

the Outlet



Summer 2015

A FEW WORDS FROM THE PRESIDENT

President's Message

By Mark Fisher



Recently, myself and a few others from our facilities team went and visited a zoo to check out one of their new exhibits. First impressions were very good. The aesthetics were excellent, the visitor engagement opportunities were plentiful and creative, and the exhibits were well thought out and provided quality environments for the animal

collection. When it was time to go behind the scenes, I was blown away....not in a good way. The holding facilities had become an obvious victim of the dreaded Value Engineering axe. Where there should have been composites or plastics, there was low grade plywood. Where there should have been stainless steel, or at a minimum hot dipped galvanized steel, there was painted steel. And where there should have been masonry or concrete, there was tin metal siding. When I asked our tour guide about the material selections, the response was "it is all that the budget allowed".

Unfortunately, I see this all the time. Zoos and aquariums spend tens of millions of dollars on new exhibits and when you take a closer look, the material and product selections that are made for the behind the scenes areas are just a step up from duct tape and liquid nail. An exaggeration for sure, but many of you know exactly what I am saying. So what to do about this predicament? Here is what we have done in Cincinnati and what I have learned from others in avoiding this common pitfall.

First and foremost is laying out a life cycle cost analysis for the powers that be. Too many times, the sole focus is the initial capital outlay. Are you making a strategic, data based case for the long term impact on the institutions bottom line if cheap materials are used? Does the CFO know that if those cheap heat pumps are put in they will have to be replaced less than fifteen years from now? The only person to make this case is you. Not the construction manager, or the architect, or the mechanical engineer. They design it and build it and then walk away. You are the one that has to live with it. Contact your peers within the AZFA and or your local vendors and sub-contractors to help you with the numbers.

Secondly, I am positive that we all have behind the scenes areas that we are not proud of. Here in Cincinnati we are in the process of redoing the last remnants of animal holding left over from "the good old days". It had crumbling concrete, peeling paint, rusted hardware, bad lighting; the works. To get the attention needed we brought the director and several others to holding and showed the details, that this simply was not acceptable, and that we needed to figure out a way to free up capital dollars to clean it up. That is exactly what we are doing. The side benefit of getting your C-suite folks involved with a tour like this is to use it as a reminder for them so you can justify the premium to go to all stainless steel in the next new exhibit. It is a powerful tool to be able to show that the institution can either pay 50% more on the stainless now and be done with it forever (literally) or be frugal by installing a lesser product and have additional capital outlay in fifteen years. Most folks are visual so go and show them what Value Engineering actually looks like several years down the road.

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Presidents Message cont.

The last point I would like to make about this relates to employee morale. A big morale killer in zoos and aquariums is having facilities that are not adequate for the animal collection. For decades, our zoos and aquariums have been infatuated with having the biggest, most diverse animal collection around. Many times, that mentality had little concern with whether or not we actually had proper facilities to manage the collection. It is the duty of the facilities professionals in our industry to demand excellence. The tide has turned on this issue in a good way and more frequently facilities teams are being called on to be a big part of the conversation to make sure that new projects are up to modern standards and that existing facilities are upgraded to meet those same standards. Having excellent facilities is what every employee wants and when they get them, their outlook and perspective improves.

If you are not currently involved with these discussions at your institution, my hope is that you will interject yourself. Your voice carries further than you think. In my experience, if you do your research ahead of time and present yourself and your ideas in a compassionate and pragmatic tone, you will be heard. One of the round table discussions at the conference in Chicago will be "Getting to Yes With Project Approval". There will be a few folks discussing their approaches and the lessons they learned on how to cut through the noise and make sure that your perspective is front and center. A new topic for an ancient dilemma.

I hope to see you in October, and remember, Value Engineering is actually a four letter word disguised as a fancy phrase trying to convince you that you are getting similar value for a cheaper price. When you hear it, be cautious my friends.

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2015 Fall Conference

**By John Kanzia,
Site Selection Committee Chair, Conference Host**

We are down to the last few months before the fall conference here in Chicago. I have been working hard with our vendors, our committees, and my colleagues at the John G. Shedd Aquarium and Lincoln Park Zoo to put together what is sure to be one heck of a conference.

You can register online any time between now and October 10th but in order to take advantage of the early bird discounted rate, make sure to register before August 31st. We will be staying at the Chicago Marriott Northwest in Hoffman Estates, and the room rate is only \$125 per night. This particular venue was selected because we will be able to locate our vendors in the ballroom around us. These conferences would not happen without the generous support of our vendors, so make sure you stop by every booth, talk to them, and thank them for their support.

Bob Wengel is arranging a pre-conference golf outing at Cog Hill Golf & Country Club in Lemont, IL on Sunday October 11th. We are limited to sixteen golfers, so be sure to register early if

you would like to participate. Later that day we will be taking buses from the hotel to the John G. Shedd Aquarium for pre-conference tours and the icebreaker. Monday and Tuesday we will be at the hotel for our business meeting, elections, and some great sessions, workshops, and roundtable discussions. Wednesday, we will be busing out to the Brookfield Zoo for zoo day, which will be full of behind the scenes tours and workshops; or you can just take a map and enjoy a day at the zoo. Thursday, is the post-conference tour at the Lincoln Park Zoo.

Special thanks to Grace Rettig, Secretary and Conference Committee Chair, Sam Peterson, Administrator and Programs & Education Committee Chair, Michael Patera, Treasurer, and Rodney Fuller, Past President and Website Co-Administrator.

Chicago, October 11th - 15th.....Be There!

2015 Fall Conference

By Grace Rettig, Secretary and Conference Committee Chair

I know October feels eons away since we are all feeling the heat of our busy seasons, but it will be here before you know it. John Kanzia from the Brookfield Zoo along with the Conference Committee has been working hard for months to be able to bring you the best AZFA Conference yet. I have been attending the conferences since 2011 and every year I am amazed how it gets better and better. Although not in "the city" the Chicago conference will give us all a chance to see three amazing facilities at one conference!

The John G. Shedd Aquarium, the Brookfield Zoo and Lincoln Park Zoo are three great reasons to attend. Other reasons are networking with folks that have the same challenges as you (many of which may actually have some answers to your questions); informative educational sessions featuring anything from water quality, to "Getting to Yes With Project Approval", to everything green, vendors that may have exactly what you need right there, awesome food and drink, a

bomb photo contest, and certifications! There is a cutoff date for hotel reservations if you want the special rate so what are you waiting for? If you know you are going, get registered. If you are not sure, why would you not go? If you have any questions on the upcoming conference please contact me at 513-559-7795 grace.rettig@cincinnatiatizoo.org or John "the conference man" Kanzia at johnkanzia@czs.org. I am looking forward to seeing old friends and making some new ones in Chicago. See you there!

2016 Conference Host Needed

By John Kanzia, Site Selection Committee Chair

As of this writing, we have not received a commitment for a 2016 conference host. We had conversations with potential host applicants at the conference last fall in Evansville, but unfortunately those talks and follow-up correspondence have not materialized into formal applications. If you are interested in applying to host the 2016 conference, the application is available online from the AZFA main page. You will find the Site Selection page under the Committees header. We are also taking applications for a 2017 conference host.

In the event that we do not receive any applications, the Site Selection Committee will recommend a city to the AZFA Board of Directors and build the conference out from there. Preferably the city would be near one or two zoos and/or aquariums that we have not seen yet so we can set up pre- and post-conference tours and a zoo/aquarium day.

Worried about hosting a conference? While it is a lot of work, the AZFA has got your back! There are a number of committees (Site Selection, Conference, Fundraising, Programs & Education, Publications & Website, just to name a few) in place to help you every step of the way. If you have any questions or would like more information about hosting, please feel free to contact me (john.kanzia@czs.org or 708-688-8514). I am hosting the fall conference this year and can answer any questions you might have.

Clark Waldram Fund

By Allmon Forrester, Conservation Committee Chair

We are closing in on the deadline for applications to be reviewed for our 2015 Annual Conference. The deadline for applications has been extended to August 15th so if you could take a moment to remind folks at your organization to get them in as soon as possible that would be great. If applications are received after that we will hang on to them for the next go around in early 2016. The next deadline is January 1st to be considered at the mid-year meeting.

One of the requirements of recipients of a Clark Waldram Fund grant is to provide progress reports and a final report. Below you will find a final report from Josh Ennen, an Aquatic Conservation Biologist with the Tennessee Aquarium Conservation Institute. A cool thing in his report is that the equipment that you helped fund will help them perform additional research in the future. A gift that keeps on giving.



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Competitive Interactions Between Headwater Stream Salamanders and Fish

By Josh Ennen, Aquatic Conservation Biologist

I would like to thank the AZFA for supporting the Tennessee Aquarium Conservation Institute and my research on salamander conservation. The original proposal focused on mudpuppy conservation; however, I could not obtain a scientific research permit for mudpuppies from Tennessee. The permitting officials were concerned about disrupting hellbender habitat; therefore, I completely changed the experiment to investigate competitive interactions between headwater stream salamanders and fish.

Importance

Many salamander species are found in or near headwater streams in the Southern Appalachian Mountains. Salamanders play a vital role in the health of the ecosystem within these waters where they serve as both predators and prey. They also bridge the gap between the terrestrial and aquatic communities because of their two-part life cycle. Amazingly, salamander populations within headwater streams can reach extraordinary densities that are unparalleled by any other vertebrate, including fish. Headwater streams are vital to the Appalachian region, comprising 70% of the total available stream length. However, we have a poor understanding of basic salamander ecology in these habitats. This is surprising since these streams are vital for salamanders as well as maintaining high water quality far downstream.



Competition among species can have profound effects on regulating distribution and abundance of a species through time and space; however, in the case of salamanders, most studies have only focused on how predation upon larvae salamanders regulates the distribution and abundance of salamanders. In this study, I investigated the direction and strength of competition between salamanders and fish to elucidate a potential driving force shaping salamander distribution in the Southern Appalachian Mountains.

Experimental Design

The experiment ran for 52 days from December 2014 to February 2015. I had three experimental treatment groups: first, one blackbelly salamander with one creek chub; second, one blackbelly salamander with one Coosa darter; and third, a control with two blackbelly salamanders. Each experimental treatment was replicated five times for a total of fifteen groups. I used live mayfly nymphs (*Ephemera simulans*) to feed the fish and salamanders every ten days. I weighed and measured each salamander before and after the experiment, and calculated delta scaled mass. This mass measurement was used to compare focal salamanders in each fish treatment to salamanders in the control group.





Recirculation Systems and Salamanders

Results

On average, salamanders displayed a positive body condition in the darters (0.09 ± 1.10 g) and control (0.47 ± 0.20 g) treatments, but lost mass in the creek chub (-0.25 ± 0.51 g) treatment. I found no significant difference between these, the control, and darter treatments; however, there was a significant difference between the control and creek chubs treatment. This finding provides evidence suggesting an asymmetric competitive interaction between those two species. This asymmetric competitive interaction could explain the low co-occurrence between black-bellied salamanders and creek chubs in headwater and second order streams in the Southern Appalachians Region.

Use of Funds

The funds were spent directly to build sixteen recirculation systems using fiberglass enclosures already at the Tennessee Aquarium. I purchased plastic sumps (Sterilite Corp., Townsend, MA, 68.14 L plastic vessel), window screening (1.44 mm x 1.58 mm mesh size), 3mm binder, large river rocks (mean width at widest = 0.30 m), PVC pipe, flexible PVV tubing, aquarium pumps (Taam, Rio Plus 1700 Aquarium Pumps), and loc-line. I plan on utilizing these systems for additional experiments

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The Green Scene

Going Green and Saving Green: Operating Efficiently & Conserving Resources By Wanda Evans, Sustainability Coordinator at the Saint Louis Zoo

Saint Louis Zoo is a world renowned conservation organization and beloved destination to over three million visitors annually. The Zoo's mission to protect wild things in wild places throughout the world is also expressed in the design, construction, operation, and maintenance here at home on our 100+ acre campus. In addition to the important research and conservation work we do around the world, Saint Louis Zoo has emerged as a sustainability leader in the region by substantially reducing energy, water, resource use, and waste bound for landfill. Extensive educational programming to visitors and employees alike has promoted personal sustainability actions that encourage a deep connection with nature and the animals with whom we share the planet.

Saint Louis Zoo has been strategically moving towards more efficient operations since 2006, with the completion of our first energy audit and energy master plan. A revised energy and water reduction audit was completed in 2012, further identifying energy and water reduction projects to help the Zoo get to our reduction goals. Since 2009, the Zoo has implemented numerous energy efficiency measures including lighting retrofits, HVAC upgrades, and energy management system controls which in combination has saved \$1,608,112 in costs! Our lighting retrofits alone save the Zoo over 2,376,098 kWh per year and \$182,484 in annual electricity costs. HVAC setbacks tied to our Building Automation System help reduce energy use from heating and cooling spaces that are unoccupied.

Occupancy sensors and daylight sensors have been installed in many offices to reduce running time of lights. We are currently installing electric vehicle charging units that will provide four preferred parking spaces in our south lot for guests with electric vehicles. In 2013, the Zoo installed a 31 kW photovoltaic array on the Safari Gift Shop. The 90 panel system is expected to save the Zoo \$4,500 in net average annual energy costs, while providing a range of environmental benefits including preventing the emission of 745 tons of carbon dioxide and other hazardous pollutants. We also installed a geothermal system with an HVAC renovation at our veterinary hospital providing renewable energy to condition that building.

As a result of the 2012 energy audit, point-of-use water meters have been purchased for all buildings and exhibits on the campus. Over 80 water meters are currently being installed to better monitor water use in each facility and animal exhibit in order to identify opportunities to reduce consumption. The meters are being tied into the Zoo-wide energy management system for easy monitoring. The data is accessible online making trending easy for facilities management.

Life support systems have saved the Zoo millions of gallons, with just one exhibit, the new Sea Lion Sound, saving 11 million gallons per year compared to the old habitat. Life support systems have since been installed in our new polar bear, Andean bear and sun bear habitats replacing the old exhibits which all had dump and fill pools. Rain sensors have been installed on our irrigation systems to turn water off when not needed and we have made leak detection and elimination a priority. Low-flow water fixtures have been installed throughout the campus. Many water features have been put on recirculating systems and pumps have been put on timers to turn off during off peak hours. Four rain barrels have been installed in highly visible areas to educate our visitors about capturing and using rainwater. Our horticulture department uses the rain barrels to water nearby potted plants.

Each year, the Zoo diverts over 50% on average of waste from the landfill by recycling and composting, with over 2 million pounds of landscape trimmings, manure, and animal bedding going to Saint Louis Composting. Since March 2013, an additional 100,000 pounds of food waste and compostable service ware has been diverted from landfill with the introduction of a composting program in three of our largest restaurants.

In 2013, the Zoo started construction on an expansion site across highway 40, the former property of Forest Park Hospital. This 13-acre site in the Dogtown neighborhood provided an unprecedented opportunity for Zoo expansion in an otherwise fixed boundary within Forest Park. While the existing buildings could not be reused for Zoo purposes, over 90% of the construction waste from abatement, remediation, and demolition was diverted. Construction waste was largely reused on site preventing use of raw material for backfill while avoiding greenhouse gas emissions related to transportation. Planning is currently underway to determine what might be built on the expansion site and sustainability is a key component driving the design.

We are excited for the next chapter in the Saint Louis Zoo's history. Stay tuned for more green innovation stories in the future.



Rain Barrel



Photovoltaic Array

AZFA New Members

Professional

Richard Adams, LSS Life Support Technician,
Ripley's Aquarium of Canada

Tom Buckner, Maintenance Manager,
Oklahoma City Zoo & Botanical Garden

Steve Cadwell, Facilities,
Potter Park Zoo

Tyler Cortner, Manager of Facilities,
Houston Zoo

Gerrett Morris, Horticulture Supervisor,
Rolling Hills Zoo

Jason Platt, Facilities Crew Leader,
Zoo New England

Eric Quamen, Manager of Facilities Systems,
Monterey Bay Aquarium

Russell Vaughn, Facilities Maintenance HVAC Technician,
Akron Zoological Park

Andrew Verhey, Life Support Manager,
Indianapolis Zoological Society

Jerry Vincent, Facilities Worker - General Maintenance,
NEW Zoo & Adventure Park

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Randy, Kent, General Manager,
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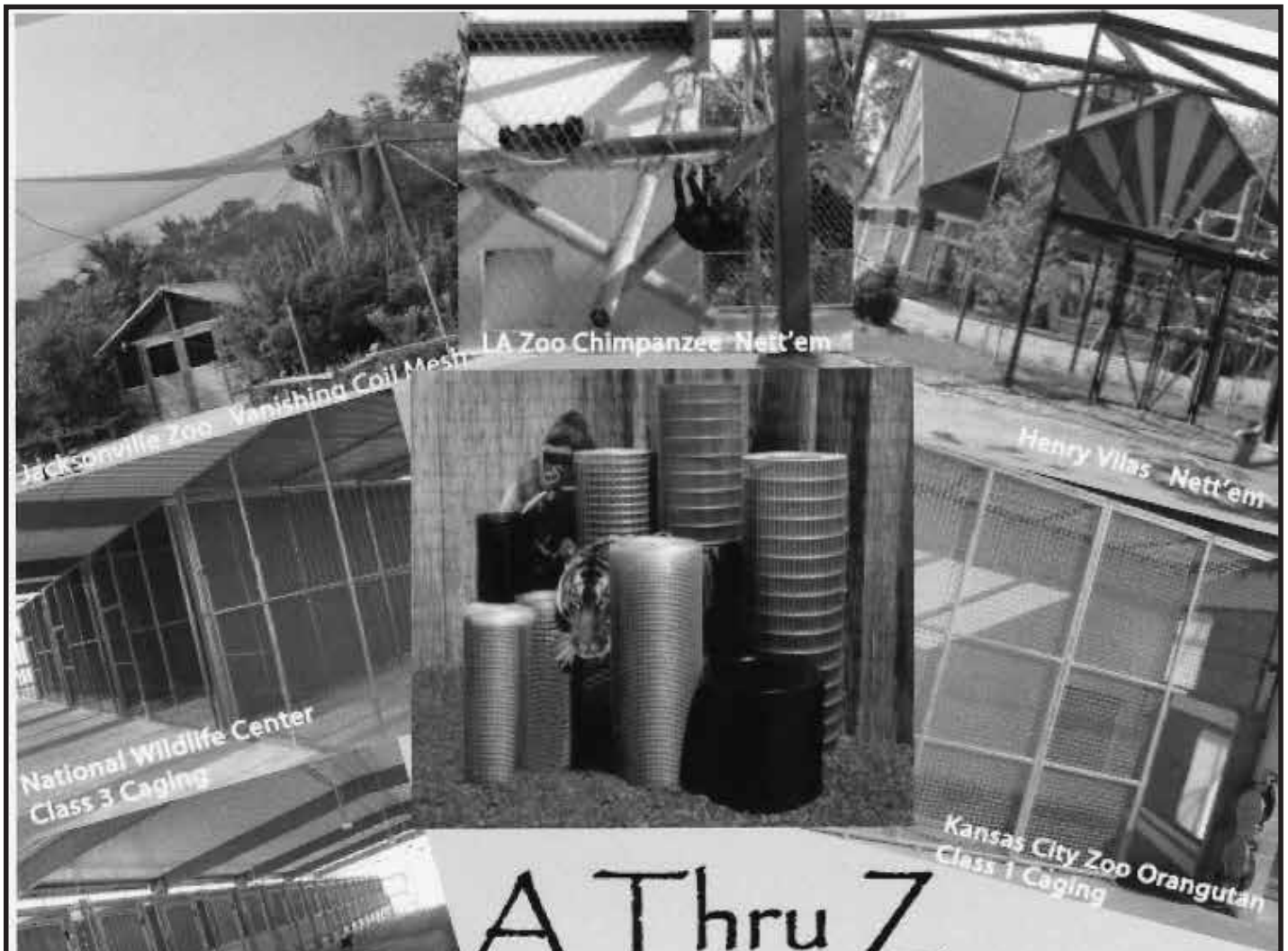
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Calendar

Deadline for articles for the next newsletter: October 21st

Annual Conference: Chicago, IL October 11th - 15th

Publication Schedule

Summer Issue - July

Fall Issue - October

Winter Issue - January

Spring Issue - April

www.azfa.org

Don't forget to check out the AZFA website for updates and news.

Website Administrator

John Kanzia, john.kanzia@czs.org

Membership

Membership Administrator

Samanthe Peterson, speterson@sazoom.com

Editor's Note

By Jennifer Golden

I'm sure many facilities have recently celebrated the opening of a new exhibit. Whether this was an in-house remodel of an existing exhibit space or a large scale new construction project our members want to hear about it.

Share your experience and spotlight the new addition to your zoo or aquarium. Please send your articles with pictures to jgolden@zoonewengland.com.

If you are a Commercial Member interested in advertising rates please contact me at jgolden@zoonewengland.com.