

## News

### ANIMAL EDUCATORS AND NURTURED BY NATURE ARE SUPPORTING THE IUCN SSC ANTEATER, SLOTH AND ARMADILLO SPECIALIST GROUP AND THE BRAZILIAN THREE-BANDED ARMADILLO CONSERVATION PROGRAM



Animal Educators Inc. and its non-profit, Nurtured by Nature Inc., are organizations headquartered in Valley Center (California) that, among other things, develop, implement, and provide sustainable interactions with the wonders of nature and environmentally sustainable breeding conservation programs for

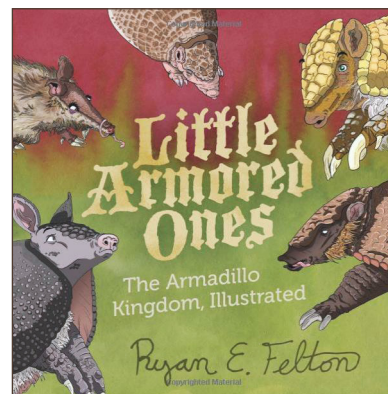
several species of reptiles and mammals. Several years ago, the co-founders of these organizations, Kevin and Wendy Yates, realized that zoos were importing southern three-banded armadillos (*Tolypeutes matacus*) for their collections, and that mortality rates of these animals were up to 50%. They created a solution to the problem by establishing a southern three-banded armadillo breeding project. With over 100 offspring born over seven years, Animal Educators and Nurtured by Nature managed to significantly reduce imports of wild-caught three-banded armadillos by zoological institutions in the US.

To show their commitment to the conservation of Xenarthra, Animal Educators and Nurtured by Nature have recently established an agreement with the IUCN SSC Anteater, Sloth and Armadillo Specialist Group to help fund the Brazilian three-banded armadillo conservation program. After their initial donation, Kevin and Wendy implemented a policy whereby any zoo that purchases a three-banded armadillo from their facility must make a mandatory donation to the conservation program. In addition, they will contribute their vast knowledge on the maintenance and captive reproduction of *Tolypeutes* to the *ex situ* breeding program of both species of three-banded armadillos.

Animal Educators is part of the AZA Regional Studbook for southern three-banded armadillos. We are extremely grateful for their commitment and generous donation!

### ART EXHIBIT HIGHLIGHTS ARMADILLOS AND RAISES MONEY TO SUPPORT THE ASASG

In March of this year artist Ryan Felton hosted an exhibition of his artwork that celebrated his passion for armadillos. Ryan developed his love for armadillos despite growing up in the state of Indiana, USA, where no armadillos occur (at least until very recently, and only now in the very southern tip of the state). Despite this childhood deprivation, Ryan has become a champion for armadillos; his main mission is to raise public awareness of these little-known mammals.



The exhibit featured a painting, most on circular pieces of wood, of each species of armadillo, with an accompanying bit of text describing some of their basic features and a map showing their geographic distribution. Although somewhat fanciful with regard to facial features and expressions, the paintings were otherwise morphologically accurate; a strip of paper below each painting indicated the actual length of each species, not including the tail. The final component to the exhibit was two letters of welcome, written by Specialist Group members Mariella Superina and Jim Loughry, that

highlighted our need to know more about armadillos and, most important, how to conserve them.

In addition to the paintings, the exhibit served as a platform for Ryan to promote his book: *Little Armored Ones: The Armadillo Kingdom, Illustrated* (self published, ISBN-13: 978-1984055101; available at [www.amazon.com](http://www.amazon.com)), which featured reproductions of his paintings, as well as the accompanying text and maps from the exhibit. The target audience for both the book and exhibit is children and young adults, although adults can certainly learn many new things about each species too.

The event was well received; Ryan estimated that about 150 people attended, perhaps lured in part by the prospect of free armadillo-themed cupcakes to consume while enjoying the exhibit. There was also a special guest star: Xander, a live screaming hairy armadillo, who Ryan introduced to people and who was the center of considerable attention.

Of particular interest to Specialist Group members is that Ryan encouraged attendees to make donations to the Anteater, Sloth and Armadillo Specialist Group. The great news is that they did so, with contributions totaling about US\$ 400. As we all know, every bit of funding helps, and it is gratifying to know that so many people, most of whom know very little about armadillos, are still willing to assist our efforts. Best wishes for continued success to Ryan as he continues his campaign on behalf of all things armadillo.



#### 4<sup>TH</sup> ANNUAL MONITORING OF THE NATIONAL ACTION PLAN FOR THE CONSERVATION OF THREE-BANDED ARMADILLOS (*TOLYPEUTES* SPP.)

The Technical Advisory Group of the National Action Plan for the Conservation of Three-banded Armadillos (*Tolypeutes* spp.), representing four Brazilian institutions, met on 3–4 October 2018, in João Pessoa, Paraíba, Brazil, for its 4<sup>th</sup> annual monitoring workshop.

This meeting, sponsored by the Chico Mendes Institute for Biodiversity Conservation (ICMBio) through the National Center for Research and Conservation of Brazilian Primates (CPB) and the Directorate of Research, Assessment and Monitoring of Biodiversity (DIBIO), is one of the components



of the Action Plan for the Conservation of the Three-banded Armadillo (PAN Tatu-bola). The main goal of the action plan is to develop strategies to reduce the risk of extinction of *Tolypeutes tricinctus* to the category of “Vulnerable”, and to ensure the proper evaluation of the conservation status of *T. matacus* in the country.

The activities of this PAN (started in 2014 and continuing until 2019) involve:

1. To update the areas of occurrence of both *Tolypeutes* species.
2. Assess the main threats to each species' conservation throughout their geographic distribution.
3. Raise awareness in local communities and the broader society about the importance of protecting *T. tricinctus* in the Caatinga and Cerrado.
4. Increase knowledge about both species' biology and ecology to guide conservation strategies.
5. Expand, train, and hire surveillance personnel to suppress the hunting of *T. tricinctus*.
6. Reduce the rate of habitat loss and promote connectivity among populations of *T. tricinctus*.

These activities were organized into 30 specific actions, of which 41% have already been concluded or are in progress. These involve mainly:

- Mapping of the current and potential distribution of the two species of *Tolypeutes*,
- the creation of protected areas in areas of occurrence of *T. tricinctus*,
- educating the public on the implications of three-banded armadillo hunting, and
- studies on the genetics, habitat use, activity patterns, and diets of both species.

Some actions are facing difficulties in their execution. These include those related to the development of protocols for where and how to maintain captive individuals, the establishment of protocols for environmental licensing in areas of occurrence



of *Tolypeutes* spp., training of surveillance agents to inspect and control hunting activities, and development of restoration projects to improve connectivity in areas of occurrence of *T. tricinctus*. Given this scenario, new strategies were discussed to improve the performance of participants in the PAN, and new partnerships are being established for the execution of these actions in 2019.

For additional information about the Brazilian Action Plan for the Conservation of the Three-banded Armadillo, see <http://www.icmbio.gov.br/portal/fauna-brasileira/plano-de-acao-nacional-lista/4808-plano-de-acao-nacional-para-conservacao-do-tatu-bola>

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### FLÁVIA MIRANDA RECEIVES HONORABLE MENTION FOR ONE OF THE BEST DOCTORAL THESES IN BRAZIL



Specialist Group member Dr. Flávia Miranda has received recognition from the Brazilian Academy of Sciences for having produced one of the best doctoral theses in the country. Dr. Miranda won a Honorable Mention for her dissertation titled “Integrative taxonomy of the genus *Cyclopes* Gray 1821 (Xenarthra, Pilosa)”. There were many criteria for the award, among which were the originality and ultimate quality of the thesis, its potential importance in the area of systematic zoology, its impact not only in the field of study but in other disciplines as well, and the number and quality of publications that could be derived from the thesis.

Congratulations to Dr. Miranda on behalf of the IUCN SSC Anteater, Sloth and Armadillo Specialist Group!

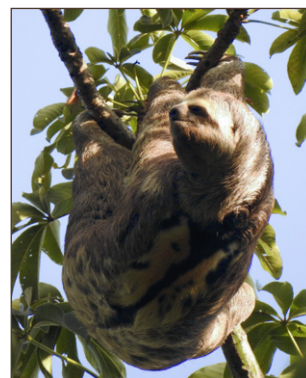
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### NEW XENARTHRA REHAB CENTER IN CÓRDOBA, COLOMBIA

The confiscation of trafficked or mistreated sloths, anteaters, and armadillos is frequent in Colombia. Fundación AIUNAU, led by Specialist Group member Tinka Plese, has been dedicated to the rescue and rehabilitation of xenarthrans, as

well as other threatened species, for many years. Since 2002, this institution has received more than 1200 animals, most of them sloths, at their Rescue and Rehabilitation Center for Xenarthra (CRRX) in the department of Antioquia, Colombia. A second facility has now opened in El Alto, in the department of Córdoba, which will allow AIUNAU to take care of trafficked and injured wildlife from northern Colombia. The new facility is located within a private reserve called Betanci, which protects about 600 hectares of tropical dry forest ([https://youtu.be/HN804odd2\\_Q](https://youtu.be/HN804odd2_Q)). Two hectares have been allotted to the rehab center, which consists of four spacious enclosures—with plenty of space for additional ones—, a small clinic where the animals can receive treatment with traditional and non-traditional medicines, and an apartment for the three staff members who take care of the animals. In addition to helping injured wildlife, this new center will allow Fundación AIUNAU to extend its conservation efforts to another part of the country.

We wish Fundación AIUNAU lots of success with their new rehab center!




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### NEW RESCUE CENTER FOR SLOTHS, ANTEATERS AND ARMADILLOS IN SURINAME

Green Heritage Fund Suriname (GHFS), led by Specialist Group member Monique Pool, was established in 2005 to help improve the fate of animals. Their first program, dedicated to the Xenarthra, aimed at conveying a conservation message by means of creating a sustainable education product for the public. On 2 November 2018, GHFS officially opened its Rescue Center for Sloths, Anteaters and Armadillos. Affectionately known as the



"Sloth Wellness Center", this new rehab center will allow Monique and her team to provide rescued xenarthrans with the care they need before returning to their natural habitat. The ceremony to open the center was attended by many friends, volunteers, and several government representatives, including Suriname's Minister of Spatial Planning, Land and Forest Management, Roline Samsoedien. The Minister stated that the Education Department of her Nature Conservation Division was going to work together with GHFS to raise public awareness of the need to protect xenarthrans and other species.

We wish GHFS all success with their new Sloth Wellness Center!

### ARMADILLOS, ANTEATERS AND SLOTHS IN THE HANDBOOK OF THE MAMMALS OF THE WORLD, VOLUME 8

Cingulata and Pilosa are the first two orders treated in the penultimate volume of the *Handbook of the Mammals of the World*. Several chapters are authored by IUCN SSC Anteater, Sloth and Armadillo Specialist Group members including Colleen McDonough & James Loughry (Dasypodidae), Mariella Superina & Agustín Abba (Chlamyphoridae), Flávia Miranda (Cyclopedidae), and Nadia Moraes-Barros (Megalonychidae). Each of these lavishly illustrated chapters, as well as those for Myrmecophagidae (authored by Alessandra Bertassoni) and Bradypodidae (authored by Jonathan Pauli), summarizes the respective Family's systematics, morphological aspects, habitat, general habits, communication, food and feeding, breeding, movements, home range, social organization, relationship with humans, status, and conservation. In turn, individual species accounts provide common names and a distribution map together with taxonomy, subspecies and distributions, descriptive notes, as well as details on the topics treated above if available.

Specialist Group chair Mariella Superina also co-authored the Volume's special introductory chapter on Conservation Priorities and Actions, focusing on the current IUCN Red List status and risk of extinction for Cingulata and Pilosa. Although only two of 20 extant species of Cingulata are listed in a threatened Red List category, only four species have stable populations while population trends

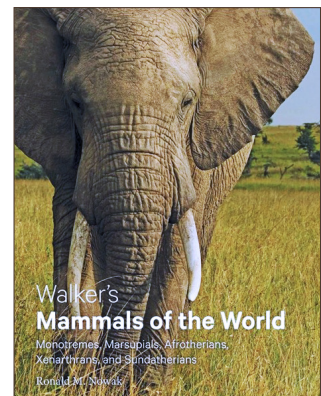
are decreasing for six and unknown for ten species. One in four extant species are so poorly known they are categorized as Data Deficient. As for Pilosa, one of the ten anteaters and two of the six sloths are listed in a threatened category. But many species in each Family lack conservation-relevant information, and research is urgently needed on their ecology, population numbers and trends, and the threats they face.

Priority species highlighted in this chapter, with details of major threats as well as current conservation efforts, are the Brazilian three-banded armadillo (*Tolypeutes tricinctus*), the giant armadillo (*Priodontes maximus*), the pygmy three-toed sloth (*Bradypus pygmaeus*), the maned three-toed sloth (*Bradypus torquatus*), and the giant anteater (*Myrmecophaga tridactyla*). Research and conservation programs should be supported by more training for students and professionals, and more technical advice to authorities.

Don E. Wilson & Russell A. Mittermeier (eds.). 2018. Handbook of the Mammals of the World, Volume 8. Insectivores, Sloths and Colugos. Lynx Edicions in association with Conservation International and IUCN, Barcelona. 710 pp. ISBN-13: 978-84-16728-08-4.

### A NEW EDITION OF WALKER'S MAMMALS OF THE WORLD HAS BEEN PUBLISHED

Updating a zoological classic, this volume covers 19 of the 31 historical and modern mammal orders, including the Cingulata and Pilosa. It represents the most sweeping modification of Walker's since publication of the first edition in 1964. Compared to corresponding sections of the 1999 edition, text length has doubled, a proportional increase far greater than in any previous revision. Every old generic account has been substantively changed, 17 accounts of newly described genera have been added, and many separate species accounts have been prepared. About 2,200 new references are cited and about 1,000 have been retained from the 1999 edition. The original illustrations, all black and white, have been almost completely replaced with more than 500 new color images, including beautiful photos of live individuals of Xenarthra, and scientifically prepared paintings of extinct genera, such as the giant ground sloth *Mylodon darwini*. Topics covered for each genus include scientific and common name, number and distribution of species, measurements, physical description, habitat, locomotion, daily and seasonal activity, diet,





population dynamics, home range, social life, reproduction, longevity, and relationship with people. The volume discusses every species, subspecies, and population that is historically extinct or listed in a category of concern by the IUCN, CITES, and U.S. Department of the Interior.

Nowak, R.M. 2018. Walker's Mammals of the World: Monotremes, Marsupials, Afrotherians, Xenarthrans, and Sundatherians. Johns Hopkins University Press, Baltimore, Maryland, USA. 784 pp. ISBN: 9781421424675.

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### A SPECIAL COURSE ON MEDICINE AND CONSERVATION OF XENARTHRA WAS HELD IN BRAZIL

Every year, the Wildlife Research Group of Brazil (Grupo de Estudos em Animais Selvagens do Brasil, GEAS) organizes an academic event that aims at increasing knowledge about native wildlife. This year GEAS teamed up with the Tamandua Institute (formerly Projeto Tamanduá) to celebrate the Year of the Anteater, an initiative of the Association of Zoos and Aquaria of Brazil, by offering a course on medicine and conservation of Xenarthra.

The course was held from 15–18 November 2018 at the University of São Paulo's Faculty of Veterinary Medicine. The first three days consisted of talks by renowned experts, including Flávia Miranda, Rogério Zacariotti, and Karina Molina. Specialist Group Chair Mariella Superina participated by videoconference. Several mini-courses were offered on the last day; topics included the care of offspring, nutrition, and diseases of Xenarthra under human care.

Over 100 registered participants and around 20 collaborators made this event a real landmark for the conservation of anteaters, sloths, and armadillos in Brazil. Such courses are fundamental to disseminate knowledge and experience, and to train future specialists.

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### RE-ASSESSMENT OF THE CONSERVATION STATUS OF XENARTHRA IN ARGENTINA

In October 2017, an agreement was signed between Argentina's Secretary of Environment and Sustainable Development (SAyDS) and the Argentinean Society for the Study of Mammals (SAREM) to re-assess the conservation status of the 408 mammal species of Argentina. The re-assessment follows IUCN's Guidelines for application of IUCN Red List criteria at regional and national levels. More than 450 specialists are participating in this process, which includes the development of a database with species descriptions and updated range maps. The compiled information will be made available through an online system.



The re-assessment of the Xenarthra is being coordinated by our Red List Authority Agustín M. Abba and our Chair Mariella Superina. Thirty mammalogists are participating in the assessment of 17 species: *Bradypus variegatus*, *Myrmecophaga tridactyla*, *Tamandua tetradactyla*, *Tolypeutes matacus*, *Cabassous chacoensis*, *Ca. tatouay*, *Priodontes maximus*, *Chaetophractus vellerosus*, *Cha. villosus*, *Zaedyus pichiy*, *Euphractus sexcinctus*, *Calyptophractus retusus*, *Chlamyphorus truncatus*, *Dasypus hybridus*, *D. novemcinctus*, *D. septemcinctus*, and *D. mazzai*.

The re-assessment process is expected to conclude by mid-2019. It will be used to update the official list of threatened mammals of Argentina within the framework of the Law on Wildlife Conservation No. 22421.

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### RE-ASSESSMENT OF THE CONSERVATION STATUS OF THE XENARTHRA AND DEVELOPMENT OF NATIONAL ACTION PLANS FOR MYRMECOPHAGA TRIDACTYLA AND PRIODONTES MAXIMUS IN BRAZIL



The Instituto Chico Mendes de Conservação da Biodiversidade (ICMBio), an institution of the Federal Government of Brazil, recently dedicated an entire week to hold two extremely important workshops that focused on the conservation of Brazilian species of Xenarthra.

Between 26 and 30 November 2018, more than 15 experts met in João Pessoa, Paraíba, to carry out the second Assessment of the conservation status of the Xenarthra of Brazil. A total of 21 species were assessed during this workshop, including four recently described *Cyclopes* species (*C. xinguensis*, *C. ida*, *C. thomasi*, and *C. rufus*). Based on new information, *Dasypus hybridus* and *Cabassous chacoensis* were removed from the list of xenarthrans native to Brazil, and their conservation status was therefore not evaluated.

The assessment workshop was followed by a second workshop to develop the National Action Plans for the conservation of giant anteaters (*Myrmecophaga tridactyla*) and giant armadillos (*Priodontes maximus*). Eight specific objectives and 31 actions were identified, which will be implemented over a period of five years.

The Brazilian Government will publish the results of both workshops in 2019. These are important steps to ensure the long-term persistence of the Xenarthra in Brazil.

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#### 2018: "RAISE THIS FLAG", THE YEAR OF THE ANTEATER



Every year, the Association of Zoos and Aquariums of Brazil (AZAB) teams up with a research and conservation institution to hold a campaign of environmental education and awareness about a Brazilian animal species. This year's campaign was

dedicated to anteaters, and the collaborating institution was the Instituto Tamanduá (formerly Projeto Tamanduá).

Many institutions, zoos, and aquaria from several continents participated in the campaign "Raise this Flag"—a wordplay referring to the Portuguese name of the giant anteater, tamanduá-bandeira, with "bandeira" meaning "flag". They organized a variety of environmental education activities to disseminate knowledge about the different anteater species, awaken curiosity and affection by the public for these fascinating species, and raise awareness about protecting the ecosystems they inhabit. A total of 27 institutions—22 of them from Brazil, 1 from Peru, 3 from Asia, and 2 from Europe—have participated in the activities, which reached over 50,000 people from all age groups and a variety of social, cultural, and economic levels. Thanks to all these participants, the Year of the Anteater is the largest campaign ever undertaken by AZAB and a research institution.

An environmental education booklet, the first of its kind to focus exclusively on anteaters, was developed within the framework of the Year of the Anteater. It is available in three languages (Portuguese, English, and Spanish) and includes environmental education activities, comics, and games. It is available for download on the official campaign website.

The Year of the Anteater is supported by the IUCN SSC Anteater, Sloth and Armadillo Specialist Group, the World Association of Zoos and Aquariums (WAZA), the Latin American Zoo and Aquarium Association (ALPZA), and the Instituto Chico Mendes de Conservação da Biodiversidade (ICM-Bio) of the Ministry of Environment of the Federal Government of Brazil.

For more information, please visit the official website:  
<http://www.anodotamandua.wix.com/campanha2018>