OCA
Ohio Cichlid Association
Cichlids - Catfish

Buckeye Bulletin

March 2018

• Next Social Meeting: Friday, March 2, 2018 at 8:00 pm •

Ohio Cichlid Association

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The Ohio Cichlid Association's Buckeye Bulletin is produced monthly by the Ohio Cichlid Association.

If you have an article, photograph, or ad to submit for publication, please send it to buckeyebulletin@gmail.com. When submitting articles for publication in this bulletin, please remember to include any photographs or art for the article. The Ohio Cichlid Association is not responsible for any fact checking or spelling correction in submitted material. Articles will be edited for space and content.

For membership info please contact Hilary Lacerda: hilarylacerda@gmail.com or visit the OCA forum.

On the Cover

This month's cover photo is courtesy of our own Carl Olszewski, the 2017 ACA photographer of the year! Congratulations Carl, and thank you for your contributions to the bulletin!

Do you want your picture on the cover of the *Buckeye Bulletin*? Please email photos to buckeyebulletin@gmail.com.

In This Issue of the Buckeye Bulletin

About the Ohio Cichlid Association

The OCA is an organization dedicated to the advancement and dissemination of information relating to all aspects of the biology of cichlids and related aquatic life. Our purpose is to promote the interest, keeping, study, breeding, and the educational exhibition of Cichlids. Additionally, the exchange of ideas, meeting new people, and distribution of information concerning Cichlids is of primary interest.

The 2018 OCA Board

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Get The Most Out of the OCA

The OCA's monthly meetings are free and open to the public. Feel free to invite a guest! There are many ways to get the most of your membership:

• submit an article, classified ad or photograph for the bulletin • put a fish in the bowl show • attend the OCA Extravaganza • turn fry in for the BAP program • attend the social meetings • buy and sell fish during the winter auction • join the board • start a forum discussion • visit ohiocichlid.com •

A special THANK YOU to Ken Walker

PRESIDENT'S MESSAGE FROM DON DANKO

February was a great month for the OCA! The Winter Auction was a huge success with very high quality fish and plant offering for buyers, great prices for sellers (one item went for $310!!) and newcomers joining us after seeing us on Facebook! Lew's resource plan worked wonderfully with virtually everything planned in advance. Hilary also did a wonderful job in training and recruiting excellent runners. This work helped solve an age-old problem of not having enough runners and ones that know the process. Here's Maddy, our MVP runner for the day:

Here are some other highlights from February:

- Carl Olszewski won the American Cichlid Association Photographer of the Year Contest! Congrats, Carl!
- We completed the 2017 Extravaganza Recap video and posted on Steve Poland's and the OCA YouTube and on our Facebook Page.
- Andrew Schock created a fantastic Bulletin with a Victorian Cichlid theme. It was packed with a number of original articles and pictures by big names in the Victorian field, including Greg Steeves, Kevin Bauman and Lew Carbone!
- Juan Miguel Artigas Azas joined our Facebook Staff and has been posting high quality species overview on a daily basis.

In March, our speaker is Richard Krauss, U.S. Geological Survey Biologist – Lake Erie. He'll be presenting on the impact of dead zones in lakes. While he principally studies Lake Erie, this phenomenon can certainly occur in other lakes. Ad Konings tells me that Lake Tanganyika supports no life below 200 meters and Lake Malawi below 150 meters, for instance. This topic should be of interest to all of us, as we live along Erie that provides drinking water and entertainment for so many of us. For me personally, after multiple decades, I've come to appreciate the diversity of the fauna of Lake Erie more than just the occasional Walleye dinner! In 2017, I began photographing the many diverse species of birds along its shoreline, from ducks, cranes and egrets to Bald Eagles, Rough Legged Hawks and Osprey. The spring and fall migration diversity is just astounding to behold! If this was all to vanish due to resource mismanagement, what a great catastrophe that we be!

So, I'm personally interested in Richard Krauss's message and I hope you are, too. Please join us on Friday, March 2, to hear him.

Don

Letter From the Editor

Hello OCA Members,

Sticking with our themed editions, we have put together a decent amount of material regarding Lake Erie for this month's issue. OCA Members Nick Zarzeczny and Bill Schwartz submitted photos of trophy sportfish caught in Lake Erie or its tributaries. Additionally, the Lake Erie Nature and Science Center, Ohio Sea Grant, and their partners were gracious enough to provide articles on the Lake Erie Dead Zone, Invasive Species, The Food Chain, and information on how we, as hobbyists, can help prevent invasive species from entering our native waters.

The Lake Erie Nature and Science Center recently unveiled a new exhibit called "Native Fish of Lake Erie" which "highlights many of the species living in our Great Lake, along with their size, ecological region and other fun facts. The display was designed in collaboration with Ohio Sea Grant to encourage reading and conversation as young children explore the Center's live animal exhibits with their families." Or, if Don's bird pictures catch your eye, you may consider attending "Birds of Lake Erie Day" scheduled for Saturday, April 28 from 11am – 4pm. "This event features a variety of programs and activities for all ages including hikes with the Center's Wildlife Rehabilitation Specialist Tim Jasinski, live animal programs featuring the wildlife of the region, an update on Cleveland's Lights Out initiative and planetarium shows featuring our night sky and the issue of light pollution."

In Cichlid related news, Williem Heijns provided a very insightful article on the effects hybridization and line breeding have on our hobby. Be sure to give it a read. Eric Sorenson, our exchange editor, also provided a great article on Protecting Malawi Cichlids by Ad Konings from our January 2009 edition. We also received another fantastic contribution from Mo Devlin on aquarium photography!

As always, feel free to send me anything you would like to contribute to the bulletin. Next month will be focused on shell dwellers – so if you have anything shell dweller related it would be particularly appreciated!

Thanks for reading!

Andrew Schock
BuckeyeBulletin@gmail.com

Program Preview
March, 2018

Dr. Richard Kraus

Submitted

My current position is with the U.S. Geological Survey (USGS) as a Research Fish Biologist and Station Supervisor of Lake Erie Biological Station in Sandusky, Ohio, where I conduct ecological research on Great Lakes fishes in support of natural resource management and native species restoration. My primary research interest is complex life cycles in fishes and how migration behavior and habitat use influences population dynamics in the context of fishing and other anthropogenic impacts. I have had the privilege of conducting research on many different species in a diversity of ecosystems, ranging from the most pristine pelagic ocean habitats to heavily modified estuaries such as Chesapeake Bay and Galveston Bay. I find culturally eutrophic (i.e., nutrient enriched) ecosystems most interesting because there is so much to learn about how fish respond to these environments, and because this knowledge has immediate application to human concerns about sustainable fisheries and healthy ecosystems. Thus, applied fisheries science on Lake Erie is a natural fit for my research goals and interests.

I have a B.S. degree in Marine Biology from College of Charleston (SC), M.S. degree in Marine Science from the College of William & Mary, and Ph.D. in Marine, Estuarine, and Environmental Science from the University of Maryland, College Park. After my graduate work, I received a Texas Institute of Oceanography postdoctoral fellowship to work at Texas A&M University at Galveston. Later I secured a faculty position at George Mason University in Fairfax, Virginia, where I taught biology courses and conducted research on Chesapeake Bay. I joined the federal civilian workforce of USGS and moved to Ohio in 2010, and have never looked back.

Once upon a time, I was an avid aquarist, and maintained several different tanks with fresh, brackish, and saltwater assemblages of fish. I typically populated these tanks with fish I captured via hand nets during snorkeling trips along the U.S. east coast. While I no long keep aquaria, I enjoy all types of recreational fishing and outdoor activities with my wife and three sons.

More information on USGS Great Lakes Science Center and USGS:
http://www.glsc.usgs.gov/
https://www.usgs.gov/

Dr. Kraus's talk, "Out of Breath and Nowhere to Go: How Low Oxygen Zones Put the Squeeze on Fish Habitat" will examine the situation in Lake Erie and other bodies of water that are heavily affect by human activity.

Next month, Chris Carpenter will visit from the Detroit area to share with us his expertise with "Shell Dwellers of Tanganyika".

SOCIAL MEETING INFORMATION

The Next OCA Social Meeting is Friday, March 2, 2018 at 8:00 pm

Middleburg Heights Community Center, Room C
16000 Bagley Rd
Cleveland, OH 44130

Meetings usually begin with a talk about cichlids or a related subject. The OCA is proud to bring world class speakers to Ohio, not only for our yearly convention, the OCA Extravaganza, but also for our monthly meetings. With Northeast Ohio being the hotbed for cichlid breeders that it is, we have discovered that there seems to be no shortage of world-class speakers locally, a number of which have used the opportunity to talk at OCA meetings to later tour the country with their fantastic presentations. After the talk we usually take a break for refreshments and some socializing among "cichlidiots". This also gives people a chance to look at bowl show entries, and after the break the bowl show winners are announced. Next, Breeder Award Program (BAP) awards are handed out. We have a Breeder Award Program for cichlids and one for catfish, turning our program into probably the largest one of its kind in the country. The entries are subsequently auctioned off, making some of the newest and rarest cichlids in the hobby available to our members at low auction prices! The OCA has had a number of first spawns in the United States and members have donated some very nice stuff to be auctioned off for the benefit of our Jim Smith Fund. Meetings end with a raffle, where we give away prizes that are set up on a huge table, which typically bends to the point of breaking under their load!

SOCIAL MEETING SCHEDULE

(All times approximate)

7:30	Doors Open
8:00	Social Time
8:15	Call to Order Announcements New Member Welcome & Speaker Introduction
8:30	Speaker
9:30	Break
9:45	BAP Awards Bowl Show Results
9:55	Mini-Auction
10:25	Raffle

UPCOMING
OCA SOCIAL MEETING PROGRAMS

2018

March 2
Richard Kraus, Ph.D.
U.S. Geological Survey Biologist
"Out of Breath and Nowhere to Go: How Low Oxygen Zones Put the Squeeze on Fish Habitat"

April 6
Chris Carpenter
"Shell Dwellers of Lake Tanganyika"

May 4
Charlie Mueller
Catfish

June 1
Lee Newman
"Cenotes, Caves and Fishes of the Yucatan"

July
No Meeting

August 3
Birger Kamprath
"Synodontis and Close Relatives"

September 7
Mark Sabaj Perez
The Cope Collection

October 5
TBA

November 2
Jeremy Basch
Geophagus

December 7
Christmas Party
Details TBA

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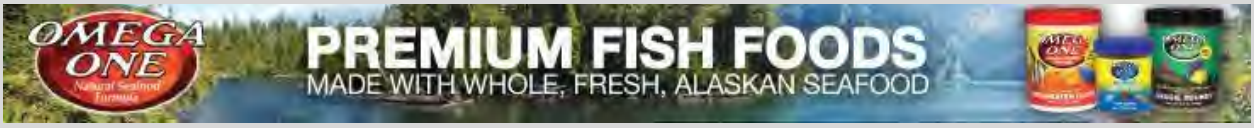

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HYBRIDS AND LINEBREEDING: A THREAT TO THE HOBBY?

BY WILLEM HEIJNS

Every now and again the discussion about hybrids and line breeding is activated with regard to the question if these form a threat to the hobby of cichlid keeping. Quite often (very) strong opinions are are put forward, sometimes causing people to lose their temper, which usually doesn't help. In this article I will summarize my opinion on this much debated issue.

What are we talking about?

In order to have an opinion on hybridization and/or line breeding, you need to know what it is. For hybrids this may sound odd, because the definition of a hybrid seems rather clear. If the parents of a cichlid belong to different species than this cichlid is called a hybrid. The problem however lies in determining to which species the parents belong. That depends on the species concept you use and on your view on taxonomy. As a "splitter" you are more likely to encounter a hybrid than as a "lumper". Take the convict cichlid. For those who believe they all belong to one species (*Amatitlania nigrofasciata*), breeding specimens from Nicaragua with specimens from Panamá or Honduras is no problem. If you believe all these populations to belong to different species (*kanna*, *siquia*), as Schmitter-Soto (2007) proposes, you are likely to produce hybrids.

With line breeding it is even worse. Whenever a hobbyist selects fry from a brood to grow out (and maybe later use for breeding), in other words whenever natural selection is replaced by artificial (=human) selection we are line breeding. This is to say: everybody does it!

Therefore it is very difficult, if not impossible, to have a straightforward opinion on whether hybridization and/or line breeding are good or bad for the hobby. How can you have an opinion if cannot define the issue?

Basics of the hobby

So, if hybridization and line breeding are such difficult concepts, what is the real issue? Well, I believe it is all about ethics. It's all about what we do and why we do it. To start off: why do you keep cichlids?

Here's my personal answer. I am fascinated by the natural world in general and by cichlids in particular. This fascination drives me to want to learn about cichlids in every way I can. How do I go about that? First, I read anything I can get my

hands on. This can be both scientific work and publications by hobbyists. Second, I have visited the countries where cichlids occur (in my case Central America) and studied them. And last but not least, until recently I kept cichlids at home trying to recreate part of their habitat as best I could and hoping to see as much of their natural behaviour as they cared to show me.

Other people may keep cichlids for other reasons. Maybe just because they are beautiful, or big, or aggressive, or cute, or just because. These people are in the hobby too, like me. We share the same hobby. But we are not the same people.

Being hobbyists of a different type, we do different things. I always tried to keep as close to nature as I could, both in decorating my tanks (or choosing tanksize for that matter) and in selecting the cichlids to keep in those tanks. I wanted to stay as close as possible to "wild type" fish. And I marveled at the sight of cichlids showing their wonderful "natural" behaviour. Much of my enjoyment came from the fact that my cichlids apparantly felt "at home".
Others may take a different view. Wild types are not special to them. They may keep Flowerhorns, hybrids, veiltailed Angels etc. And get their joy out of those. Mind you, this is not to say that they will never keep wild types at all. They may and in fact they do. And they also care about their fish and want to give them a good home. It's just that they start from a different point of view.

It is very important to point out that there is nothing ethically wrong with both ways of keeping cichlids. People who keep Flowerhorns, etc are not doing anything wrong. There shouldn't be any repercussions for them and their way of practicing the hobby. Nor should there be any for me.

<u>Wild type?</u>
As I belong to the category of hobbyists who want to keep as close to nature as possible, an important question for me is: what are "wild types"? This is not just a hobbyist question. Science has struggled (or still is struggling) with it too. An example. In pre-Darwinian times it was believed that species were unchangeable. A popular philosophy in those days held that an organism is nothing more than an imperfect reflection (a copy if you will) of the essence of a species. This essentialism was largely based on ideas that go back to Plato. Observed variation is the result of this imperfect copy process. Is the wild type then the same as the essence?
You may argue that essentialism is nog longer an adhered philosophy in natural sciences. And you are right. But taxonomy still has the type concept. The namebearing (holo)type of a cichlid species is the specimen other cichlids are

compared to in order to determine if these belong to the same species. Very much like the essence. Is the wild type thus equal to the holotype?
I can hardly believe that. The holotype may very well be an aberrant example of the variation within a species. And we all know this variation can be very broad. Again the convict cichlid as an example. I once brought home seven specimens from the island of Ometepe in Nicaragua. I kept them in a 200g tank by themselves until the third generation. The variation in the resulting group (about 40) was such that I could easily have described three new species if I would have used the criteria Schmitter-Soto (2007) did in his revision.

It is difficult to define a wild type for many cichlid species, when variation is the rule.

Enhancing your fish

The only real wild types in the hobby are the ones that were collected in their natural habitat and subsequently put in an aquarium. This will only last for one generation. As soon as we start breeding, natural selection is replaced by human selection. And changes to the original wild types are introduced. There is no way to prevent this from happening. The big question here is: what do we want to achieve?

If we are acting in the interest of the fish (i.e. selecting for strong and healthy offspring) that is perfectly OK. If we want to try and enhance certain characters in our own interest (better colours, longer fins, etc) well, that is OK too. There is only one restriction in my opinion. We should always take into account the wellbeing of the fish. If veiltailed guppy of angelfish can barely swim, something is wrong. The same goes for parrotfish that can hardly close their mouths. Once I've heard the argument: but they can still eat, can't they? That may be true. Fish can cope with many physical problems. I once kept a male *Archocentrus centrarchus* that had lost its upper jaw in a fight. He was able to eat. But selecting specimens with (heritable) malformations for breeding would be unethical.

From the ethical point of view there is no real difference between hybridization and line breeding. Both are done with the aim of creating cichlids that are considered "more beautiful" and/or sought after. That is in the interest of the hobbyist (and not necessarily the fish) nut nonetheless acceptable, if it does not harm the fish' wellbeing. But it is not to everybody's taste.

So what is the real threat?

There is nothing wrong with keeping wild types, hybridization and line breeding from an ethical standpoint. All are part of this great hobby of ours. So what is the real problem then? It is trust, really. When I go out and buy fish, I need information. Among many other things I want to know the name of my new fish. To which species does it belong? Or is it a hybrid? This information is crucial. And it can be a big problem. The information is often not accurate or sometimes even misleading. Hybrids are sold as pure species. And if I buy fry from a friend who didn't ask questions at his LFS and got a hybrid labelled as a pure species, I may be convinced I have a good species because I trust my friend. This is not hypothetical. Check out the forums and you'll find many examples. Take *Paratheraps*. An interesting genus with several species that resemble each other quite a bit. On many forums you see people posting pictures of their newly acquired *Paratheraps*, asking which species it belongs to. All too often the answer is: we don't know, probably a hybrid. And I can hear them thinking: or maybe a new species? Who doesn't want to be the first one having a new species in his/her tank?

Now I know some hobbyists say that they keep track of their cichlids, know their provenance and label them accordingly when they sell fry. And I believe them. But I also believe they are a minority in the hobby. Many cichlids are sold without that type of information. And even if it is supplied, it's sure to be lost in the next transaction.

I fear there is no way we can control this. Our hobby will more and more be polluted by cichlids which we will be unable to identify. I don't think there is a solution to this. All the talk about banning hybrids from the (organised) hobby is pointless. It discriminates serious hobbyists that happen to keep hybrids. And the vast majority of hobbyists don't know or simply don't care. Added to all this is the fact that it becomes more and more difficult to obtain cichlids from the wild (the real wild types). Therefore my worst case scenario is that wild caught cichlids will eventually disappear from the hobby and that we will be left with only hybrids or doubtful "species".

So isn't there anything we can do? Yes, there is. The answer is not to regulate but to educate. If we can teach hobbyists that it is important to secure pure species for the hobby and that hybridization is allowed but in a controlled manner (provenance, etc), there will be enough room for both approaches.

I sometimes wish hybrids would never have entered the hobby. To put it more bluntly: I hate hybrids. But since they are here we might just as well try to keep the negative consequences within limits.

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TODAY IN THE FISHROOM

WITH MO DEVLIN

The Black Out Look – Part Two

So, is this photoshopped? It's a question that comes up frequently when I discuss aquatic photography…or any photography. The short answer is, yes. Of course, it is. Photoshop is the program I use to process the photos from the RAW format to the JPEG. The real meaning behind the question is, are you doing something extra to get the image to look like that? Again, yes. RAW processing provides you a lot of latitude in adjust the files to give a little more…or less, tweak color and contrast, sharpen, burn, etc.

Years prior the introduction of the digital single lens reflex (DSLR) camera, photographers shot film. And the results were all over the board. Accomplished photographers, many who had been taking fish photos for decades with film cameras, were producing some nice stuff. But most us, for the most part, were cranking out snapshots. I keep a file of photos from my pre-digital days just as a reminder of where it started. The advent of digital imaging was a revolution for people who enjoyed grabbing photos of their fish. Like most technology, not everyone embraced it at the same time. So, the natural general reaction when you saw a good photo was, he really "photoshopped" it to get that.

Digital cameras gave us so many more options. Programs like Photoshop only served to enhance an already good photo. In part one of this series I reinforced that the best way to improve your photos was to learn how to use the tools. If you understand what's happening when you change ISO, aperture or shutter, you will have more control on fixing issues before your shoot. You start controlling the light and the end result. Your digital processing can be a lot like a microwave. I have a microwave with all kinds of functions for cooking entire meals. I use mine to heat food. Period. Photoshop can be used to simply adjust all the basics (color, contrast, size, etc.) Or you can unleash its full power by playing with layers, channels, masks, filters and much more.

I explained this at a talk one time and was asked, "but isn't that cheating." My reply was, "cheating who?" My end goal is to produce the very best image possible, using all of the tools and technique at my disposal. Over the years I've experimented with many great ways to "cheat" my way to some really nice stuff. Here's a cheater's guide to a couple techniques on the black out look and something I've nicknamed the "fade out" background.

If you are looking for a true blacked out background, we will assume you've used the technique outlined in part one. But if it's not exactly blacked out, there's a simple fix utilizing Photoshop layers. Layers can either be a duplicate of the image, parts of the image or image adjustments. For the sake of brevity, if you are familiar with Photoshop and would like step by step instructions on how to achieve this effect, contact me and I will email it to you. Mo@MoDevlin.com.

Step One: Make sure your image is saved somewhere other than your memory card. Working with the image in photoshop off a card will make the program run slower. It's also good practice so you don't lose the original.

Step Two: When the file is opened in PS, create a duplicate layer. Never work on the original image. At this point you will have the duplicate above the original. If you are not familiar with layers in photoshop, it's basically stacked images. If the background in the photo isn't dark enough, or if you have some other object exposed, you can do one of a few things. One option is grab that paintbrush tool, select black and start painting around the fish. Another is to use that selection tool, cut out the fish and lay it on a black background. Both work, but not well.

Step Three: Create another layer. This one will be an "adjustment" layer. No image, just a blank slate. Use the paint bucket tool and change the new layer to black. Now you have three layers. A black on top, the copy and the original in that order. Drag the copy above the black layer. Now you have the copy, black and the original in that order.

Step Four: Create a layer mask. Layer masks use values of gray to assign levels of transparency to specific portions of a layer or group of layers. Put simply the mask will allow you to remove portions of the image (copy) to reveal the layer below (black). You will still be painting, but unlike the pen you can UNpaint any section that you might have painted in error.

Step Five: Start painting. Grab the brush tool and set the color to black. You can change the size and also the hardness, making the brush have very hard or faded edges. I can make a case for either, but it's an as needed thing that will become apparent when you start using it. Set the hardness right in the middle. The size depends on how much area you want to paint off the background.

Selecting the mask, paint away the black background on the copy. This will reveal the black background. Use a larger brush to cover big areas. Dial down the brush size when you get closer to the part you want to keep (fish). If you paint away a piece you wanted, no worries. Change the pen color to white and go over the area you erased. Back good as new.

Remember that the hardness can be adjusted. As you get closer to the fish, you might see that you are losing some of the details of the softened edge brush. My work flow has always been getting rid of the back ground then using a smaller brush and a harder edge to paint the fish back.

Tweaks

Often, because of the color temperature of the original photo, it might not match to the true black background. It's not always a problem, but with this masking technique the best possible outcome is when it blends naturally to the black layer. An option would be to change your black to something closer to what the original photo considers black. Using the pens color pad, select the eyedropper and use it to sample an area on the background of the original. Then select the original black layer you created and use the paint bucket to change that color from black to the image's "black". You will know immediately if it looks better since the masked layer wasn't changed.

Remember that the brush tool you use has an opacity setting. It's basically how much "paint" It uses when in use. Start with the hardness at 100% and the Opacity at 100%. Use this setting to remove the obvious, immediately revealing the black. As you get closer to the fish, adjust the size of the brush to get as close as possible leaving a safe area around the fish. For close up work, set appropriate size (bigger or smaller) and adjust the opacity on the brush to fifty or lower. This will simply require you to go over an area more than once.

The opacity setting is a great tool for fixing the areas around the fins. If your image was going to look "wonky" over the black, it will generally be around the fins, which are mostly translucent revealing the original photo black. Set the opacity low and the brush size big enough to cover a good portion of the fins. Paint away slowly. The lowered opacity slowly removes the copy original and blends closer to

the black background. With masking layers, you really don't have issues you that you can't redo or fix. In a bind you can simply delete the layer and start over.

If you have a shot that needs to be punched up a bit, try a "fade out" background. The process is like the above, only changing the stacking order of the images. For this you create a second copy of the original image, stacking them 2nd copy, copy, black and original. Before you start, turn off the copy layer (second down) temporarily. Go through the same masking process as explained. When you have the fish on the black background, turn that copy layer back on. At this point you have a couple choices.

Option one: Select the copy layer that you turned back on. Using the opacity option, turn it back which slowly will reveal the black background. This a nice effect that will help draw the eye to the fish. Practice and personal taste will dictate how much the copy is faded. Remember that there is no limit on layers. If you fade that background and realize that you can still see that heater or filter intake, create another mask on the copy image and paint it away revealing more of the black.

Option two: Photoshop has a few very useful filters. Select the copy layer you turned back on. Under filters, select Filter → Blur → Gausian Blur. Adjust the radius to somewhere between 4 – 10. The higher the number, the more blur. My advice is don't overdo it. Turn the top masked layer back on. The fish will be crisp, and the background will be slightly blurred. If you have the new IPhone, they call this the portrait look.

Here's a few additional words on filters. For the most part, the filters offered in the Photoshop program are useless, except for the blur and noise options. But even those have minimal value. There are lots of third party filters out there. Google's Nik offers plugins that are free. I have the Topaz suite of filters and love them. You can buy them individually or as a suite. The two that I recommend highly are Clarity and Detail. One deals with the contrast options of the image, and the other is the detail (sharpness) of the image. Neither can fix dull or out of focus, but both are guaranteed to take a good image to the next level.

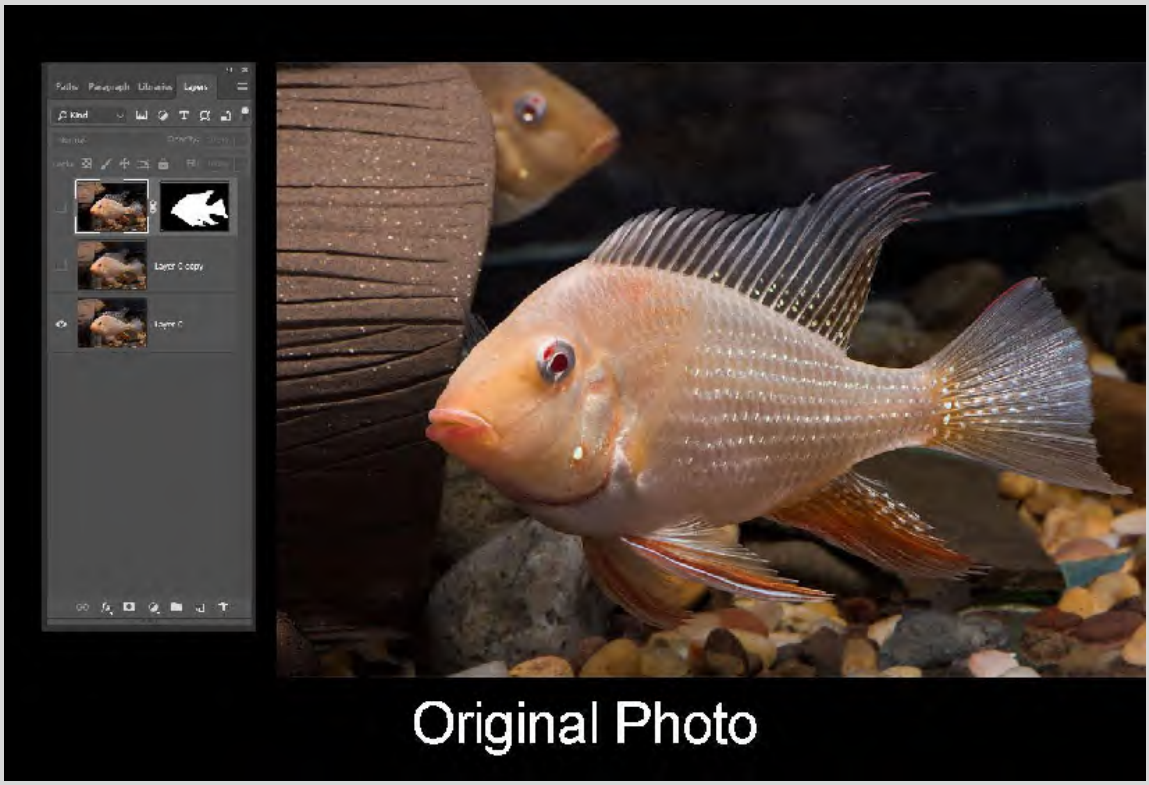
Once you get comfortable with layers, you will see that they aren't limited to just one setting. On the layer panel you can see a setting that says normal. If you select it, you will see a drop down with several different options. In the "learning your tools" spirit, I would highly recommend playing with the settings to see what each does. For a quick cheat sheet, go here:
https://helpx.adobe.com/in/photoshop/using/blending-modes.html

Here's one example of a quick fix to immediately sharpen an image. After using the fundamental set up of creating a copy of your original image, go to Filter → Other → High Pass. When it launches, the image will show a preview of the copy that will appear gray. Using the slider, slowly pull back until you can just see the image appear. Usually around the number four setting. Hit ok. The layer will be converted to that grey. With that grey layer selected, go to that "normal window" mentioned above, and change the layer blend from normal to hard light. Your image will immediately appear sharper. One word of warning, this process sharpens everything. So, if you do, it will also make small specs and spots jump out. Of course, now that you have the tools to paint them out, it won't be much of an issue.

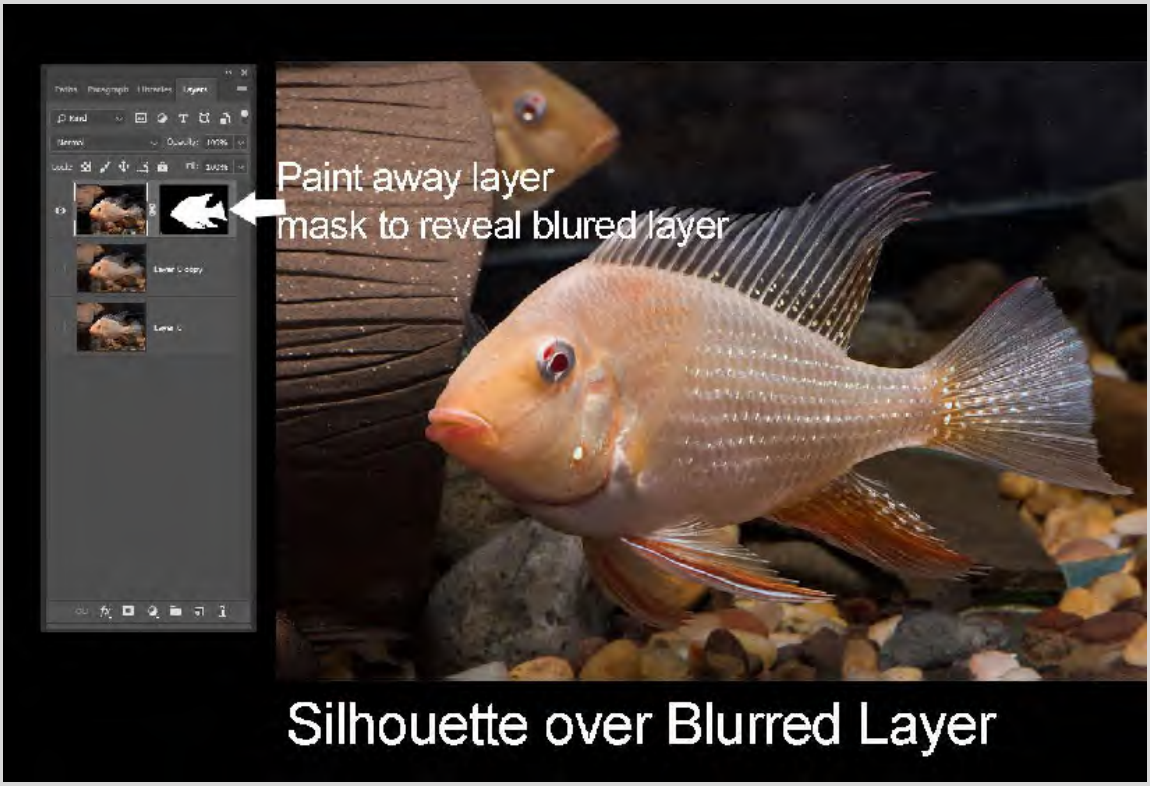
I'm aware that a good majority of the folks reading this do not use photoshop. For those who aren't and might consider it, look for the cloud-based software Photoshop CC (Creative Cloud). You can get photoshop and Lightroom for as little as ten dollars a month. There are also some very good free image processing programs available. Most of them work with some type of layer system. There's an expression, it's not about the destination, it's about the journey. In this case, it's all about the destination…producing a great image. Take the time to read, experiment and learn. As with most

things wrapped around technology, there's a learning curve. And with practice, your skills will improve.

Heckeli Example



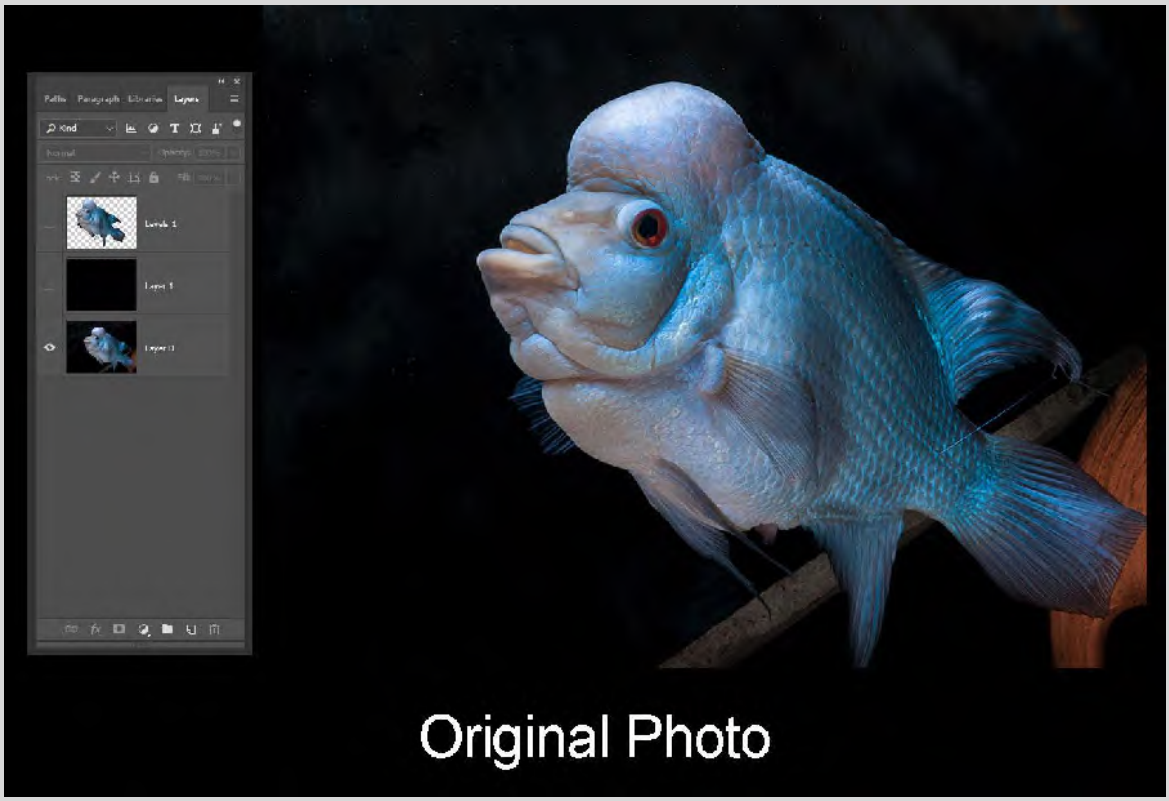
The image is not bad, but there are some distractions in the background.



I created a copy of the image and blurred it slightly to make the fish in the front stand out. Using a layer mask I "painted" away the portion I didn't want revealing the blurred layer below.

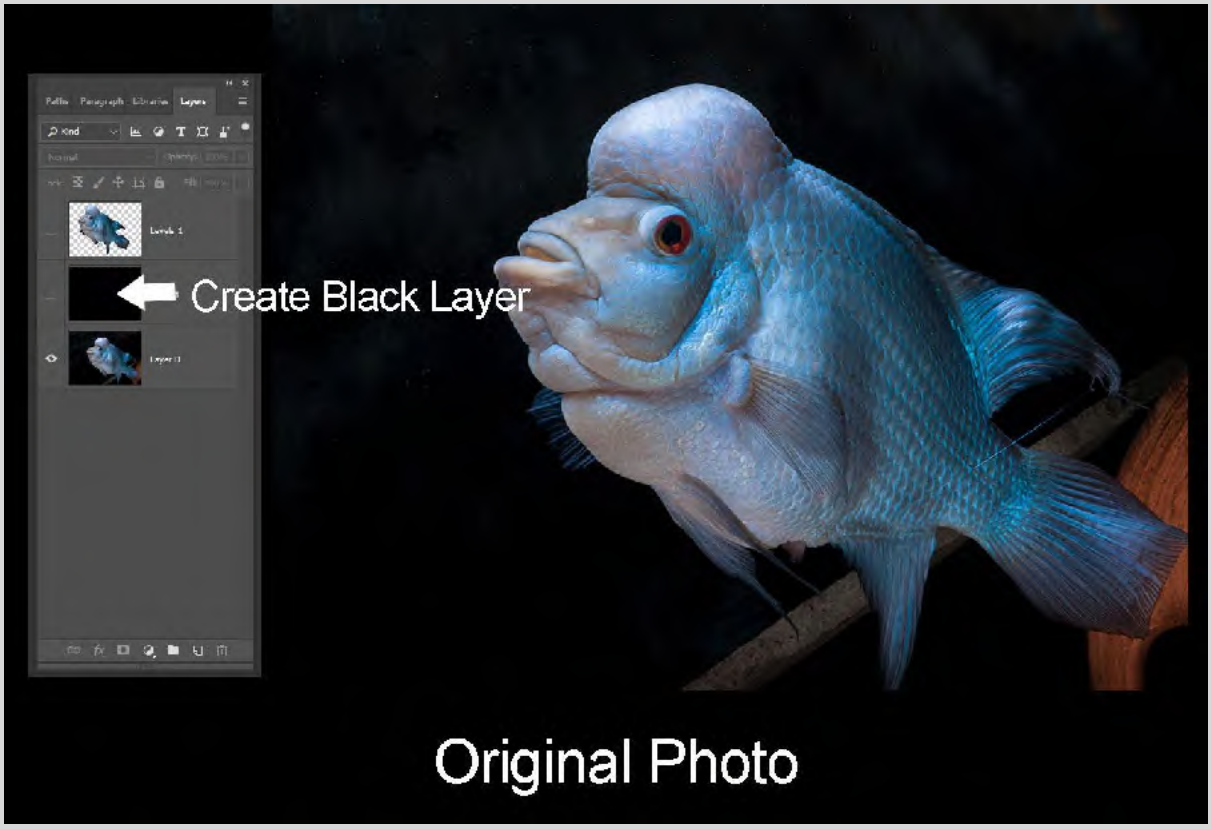
This is what the blurred layer looked like. The technique basically is a trick to shorten the image's depth of field and give it a portrait like feel.

Thai Silk Example



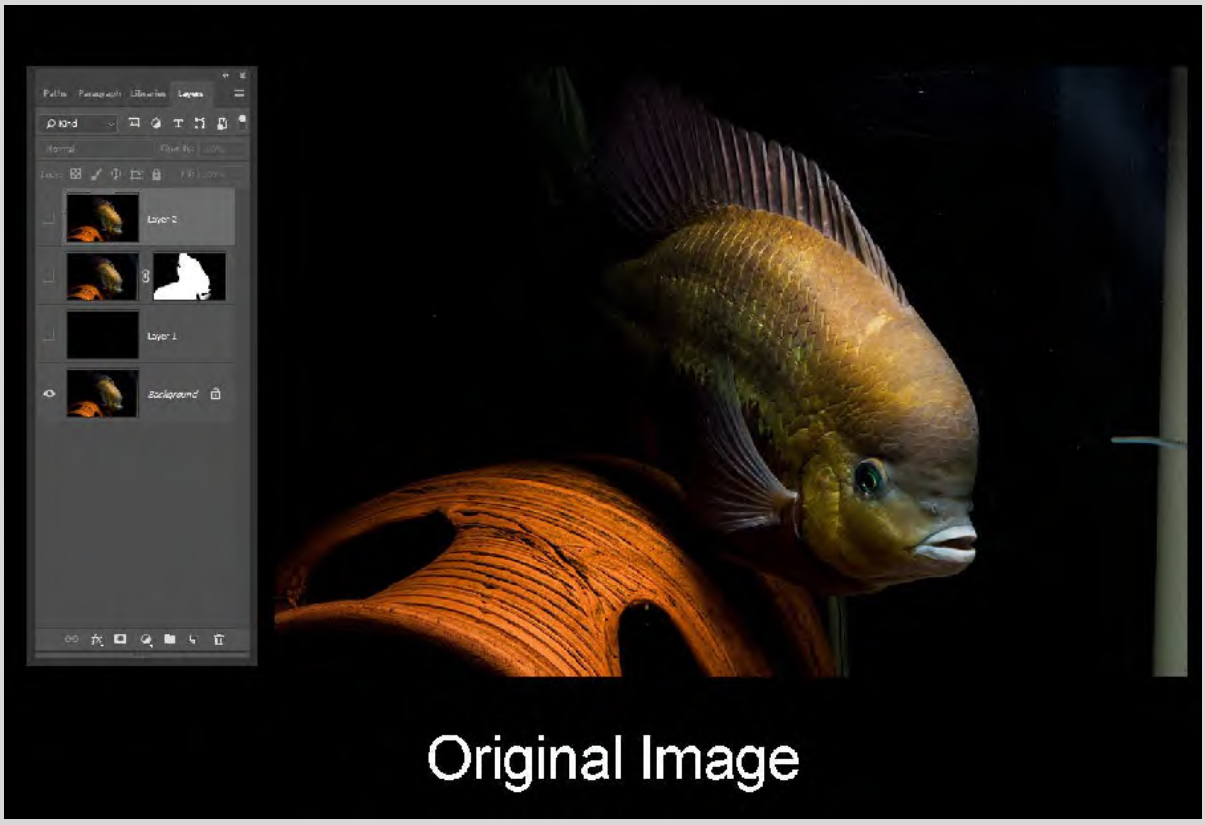
I liked the look of the fish, but wanted to remove the distracting background.

Using a plug in called Topaz ReMask, I created a silhouette of the fish.

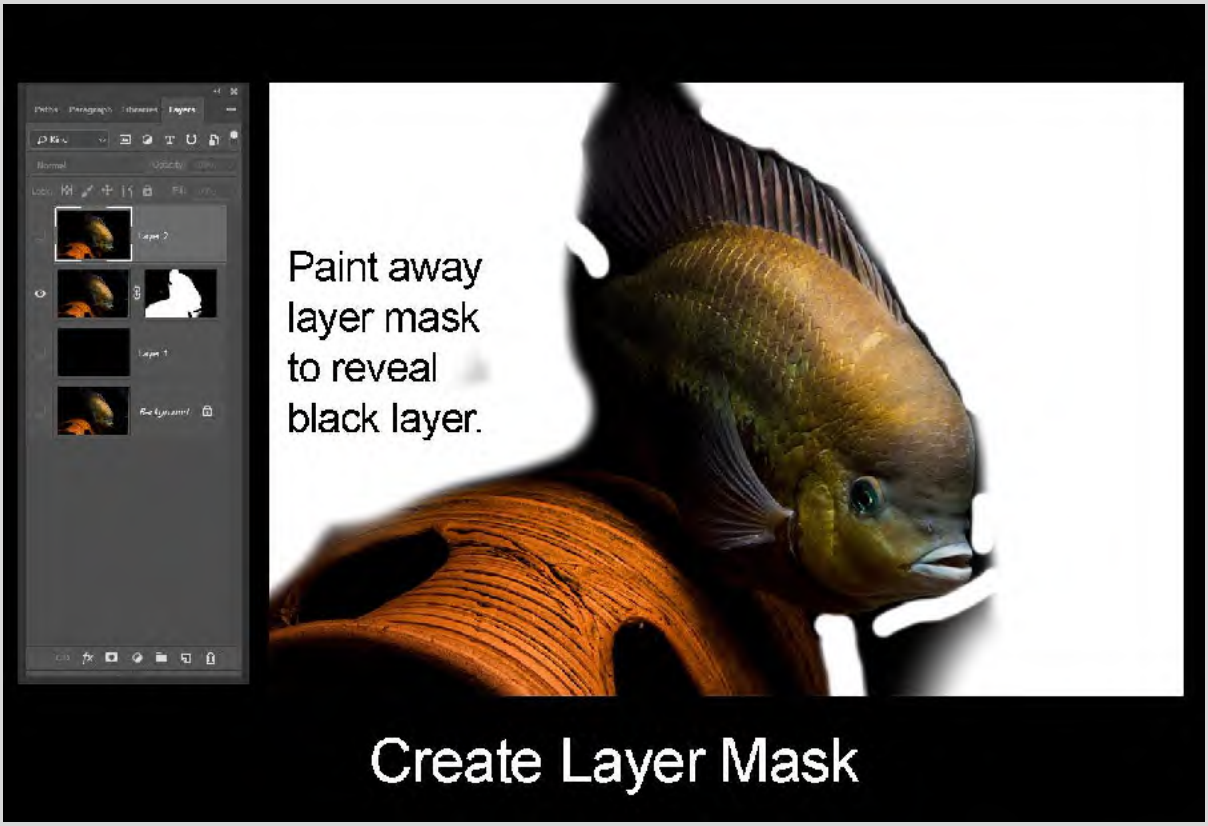


Create a black layer mask.

Pearsei Example



Very nice dramatic lighting on the Pearsei, but some distracting images on the right. Plus the background was not as dark as I wanted.



By creating a layer mask I can wipe away the background and reveal the black adjustment layer below.

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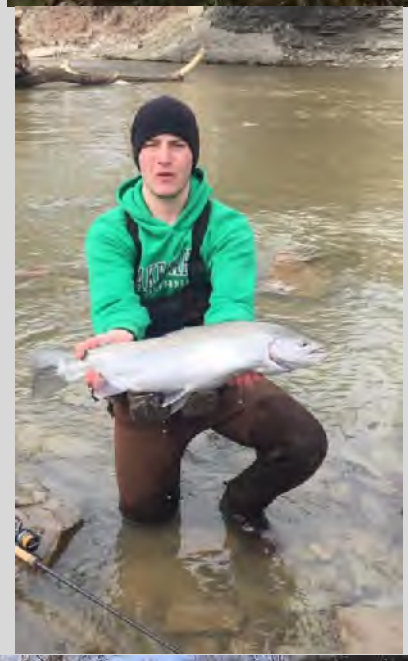
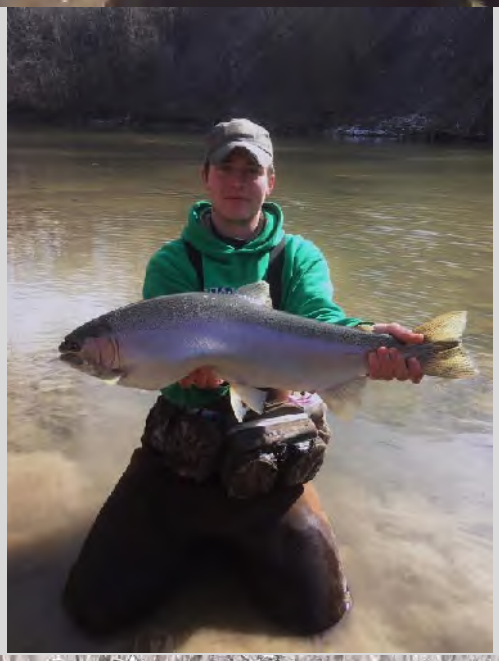
Anglers of the OCA

Lake Erie is well known for its gamefish. Pictured below are OCA Members Bill Schwartz with a smallmouth bass and Nick Zarzeczny with Steelhead from Lake Erie and its tributaries. Nick offered the following regarding his steelhead:

“Steelhead, *O. mykiss*, are anadromous rainbow trout that travel up streams to spawn. They were introduced into Lake Erie as a sportfish for local anglers. Unlike Salmon species, steelhead usually survive after spawning, and return to the body of water they came from. Through their spawning process, steelhead change their bodily color patterns - going from a bright silver to a dark olive/red color.”





PLEASE SUPPORT THE JIM SMITH FUND

Ohio Cichlid Association
www.ohiocichlid.com
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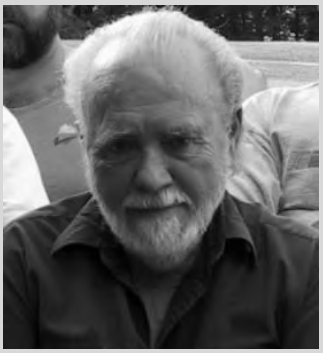

Throughout the year, we will be running a number of fund raising activities for the OCA Jim Smith Fund for Conservation and Education. These will include the following:

- Raffling off donated livestock or goods
- 50/50 Raffles during OCA events
- Donated bags of fish will be raffled at club auctions
- Sale of shirts and goody bags donated by Omega/Ad Konings
- Donations will be accepted through a button on the club website

Please consider donating cash, livestock or hardgoods at any OCA event or meeting to help raise money for the Jim Smith Fund. Because of the generous donations of our members and supporters, we have been able provide much needed grants for cichlid or catfish research and conservation! Thanks for your anticipated support!

The Jim Smith Fund is the OCA's endowment fund that annually awards Cichlid and Catfish researchers and others funds to promote Conservation and Education efforts. To date:

- 2008: $1,000 was given to support the construction of Anti-Netting Devices in Lake Malawi
- 2009: $1,000 was donated to the Stewart M. Grant Conservation Fund
- 2010: $1,000 was donated to the Max Hayes High School to support local education
- 2011: $2,500 awarded to Jay Stauffer at Penn State to catalog 3,200 collections of Cichlids
- 2012: $1500 awarded to Jay Stauffer of Penn State University to videograph cichlids in the wild
- 2013: the Jim Smith Fund was able to make two awards, one to Ed Burress for Pike Cichlid research and the other to Ron Coleman for Central American research
- 2014: an award of $1000 was made to Ad Konings for Tanganyikan breeding facilities
- 2015: Melanie Stiassny received a $1200 grant to fund attempts to collect live Teleogramma obamaorum. Sam Borstein received $2000 to study Malawi Cichlid feeding techniques.

The Jim Smith Fund has awarded over $13K to support Conservation and Education!!

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Ray "Kingfish" Lucas

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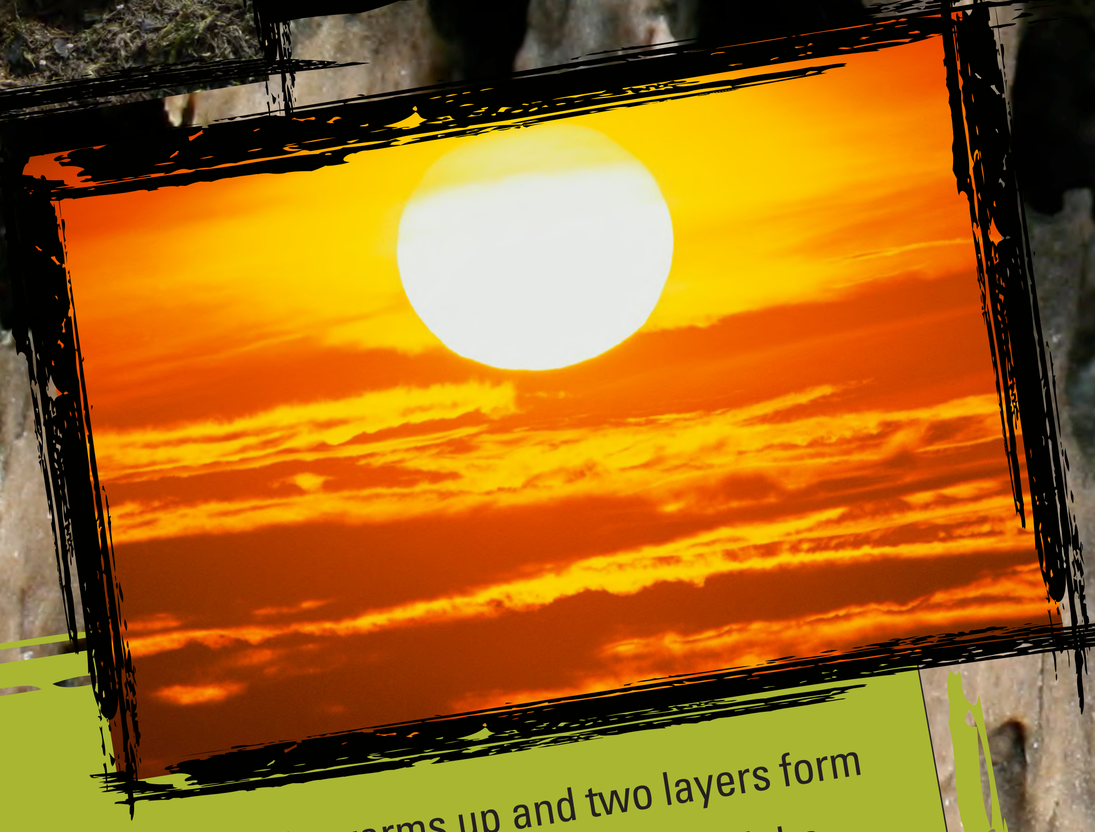
WHAT IS THE DEAD ZONE?



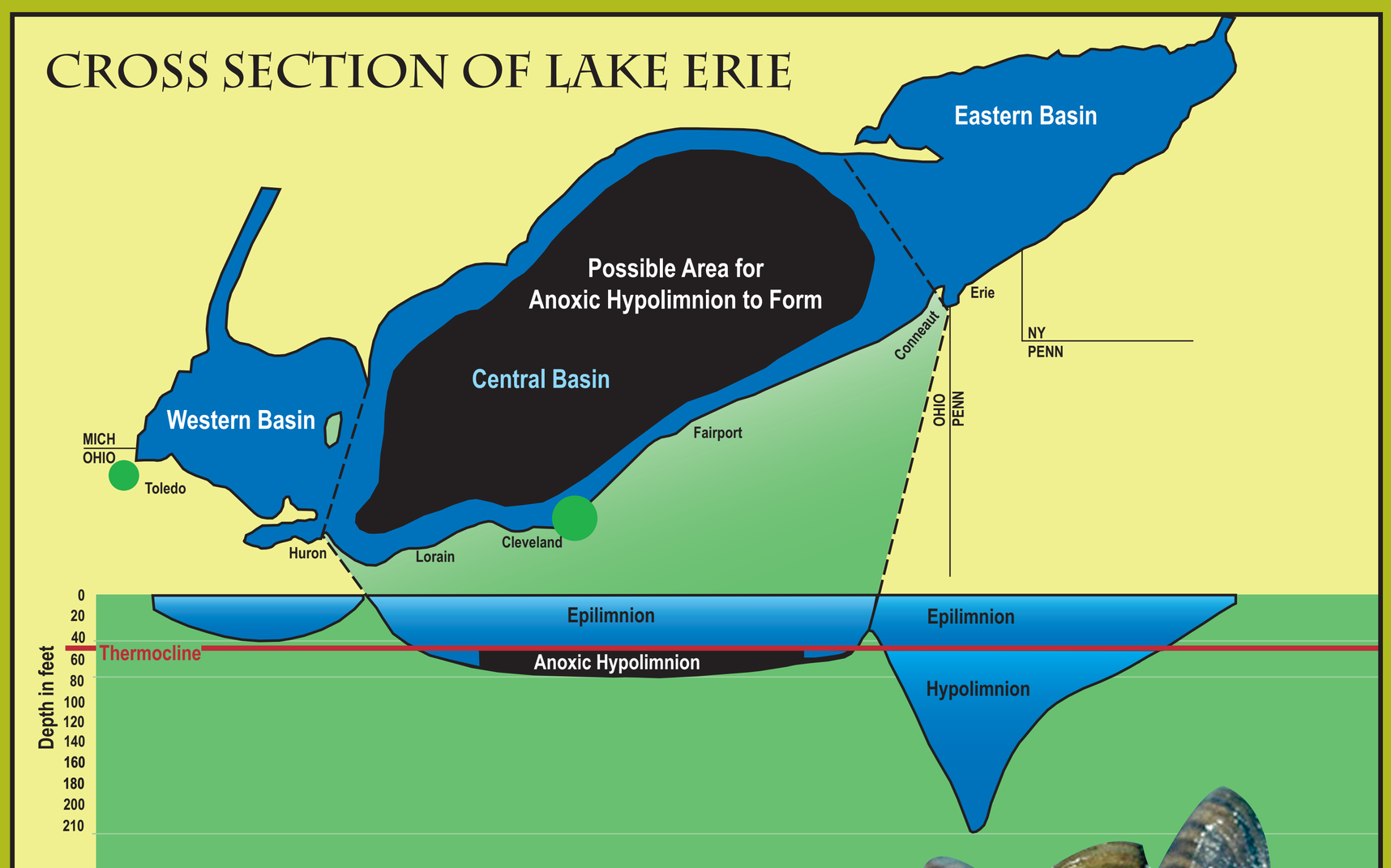
Each summer, the water in Lake Erie warms up and two layers form in the Central and Eastern basins: a warm upper layer, called the epilimnion, and the cold lower layer, called the hypolimnion. Between these two layers is a thin area called the thermocline, where the warm and cold water mix.

In May and June, there is plenty of oxygen in the water to keep the plants and animals in the lake alive. But as the summer goes on, algae and other organisms die and fall into the hypolimnion to decompose, using up oxygen. The Dead Zone forms when the water becomes anoxic, which means all the oxygen is gone. Any animals caught in it die—sometimes washing to shore in large numbers. The lake stays this way until fall, when the water begins to cool and the two layers mix together again.

THE OHIO STATE UNIVERSITY · STONE LABORATORY · NOAA · Sea Grant Ohio Sea Grant College Program

TOO SHALLOW, TOO DEEP, JUST RIGHT

Lake Erie is divided into three basins, but only one of them has the right conditions for a Dead Zone. The Western Basin is so shallow that it doesn't form layers, except in rare circumstances when there is no wind for a long time and the temperature gets very hot. The Eastern Basin is so deep that the water below the thermocline never runs out of oxygen. The Central Basin, however, is just deep enough to allow a shallow hypolimnion to form—the perfect conditions for a Dead Zone.



WHAT CAUSES DEAD ZONES?

There have been Dead Zones in Lake Erie since the 1930s, but scientists are still working to find out what causes them. Knowing why they happen will help us find ways to stop them in the future. Phosphorus and zebra and quagga mussels are the most likely culprits.

PHOSPHORUS

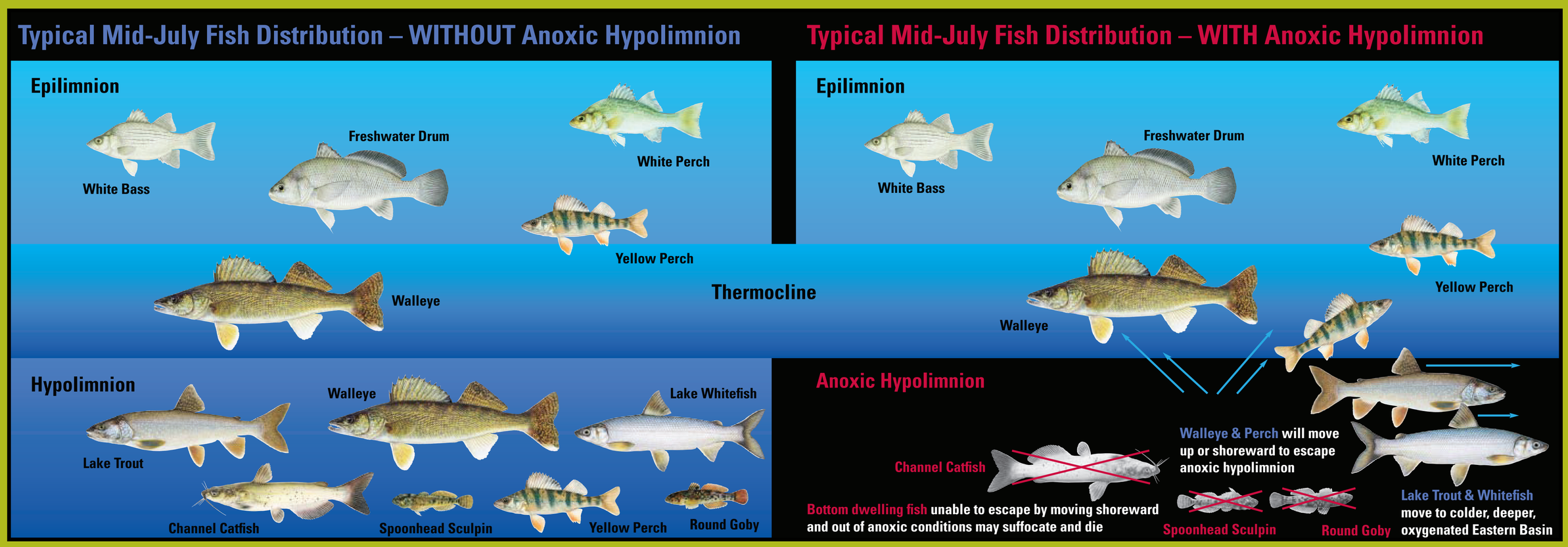
Phosphorus comes into Lake Erie from water that runs off of surrounding land and into the lake or its tributaries. In the 1980s, the government upgraded water treatment plants and restricted the amount of phosphorus that could be used, which made the Dead Zone smaller. But within the last 15 years, the Dead Zone has begun to grow again, even though phosphorus levels have stayed the same. Ohio Sea Grant researchers are searching for the answers.

ZEBRA AND QUAGGA MUSSELS

These invasive species eat by filtering small particles out of the water, including algae and zooplankton. They also excrete phosphorus, putting it back into the water where it can be used again instead of falling into the sediment on the floor of Lake Erie.

WHAT HAPPENS TO THE FISH?

When Lake Erie is the same temperature from top to bottom in fall, winter, and early spring, fish can be found in their preferred habitats and near good sources of food. In the summer, when the Dead Zone appears in the Central Basin, many fish will move toward water with more oxygen—the epilimnion, the shoreline, or the deeper Eastern Basin. Bottom-dwelling fish like burbot and channel catfish often cannot escape and will suffocate.



DON'T SPRAY THOSE WEEDS!

WHAT YOU CAN DO?

Some scientists think certain kinds of herbicides—chemicals that kill plants—might be making the Dead Zone worse. These herbicides, especially Roundup, are high in phosphorus, and can easily get into the ground water, eventually arriving in Lake Erie.

OHIO SEA GRANT AND STONE LABORATORY

Aquatic Invasive Species in the Great Lakes

David Jude, University of Michigan

David Jude, University of Michigan

Round Goby and zebra mussels are examples of ballast water introductions.

John Muk

Common Carp were intentionally stocked in the U.S. in the 1800s.

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Ohio Sea Grant, based at The Ohio State University, is one of 33 state programs in the National Sea Grant College Program of the National Oceanic and Atmospheric Administration (NOAA), Department of Commerce. Ohio Sea Grant is supported by the Ohio Board of Regents, Ohio State University Extension, other universities, industries, and associations.

OHSU-FS-1501
Updated March 2, 2015

Aquatic invasive species (or AIS) are organisms that live in the water most or all of their life, are found outside of their native range and become harmful to their new ecosystem. AIS can reduce the abundance of native species, take over the food supply and impact recreational and commercial activities. They are a worldwide problem, and as of early 2015 there were a recorded 194 aquatic non-native species in the Great Lakes ecosystem, many of which are invasive and can be found in Lake Erie. There are a wide array of invasive organisms ranging from animals such as fish and invertebrates, to plants, to microscopic plankton, bacteria and viruses. Each species can have a unique impact based on where it fits into its new environment. There are usually negative economic and recreational impacts associated with AIS as well.

WHERE DO THEY COME FROM AND HOW DO THEY GET HERE?

AIS can get to Lake Erie from just about anywhere in the world. In the Great Lakes, there are invasive species from many different regions, including zebra mussels from Eurasia and common reed from Europe. Regardless of where they originate, humans are almost always involved in introducing a non-native species to a new environment. AIS are generally more likely to become invasive in that new environment when conditions such as habitat type, temperature and climate are similar to their native range, although that is not necessarily a requirement for their success.

Several common pathways are known to have spread AIS into the Lake Erie ecosystem. One example is ballast water on international shipping vessels, where certain species may be able to survive long enough to be released at the final destination port. Stricter regulations have been enforced in recent years, and no new ballast water introductions have been detected since 2006.

The removal of natural barriers has allowed multiple AIS into Lake Erie. For example, the Welland and Erie Canals are human-made waterways designed so that ships could travel from Lake Ontario to Lake Erie around barriers like Niagara Falls. These shipping canals were essential to the westward expansion of the United States, but they also connected distinct watersheds and allowed some AIS to reach new aquatic ecosystems. This is currently an issue in Chicago, where the Chicago Area Waterway System has connected the separate watersheds of the Great Lakes Basin and the Mississippi River Basin. Electric barriers and other methods are being used to try to keep invasive species from moving into new areas in connected watersheds.

Stocking, whether intentional or accidental, has also been responsible for multiple AIS introductions that have caused profound impacts on the ecosystem. Intentional stocking is when a desired species is

introduced to a body of water, but can also include the release of aquarium pets into the wild. Accidental stocking occurs when a species escapes from an aquaculture facility, if AIS get mixed in with desired species or when unused fishing bait is dumped into the wild.

@edans, Flickr

John Lyons

Sea Lamprey and White Perch are examples of introductions through human-made canals.

WHAT PROBLEMS CAN AIS CAUSE?

Ecosystem Impacts: AIS can cause a variety of ecological problems, and in a water body the size of Lake Erie it is difficult to pinpoint the impacts caused by a single species. A common AIS impact is competition with native species for resources like food and habitat. Invasive species can outcompete native species and either lower the population of a native species or replace it altogether. This reduces species diversity and can make the ecosystem more susceptible to environmental changes. AIS can also alter the natural food web, pass toxins through the food web, prey directly on native species, damage native habitat and quickly overpopulate an area since they often do not have natural predators in their new ecosystems.

Recreational Impacts: People who fish, boat or enjoy other recreational activities on Lake Erie have all been affected by AIS. Some invasives, such as zebra and quagga mussels, filter feed on the phytoplankton that makes up the base of the Lake Erie food web. This reduces available prey for other organisms, including important recreational sport fish. It has also made Lake Erie water more clear, and clearer water allows sunlight to reach deeper into the water column. In shallow water such as Lake Erie, this allows more aquatic plants to grow. In some cases, plants and algae can grow to nuisance levels and pile up on beaches. Additionally, the invasive mussel shells are sharp, so swimmers need to wear shoes to protect themselves from injury.

Hydrilla was likely released via improper disposal from aquaria.

Invasive plants and algae can form floating mats. These mats can block sunlight from reaching deep enough to allow phytoplankton growth, limiting food availability. Some invasive aquatic plants can reach such high densities that they are of little use to native organisms and can make water access difficult for boaters, anglers and swimmers. Microscopic AIS like the spiny water flea can damage fishing gear and outcompete larval fish for food. Invasive bacteria and viruses can cause fish diseases resulting in die offs that pollute beaches and reduce food availability for predator species.

Some AIS prey directly on sport fish and can alter fisheries management. Sea Lamprey are parasitic fish that feed on the body fluids of species like Lake Trout, Lake Whitefish and Walleye, often killing them in the process. Round Goby will feed on Smallmouth Bass eggs and young; this has led to a change in Ohio fishing regulations to allow Smallmouth Bass to protect their nest during the spawning season. The Round Goby is also a prey item for many sport fish and, because of its diet, can cause toxin accumulation in game species like Smallmouth Bass, Walleye and Yellow Perch.

Economic Impacts: Tourism is a major economic driver for Ohio's coastal communities. When AIS cause fish die offs or rotting algal mats, beaches and other recreational locations become unusable and tourism-related businesses suffer. When AIS affect the behaviors, populations or management of fisheries, opportunities for anglers decrease. Fewer opportunities lead to fewer visitors, and local charter captains, restaurants, hotels and other businesses see decreased revenue. Some AIS have direct financial impacts; for instance, they can clog pumps on boat motors or water intake pipes, which then need to be cleaned, removed or replaced.

HOW CAN YOU HELP?

Once they are established in an area, AIS are nearly impossible to eradicate. Control is possible in some instances, but usually comes at a major cost. The best strategy is to prevent new AIS from spreading. To help prevent the spread of AIS, anglers, boaters and other recreationists should:

- learn to recognize AIS
- inspect equipment and remove all aquatic plants, animals and mud from boat, motor, trailer and equipment before leaving water access
- drain water from motor, bilge, live well and other containers before leaving access areas
- dispose of unwanted bait, worms and fish parts in the trash
- clean boating equipment with high-pressure or heated water
- allow boats and equipment to dry for at least five days before transporting them between bodies of water
- never dump live fishes, bait or other organisms from one water body into another

For more information about aquatic invasive species in the Great Lakes, contact Ohio Sea Grant. Information is also available through the "Stop Aquatic Hitchhikers!" campaign at ***www.protectyourwaters.net***, and the "Habitattitude" campaign at ***www.habitattitude.net***.

Got Fish & Aquatic Plants? Get Habitattitude™

It's an early Saturday morning in July, and a water gardener is tending her pond. Deciding that there is an overabundance of water hyacinth, she nets the excess plants and then wonders where to take them. On the other side of town, it's moving day and a couple are downsizing from a large house to a condominium. There's no room for their killifish tank in their new home. What to do?

These well-intentioned hobbyists may decide it's best to release their aquatic pets and plants into a nearby pond, lake or stream. This decision, however, could harm the environment as well as the released pets and plants.

Good Deed Gone Bad

Aquarium hobbyists and water gardeners often release their aquatic animals and plants into the natural environment out of kindness to these organisms. Release of pets and plants, however, is not always humane. Organisms discharged into the environment often die from starvation, are eaten by predators, or succumb to parasites and diseases. Although hobbyists seldom intend this fate for their former pets and plants, such fate frequently occurs.

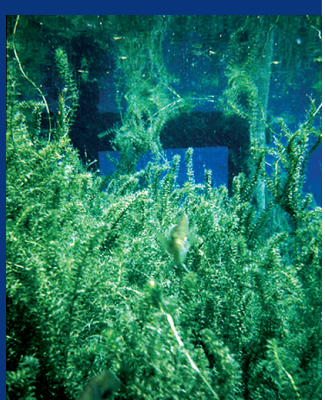
Some aquarium and water garden organisms, however, do thrive when released and can cause significant environmental and economic harm (see sidebar). Those species most likely to cause harm are called "invasive." When introduced into a new environment, invasive species prosper at the expense of native ones. Invasives can compete for food with and prey upon natives, infest them with parasites and diseases, and change their genetic pools through hybridization. The ultimate result is that numbers of native species decline and the pond, lake or stream changes, usually in an undesirable way.

In many cases, invasive animals and plants are non-native or "exotic." Species native to North America, however, may also become invasive when transported to another region of the continent. Regardless of origin, invasive aquatic organisms can be unintentionally spread by aquarium hobbyists and water gardeners.

Pat Charlebois, IISG/INHS

Hydrilla: handle with care

Hydrilla *(Hydrilla verticillata),* also known as water thyme, is a well-known aquarium and water garden plant native to parts of Asia and Africa. It was first found growing wild in North America (in Florida) in 1960. Since then, it has spread as far north as Connecticut and as far west as California. Hydrilla is a successful invader because it tolerates a wide range of nutrient and pH levels, and persists in low sunlight. It's also successful because it can reproduce in several ways—through plant fragments, turions (buds that form in leaf axils), and subterranean tubers. These plant parts can take root in the sediments, and provide the beginnings for a whole new plant. As the plant grows toward the surface, it branches more and more frequently forming dense mats. These mats create inhospitable habitat for other plants and animals, and hinder activities such as boating and swimming. They can also clog water intake pipes, and restrict water flow in irrigation canals. Methods to control hydrilla, including mechanical harvesting and herbicides, are costly. Florida alone spends millions annually in hydrilla management.



Vic Ramey, University of Florida

What is Habitattitude™?

Habitattitude™ is a national public education campaign to 1) raise awareness of the problems associated with releasing aquatic organisms into the natural environment and 2) encourage responsible hobbyist behavior, particularly the use of release alternatives (see sidebar).

The Habitattitude™ fishbowl logo and accompanying prevention message—"protect our environment, do not release fish and aquatic plants"—are the cornerstones of the Habitattitude™ campaign. This logo and message are available for use by campaign partners such as pet retailers and hobbyist clubs. Several large pet retailers have already joined the Habitattitude™ campaign and have printed these graphics on a variety of materials (e.g., aquaria stickers and bookmarks) destined for their customers. The overall campaign is being presented at trade shows, in hobbyist magazines, at retail stores and on the Habitattitude™ website (*www.Habitattitude.net*).

What Can You Do?

First and foremost, you can tend aquaria and water gardens responsibly by choosing alternatives to release. You can also learn more about the invasive species issue and share your knowledge with fellow hobbyists. Finally, you can encourage your aquarium or water gardening clubs, pet retailers, nurseries and local governing agencies to join the campaign and help promote its message. By taking these steps, you play a vital role in helping protect our natural resources from aquatic invasive species.

Be a Responsible Hobbyist...

Get Habitattitude™

Habitattitude™

PROTECT OUR ENVIRONMENT

DO NOT RELEASE FISH AND AQUATIC PLANTS

Alternatives to Release

Do you have unwanted pets or plants? Use these options:

- Contact retailers for proper handling advice or possible returns.
- Give to or trade with another aquarist, pond owner or water gardener.
- Donate to a local aquarium society, school or aquatic business.
- Seal aquatic plants in plastic bags and dispose in trash.
- Contact veterinarian or pet retailer for guidance on humane disposal of animals.

Remember, release of organisms into natural waterways can harm both the environment and the released pets and plants.

For more information contact Illinois-Indiana Sea Grant at 847-872-8677 or visit ***www.Habitattitude.net.*** For other aquatic invasive species publications, visit ***www.sgnis.org.***

Produced by Illinois-Indiana Sea Grant as part of a national aquatic invasive species outreach initiative. This initiative is a cooperative effort of the Illinois-Indiana, Michigan, Minnesota, Ohio and Pennsylvania Sea Grant Programs with the Pet Industry Joint Advisory Council and the U.S. Fish and Wildlife Service.

For additional copies of this fact sheet, contact Illinois-Indiana Sea Grant at 217-333-9448 or goettel@uiuc.edu.

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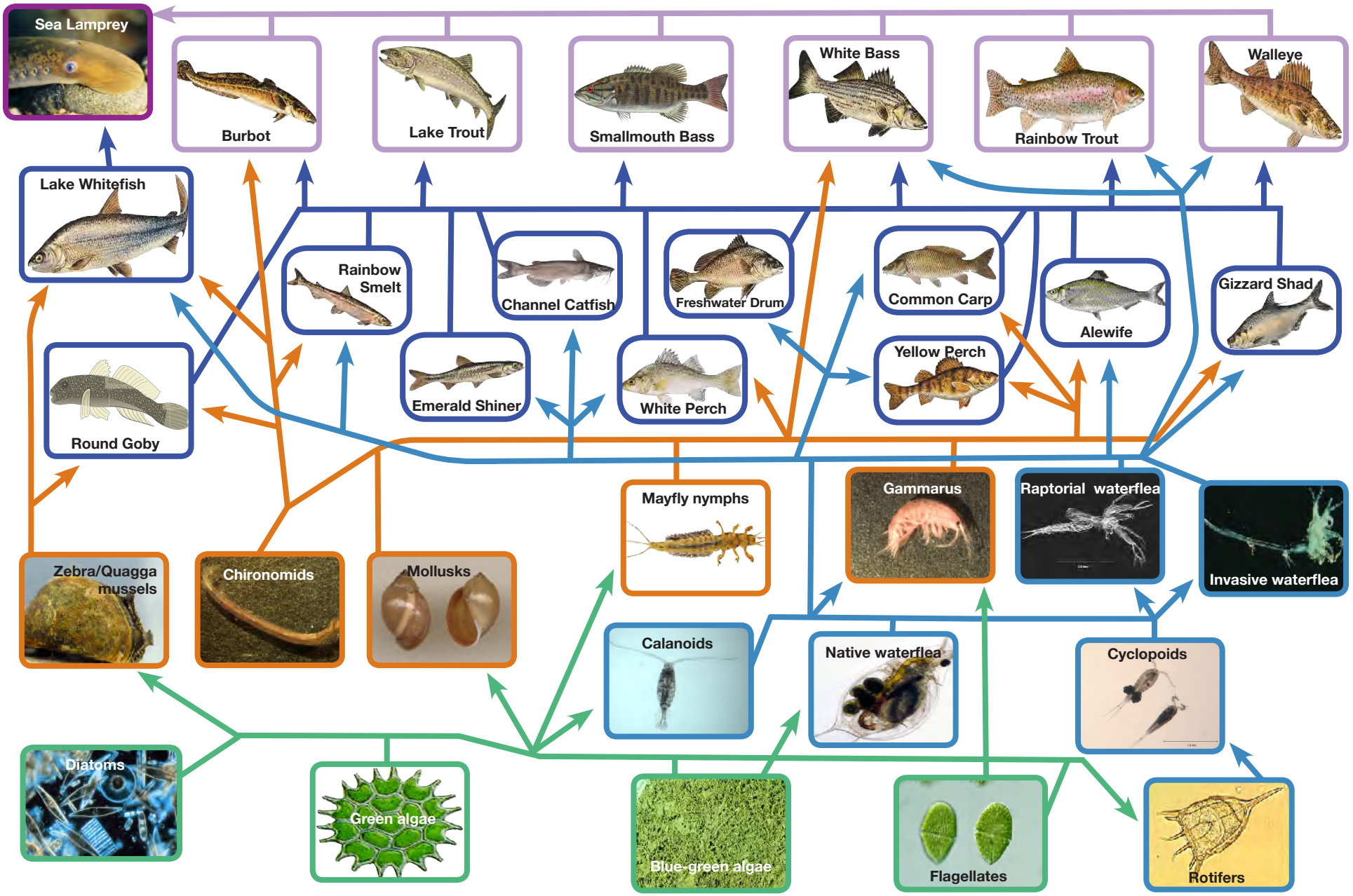
The Illinois Natural History Survey is a division of the Illinois Department of Natural Resources, Joel Brunsvold, Director. ***Sea Grant Publication IISG–05–03***

Lake Erie Food Web



Foodweb based on "Impact of exotic invertebrate invaders on food web structure and function in the Great Lakes: A network analysis approach" by Mason, Krause, and Ulanowicz, 2002 - Modifications for Lake Erie, 2009.

NOAA, Great Lakes Environmental Research Laboratory, 4840 S. State Road, Ann Arbor, MI
734-741-2235 - www.glerl.noaa.gov

Lake Erie Food Web

Sea Lamprey

Sea lamprey (*Petromyzon marinus*). An aggressive, non-native parasite that fastens onto its prey and rasps out a hole with its rough tongue.

Piscivores (Fish Eaters)

Rainbow trout or Steelhead (*Oncorhynchus mykiss*). A lake strain of non-native rainbow trout, rarely found deeper than 35 feet. Supplemented by stocking.

White bass *(Morone Chrysops).* Prefers clear open water in lakes and large rivers. Visual feeders, uses sight instead of smell to find prey.

Smallmouth bass *(Micropterus dolomieui*). Native coolwater species. Intolerant of pollution so is a good indicator of a healthy environment.

Lake trout *(Salvelinus namaycush*). Nearly eliminated by sea lampreys during the 1950s and 1960s. Stocking and lamprey control are resulting in it's resurgence.

Walleye *(Stizostedion vitreum*). Carnivorous night feeders, eating fishes such as yellow perch and freshwater drum, insects, crayfish, snails, and mudpuppies.

Burbot *(Lota lota*). Elongated, cylindrical, freshwater codfish.

Forage Fish

Lake whitefish (*Coregonus clupeaformis*). Native found in cold waters. Bottom feeder—diets have shifted to include zebra and quagga mussels.

Channel catfish (*Ictalurus punctatus*). Prefer cool, deep water with a sand or gravel bottom. Primarily bottom feeders, but also feed at the surface.

Common carp (*Cyprinus carpio*). Large, omnivorous fish. Uproot plants on which ducks feed, muddy the water, and destroy plants and cover needed by other fish.

White perch (*Morone americana*). Invaded the Great Lakes through the Erie and Welland canals in 1950. Diet consists of walleye, white bass, and other fish eggs.

Yellow perch (*Perca flavescens*). Native that schools near shore, usually at depths less than 30 feet.

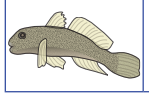
Emerald shiner (*Notropis atherinoides*). Very abundant in Lake Erie where they are important forage for sport fish.

Rainbow Smelt (*Osmerus mordax*). Found in both coastal and offshore habitats. Light-sensitive, so prefer deeper, cooler waters during the warmer seasons.

Freshwater drum (*Aplodinotus grunniens*). Gets its name from the odd grunting noises produced by muscles vibrating against the swim bladder.

Alewife (*Alosa pseudoharengus*). Atlantic species that invaded Lake Erie in 1931 via the Welland canal.

Gizzard shad *(Dorosoma cepedianum).* Commonly grows to 9-14 inches. Found in large schools. Has no commercial value.



Round goby (*Neogobius melanostomus*). Invasive, introduced into the Great Lakes via freighter ballast. Feeds on bivalves, including zebra mussels, crustaceans, insects, and small fishes.

Macroinvertebrates

Chironomids/Oligochaetes. Larval insects and worms that live on the lake bottom. Feed on detritus. Species present are a good indicator of water quality.

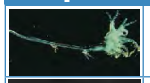
Mayfly nymphs *(Hexagenia* spp.*)*. A burrowing insect larvae found in warm, shallow water bays and basins, usually in soft sediments. The presence of this sensitive organism indicates good water quality conditions.

Amphipods *(Gammarus)*. A common amphipod found in warm, shallow regions.

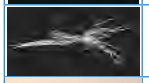
Mollusks. A mixture of native and non-native species of snails and clams are eaten by lake whitefish and other bottom feeding fish.

Zebra and quagga mussels *(Dreissena polymorpha* and *Dreissena bugensis)*. Invaded Lake Erie in 1988/89, filter-feeders that remove huge quantities of plankton.

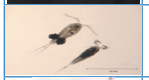
Zooplankton (Microscopic animals found in the water column)



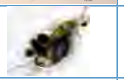
Invasive Spiny waterfleas *(Bythotrephes longimanus)*. Visual raptorial predator that can depress native waterflea populations.



Native Raptorial waterfleas *(Leptodora kindtii)*. Slow moving and patchy distribution of small swarms at relatively low numbers.



Cyclopoid copepods (e.g., *Cyclops bicuspidatus)*. Carnivorous copepods that feed on rotifers and other microzooplankton.



Native waterfleas (e.g., *Daphnia galeata)*. Filter-feeding waterfleas that can be important for controlling phytoplankton.

Calanoid copepods (e.g., *Diaptomus* spp.*)*. Omnivores that feed on both phytoplankton and microzooplankton.

Rotifers. A diverse group of microzooplankton that, depending on species, feed on phytoplankton, detritus, or other microzooplankton.

Phytoplankton (Algae found in the water column)

Blue-green algae (aka Cyanobacteria). Often inedible and frequently toxic; blooms in late summer and can look like spilled paint on the water surface.

Green algae. Microscopic (single-celled) plants that form the main support of the summer food web. Also includes large nuisance species such as *Cladophora*.

Diatoms. Cold-loving microscopic (single celled) plants encased in silica shells that support the first wave of production in the spring.

Flagellates. Motile, single-celled plants or animals frequently found in high numbers. Most eat bacteria and so may help funnel bacterial products back into the food chain.

130 species of fish, including at least 18 non-natives, make their homes in the waters of Lake Erie. Ten species of native fish have been extirpated from Lake Erie. This food web includes only the dominant species.

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FEBRUARY CICHLID BAP REPORT

Listed below are the Cichlid BAP submissions for last month. Members successfully bred these cichlids and raised fry to a minimum of 1". Varying point values determined by spawn difficulty were given to members' total Cichlid BAP points.

Congratulations on these spawns and thank you for your participation.

February 3, 2018

Bill & Janice Bilski	
Mylochromis ericotaenia	10
Jason Gorges	
Pundamilia macrocephala	10
Gary Mendez	
Pseudotropheus crabro	10
Steatocranus tinanti	15
Russell & Tom Pierce	
Pundamilia nyererei	10
Roger Stark	
Hemichromis bimaculatum	10
Pterophyllum scalare "silver"	10
Jonathan Strazinsky	
Neetroplus nematopus	10

Welcome to the program:

Russell & Tom Pierce

CICHLID BAP TOTALS

Listed below are the Cichlid BAP grand totals. The information is maintained by Mark Chaloupka. See Mark at monthly meetings for more information about the Cichlid Breeders Award Program. Thank you for your participation.

CURRENT B.A.P. STANDINGS (2/3/18)

BREEDER	2018	TOTAL

MASTER BREEDER 1000 POINT LEVEL

Lew Carbone	10	3005
Don & Marilyn Danko	-	2405
Dan Woodland	-	2070
Josh Cunningham	-	1640
Bryan Davis	-	1455
Bill Loudermilk	-	1200
Linda Wallrath	-	1130
John Tesar	-	1110
Mark Chaloupka	-	1075
Rich & Maggie Schoeffel	-	1065

900 POINT LEVEL

Dennis Tomazin	-	965
Jeff Yadlovsky	-	955
Tom Swiderski	-	905

800 POINT LEVEL

Hilary & Antonio Lacerda	-	870
Jonathan Strazinsky	10	850
Dustin Brummitt	-	840
Gary Mendez	25	825
Ken & Sue Galaska	-	800

700 POINT LEVEL

Jeff Natterer	-	705
Bill Schwartz	-	700

600 POINT LEVEL

Bob Blazek	-	660
Charlie & Cathy Suk	-	615
Steve Zarzeczny	-	600

500 POINT LEVEL

Tim Craig	-	540
George Anagnostopoulos	-	515
Ron Georgeone	-	510

400 POINT LEVEL

Rick Hallis	-	495
Phil Hypes	-	475
Eric & Rhonda Sorensen	-	475
Kyle May	-	460
Bob Bina	-	435
Tyler Toncler	-	420

300 POINT LEVEL

Jonathan Dietrich	-	335
David Hale	-	335
Tony Poth	-	335
Greg Senn	-	325
Gary Zalewski	-	325
Ken & Karen Grimmett	-	310
Tom & Carolyn Evers	-	300

200 POINT LEVEL

Andrew Schock	-	290
Dennis Kuehn	-	285
James Shakour	-	275
Jason Mlynar	-	260
David Hearn	-	255
Dave Esner	-	250
Ken Walker	-	240
Justin Way	-	220
Mark Kazanoff	-	215
Paul Collander	-	205

100 POINT LEVEL

Bill & Janice Bilski	10	195
Marc & Dawn DeWerth	-	195
Ozeal Hunter	-	190
Chuck Carroll	-	185
Denis Rozmus	-	185
Andrew Subotnik	-	180
Bob Evers	-	175
Charles Nowakowski	-	165
Frank Mueller	-	160
Steve Heinbaugh	-	150
David Ayers	-	145
Greg Seith	-	145
Dan Ogrizek	-	140
John Griffith	-	135
Carl Oszewski	-	135
Joe Ring	-	120
Steve Olander	-	115
Peter Nario-Redmond	-	115
Aaron Stevens	-	115
David Toth	-	115
Raymond Langer	-	110

BREEDER LEVEL

Mark Huntington	-	95
Dolores Bacisin	-	85
Pete Gembka	-	80
Rick Wood	-	75
Bob Tillman	-	70
Roger Stark	20	70
Matt Urbin	-	70
Dave Dimond	-	65
Anthony Scarton	-	65
Nicholas Zarzeczny	-	65
Jim Jensen	-	60
Paul Palisin	-	60
Chris Jaskolka	-	55
John Kaminski	-	55
Dave Dimond	-	50
Margaret Heifner	-	50
John Kahl	-	50
Alex Gorges	-	45
Jason Gorges	10	40
Ethan Wiley	-	40
Matt Lacy	-	35
Christopher Sooy	-	35
Tom Tansey	-	35
Paul Hutnyak	-	30
Keith Robinson	-	30
Adam Stallman	-	30
Wayne Corman	-	25
Fred Roberts	-	25
Andy Lacerda	-	20
Scott Meyers	-	20
Bill Sensor	-	20
Jason Webb	-	20
Ken Carey	-	10
Jim & Amy Damm	-	10
Ron Drungil	-	10
Ben Jensen	-	10
Cory Knarr	-	10
Michael Meyer	-	10
Russell & Tom Pierce	10	10
Mike Trader	-	10

The points list for the Breeders Award Program has been updated to include only current members. If you are a current member and your name has been omitted, please see the B.A.P. Chairman at the social meeting so we can correct any errors.

Please remember: You may only turn in a species or strain of fish for B.A.P. points one time. If you need a list of what you have been credited with, see the BAP chairman at the social meeting.

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FEBRUARY CATFISH BAP REPORT

Listed below are the Catfish BAP submissions for last month. Members successfully bred these catfish and raised fry to a minimum of 1". Varying point values determined by spawn difficulty were given to members' total Catfish BAP points. Congratulations on these spawns and thank you for your participation.

Breeder	Species	Points
Dave Ayres	Corydoras napoensis	10
Bob Blazek	Synodontis lucipinnis	20

CATFISH BAP TOTALS

Listed below are the Catfish BAP grand totals. The information is maintained by Steve Heinbaugh. See Steve at monthly meetings for more information about the Catfish Breeders Award Program. Thank you for your participation.

NAME	2018	TOTAL
Dan Ogrizek		420
Steve Heinbaugh		365
Dave Ayres	10	325
Don & Marilyn Danko		285
Phil Ayres		230
Ken Walker		120
Eric & Rhonda Sorensen		110
Bob Blazek	20	100
Dan Woodland		100
Matt Urbin		90
Tom & Carolyn Evers		80
Hilary Lacerda		80
Bill Schwartz	10	70
Bob Bina		70
John Kaminski		70

Justin Way	60
Bryan Davis	60
Phil Hypes	60
Jeff Natterer	50
Ken Galaska	45
Tyler Toncler	45
Matt Lacy	40
Josh Cunningham	40
Kyle May	40
George Aganostopoulos	40
John Tesar	30
Karen & Ken Grimmett	30
Lew Carbone	30
Andrew Schock	30
Bob Evers	30
Jason Mlynar	25
Tony Poth	20
Gary Mendez	20
David Toth	20
Paul Palisin	20
Jeff Yadlovsky	10
Dave Hearn	10
John Griffith	10
Carl Olszewski	10
Anthony Scranton	10
Jon Dietrich	10
Richard Shamray	10
William Zarzeczny	10
Wayne Corman	10
Mark Chaloupka	10
David Hale	10
Jonathan Strazinsky	10
Bob & Jennifer Tillman	10

Protecting Malawi Cichlids

By Ad Konings

For years it was thought that the huge biodiversity in Africa's Rift lakes was in good shape and unlikely to be affected by the burgeoning human population; the simple reason being that no industry had established on the lakes' shores. Industrial pollution and loss of habitat is the main cause of biodiversity loss around the world but the lack of an industrial-sized infrastructure in the countries around the lakes discouraged prospecting entrepreneurs from setting up camp. However, the paucity of jobs and income more or less forced the riparian communities to increase their fishing efforts. This massive increase naturally brought an enormous reduction in fish stocks. Since the early 1970s beach seines have systematically been employed by almost every village along the shores of Lake Malawi and by 1985 the number of nets had increased 50-fold and the fishing efforts even more, but the amount of landed fish had actually decreased. In the early 1990s fish stocks in the southeastern arm of the lake and those of Lake Malombe had collapsed. At present there is still no regulation in force even though beach seines and small-meshed gill nets are forbidden. When I visited the lake in the late 1980s beach seines were very prevalent and the catches, even strongly reduced from what they were 10 years earlier, were substantial. Nowadays beach seines are rare in the South East Arm of Lake Malawi, not because the authorities finally caught up with applying law, but simply because there are no fish left. The same is true for the Zambian section of Lake Tanganyika where beach seines are banned as well but the sand-dwelling cichlids of the shallow inshore waters never returned. In Lake Malawi I remember witnessing seines tied between two large diesel boats being dragged over long sandy stretches swiping several *Lethrinops* species into oblivion. Most of those operations have since long ceased because the fish are gone, but in the Salima Area seining is still very prevalent, with nets and ropes being laid 2 km into the lake. Unfortunately the area affected, the southwestern corner of the lake near Chipoka, is a major breeding area for *chambo* (*Oreochromis* spp. —tilapias) one of the main food fishes of Lake Malawi. These seine nets are employed during the breading season of these fishes as they return to the area every year. Legislation is in place that prohibits fishing during the breeding period (Nov / Dec), but the controlling government body (Fisheries) does not have the means to enforce it.

In 1980 the rocky shorelines and the islands around the Nankumba Peninsula in the southern part of the lake were declared National Park and in 1983 the park was elevated to a World Heritage Site. The park, the major part of which includes the forest reserve on Nankumba Peninsula, embraces lake waters that lie within 100 meters of the park's terrestrial sections. Almost all shorelines within the park's boundaries are rocky and the purpose of this arrangement is to include and protect as wide a variety as possible of cichlids, many of which

(Continued on page 17)

(Continued from page 7)
are restricted to particular rocky shores. To date, a total of 220 species of rock-frequenting cichlids have been recognized within park waters. The total water area protected under the National Park is estimated at about 7 km^2, a mere fraction of the lake's overall surface area, but about 25% of the lake's cichlid species are represented within.

The lake and its multitude of fish species have been around long before our own species appeared on the scene, and although the lake is governed by the jurisdiction of three different countries, none of them can responsibly claim owning the lake and its treasures. Lake Malawi is a natural treasure of world-magnitude and it should be treated as such. The Malawi government has taken upon itself the difficult task of protecting a section, an important section, of this treasure for generations to come. Their mission is not simple and/or straightforward. Besides the preservation of the lake's riches there is also the need to alleviate poverty of the people that presently live along its shores. However, the cichlids of Lake Malawi National Park must never be exploited as a solution towards that predicament. Poorly-regulated and uncontrolled fishing is certainly a step in the wrong direction in preserving the lake's viability but also controlled or sustained usage of resources in the park must be out of the question. The lake's cichlid diversity is not a resource that can be measured or controlled. Conservation is the only option—indeed a difficult mission.

Fishing in park waters is not allowed within 100 meter of the shore and although this was well conceived on paper, in reality the Park lacks the manpower to oversee these regulations. As a consequence fishing occurs in all park waters and in fact some places are so much over-fished that at present absolutely none of the many sand-dwelling or open water species, still present 10 years ago, can be found. It is also forbidden to set up camp or just to live on any of the islands included in the park, but hundreds of fishermen manage to dodge the law and permanently live in the Park. Since most of the sand-dwelling cichlids around these islands have been wiped out the fishing effort is now directed to catching the rock-dwelling mbuna. I have seen several small-meshed gill nets with hundreds of trapped mbuna right in front of Park headquarters at the southeastern tip of Thumbi West Island. Mbuna are also caught with so-called chirimila nets, originally intended for utaka but they have disappeared as well, around the islands where plankton blooms lure the mbuna away from rocks.

This gruesome scenario was also in place around the Maleri islands where, over the years, beach seines had torn out the aquatic plants in the shallow sandy areas and left a bare sandy bottom void of any fish. Plankton-feeding mbuna were caught in chirimilas and trees on the island were cut for firewood for the numerous camps on the three islands. The islands were too far from Park headquarters at Otter Point (Cape Maclear)

(Continued on page 21)

(Continued from page 17)

and the illegal fishing could thus continue virtually uncontrolled. The situation was grim all around the lake and the various tourist establishments had difficulty finding good spots for their guests to snorkel or dive and meet some of the awesome fish known to inhabit Lake Malawi.

In 2006 a group of concerned Malawians were awarded a concession to "develop" the Maleri islands by establishing a camp on Nankoma Island, a lodge on Maleri Island, and a single cottage on Nakantenga Island. They had to build everything in agreement to the natural settings and where possible restore the original flora and fauna. There were also given "control" over the enforcement of the no-fishing zone around the islands and had to expel the illegal squatters. This group, called Waterlands, was initially funded by the Malawi Environmental Endowment Trust (MEET) as they understood that local control of the over-fishing situation would be more effective. Two main performers of this group, Nigel Cheal and Alan Pitman, set to develop and employ Anti Netting Devices (ANDs) that would hinder the illegal fishermen from pulling a net at any point in the no-fishing zone around the three islands. The first were set at the end of 2006 and after a few months had to be removed because too many bits of netting had accumulated around the device that it became ineffective catching additional nets. October 2007 more than 150 of these devices were protecting the cichlids around the Maleri islands. Most of these net-traps are suspended in the water by a thick steel cable attached to a very large anchor. The anchor either consists of a large boulder or, in sandy areas, of a large drum-size cylinder (made up of old tobacco thresher baskets welded together to form a cylinder) that will be filled underwater with rocks and to which the floating trap is attached (see photo).

Most of these contraptions were made and placed by Alan who has also started to plant the bare sandy areas with aquatic plants from parts of the island where they were still present. I remember that one particular corner along the eastside of the large island was heavily vegetated 20 years ago (underwater). All these plants have since been torn out by seine nets. Now they are slowly replaced by transplants from the surrounding areas. Illegal fishing is sometimes still a problem but these are with short static nets placed at risk between the artificial reefs. These aquatic plants play a very important role in the lives of many utaka as they serve as nursery grounds giving protection and food to the small fry. The local fishermen, who are allowed to fish beyond the 100 meter boundary of the Park, commented recently that there seems to be more fish around the islands. Also the tour operators of Danforth Yachting commented that the rock-dwelling cichlid populations around the Maleri islands are in a much better shape than those at Cape Maclear and they now prefer to bring their guests to the Maleris for snorkeling and/or diving excursions.

If funds become available the men from Waterlands are willing to

(Continued on page 23)

(Continued from page 21)

place net barriers all around the shoreline of the National Park for which they have been given permission from the parks director Dr. Leonard Sefu. Jay Stauffer of Penn State University and I are planning to generate funding for the ongoing protection of Malawi cichlids via donations into the "Stuart M. Grant Cichlid Conservation Fund". These tax-deductible donations can be mailed to Prof. Jay R Stauffer, 420 Forest Resources Building, Penn State University, University Park, PA 16802 (please make check out to Penn State University). The PCCA website will feature updates on the process of placing the barriers and on the replanting efforts and later in the year will have a possibility to donate via Paypal.

I have always been of the opinion that you can only protect a natural resource by buying the habitat in question, put a fence around it and limit access to those that want to enjoy and shoot with cameras. It is impossible to do so with Lake Malawi and although there have been talks of turning the entire lake into a multinational park, preventing over-fishing in select areas really has a chance of succeeding in preserving the great biodiversity still to be found in this magnificent lake.

Editor's Note: OCA Board just approved $1000 to go to this worth while effort.

Bowl Show 2009 Schedule

Meetings '09	A	B	C
Jan. 2	Tanganyikan Shell-dwellers	Central Americans under 6"	Loracariids (Pleco types) over 6"
Feb. 6	Victorian Basin	Angelfish	Synodontis and other Mochokids
Mar. 6	Pseudotropheus, Cynotilapia, Melanochromis	South Americans under 6"-- exclude Angels, Discus, Apistos	Catfish—exclude Callichthids, Loracariids, Mochokids (see other classes for explanations)
Apr. 3	Peacocks	Central Americans over 6"	Freshwater Crustaceans
May. 1	Tanganyikan Mouthbrooders--exclude Frontosa	South Americans over 6"	Loracariids under 6"
June. 5	Mbuna--exclude Pseudo, Cyno, Melano	Discus, Uaru	Open Catfish, limit 3 per participant (all Cats eligible)
July	**No meeting**		
Aug. 7	Old World—exlude Rift Lakes and Victorian Basin	Open New World, limit 3	Open Tanganyika, limit 3
Sept. 4	Frontosa	Open Old World, exclude Malawi, Tang.	Corys and other Callichthyids
Oct. 2	Malawi "Haps"	Apistos	Fish Photography
Nov. 6	Female cichlids, limit 3	Telmatochromis, Chalinochromis	Loaches and Botias
Dec. 4	Tanganyikan "Lamps"—exclude Shell-dwellers	Julidochromis	Open Malawi, limit 3

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OCA BOWL SHOW

Listed below is information about the monthly meeting Bowl Show. The Bowl Show is your opportunity to show off your fish. Each month different categories of Cichlids and Catfish will be judged. Points will be given and prizes will be awarded. All members are welcome to participate. This is great practice for our yearly Extravaganza show! See Scott Myers, at a meeting for more information.

Here are the details for this year's Bowl Show:

>Cash prizes: $15 for 1st place in each class and an additional $15 for Best of Show.

>Points: In each class, 10 for 1st, 7 for 2nd, 5 for 3rd, 1 for any non-placing entry, and an additional 5 for Best of Show.

>Best of Show will be awarded only if there are 2 or more show entries.

>Grand Prize for 2018: 75 gallon aquarium or cash equivalent.

>Size restrictions refer to full-grown adult sizes as reported by Cichlid Room Companion or Planet Catfish.

March Classes:

Mbuna
Catfish,exclude Mochokids, Loricariids, Callichthyids
Fish Photography

2018 BOWL SHOW CLASSES

February 2
Victoria Basin
Loricariids (Pleco types) 6” or under
South Americans 6” and under, exclude Angels, Apistos

March 2
Mbuna
Catfish,exclude Mochokids, Loricariids, Callichthyids
Fish Photography

April 6
Tanganyikan Shell Dwellers
Angels
Callichthyids (Cory types)

May 4
Loricariids (Pleco types) over 6”
Peacocks
Open New World

June1
Central Americans over 6”
Tanganyikan Mouthbrooders, exclude Frontosa
Frontosa

August 3
Mochokids (Synodontis types)
Discus, Uaru
Old World, exclude Rift Lakes, Vic Basin

September 7
Apistos
Open Tanganyika
Malawi Haps

October 5
Central Americans 6” and under
Open Catfish
Female cichlids

November 2
South Americans over 6”
Open Old World, exclude Malawi, Tanganyika
Loaches and Botias

December 7
Julidichromis, Telmatachromis, Chalinochromis
Tanganyikan Lamps, exclude Shell Dwellers
Open Malawi

All classes are for cichlids, unless otherwise specified.