toed Box Turtles in overcrowded conditions at a turtle race at the New Hamburg Picnic in New Hamburg, Missouri. About 50 turtles were entered in this race. Several turtles from this race were fitted with radio trackers, and developed severe respiratory disease after release, including the turtles with "5" and "33" painted on them. "33" would later die from the infection.

Photo by Alex Heeb.

bacteria Mycoplasma sp. took hold and wreaked havoc on wild populations of these endangered animals, this is a major concern (Berry 1997, McLaughlin 1997).

It is very common for children to accidentally drop turtles onto hard concrete at the race site, potentially causing internal injuries. We have seen plenty of turtles at turtle races with severe shell rot or other injuries that needed treatment. To highlight the situation at just one race, consider the turtle race in Troy, Missouri, where a turtle was observed with an area of necrotized flesh with a botfly infestation. At the same event, a female turtle started dropping eggs during the middle of the race. A locally rare Ornate Box Turtle was found with severe shell rot. Participants stated they had kept the turtle, which later died in the care of a wildlife rehabber, in a cattle trough for some time prior to the race. The race organizers made a truck bed available for people to dump unwanted turtles in. Turtles were observed scrambling for the only sliver of shade (pictured below), and exhibited overheating responses in the sweltering environment.

Intentional Relocation

Wild box turtles have extreme site fidelity, meaning they are imprinted on a five to 15 acre site (Dodd 2001). Typically, they spend their entire lives inside of these "home ranges," except for occasional forays by females to find egg laying sites. When box turtles are relocated, they wander aimlessly, searching for their lost home range. They become extremely prone to developing respiratory infection and exhibit increased mortality rates (Cook 2004, Hester 2008).

People collecting turtles for turtle races appear to often make no effort to return box turtles to their home range. In fact some turtle race organizers encourage this by offering to relocate box turtles people no longer want after the race.

Excessively Hot Conditions

Turtle race organizers often pick a concrete or sand surface for the turtle race and proceed to race turtles during the hottest part of the day. For example, one turtle race in Hebron, Indiana, which often has over 120 turtles entered, conducts its races on an asphalt parking lot in midday during July. An article in the local paper described the pavement as "scorching." One person, writing in a local Facebook group, recommended a person against using their family pet for the race. "Personally I wouldn't use a pet tortoise or box turtle," they said. "The asphalt gets EXTREMELY hot

Pictured: Wild Ornate Box Turtles were abandoned in this tub after the Roosevelt County Fair in Portales, New Mexico. About 150 turtles were entered in this race.

Photo by Sarah Reeb.

and they can get burns on their feet and shells from it."

When Alan Gregory, who runs a turtle rehab center in Arkansas (and who now volunteers with our task force), visited a local turtle race a few years ago, he brought a thermometer with him. The thermometer, which could read up to 120 degrees Fahrenheit, maxed out. "Usually on this day we are dealing with 100-200 turtles from the turtle races," Gregory said. "Removing paint, treating for starvation, shell rot, respiratory infection, heat stroke and more. It is usually one of the worst days of the year for us."

In 1998, Sarah Reeb, a concerned citizen whose work on turtle races in Kansas helped inspire the current project, pegged her local turtle race at 130 degrees Fahrenheit. She suggested reforms to the race organizers – including prohibiting people from painting turtle shells and moving the race to a cooler time of day – and was rebuffed by organizers.

"What you don't see is how many of them are cooking in the sun, how many are starving," she told a reporter from the Topeka Capital-Journal, "and how many have died. (Anonymous 1998)"

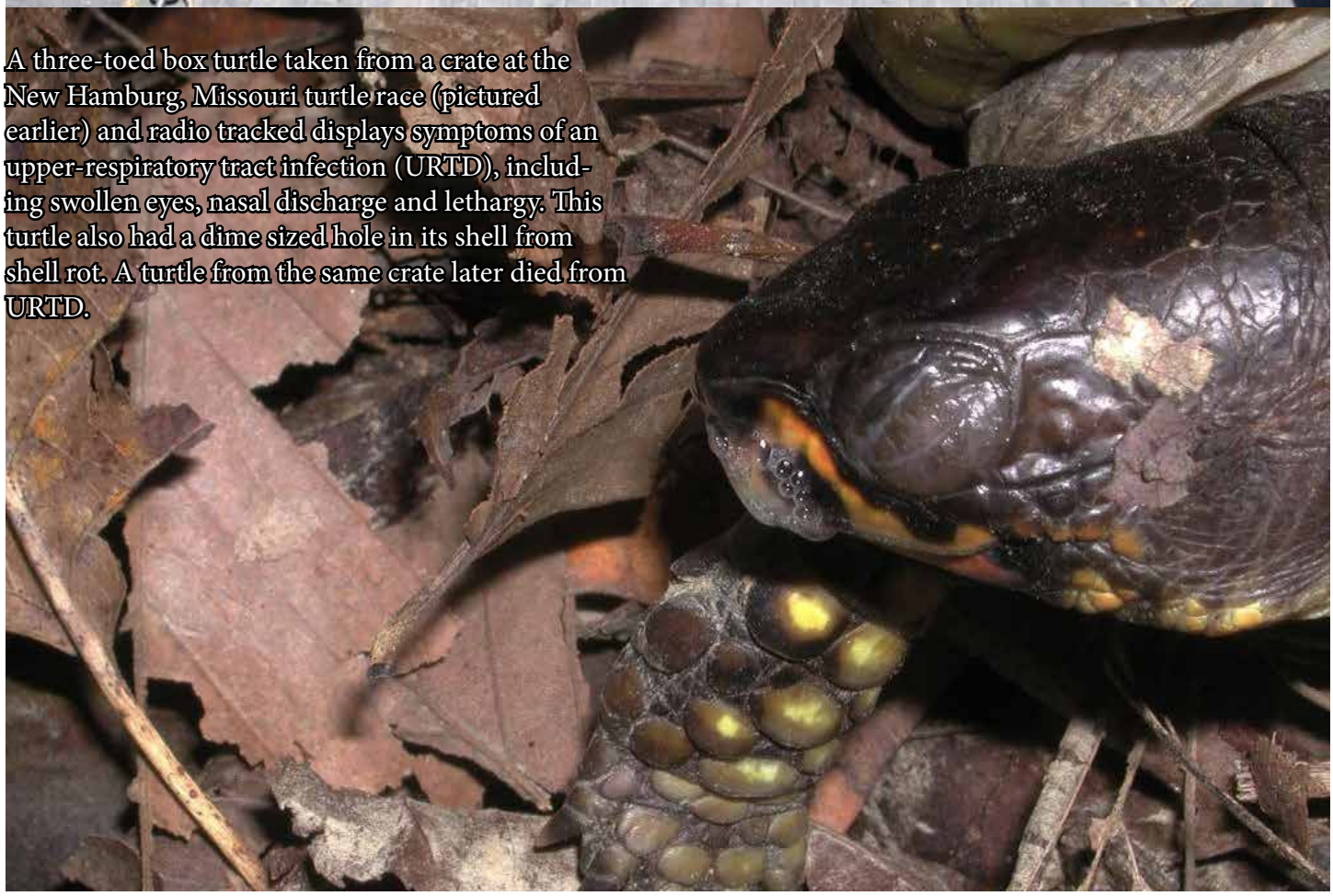
An Attitude of Apathy

One of the most astounding things about turtle races is the way organizers and participants are able to write off the problems they are creating. This attitude of apathy towards the animals is pervasive across turtle races. Although anecdotal, I can provide examples that back up this observation.

For example, in Washington, Missouri, which has an annual turtle race with upwards of 150 box turtles entered, organizers have for years set out boxes where people can abandon turtles they no longer want after the race ends (pictured below). About a third of the turtles are usually abandoned. The organizers then load the turtles onto an ATV, drive them to the backyard of a nearby house, and release them. Leaving aside the previously described harmful impacts of relocating box turtles, this is an extremely inappropriate release site for turtles – with just a few acres of forest habitat, surrounded on all sides by industrial sites, housing developments, highways and railroads. The mortality rate for these turtles is likely extreme. I approached the organizer of the event one year and attempted to convince him to at least release the turtles in habitat where they would have a chance. He seemed astounded that someone was showing an interest in the welfare of the turtles, and said, with an indignant tone, "We do this every year. They'll be fine."

Three-toed Box Turtles abandoned after a turtle race at the Lincoln County Fair in Troy, Missouri scramble for the only sliver of shade in the bed of a scorching pickup truck.

Photo by Alex Heeb.



A three-toed box turtle taken from a crate at the New Hamburg, Missouri turtle race (pictured earlier) and radio tracked displays symptoms of an upper-respiratory tract infection (URTD), including swollen eyes, nasal discharge and lethargy. This turtle also had a dime sized hole in its shell from shell rot. A turtle from the same crate later died from URTD.

Wildlife officials in Maryland banned turtle races in 2016 – the only state so far to do so. Prior to that, they had been working for years to shut down the state's last turtle race, in the town of Bel Air. This controversy was covered by the local newspaper in 2013 (Zumer and Butler 2013). The apathy of participants was apparent.

"I think it's ridiculous," one man said of concerns. "I think they are insane to make it an issue over a 50-year tradition."

"I think there are more important issues to be addressed than worrying about a turtle race, when over the years people have been told, 'Return the turtle back home,'" a local woman commented. "I just think all this energy over a turtle race is just absurd. To put a damper on a tradition that is healthy and happy and family-oriented is over the top."

This sentiment was echoed in Leoti, Kansas, where a race advocate penned a newspaper column (Geyer 1998) in response to Sarah Reeb's efforts (mentioned earlier) to reform the race at her local fair. The race had just been scuttled after its main sponsor pulled out, although another sponsor was found, and the race continues to this day.

"I can certainly relate to what the sources were saying as far as it being too hot, etc, etc, etc., but it's a shame to lose one of our oldest fair traditions…" she said. "I know, I know, I've read a lot of literature that was brought to me on the habitat and well-being of the box turtle, but I think there are a lot more important things that people should be worrying about… And as far as I know, box turtles haven't been put on the endangered species list yet!"

A reporter from the Topeka Capital-Journal asked the Leoti fair board president about the treatment of turtles at the race where, as mentioned earlier, the race circle exceeded 130 degrees Fahrenheit (Anonymous 1998).

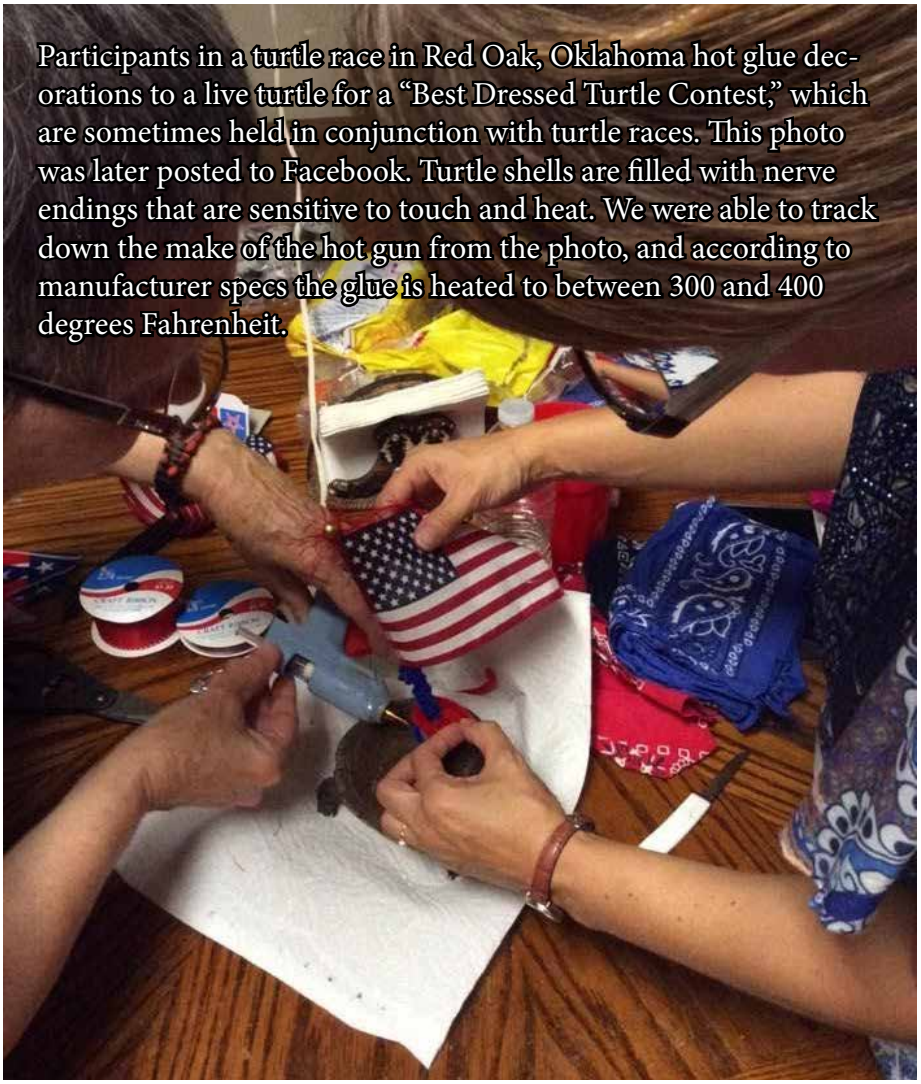
These Three-toed Box Turtles that were abandoned after a turtle race in Washington, Missouri were released in an extremely inappropriate habitat. The organizer rebuffed all attempts to convince him to release the turtles someplace more suitable.

Photo by Alex Heeb.

"We're just trying to do the best we can, and I'm sure there's also a million dogs in the world, and some aren't being treated right," he said. "Maybe some of these turtles aren't being treated right. I don't understand it. I guess you should never use a trap on a [mouse]."

In Hebron, Indiana, which as mentioned earlier has a major problem with turtles overheating, the local newspaper published a friendly piece about the race, downplaying the impact (Coffer 2019). "The weather was scorching hot on the pavement," it said, "but the turtles were not affected."

I suspect that the reason for this apathy is an over-emphasis on amusement embedded in the very nature of turtle races. People involved with the races easily slip into a mode where they are not seeing the turtles as living animals and important components of an ecosystem. Rather, they approach them as objects from which the maximum possible entertainment value is to be extracted.



Participants in a turtle race in Red Oak, Oklahoma hot glue decorations to a live turtle for a "Best Dressed Turtle Contest," which are sometimes held in conjunction with turtle races. This photo was later posted to Facebook. Turtle shells are filled with nerve endings that are sensitive to touch and heat. We were able to track down the make of the hot gun from the photo, and according to manufacturer specs the glue is heated to between 300 and 400 degrees Fahrenheit.

A Threat to Wild Populations

Turtles are amongst the most threatened group of vertebrates on the planet, according to the Turtle Conservation Coalition, which has calculated that half of all turtle and tortoise species are either endangered or critically endangered (Rhodin et al. 2019). Relative to other animals, turtles are very long lived, but have high hatchling mortality. This conservative reproductive strategy makes them extremely dependent on high annual adult survivorship for the continuation of populations.

Box turtles, which are the primary species used in turtle races – and hence the focus of this project – also conform to this reproductive strategy (Dodd 2001). Based on both research and anecdotal evidence, experts believe they are declining throughout their range. While some areas continue to show robust populations, in about half of long-term population studies, box turtles have shown massive declines. For example, a population of about 100 box turtles slowly collapsed during a 37-year study by the University of Delaware (Nazdrowicz 2013). By the time the study wrapped up in 2002, the site only had 14 box turtles left. Similar declines were observed in studies in Maryland (Hall et al.1999), and in Missouri (Miller 2000).In Ohio, box turtles once ranged nearly statewide; they have now disappeared from the northern half of the state (Anonymous 2008). These declines have been attributed to habitat destruction, disease, road mortality and collection for pets.

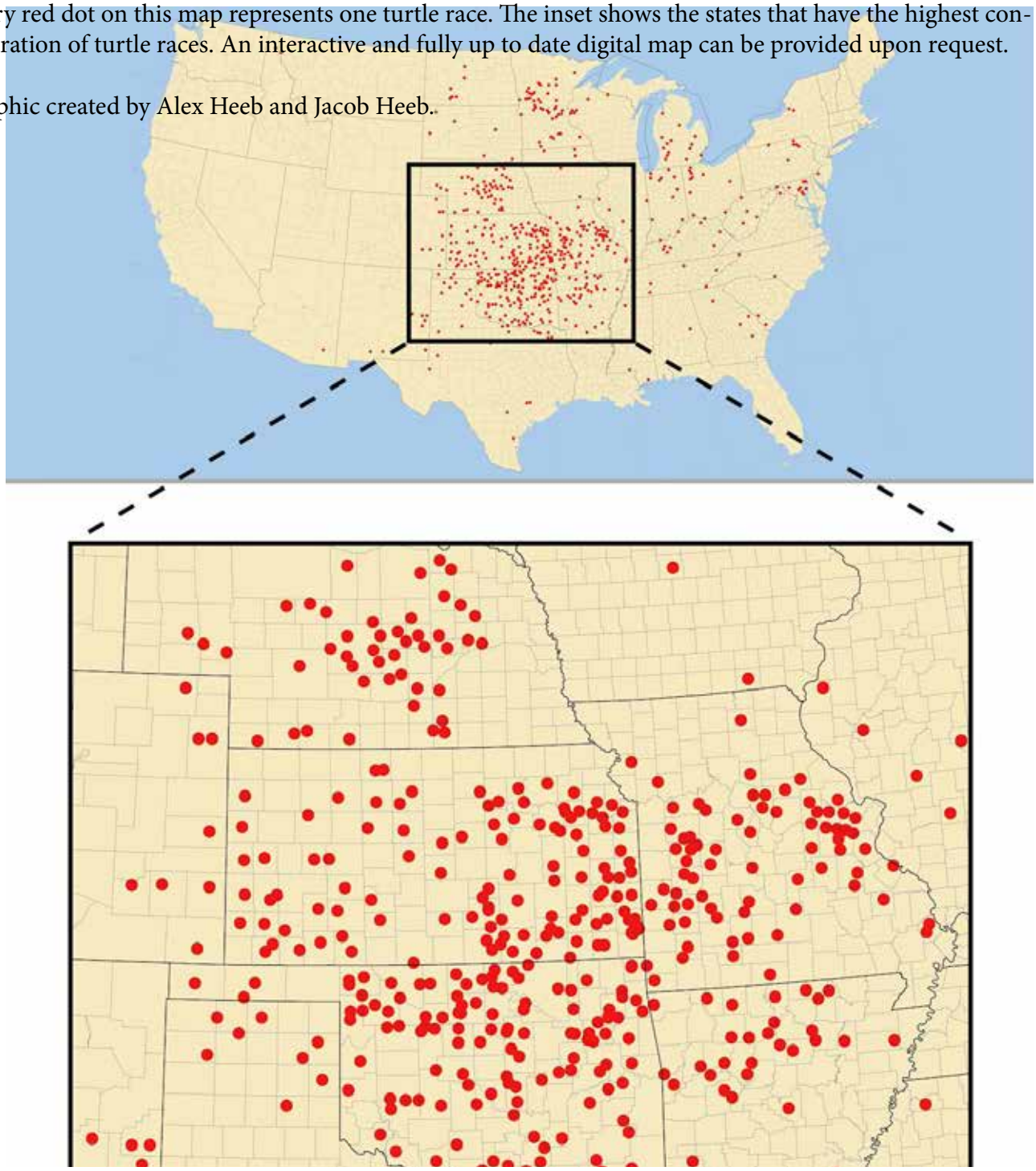
As something that causes thousands of wild box turtles to be removed from their habitats, turtle races compound the impacts of these other factors.

Aside from the two box turtle species, 12 species of turtles have been documented at turtle races, including a number of endangered and otherwise protected spe-

cies. The rare Blanding's Turtle, a candidate for listing under the Endangered Species Act (ESA), has been seen at four races in Michigan, three races in Nebraska, two races in Indiana and one race in Missouri. The Wood Turtle, also an ESA candidate species, has been spotted at two races in Pennsylvania, one in Michigan, one in New York, one in Virginia and one in West Virginia. The Spotted Turtle, likewise an ESA candidate, has been used at one race in Pennsylvania, while the Gopher Tortoise, which is Federally threatened in parts of its range and state protected in the remainder, was observed at a race in Georgia. The Ornate Box Turtle has shown up with frequency at two races in Illinois, where it is a state threatened species, and on occasion in Arkansas, where it is a species of special concern. Eastern Box Turtles are sometimes used in spite of protected status at races in Pennsylvania, Indiana and Michigan. The above information likely represents an underestimate, as this dataset (based on two race visits, and some photos posted publicly on the internet) is highly incomplete.

Every red dot on this map represents one turtle race. The inset shows the states that have the highest concentration of turtle races. An interactive and fully up to date digital map can be provided upon request.

Graphic created by Alex Heeb and Jacob Heeb.



Revealing the Scope of Turtle Races

Until recently, the full scope of turtle races was hidden. Occasionally a humanitarian or biologist would stumble across a turtle race at a festival and, horrified at what they had seen, raise the alarm. Newspaper articles have been written on the subject, but more often than not the controversy died down. No attempt was ever made to quantify the problem, until Sarah Reeb stumbled across two turtle races at Kansas county fairs in 1997. With the help of a local zoo,

Reeb started a phone survey for turtle races in Kansas and was able to identify about 30 races – far more than anyone realized existed.

I came across a copy of Reeb's research in 2005. By that time, the internet was much more established and local newspapers had begun posting festival schedules online. I developed a search methodology that allowed for a systematic assay of turtle races, and began finding them by the dozens, and then the hundreds.

In 2019, with the launch of the new project, I updated the list of turtle races I had generated in 2005 using the same systematic search methods. At this time, we are tracking roughly 600 active and ongoing turtle races in 32 states. Some states, however, have much higher concentrations than others. Kansas, the most impacted state, has 138 turtle races. Oklahoma has 129, Missouri has 78 and Nebraska has 63. These four contiguous states alone account for two-thirds of the country's turtle races.

With the data I gathered as a high school student, I was able to determine – in an estimate limited to a seven state area – that about 25,000 box turtles a year were being collected for turtle races. During our investigative stage for the current project, we are hoping to get a very accurate estimate for all 32 states where turtle races are held.

The Task Force

The Turtle Race Task Force began forming in November 2019, after I realized that the scope of the new project would require multiple investigators and began looking for a few interested individuals to assist via social media. Instead of just finding a handful of people, however, dozens of people took interest in the project and offered to lend their talents.

Today we have a volunteer list with over 200 members including macro and micro-biologists, conservationists, environmental specialists, veterinarians, science writers and students. Nine volunteers, myself included, are members of the Task Force Board of Advisers. We are writing grants, obtaining permits, refining methodology, organizing volunteers and doing other work to prepare the effort.

We are envisioning a three-phase project to address the turtle racing problem. Phase I will consist of a one summer investigation into turtle races. Our volunteers will visit as many turtle races as possible to determine how many turtles and what species are being used and document animal abuses that are occurring. If funded, we would like to hire student help for the summer to fill any volunteer coverage gaps. Phase II will consist of a health and disease investigation.

In Phase III, we will launch a major publicity campaign using data and material gathered in Phase I and will work to get turtles races either heavily regulated or banned at the state level.

Phase I was initially planned to launch in spring 2020, but the COVID-19 pandemic forced us to delay almost the entire project (except for some preliminary investigative work focused on endangered species) for a year. Perhaps 60 to 80 percent of festivals with turtle races have been cancelled for the year 2020.

Phase I – Investigation

Field work will be conducted from April to November 2021, with most of the work concentrated in June, July, August and September. The goal is to publish the results in a scientific journal, potentially Human Dimensions of Wildlife or Herpetological Conservation and Biology . We plan to do the following:

- Have volunteer investigators attend races in their area
- Have full-time (for summer) investigators at races volunteers cannot attend
- Collect field data on how many turtles are being used and of what species

- Determine race organizer knowledge levels
- Survey participant attitudes and knowledge levels using semi-structured interviews at races. Also use interviews to determine how long turtles are being held, what percentage are being relocated, and where and how they are being collected
- Collect photographic documentation of captive conditions, abuses, and any endangered species brought to races

Phase II – Health and disease research

In this phase, scheduled for summer 2022, we will take a detailed look at how turtle races are impacting the health of box turtles. There will also be a human health aspect with Salmonella testing.

- Have specialist veterinarians perform full health workups on box turtles from one or more races, to include measurement of stress hormones, disease testing, and an examination or tests to see if the female turtles are gravid (carrying eggs).
- Possibly monitor a subset of box turtles via radio telemetry to determine the longer term impacts of races on their health and survivorship
- Test turtles for Salmonella to see if conditions before races are causing an increase in prevalence and possibly endangering children

Phase III – Intervention campaign

This will commence upon successful publication in a scientific journal of information gathered in Phase I, and will become fully active upon the completion of Phase II. This phase will consist of efforts to get turtle races heavily regulated or potentially banned, especially in states with high numbers of races. Specifically:

- Build relationships with wildlife commissioners and other key players while conveying information gathered in Phase I and II
- Advise key officials on best approaches for stopping turtle races
- Development of a website and creation of Facebook page and Twitter account (this objective may be achieved as early as 2020).
- Development of a significant advertising campaign via social media
- Build social media and email list following so that when new regulations or laws are pending, supporters can be mobilized to submit comments to agencies and attend meetings.
- Approach media for publicity
- Work state by state, using previous victories to build momentum for new ones
- Education and outreach to race organizers, sponsors and participants

Leadership

Some very talented and passionate individuals have stepped forward to join the Turtle Race Task Force, and eight individuals serve on the Board of Advisers:

Alex Heeb (Project Director) — Missouri
Christine Light (Assistant Director) — California
Liv Jones, DVM — Kansas
Cailin Mary Gallagher — Michigan
Ellie Houchin — Oklahoma
Taylor Blazi — Texas
Madeline Smith — Missouri
Chelsie Creps — Missouri

Fiscal Sponsor

The board and principal officer (Dr. Ann-Elizabeth Nash) of the Colorado Reptile Humane Society (CoRHS) have generously agreed to let their organization serve as our fiscal sponsor. CoRHS is a 501(c)(3) animal welfare organization founded in 1999 and based in Longmont, Colorado. They run an animal shelter, in addition to advocating for animal welfare and educating the community.

This fiscal sponsorship essentially gives the Turtle Race Task Force 501(c)(3) status. CoRHS will hold a bank account for the use of the Task Force, with the Director and Assistant Director of the Task Force authorized as users.

Funding

Funding Strategy

Our board has been busy applying for grants from wildlife conservation and animal welfare organizations. To date we have received the following grants and contributions:

$10,000 — The Summerlee Foundation
$10,000 — The Vista Dios Foundation
$7,500 — The William and Charlotte Parks Foundation for Animal Welfare
$5,000 — Kirkpatrick Foundation
$1,000 — The James E. Dutton Foundation
$150 — The Daniel Lyons Foundation
$1,500 — GoFundMe campaign

Conclusion

Since 1924, when the first modern turtle race was held in Oklahoma, turtle races have been operating essentially unregulated. Though tens of thousands of wild turtles are swept up by these events annually, creating a significant animal welfare and environmental problem, the issue has remained largely overlooked. To date, only Maryland has made a significant stride, by banning all turtle races in 2016.

The Turtle Race Task Force represents the best chance at changing the status quo. We hope that within a few years we can reverse the current situation, and end most of the turtle races presently ongoing, which will have an immediate and considerable impact on the welfare of wild turtles in the United States.

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How to Raise *Big* Fish

By Greg Sage

Since I first started with an aquarium, keeping the domestically developed swordtails, guppies, mollies and platies, it always seemed that the guy with the biggest fish had the best fish, and was then was the best fish keeper. When you get more serious about keeping and showing your fish, size does matter. I have sat up far too many nights pondering this issue, as have most other fishkeepers that want great looking fish. What do I need to do to develop huge, honkin' fish?

I am going to tell you that my fishroom does not consist of rows of tanks filled with extremely large, "beefy" fish. There are some that are, but there being few is by choice. I have kept many Cichlids, barbs, danios etc. and explored raising them big as well as breeding them, but my general point of reference in this article are the domestic livebearers- swords and guppies, because my work with them has dictated the size tanks I use, etc. However, to raise any species up to its maximum size and health requires adherence to all of the same factors. There are a number of variables involved in this process, and many of them are standard good husbandry. There are also a number of "tricks" that some people swear by that may be valid, but are inconsistent and may not work for you. These practices are specific to developing size, and hopefully I will address most of them, some that you will not find in many of the pet fish books available to the casual hobbyist.

The overall heft of a fish also influences how large a fish is perceived. I had a friend determined to see how large he could get the swordtail, Xiphophorus montezumae, considered one of the largest swordtails currently known. He put 3 fish each in 2 bare 30 gallon tanks and stuffed them daily with Daphnia, dry food and brine shrimp. Normally, a big full sized montezumae will get to be about 5.5 inches. I have never seen one hit a full 6 inches, but rumors have gone around that they can reach up to 10 inches.

After a few months he had solid, big fish. He called me with a report, "Someone was looking at these fish today and estimates they are about 9 inches!" "Have you taken a picture?" I asked. "Oh no," he tells me, I don't have a camera," "Then when they die, send them to me." I told him. "Wrap them up in alcohol and mail them to me, I'll preserve them and measure them for you." And he did. They were big, husky fish. And they measured almost exactly 5.5 inches, entire length including sword, but they were very deep bodied from having been well fed all of their lives. Things like this make me wonder about stories of red swords in the 60's that reached 6 inches, and that maybe those striving to grow fish back to what they are remembering from their youth are chasing an ideal that can't be met, because they were never really that way. I have seen mollies however, that may have reached 6 inches, grown by a fish farmer in Texas, but again, I didn't have a tape measure, and their most striking attribute was a thick, heavy body which may have made them look larger than they really were. But they were certainly very big fish. So size can also be what people think they see, even if it isn't entirely true.

Essentially, there are 7 factors. Water quality, Aeration, Tank Size, Foods, Temperature, Stocking levels, and Genetics.
You will notice I list genetics last. Yes, it is a factor, but it amazes me how many see a big fish and have "gotta have it" (or a few of its young.) And then end up with fish the same size as what they had all along. Or people that create "horses" out of fish they bought at their local fish store. Genetics, though a fundamental essential component, is far from the entire picture.

I will address each of these variables as they apply to raising not only healthy, prolific and colorful fish, but fish that will get close to being as large as they can be.

The 7 Factors

Water quality: Each of these 7 variables is important, and I will make an effort to avoid saying that each is

the "most important." But good water quality is essential, and there are many ways to accomplish this. To begin with, so that there are no opportunities for decaying organic matter to accumulate, I keep all bare bottom tanks, with floating or potted plants. Ammonia stresses the fish, and when you are going to be feeding a fish heavily to get it as large as possible, keeping a bare bottomed tank ensures that your water quality will stay as consistent as you keep it through variables you can control- water changes, changing the filters etc..

The most essential is water changes. I have experimented with different amounts at different time intervals, and have found that 50% twice a week is good, and about 10% a day is best. I know hobbyists that do 50% every day. I used to think that you could harm the fish if you changed too much, that more than 50% would deplete the bacteria etc. to a point to do harm to the fish, but that is not the case, particularly if you water that has been allowed to sit for a few days. If the changes are done regularly, and the water introduced is close in temperature and dechlorinated, there will not be a problem. The problem comes when you slow down or stop the changes, and the effect that this will have on the fish, which may not respond well until they adapt. If you change huge amounts infrequently (approx. more than 50% once a week) there is an adjustment from "old" to "new" water that the fish are required to go through, and you may introduce stress issues that you did not have previously. It is best to change water consistently both in amount and time between changes. With a tank where I was setting out to grow the biggest fish I could, I would change at least 50% twice a week, 10-15% a day is better.

The thinking with raising big fish is that you want all of their energy to go into growth, not fighting other stressors or expending their energy in other ways.

One secret to big fish is starting off the fry as well as possible, setting an initially strong, consistent rate of growth. With new babies in say, a 2 gallon tank I change 50% of the water daily for the first 2 weeks to a month, or hang the babies in a net breeder in a much larger tank with just a couple of fish swimming below. They then eat the baby brine shrimp and dry food that falls through the netting. The frequent feedings and brine shrimp will foul the water quickly in a small 2 gallon type baby tank, and until they are big enough to fend for themselves extra effort needs to be put in to keep the water of high quality during those all- important first few weeks- the net breeder hanging in a much larger body of water solves that problem.

Keeping them in the breeder for the first 10 days to 2 weeks means that you can keep an eye on them, and they will be less likely to miss food when it is introduced into the tank. When time comes to release them, remove any other fish, and they will already be acclimated to the water conditions in that tank. Be aware that keeping them too long in the breeder will also stunt their growth- as soon as they can fend for themselves confidently- no less than 2 weeks, assuming there are no other larger fish in the tank, they should be released.

I understand this sounds like effort, even work. Water changes are extremely important, so find ways to make it easy for yourself. No one should be expected to be sucking on hoses and schlepping heavy buckets around on their weekends. (But most of us do). I currently run about 60 tanks and have made a PVC network that goes into every tank and the entire room receives a daily 10% water change, automatically, in 6 zones, in about a half hour, both filling and draining. The plans for this PVC setup can be purchased by emailing me, and this setup requires no drilling of tanks, pumps or sumps.

The second water quality issue for growing large fish is to keep the fish within the water quality parameters they are best suited for. I used to live in a city where the water coming from the tap was a pH of 8.2. It would not have been possible for me to get the best growth from South American Cichlids in those conditions, for they require water that is ideally far more acidic. But the African Cichlids did great in that water. Read up on the fish you want to keep, and keep species that will do best in your water. Paying to add chemicals to alter either the pH or hardness with each water change can be very expensive, and inconsistent from the fish's point of view. Trying to grow out a fish that is a close-match to your water is the best path to success.

Aeration: This is an important variable in that it can have a profound effect on the immediate health of the fish. It is important to research the type of water conditions that the fish are accustomed to in the wild- some species are native to faster moving streams and would

require more aeration, and possibly cooler water, as a matter of course, some do not.

With respect to growing larger fish, I have seen large fish produced from many types of aeration. I use box filters with small stones and polyester floss in my tanks, and feel that the moderately rough aeration they provide works well for the fish that I try to grow their largest- primarily the swords. I have seen fish that were kept just to produce size that were raised without aeration (and kept to just a couple per large tank) that ended up huge and "beefy." The thinking was that their energy went into growth and not the swimming activity that turbulence in the water would require. As a result, my fish tend to be sleeker from the activity that they encounter, and not as heavy bodied. Some might say they then aren't as large, and they might be right. You can actually produce "fat" fish, and you can get them pretty large, but the males are occasionally sterile from "fat testes" syndrome (I am not making this up!). Essentially, I am of the opinion that a big fish should also be a healthy fish.

I have also heard from some breeders that they will introduce a fair amount of aeration to new young so that they are forced to swim vigorously to survive, and then feed heavily with the premise that this would encourage the biggest and strongest fish. It is an interesting idea, but I would prefer to evaluate each fish when they are older, and make the effort to bring all of the young into at least adolescence (except those with obvious defects) as carefully and as gently as possibly, with their energies during that period in their lives focused on growth.

The goal is to create a world for the fish where their life energy is not being expended for anything other than getting larger. A tank where the oxygen saturation or pH has been affected because it is dirty means the fish must navigate those obstacles just to survive. It won't be putting its precious resources into growth. A consistent airstone or box filter will help to keep the bacterial levels up to keep your ammonia levels down, and combined with vacuuming up any excess food will create an environment the fish need to grow

Tank Size: The size of the tank, though important, matters less than you would assume, provided the water quality stays high. It is much easier, however, to maintain higher water quality with a larger tank, particularly when there are only a few fish in the tank. You will be putting larger amounts of food into the tank than you normally would to encourage a lot of growth, and you do not want the water quality to deteriorate. So if you are setting out to specifically raise large fish, your best odds at success will involve a larger tank than you would normally provide for the size and number of fish you will be working with. As in the story above, my friend chose 2- 30 gallon tanks for 5 fish, the greatest number of fish he felt he could provide with the smallest tanks that would meet his needs.

When choosing a tank the factors to take into consideration were those my friend considered. With a fish he thought would get to be 6 inches+ he chose a tank where the water quality would stay high with heavy feedings, but not so big that the fish would ever miss finding food that was put into the tank. Next he had it filtered so it stayed clean, but left outlet and air stre am turbulence at a level where the fish weren't pushed around having to fight the current. He deliberately set out to produce fat fish. Then he made sure that they were all the same sex, so that the males wouldn't spend their energy chasing females as they matured. He provided modest light so they were comfortable and as unstressed as possible, then fed them 4-5 times a day with as many types of live and dry food as he could come up with. If I were to decide I wanted to raise a big Oscar, I could easily see myself keeping a single individual in a 100 gallon tank. If it were guppies I'd keep a half dozen in tank of 10 or 15 gallons.

Also keep in mind that most aquarium fish are rarely grown to their potential when it comes to size. Most fish you see being kept in people's aquariums are undersized for no other reason than that much of the commercially available fish food is inconsistent, bland or is often used past its nutritious prime, when live food is essential to maximum growth. Most fish have the potential to grow much larger than they do in home aquariums or pet shops.

Foods: Can you raise truly big fish without live food? Well, sorry, but no. There are a number of alternatives, but a variety of live food, and lots of it, are best. Before I go into those alternatives, I will share my experience with live foods.

As a given, you will need to hatch baby brine shrimp (BBS). There are a number of alternatives marketed

recently that claim to be nearly as good, and these are generally fairly good products . However, the serious breeders that I have dealt with all use BBS, particularly to feed young fish. Some breeders will actually feed up to 10 times per day, small feedings, as that will contribute to growth better than one or two big feedings a day. I feed young 3-4 times a day, twice brine shrimp, once or twice a fine mix of dry food. Adult fish are fed twice a day, once live food if available, and once dry food.

I have tried a wide variety of live food with varying amounts of success, but for me the easiest to raise (other than brine shrimp), with the least chance of spreading disease to the fish, least smelly etc., are redworms. (small earthworms). I keep them in moist, pure Canadian peat, feed them egg laying mix chicken feed crumble, and they reproduce quickly. The drawback is that they need to be chopped up to be fed to the fish. Occasionally I am haunted by thoughts of one day meeting all of the thousands of earthworms I have cut up in my life, but the fish love them and they are one of the best balanced foods available. The size of your broods will increase and they definitely contribute to large fish, regardless of species.

There are many other types of live foods; white worms, fruit flies, microworms, vinegar eels etc., and I have kept them all with various amounts of success. Many stores also sell blackworms which are excellent, and tubifex, which I generally avoid due to the number of diseases and various flukes the cultures are often contaminated with. Frozen brine shrimp is also commonly available, and there continues to be much discussion over the nutritional value of adult shrimp. My advice is to try it and see if it does what you need for it to do. You may also choose to go to the internet to read some of the literature available before using it. When raising fish to be as large as possible, generous feedings of a quality, fresh dry food, frozen brine shrimp, and chopped earthworms with feedings of at least twice a day will certainly give you the results you are looking for.

With respect to dry food I keep all of my foods in the freezer, and feed a high quality staple flake bought online mixed with a vegetable flake. There are foods sold in the pet store that are fine, but I choose to order by mail because I use it in fairly large quantities and I know it will be fresh. When fish are fed the same brand of food for a long period I will often add an attractant, something they really like that when mixed in will cause them to eat more than they normally would. Brine Shrimp Direct's "Golden Pearls" (rotifiers or other small animals prepared into a fine powder fed primarily to younger fish) works well for this. Now I have seen an exception to most of what I'd just written regarding live food and size. I had a retired friend in his 80's with a 20 gallon tank I kept stocked for him with swordtails and a couple corydora catfish. The tank was set up directly next to a chair where he sat much of the day watching TV. I know that his younger wife did at least a 50% water change once a week, and occasionally siphoned off excess food from the bottom. Each time he sat down, or whenever he thought of it (which became far more frequent as his short term memory diminished) he fed the fish from a container of dry food placed next to the tank (and the TV remote). These fish were easily being fed 10-20 times per day, but they received no live food. And they got large. But they were also fat, out of shape, crowded and rarely dropped fry.

Temperature: Fish raised at higher temperatures grow quicker, have shorter lifespans, reach sexual maturity sooner, and may not get as large. Fish kept in cooler temps are affected in all of the opposite ways. However, at cooler temps some fish could be more prone to disease.

I have found that settling on the proper temperature for any particular species depends on the temperature that is known to be optimum for them, keeping an eye out for where they appear to be at optimum health. You may also find that fish into their 2nd, 3rd or 4th generation for you will be more adaptable to your setting a temperature at the natural level for the species, which may be different than the temperature the fish were raised in previously, particularly if they were obtained from a local fish store. An example are the colored swords available at most pet shops. They are generally kept between 75 and 80 degrees, yet the temperature the species they were developed from are accustomed to is closer to 72. But if you were to take a newly purchased adolescent fish from the fish store, and immediately put them in 72 degree water you may encounter ich or fungal infections. Most home aquarists keep their tanks at 75-80 degrees, and when all species are adapted to that temperature, then many varieties can be kept together without temperature concerns, so most pet shops keep their tanks at 75-80

degrees.
I generally keep my tanks containing domestic X. helleri swords at about 70-74 degrees. When I am raising them to become their largest, it is best that I slowly adapt any fish accustomed to the higher temperature down to the lower temperature and grow them out there, for that is where they should be the most healthy.

An exception to this are new young. I generally keep them at warmer temps (78-80), for the first 2 to 3 weeks to get past their fragile first few days as quickly as possible with as aggressive a growth pace as I can, then I bring the temp down as they mature.

Stocking levels: How many fish you try to keep in a particular amount of water will have a direct effect on the size of the fish you will end up with, addressed earlier in the Tank Size section. The fewer fish in the tank, the more resources that are available to each individual fish. The water stays cleaner, food is more plentiful without clouding the water, and each fish expresses less energy interacting with others for dominance, competition for food, etc. My biggest fish have come from tanks of 10 gallons or more that contained no more than a couple fish. I have seen some larger livebearers raised for size that were kept at 10 gallons per fish. Generally, the "one incher per gallon" rule seems to apply fairly well for fish smaller than 3 inches. It is best to have them kept same sex, or one male to two or 3 females to keep the amount of sparring between males to a minimum, but same sex is better. I have observed often that when two tanks are kept next to one another, using Guppies as an example, with a divider between them so one can't see the other, and one is mixed sex and one is males only, the growth difference between the two groups at 4 months is dramatic. The same sex males will far outpace the growth of the males in the tank being kept with females, for they spend much of their energy sparring with one another over the attention of the females.

In all of my tanks I strive for as natural an environment as possible for the fish with generous floating or potted plants (no gravel) high quality water and generally low stock levels. If it were possible for all the fish in my room to lose their sense of confinement by the tanks being large enough, the fish being at low enough stocking levels and the water being of high enough quality I would, and that certainly leads to colonies that are large and robust.
I have not seen studies demonstrating that fish will inhibit their growth when in close proximity to other fish within a confined area when the water quality, food etc. remain excellent. There was an article in one of the fish hobbyist magazines written by someone that had just exactly that, eventually raising an absurd number of fish (pet shop swordtails) in a very small tank, but with massive, multi day water changes, claiming the fish still grew to full size. But stress is probably the greatest strain on long term good health, and crowded conditions are stressful for any fish. Increases in population begin to require greater and more frequent water changes, depending on the number of fish you have, which become less effective the more food you need to add. I believe it is best, and less stressful on the fish to simply maintain fewer numbers in larger amounts of water, particularly if you want fish that are going to grow at their maximum rate.

Genetics: This is the "wild card" that most people pin far greater hopes on than they should. Because someone has a large strain of something, and they give you young, it doesn't mean you are going to get fish as large as what they have. Likewise, it is not any guarantee that fry from smaller individuals in a species will produce large fish. The genes are either there or they are not. The genetic makeup of any fish will not change in a generation or two. In most instances, your attempts to raise large fish from a specific line will produce larger fish than you expect, for the effort and practice to do it right is often not followed. I recently obtained a line of guppy that was beautiful in its finnage and color, and appeared as robust and healthy as I could have hoped for. But I had seen fish of that same line in other places, and they were much larger. I wondered if there had been developed a number of lines, some smaller than others. The difference between the fish I received and what I had seen was dramatic. What I bought were well maintained fish from a reputable breeder (who charged me as much as they cost anywhere), so I made the assumption that they were as large as they could be. I was wrong. I called around, and no one knew enough about these fish to say whether they had seen different sized strains, or that this line could be variable. So I decided to see if I could improve on the size of those first individuals, making an assumption that the genes were there, and the previous breeder simply hadn't raised them to their potential. By the second generation they had increased in size by over

50%, and by the third generation (through careful choosing of breeders) they were where I had felt they should be.

This also applies to pet store fish. The commercial breeders make every effort to develop a strong hardy stock that will get large and sell as many fish as possible. But from the time they leave the commercial breeder's ponds in Florida or Singapore, the young fish weren't fed, or have been on occasional feedings of dry food until you bring them home from the local pet store. The genes are there, but the fish may not be particularly large or robust in appearance. I have had friends that have taken "bread and butter" petshop quality swordtails and put them out in ponds with heavy feeding to create truly large fish with color they did not know was possible. A careful choice of breeders for the next generation, and you end up with a great fish that can demand a fair price from other hobbyists.

I knew a discus and angelfish breeder that advertised that he had angelfish that were a "super-sized" line. In his ads he claimed his angelfish got to the size of "dinner plates." So I went to visit his facility. He had about 100 large tanks in a built-out garage, and his angelfish were indeed large. (I felt the dinner plate claim was a little much, however), but they were big, robust angelfish, and he charged absolute top dollar for them. He kept them in very high percentage RO (reverse-osmosis) water and fed lots of live food many times a day. I asked him if these angels were a mutation he'd come across, or a fish that had been developed over many years by another breeder. "No," he said. He then told me how he had bought them in a pet shop in San Francisco. He liked them, fed them well, put them in big tanks, and voila! "Dinner plate" sized angelfish. One big problem he had, however, and he soon went out of business in part because of it, was that for him to get the maximum size from his fish he used RO water, so that diseases and biological contaminants could not challenge the fish, helping to get the fish slightly larger. People buying his fish trying to raise them in regular water found that they didn't last long. I bought a few, and they were all dead within a month.

It is generally agreed that when a male swordtail reaches sexual maturity (its caudal extension- the sword, has grown out) that an individual's growth toward becoming a substantially larger fish generally stops, and many species of fish are similar. Once sexual maturity begins, growth slows down or may even stop almost completely. The fish that become largest are those that mature the latest. Many livebearer populations will have males that will mature earlier, and their presence continues because they are able to mate earlier and continue that early development trait. Some populations produce smaller sized males within the same species because of this. These early maturing males are an evolutionary adaptation, and have even developed a breeding strategy of sneaking up on females and inseminating them without the courtship rituals the fish generally exhibit. One of the advantages of keeping fish in same sex tanks as they grow out you can spot the earlier maturing fish and isolate them. Males that are not raised around females also grow larger as their energy is not spent attempting to mate, and there is not the incentive to reach maturity earlier in competition with other males to produce young.

It is also a common belief that larger alpha males in a tank will release a growth inhibitor into the water that inhibits the growth of other males in a tank, giving them a reproductive advantage. This is believed to be another reason that frequent water changes are a must.

At the same time it has been suggested that young raised around larger fish will tend to grow larger more quickly to develop a competitive advantage for females. There does seem to be some truth to that, when large water changes are routinely done to address any growth inhibiting hormones that may be released. (and to my knowledge, though widely believed to exist, a growth inhibiting substance released into the water has never been identified). I tend to think that much of both beliefs may be no more than subjective assumptions.

One other factor that arises in many animals, that I have seen (rarely) in fish, is that occasionally a particularly large fish will appear in a batch of young, one that you may feel is beyond the normal scope or range of size for that species. You raise it up, and it appears to be the holy- grail fish you had been hoping for, only to find that it simply won't breed. There are instances where a large fish- actually a mutation for size, will come about, only to find that it is sterile. You can do a couple things. I would separate the female that dropped the batch he appeared in and breed her as often as possible), with the same male if possible) to

see if you can produce more of those mutations, in the hope that eventually one will be fertile, or keep the siblings of that fish separate, keeping an eye on their offspring to see if the mutation reappears.

I have also found that the fewer times that fish are moved contributes to more stability for the fish. They do respond to this by showing a lower incidence of disease and consistent growth. I understand the need to move fish as they grow, but I will put fish that are big enough to get around and find food (approx. 3-4 weeks) from a 10 gallon into a large tank (such as a 30 gallon), and leave them there until they are put into single sex tanks (guppies are ready for same sex tanks at that age). There they will stay for the remainder of their lives with the exception of those chosen as breeders or to be sold.

There are other techniques to grow fish their largest that that can be beneficial, and that you may want to try.

-Keeping lights on 24 hours. This makes sense; fish will spend a greater portion of their time awake and growing. To hold down on algea growth or an increase in temperature you can choose to use low wattage bulbs. I currently don't do this but know of breeders that insist upon it. The thinking is that the fish will sleep when it needs to, otherwise it is kept awake and growing.

-Using salt in the water. Salt has its advantages in that it will hold down your incidence of disease at approx. 1 tblspn. Per 5 gallons. Most livebearers tolerate salt well, and providing a prophylactic dose of salt helps encourage healthier growth.

-Plants. I use plants in all of my tanks for the shelter it provides the fish and the effect plants have to keep the fish calm, to reduce ammonia and to assist gaseous exchange. Najas Grass, Java Moss, Java Fern, Watersprite, potted Amazon Swords, and various crypts and ferns are my favorites.

-Bare bottom tanks. I use all bare bottom tanks. The tanks are cleaner, easier to maintain and the removal of fish from a tank is easier.

-In a perfect world find a way to keep a live food alive in the tank that the fish can feed on whenever possible. I raise daphnia and keep them in my fry tanks, where they will live for days producing young the fry can feed on. I will often put 3-4 inch sand filled plastic containers in a fry tank, seeded with blackworms to graze on. They will stay rooted in the sand waving in the water column, and will eat powdered fish food.

-Being realistic and patient. This takes time, and you may try with more than one group of fish before you hit your stride and the fish begin to start looking as you expect them to.

So, to raise large fish;

Find young fish from healthy, ideally good sized parents.

Put them in a single species, bare bottom tank of at least 1.5-2 gallons per fish to start, at 75 degrees, some floating plants, at least 12 hours of light and fair aeration. As they become about 1" move to 10 gallon or more per fish (depending on species). Strong filtration with modest air movement (depending on species) should be provided. Keep at cooler temps of natural range for greatest size.

Water quality is everything. Do frequent water changes of at least 50% weekly, smaller amounts at frequent intervals is better than large changes done infrequently.

Feed often with good quality food, starting with baby brine shrimp immediately, look into supplementary live foods. Clean bottom often to prevent mulm build-up.

And there is one last thing. To give an extreme example, if you were to set up one tank with one fish and do all I mentioned, yes, you may get a large fish. But always set out with as many as you can provide for, giving yourself the best odds for success. Some individuals may be genetically or constitutionally predisposed to be smaller fish, regardless of what you do. And above all, spend the time first putting together a program, system or approach so that it is all as easy for you as possible. And though I would like to say "Good Luck", hopefully I have shown that luck has very little to do with it!

Greg Sage

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www.selectaquatics.com

OKAA & OBBA
Calendar of Events

August 27th

OKAA-OBBA

August Meeting

Bixby Library

September 10th

OKAA-OBBA

Swap Meet

Hilton Garden Inn Midtown Tulsa

September 24th

OKAA-OBBA

September Meeting

Bixby Library

October 21st - 23rd

OKAA-OBBA

International Betta Show

Hilton Garden Inn Midtown Tulsa

October Meeting will be at the show.

October 23rd

OKAA-OBBA All Species Auction

Hilton Garden Inn Midtown Tulsa

If your FOTAS club is having events and would like them published in Fish Tales then let your FOTAS Representative know and submit them to the Fish Tales Editor!

OBBA - OKAA All Species Auction
23 October 2022
Tulsa Midtown Hilton Garden Inn
4518 E Skelly Dr
Tulsa, OK 74135

Sunday Auction Rules
OKAA/OBBA will not accept responsibility for any item's safe keeping nor its condition before or after the sale.

SALES

- Cash only! 75%/25% Seller/Host Club
- IBC Auction Items will be the first to be Auctioned then the All Species

ITEMS

- Only fish or aquarium related products are allowed in the auction.
- All items must be properly bagged if needed.
  - Proper fish bags must be used.
  - Zip-locks and baggies are unacceptable.
  - Live animals must be properly bagged with air and water. Please double bag.
  - Larger fish may be kept in buckets or other suitable containers, but the bucket becomes property of the buyer.
  - Items such as driftwood or decorations do not need to be bagged; however, they must be labeled appropriately.
  - Items not properly bagged will be rebagged by OKAA/OBBA volunteers. There will be a $2 fee for items that need to be rebagged. This is NON-NEGOTIABLE.

LABELS / SELLER SHEETS

- All Sellers must fill out a seller sheet.
- Your Seller ID are your initials. For example, if your name is Homer Jay Simpson, your Seller ID would be HJS.
- All items that you are selling must be listed on your seller sheet.
- All items must be labeled with your Seller ID and Item Number.
- Your labels should match the numbers on your seller sheet.
- You may put a reserve price on your item.
- Below are examples of acceptable labels:

EXAMPLES OF SELLER TAGS

HJS 007 (Sellers 3 Abr Code and Item number)
Pygmy Chain Sword (Item description)
(Echinodorus tenellus) (Species-helpful but not needed)
Reserve $5 (Not needed)

TIMES

- 9:00 am - 11:00 am Registration
- 11:00 am - 6:00 pm Auction

Notes: Species names can be vitally important and help your sales of particular species as well as location data if known. All IBC Items have a mininum of $5 unless waived.

OKAA – OBBA
Fall Swap Meet

September 10th, 2022
10:00 am to 4:00 pm

Hilton Garden Inn, Tulsa Midtown
4518 E Skelly Dr.
Tulsa, OK 74135

$20* per Table, set up at 9:00 am
For questions contact
herpchat@yahoo.com
***Cash or PayPal accepted**

Oklahoma Betta Breeders Association
Fall Show
October 21-23, 2022
Hilton Garden Inn, Tulsa Midtown
4518 E Skelly Dr.
Tulsa, OK 74135

Show Chairs: Gerald Griffin
Email: herpchat@yahoo.com
Phone: 918-581-4663

Mail Entries to:
Valaree Brown
29321 E 36th St S
Broken Arrow OK 74014

Special Note: Do NOT label your shipping boxes "Live Fish." We have had issues in the past with certain shipping companies holding boxes marked in this manner. Please send your fish through the United States postal service if at all possible. Sending through UPS or FedEx can result in mishandling and/or delay.

Show Fish: Mail-in entries need to arrive no later than **5 PM Friday, October 21st, 2022.** OBBA will need to receive your entry form, fees and return postage (if necessary) with your fish. Return postage and entry fees cannot and will not be deducted from auction proceeds. Please provide a return mailing label, empty bags and heat packs (if desired) with your fish.

Please pre-register all your show fish!

Email your entry form to the show chair by
Thursday October 20th, 2022.
Walk Ins: All walk-in entries must arrive by **5:00 PM Friday, October 21st, 2022.**
Please notify the show chair when you will be arriving with your fish. You **must** tell the show chair if you are bringing walk-in entries!

Entry Fees

$3.00 per single entry
$5.00 per pair
Make checks payable to: Gerald Griffin
PayPal is accepted. Send PayPal payments herpchat@yahoo.com

Auction Fish:
Unless marked on the entry form, auction fish have a minimum bid of $5.00.
You may also send fish to be sold in the Stock shop

Money Split: Seller split is 75% to seller and 25% to OBBA on "Show Fish". There will be a 50/50 split on all stock shop items.

Unsold Items: Please include information about what you would like done with unsold items. Options are:
1) Have them returned to you (providing you have included return shipping money) (default option)
2) Reduce the price until they are sold (reduction at auctioneer's discretion)
3) Club donation

Join the Southeast Louisiana Aquarium Society (SELAS)
for a

DOUBLE FEATURE SOCIAL

SUNDAY
MAY 29
2022

RAIN DATE:
SUNDAY, JUNE 5, 2022

10:30 AM: **AST BEAD FILTER SOLUTIONS**
2120 NORTH 3RD STREET
BATON ROUGE, LA 70802
> RSVP REQUIRED TO ATTEND
> CATERED LUNCH FOLLOWING TOUR

2:00 PM: **ORNAMENTAL POND FISH (OPF)**
301 THORN ROAD
PORT ALLEN, LA 70767
> RSVP NOT REQUIRED

FOR QUESTIONS & RSVP,
CONTACT CLAY AT CLAYT101@COX.NET

Meet us for a behind-the-scenes tour at AST Bead Filter Solutions at 10:30 AM. RSVP is required for the catered lunch following the tour. Afterwards, we will visit Ornamental Pond Fish (OPF) at 2:00 PM. Reservations are not required if you only plan on visiting OFP.

FEATURED:

AST BEAD FILTER SOLUTIONS

HOST CLUB:

SOUTHEAST LOUISIANA AQUARIUM SOCIETY

Hill Country Cichlid Club Presents:

HCCC FALL FISH and AQUARIUM AUCTION!

Saturday September 17, 2022 11:00am

Schertz Community Center

1400 Schertz Parkway, Schertz Texas 78154

Featuring the Famous Catfish Raffle!!!!

No Charge Admission! No Bidder Fee!

Hundreds of items including Rare Tropical Fish,

Aquatic Plants, Aquarium Decoration and accessories

Doors open at 9:00 A.M. for setup and browsing

For more info:
www.facebook.com/groups/hillcountrycichlidclub/

We are going back to an old school type SELAS event. Just a meet and greet for old members to get to know new members and vice versa. It's a potluck so try to bring a food or drink item.

SUNDAY, AUGUST 28TH, 2022

AT 12 PM – 4 PM

SELAS Potluck

10123 Glen Ridge Ave,

Baton Rouge, LA 70809

For more info, go to the Facebook event page:

https://www.facebook.com/events/453264819990318

Previous Issue of Fish Tales

What would you like to see in the next Fish Tales Magazine?

Contact the Editor if you have story ideas or would like to contribute to Fish Tales!

FOTAS

Federation of Texas Aquarium Societies

Fish Tales

Volume 11 Issue 2

Jul - Dec 2021

What does it take to put on a Betta Show?

Cheap Water Features

Hitchhiker's Guide to the Planted Tank

Introduction to the CARES Fish Preservation Program

Area of Concern: Earth