



FINAL REPORT



Annual Report of Activities
2019-2020

ABOUT THE INITIATIVE

THE HYACINTH MACAW INSTITUTE

It was created in September 3rd, 2003. The Institute is a non-governmental, private and non-profit organization, that develops national environmental protection projects, with administrative and financial autonomy, with headquarters and venue in Campo Grande, MS. In 2004, the Hyacinth Macaw Institute starts to manage and administer the resources received by the Hyacinth Macaw Project and since then, it participates in advocacy actions, subsidizes and promotes public policies in favor of biodiversity conservation.

THE MISSION

To promote the conservation of biodiversity, seeking the rational use of natural resources and improving the quality of life.



THE HYACINTH MACAW PROJECT

The Hyacinth Macaw Project studies the biology and ecological relationships of the Hyacinth Macaw. To do this, it manages the nests and promotes the conservation of the bird in its natural habitat.

The main objectives are:

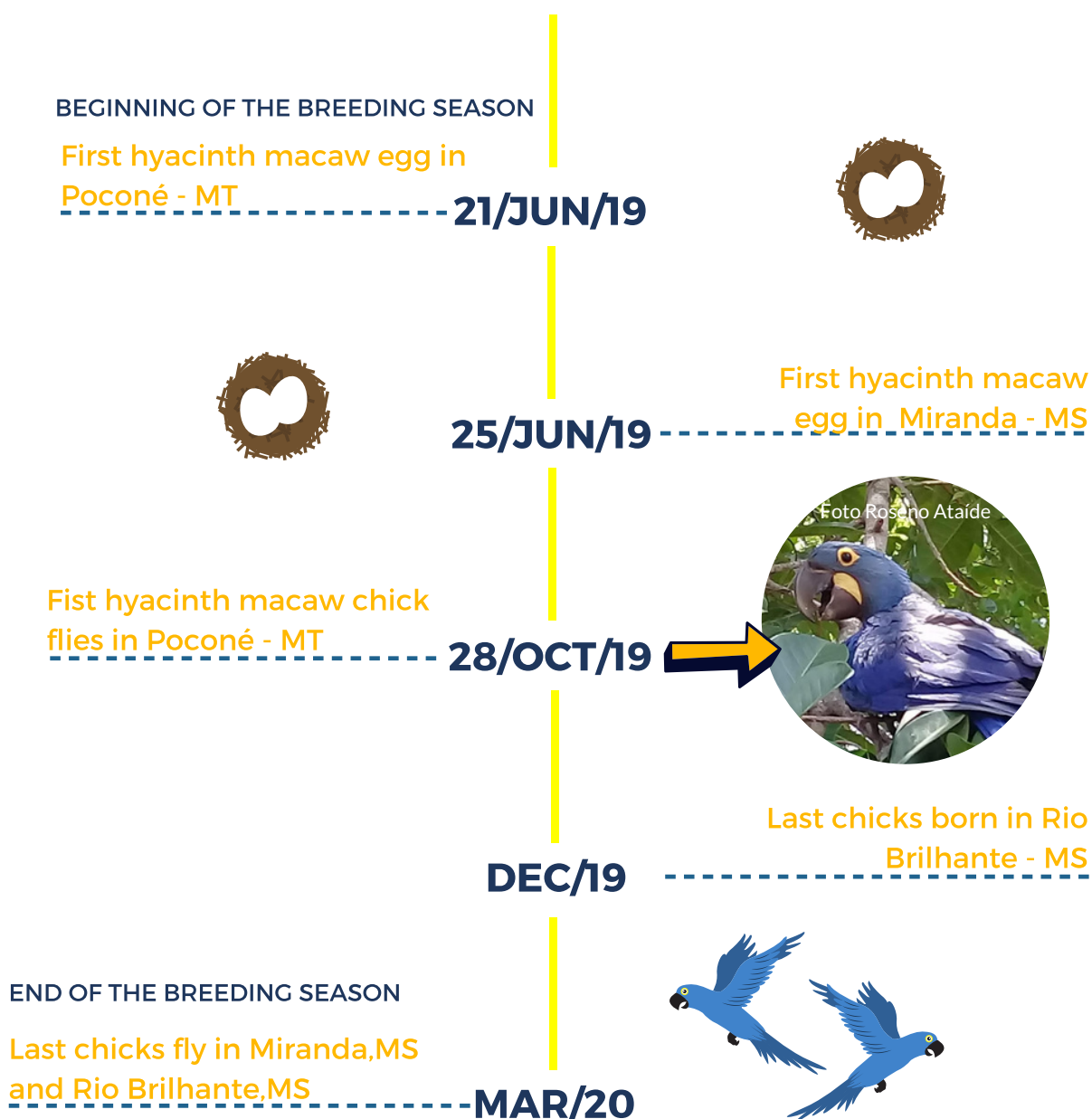
1. Maintain viable populations of hyacinth macaws at medium and long term in the wild in its natural environment;
2. Promote biodiversity conservation and of the Pantanal as a whole.



EACH YEAR SPECIFIC OBJECTIVES EMERGE TO BE WORKED ON FIELD, BUT EVERYTHING IS LINKED TO BASIC BIOLOGY, REPRODUCTION, BEHAVIOR, HABITAT REQUIREMENTS, MANAGEMENT AND ENVIRONMENTAL EDUCATION FOR THE CONSERVATION OF THE SPECIES IN NATURE, AMONG OTHERS.

HYACINTH MACAW PROJECT

GENERAL RESULTS OF THE BREEDING SEASON



The breeding season for hyacinth macaws (*Anodorhynchus hyacinthinus*) 2019-2020 began in June 2019, with the news of the first egg in Poconé, in the Pantanal of Mato Grosso, on the 21st. At Caiman, Pantanal of Miranda, Mato Grosso do Sul we registered the presence of two eggs in nest N.2274 on June 25, 2019. The first chick to leave the nest was the one in Poconé, on October 28, this information was shared by the owner,

Mr. Roseno Ataíde, great partner of the Project and Citizen Scientist. The last chicks of the season were born in December, a record documented by Mr. Tico, in an isolated nest in the Cerrado, in Rio Brilhante, more than 250 km away from the Pantanal. The end of the breeding season occurred at the end of March 2020 with the flight of the last chicks in Caiman and also in Rio Brilhante.

THE WORK IN NUMBERS

A total of 1621 monitoring were carried out in 243 nests registered in 23 properties in the states of Mato Grosso do Sul and Mato Grosso, as can be seen in the graph below. Five sub-regions of the Pantanal were monitored with 73% (N = 176) of the nests and the rest in the Cerrado, in eight municipalities.

+17 K

KILOMETERS TRAVELED

1621

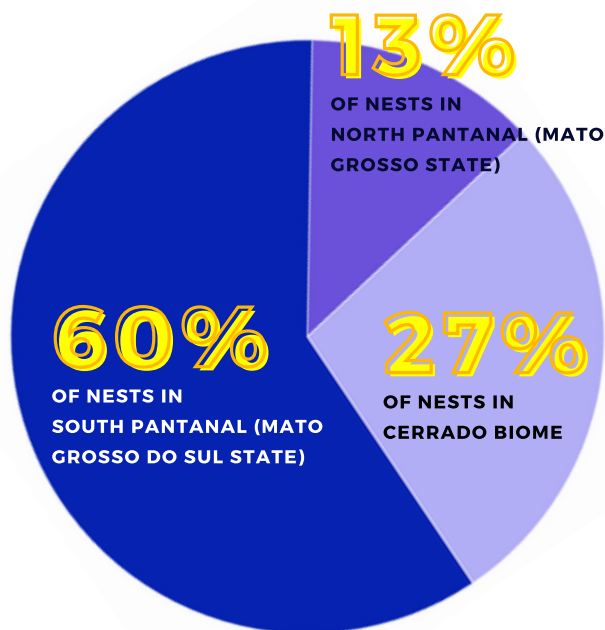
MONITORING

248

MONITORED NESTS

23

PROPERTIES VISITED IN MATO GROSSO
SUL AND MATO GROSSO



THE FARM WITH THE LARGEST NUMBER OF MONITORED NESTS IS CAIMAN, THAT BECAME THE CENTER OF REPRODUCTION OF HYACINTH MACAWS IN NATURE.

And the municipalities of Poconé, Campo Grande and Rio Brilhante that had only one monitored nest each. To this end, we have a permanent team at Caiman and two more teams were formed to work in other regions.



Foto Neiva Guedes

PROPERTIES MONITORED IN THE SEASON

Region	Property	Number of monitorings	Number of nests
Pantanal of Miranda	Caiman Farm	1142	104
	Santa Delfina, Novo Horizonte, 23 de Março	88	22
Pantanal of Aquidauana	Aguapé Lodge	20	5
Pantanal of Paraguai	Santa Tereza Farm	14	14
Pantanal of Barão do Melgaço-MT	São Francisco do Perigara Farm	64	24
Pantanal of Poconé-MT	SESC Pantanal	14	7
Cerrado - Miranda	Refúgio da Ilha, Hi Fish, Baia Grande, Santa Luzia	61	13
Cerrado - Aquidauana	Conquista, Chapadão, Chácara Anis	54	12
Cerrado - Bonito	Santuário, Mimosa, Chácara Nirvana	125	29
Cerrado - Jardim	Recanto Rio da Prata	54	12
Cerrado - Terenos	Estância Mutum	3	3
Cerrado - Campo Grande	Chácara Princesa	4	1
Cerrado - Rio Brillhante	Estância Beira Rio	6	1
Cerrado - Poconé	Poconé	5	1



Foto: Rodrigo Oliveira



Foto: Kefany Ramalho



Foto: Fernanda Fontoura



Foto: Fernanda Fontoura

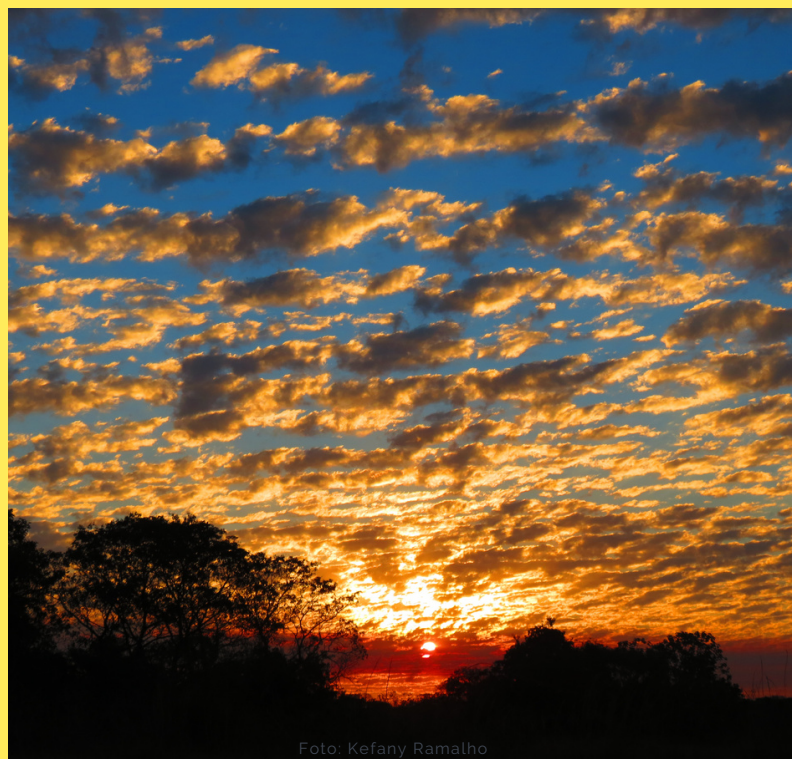


Foto: Kefany Ramalho



Foto: Kefany Ramalho



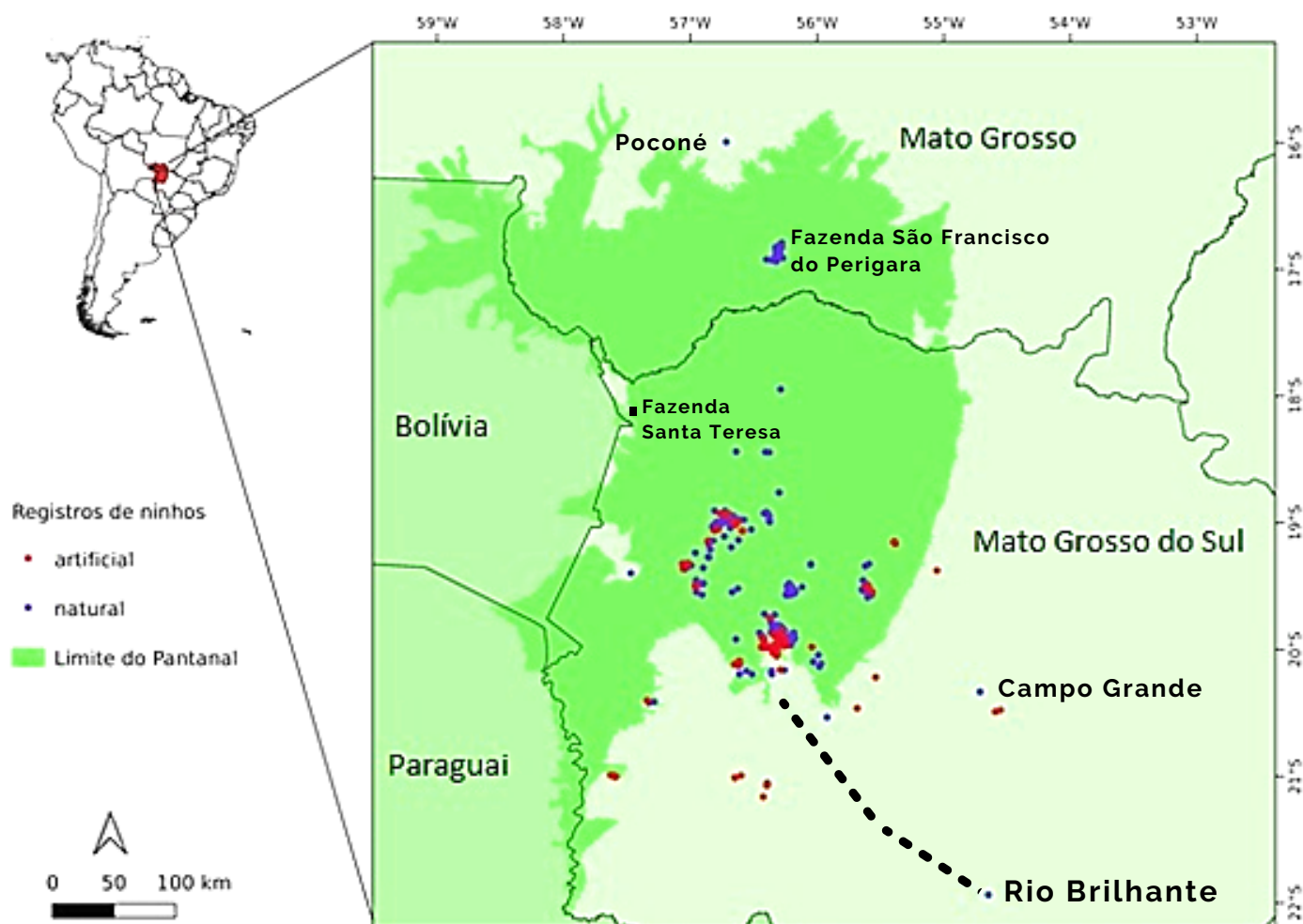
Foto: Fernanda Fontoura



Foto: Kefany Ramalho

EXPEDITIONS

Map of the Pantanal and Cerrado biomes with registered natural (blue dot) and artificial nests (red dot) carried out by the Hyacinth Macaw Institute in the states of Mato Grosso do Sul and Mato Grosso.



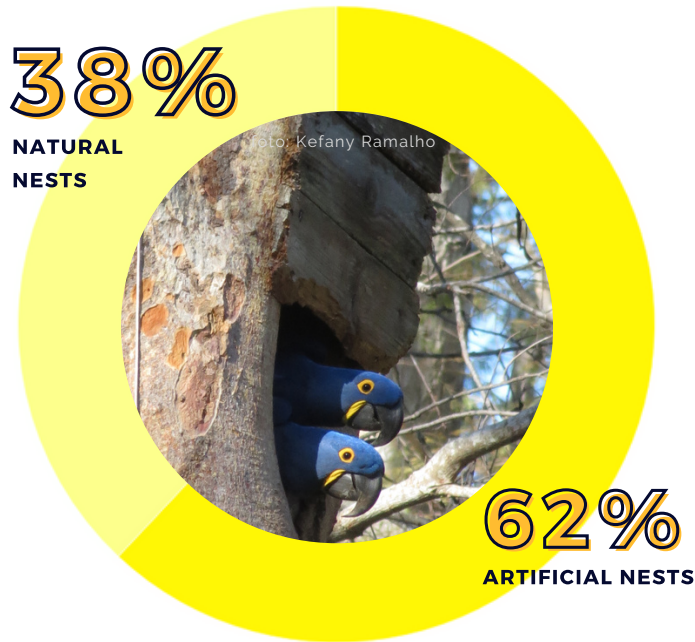
Above, you can see the map of the Pantanal and Cerrado biomes, in the States of Mato Grosso do Sul and Mato Grosso, with the natural and artificial nests registered by the Hyacinth Macaw Project. Observe the distance from the last blue dot (below, in MS), which is the natural nest on the banks of the Brilhante River, in the municipality of the same name, about 250 km away from the South Pantanal. Monitoring in Mato Grosso also means a large displacement of the team, from Campo Grande to Cuiabá, another hour's drive to Poconé and finally, half an hour on a small plane to the São Francisco do Perigara farm. On the way back, there are two more hours, starting from Poconé to monitor the nests installed in Baía das Pedras, from SESC Pantanal.

EQUALLY DISTANT AND WITH SLOWER LOGISTICS, IS THE MONITORING OF NESTS AT SANTA TERESA FARM, WHICH STARTING POINT IS THE CITY OF CORUMBÁ, 400 KM AWAY FROM CAMPO GRANDE, FROM WHERE A BOAT LEAVES, LENT BY THE OWN FARM, FOR TRANSPORTATION OF THE TEAM FOR ABOUT 4 HOURS ALONG THE PARAGUAY RIVER.

Therefore, these more distant points are monitored two to three times throughout the breeding season and not monthly, like the others. And a very important issue of these more distant monitoring is that we need to count on the support of personnel and transportation "in loco" for locomotion within these properties. Therefore, the partnership with them and the owners is fundamental to obtain results.

THE WORK IN NUMBERS

Of the 243 monitored nests, the majority, 62% (N = 151) were artificial (graph below) and the rest, 38% (N = 92) was natural, in 10 properties, of which nine were registered in this period. Thirteen properties, in seven sub-regions, have only artificial nests, of which 63 were installed by the Project team in this breeding season. At the Santa Teresa farm, in the Pantanal of Paraguay, there is one natural nest and 13 artificial, seven of which need to be exchanged.



To exemplify the dynamics of the nests, 21 nests were installed there in 2007. Over the years, some nests became unviable and were removed. In 2016, five new nests were installed, while others were replaced.

THIS FACT DEMONSTRATES THAT THE SCARCITY OF CAVITIES IS REALLY A LIMITING FACTOR FOR THE REPRODUCTION NOT ONLY OF THE HYACINTH MACAW, BUT OF SEVERAL SPECIES THAT USE THESE CAVITIES.

In this breeding season 95 nests, both natural and artificial, were managed. This means: decrease the opening, elevate the bed, drainage and installation of a metal plate at the base of the tree to prevent terrestrial mammals (predators) from climbing.

95
MANAGED NESTS

63
ARTIFICIAL NESTS INSTALLED

9
NATURAL NESTS REGISTERED



OCCUPATION OF THE CAVITIES

Most of the 243 registered and monitored nests, 53% (N = 124) were occupied by hyacinth macaws and 41% (N = 100) were occupied by another 25 species. Some cavities were occupied simultaneously by more than one species, for example, macaws on the bed (base of the nest) and bats or bees on the ceiling. And others were disputed or occupied consecutively, for example, used by macaws and later by ducks, mallards or owls. Among the other species that occupied the nests in this breeding season, are: red-and-green macaw (***Ara chloropterus***) (fig. below), golden-collared macaw (***Primolius auricollis***), white-eyed parakeet (***Aratinga leucophthalma***), turquoise-fronted amazon (***Amazona aestiva***), black-hooded parakeet (***Aratinga nenday***), toucan (***Ramphastos toco***), black vulture (***Coragyps atratus***), muscovy duck (***Cairina moschata***), black-bellied whistling duck (***Dendrocygna autumnalis***), bat falcon (***Falco ruficularis***) (fig. below), american kestrel (***Falco sparverius***), laughing falcon (***Herpetotheres cachinans***), collared forest falcon (***Micrastur semitorquatus***), american barn owl (***Tyto furcata***), shiny cowbird (***Molothrus bonariensis***), cattle tyrant (***Machetornis rixosa***), white-rumped monjita (***Xolmis velatus***), chopi blackbird (***Gnorimopsar chopi***), streaked flycatcher (***Myiodynastes maculatus***) (fig. below), bats (***Diaemus youngi***, ***Chrotopterus auritus***, ***Molossus sp.*** and ***Noctilio sp.***), africanized bees (***Apis mellifera***) and native bees (***Trigona spinipes***).

53%

of the nests were occupied by hyacinth macaws

41%

of the nests were occupied by other 25 species

IT IS WORTH MENTIONING THAT THE MAJORITY OF THESE SPECIES ARE REPRODUCING IN ARTIFICIAL NESTS AND THAT THIS SEASON WE COMPLETED A LIST WITH 21 SPECIES. THE STREAKED FLYCATCHER (MYIODYNASTES MACULATUS) IS A MIGRATORY SPECIES REPORTED IN THE AMAZON REGION AND WE HAD THE FIRST RECORD WITH TWO CHICKS IN AN ARTIFICIAL NEST IN THE PANTANAL OF MATO GROSSO. IN ADDITION, THE NEST ALSO HAD FIVE EGGS OF MUSCOVY DUCK (CAIRINA MOSCHATA)



OCCUPATION OF CAVITIES BY THE HYACINTH MACAWS



Foto: Cezar Correa

REGARDING THE REPRODUCTION OF THE HYACINTH MACAWS, IT WAS A TOTALLY DIFFERENT YEAR.

At the beginning of the breeding season, there was a prolonged drought, the climate was very inhospitable, as the rains, which are an important trigger for the start of egg laying, were delayed. The region had low humidity, high temperatures, strong winds and the field was extremely dry. Only two couples had laid eggs in June: one in Poconé and the other in Caiman. The rest did not start until August.



Foto: Fernanda Fontoura



Foto: Ana C. Lourenco

OCCUPATION OF CAVITIES BY THE HYACINTH MACAWS



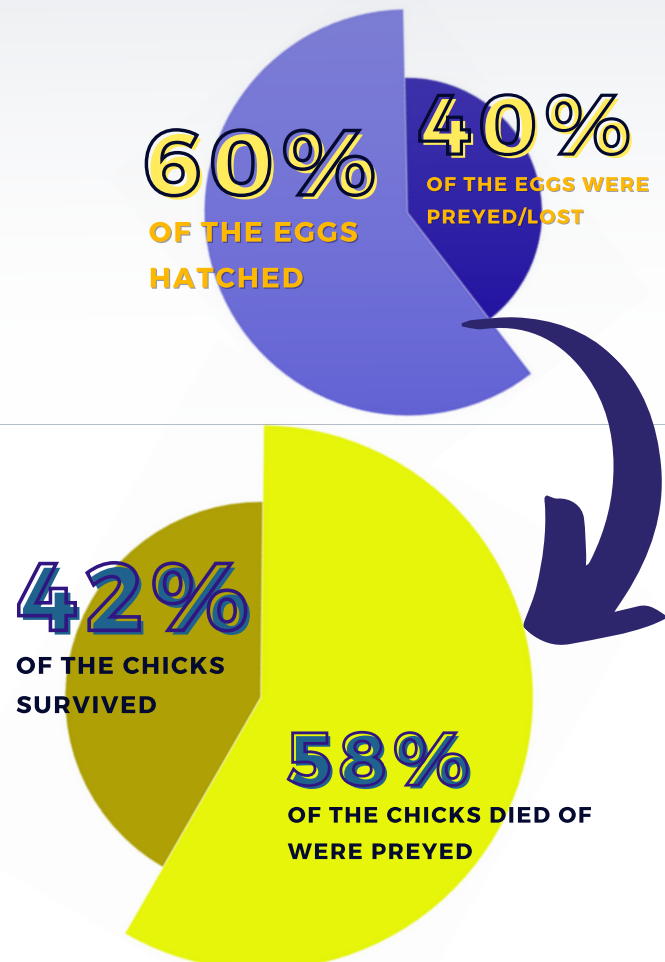
Foto: Kefany Ramalho

IN SEPTEMBER WHEN THE CHICKS WERE BEING BORN, THE BIGGEST FIRE EVER RECORDED OCCURED IN THE MAIN RESEARCH AREA, THE REPRODUCTION CENTER AT CAIMAN. THEREFORE, THE SCENARIO WAS A WAR ZONE. WEEKS OF STRUGGLING AND FIGHTING THE FIRE COUNTED ON THE MOBILIZATION OF ALL THE FARM'S PERSONNEL, RESEARCH PROJECTS, NEIGHBORS, FIREFIGHTERS, AMONG OTHERS, FIGHTING FOR A SINGLE CAUSE, PUTTING OUT THE FIRE AND PREVENTING THE RPPN ARACY KLABIN TO BURN.

However, at the end of the breeding season, the result were a surprise, as 163 eggs were laid, of which 65 were lost or preyed and 60% (N = 98) hatched. Of the 98 chicks that were born, 42% (N = 41) survived and flew.

IN THIS SEASON, NESTS, EGGS AND CHICKS WERE BURNED, LOST OR KILLED, BUT THE HYACINTH MACAWS SHOWED A LOT OF RESILIENCE.

They did not abandon burnt nests, neither with eggs or chicks. Faced with the losses, they laid eggs again. And the chicks, despite having some health issues or injuries, managed to recover and in the end, flew.



TEAM AND COLLABORATORS

THE PEOPLE BEHIND THIS WORK

Field biologists: Fernanda M. Fontoura; Kefany Ramalho; Ana Cecília Lourenço

Research assistants: Lucas Rocha; Everson Freitas, Lucas Weiss

Eventual participation: Luciana Ferreira, Grace Ferreira da Silva, Cynthia Mazzi, Thamy Moreira, Larissa Tinoco, Gabriela Corrêa, Neliane Corrêa, Luiz Dervalho, Rodrigo de Oliveira

Communication: Eveline G. Castanho; Elisiane Mascarenhas; Cynthia Mazzi



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