

2018

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Ingham County

# Potter Park Zoo Master Plan

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# Potter Park Zoo

# Master Plan

# Executive Summary

This revised master plan, created by Potter Park Zoo, examines the zoo's existing conditions, organization, and animal residents while incorporating projects that will be a priority in coming years. The emphasis is on maintaining commitment to our mission, inspiring conservation of animals and the natural world, and offering our guests the best possible on site experience is a theme throughout the plan. We want to reach all community members – those who visit the zoo and those who experience our education programming off grounds throughout our region.

As a team, we are dedicated to newly refined goals of exceptional animal welfare, outstanding conservation efforts and financial sustainability. We successfully completed accreditation from the Association of Zoos and Aquariums (AZA) for the sixth time. We are dedicated to exceeding the standards of excellence required by AZA and continuing as an accredited organization.

The plan's animal population section reflects those animals for which we can provide the highest care and welfare standards while also promoting



conservation and educational opportunities for those experiencing the zoo grounds.

We are proud to be a part of this community and will continue to provide a fun, educational and positive experience for each visitor.

Cynthia D. Wagner, Zoo Director  
Amy L. Morris-Hall, Zoological Society  
Executive Director



# Content and Existing Conditions

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This document presents an inventory and analysis of Potter Park Zoo in Lansing, Michigan, describing physical assets, constraints and opportunities, and preparing a foundation upon which programming and master planning are built. The following analysis examines the zoo's ecological and urban context, existing organization, visitor experience, and physical condition of its exhibits, buildings, public spaces and amenities. This analysis contains recommendations for how the identified needs should be met.

## **Ecological Context**

Surrounded by the Great Lakes, Michigan's diverse ecology encompasses several distinct regions. Moving from north to south they are:

1. Northern Lakes and Forests
2. North Central Hardwood Forests
3. Huron and Erie Lake Plains and Southern Michigan Drift Plains

The land varies between sandy dunes, flat drift plains, moraine hills, lake basins and limestone bluffs. An ecological gem in the heartland of America, the diverse plant communities include dune grasslands, prairies, oak savannas, deciduous, evergreen and mosaic forests, wetlands and bogs. The rich landscape is home to cougar, bobcat, black bear, wolf, white-tailed deer, badger, porcupine, beaver and otter. Its lakes, rivers and wetlands house muskellunge, pike, sturgeon, longnose gar and countless other fish, as well as snapping turtles, massasauga rattlesnakes and many other reptiles and amphibians.

## Content and Existing Conditions



The natural area created by the Red Cedar River provides is a valuable amenity and an opportunity for expansion of the zoo's conservation message and educational mission into native Michigan habitat.

The zoo is covered by a dense, mature deciduous tree canopy consisting primarily of white oak, which provides filtered shade during summer months. The tree canopy also exhibits areas of decline and the presence of dead wood which may pose a hazard to people and buildings. A tree planting and management strategy is needed to ensure lost tree replacement and dead wood removal.

The site's understory planting is mostly open with low trees and shrubs massed at exhibits. Minimal understory provides long open views within the zoo. This attribute is pleasing in large exhibits and open lawn areas, but becomes distracting where holding buildings, backs of exhibits and off-exhibit areas become visible.

## Climate

Lansing, Michigan experiences a typical Midwest climate characterized by hot summers and cold winters. Summer high temperatures average around 80 degrees Fahrenheit and winter low temperatures average around 30 degrees Fahrenheit. Precipitation averages 30 inches to 38 inches per year falling as rain during temperate seasons and snow in winter. In summer, the area may receive sudden and intense thunderstorms with heavy rain and lightning.

Based on climate, animal species most appropriate to the zoo will be from temperate and montane regions. Carefully selected species from tropical and arid regions may be housed, but will require protection from the elements.

In order to maintain year-round visitation, special consideration must be given to seasonal guest comfort with shade and conditioned areas available during summer, protection from rain, and opportunities for warming in winter.

# Regional Context

## Potter Park Zoo must distinguish itself with a unique mission, educational purpose and visitor experience.

Located within the city of Lansing, Potter Park Zoo serves a municipal population of approximately 114,000 surrounding the zoo. Ingham, Eaton, Clinton and Shiawassee counties increase the total population served to around 545,000. Lansing draws State Capitol visitors and the zoo is recognized as a primary tourist destination. East Lansing, home to Michigan State University, brings an annually changing population of students and families to the area. The university includes courses of study in zoology, animal science, fisheries and wildlife, veterinary medicine, horticulture, landscape architecture and numerous other programs

providing the zoo with opportunities for project partnering, educational programming, research and information sharing.

Other zoos near the region include the 125-acre Detroit Zoo 79 miles to the east, the 31-acre John Ball Zoo 70 miles to the west, and the 137-acre Binder Park Zoo 56 miles to the southwest. While these three zoos and Potter Park Zoo share similarities in many visitor experience aspects and zoological collections, each must define itself by a unique mission, education purpose and visitor experience.

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## Surroundings

The land surrounding Potter Park Zoo to the north and west is residential. To the north, neighborhoods are separated from the zoo by railroad tracks, and to the west by the admission free portion of Potter Park which provides parking, picnic areas, play equipment, restrooms, an open-air shelter, rolling topography and a mature tree canopy, primarily consisting of white oak. To the east, the Red Cedar River wetlands are separated from the zoo by Aurelius Road. Two valuable assets, the Lansing River Trail and Red Cedar River border the south.

- The Lansing River Trail provides zoo access from surrounding city regions, plus access from the zoo into the natural Red Cedar River habitat.
- The Red Cedar River provides an opportunity for Potter Park Zoo to teach and promote Greater Lansing's riverine ecology.

## History

Established in 1920, Potter Park Zoo occupies approximately 20 acres (excluding parking) within the 85-acre Potter Park. The zoo started with a herd of elk but now houses over 500 species including animals from regions of North and South America, Africa, Asia and Australia.

The zoo has evolved through continuous development with a large number of its buildings and more permanent exhibits dating back to the Works Progress Administration (WPA) projects during the late 1930's. In more recent history, the zoo has constructed a new entry complex, administration building, education facilities and concessions. Many additions and improvements to animal exhibits have also been completed in recent years.

# Content and Existing Conditions

## Exhibits

Potter Park Zoo has a valuable and educational animal population. However, the exhibits in which they are housed vary by date constructed, quality of physical condition and quality of visitor experience. Most older exhibits rely on walled, fenced or caged enclosures with limited natural landscape. These exhibits limit the visitor's and the animal's experience.

Exhibit landscapes need to be extended to include the visitor's physical viewing area to create a sense of habitat immersion. Some exhibits can be viewed from their entire perimeter. The animal's comfort and viewer's experience will be improved if views are limited to only specific locations.

Landscapes should be further developed with topography, vegetation, rockwork, and soils that replicate native habitat of the animals.

Additional interpretative and educational messages should be further developed and communicated in conjunction with each exhibit using up-to-date technology.

Several exhibits include low walls, fencing and vegetation that obstruct viewing for children and guests in wheelchairs. Alternative viewing should be developed while considering guest safety.

## Visitor Experience

Potter Park Zoo offers a park-like experience to visitors. Guests see animals set in an open, tree covered park atmosphere. To communicate mission and educational messages, the master plan must define a calculated experience that will focus on continued development activities.

Potter Park Zoo's mission is clear and concise. It needs to be conveyed to zoo visitors throughout the duration of their visit. A visit to Potter Park Zoo should inspire wildlife conservation, ecological sustainability, and sense of citizenship.



### Circulation

Most guests arrive by private vehicle or school bus. The existing parking lot provides around 500 spaces for visitors and staff. On peak visitation days, lawn areas in Potter Park are used for parking overflow.

Within the zoo, service vehicles travel the north and south perimeter on back-of-house service roads, and occasionally on internal pedestrian paths which are wide enough to accommodate vehicles. Emergency vehicle access is provided on the perimeter service road and internal paths. North and south perimeter roads should be connected to allow continuous back-of-house circulation. Where possible, service drives should be separate from public paths.

### Utilities

While this assessment does not include a full utility evaluation, a few general observations can be made:

- Several areas employ combined stormwater and sanitary sewers. A storm water management strategy should separate the stormwater from the sanitary sewer pipes.
- Most irrigation water is drawn from the Red Cedar River with a few areas around the Discovery Center relying on municipal water. Irrigation design should use natural storm water or recycled grey water.
- A study of the Red Cedar River flood patterns should be conducted to anticipate physical impacts.
- Stormwater management should strive to reduce a dependence on piped systems and employ natural cleansing, surface storage and restoration of natural hydrology.
- The Red Cedar Rivers' hydrology and sustainable stormwater management should be demonstrated and interpreted.

### Site Organization

A map provided to Potter Park Zoo visitors illustrates animal exhibit locations and identifies species. Graphics throughout the zoo educate zoo guests about the continent of origin and conservation status of each animal.

### Visitation

Potter Park Zoo has grown to attract around 185,000 visitors annually. This includes visitors through the gates as well as numerous school and group visits. Approximately 58,500 students are educated by the zoo annually by onsite and offsite outreach. Membership in 2017 was approximately 2,318 families totaling 4,331 people. The zoo is open 364 days per year, with peak attendance during summer months. The zoo has been able to accommodate high levels of visitation with current facilities, paths and staffing.

### Management and Operations

Historically the zoo was owned and managed by the city of Lansing. However in 2007, zoo operations and management were transferred to Ingham County. Zoo operations are overseen by the Potter Park Zoo Director who reports to the Ingham County Controller. In collaboration, membership, education programming, public relations and marketing, and public and private events are managed by the Potter Park Zoological Society under an agreement with the county.



# Mission, Core Values, Goals and Strategies

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## Our Mission:

**Inspiring conservation of animals and the natural world.**

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## Core Values

We will advocate, respect and care for co-workers, guests, the facility and animals by demonstrating these values:

### Positivity

- Display a positive attitude under all circumstances
- Work with purpose, passion and energy
- Take time to celebrate successes of self and others
- Positively interact with zoo visitors to ensure a great experience
- Encourage inclusion in all interactions

### Teamwork

- Direct, open and honest communication shall be practiced
- Listen and value others ideas, concerns and questions
- Demonstrate the mindset that “None of us are as smart as all of us” within and between departments
- Help others to do what needs to get done within and between departments
- Be accountable – take ownership for projects and do what you say you are going to do

### Creativity

- Challenge the way we have always done it
- Think outside the box – look for new and innovative ways to accomplish goals
- Pursue improvement – strive to further knowledge and skills and learn from others

## Goal #1

# Excellent Animal Welfare



**All departments will provide the highest level of welfare to each animal at the zoo.**

## Strategies

- Train all staff in best animal welfare practices.
- Create an animal welfare assessment process to evaluate each animal's ongoing welfare state.
- Ensure animal welfare of current and future species is the first consideration in all institutional collection planning.
- Animal welfare will be a priority in the planning of all zoo activities.

## Goal #2

# Impactful Conservation



**Continually demonstrate a culture of conservation to staff, board members, volunteers, members and the community.**

## Strategies

- Demonstrate leadership in conservation through prioritized species selection and conservation partnerships.
- Integrate a culture of conservation into all positions at the zoo.
- Employ best practices for reducing environmental impact on zoo grounds.
- Include conservation messages in all zoo communications.

## Goal #3

# Financial Sustainability



**We will sustainably grow our financial resources to assure Potter Park Zoo achieves its mission.**

## Strategies

- Maintain a capital improvement budget which allows for maintenance and improvement of zoo facilities.
- Build a fund balance annually until it has reached a level that will prepare the zoo for unforeseen circumstances.
- Increase funding for Potter Park Zoo and the Potter Park Zoological Society through expanded opportunities including grants, sponsorships, unrestricted donations, memberships and events.





# Assessment

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**The following is an inventory and analysis summary with recommendations to guide the Potter Park Zoo Master Plan programming and concept design.**

## **Organizational Concept**

- The organizational concept should illustrate Potter Park Zoo's conservation priorities.
- Potter Park Zoo should highlight Michigan ecology, wildlife and natural habitats as well as those in similar world regions.
- The exhibits and experiences within Potter Park Zoo should be organized to illustrate specific habitats, grouping animals from similar regions when possible.

## **Exhibits**

- Existing exhibits are currently identified as African, Asian, North and South American, or Australian.
- Landscapes should extend beyond exhibits to enclose the viewer, creating a sense of immersion in the animal's natural environment.
- Each animal should be offered a variety of environments including sun, shade, protection from rain and off-view areas to provide for the highest level of welfare.
- Older exhibits should be demolished or renovated to be in keeping of modern zoological practices.
- Fenced exhibits should focus on views, safety, and eliminate cross viewing.

## **Buildings**

- Most holding buildings are adequate, but will need to be adapted or expanded for existing and new species.
- The veterinary clinic is undersized and in need of expansion or replacement.
- Concession buildings need to attract visitors with improved theming, modernization and climate controlled seating.



# Organization and Concept – Great Lakes of the World

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Potter Park Zoo has the opportunity to adopt as its purpose communication regarding the rich Great Lakes environmental habitats to zoo guests. Michigan has a diverse ecology and a unique location at the center of the Great Lakes region. A visit to the zoo will immerse visitors in these regions. The zoo's diverse animal collection and conservation efforts will also be presented to guests in a unified and understandable message around this concept.

The master plan organization makes use of the zoo's existing topography and tree canopy to determine forest locations and open savanna or lawn locations. It also helps organize the various environments and animal species to make use of existing buildings, exhibits and infrastructure.

The animals in this plan were selected based on:

- Alignment with the Potter Park Zoo mission
- Suitability to the Michigan climate
- Similarity to the ecology of Michigan and the Great Lakes
- Adequacy of space available to comfortably house the animals and their social groups ensuring the highest level of welfare (fewer large, well created habitats preferred over many small less developed habitats)
- Conservation priority

# Michigan Great Lakes



The Great Lakes environment will change with the seasons. Exhibiting many native flora which will include vibrant spring blooms, a lush summer tree canopy, spectacular fall colors and snow dusted evergreen forests in winter, inviting visitors to witness the ever changing display. Acclimated to Michigan's climate, animal inhabitants will be comfortable and exhibit natural behavior year round.

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## *Visitor Experience – Michigan Great Lakes*

Traveling through the Michigan Great Lakes, visitors will see varied landscapes and North American animals. Throughout, guests will experience the beauty brought on by the changing Midwest seasons and develop an understanding and appreciation for Michigan's unique wildlife and habitats.

## Northern Lakes & Forests



Modeled after the forested shores of Lake Superior, Porcupine Mountain Wilderness State Park and Isle Royale National Park, this environment is characterized by evergreen and mosaic forests with steep topography and rocky outcroppings.

### Landscape Immersion

This dense and dark forest will be similar to those encountered in Michigan's Upper Peninsula with a mixture of evergreen and deciduous trees.

- Evergreen trees - white pine, eastern white cedar, eastern hemlock, balsam fir, black spruce, jack pine
- Deciduous trees - tamarack larch, sugar maple, red oak, basswood, bigtooth aspen, quaking aspen, yellow birch, paper birch
- Understory shrubs - pagoda dogwood, blueberry, creeping juniper, mountain holly, swamp rose
- Wetland plants - longhair sedge, bladder sedge, wool grass, soft-stemmed bulrush

## Central Hardwood Forests



Capitalizing on existing mature oak trees of the zoo, this environment will illustrate a dense mosaic and deciduous oak/hickory and beech/maple forest and wetlands typical of north central Michigan.

### Landscape Immersion

This open forest will be similar to those encountered in north-central Michigan and will readily make use of the zoo's existing tree canopy.

- Deciduous trees - sugar maple, red oak, basswood, American filbert, chokecherry, serviceberry
- Evergreen trees (in sparse locations) - white pine, eastern white cedar, eastern hemlock
- Understory shrubs - redosier dogwood, American cranberry bush viburnum, snowberry, ninebark, sumac, leadplant

## Lake and Southern Drift Plains



Illustrating Michigan's eastern plains along Lake Erie and Huron, the Lake Plains environment is characterized by beech forests and elm-ash swamps dissolving into oak savannas and sandy dunes. The Southern Drift Plains environment is characterized by glacially sculpted, rolling plains dotted with numerous lakes, rivers and wetlands, this environment will illustrate southern grasslands and savanna environments. This community encompasses Lansing, providing an opportunity to explain local educational and conservation messages.

### Landscape Immersion

These plains will consist of oak savannas and grassland prairie that would have covered the southern portion of the state prior to agricultural development.

- Grasses - big bluestem, indian grass, switchgrass, purple lovegrass
- Forbs - brown-eyed susan, blazing star, purple coneflower
- Deciduous trees - white oak, bur oak, black cherry, hawthorn
- Evergreen trees - white pine, jack pine
- Shrubs - New Jersey tea, dogwood, pasture rose

## Red Cedar Ecology Center



The Red Cedar River Ecology Center will highlight Michigan's Great Lakes. In this new building, the Great Lakes region's biological diversity, ecological and social importance will be demonstrated. Guests will view interpretive exhibits, attend classes and witness fish, reptiles, amphibians and invertebrates that inhabit the region and learn what they can do as stewards and protectors of this ecosystem.

Exhibits will illustrate the aquatic and terrestrial species of the Great Lakes and its tributaries, including a warm water stream, a cold water stream, and pond.

### Landscape Immersion

- Deciduous trees - red maple, swamp white oak, basswood, eastern cottonwood, downy serviceberry
- Deciduous shrubs - gray dogwood, red-osier dogwood, buttonbush, black chokeberry, ninebark
- Sedges, rushes and grasses - soft-stemmed bulrush, graceful sedge, tussock sedge, wool-grass, bottlebrush grass

# Michigan Great Lakes Animal Species



## Current Collection Species

- Alaskan moose
- Arctic fox
- Bald eagle
- Barred owl
- Grey wolf
- Frogs (Eastern Grey Tree and Northern Leopard)
- Massasauga rattlesnake
- Mudpuppy
- Raven
- River otter (North American)
- Toads (American)
- Turtle (Spotted, Blanding's, Wood, Eastern Box, Musk and Painted)

### Ambassador

- Eastern screech owl
- Milksnake
- Porcupine (North American)
- Red tailed hawk
- Snowy owl

## Proposed Species

- Bobcat or Lynx
- Fisher or Marten



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# Lake Baikal

## Siberia, Russia and Central Asian Grasslands – Mongolia and Central China



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Lake Baikal is the oldest and deepest lake on earth. Its surrounding boreal and montane forests are home to Amur tiger and snow leopards. These evergreen and mosaic forests share similarities to Michigan’s upper peninsula.

South of Lake Baikal, the Central Asian Grasslands occupy portions of Mongolia and central China. Open grasslands are home to grazing animals such as bactrian camel, takin and muntjac. To the south, this region is bordered by dense forest inhabited by the red panda. Though portions of this region are isolated from human populations, this grassland habitat is under threat from agricultural development.

Landscape: Montane and boreal mosaic coniferous forest

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# Lake Baikal Animal Species



## Current Species

- Amur tiger
- Binturong
- Blue tree monitor
- Eurasian eagle owl
- Guam rail
- Northern tree shrew
- Pallas' cat
- Red panda
- Snow leopard
- Spiny turtle
- Tufted deer

## Phase Out

- Bactrian camel
- Blue-crowned parrot
- Peafowl

## Proposed Species

- Francois' langur



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# Lake Tanganyika

Tanzania, Democratic Republic of Congo,  
Burundi and Zambia, Africa



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Lake Tanganyika lies in a deep fault within the Rift Valley of eastern Africa and is the second deepest freshwater lake in the world. The lake is estimated to be 9-12 million years old and has 250 species of cichlid fish. This area has a high degree of floral richness, wetlands and numerous animal species.

While rich in wildlife, Lake Tanganyika has been adversely impacted by human activity including overfishing and deforestation as adjacent land is converted for agriculture and a growing population of people living around the lake.

Landscape: Freshwater lake, Central Zambebian Miambo Woodlands and Albertine Rift montane forests.



# Lake Tanganyika Animal Species



## Current Species

- African lion
- African spurred tortoise
- Blue-naped mousebird
- Blue-bellied roller
- Cape porcupine
- Eastern black rhino
- Eastern bongo
- Henkel's leaf tailed gecko
- Lesser Madagascar hedgehog tenrec
- Madagascar giant day gecko
- Madagascar giant hognose
- Mandrill
- Meerkat
- Southern ground hornbill

### Ambassador

- Lesser Madagascar hedgehog tenrec

### Phase Out

- Banded mongoose
- Bat-eared fox
- Ring tail lemur

## Proposed Species

- Okapi
- Trumpeter hornbills
- Warthog



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# Rio Condor, Andean Lakes and the wetlands of the Pantanal

Chile, Argentina and Brazil, South America

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Bordering Chile and Argentina, glacially-fed lakes are cradled by the Andean mountain range. In this region, high altitude plants and animals make their home between the tree line and permanent snow line.

Also in South America is the Pantanal, the world's largest tropical wetlands covering from 54,000 and 74,000 square miles. This ecosystem is home to thousands of species.

Landscape: Freshwater, coastal, high elevation montane grasslands, wetlands

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# Rio Condor, Andean Lakes and the Pantanal Animal Species



## Current Species

- Black-headed spider monkey
- Cotton top tamarin
- Giant anteater
- Green aracari
- King vulture
- Magellanic penguin
- Patagonian cavy
- Poison dart frog
- Seba's fruit bat

### Ambassador

- Brazilian rainbow boa
- Chilean rose hair tarantula
- Chinchilla
- Red tailed boa
- Yellow-naped Amazon

### Phase Out

- Golden lion tamarin

## Proposed Species

- Baird's tapir



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# Lake Eyre and the wetlands of Australia

Australia

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Lake Eyre, officially known as Kati Thanda-Lake Eyre, is a mind-blowingly vast, dry expanse of shimmering salt in the South Australian outback, in a basin so large that it crosses the borders of three states. On cloudless days, the seemingly featureless landscape can seem to merge with the horizon, making it difficult to distinguish between land and sky. Visitors who come here often remark on the incredible sense of isolation and space, as well as the landscape's remarkably beautiful appearance. Most of the time the lake is dry (it has only filled to capacity three times in the past 150 years) but about every eight years it receives a significant amount of water. On these occasions the lake bursts to life, forming an oasis for thousands of migratory waterbirds and producing seas of wildflowers. Wet or dry, it is a truly special place.

Landscape: Primarily dry, but becomes an oasis every eight years.

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# Lake Eyre Animal Species



## Current Species

Budgerigar  
Crimson rosella  
Red kangaroo  
Western grey kangaroo

### Ambassador

Bearded dragon  
Blue tongue skink



## Proposed Species

Emu  
Kookaburra  
Tasmanian devil  
Tawny frogmouth





# Priority Projects

## Animal Health Care and Quarantine Facility – 2022

The 2017 Association of Zoos and Aquariums (AZA) inspection team reported the current animal health care facility and quarantine areas are not adequate for a collection of Potter Park Zoo's size.

The new Animal Health Care and Quarantine Facility will demonstrate Potter Park Zoo's exemplary efforts in the field of animal care to the public and to their zoological and veterinary peers.

The facility will comply with AZA and American Association of Zoo Veterinarians (AAZV) standards and provide the following:

- Sterile surgery and scrub area
- Storage

- Treatment
- Pharmacy
- Laboratory
- Radiology
- Medical records storage
- Necropsy with refrigerated area
- Animal holding
- Animal quarantine

Veterinary staff offices will be grouped with a room large enough to accommodate meetings. The facility will provide isolation of sick animals with staff in close proximity to treat all animals effectively. The new building will be located near exhibits for rapid transport and will allow for ease of access for loading functions.

## Commissary – 2022

Animal food is currently stored and prepared in various holding buildings by multiple staff. A centralized commissary would improve efficiency for the animal care team.

To this end, the former animal health care facility will be repurposed as a commissary, allowing easy access for husbandry staff and keeper staff

making deliveries. With a viewing window for the public, this location will also provide an opportunity to demonstrate animal nutrition, food preparation and diets for various species. The commissary program includes dry, refrigerated and frozen food storage for the entire zoo with the exception of hay storage, which will be located nearby in the Michigan Farm Barn.

## Priority Projects



### **Farmyard Renovation – 2020**

The farmyard renovation will support our long-term efforts to provide educational opportunities to our guests throughout our facility. It is a priority project because of the dated condition of the farmyard.

The renovation will address the broad disconnect between the average consumer and the farmers who grow food. A better understanding and appreciation is needed from both sides to help us achieve the goal of a reliable, stable and sustainable food supply. The design objectives of the new farmyard exhibit will address several of these issues.



## **Americans with Disabilities Act (ADA) Evaluation – 2019**

Potter Park Zoo will be investing in a complete evaluation of zoo facilities in public areas to better understand needs with regard to ADA compliance. From this evaluation, priorities will be set and a plan will be completed to ensure the zoo is welcoming to all. All future exhibits being completed with ADA compliance as a priority consideration.

## **Moat Elimination – 2021**

The AZA inspection team also noted that the moat area is not in keeping with modern zoological practices and that this area, which currently houses four small species, must be eliminated.

## **Paths – 2020-2022**

The zoo's public paths are in poor condition in many areas. For safety and aesthetic reasons the paths need to be redesigned and replaced. Long straight-aways will be limited to add visual appeal and provide a sense of discovery while traveling through the zoo.

## **Penguin Exhibit – 2024**

The current exhibit housing the Magellanic penguins is aging and in need of renovation. The proposed new exhibit would include underwater viewing and increased land space. The holding area also requires an upgrade to allow for better welfare husbandry and to offer more nesting opportunities for the our breeding penguins.

## **Lion Exhibit – 2025**

During the winter months, the lions choose not to go outside. Staff currently manages them by providing as much inside space as possible. Inspectors noted the lion's winter holding area is not adequate. The new exhibit will provide a heated cave and additional amenities and heated space that will allow the lions to be more active and spend time outdoors more often during winter.

# POTTER PARK ZOO



# DO MASTERPLAN





# Conservation

**While the zoo's mission, experience and educational programs promote conservation and participation in Species Survival Plans, this plan will provide focus for these efforts and introduce a basis for new initiatives.**

## Conservation Opportunities

### Species Survival Plans

*Green SSP – Zoos house enough individuals and genetic diversity to maintain the population for 100 years or 10 generations.*

*Yellow SSP – Zoos house either enough individuals or enough genetic diversity to maintain the population for 100 years.*

*Red SSP – Zoos do not house enough individuals nor the genetic diversity necessary to maintain the population for 100 years.*

#### Green SSP

African Lion  
Amur Tiger  
Cotton Top Tamarin  
Golden Lion Tamarin  
King Vulture  
Magellanic Penguin  
North American River Otter  
Puerto Rican Crested Toad  
Ring Tailed Lemur  
Red Panda

#### Yellow SSP

Anteater, Giant  
Banded Mongoose  
 Binturong  
Blue Bellied Roller  
Cape Porcupine  
Eastern Black Rhino  
Eastern Bongo  
Eurasian Eagle Owl.  
Green Aracari  
Lesser Madagascar Hedgehog  
Tenrec  
Mandrill  
Massasauga Rattlesnake  
Meerkat  
North American Porcupine  
Red Kangaroo

Snow Leopard  
Southern Ground Hornbill  
Southern Three Banded Armadillo  
Spider Monkey  
Spotted Turtle  
Western Gray Kangaroo  
Western Tufted Deer  
Wood Turtle

#### Red SSP

Alaskan Moose  
Guam Rail  
Northern Tree Shrew  
Pallas' Cat

## Local Conservation Efforts

As an interpreter of lake region ecology and zoology, Potter Park Zoo should become a conduit for raising public awareness of ecological and zoological diversity of all lakes and the needed conservation efforts of each surrounding ecosystem. This task will require conservation messaging as the central focus of development of exhibits and educational programming. This challenge can be addressed through staff development, on grounds conservation efforts, community conservation partnerships and through efforts led by the zoo.

### Staff Development

Potter Park Zoo is committed to continually demonstrating an institutional culture of conservation by staff and integrating conservation efforts into all positions at the zoo. This process includes the following:

- Integration of conservation messaging in all job descriptions.
- All employees will be encouraged to sign a commitment to conservation pledge
- Incorporating conservation into all staff operations
- Allowing all staff the opportunity to participate in field conservation efforts.

### On-Grounds Conservation

A commitment to conservation will be demonstrated by employing best practices for reducing environmental impact on zoo grounds. These will include:

- Using recycled and recyclable materials on zoo grounds.
- Utilizing sustainable cleaning products in the zoo.
- Composting food, plant and animal waste.
- Incorporating sustainability into concession operations.

### Conservation Partnerships

Through partnership with other organizations, Potter Park Zoo is able to promote awareness of research, habitat restoration and conservation efforts of other groups to its guests, while gaining exposure to the larger audience these groups provide. The efforts can be highlighted in the interpretive signage, video, web content, classes and presentations at the zoo. The zoo can introduce visitors to the national parks and lakeshores, wilderness areas, nature preserves and state parks that illustrate the Great Lakes and Michigan's native animals. Further investigation and discussion will take place during implementation of the master plan to identify partners aligned with the zoo's conservation plan.



## Conservation Efforts Led By Potter Park Zoo

Enlisting the assistance of Ingham County, zoo staff, the zoo advisory board, zoo society staff, the society board, volunteers, docents and zoo members, Potter Park Zoo has the ability to design and lead local conservation efforts.

### Community Conservation

While surrounded by numerous opportunities, one possibility is the adoption of a portion of the Red Cedar River. Located on its banks, the zoo could become the protector, caregiver and interpreter of the river. The zoo could organize clean up days, restoration planting and creation of waterfowl nesting sites. Plant and animal inventories and research could be conducted, and if appropriate, wildlife breeding and reintroduction could be led by the zoo team. As interpreter of the river habitat, the zoo could lead efforts to create public access trails and boardwalks with interpretive signage to teach about the native wildlife in the river environment. These efforts will raise public awareness of the zoo as a community steward and of the river as a vital resource.

### Global Conservation Efforts

As the exhibits at Potter Park Zoo focus on specific Lakes of the World, the zoo's conservation efforts abroad may also become focused on specific issues. Areas to be replicated and species to be exhibited may be selected based on research efforts led by zoo staff, society members or zoo partners such as Michigan State University. In addition, efforts led by non-profit and non-governmental organizations may be highlighted to raise public awareness. Exhibits should be developed in conjunction with research efforts of groups such as World Wildlife Fund, the Nature Conservancy, Conservation International, and the United Nations Educational, Scientific and Cultural Organization (UNESCO).





# Guest Services, Traffic and Infrastructure

In addition to an immersive and educational experience, the needs of guests must be met in order to create a fulfilling and safe experience.

## Guest Services

### Gathering Spaces

**Orientation space** – Near the zoo entry, the Welcome Plaza allows people to meet, review maps and interpretive information to plan their visit.

**Special event space** – An event lawn is featured and can accommodate many people for special events. This space will be preserved.

**Class/Touring gathering spaces** – The amphitheater, which can seat approximately 30 to 50 people in view of a presenter will be renovated.

**Informal seating** – Throughout the zoo, small spaces adequate seating for groups of 6 to 8 people are provided. These spaces are located near exhibit viewing areas.

### Food Services

- Concessions at the Welcome Plaza and the Grill area need to be modernized.
- Concessions menu choices will highlight conservation and sustainability.
- The menu should offer both quick “grab-and-go” items as well as full meal selections.
- Waste reduction, composting and recycling will be demonstrated by zoo concessions.
- Concession seating includes areas of shade.
- Additional seating options should be added.
- Food service will be extended to include ancillary kiosks or stands in additional locations.

## Retail



Potter Park Zoo currently offers one retail gift shop located near the entry. The location is able to allow ease of delivery and positioned to allow guests to purchase souvenirs upon entry and prior to exiting the zoo.

The existing gift shop will increase the quantity and variety of merchandise displays.

In keeping with the zoo's conservation mission, the merchandise at the gift shop will support the environment and cultures about which the zoo is teaching.

Additional retail should be provided with seasonal carts. Carts should be located near specific exhibits and sell merchandise related to the geography, culture and messages embodied in the exhibit.

## Play Areas



Play is needed to engage children in learning the zoo's mission of conservation education. A large playground exists in Potter Park outside of the zoo, but smaller, shorter duration play features will be developed in the zoo. These will be spaced throughout the zoo, providing opportunities for brief 10 to 20 minute play experiences that teach children about the natural environment, wildlife and culture. All play areas will be developed in compliance with Consumer Product Safety Council and American Society for Testing and Materials guidelines.

Themes for possible further development include:

- Nature play area in the backyard garden
- Interactive activities in the renovated barnyard
- Animal sculptures illustrating cultural interpretations and connection to the environment
- Climbing structures simulating the natural environment
- Cultural elements, art works, games and instruments that connect visitors to the geographic environment

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# Pedestrian and Vehicle Traffic



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## Pedestrian Circulation

Within the zoo, guests will travel via a system of primary and secondary paths. Primary paths will lead to main attractions such as food services, the event lawn and animal exhibits. These paths can also accommodate service and emergency vehicles. Primary paths are 12' to 14' wide and should include a reinforced landscape edge to widen the path of travel if required by local emergency authorities.

Secondary paths will guide guests through the zoo's environments providing an exploratory and immersive experience. They allow guests to view the landscape and wildlife experience. These paths will typically be 8' to 10' wide with wider areas at animal viewing locations.

Both primary and secondary paths need to comply with the Americans with Disabilities Act for universal accessibility.

## Biking Access

Bicycles will access Potter Park Zoo via the Lansing River Trail. A new sign should direct cyclists around the west end of the parking lot to new bicycle racks located at the end of the entry walk. Existing bicycle racks near the Entry and Discovery Center will remain in place.

# Infrastructure



As Potter Park Zoo continues to improve and grow, its infrastructure must be developed to support new exhibits and amenities and to promote the conservation and ecological sustainability efforts of the zoo. As new exhibits and buildings are developed, they should be evaluated for their future utility demands. The zoo's utilities were evaluated in 1985 and many improvements were made including expansion of water and electrical service. However, a new assessment of the zoo's utilities should be conducted to evaluate condition, capacity and to anticipate necessary improvements.

As new utility systems are developed, natural systems that harmonize with the site's hydrology and climate should be favored over traditional engineered solutions. For example, passive heating, cooling and ventilation should be employed to address climate and minimize dependence on electricity and natural gas for heating and cooling. Storm water should be collected and funneled through wetlands and swales rather than piped systems.

While more detailed discussion of utility infrastructure may follow as the master plan is created, several general requirements will guide development of the plan.

## Storm Water

To be a good steward of the Red Cedar River watershed, Potter Park Zoo must carefully cleanse and manage the storm water that enters its site making use of it for irrigation, exhibits, natural ponds and wetlands, or returning it to the river and natural aquifer.

- The existing storm sewer will be reviewed, and modified where needed to remove storm water from the sanitary sewer system.
- New construction projects will separate storm water from sanitary waste.
- Storm water can be collected in ponds, cisterns or rain barrels for use in irrigation, washing or water features within the landscape.
- Where storm water is returned to the river or ground water, it will pass through constructed biofiltration swales, wetlands or settling ponds to provide filtration.

## Sanitary Sewer

The existing sanitary sewer systems at the zoo vary in age. At a few locations, stormwater pipes are connected to the sanitary system. Sanitary fees are metered separately from municipal water, so reduction of stormwater and wastewater in the sanitary system will benefit the zoo with cost savings and promote environmental conservation of water.

- Storm water lines will be disconnected from the sanitary sewer.
- Grey water separation and recycling will be explored in new projects.
- On site treatment of waste water from buildings and life support systems through constructed wetlands and onsite backwash treatment will be explored.

## Domestic Water

To save cost and make efficient use of natural resources, Potter Park Zoo should conduct a full assessment of municipal water use to identify and reduce waste.

- Water capacity and demand to support increased visitation, new buildings and exhibits will be evaluated as master plan improvements are further designed and implemented.
- Use of municipal water for wash-down or irrigation will be reduced and the use of harvested rainwater or recycled grey-water should be encouraged.
- Water will be conserved through the use of low-flow kitchen and restroom fixtures.
- Life support systems will incorporate backwash recovery and other water saving technologies.

## Electricity

Similar to water and sewer, the electrical supply to the zoo will be evaluated and future demand projected based on proposed facilities.

To help reduce electric consumption, green technologies will continue to be considered as retrofits to existing facilities and in new projects including:

- LED and compact fluorescent lights.
- Occupancy sensors to control lights in vacant areas.
- Passive heating and cooling strategies.
- High efficiency pumps and life support equipment.

# Infrastructure

## Information Technology

Advances in information technology are opening new doors for the zoo to connect with guests and other audiences. The zoo information technology infrastructure should keep pace with these opportunities.

- Information technology requires ongoing maintenance and management of equipment and web content necessitating dedicated employees to handle this work.
- Potter Park Zoo's website and social media presence is critical to this connection and both need to be consistently managed.
- Zoo technology infrastructure needs to continually be updated to accommodate staff internet connection as well as adding these options for guests.

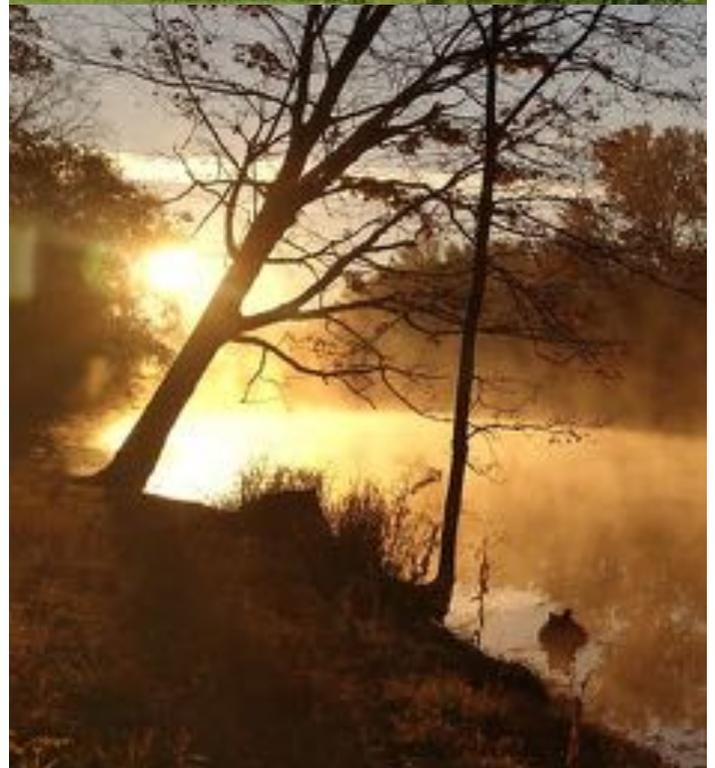
## Refuse

Reducing trash and practicing recycling saves on expenses while helping the environment and teaching responsible resource use in keeping with the zoo's conservation objective. The zoo's material use and recycling program will be continually reviewed in conjunction with the county's waste management. Strategies that have been and can continue to be explored include:

- Composting food waste at concessions and with events.
- Making concessions and events material packaging recyclable or compostable.
- Establishing on-site composting for landscape and animal waste.

## Utility Service

Comparison of future zoo plans with the existing utility infrastructure must happen. This would include electrical service, water lines and sanitary service.





# Animal Population

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**The thematic organization for Potter Park Zoo incorporates the existing animal population while providing guidance for selecting new species and brings cohesion to the animals.**

## Animal Welfare

Animal welfare is the foremost concern to Potter Park Zoo staff, and exhibits will be designed and species selected with this in mind. To be housed at the zoo, animals must be adapted to the climate and environment at the zoo, or exceptional indoor accommodations must be made for winter months.

Habitats created shall provide animals with the option to exercise control over their environment, provide a habitat-immersive and appropriate experience for the animal, provide a variety of experiences and alleviate noise and other nuisance.



# Current Animal Residents

The Institutional Collection Plan provides a rationale for the existing resident animals and guides future development. This document is a living document and must provide not only stability within the zoo populations, but also allow for adaptability to unexpected circumstances. Each year the Animal Management Committee (AMC) will evaluate the existing document for relevance and modify it as necessary. The AMC consists of the zoo director, the zoo society director, the general curator, the zoo veterinarian and the zoo education curator.

## Priority Animal Species in Existing Population

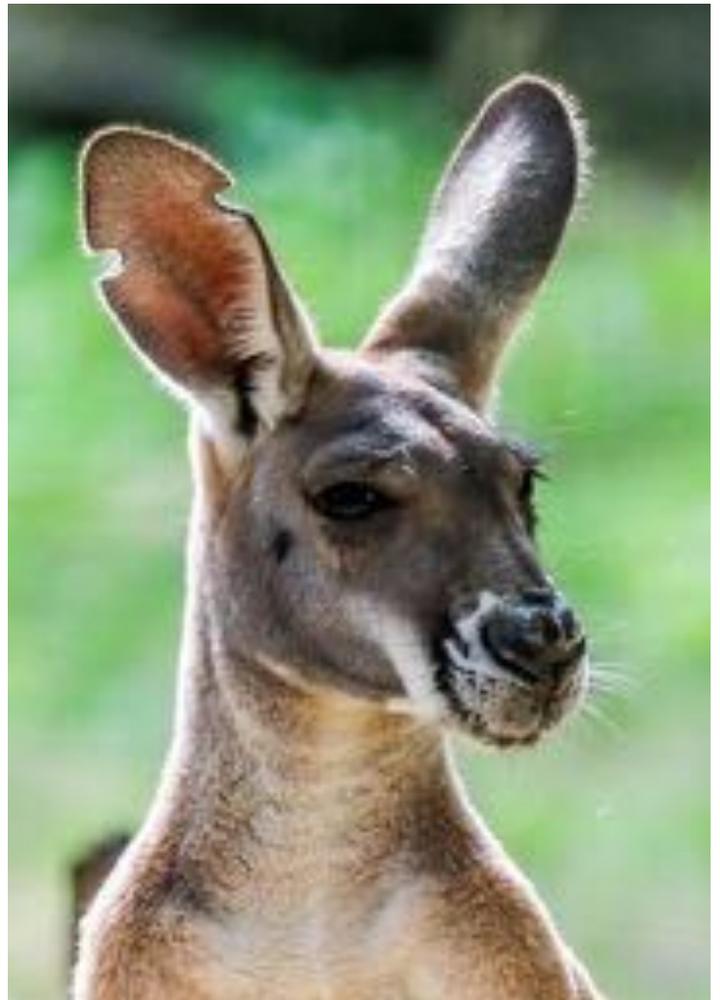
Potter Park Zoo participates in many animal conservation programs (Species Survival Plans or SSPs) and has identified several key animals that must remain for conservation purposes. These are listed in the Institutional Collection Plan and include black rhino, Amur tiger, snow leopard, red panda and African lion. SSP animals are a priority, but may be phased out if inconsistent with zoo priorities.

If a species is phased out due to an aging population or other reasons, the existing animals will be cared for at the highest standard while remaining at the zoo.

## Species Selection Criteria

Potter Park Zoo's animal care staff have assembled criteria to evaluate existing species at the zoo and provide guidance for future determinations. The staff acted on behalf of the animal population while supporting the zoo's mission. The criteria animal care staff use for consideration of a new species is are follows:

- Purpose
  - Conservation
  - Education
  - Science
  - Display
- Availability
- Management
  - Established husbandry
  - Experience and resources
- Welfare assurance
- Wild population status
- Zoo population status
- AZA SSP/TAG recommendations
- Exhibit value
- Education Value



## Mammals Collection 2018

### AZA ANIMAL PROGRAMS:

The table below provides the contact information for the Species Survival Plan leader for all mammalian species currently housed at Potter Park Zoo. Included in the table is the most recent dates for the species Breeding and Transfer Plan (BTP), Regional Collection Plan (RCP) or Studbook (if BTP has not been completed).

### SPECIES SURVIVAL PLANS (SSP):

Green SSP – Zoos house enough individuals and genetic diversity to maintain the population for 100 years or 10 generations.

Yellow SSP – Zoos house either enough individuals or enough genetic diversity to maintain the population for 100 years.

Red SSP – Zoos do not house enough individuals nor the genetic diversity necessary to maintain the population for 100 years.

### TAXON ADVISORY GROUP (TAG):

A TAG is a group of specialists in a particular taxa. A taxa is a group or rank in a biological classification into which related organisms are classified.

Species	Program	Most Recent Plan
Tiger, Amur	Green SSP	BTP 2017
Cotton Top Tamarin	Green SSP	BTP 2016
Golden Lion Tamarin	Green SSP	BTP 2013
Lion	Green SSP	BTP 2016
Meerkat	Green SSP	BTP 2017
N.A River Otter	Green SSP	BTP 2017
Red Panda	Green SSP	BTP 2017
Ring Tailed Lemur	Green SSP	BTP 2016
Giant Anteater	Yellow SSP	BTP 2017 (draft)
Banded Mongoose	Yellow SSP	BTP 2017
Binturong	Yellow SSP	BTP 2017
Cape/Crested Porcupine	Yellow SSP	BTP 2015
Eastern Black Rhino	Yellow SSP	BTP 2014
Eastern Bongo	Yellow SSP	BTP 2016
Lesser Madagascar Hedgehog Tenrec	Yellow SSP	BTP 2016
Mandrill	Yellow SSP	BTP 2017 - draft

North American Porcupine	Yellow SSP	BTP 2015
Red Kangaroo	Yellow SSP	Studbook 2010
Red Ruffed Lemur	Yellow SSP	BTP 2017
Snow Leopard	Yellow SSP	BTP 2017
Southern three banded armadillo	Yellow SSP	BTP 2016
Spider Monkey, Robust Black	Yellow SSP	BTP 2014
Western Gray Kangaroo	Yellow SSP	Studbook 2017
Western Tufted Deer	Yellow SSP	BTP 2015
Moose	Red SSP	BTP 2015
Northern Tree Shrew	Red SSP	BTP 2017
Pallas' Cat	Red SSP	BTP 2015

Bat	TAG	RCP 2015
Antelope & Giraffe TAG	TAG	RCP 2014
Caprinae	TAG	RCP 2011
Deer (Cervid/Tragulid)	TAG	RCP 2014
Felid	TAG	RCP 2009
Marsupial & monotreme	TAG	RCP 2012
New World Primate	TAG	RCP 2016
Old World Monkey	TAG	RCP 2013
Pangolin, Aardvark and Xenarthra	TAG	RCP 2016
Prosimian	TAG	RCP 2014
Rhinoceros	TAG	RCP 2015
Rodent, Insectivore, Lagomorph	TAG	RCP 2017
Small Carnivore	TAG	RCP 2014
Wild Cattle and Camelid	TAG	RCP 2014

## Avian Collection 2018

### AZA PROGRAMS

The table below provides the contact information for the Species Survival Plan (SSP) leader for all avian species currently housed at Potter Park Zoo. Included in the table is the most recent dates for the species Breeding and Transfer Plan (BTP), Regional Collection Plan (RCP) or Studbook (if BTP has not been completed).

Species	Program	Most Recent Plan
Magellanic Penguin	Green SSP	BTP 2016
King Vulture	Yellow SSP	BTP 2017
Eurasian Eagle Owl	Yellow SSP	BTP 2017
Blue Bellied Roller	Yellow SSP	BTP 2016
Southern Ground Hornbill	Yellow SSP	BTP 2017 - draft
Green Aracari	Yellow SSP	BTP 2016
Guam Kingfisher	Yellow SSP	BTP 2016
Guam Rail	Yellow SSP	BTP 2017

Anseriformes	TAG	RCP 2012
Charadriiformes	TAG	RCP 2017
Ciconiiformes & Phoenicopteriformes	TAG	RCP 2014
Columbiformes	TAG	RCP 2012
Coraciiformes	TAG	RCP 2017
Galliformes	TAG	RCP 2012
Gruiformes	TAG	RCP 2014
PAACT	TAG	RCP 2016
Parrot	TAG	RCP 2015
Pelecaniformes	TAG	RCP 2012
Penguin	TAG	RCP 2015
Piciformes	TAG	RCP 2015
Raptor	TAG	RCP 2015
Struthioniformes	TAG	RCP 2015

## Reptile/Amphibian/Invertebrate Collection 2018

### AZA PROGRAMS

The table below provides the contact information for the Species Survival Plan (SSP) leader for all reptilian, amphibian and invertebrate species currently housed at Potter Park Zoo. Included in the table is the most recent dates for the species Breeding and Transfer Plan (BTP), Regional Collection Plan (RCP) or Studbook (if BTP has not been completed).

Species	Program	Most Recent Plan
Puerto Rican Crested Toad	Green SSP	BTP 2014
Eastern Massasauga	Yellow SSP	BTP 2017
Henkel's Leaf tailed Gecko	Yellow SSP	BTP 2017
Spiny Turtle	Yellow SSP	BTP 2017 Draft
Spotted Turtle	Yellow SSP	BTP 2016
Wood Turtle	Yellow SSP	BTP 2016
Blanding's Turtle	Candidate program	N/A

Amphibian	TAG	RCP 2014
Chelonian	TAG	RCP 2016
Lizard	TAG	RCP 2013
Snake	TAG	RCP 2016
Terrestrial Invertebrate	TAG	RCP 2015

**This document was prepared under the  
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**The Ingham County  
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The Potter Park Zoological Society Board**

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