Diagnosing cardiac disease in marine mammals

One of the thirteen funded projects in the FY2018 Wild Animal Health Fund

This research project aims to develop an easy to use, reliable diagnostic test to diagnose heart disease in marine mammals. Similar to humans and domestic animals, marine mammals also get heart disease; however, diagnosis is difficult in these species and disease is often not detected until much later in the course, making treatment challenging. There are specific proteins (cardiac troponins and N-terminal pro-brain natriuretic peptides) that increase in the blood when the heart is injured.

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Six years ago we established the Wild Animal Health Fund to raise money and fund research that benefits zoo animals and wildlife in an effort to save lives, eliminate diseases, increase reproduction and help maintain and protect wild populations of threatened and endangered species.

These studies give clinical veterinarians the tools needed to understand, diagnose, treat and prevent disease and conditions in our zoo and wildlife friends. With your support, the WAHF is saying “YES!” to more research grant funding.

Why do we need to fund this type of research? Zoo and wildlife veterinarians are faced with practicing veterinary medicine on species for which there is very little published medical information. In many cases normal blood values and physiological parameters are not yet known. The lack of knowledge impacts the positive outcome when treating these species. These are significant challenges that zoo and wildlife veterinarians deal with on a regular basis. Because it is our goal to provide the best care possible for these animals, we are constantly problem solving, striving to figure out a better way to do things, and are pushing the envelope on understanding the science to help the animals.

We believe that most people who are passionate about animals will contribute to helping the animals once they know about the Wild Animal Health Fund. It is our vision to fund $1 million annually if we’re going to win this race against extinction. The environment matters and so do the lives of the animals that inhabit it. With your support, we can continue to spread the awareness and fund critical animal health studies.

Robert Hilsenroth, DVM
Executive Director, AAZV

The Fund is growing, thanks to YOU!

Leadership

AAZV Executive Committee

President:
Julie Napier, DVM - Omaha’s Henry Doorly Zoo, Nebraska

President Elect:
Leigh Clayton, DVM, DABVP - National Aquarium, Maryland

Vice President:
Jessica Siegal-Willott, DVM, Dipl. ACZM - National Zoo, Washington D.C

Treasurer:
Lauren Howard, DVM, Dipl. ACZM - San Diego Zoo Safari Park, California

Secretary:
Michelle Davis, DVM – Georgia Aquarium, Georgia

Member-at-Large:
Clay Hilton, MS, DVM - Texas A & M University, Texas

Member-at-Large:
Paige Brock, DVM, Dipl. ACZM – Riverbanks Zoo & Garden, So. Carolina

Immediate Past-President:
Mike Adkesson, DVM, Dipl. ACZM – Brookfield Zoo, Illinois

Mission Statement

The mission of the Wild Animal Health Fund is to raise funds and apply those funds to critical research and studies that optimize the health, welfare and prevention of extinction of zoo animals and wildlife in all habitats.
### Wild Animal Health Fund: Grant Making History

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Applications</th>
<th>Total Requested Grant Funds</th>
<th>Number of Grants Funded</th>
<th>Total of Grants Funded</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>28</td>
<td>$232,061</td>
<td>6</td>
<td>$49,067</td>
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<tr>
<td>2013</td>
<td>40</td>
<td>$309,162</td>
<td>8</td>
<td>$64,800</td>
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<tr>
<td>2014</td>
<td>48</td>
<td>$418,936</td>
<td>8</td>
<td>$75,064</td>
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<tr>
<td>2015</td>
<td>41</td>
<td>$319,074</td>
<td>11</td>
<td>$80,862</td>
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<tr>
<td>2016</td>
<td>43</td>
<td>$349,793</td>
<td>9</td>
<td>$80,000</td>
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<tr>
<td>2017</td>
<td>44</td>
<td>$378,611</td>
<td>10</td>
<td>$93,551</td>
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<td>2018</td>
<td>74</td>
<td>$599,883</td>
<td>13</td>
<td>$105,407</td>
</tr>
</tbody>
</table>

### Zoo animal and wildlife that have benefited from studies:

- African elephant
- African tree pangolin
- African buffalo
- Amazon parrot
- American horseshoe crab
- American kestrel
- Asian elephant
- Bat
- Bearded dragon
- Fur seal
- Golden frog
- Gorilla
- Green sea turtle
- Green sea urchin
- Grey seal
- Hermann's tortoise
- Iberian mountain lizard
- Island fox
- Lemur
- Lion
- Lizard
- Loggerhead shrike
- Loon
- Manatee
- Mountain chicken frog
- Narwhal
- Orangutan
- Peafowl/Peacock
- Penguin
- Pink pigeon
- Pygmy hippo
- Quaker parrot
- Red blood python
- Red river hog
- Red tailed hawk
- Sea lion
- Sea otter
- Sloth
- Triatoma,"Kissing Bug"
- Turtle
- Warthog
- Warty pig
- White ibis
- White rhino
- White-tailed deer
- Whooping crane
Continued from page 1:

These proteins are called "cardiac biomarkers" and assays measuring them are considered the gold-standard for detecting heart disease in both human and veterinary medicine.

Through this project, we aim to develop species-specific assays to measure these cardiac biomarkers in Steller sea lions, California sea lions, sea otters and belugas. This collaborative multi-institutional project will use stored blood samples provided by zoos, aquariums, and marine mammal rehabilitation facilities from across the country. It has the potential to allow for the early detection of heart disease in these animals. The ultimate goal is to develop a non-invasive diagnostic tool, which will help veterinarians working with marine mammals to provide the best quality medical care for these animals in both aquarium and rehabilitation settings!

Jen Flower, DVM, MS, Dipl. ACZM
Chief Clinical Veterinarian, Mystic Aquarium, a division of Sea Research Foundation

FINANCIAL INFORMATION

It is important that you know that 100% of annual contributions received by the Wild Animal Health Fund go directly to funding the research projects. Absolutely zero dollars from these donations go toward any operational overhead for the Wild Animal Health Fund. This is possible because the 1,200 members of the AAZV contribute part of their dues revenue to operating the WAHF. We know this is unlike most other charities and the members of AAZV are passionate about continuing to underwrite the operations going forward.
**Wild Animal Health Fund History of Resources**

Back in the fall of 2013, AAZV put forth the initial reserves for the Wild Animal Health Fund. The table above lists the last five years of incoming donations and grant disbursements. The total grant funding over the last five years is $417,511, which leaves a fund balance of $231,570. In the non-profit sector, programs should have at least one year’s worth of program budget available to guarantee continuation of the program in the event of a year when contributions may fall short. For 2019, the allocation for approved grants will be $120,000.

When you make a tax-deductible donation to the Wild Animal Health Fund, you can be assured we meet the highest standards of accountability and that your entire gift will be used to improve the health and well-being of zoo animals and wildlife around the globe.

<table>
<thead>
<tr>
<th></th>
<th>FY2014</th>
<th>FY2015</th>
<th>FY2016</th>
<th>FY2017</th>
<th>FY2018</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Incoming Contributions</strong></td>
<td>$57,000</td>
<td>$84,736</td>
<td>$107,536</td>
<td>$101,880</td>
<td>$91,873</td>
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<tr>
<td><strong>Outgoing Grant funds</strong></td>
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<td>$86,530</td>
<td>$96,376</td>
<td>$34,376</td>
<td>$125,135</td>
</tr>
<tr>
<td><strong>Fund Balance</strong></td>
<td>$57,000</td>
<td>$66,642</td>
<td>$87,648</td>
<td>$93,152</td>
<td>$150,649</td>
</tr>
</tbody>
</table>

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**Charity Rating and Transparency**

The Wild Animal Health Fund is a program within the American Association of Zoo Veterinarians (AAZV) and a large portion of our non-profit revenue is from the professional zoo and wildlife veterinarians, who are our members. In addition, AAZV does not receive any government funding. When donations to the Wild Animal Health Fund exceed the operating revenues of AAZV, a charity rating can be assessed by non-profit organizations like Charity Navigator, Charity Watch, and BBB Wise Giving Alliance.

The Wild Animal Health Fund is a GuideStar Gold Participant. We have this seal of approval because we publicly provide transparent information of our mission, legitimacy, impact, reputation, finances, governance and more. GuideStar is the most complete source of information about U.S. charities. Please feel free to visit the www.GuideStar.org website.

In closing, we welcome the opportunity to talk to you about the Wild Animal Health Fund. Contact us at Admin@WildAnimalHealthFund.org