Associação Mico-Leão-Dourado

(AMLD; *Golden Lion Tamarin Association*)

STRATEGIC PLAN TO SAVE GOLDEN LION TAMARINS FROM EXTINCTION

THE YEAR IN REVIEW: 2017

In 2017, AMLD made significant progress in keeping GLTs from extinction in Brazil's Atlantic Forest. We are pleased to share this report on our achievements. We are grateful to those of you who helped support our work!

Where are we in achieving our 2025 goal of at least 2,000 GLTs in at least 25,000 hectares of connected and protected Atlantic Forest?

Experts agree that a viable population of GLTs[1] requires at least 2,000 GLTs in at least 25,000 hectares of connected and protected Atlantic Forest. In 2017, we had 3 important victories that improved chances of achieving that goal: 1. Autopista Fluminense presented construction plans for a forested overpass over interstate highway BR101 and they were approved by all stakeholders. Construction is expected to begin in April (AMLD Strategy 6). 2. An official presidential decree doubled the size of União Reserve, which now includes the corridor bought and restored by AMLD. This is now the largest connected and protected fragment of GLT habitat (AMLD Strategy 2). 3. On January 17, 2018 AMLD purchased Fazenda Igarapé to be its new headquarters and training center for local conservation/forest restoration (AMLD Strategy 10). Our most significant challenge in 2017 was the outbreak of yellow fever in the region and throughout Brazil (AMLD Strategy 12).

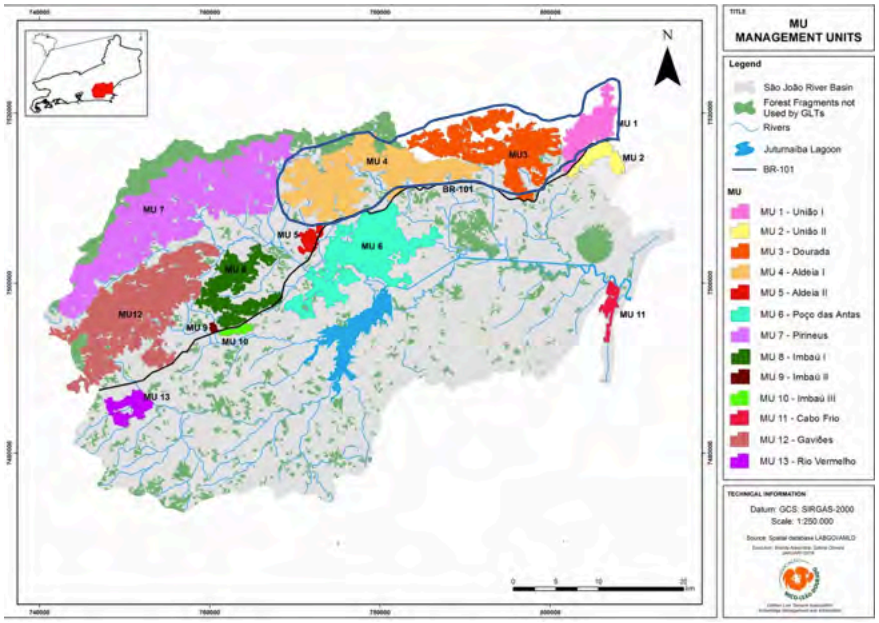

Figure 1. Forest fragments in the GLT geographic distribution, south-central Rio de Janeiro state, Brazil. The largest block of connected forest is circled.

Our work focuses on the 12 largest remaining fragments of GLT habitat, all in the São João and Macaé River Basins (BSJ/M), Rio de Janeiro State, Brazil. Our strategy to reach a viable population of GLTs is to connect the fragments and permanently protect them. Adding the criterion of effective management to our definition of "protected" GLT habitat (Strategy 2),

[1] 98% retention of genetic diversity, 0% probability of extinction as determined by Vortex modeling over 100 years

the new total, 16,860ha, includes the expanded União Reserve, Poço das Antas Reserve (6,230ha), 22 Private Reserves (2,639 hectares), and Atalaia Municipal Park, Macaé (235ha).

Following are estimates of our indicators, current as of 31 December 2017:

- Available forest in the BSJ/M: 49,159ha
- Number of GLTs in the BSJ/M: 3,200 (desired status = 3,400)
- Protected forest in the BSJ/M: 16,860ha (desired status = 25,000ha)
- Number of blocks of connected forest = 11 (desired status $\leq$ 3)
- Largest block of connected forest: 15,240ha (desired status = 25,000ha)
- Number of GLTs in the largest connected forest block: 1,113 (desired status = 2,000)
- Protected forest in largest block of connected forest: 6,841ha (desired status = 25,000ha)
- Current status in terms of our 2025 goal: Number of GLTs in the protected portion of the largest connected forest block: 408 (desired status = 2000)

A Brazilian colleague will defend her dissertation on forest connectivity in the BSJ/M in April, 2018. She is using state-of-art modeling techniques applied to a new habitat map. Until her results become available, our estimates of connectivity are based on opinions of our field teams. In 2017, AMLD teams interviewed 52 landowners, and began conducting GLT vocalization playbacks and doing forest connectivity ground-truthing in areas where GLTs were not detected previously. We expect results early in 2018.

AMLD developed a 10year Strategic Plan to keep GLTs from extinction in Brazil's Atlantic Forest. The following sections summarize 2017 progress in implementing activities, achieving objectives, as well as learning and adaptations for each of 13 implemented strategies in the Strategic Plan.

Strategy 1. GLT Metapopulation monitoring and management

This strategy addresses three important needs: scientific management of small and isolated GLT populations, collection of information on GLT biology that guides our conservation work and informs about our progress, and detection and reaction to potential threats to the GLT population, e.g. epidemic diseases.

Activities in 2017:

Much of AMLD's Metapopulation Management Team's (META) time this year was spent reacting to the sudden onset of yellow fever in humans and nonhuman primates in the region (see Strategy 12). META confirmed the compositions of 15-17 GLT groups at weekly intervals in 5 locations, noted threats such as fire, hunters and deforestation, sick or injured GLTs and monitored the progress of one GLT group that was translocated in 2016 (a rescued GLT with a mate translocated to an unoccupied forest). META initiated GLT vocalization playbacks in areas where GLTs were not detected in the 2013-2014 census. That work will be concluded early in 2018. Plans to translocate all GLTs from the Cabo Frio fragment were developed and destinations identified.

Progress

META noted no GLT mortality caused by yellow fever. META's monitoring of GLT groups suggests that most populations are stable in size and reproducing normally. The exception continues to be Imbau II, a very small fragment inhabited by 5 GLT groups used for AMLD ecotourism. Two planted forest corridors allow GLTs to leave/enter this fragment, but group composition remains unstable. Large groups of capuchin monkeys make it difficult to capture, mark and radiocollar GLTs in the two Biological Reserves. Predation at the den site resulted in deaths of 4 GLTs in a group monitored in Poco das Antas Reserve since 1984. A duo translocated in 2016 disappeared. META received reports of 3 GLTs in Parque Taquara, in the center of Rio de Janeiro city. We believe these were captive "pets" released there.

Strategy 2. Forest Protection

With over 80% of GLT habitat privately owned and vulnerable to development and fragmentation, forest protection is key to saving GLTs on the long term. The objective for this strategy is to achieve at least 25,000ha of permanently protected forest in effectively managed public protected areas (IUCN categories I-IV), private reserves, and legally required protected areas on private land.

In 2017, we expanded our definition of "protected forest" to include privately owned forest that must be maintained under Brazil's new Forest Code and is enforced by the "Cadastro Ambiental Rural" (CAR). CAR is a new online public land registry, obligatory for all rural landowners, that integrates forest cover and land ownership information. CAR makes it possible to enforce Brazil's Forest Code, requiring landowners to restore and maintain forest on steep slopes and along watercourses (APPs), and on 20% of their property (Legal Reserves). Landowners must prove compliance to receive bank loans, government benefits, and to transfer property ownership.

This strategy includes activities to improve management of existing public protected areas. On private land, the strategy includes activities to develop financial incentives for the creation of RPPNs and payment for forest environmental services, educate the local public about the relation of forests to human well-being, and engage individual landowners in restoration of APPs and Legal Reserves in areas strategically important for forest connections.

Activities and progress

AMLD detailed criteria for defining "protected" as the forested portion of any of the following:

- Legally created municipal, state, and federal parks and reserves that have effective management (human resources, financial resources, management plan, etc.)
- Legally created RPPNs (private reserves)
- APPs or Legal Reserves of private properties registered in CAR

A doctoral candidate partnering with AMLD is identifying and mapping areas of strategic importance for forest connectivity that also are areas that must be restored and protected

under CAR. Results will be available early in 2018. The financial crisis in Brazil makes it unlikely that resources will be available for creation of new private reserves or payment for ecological services in the near future.

União Biological Reserve was created in 1998 as a result of pressure by AMLD and partner institutions. In 2007, AMLD in partnership with SavingSpecies purchased 140 hectares of cattle pasture isolating União Reserve from forests to the west. AMLD reforested that cattle pasture thus linking União to adjacent forests. GLTs and other mammals now use the corridor. Since the Reserve's creation, AMLD and partners have lobbied to increase its size. In 2017, AMLD's Executive Secretary met in Brasilia with the President of ICMBio and other officials concerning the opportunity to increase the size of União. On 5 June 2017, the President of Brazil signed a bill increasing União Reserve from 2,584 hectares to 7,756 hectares, including the 140 hectares purchased and reforested by AMLD—a huge step forward for GLT conservation.

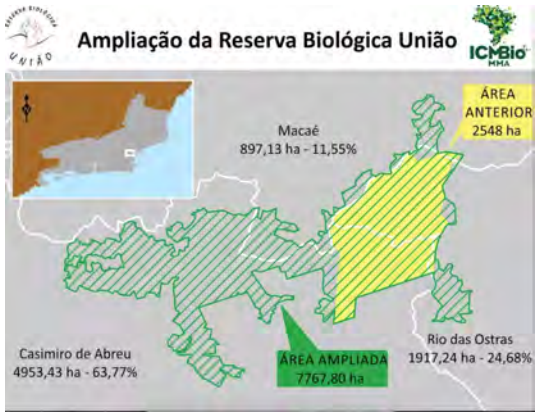

Figure 2. This map shows the original area of União Reserve (yellow) and the increased area (green crosshatch).

AMLD participated in the advisory councils of both Biological Reserves, Três Picos State Park, two municipal environment councils, and continued monitoring the recovery of degraded areas previously reforested by AMLD in both reserves.

Strategy 3. Strengthen sustainable agriculture on family farms

The objective of this strategy is to empower farm families to generate "forest friendly" income and thus not sell their land to developers. Sustainable agricultural practices also reduce improper use of fire, one of the main threats to GLT habitat. AMLD in partnership with 4 academic and government institutions accomplishes this by providing technical support to family run tree nurseries that raise and sell native tree seedlings for use in reforestation; by providing technical support for local agro-ecological initiatives (the application of ecological principals in the design and management of agro-food systems); and by participating in forums to advance state policies promoting sustainable agriculture and agroforestry.

Activities and progress

In 2017, AMLD's Extension Team provided technical support to 5 family owned native tree nurseries and 20 family farms. With AMLD's help, all 5 nurseries developed business plans and are registered with the proper agencies to allow owners to legally sell their seedlings. Tree-nursery owners were taught how to identify native tree species, collect seeds from "donor trees", and mark their location using GPS. Seed collections from these nurseries are curated by AMLD in a climate-controlled facility built for this purpose. AMLD trained the 5 nursery owners to use "agro-ecological" methods such as environment-friendly composting.

In 2017, these nurseries produced and sold 124k native-tree seedlings (75 species). AMLD's Extension Team hosted 4 workshops on agro-ecological methods and helped its family farm partners to participate in the 2017 State Agroecology Congress. Seven families used sustainable agroforestry practices to improve degraded forested areas. Five nurseries and 20 farms sold their produce, thus increasing their income. All AMLD-sponsored tree nurseries and sustainable agriculture farms served as demonstration areas to teach techniques to local landowners. AMLD added interviews with 52 rural landowners to its Landowner Database and mapped their property locations in 3 top-priority areas for reforestation.

Strategy 4. Forest restoration

The objectives of this strategy are to restore connections between isolated forest fragments and to increase the amount of habitat available to GLTs, thereby contributing directly to AMLD's conservation goals.

Figure 3. Google Earth photos showing reforestation of a corridor joining União Reserve, on the right side of each photo, with forests which were added to the Reserve in 2017.

Activities

Forest restoration is accomplished through: analysis of existing forest connections and priorities for restoration; informing local landowners about legal requirements for reforestation; developing partnerships with landowners to restore critical areas for GLTs while maintaining compliance with legal requirements (Forest Code: APP & Legal Reserves); developing partnerships with corporations required to finance forest restoration to mitigate environmental impact of their operations; empowering local nursery owners to produce and sell native tree seedlings thus ensuring a supply chain in the region; planting forest corridors and recuperating degraded areas; monitoring the progress of areas in process of restoration; and monitoring the overall forest cover and connectivity in the BSJ/M.

Progress

- 41ha native forest planted, 186ha of forest in maintenance
- 100% of areas in Poço das Antas Reserve that can be reforested are in the process of reforestation (166ha)
- 85% of areas in União Reserve that can be reforested are in the process of reforestation (40ha)
- Forest habitat increased via reforestation: 337ha (cumulative since 1997) using 70 native tree species
- Number of forest corridors planted: 2 in 2017; cumulative since 1997: 22
- Number of native tree seedlings planted (cumulative): 602,783
- Number of landowners involved in AMLD reforestation: 34
- Research completed to develop an on-line form for interested landowners to register their properties in AMLD's Reforestation Database.

Strategy 5. Environmental education—building awareness and citizenship

This strategy is designed to reduce high priority threats: unplanned urban expansion in priority areas for GLTs, roads fragmenting GLT habitat, as well as to increase local public engagement in the restoration and long-term protection of a connected forest landscape. In 2017, AMLD reinitiated its education activities after a hiatus of 3 years by hiring an experienced local environmental educator and university interns.

Figure 4. Children from a local school help celebrate "Golden Lion Tamarin Day", August 2nd.

Activities and progress

AMLD is again offering its award-winning in-service educator training program titled "Rediscovering the Atlantic Forest" (RAF). RAF is designed to prepare educators working in the GLT species range to integrate into their course curricula the relationships between the local Atlantic Forest and human well-being. To date, 152 educators (7 cohorts) completed the RAF. This year's cohort has 23 teachers from 4 municipalities in the GLT species range. Each course consists of 10 monthly (March–December) weekend sessions held at the Education Centers of the 2 Biological Reserves, including activities in local forests. During each session, each educator plans an educational project to integrate community conservation actions into his/her own educational activities. They then carry out the planned projects at their home institutions (484 activities, total) and share the results obtained at subsequent course sessions. AMLD is creating a social media network of

previous course participants. In addition, 2,334 local residents participated in environmental education events hosted by AMLD.

Strategy 6. Influence widening of BR101 highway to include bridges for GLTs

Widening of interstate highway BR101 threatens to permanently isolate three large forest fragments and their GLT populations (ca. 732 individuals) from fragments north of the highway. This separation would make it much more difficult for AMLD to achieve its goal of saving GLTs from extinction. Forested overpasses that GLTs can use are the only effective solution. At AMLD's request, a Federal Prosecutor forced the construction company (APF) to meet with AMLD, ICMBio, and IBAMA onsite. APF prepared an overpass design and presented it to the Brazilian federal transportation agency (ANTT) responsible for highway concessions and setting tolls. APF's design lacked detail and their proposal to ANTT was not well justified. In April 2016, ANTT rejected APF's plan for a forested overpass.

Activities and progress

A Federal Judge required APF to submit new designs that federal authorities and AMLD would approve. AFP hired a consulting firm which produced designs for bridges that would be cheap but useless. AMLD consulted world experts and countered with designs we believe GLTs will use. AMLD, Save the Golden Lion Tamarin (SGLT) and Philadelphia Zoo launched online petitions (ca. 5k signatures) and social media campaigns, including production of a short video asking Brazilian and international publics to support AMLD's request for forested overpasses. AMLD and SGLT sent letters to CEOs of APF's international holding companies, and to presidents of the relevant federal agencies requesting that they ask APF to comply with requirements to install effective wildlife overpasses. AMLD's Executive Secretary travelled to Brasilia and met with Brazilian authorities (ICMBio, IBAMA and ANTT) and got written agreement from these agencies. A District Court Judge ruled that APF must provide designs for approval by all stakeholders and must install various types of overpasses, including at least one forested wildlife bridge, Brazil's first. This bridge will link forests of Poço das Antas Reserve with those to the north of the highway. In December, APF produced plans approved by all parties. Construction is scheduled to begin in April 2018.

Strategy 7. Public policy

This strategy aims to influence the development and implementation of municipal, regional and national public policies that ensure the restoration and permanent protection of forests in the São João and Macaé River Basins (BSJ/M). Activities include empowering institutions in environmental planning, management and oversight; ensuring communication among government and non-governmental institutions involved in environmental management; and communicating details of public policies concerning forest conservation.

Activities and progress

AMLD participated in the following public policy forums:

- Advisory boards of Poço das Antas and União Reserves, Três Picos State Park, and the GLT Mosaic Committee (which includes RPPNs)

- Committees dealing with private land use (Comitê de Bacias Lagos São João, Environmental Councils of Casimiro de Abreu and Silva Jardim municipalities, Silva Jardim Tourism Council and Agenda 21)
- Monitoring Committee for the Brazilian Federal Plan for Conservation of Endangered Species—PAN MAMAC

Important results in 2017 include the increase in size of União Reserve, and the agreement to construct at least one forested wildlife bridge over BR101 highway. The municipalities of Silva Jardim and Casimiro de Abreu began a partnership with AMLD to enroll teachers of their municipal schools in AMLD's Rediscovering the Atlantic Forest course (Strategy 5). The Municipal Council of Silva Jardim recognized August 2 as GLT Day, to be celebrated annually. Silva Jardim also awarded AMLD exemption from municipal taxes – a decision recognizing AMLD's contributions to sustainable development in the municipality. Poço das Antas Reserve received resources to hire a Fire Brigade for 6 of 12 months.

Learning and adaptations

AMLD does not have enough staff to continue participating in all these committees. We will set specific public policy goals to help prioritize participation in these activities.

Strategy 8. Communications and marketing

This strategy uses mass media, websites, electronic newsletters, social media, technical publications, conferences, promotional materials, and face-to-face events to reach local, national, and international publics with messages designed to further achieve our strategy objectives and our overall goal.

Activities

In 2016, AMLD contracted a communications professional to work with their web-site manager. The contract continued through first semester 2017. Public participation generated by this increased media effort furthered strategies to ensure wildlife passageways over BR101, yellow fever vaccinations for the public in our target area as well as avoiding retaliation-killing of non-human primates in the area. Although services of this professional increased the quantity, quality and timeliness of AMLD's social media impact, AMLD lacked financial resources to renew the contract. AMLD's Education Team is filling some of the gap.

Results

- Improved content and regular updates for AMLD's website (in Portuguese) and SGLT website (in English)
- Increased postings, views (22,395) and likes (15,698) on AMLD's Facebook in Portuguese and SGLT Facebook in English
- AMLD partnered in production of 3 documentary videos
- AMLD's social network campaign helped force construction of a forested wildlife bridge (Strategy 6). 142,775 people engaged via social media (increase due to SZB campaign materials on AMLD site

- AMLD's work was featured in 16 TV spots and printed media articles in Brazil, and 11 outside Brazil
- AMLD's new partnership with CBB (produces "Golden Lion Tamarin Beer") was featured on national T.V.

Lessons learned and adaptations

A communications professional on our team greatly improved effectiveness of our messages to local, national, and international audiences. Unfortunately, AMLD lacks financial resources necessary to compete with salaries available in Rio City. Also, updates to AMLD's web site must be edited by a professional site manager. Finding resources to upgrade the site platform to allow AMLD staff to edit content is a priority.

Strategy 9. Regional sustainable tourism

Sustainable tourism addresses major threats related to habitat conversion (urbanization) by local landowners by providing economic benefits to landowners and to the region. AMLD initiated this strategy with guided tours to see habituated GLTs in the forest.

Activities and progress

With few exceptions, AMLD's public tourism activities (visits to see GLTs and Trilha do Mico hiking club) were suspended during first semester due to the outbreak of yellow fever in the state of Rio. Tourist groups booked prior to March were allowed to visit, but all were required to show proof of yellow fever vaccination. Ten news-media crews were permitted to visit GLTs after showing evidence of yellow fever vaccination.

Figure 5. Students from a local school enjoy seeing golden lion tamarins at a ranch participating in AMLD's Ecotourism Program.

As a result of yellow fever, the number of people visiting GLTs in 2017 was well below carrying capacity (3,120 visitors/year): local visitors (São João & Macaé River Basins) – 76;

from other regions of Brazil – 134; USA – 63; EU – 91. Contact information for all 419 visitors was registered in AMLD's database. 16 tour agencies or educational institutions brought tourists to see GLTs. Financial gain to AMLD in 2017 was US$6,345. 100% of visitors evaluated the experience as "positive". Two AMLD staff members are completing a course to become certified ecotourism guides. Five local landowners participated as hosts (meals & lodging) in AMLD's ecotourism program. AMLD helped train 16 local nature guides.

Strategy 11. Integrate Management of the Ex Situ and In Situ GLT Populations

This strategy aims to improve the flow of information and support among the 150 zoos holding GLTs worldwide, ICMBio, and AMLD to ensure that a scientifically managed ex-situ GLT population exists to rebuild the in-situ population after any potential catastrophe. A threats analysis, results chain and actions for this strategy were developed during the September 2016 workshop, with participation of AMLD staff, International GLT Studbook Keeper, Conservation Director for EAZA and Copenhagen Zoo, CPSG representative - Europe, Brazil Regional GLT Studbook Keeper, and representatives from Centro de Primatas Brasileiros - ICMBio, and SGLT. Additional planning is scheduled for March 2018.

AMLD partnered with Miami University's Project Dragonfly Global Field Program to host a summer for-credit graduate field course in GLT conservation for international zoo educators, including 15 from 15 US zoos, 3 from 3 Brazilian zoos and all AMLD staff. AMLD partnered with the Brazilian Zoo Society (SZB) to develop an educational campaign (Strategy 13) and to increase communication among zoo educators in Brazil. AMLD also partnered with IUCN-CPSG to offer a course for SZB members and ICMBio staff in integrated in-situ/ex-situ management of endangered species.

To generate interest among zoos and their staff outside Brazil, SGLT organized information tables at the AZA regional meeting in Omaha, the Smithsonian Earth Optimism Day, and the AAZK Annual Congress in Washington DC. Luís Paulo Ferraz participated in a conservation conference at Wellington Zoo in New Zealand.

Strategy 12. Emergency Plan to Reduce Effects of Epidemic Disease in the GLT Population

On 4 January, 2017, dead and dying monkeys were reported in states adjacent to Rio. The cause was yellow fever, an arbovirus carried by mosquitoes that infects humans and nonhuman primates. Mortality in nonhuman primates is high in some species and serves as an indicator of yellow fever presence, thereby signaling the need for mass vaccination of the local human population. No vaccine exists for nonhuman primates. Five cases of yellow fever in humans, including one fatality, were reported in Casimiro de Abreu, the center of the GLT geographic range. Brazil reported deaths of 294 people and an estimated 4,400 nonhuman primates, primarily howler and titi monkeys—the most severe outbreak in decades. The rapid spread of the disease was probably due to infected people travelling to other places where they were bitten by mosquitoes that then bit and infected people in the area. Because monkeys were seen dying from yellow fever, many monkeys were killed by people mistakenly thinking that the monkeys were the cause of the outbreak.

Figure 6. AMLD helped transport local health officials to remote areas where residents were vaccinated against yellow fever.

Activities and progress

As soon as the disease was detected in neighboring states AMLD reached out to experts worldwide for orientation concerning disease prevention and treatment. AMLD initiated a yellow fever communication network among ca. 30 Brazilian primatologists, expedited vaccination of AMLD and ICMBio staff and intensified its monitoring of GLT groups. AMLD and ICMBio closed public access to their forests. AMLD pressured public health officials to vaccinate the public in the São João and Macaé River Basins but shortage of vaccine delayed implementation.

AMLD developed and distributed a FAQ Sheet about yellow fever emphasizing the beneficial role of nonhuman primates as sentinels for the disease. AMLD hosted Rio State health officials, taking them to remote villages to vaccinate people, and captured GLTs to collect blood samples. AMLD did many interviews with national and international news media, and posts on social media, informing about the status of GLTs and correcting the misguided notion that monkeys are the cause of the disease. In 2017, no GLTs were known to have been killed by this outbreak of yellow fever or by people who associated GLTs with the spread of the disease.

Learning and Adaptations:

We were unprepared for the sudden onset of yellow fever in 2017. We are developing a results chain to react promptly to disease threats, including yellow fever. Additional planning will take place in March 2018.

Strategy 13. AMLD/SZB Campaign

Each year, the Brazilian Zoo Society (SZB) partners with a Brazilian field conservation program in a campaign to educate the public about a Brazilian animal and gain support for its conservation. SZB members chose GLTs as the focal animal for its 2017 campaign. The campaign aims to increase Brazilian public support for AMLD's conservation efforts and increase Brazilian zoo capacity to support in-situ and ex-situ conservation efforts for GLTs and other species. One objective of the campaign is to make the Brazilian zoo-going public aware of the negative impact of purchasing primate pets and releasing them to become invasive species. The campaign ran March 2017 – February 2018.

Figure 6. Participants in the 2017 Congress of the Brazilian Society of Zoos and Aquaria (SZB) celebrate Year of the Golden Lion Tamarin.

Activities and progress

AMLD and SZB educators began planning the campaign in May 2016, using the Open Standards and Miradi. Plans were finalized in the second semester of 2016 and educational materials for zoos to use with their publics were produced in January and February 2017. The campaign began in March with zoos across Brazil participating. AMLD's website hosted information about the campaign, including educational materials, videos, music and a list of zoos that have GLTs. To launch the campaign, AMLD's Executive Secretary gave a keynote address and AMLD staff organized a booth at the 41st SZB congress, Pomerode Zoo, Santa Catarina. August 2, GLT Day (adopted by Silva Jardim municipality and SZB), was celebrated at participating zoos throughout Brazil and elsewhere via an AMLD Facebook live post featuring AMLD staff showing GLTs in their forest habitat. AMLD and zoo educators throughout Brazil developed a social media network to share information on conservation and education activities developed for zoo publics. Analysis of indicator data evaluating success of the campaign was completed in March 2018.

Strategy 10. Strengthen AMLD's institutional sustainability

Because GLT habitat is relatively small and fragmented, and under high pressure for development, the monitoring, management and protection of the species and its habitat will be necessary for the foreseeable future. With a dedicated and competent local staff and a large number of respected collaborators, AMLD is the only organization with the necessary commitment and capacity to coordinate the development, implementation, monitoring, and adaptation of a strategic plan to save (and maintain) GLTs from extinction. The Institutional Sustainability Strategy focuses on building and maintaining AMLD's capacity to coordinate all steps of the adaptive management of this plan. If it is to survive on the long term, AMLD must continually invest in improving all aspects of its administration: strategic, technical, financial planning, accounting, fundraising, personnel management, partnerships, communications, sharing learning and more.

Activities and progress

The economic and political crisis in Brazil resulted in cancellation or sequester of funding from most Brazilian sources. AMLD is now forced to increase reliance on funding sources outside Brazil. Nevertheless, AMLD secured financial resources necessary to maintain a

competent management team to implement all strategies in its 2017 GLT strategic plan. AMLD salaries and required benefits were paid on time and in full, and with a modest increase in 2017 to account for 2yrs of inflation. For the first time, AMLD offered health insurance to its employees. However, salaries still remain below market value and we lost personnel as a result. In 2017, AMLD/SGLT submitted 22 proposals for funding; 17 approved, 1 pending.

Despite economic austerity, AMLD maintained high standards of financial planning, management, accounting, administrative record keeping, personnel management, internal communication, adequate physical space and infrastructure for its staff, and effective partnerships with relevant local, state, national, and international governments, non-governmental organizations and research institutions. AMLD developed new partnerships with Miami University of Ohio, Fairfield University, CBB Brewery as well as with agricultural and sustainable development research institutions in Brazil.

In December, 2016, AMLD and SavingSpecies submitted a proposal to DOB Ecology, a private foundation in the Netherlands, to purchase the 236ha Igarapé Ranch, across BR101 from Poço das Antas Reserve. In January, 2017, that proposal was approved. The ranch will become AMLD's permanent headquarters, serving as a site for demonstration and training in forest restoration, connection, and protection strategies, environmental education, sustainable agriculture and more. AMLD will reforest the ranch's ca. 100 hectares of cattle pasture thereby connecting Poço das Antas Reserve with forests to the north of BR101 via the forested bridge to be built over the highway. AMLD purchased the ranch in January 2018.

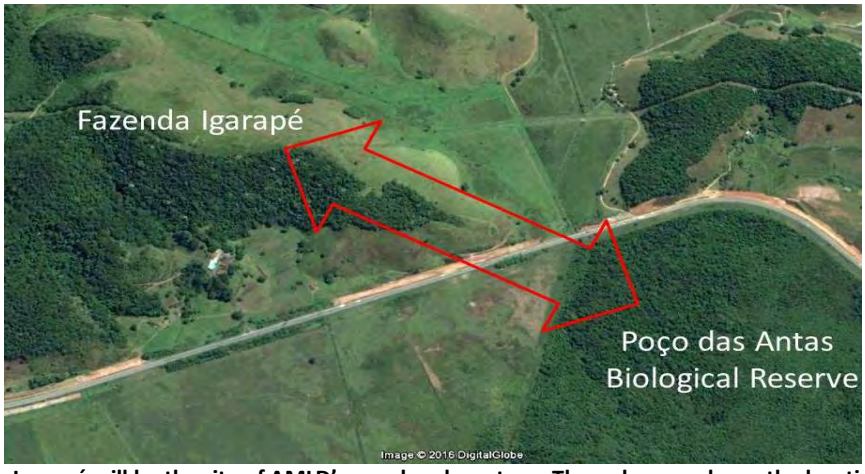

Figure 7. Fazenda Igarapé will be the site of AMLD's new headquarters. The red arrow shows the location of the future forested wildlife overpass linking GLT populations of Poço das Antas Reserve and Igarapé.

Thank You to Our 2017 Supporters!

***Associação Mico-Leão-Dourado* and *Save the Golden Lion Tamarin*[2] thank:**

Our Major Partner Institutions for their long-term financial and technical contributions:

Copenhagen Zoo
EDF Norte Fluminense
Philadelphia Zoo
Saving Species
Smithsonian National Zoological Park
The Walt Disney Company
Zoo Atlanta

And all the institutions and individuals who donated through Save the Golden Lion Tamarin:

US$30,000+
Disney Conservation Fund
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US$1,000-$5,000
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Toni Allen
Virginia Burney
Dickerson Park Zoo
Sheryl and Allen Hockenberry
Jeremy Mallinson

[2] Save the Golden Lion Tamarin (SGLT), a U.S. Public Charity created to support AMLD's conservation work

US$100 - $499

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Second Graders at Woodbury Heights Elementary School

ZOO PARTNERS IN 2017

In addition to the zoos below, which generously provided financial support for GLT conservation in situ, we are grateful to the GLT International and Regional Studbook Keepers and their institutions: Jennifer Mickelberg (Zoo Atlanta), Nick Lindsay (Zoological Society of London), Mara Cristina Marques (Fundação Parque Zoológico de São Paulo), Amanda Embury (Zoos Victoria). We are also grateful to the over 150 zoos that participated in the GLT Captive Breeding Program.

American Association of Zoo Keepers (AAZK)
AAZK, Brandywine Zoo Chapter
AAZK, Georgia Chapter
AAZK, North Carolina Chapter,
Apenheul Primate Park, The Netherlands
Belfast Zoo, Northern Ireland
Buttonwood Park Zoo
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Obrigado!—We greatly appreciate your support!

AMLD/SGLT DONATION INFORMATION

Would you like to make a donation to help AMLD and SGLT keep Golden Lion Tamarins safe from extinction in Brazil? If so, you have several options:

- If you are Brazilian you may donate directly to **AMLD.** You can find more information, in Portuguese, here… http://www.micoleao.org.br/ .

- If you are from the U.S. you may make your tax-deductible donation to **Save the Golden Lion Tamarin**, a U.S. Public Charity created to support AMLD's conservation work. Click here for more information and to make a donation…. http://savetheliontamarin.org/ .

- Regardless of where you are from you may contribute to the **Lion Tamarins of Brazil Fund**. This fund was created to provide a way for zoos to support in situ field research on lion tamarins. Please ask that your donation be earmarked for "GLTs". You can find more information here… http://ltbf.org/?page_id=23 .

If you would like more information on how you can help save Golden Lion Tamarins please send an email to contact@savetheliontamarin.org .