

AGENDA

Potter Park Zoo Advisory Board

1301 S. Pennsylvania Avenue ~ Lansing, MI 48912

Telephone: 517.342.2776; Fax: 517.316.3894

The Board information packet is available on-line by going to www.potterparkzoo.org, selecting "About," clicking on "Zoo Advisory Board" and clicking "October 12, 2022".

POTTER PARK ZOO ADVISORY BOARD MEETING

Wednesday, October 12, 2022

6:00 PM

1. Call to Order
2. Approval of the August 10, 2022 and September 14, 2022 Meeting Minutes.
3. Limited Public Comment – *Limited to 3 minutes with no discussion*
4. Late Items/Deletions/Consent Items
5. Action Items
6. Director's Report
 - a. Finance Report – Cynthia Wagner
 - b. Admission Report- Cynthia Wagner
 - c. Director's Report – Cynthia Wagner
7. New Business
 - a. Ticket Distribution Report
 - b. AZA Conservation and Science
8. Old Business
 - a. Capital Campaign Update – Amy Morris
9. Board Comments
10. Limited Public Comment - *Limited to 3 minutes with no discussion*
11. Upcoming Meeting
 - a. Zoo Advisory Board Meeting November 9, 2022 at 6:00 PM
12. Adjournment

**MINUTES – INGHAM COUNTY
POTTER PARK ZOO ADVISORY BOARD**

**1301 S. Pennsylvania Avenue,
Lansing, MI, August 10, 2022**

BOARD MEMBERS

PRESENT: Vice Chair Kyle Binkley Jack Kottwitz, Dr. Richard Snider, Julie Pingston, Emily Linden, and Mary Leys

ALSO PRESENT: Cynthia Wagner, Zoo Director, Amy Morris, Executive Director Potter Park Zoological Society

ABSENT: Chair Cheryl Bergman, Commissioner Tennis, Commissioner Trubac, Molly Korn, and Mary Hauser

CALL TO ORDER: Meeting called to order at 6:01 p.m.

MINUTES: Moved by Julie Pingston and supported by Mary Leys to approve the minutes of the July 13, 2022 meeting as revised, **Yes-6; No-0; MOTION CARRIED.**

LIMITED PUBLIC COMMENT

None

LATE ITEMS/DELETIONS/CONSENT ITEMS

None

ACTION ITEMS

Agreement with Wolverine Engineers and Surveyors

Director Wagner stated Wolverine was the third lowest bid and of the three lowest bids they had the most experience with projects similar to size and scope of the zoo asphalt project. They were also the only vendor of the three lowest bids to clearly define a timeline that met zoo operational needs and identify an arborist with extensive oak wilt knowledge to consult on the project. Oak wilt is of significant concern to the zoo and all steps to prevent it must be taken.

Moved by Julie Pingston and supported by Dr. Snider to support the Resolution to enter in an agreement with Wolverine Engineers and Surveyors for asphalt architectural and engineering services at Potter Park Zoo, **Yes-6; No-0; MOTION CARRIED.**

FINANCIAL REPORTS

Zoo Financial Report

Director Wagner reported from the budget/actual report the unrestricted fund balance is over \$2 million due to CIP funds not having been expended yet and also revenue outpacing expenditures in the summer which will even out in the fall. She stated non-controllable expenses had increased significantly compared to 2021 due to IT support costs,

and several months of 2021 utilities being paid in 2022 due to change in the BWL billing process.

Admission Report

Director Wagner reported admission was up for July compared to 2019, but down from 2021. She stated YTD admission was up compared to 2019 and 2021, however if school group numbers are removed from the admission totals then YTD admission is down from 2021 at the same time. She stated general admission is down 9% without school groups, but with school groups totals are up. Parking is up compared to 2021, but still down from 2019.

ZOO DIRECTOR REPORT

Major Elements Reported by Director Wagner:

BWL is working to pull a well in the park causing the large area to be closed off near the playground. There is no estimated time for completion.

An emergency water line repair was necessary at the Tiger Den to restore running water to the public bathrooms and maintenance shop.

The veterinary technician position is vacant and posted.

Stephanie Pentiuk accepted the position of Conservation Engagement Lead and starts August 14.

The AZA conference in August 29 through September 1. Many Society staff and Director Wagner will be attending.

Employee injury reports are down 46% through July 27 compared to 2021.

Elsie public library was added as a new Zoo In Your Neighborhood partner.

The baby lemur, two bintlets and red panda cub are all doing well. A public naming contest will be held for the bintlets soon.

Several exhibits are being changed and remodeled in the reptile house.

Dr. Ronan was asked to help co-author the updated version of the Guidelines for Zoo and Aquarium Veterinary Medical Programs and Veterinary Hospital.

Pat Fountain was elected to the International Rhino Keeper Association Board of Directors starting September 1, 2022.

Several exhibit changes are being discussed in animal management including closing the moat exhibits, phasing out ponies and wolves and bringing in new species like okapi.

NEW BUSINESS

Presentation – AIRS Rhino Study

Kelly Chimpen Mac Leod and Pat Fountain presented information about the black rhino research study Potter Park Zoo is participating in with over 30 other AZA facilities. The zookeepers trained the rhinos so measurements could be taken to monitor their health in relation to their movement. Doppsee is wearing an ankle bracelet for a week which functions similar to a Fitbit tracking her movements.

Dr. Snider asked if the study includes research about the relationship between the keeper and the rhino. Ms. Leod stated that would be part of a future study and was not directly being studied as part of this project.

OLD BUSINESS

Capital Campaign Update and External Relations Subcommittee Update

Potter Park Zoological Society Executive Director reported that several major commitments are in process and the total raised is close to the 4.5-million-dollar goal.

BOARD COMMENTS

Mary Leys stated she would not be able to attend the September board meeting.

Dr. Snider requested an update on the conservation plan progress at the next board meeting.

LIMITED PUBLIC COMMENT

None

ADJOURNMENT

Meeting ended at 6:47 p.m.

MINUTES – INGHAM COUNTY
POTTER PARK ZOO ADVISORY BOARD
1301 S. Pennsylvania Avenue,
Lansing, MI, September 14, 2022

BOARD MEMBERS

PRESENT: Chair Cheryl Bergman, Jack Kottwitz, Commissioner Trubac, Dr. Richard Snider, and Emily Linden

ALSO PRESENT: Cynthia Wagner, Zoo Director, Amy Morris, Executive Director Potter Park Zoological Society

ABSENT: Vice Chair Kyle Binkley, Commissioner Tennis, Julie Pingston, Molly Korn, Mary Leys and Mary Hauser

CALL TO ORDER: Meeting called to order at 6:03 p.m.

MINUTES: Quorum not present

LIMITED PUBLIC COMMENT

None

LATE ITEMS/DELETIONS/CONSENT ITEMS

None

ACTION ITEMS

Account Clerk Conversion from .5 FTE to 1.0 FTE – Resolution

Director Wagner explained the current part time position will become vacant soon and that there is a need to expand the position to full time. The management and coordination of the point of sale system needs to be added to the duties of this position to allow the guest experience supervisor to spend sufficient time managing merchandise, sales, and employees for the Savannah Grill and AniMall.

The board supported the updated job description and the conversion from part-time to full-time.

FINANCIAL REPORTS

Zoo Financial Report

Director Wagner reported the fund balance is at \$2,292,351 in unrestricted funds. This is the time of year when revenue is exceeding expenses so the fund balance will go down by the end of 2022. She noted that supplies are over budget, however \$100,000 is in gift shop and concessions expenses and both of those areas are also exceeding revenue.

Admission and Parking Report

Director Wagner reported parking was down for the month of August, but still up YTD compared to 2021. She also stated that annual parking pass rates would be increased in 2023, staying in line with Ingham County Parks.

Director Wagner reported admissions was down in August compared to 2021, however most of that decrease came from children under 3 which are non-paying guests so admission revenue has not been greatly impacted. Admissions YTD is up for 2022 compared to 2021. She also stated that several admission rates will increase in 2023.

ZOO DIRECTOR REPORT

Major Elements Reported by Director Wagner:

Fall hours have started.

The Health Department annual inspection at concessions yielded no violations.

The Community Mental Health event had 1034 guests attend.

Bowling for Rhinos had a very successful event that raised \$7,000 for rhino conservation.

The bintlets have made their exhibit debut outside and are doing well.

Dr. Allison Dianis has started as a joint fellow between Binder Park Zoo and Potter Park Zoo.

Sarah Foote received a five-year recognition letter for her work on the Blanding's Turtle Program.

NEW BUSINESS

AZA Annual Conference

Director Wagner reported some of the main topics from the AZA Director's meeting and conference:

- The AZA Board of Directors will be working to connect small and medium size zoos to the organization, create middle management level professional development opportunities, onboard and mentor new directors, and evaluate the AZA SAFE website.
- When referring to an animal's state of being, animal well-being will now be used rather than animal welfare.
- The top 10 accreditation safety citations:
 - Hazardous Materials Training
 - Occupational Health Program
 - Zoonotic Disease Training
 - Dangerous Animal Procedures
 - Exhibit Service Areas
 - Perimeter Fence
 - Exhibit Security
 - Public Barriers
 - Drill
 - Risk Management Plan

OLD BUSINESS

Capital Campaign Update

Director Amy Morris presented a capital campaign. Total funds raised in hard commitments and funds in hand is around 3.8M. There are two foundations that the zoo is waiting to hear back from that have the potential to put the total over the 4.5M goal.

BOARD COMMENTS

Dr. Jack Kottwitz stated he would not be able to attend the October board meeting.

LIMITED PUBLIC COMMENT

None

ADJOURNMENT

Meeting ended at 7:01 p.m.

POTTER PARK ZOO
MONTHLY PARKING REPORT
FOR MONTH AND YTD ENDING SEPTEMBER 30, 2022

ADMISSION TYPE	CURRENT MONTH				YEAR-TO-DATE			
	2019 COUNT	2021 COUNT	2022 COUNT	BETTER (WORSE) THAN PY	2019 COUNT	2021 COUNT	2022 COUNT	BETTER (WORSE) THAN PY
ANNUAL RESIDENT PASS	1	0	1	1	279	91	216	125
ANNUAL NON-RESIDENT PASS	0	0	0	0	31	10	26	16
PPZ MEMBER DELUXE/PREMIUM	241	338	315	(23)	2,097	2,479	2,702	223
DAILY RESIDENT PARKING	2,121	1,988	1,914	(74)	17,064	15,070	16,512	1,442
DAILY NON-RESIDENT PARKING	1,953	2,709	1,793	(916)	20,127	18,714	17,869	(845)
EVENTS	248	72	91	19	3,474	1,061	1,954	893
ANNUAL PASS RESIDENT ENTRY	0	0	223	223	0	218	1,690	1,472
ANNUAL PASS NON-RESIDENT ENTRY	0	0	6	6	0	6	33	27
WAIVED ANNUAL PASS	0	0	1	1	0	5	44	39
OTHER (non-paying)	830	309	26	(283)	11,454	1,755	874	(881)
TOTAL	5,394	5,416	4,370	(1,046)	54,526	39,409	41,920	2,511

ADMISSION TYPE	AMOUNT
ANNUAL RESIDENT PASS	\$32.00
ANNUAL NON-RESIDENT PASS	\$42.00
RESIDENT DAILY PASS	\$3.00
NON-RESIDENT DAILY PASS	\$5.00

POTTER PARK ZOO
MONTHLY ATTENDANCE REPORT
FOR MONTH AND YTD SEPTEMBER 30, 2022

ADMISSION TYPE	CURRENT MONTH						YEAR-TO-DATE			
	2019	2021	2022 Gate	2022 Online	2022 Total	BETTER (WORSE) THAN PY	2019 COUNT	2021 COUNT	2022 COUNT	BETTER (WORSE) THAN PY
GENERAL										
CHILD RESIDENT	1,471	2,217	1,073	16	1,089	(1,128)	22,277	12,682	10,673	(2,009)
CHILD NON-RESIDENT	0	1,402	1,164	98	1,262	(140)	0	17,604	14,007	(3,597)
CHILDREN - UNDER 3	1,109	1,198	876	40	916	(282)	11,699	15,406	7,608	(7,798)
ADULT RESIDENT	2,020	2,448	2,568	34	2,602	154	21,697	22,271	23,049	778
ADULT NON-RESIDENT	1,643	2,399	2,241	170	2,411	12	17,390	26,569	25,553	(1,016)
SENIOR/MILITARY RESIDENT	303	451	365	4	369	(82)	2,547	2,692	3,021	329
SENIOR/MILITARY NON-RESIDENT	331	611	470	16	486	(125)	3,449	4,514	4,073	(441)
GROUPS	192	221	896	0	896	675	9,517	4,133	18,138	14,005
SUBTOTAL	7,069	10,947	9,653	378	10,031	(916)	88,576	105,871	106,122	251
MEMBERSHIPS/PROGRAMS										
PPZ MEMBERS/RECIPROCAL	1,623	1,982	2,055	21	2,076	94	25,097	16,903	17,409	506
SOCIETY PROGRAMMING/EVENTS	810	635	2,184	0	2,184	1,549	25,490	10,444	15,188	4,744
MONDAY PROGRAM	369	248	169	0	169	(79)	7,539	3,082	3,929	847
ZIYN	0	268	322	0	322	54	0	2,459	4,025	1,566
OTHER (non-paying)	3083	490	72	0	72	(418)	4,597	1,941	1,562	(379)
SUBTOTAL	5,885	3,623	4,802	21	4,823	1,200	62,723	34,829	42,113	7,284
GRAND TOTAL	12,954	14,570	14,455	399	14,854	284	151,299	140,700	148,235	7,535

ADMISSION TYPE	DESCRIPTION
CHILDREN RESIDENT	Children, Ingham County ages 3-16 (\$5 April - October, \$3 November-March)
CHILDREN NON-RESIDENT	Children, Out of Ingham County ages 3-16 (\$5 April - October, \$3 November-March)
CHILDREN - UNDER 3	All Children, any county under age 3 (Free)
ADULT RESIDENT	Adult of Ingham County (\$7 April 1 - Oct. 31, \$4 November-March)
ADULT NON-RESIDENT	Adult Out of Ingham County (\$13 April 1 - Oct. 31, \$4 November-March)
SENIOR/MILITARY RESIDENT	Seniors/Military of Ingham County (\$5 April 1 - Oct. 31, \$4 November-March)
SENIOR/MILITARY NON-RESIDENT	Seniors/Military of Ingham County (\$11 April 1 - Oct. 31, \$4 November-March)
PPZ MEMBERS	Visitors holding membership at PPZ - one time payment
SPECIAL EVENTS - PPZ	Admission included in event fee
SPECIAL EVENTS - COUNTY	Admission included in event fee
RECIPROCAL ZOO MEMBERS	Reciprocal Zoo memberships (Discount varies)
RECIPROCAL ZOO MEMBERS (100%)	Reciprocal Zoo Members (Free admission)
GROUPS	20 or more guests paying together (\$1 off per person)
MONDAY PROGRAM	Ingham County and City of Lansing Residents free 9-12 PM on non-holiday Mondays
OTHER (non-paying)	Any coupon related attendee

POTTER PARK ZOO
BALANCE SHEET - PRELIMINARY
AS OF SEPTEMBER 30TH, 2022

ASSETS

CASH	\$	2,560,027
DEPOSITORY CASH		119,952
IMPREST CASH		8,000
TAXES REC - CURRENT LEVY		738,918
TAXES REC - DELINQUENT		20,151
ESTIMATED UNCOLLECTIBLE DELINQUENT TAXES		(18,817)
IFT TAX RECEIVABLE		(15,546)
PROPERTY TAX RECEIVABLE		-
INTEREST RECEIVABLE		2,931
DUE FROM STATE		-
INVENTORY		68,592
PREPAID EXPENSES		0
ACCOUNTS RECEIVABLE - OTHER		80

TOTAL ASSETS	\$	3,484,288
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LIABILITIES

VOUCHERS PAYABLE	-
DUE TO ZOOLOGICAL SOCIETY	116,916
TAX LEVY LIABILITY	23,500
SALES TAX PAYABLE	(1,314)
REFUND NOW	(61)
REFUND APPLY	(634)
ACCRUED PAYROLL	52,552
ACCOUNTS PAYABLE	22,296
DEFERRED REVENUE - PROPERTY TAXES	6,356
DEFERRED REVENUE - DELINQUENT TAXES	6,383

TOTAL LIABILITIES	225,994
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FUND BALANCE

UNSPENDABLE	68,592
UNRESTRICTED FUND BALANCE	3,189,703
	3,258,294

TOTAL LIABILITIES AND FUND BALANCE	\$	3,484,288
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POTTER PARK ZOO
YEAR TO DATE BUDGET/ACTUAL REPORT - PRELIMINARY
FOR 9 MONTHS ENDING SEPTEMBER 30TH, 2022

	2022 BUDGET	SEPTEMBER 2022 YTD ACTUAL	BUDGET REMAINING	% OF BUDGET	SEPTEMBER 2021 YTD ACTUAL
REVENUES					
PROPERTY TAX	\$ 4,150,873	\$ 4,028,401	\$ 122,472	97.05%	\$ 3,230,899
UNALLOCATED PORTION OF TAXES (3 MONTHS)	\$ -	\$ (1,007,100)	\$ -	0.00%	\$ (807,725)
ADMISSIONS	\$ 625,000	\$ 689,845	\$ (64,845)	110.38%	\$ 726,032
CONCESSIONS, GIFT SHOP, VENDING	\$ 510,000	\$ 745,006	\$ (235,006)	146.08%	\$ 699,115
PARKING FEES	\$ 185,000	\$ 149,065	\$ 35,935	80.58%	\$ 139,696
INTERACTIVE SITES	\$ 70,000	\$ 109,173	\$ (39,173)	155.96%	\$ 131,582
INTEREST INCOME	\$ 40,000	\$ 14,452	\$ 25,548	36.13%	\$ 2,208
OTHER REVENUES	\$ (640,586)	\$ 87,545	\$ (728,131)	-13.67%	\$ 80,539
TOTAL REVENUES	\$ 4,940,287	\$ 4,816,386	\$ (883,199)	97.49%	\$ 4,202,348
EXPENDITURES					
PERSONNEL SERVICES					
Salaries & Wages - Full Time	\$ 1,704,351	\$ 1,243,533	\$ 460,818	72.96%	\$ 1,201,744
Salaries & Wages - Seasonal	\$ 565,284	\$ 563,959	\$ 1,325	99.77%	\$ 523,270
Benefits	\$ 885,155	\$ 671,830	\$ 213,325	75.90%	\$ 660,253
Total Personnel Services	\$ 3,154,790	\$ 2,479,322	\$ 675,468	78.59%	\$ 2,385,268
CONTROLLABLE EXPENDITURES					
Supplies	\$ 323,000	\$ 400,944	\$ (77,944)	124.13%	\$ 363,880
Animal Care	\$ 302,000	\$ 215,997	\$ 86,003	71.52%	\$ 219,651
Purchased Services	\$ 1,150,767	\$ 589,780	\$ 560,987	51.25%	\$ 498,625
Utilities - Telephone	\$ 20,125	\$ 14,762	\$ 5,363	73.35%	\$ 14,720
Rentals & Leases	\$ 2,000	\$ 1,693	\$ 307	84.66%	\$ 3,746
Other Expenses	\$ 136,650	\$ 107,752	\$ 28,898	78.85%	\$ 60,810
Total Controllable Expenditures	\$ 1,934,542	\$ 1,330,928	\$ 603,614	68.80%	\$ 1,161,432
NON-CONTROLLABLE EXPENDITURES					
Utilities	\$ 235,000	\$ 204,339	\$ 30,661	86.95%	\$ 143,328
Insurance	\$ 85,000	\$ 87,544	\$ (2,544)	102.99%	\$ 64,309
IT Support Expense	\$ 188,148	\$ 138,173	\$ 49,975	73.44%	\$ 58,345
Other Expenses	\$ 496	\$ 372	\$ 124	75.05%	\$ -
Total Non-Controllable Expenditures	\$ 508,644	\$ 430,428	\$ 78,216	84.62%	\$ 265,982
CAPITAL OUTLAY					
Capital Improvements	\$ (657,689)	\$ 68,889	\$ (726,578)	-10.47%	\$ -
TOTAL EXPENDITURES	\$ 4,940,287	\$ 4,309,568	\$ 630,719	87.23%	\$ 3,812,682
TOTAL CHANGE IN FUND BALANCE	\$ -	\$ 506,819			\$ 389,666
FUND BALANCE AS OF 1/1/22					
NON-SPENDABLE		\$ 68,592			
UNRESTRICTED		\$ 1,593,862			
		<u>\$ 1,662,454</u>			
FUND BALANCE AS OF 9/30/2022		\$ 2,169,273			
FUND BALANCE AS OF 9/30/2022					
UNSPENDABLE		\$ 68,592			
UNRESTRICTED		\$ 2,100,681			
		<u>\$ 2,169,273</u>			



Director's Report October 12, 2022

Staff

Autumn Carpenter has accepted the veterinary technician position and will start full time November 6, 2022.

The zoo will be holding a flu shot clinic October 11 from 9:30-11 a.m. in the Safari room. This is open to all employees and families.

The zoo's emergency response team completed their biannual range day with everyone completing the qualification for handling and shooting a shotgun. The training is led by the Ingham County Sheriff's Department.



Staff will have the opportunity to learn about the need for foster care and adoptive parents in Ingham County on October 11, 2022 from 12-12:30 p.m. Lunch is provided for attendees by the Ennis Center for Children.

Staff injury reports are down 29% YTD compared to 2021.

A fire drill was conducted on 9/26/22.

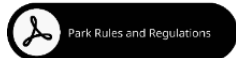
Dan Beachnau and Rick Parker have completed the Instructor First Aid/CPR/AED and Instructor inclusion training, required through the Red Cross to teach classes on site.

Sarah Foote is attending the AZA Registrar conference the week of October 17 and Brian Fisher is attending the Zoo & Aquarium Facilities Association conference. Annie Marcum is attending the American Association of Zoo Keepers (AAZ) annual conference. Professional development opportunities have really started to pick up again.

Guest Services

A huge shout out to our gift shop and concessions team this season! Their hard work at the Savanna Grill, AniMall, and Kiosks led to the sale of 31 souvenir hot cups, 209 souvenir popcorn buckets, and just shy of 1,700 souvenir cold cups!

After a close competition, the team has spoken. Rick the Rhino will be one of two new mascots next season.



The new park and zoo rules and regulations have been approved with the effective date of Oct. 1. They can be accessed on the PPZ website or by scanning this QR-Code. QR-Codes will be posted throughout the zoo and park.



★★★★★ a week ago **NEW**

Haven't been to Potter Park in a few years, we went mid day on a Saturday and it wasn't too busy. Ended up spending the afternoon, complete with a ice cream treat and a trip to the gift shop. It was great! We'll be back next year!

★★★★★ 6 days ago **NEW**

I love this zoo and I really loved the ponies. The areas are cleaner than most zoos and they have a lot of animals. The ponies are so cute and well kept. I also loved the birds.

← Reply 👍 Like

★★★★★ 16 hours ago **NEW**

We love this zoo. The peacocks, bald eagle and chickens are probably my favorites. They take really good care of their animals compared to other zoos we have been to and really give them enough room to sprawl out. A very nice place to hang out for the day.

← Reply 👍 Like

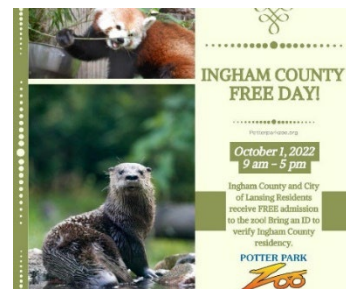


A family that visited PPZ recently has been to over 30 zoos this year alone! They hope to be back soon because they want to participate in an otter meet & greet. The otters were their favorite!

Events

586 Ingham County & City of Lansing residents enjoyed free admission October 1, 2022.

Tailgate with the Animals and College Day were October 2, 2022. Nearly 100 college students came out for the tailgate. We couldn't have done it without the hard work from our incredible keepers, education team, and the volunteers.



Membership

In September, 1,678 members visited the zoo. As fall settles in, visits drop a bit until October when the Fall Zootacular event takes place over 3 weekends.

There were 6,317 total members at the end of September, making up 2896 member households.

Diversity, Equity, Access and Inclusion (DEAI)

A demographic survey has been created and is now available for guests to fill out after they visit our zoo. This feedback will help us as we apply for grants and continue to evaluate our programming.

Zoo in Your Neighborhood

In September, 99 zoo passes were used and over 300 guests visited using a pass. This year has been the best thus far for zoo pass use as we continue to have record breaking numbers.

We have a new ZIYN partner, Wellspring Lutheran Services. They will be providing zoo passes to their families who foster children.

FALCONERS

Over 65 families have registered for this month's FALCONER Fall ZooTacular. Families will experience our Fall ZooTacular but in a sensory friendly environment and without large crowds. It will be held on Friday, Oct 14 from 5:30 pm - 8:00 pm.

Mariah Martinez is working with the IBIO 489 Seminar in Zoo and Aquarium Science class at Michigan State University. She is providing insight into sensory friendly events at zoos and the class is preparing projects that will contribute to a FALCONERS event in 2023

Maintenance

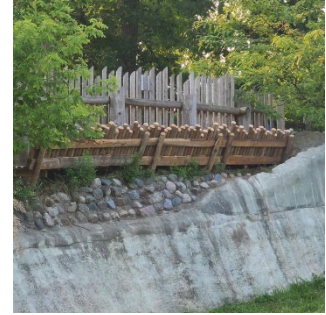
The asphalt project officially started September 27! Surveyors are collecting information that will help formulate the recommendations for the construction RFP.

The field evaluation of the roof on the F/P House was completed September 13. Reports and construction bid documents should be ready in November. Between the bidding process and material lead times, we are anticipating construction to start early next April.

As a safety precaution a kick was added as a secondary barrier to the rhino viewing area to prevent any falls or dropped items into the exhibit.

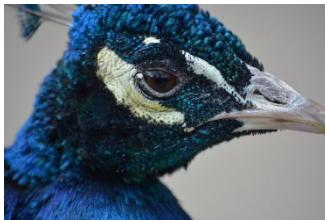


Doug has been working hard to give the lion exhibit viewing area a new coat of paint.



The otter exhibit pond will be winterized the week of October 17 and a few repairs will be completed. The handrail and glass along the bridge that overlooks the otter exhibit stream will also be replaced that week.

Animal Care and Research



Due to the Highly Pathogenic Avian Influenza (HPAI) detected in Ingham County, the animal care team has taken several birds off exhibit until further notice. HPAI is a highly contagious virus that can be spread in various ways from flock to flock, including by wild birds, through contact with infected poultry, fecal matter, equipment, and on the clothing and shoes of caretakers.

Animal Naming Contests raised \$2685.00:

- Bongo - \$545.00
- Binturong - \$700.00
- Red Panda - \$1,440.00

Two penguins have been added to our group, bringing the total to 10.

HPAI has affected the area again including Ingham County. Several of our bird species have been moved inside for their safety.



With temperatures changing some of our animals (birds, porcupine, tortoise, etc.) will be coming inside on cold nights and days.

The Bills and Quills exhibit will transition to a peacock exhibit the fall and winter.

One of the grey kangaroo joeys is leaving for Oglebay Zoo soon. This placement is recommended by the grey kangaroo SSP.

September 12, 2022

To: Sarah Foote

RE: Grant for the Forensic Application of Stable Isotopes and Trace Elements in Determining Turtle Origin

From: Dr. Matthew Chatfield

Please find below our year-end summary report (with 6-month extension). Following this we have provided some photos related to our work with all three species of turtle, along with some anecdotes and less formal information that may be used in zoo promotional materials. We will of course acknowledge the kind support of the Potter Park Zoo Conservation Fund in any upcoming presentations or publications based on work funded by this grant.

Thank you for helping to fund our investigation into the use of stable isotopes and elemental analyses from turtle claw tip samples as a forensic tool for combatting the illegal turtle trade. Our primary goal for the 2021 and 2022 field seasons was to expand our work on sample collection in wood turtles (*Glyptemys insculpta*) to other at risk North American emydine turtles and include spotted turtles (*Clemmys guttata*) and Blanding's turtles (*Emydoidea blandingii*).

Over the past year and a half, we have focused our efforts on building a network and obtaining samples from wood, spotted and Blanding's turtle claw tips from our State colleagues from sites throughout Maine, as well as from biologists at other sites throughout their range. In parallel we sought samples from a variety of zoos and wildlife centers since we seek to differentiate wild-caught (i.e., illegal) elemental and isotopic profiles from those of captive-born (i.e., legal) turtles (see project goals 1 and 2 from our proposal). The Potter Park Zoo Conservation Fund awarded us \$1,500 toward the cost of running samples from spotted and Blanding's turtles at the University of Arkansas Stable Isotope Lab where each sample is analyzed for its isotopic composition by continuous flow methods and trace elements using a laser ablation system.

Project goals:

1. Establish if wild caught turtles can be differentiated from captive raised turtles based on their isotopic profiles.
2. Establish if wild caught turtles can be differentiated from captive raised turtles based on their elemental profiles.
3. Determine the extent to which these profiles are applicable to each species and consistent across species.

Progress to date:

- We developed a network of 30 different organizations, which included researchers and practitioners from government agencies, zoos, rehabilitation centers, and universities. These partners contributed 289 Wood Turtle samples (in addition to the 171 samples from our own study sites), 309 Spotted Turtle samples, and 109 Blanding's Turtle samples. In total, these samples represent over 400 individuals from captive collections and wild populations. Besides funding this important work, we are further grateful to Potter Park Zoo for sending us samples from the wood turtle (n=1), spotted turtles (n=2), and Blanding's turtles (n=2) in your collection.
- All funds awarded by PPZ have been spent out. The final batches of samples from all three species have recently been shipped to the University of Arkansas, and PPZ funds earmarked for running spotted and Blanding's turtles were transferred to the UA Lab account in August of 2022 to cover the cost of their upcoming sample run.
- The first manuscript (based on wood turtle samples only) on the underlying methodology is currently in prep and will be submitted next month to the open access journal *Biology*, Special Issue: Applications of Stable Isotope Analyses in Ecology as an initial proof of concept paper.

Although delays caused by the pandemic, staffing, and insufficient funding have substantially slowed our work, we are very excited by our findings to-date from analyses of wood turtle samples. These findings suggest that, for wood turtles at least, project goals 1 & 2 will be met. Our work over the coming months will focus on verifying these results and presenting them to the larger scientific and conservation communities. Our examination of results across species (project goal 3) should occur in early 2023. We are extremely grateful to the many organizations that have partnered with us in this effort, allowing us to get to this point. There is still a great deal of work to do and funding for this project remains a challenge.

Project photos:

The photos below were taken by our new partners at The Orianne Society. This reptile conservation organization has an ongoing mark-recapture study of spotted turtles in the southern part of their range. They generously sent us 46 samples (representing 23 individuals) from their study population. The first photo was used in an Instagram post enthusiastically announcing their participation in the element study.



One of the coolest things that happens in a collaborative project like this one, with so many organizational partners, is when someone contacts you unsolicited looking for help but also presenting you with an opportunity, such as this one to test nails from a surrendered Blanding's turtle (complements of the John Ball Zoo). While we may not have been able to help them determine origin at the time of the request, samples like these will be an enormous help as test cases for the algorithms we hope to develop.

Hi Cheryl,

This individual is a male of unknown age but was taken from the wild 6 years ago in Michigan. We are doing diagnostic testing and have gotten permission to re-release him pending results. I've clipped his nails and can send if they are useful to you.

Thanks,

Laura



The Element Study Team



Dr. Matthew Chatfield, University of Maine



Dr. Cheryl Frederick, Center for Wildlife Studies



Dr. Jack Hopkins, Center for Wildlife Studies



Derek Yorks, Maine Inland Fisheries and Wildlife

Ticket Distribution - YTD 467

Date Sent	Name/Organization	Contact	Phone Number/ Email	Event	Tax ID#	Number of Passes	Location	Event Date	Date Issued	Pass #'s
5/18/2022	We Walk the Line - The Connor Shea Memorial Fund			2022 We Walk the Line Golf Outing and Silent Auction	87-2908339	4	Brighton, MI	9/30/2022	5/17/2022	22-01 thru 22-04
5/18/2022	Grand Ledge Wrestling Club			Grand Ledge Wrestling Golf Outing	38-3142792	4	Grand Ledge, MI	6/18/2022	5/17/2022	22-05 thru 22-08
5/18/2022	St. Joseph Catholic School			St. Joseph Catholic School and Parish 17th Annual Golf Outing	38-1359737	4	Howell, MI	6/18/2022	5/17/2022	22-09 thru 22-12
5/18/2022	Okemos Public Montessori at Central			Flash Dash	45-0594241	4	Okemos, MI	6/6/2022	5/17/2022	22-13 thru 22-16
5/18/2022	The Ken Dieterman Foundation			6th Annual Ken Dieterman Memorial Outing	83-1991178	4	Comstock Park, MI	7/21/2022	5/17/2022	22-17 thru 22-20
5/18/2022	The Child Advocacy Center of Lapeer County			Cheers for Children	32-0262892	4	Lapeer, MI	6/3/2022	5/17/2022	22-21 thru 22-24
5/18/2022	Delta Center Elementary School			Carnival & Silent Auction	38-6001146	4	Lansing, MI	6/3/2022	5/17/2022	22-25 thru 22-28
5/18/2022	Love Indeed Inc.			Cherry Creek Charity Golf Outing	47-4838914	6	Haslett, MI	6/4/2022	5/17/2022	22-29 thru 22-34
5/18/2022	Highfields			Highfields 42nd Annual Golf Outing Silent Auction	38-6099698	4	Onondaga, MI	6/6/2022	5/17/2022	22-35 thru 22-38
5/18/2022	Cristo Rey Community Center			Golf Fore Giving	38-1779460	6	Lansing, MI	6/23/2022	5/17/2022	22-39 thru 22-44
5/18/2022	American Cancer Society/Relay For Life			Shiawassee County Relay For Life	13-1788491	4	Corunna, MI	6/25/2022	5/17/2022	22-45 thru 22-48
5/18/2022	Harley Beatty Family supporting Impression 5 Science Center			20th Annual Harley Beatty Charity Golf Outing	23-7200548	4	Holt, MI	7/30/2022	5/17/2022	22-49 thru 22-52

Date Sent	Name/Organization	Contact	Phone Number/ Email	Event	Tax ID#	Number of Passes	Location	Event Date	Date Issued	Pass #'s
5/18/2022	Saline Area Social Service			SASS Annual Fundraiser	23-7134646	6	Saline, MI	7/19/2022	5/17/2022	22-53 thru 22-58
5/18/2022	West Michigan Cancer Center			14th Annual Wendy Hotrum Memorial Golf Outing	38-3061574	4	Kalamazoo, MI	7/9/2022	5/17/2022	22-59 thru 22-62
5/18/2022	National Federation of the Blind of Michigan			National Federation of the Blind of Michigan 1st Annual Golf Outing	51-0136079	6	Lansing, MI	7/23/2022	5/17/2022	22-63 thru 22-68
5/18/2022	YMCA of Greater Flint			YMCA of Greater Flint's Annual Fundraising Gala	38-1358056	6	Flint, MI	8/27/2022	5/17/2022	22-69 thru 22-74
5/18/2022	St. Agnes Church			St. Agnes FunFest	23-7375133	4	Fowlerville, Mi	8/21/2022	5/17/2022	22-75 thru 22-78
5/18/2022	Shiawassee Regional Chamber of Commerce			61st Annual Golf Classic 2022	38-0901196	4	Owosso, MI	9/13/2022	5/17/2022	22-79 thru 22-82
5/18/2022	Lapeer County Health Dept. WIC			Lapeer WIC Annual Breastfeeding Awareness Celebration	38-6005780	4	Lapeer, MI	8/1/2022	5/17/2022	22-83 thru 22-86
5/18/2022	CEI Community Mental Health			Annual Consumer Pinic	38-6337733	6	Lansing, MI	8/5/2022	5/17/2022	22-87 thru 22-92
5/25/2022	Holden House			Outing for Holden House		14	Lansing, MI	6/1/2022	5/24/2022	22-93 thru 22-106
5/25/2022	Greater Lansing Convention & Visitors Bureau			Free Press Prize Package		4	Lansing, MI	6/1/2022	5/24/2022	22-107 thru 22-110
5/25/2022	Ele's Place			Ele's Race 5K	38-2976751	10	Lansing, MI	7/23/2022	5/24/2022	22-111 thru 22-120
5/25/2022	Arts in Motion Studio			Chair Affair	30-0727293	4	Grand Rapids, Mi	11/5/2022	5/24/2022	22-121 thru 22-124
6/7/2022	Greater Lansing Food Bank			Empty Plate 2023		6	Bath, MI	5/12/2023	6/7/2022	22-125 thru 22-130
6/7/2022	Dansville Schools Education Foundation			Annual Dinner and Auction	38-6001598	6	Dansville, Mi	11/12/2022	6/7/2022	22-131 thru 22-136

Date Sent	Name/Organization	Contact	Phone Number/ Email	Event	Tax ID#	Number of Passes	Location	Event Date	Date Issued	Pass #'s
6/7/2022	The Champion Project			4th Annual Gala Fundraiser	83-2328325	4	Holt, Mi	10/7/2022	6/7/2022	22-137 thru 22-140
6/7/2022	MSU Department of Pediatrics and Human Development			6th Annual Autism Conference	38-6005984	4	East Lansing, MI	7/28/2022	6/7/2022	22-141 thru 22-144
06/07/2022	Caring About Kids, Inc. (CAK)			6th Annual MDHHS-OIG Charity Golf Scramble	38-3177440	6	Lansing, MI	8/5/2022	6/7/2022	22-145 thru 22-150
6/7/2022	Heart to Heart Hospice Foundation			Silent Auction	37-1541320	4	Flint, MI	9/7/2022	6/7/2022	22-151 thru 22-154
6/7/2022	Special Days Camp			Rob Donaldson Memorial Bowl	38-2369894	4	Dimondale, MI	6/25/2022	6/7/2022	22-155 thru 22-158
6/7/2022	Circle Rocking S Children's Farm			Blessing of the Animals	38-3346106	6	Free Soil, MI	9/18/2022	6/7/2022	22-159 thru 22-164
6/21/2022	The Fledge			The Fledge Science Fair	83-1612275	4	Lansing, MI	8/27/2022	6/21/2022	22-165 thru 22-168
6/21/2022	Anchor Bay School District Music Program			Anchor Bay Legacy	46-0519345	4	New Baltimore, MI	11/12/2022	6/21/2022	22-169 thru 22-172
6/21/2022	Most Holy Trinity School			Most Holy Trinity School Annual Dinner Raffle and Fundraiser	38-1359522	4	Fowler, MI	11/5/2022	6/21/2022	22-173 thru 22-176
6/21/2022	Cascades Humane Society			Unleash Your Heart Gala	38-1781494	4	Jackson, Mi	9/16/2022	6/21/2022	22-177 thru 22-180
6/21/2022	United Way of Gratiot & Isabella Counties			Golf United	39-1957175	6	Mt. Pleasant, MI	8/4/2022	6/21/2022	22-181 thru 22-186
6/28/2022	Kids N Stuff Children's Museum			Bids 'N' Stuff Annual Auction: Roaring 20s	38-3580496	4	Albion, MI	9/10/2022	6/28/2022	22-187 thru 22-190
6/28/2022	Sacred Heart School			Sacred Heart Annual Golf Outing		6	Hudson, MI	7/9/2022	6/28/2022	22-191 thru 22-196
7/5/2022	East Jackson Band Boosters			East Jackson Band Booster Cash Bash	47-4390196	4	Jackson, Mi	8/6/2022	7/5/2022	22-197 thru 22-200

Date Sent	Name/Organization	Contact	Phone Number/ Email	Event	Tax ID#	Number of Passes	Location	Event Date	Date Issued	Pass #'s
7/12/2022	Mother and Earth Baby Boutique and Toy Shoppe			Mother and Earth Family Festival		35	Lansing, MI	8/6/2022	7/12/2022	22-201 thru 22-235
7/12/2022	Child and Family Charities			Red Nose Ruckus	38-2118108	4	Lansing, MI	12/2/2022	7/12/2022	22-236 thru 22- 239(received email they did not receive the passes addition 4 sent per Cindy's OK 22-266 thru 22- 269(07/26/2022)
7/12/2022	MALS Foundation			MALS Foundation 2nd Annual Golf Scramble for Melanoma	87-1801845	4	Waterford, MI	10/8/2022	7/12/2022	22-240 thru 22-243
7/12/2022	Ingham Intermediate School District			2022 Ingham Academy Garden Gala	38-173-7701	6	Lansing, MI	7/28/2022	7/12/2022	22-244 thru 22-249
7/19/2022	Hope Lutheran Church			Mission Dinner Auction	38-1807760	4	Warren, MI	9/25/2022	7/19/2022	22-250 thru 22-253
7/19/2022	Kentwood Parks and Recreation			The Vibe - Silent Auction		4	Kentwood, MI	9/8/2022	7/19/2022	22-254 thru 22-257
7/26/2022	Dawn Farm			Dawn Farm Jamboree	23-7318277	4	Ypsilanti, MI	9/11/2022	7/26/2022	22-258 thru 22-261
7/26/2022	Congregation Shaarey Zedek Sisterhood			Shaarey Zedek Sisterhood First Annual Online Auction	38-1678821	4	East Lansing, MI	10/1/2022	7/26/2022	22-262 thru 22-265
8/2/2022	Williamston Area Senior Center			30th Birthday Celebration Dinner & Silent Auction	38-3201966	4	Williamston, MI	10/6/2022	8/2/2022	22-266 thru 22-269
8/16/2022	Outreach Christian Church			Silent Auction	45-0492010	4	Lake Odessa, MI	9/25/2022	8/16/2022	22-270 thru 22-273
8/16/2022	Alzheimer's Association			Walk to End Alz	13-3039601	6	Okemos, MI	10/2/2022	8/16/2022	22-274 thru 22-279
8/16/2022	Garfield Cooperative Preschool			Holiday Concert and Silent Auction	38-2087707	4	Livonia, MI	12/9/2022	8/16/2022	22-280 thru 22-283
8/16/2022	Dairy Discovery			Dairy Discovery Auction	82-3766300	4	Alto, MI	10/18/2022	8/16/2022	22-284 thru 22-287

Date Sent	Name/Organization	Contact	Phone Number/ Email	Event	Tax ID#	Number of Passes	Location	Event Date	Date Issued	Pass #'s
8/16/2022	Council for the Prevention of Child Abuse and Neglect			CPCAN's Spooktacular Family Fun Run and 5K	38-2331754	4	Jackson, Mi	10/15/2022	8/16/2022	22-288 thru 22-291
8/16/2022	St. Matthew Lutheran School			Annual Benefit Auction	38-6008169	4	Westland, MI	10/1/2022	8/16/2022	22-292 thru 22-295
8/16/2022	Michigan Historic Preservation Network			2022 Fall Benefit Auction	38-2878515	4	Lansing, MI	10/7/2022	8/16/2022	22-296 thru 22-299
8/23/2022	Forster Woods Adult Day Center			10 Year Anniversary Benefit Dinner & Silent Auction	45-4844675	4	Williamston, Mi	9/23/2022	8/23/2022	22-300 thru 22-303
8/23/2022	Howell High School AFJROTC			7th Annual Howell AFJROTC Golf Outing	51-0148294	4	Howell, MI	9/17/2022	8/23/2022	22-304 thru 22-307
8/23/2022	Small Talk CAC			Auction for Advocacy: A Night to End Child Abuse	32-0441060	4	Lansing, MI	9/15/2022	8/23/2022	22-308 thru 22-311
8/23/2022	Rainbow Homes			Rainbow Homes Silent Auction	38-3457782	4	Holt, Mi	4/22/2023	8/23/2022	22-312 thru 22-315
8/23/2022	Three Fires Elementary PTO			Fundraiser playground equipment	45-3575903	4	Howell, MI	4/21/2023	8/23/2022	22-316 thru 22-319
9/11/2022	St Louis Center			Fall Harvest Fest To Benefit St. Louis Center	38-6038121	4	Chelsea, MI	9/25/2022	9/11/2022	22-320 thru 22-323
9/11/2022	Todd Martin Youth Leadership			2022 Champions Weekend	81-0583592	4	Lansing, MI	10/14/2022	9/11/2022	22-324 thru 22-327
9/11/2022	Randolph Elementary School			November Calender Raffle	38-2376317	4	Livona, MI	11/1/2022	9/11/2022	22-328 thru 22-331
9/11/2022	Pregnancy Help Clinic			Life is Good Gala	38-2091946	4	Brighton, MI	11/5/2022	9/11/2022	22-332 thru 22-335
9/11/2022	Five Points of Hope			A Night to Remember	33-1215395	4	Milford, MI	11/4/2022	9/11/2022	22-336 thru 22-339
9/13/2022	Delivering Hope for Kids			Strikes for Tykes Bowling Fundraiser	47-2286729	4	Fenton, MI	11/11/2022	9/13/2022	22-340 thru 22-343

Date Sent	Name/Organization	Contact	Phone Number/ Email	Event	Tax ID#	Number of Passes	Location	Event Date	Date Issued	Pass #'s
9/13/2022	The Arc Livingston			29th Annual Holiday Fashion Show	38-1981175	4	Brighton, MI	11/17/2022	9/13/2022	22-344 thru 22-347
9/13/2022	National Kidney Foundation of Michigan			Kidney Ball 2022	38-1559941	6	Ann Arbor, MI	11/19/2022	9/13/2022	22-348 thru 22-353
9/13/2022	Okemos High School Drama Boosters			Raffle Calender	81-4707492	4	Okemos, MI	2/25/2023	9/13/2022	22-354 thru 22-357
9/20/2022	Bark Nation			Unchained Raffle	46-1987120	4	Ferndale, MI	12/17/2022	9/20/2022	22-358 thru 22-361
9/20/2022	St. Mary Catholic School, Pinckney -PTC			Fall Festival Glow Party Trivia Night	38-1359738	4	Pinckney, MI	09/24/22,10/07/22	9/20/2022	22-362 thru 22-365
9/20/2022	Renaissance Players			Silent Auction		4	Novi, MI	10/29/2022	9/20/2022	22-366 thru 22-369
9/20/2022	Concord PTO			Fall Festival & Silent Auction	27-0798278	4	Concord, MI	10/29/2022	9/20/2022	22-370 thru 22-373
9/20/2022	Hawkins Elementary School PTO			Hawkins Elementary School Color Run	93-1466256	4	Brighton, MI	9/28/2022	9/20/2022	22-374 thru 22-377
9/20/2022	Motherly Intercession			Annual Silent Auction	38-3571422	4	Flint, MI	11/12/2022	9/20/2022	22-378 thru 22-381
9/27/2022	Manistee Catholic Central School			HARVEST	38-1719100	4	South Manistee, MI	11/5/2022	9/27/2022	22-382 thru 22-385
9/27/2022	DeWitt Elementary Parent Teacher Association			Denim & Diamonds	38-2618924	4	DeWitt, MI	11/5/2022	9/27/2022	22-386 thru 22-389
9/27/2022	Red Cedar Family Council			Fall Carnival Fundraiser	87-3309105	4	East Lansing, MI	10/21/2022	9/27/2022	22-390 thru 22-393
9/27/2022	American Cancer Society			Relay for Life - Live Purse Auction	13-1788491	4	Manistee, MI	11/5/2022	9/27/2022	22-394 thru 22-397
9/27/2022	Cristo Rey Community Center			Healthy Families Event		48	Lansing, MI	9/28/2022	9/27/2022	22-398 thru 22-445
10/4/2022	Eaton Rapids Choral Boosters			Greyhound Cabaret 2022 Silent Auction	38-3565997	4	Eaton Rapids, MI	10/22/2022	10/4/2022	22-446 thru 22-449
10/4/2022	EVE Inc			An EVEing Out	38-2211520	4	Lansing, MI	10/26/2022	10/4/2022	22-450 thru 22-453
10/4/2022	Tri-County Office on Aging			37th Annual Dinner & Auction		6	Lansing, MI	11/16/2022	10/4/2022	22-454 thru 22-459

Date Sent	Name/Organization	Contact	Phone Number/ Email	Event	Tax ID#	Number of Passes	Location	Event Date	Date Issued	Pass #'s
10/4/2022	Cornerstone Christian School			Cornerstone Christian School Trunk or Treat Community Event	38-2841147	4	Brighton, MI	10/29/2022	10/4/2022	22-460 thru 22-463
10/4/2022	Answer Center for Women			Answer Center for Women Silent Auction	38-2573870	4	Burton, MI	11/4/2022	10/4/2022	22-464 thru 22-467

TOTAL TICKETS DISTRIBUTED YTD

467

2021 Annual Report on Conservation and Science

HIGHLIGHTS



**ASSOCIATION
OF ZOOS &
AQUARIUMS**

The Association of Zoos and Aquariums and its member institutions envision a world where, as a result of their work, all people respect, value, and conserve wildlife and wild places.

The 2021 Annual Report on Conservation and Science *Highlights* publication celebrates the cumulative effort of AZA-accredited zoos and aquariums and certified related facilities in the following areas:

- field conservation
- education programming
- green (sustainable) business practices
- mission-focused research

This publication underscores what the AZA community accomplishes together.

Visit AZA's website to learn about what each member facility is doing individually.

www.aza.org/annual-report-on-conservation-and-science

CONTENTS

- 1 field conservation
- 5 education programming
- 8 green (sustainable) business practices
- 11 mission-focused research

field conservation

**\$216.9
MILLION**
SPENT ON FIELD
CONSERVATION

**\$25.3
MILLION**
SPENT ON SAFE
SPECIES



117 COUNTRIES

45%
of projects
in the U.S.

Projects most frequently
occurred in the United
States, Kenya, Indonesia,
South Africa, and Canada.

54%
of projects
outside the U.S.



954

**SPECIES AND
SUBSPECIES
BENEFITED**

225 = **184** + **41**
listed under U.S. Endangered Species Act Endangered Threatened

More than **2,900** project submissions



230 FACILITIES REPORTED

220 accredited zoos and aquariums
10 certified related facilities



**MORE THAN
960
PARTNERS
IN CONSERVATION**

Field Conservation

Association of Zoos and Aquariums-accredited and certified related facilities engaged in conservation that directly impacts animals and habitats in the wild.

More than 900 species, subspecies, and species groups benefited from both species-specific and habitat-focused conservation projects. The International Union for Conservation of Nature (IUCN) Red List of Threatened Species™ indicates that 120 of these species and subspecies are critically endangered and 127 are endangered. An additional five species are listed as extinct in the wild by the IUCN, including the Guam kingfisher, Kihansi spray toad, Partula snail, Scimitar-horned oryx, and Wyoming toad.

Species-specific projects focused on:

- » Mammals – 49%
- » Birds – 17%
- » Reptiles – 17%
- » Amphibians – 6%
- » Invertebrates – 7%
- » Fishes – 4%
- » Flora – <1%

Most Frequently Targeted Species

MAMMALS

Lion
Cheetah
African elephant
Tiger
Giraffe

BIRDS

African penguin
Whooping crane
African white-backed vulture
California condor, grey-crowned crane, and Humboldt penguin (tied)

REPTILES

Green turtle
Loggerhead turtle
Leatherback turtle
Kemp's ridley turtle
Komodo dragon

AMPHIBIANS

Puerto Rican crested toad
Panamanian golden frog
Eastern hellbender
Mountain yellow-legged frog and Wyoming toad (tied)

INVERTEBRATES

Monarch butterfly
Eastern oyster and elkhorn coral (tied)
American burying beetle, Atlantic horseshoe crab, and staghorn coral (tied)

FISHES

Sand tiger shark
Lake sturgeon
White shark and hammerhead shark (tied)
Manta ray and smalltooth shark (tied)

Multi-species Conservation

AZA members supported conservation organizations or participated in multi-species or taxon-wide field conservation projects, in addition to species-specific efforts. The most frequently targeted species groups were:

- » Sea turtles
- » Elephants
- » Butterflies
- » Freshwater turtles
- » Frogs
- » Corals
- » Rhinoceroses
- » Tortoises (terrestrial turtles)
- » Salamanders
- » Bats

Helping Governments Meet Their Mandates

AZA members collaborated on conservation with each other and other organizations. Of the more than 960 partners in conservation, 106 were government entities around the world. The largest number of federal collaborations occurred in the United States with the Fish and Wildlife Service, Forest Service, National Park Service, National Oceanic and Atmospheric Administration, and Geological Survey. Government collaborations were identified in 17 countries, 38 U.S. states, and 18 U.S. counties.



SAFE: Saving Animals From Extinction



AZA SAFE: Saving Animals From Extinction creates opportunities for AZA members to collaborate for greater conservation impact. Two new SAFE species programs, African painted dog and chinchilla, were added in 2021, bringing the total number of SAFE species programs to 30.

SAFE species programs create plans that guide the AZA community's cooperative implementation of, and support for, existing recovery and action plans for species conservation. In 2021, SAFE American turtle, Andean highland flamingo, Asian hornbill, coral, and shark and ray finalized new plans.

Members reported spending more than \$25 million in 2021 to save these animals from extinction:

- | | |
|--------------------------------------|---|
| » African lion: \$811,000 | » Coral: \$5,039,000 |
| » African painted dog: \$472,000 | » Eastern indigo snake: \$184,000 |
| » African penguin: \$297,000 | » Giraffe: \$1,024,000 |
| » African vulture: \$228,000 | » Gorilla: \$1,484,000 |
| » American turtle: \$917,000 | » Jaguar: \$357,000 |
| » American red wolf: \$334,000 | » North American monarch: \$387,000 |
| » Andean highland flamingo: \$47,000 | » North American songbird: \$2,618,000 |
| » Andean bear: \$290,000 | » Orangutan: \$538,000 |
| » Asian elephant: \$356,000 | » Radiated tortoise: \$93,000 |
| » Asian hornbill: \$57,000 | » Sea turtle: \$4,567,000 |
| » Black rhinoceros: \$606,000 | » Shark and ray: \$1,702,000 |
| » Black-footed ferret: \$563,000 | » Tree kangaroos of Papua New Guinea: \$701,000 |
| » Cheetah: \$389,000 | » Vaquita: \$48,000 |
| » Chimpanzee: \$481,000 | » Western pond turtle: \$287,000 |
| » Chinchilla: \$10,000 | » Whooping crane: \$415,000 |

Download the 2021 *SAFE Annual Report*, learn more, and join a SAFE species program at: www.aza.org/aza-safe.

What Did AZA Zoos and Aquariums Do?

Field conservation projects worked directly with animals, their habitats, and the people living with or impacting the targeted animals. The majority of field conservation projects in 2021 focused on:

- » Population biology/monitoring
- » Reintroduction
- » Habitat protection
- » Conservation/environmental education
- » Rescue, rehabilitation, and/or sanctuary
- » Community participation
- » Awareness
- » Assurance populations
- » Conservation biology
- » Habitat assessment/monitoring



“We provide dynamic guest experiences that connect people to animals and nature while providing excellent animal care and welfare and modeling sustainable behavior. This labor of love is to ensure animals thrive in their range habitats. Animals need us to galvanize our audiences toward conservation actions. They also need us to bring our expertise in animal care, welfare, research, education, and communication to field conservation tables to strategize and help where it is most impactful, not just where there is an internal passion. It is exciting to think we could have native habitats or ecosystems with healthy populations of species across taxa because collectively we worked together strategically with field conservationists to have the greatest impact on saving animals from extinction.”

*Dr. Jo-Elle Mogerman
Director-WildCare Park
Saint Louis Zoo
Chair, AZA's Wildlife Conservation Committee*

education programming

3,016

**TOTAL EDUCATION
PROGRAMS REPORTED**



424 programs were on hold
due to the pandemic

55+ MILLION REACHED

29%

of those reached by education
programming engaged with programs
and resources presented online
including virtual field trips, social
media live streams, online courses,
and virtual curriculum resources.



2,350+

FTE educators employed by
AZA-accredited facilities
supported by more than

**27,781 EDUCATION
VOLUNTEERS**

contributing more than
**1,650,858 HOURS
OF SERVICE**



209 FACILITIES REPORTED

**TOP 5 “HOT TOPICS”
INCLUDED IN PROGRAMS**



Connecting to nature



Habitat loss



Climate change/ocean acidification



Human-wildlife coexistence



Sustainable living

Evaluating Impact

AZA-accredited facilities design programs to meet the needs of their participants, push forward their organizational mission, and drive conservation action. Assessing and evaluating programs is critical to understanding how effective these programs are and what participants are taking away from their experience.

- » 87% of reporting facilities assessed programs for participant satisfaction
- » 69% of reporting facilities assessed programs for change in knowledge/skills
- » 64% of reporting facilities assessed programs for change in attitude/feelings
- » 42% of reporting facilities assessed programs for change in behavior

Connecting to Nature

An experience at a zoo or the aquarium can be an access point to connect with animals and the natural world while in a familiar and safe environment, increasing confidence and comfort with spending time in nature. Through online, hybrid, and in-person programs, AZA-accredited zoos and aquariums are gateways through which millions of people learn about and explore the natural world. AZA members connect people to nature and support them in spending more time enjoying the natural world through play, community science, and conservation action.

- » 209 facilities reported more than 1,832 education programs that include content about connecting to nature, reaching more than 36 million.



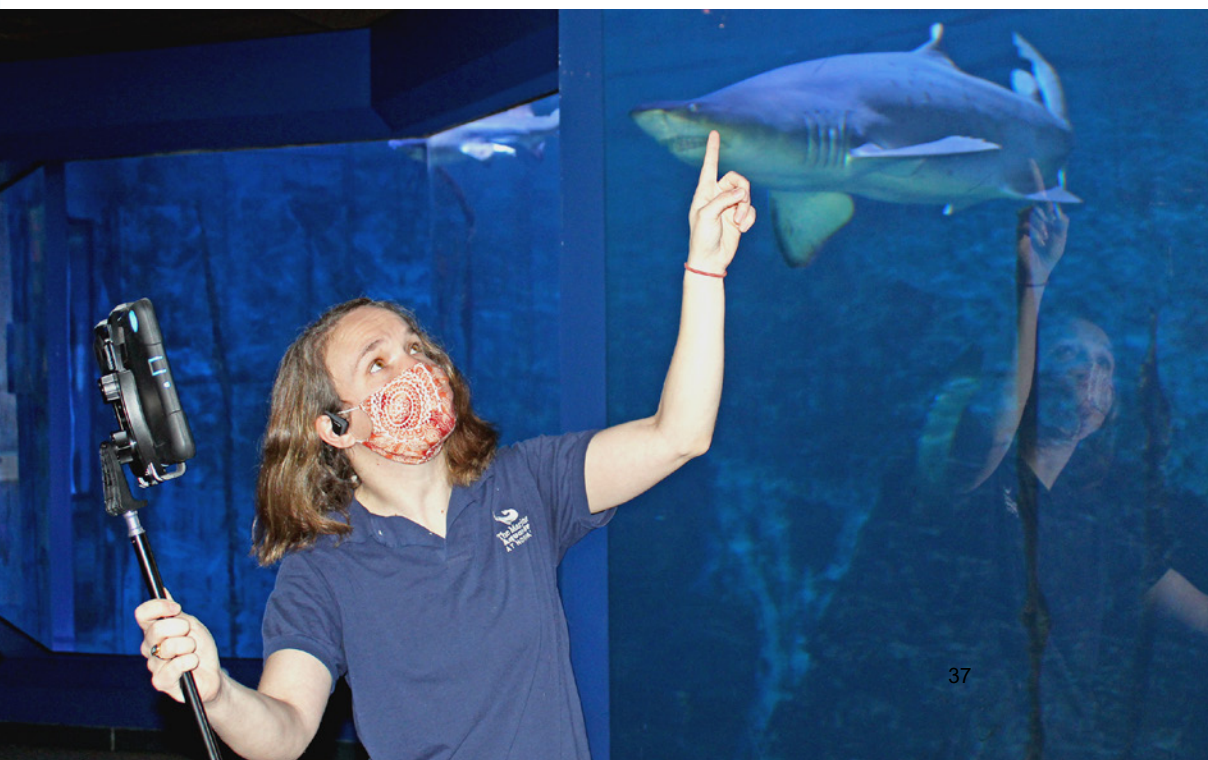
“With students, teachers, and families facing unprecedented challenges, we knew immediately the Aquarium could play a role in engaging and educating homebound students. Within two weeks of our local schools closing in March 2020, we launched a suite of live, instructor-led virtual programs. What we never expected was the response: that in little more than a year we would interact with more than 38,000 people in 44 states and 12 foreign countries. We delivered virtual programs in English, Spanish, and American Sign Language. Through technology, we brought our audiences behind-the-scenes, on the water, and to local natural areas. We taught people of all ages to use data gathering apps and encouraged them to participate in community science—a wonderful activity consistent with social distancing. Throughout it all, our virtual programs demonstrated that the motivating power of wild animals and the mission of aquariums and zoos transcend time and space, leading us to think about our audience—and engagement—in new ways.”

*Tom Naiman
Vice President - Education
The Maritime Aquarium at Norwalk
2021 Top Honors Recipient of AZA's Education Award*

Educating Through a Pandemic

As AZA zoos and aquariums continue to bounce back from closures and changes in response to the COVID-19 pandemic, members continue to face challenges but are also adapting in creative ways to engage the public and support teachers, students, and families. Many facilities continued offering virtual programs as well as in-person and hybrid education programs.

- » 424 (12%) of the 3,440 total education programs reported remained on hold due to the pandemic in 2021.
- » Education staffing numbers remained similar overall to 2020 staffing numbers with an average of 13 full-time equivalent education staff per facility in both years. This is down from an average of 18 in 2019.
- » More than 16 million program participants were reached virtually in 2021.
- » The total number of volunteer hours increased from 901,164 hours in 2020 to 1,650,858 hours of service in 2021.



green (sustainable) business practices

Percent of respondents that documented
organizational resource use:



70
ENERGY



59
WATER



49
FUEL



42
WASTE



161 FACILITIES RESPONDED

46

FACILITIES REPORTED HAVING
A DEDICATED LINE ITEM IN THE
BUDGET FOR GREEN PRACTICES



74

facilities purchased renewable
energy or generated it on-site

192.61

FTE staff dedicated
to coordinating green
business practices at
97 FACILITIES



53%

SOURCED LOCAL FOOD
OR GREW IT ON-SITE



Recycling and composting
were the most frequently
reported green practices

A Community of Practice Conserving Natural Resources

Natural resource conservation and sustainability (green) practices are required elements of AZA's conservation-related accreditation standards, and AZA-accredited zoos and aquariums and certified related facilities develop and implement an array of innovative strategies to meet their green goals. Under the leadership of the Green Scientific Advisory Group, the AZA community actively mentors and challenges one another in this field.

The mission of the Green SAG is to lead the AZA community in reducing human impact on natural resources and wildlife through sustainable business operations. The Green SAG is guided by its 2019–2022 *Action Plan* which reflects a vision of operational sustainability embedded in the culture and implemented through the strategic plan of every AZA facility. In 2021, the Green SAG facilitated panels and hosted webinars on the importance of AZA organizations embedding sustainability into their daily operations by establishing institution-wide cultures of accountability to implement their vision for a sustainable future.

Become a part of this community of practice by joining the “Green/Sustainable Operations” community on the AZA Network, exploring resources like the *Green Guides*, and reading and sharing your stories in *Green Tales* in AZA's monthly member magazine, *Connect*. Learn more at: www.aza.org/green-practices.

Renewable Power

In 2021, 74 facilities reported generating renewable energy on-site or purchasing it for their business operations. Twenty-four AZA-accredited facilities reported the amount of renewable energy generated or purchased, totaling over 82.3 million kilowatt hours (kWh)—enough to power more than 7,000 homes for a year.

Waste Not

Waste management includes proactively minimizing the amount of waste that would be generated, recycling and composting, and sending waste to landfill. Sixty-eight facilities reported recycling more than 60,700 tons of waste, while 60 facilities reported composting more than 24,700 tons of materials.





“We are honored to have received the 2021 Green Award from AZA. Our success comes from a deliberate conservation focus combined with open and regular accountability. Change didn’t happen overnight but was prioritized through an effective Energy and Sustainability Master Plan. Through goal setting and around resource conservation, our organization realized significant impacts.

“Additionally, we encouraged accountability through open communication with the public, an active Green Team, and our partnership with the Verdis Group that included regular meetings with and involvement of the senior staff of the Zoo. Looking forward, we are working to improve our impact through the development of climate action and conservation strategic plans.”

*Dennis Schnurbusch II
Senior Vice President of Operations and COO
Omaha's Henry Doorly Zoo & Aquarium®
2021 Top Honors Recipient of AZA's Green Award*

Eat Local

In the 2008 Food, Conservation, and Energy Act, the U.S. Congress defined a “locally or regionally produced agricultural food product” as having traveled less than 400 miles from its origin or within the state in which it is produced. Eighty-five AZA facilities reported sourcing local food or growing it on-site. Forty-six facilities quantified the amount of local food as 11.4 million pounds.

Third-party Verification

Independent organizations confirm the green practices at AZA facilities. Thirty-eight facilities reported having certified wildlife habitat on-site, 17 facilities reported buildings that are LEED-certified by the U.S. Green Building Council, and ten were Dine Green-certified by the Green Restaurant Association. Additionally, facilities reported receiving state, city, or local green travel, hospitality, or green business-related certifications in seven U.S. states (California, Colorado, North Carolina, Tennessee, Virginia, Washington, and Wisconsin) and Korea.

TOP TEN MOST COMMON GREEN PRACTICES

- » Commingled recycling
- » Composting (on-site or off-site)
- » Local food procurement (on-site animals and/or guests)
- » Waterwise landscaping
- » Building energy management
- » Construction waste diversion/recycling
- » Graywater reuse and/or rainwater harvesting
- » Solar or wind energy generation
- » Green purchasing policy/green procurement
- » Community based sustainability projects

mission-focused research



\$20.9 MILLION
SPENT ON RESEARCH

1,466
PROJECTS
REPORTED



719

peer-reviewed papers,
technical reports, book chapters,
graduate theses, or IUCN Red List
assessments published



164 FACILITIES REPORTED

297.83 FTE staff researchers
at 62 FACILITIES

55% of research
projects
LED BY AZA MEMBER
FACILITIES

648 SPECIES AND
SUBSPECIES
STUDIED

100 
advanced degrees conferred

Science-Based

Contemporary animal management, husbandry, veterinary care, and conservation should be based in science. A commitment to scientific advancement through research studies, both basic and applied, is a trademark of the modern zoological park and aquarium.

Research Focus

Animal care, health, and welfare (48%) and basic biology (19%) were the AZA community's most common areas of research, comprising over two-thirds of the community's research. Other research explored species and habitat conservation (focused primarily on populations in the wild or those being prepared for reintroduction into the wild, 17%), sustainable animal collections (focused primarily on populations held in human care, 11%), and conservation education, engagement, and/or social science (4%).

Species Studied

Nearly half of all research focused on mammals, with chimpanzees, Asian elephants, polar bears, and giraffes being the most frequently studied. Out of the projects focused on specific species or taxa, research focused on:

- » Mammals – 49%
- » Birds – 18%
- » Reptiles – 13%
- » Amphibians – 7%
- » Fishes – 6%
- » Invertebrates – 6%
- » Flora – 1%



"I have been fortunate over my lengthy career to contribute to advances in population management through the development and application of genetics and genomics technologies. While achieving these contributions, I have worked with giants in the field, whose efforts set a tradition of excellence by applying the highest quality of science to fulfill conservation objectives to unite zoo and wild-population management. I am honored to be included with these other recipients of the Devra Kleiman Scientific Advancement Award."

*Dr. Oliver (Ollie) Ryder
Director of Genetics
San Diego Zoo Safari Park
2021 Honoree of AZA's Devra Kleiman Scientific Advancement Award*

Where is Research Done?

Research by staff at AZA-accredited zoos and aquariums took place in 61 countries. Research primarily occurred in the United States, followed by research conducted in Canada, Madagascar, and Uganda. While some research took place in coastal regions, urban areas, wetlands, tropical rainforests, and other habitats, the vast majority of projects were conducted on-grounds at AZA-accredited zoos or aquariums or certified related facilities.

Training New Scientists

AZA member organizations are contributing to bodies of knowledge and training future scientists. In 2021, 100 advanced degrees—including doctorate, veterinary, and master's—were received because the research was done at an AZA member facility; samples and/or data were garnered from a member organization; and/or staff from the AZA organization served as the primary mentor or advisor to the recipient of the research-based advanced degree.

Find Our Findings

In 2021, AZA members published 719 peer-reviewed papers, technical reports, book chapters, and graduate theses, including 337 assessments for the IUCN Red List. After the IUCN Red List, publications most frequently appeared in:

- » *Journal of Zoo and Wildlife Medicine*
- » *PLoS ONE*
- » *Animals*
- » *American Journal of Primatology*
- » *Zoo Biology*
- » *Frontiers in Marine Science*
- » *Journal of Zoo and Aquarium Research*
- » *Journal of Zoological and Botanical Gardens*
- » *Proceedings of the Royal Society B*
- » *Conservation Science and Practice*
- » *Herpetological Review*

KEYWORDS USED TO DESCRIBE
EACH RESEARCH PROJECT

Exhibit Design/Evaluation Conservation Education
Habitat Taxonomy **Reproductive Biology**
Husbandry Habitat Assessment/Monitoring
Non-Native Species Enrichment **Genetics** Animal Training
Animal Health
Biology Reintroduction and Translocation Botany
Assurance Populations Visitor Studies Ethics
Disease/Epidemiology
Protected Area Design Conservation Status Assessment
Population Management Citizen Science
Program Evaluation Habitat Preservation and Restoration
Welfare/Wellness Cognition
Biotic Survey Impact of Human Disturbance Sensory Biology
Nutrition Pharmacology Physiology
Human-Wildlife Conflict **Behavior**
Population Biology Demography Endocrinology
Pathology Life History
Environmental Education



By the close of 2021, the AZA community included 238 accredited zoos and aquariums and 14 certified related facilities. Members' survey response rate varied by topic: 91 percent for field conservation activities, 82 percent for education programming, 64 percent for green business practices, and 65 percent for mission-focused research. AZA is grateful to each member that responded to these surveys.

These *Highlights* were compiled by Gillian Cannataro, program assistant, conservation programs; Shelly Grow, vice president, conservation and science; Kari Hart, director, professional development and education; and Heidi Faris, coordinator, connecting to nature.



Capital Campaign Progress
As of Oct. 4, 2022

Funds Received	\$561,190
Hard Pledges	\$1,241,443
State Budget Appropriation	\$2,000,000
Remaining funds to be raised	\$697,367
Goal	\$4,500,000

Upcoming major donor prospects

Delta Dental
Consumers Energy

PPZS CAPITAL CAMPAIGN PROGRESS - OCT. 4, 2022
GOAL \$4,500,000

