

IN MEMORIAM: JOSÉ MÁRCIO AYRES AND ULYSSES S. SEAL

JOSÉ MÁRCIO AYRES 1954–2003: A PRIMATOLOGIST WHO LIKED TO CREATE PARKS*

Cláudio Valladares-Pádua



Photo: Russ Mittermeier

I first met Márcio Ayres at a primate conservation workshop organized by the University of Leicester in 1982. He was a postgraduate student in England then, and Dr. Bob Martin, a mutual friend, introduced us, certain

that we would have a lot in common. Bob was right. The long conversations and laughs we had together then were the essence of all our future meetings; he had a tremendous sense of humour and a passion for the conservation of nature. The years followed, punctuated by innumerable meetings with Márcio; always anxious to tell me his news, his plans, his progress. Márcio had the enormous energy of one who is working for a mission – Amazonia, a mission he never lost sight of throughout his life.

Márcio Ayres graduated in Biological Sciences in 1976 at the University of São Paulo. Even when young, he showed his determination to put his ideas into practice when, only 20 years old, he took the job of administrator at the Ribeirão Preto Zoo. But he was not content to stop there, and enrolled in the Master's course in Ecology of the National Institute for Amazon Research (INPA) and the University of Amazonas (INPA/FUA), under the supervision of Dr. Paulo Emílio Vanzolini. His thesis was pioneer and challenging, as in all he did – a field study of the white-nosed saki, *Chiropotes albinasus*, at Aripuanã (along with some observations of the Guiana bearded saki, *Chiropotes satanas*, at the field site of the Biological Dynamics of Forest Fragments Project, north of Manaus). It was then that he experienced at first hand the enormous threats hanging over the Amazonian forests, and realized that the salvation of its primates and enormous wealth of biodiversity was only possible through the creation of protected areas. I believe it was then that the seed of young Márcio's future vision as a creator of protected areas was planted, and the only reason he did not pursue his objective then with the vigour of later years was the need to complete his qualifications. Not content with a Master's degree, Márcio followed on with a doctoral degree at the University of Cambridge, England, under the supervision of Dr. David J. Chivers. In the early 1980s, his Ph.D. research took him back to Amazonia in search of primates – this time to the white uakaris, *Cacajao calvus*, and the middle Solimões. The várzeas of Mamirauá were under numerous threats. The risk to his study animals inspired him to initiate a campaign for a protected area for the region, until then known only

from the descriptions of Henry Walter Bates in the middle 19th Century. On one occasion, Márcio recounted that the communities of the region were convinced he was a missionary priest, and those who knew him then could well believe it; his appearance was that of a monk with the mission not to save souls, but to save biodiversity! In 1987, Márcio was appointed to the Wildlife Conservation Society (WCS) Carter Chair in Rainforest Ecology.

In 1985, he sent a proposal to the Secretary of the Environment for the creation of the Mamirauá Ecological Station, the first with the specific aim of protecting Amazonian várzea and its regional biodiversity while at the same guaranteeing the well-being and prosperity of the human populations living there. To his frustration, the proposal languished; but in 1990, undeterred, he convinced the Governor of the State of Amazonas to declare the area (the confluence of the Rios Solimões and Japurá, bounded on the west by the Auatí-Paraná) a reserve. His original proposal was for 36,000 ha, and I remember his bemusement (and slight alarm at the consequence) at his powers of persuasion when the reserve was decreed with an area of 1,124,000 ha! To deal with its enormous size, he drew up a plan for a “focal area” of 260,000 ha, where he established a pilot programme for research, community work, and the management of the reserve. From 1994 to 1996, further inspiration on the part of Márcio (and the determination to go with it) resulted in the State of Amazonas passing a law which created a new protected areas category, the State Sustainable Development Reserve (later, in 2000, incorporated into the National System of Protected Areas – SNUC), and Mamirauá was the first.

Márcio's major challenge was to ensure that protected areas such as Mamirauá did not remain only as decrees, and with the creation of an NGO – the Sociedade Civil Mamirauá – he set up a system of participative active management and protection by the local communities themselves.

In 1997, we were staying in the same hotel in Manaus. His eyes were bright with enthusiasm once again as he recounted his plans for the creation of a new reserve, Amanã, which would connect Mamirauá with the Jaú National Park to create an enormous “corridor” of protected forests and waters in the central Amazon. The Governor of the State of Amazonas decreed the Amanã State Sustainable Development Reserve in 1998. The two reserves combined protect more than 3 million ha. The Management Plan for Mamirauá, based on more than 10 years of research, surveys, monitoring and community development, is considered exemplary.

The overwhelmingly positive results of the innovative experiences in the conservation and management of the two reserves brought Márcio international recognition in the field of conservation biology, and he was consequently the recipient of numerous awards – the American Society of Primatology's Conservation Award, the WWF-International Gold Medal, the Society for Conservation Biology Award, and the Rolex Award for Enterprise. The

Sociedade Civil Mamirauá, which he created, was awarded the Von Martius Prize from the Brazil-Germany Chamber of Commerce in 2000, and the UNESCO Prize in the Science and Development category in 2001.

The final time I heard Márcio's voice was last year, during the annual Congress of the Society for Conservation Biology in Kent, UK. Although Márcio was physically absent, victim of cancer which stopped him travelling, his colleague of many years, Dr. Gustavo Fonseca, arranged for a telephone call to be broadcast at the ceremony which was to give him a special tribute from the Society. Talking from the hospital where he was already severely ill, once more he showed his enormous courage, enthusiasm and hope in talking of how important the award was for him and for his future plans.

Twice after this I tried to visit Márcio in New York, but his illness made it impossible, and he died on 7 March 2003. We have lost, prematurely, one of the greatest conservationists our country has ever seen. One certainty remains, however: on high, our untiring friend Márcio is creating new protected areas in Heaven. A sincere and sad goodbye from all of us primatologists who admired him so much.

*Translated from the Portuguese, originally published in the *Boletim Informativo da Sociedade Brasileira de Zoologia*, June 2003, No. 72: 6-7.

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JOSÉ MÁRCIO AYRES

Russell A. Mittermeier

José Márcio Ayres and I shared a love for a very special primate, the white uakari of the *várzea* forests of the upper Solimões. I had originally planned to do my thesis on this animal, and carried out an expedition to find it in 1973. I succeeded in locating several populations, especially in the tiny Rio Panauá, but the logistics of working there (and the mosquitos) were so difficult that I gave up and chose another thesis topic. It would be a decade before Márcio, who was also fascinated by this bizarre monkey with a short tail, long shaggy white fur and a bright red face, demonstrated his dedication and persistence by conducting the first detailed field study of this animal. This study, which Márcio carried out in spite of many hardships and a variety of health problems that he encountered during his work, is now a classic and one of the most important bodies of research ever carried out on an Amazonian primate. What is more, his commitment to the species and the region in which it occurs led to the creation of the 1,124,000 ha Mamirauá Sustainable Development Reserve, and later the huge Mamirauá-Amanã-Jaú Corridor, one of the most important protected-area complexes on Earth.

But Márcio was not satisfied with the mere creation of a new protected area. Rather, he decided that Mamirauá should become a model for conservation in Amazonia, and he began, more than a decade ago, to create an infrastructure and find the funding to make Mamirauá work at a scale that was meaningful and relevant to the region, its human inhabitants and its biodiversity—something that had never been done before. He used his considerable skills in science, communications, and fund-raising to create a program that is unmatched anywhere in Amazonia, and that has set new standards for conservation. Several years ago, before his illness began, he and I talked about trying to recreate the Mamirauá model in 10 other places in Amazonia. He first looked at me like I was crazy, but, after a brief reflection, indicated that he was ready to go. I have no doubt that, had he lived, he would have over the course of his career been instrumental in the creation of many more reserves of this kind. Indeed, the Sustainable Development Reserve model, of which Mamirauá was the first, has already become an integral part of conservation strategies for Amazonia, with another four, covering 3,281,021 ha, having been created in Márcio's lifetime and many more in the planning stages.

Márcio Ayres, in the simplest possible terms, was the greatest conservationist ever to work in Amazonia. He was a true leader, a visionary, a practical implementer, a clever communicator, and an amazing salesman who succeeded in finding funds for his work from a wide range of different sources. On top of that, he was a world-class scientist, whose grasp of the biodiversity conservation business was unsurpassed and whose scientific contributions will long be remembered. And, last but not least, he was a loyal and steadfast friend who could always be counted upon in any circumstance. I first met Márcio at a primate meeting in Belém in 1977, and over the next quarter century, we shared many experiences in the field, in international gatherings of many different kinds, and as members of the Steering Committee of the IUCN's Species Survival Commission. As with so many others who shared his life, I will miss him very much and still find it hard to believe that he is gone. He had so much to contribute in so many ways, and it is truly sad that he left us before he could realize all of his dreams. The best thing that we can do to honor him is to help continue what he so effectively started, and to make sure that his vision of Amazonia becomes a reality.

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THE GRAND VISION OF MÁRCIO AYRES

Gustavo A.B. da Fonseca

The life of José Márcio Ayres—Márcio to his colleagues, and Zé Márcio to his relatives—epitomized the power of articulating strong links between good science and effective

conservation action, something that is often said but much less frequently accomplished. He would derive as much pleasure from having a high-profile paper of his appearing in *The American Naturalist*, supporting the allopatric model of speciation driven by Amazonian rivers, as he would by dumbfounding an unimaginative government bureaucrat into committing sizable sums of money to his beloved reserves. I remember him being as proud of himself from being accepted into the Brazilian Academy of Sciences, and receiving countless prizes and honors internationally, as he was of showing the progress in the human health statistics resulting from investments in the Amazonian communities he loved to work with. He definitely lived what he preached.

Very funny, personable and unassuming, Márcio definitely had the Midas touch. While working on a doctoral dissertation with the white uakari, *Cacajao calvus*, he envisioned the largest flooded forest reserve in the world, the Mamirauá Sustainable Development Reserve. While thinking about new ways of ensuring the long-term ecological integrity of the Amazon basin, Márcio dreamt of the most extensive and unbroken network of protected areas and Indigenous reserves in the world: the Central Amazon Corridor, in excess of 12 million hectares. Transplanting to the national and international arenas the political skills acquired through many years of the soft talk that characterizes the social environment of all native Amazonids, his dreams and vision slowly but surely became reality. The protected area management models pioneered in the Mamirauá and Amanã Sustainable Development Reserves, anchored on solid conservation biology and socio-economic research agendas, will remain Márcio's most enduring legacy, and the principal inspiration to those who follow in his footsteps.

Since the diagnosis of his illness in late 2001, Márcio and I spoke on the phone every couple of days or so, his condition permitting. The usual optimism and the constant scheming up of great new things never slowed down, even in the worst phases of his treatment. Márcio would continue spending many hours a day on the Internet working on numerous projects but, as a master junk-mailer, he never ceased to continue playing tricks and teasing friends with jokes of all tastes and colors. Above all, Márcio was a great optimist who enjoyed life.

During my few visits to his apartment in New York, where he was staying while receiving the best medical care possible—almost always in the company of his wife, sons and parents—he suggested writing a book on the work that we and many other colleagues did in 1996: designing and proposing, at the request of the Brazilian government, the creation of seven major “Ecological Corridors” in the Amazon and the Atlantic Forest which encompassed many dozens of reserves and other forms of managed landscapes. He likely knew this would be his last publication, and his choice was emblematic of how he would like to be remembered – as an advocate of bold new ideas.

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ULYSSES S. SEAL: 1929-2003



Ulie Seal, Chair of the IUCN/SSC Conservation Breeding Specialist Group (CBSG), died on 19 March, 2003. He was a truly remarkable man. He took over the CBSG with 15 members and, over the course of 24 years, turned it into a global network of over 1000 members, which has had,

and still has, an enormous impact on the conservation of the world's biodiversity. The CBSG network has become a widespread and highly effective interdisciplinary vehicle for communication and collaboration between people from the captive breeding community, wildlife managers, NGOs, governments and the private sector. Ulie further expanded CBSG's capacity by establishing a regional network of offices in South Asia, Mesoamerica, Indonesia, Mexico, South Africa, and Europe. As Chairman, Ulie contributed to the survival of thousands of plant and animal species throughout the world, from the tiny goblin fern in the northern Minnesota forests to the mountain gorillas in Uganda. Ulie influenced and touched countless individuals who continue to carry on his passion for the conservation of wildlife. (Adapted from *CBSG News*, 14(1), 2003, a special edition in his honor.)

With CBSG, he developed the various workshop mechanisms that have contributed so much to prioritizing and organizing conservation strategies worldwide – notably the Population and Habitat Viability Assessment (PHVA) and the Conservation Assessment and Management Plan (CAMP). CBSG organized three workshops for Brazilian primates – Ulie Seal led and facilitated two of them: the Lion Tamarin, *Leontopithecus*, PVA held in Belo Horizonte, Minas Gerais, in 1990, and the Muriqui PHVA, also in Belo Horizonte in 1998 (see *Neotropical Primates* 6(2): 52-53, 1998). (The second Lion Tamarin PHVA, held in 1997, was orchestrated by Ulie and facilitated by Susie Ellis and Robert Lacy; see *Neotropical Primates* 5(2): 53-55, 1997). PHVAs have also been held for *Alouatta palliata* in Mexico (1995), *Saimiri oerstedii citrinellus* in Costa Rica (1994), and *Saguinus oedipus* in Colombia, and CAMP workshops were also organized through CBSG for Mexican Primates (1995), Panamanian Endemic Species (1994) and Mesoamerican Primates (1997).

Robert C. Lacy, of the Department of Conservation Biology of the Chicago Zoological Society, Brookfield Zoo, who developed the Vortex population analysis software used in these PHVAs, was appointed to the Chair of the

CBSG in Ulie's place. There follows a letter from him, and also Onnie Byers, Executive Officer of the CBSG.

A letter from Robert C. Lacy

It is with great sadness that I write to let you know that Ulysses S. Seal, Chairman of the Conservation Breeding Specialist Group since its inception several decades ago, succumbed to cancer on 19 March, 2003. Ulie's seemingly boundless energy was drained by the effects of the disease and the treatments, but he continued to provide wise and caring advice up to his last days with us.

Ulie's legacy is so vast that it would be impossible to summarize in a short letter. Through his several careers, he made tremendous contributions to human health, animal health, wildlife conservation, and the development of effective processes for collaboration. Perhaps most importantly, he inspired, challenged, and worked with an amazing network of friends and colleagues (and even with his professional antagonists) to make progress on the problems of conservation about which he felt so passionately. It is a tribute to Ulie, and to his direct personal influence, that the CBSG has more than 1,000 members, has more than 130 organizational and individual sponsors, and has impacted countless more people globally. Appropriately, Ulie has received almost every conservation medal and award that there is.

At the recommendation of the CBSG Steering Committee and with Ulie's approval, David Brackett as Chair of the IUCN Species Survival Commission has asked me to become the next chair of the CBSG. Taking on this role is obviously a daunting challenge for me. I decided to accept this challenge because of the tremendous value I place on, and energy I receive from, the philosophies and people that are the CBSG. The CBSG has always recognized that the problems of conservation are caused by many, diverse, interacting threats, resulting from the actions of humans. The solutions, therefore, will require collaborative efforts of many people from diverse backgrounds and with varied expertise and styles. To obtain and sustain the critically needed benefits of productive collaborations requires that the CBSG adhere to and promote a philosophy of openness, listening to and embracing the diverse and at times discordant views of our colleagues, seeking knowledge and expertise wherever we can find it, and keeping focused on ideas, ideals, and actions, rather than on personalities, assumed motivations, and rhetoric. The threats to wildlife species and natural systems arising from the exploding numbers and impacts of humans can be extremely depressing. Yet, it is impossible not to see hope in a loose network of more than a thousand talented people who have committed themselves to working together to find solutions. In addition, formal partnerships with other conservation organizations provide opportunities for successes that neither CBSG nor any one organization could achieve on its own. Finally, the staff of the CBSG office in Minneapolis, as well as in our regional network offices in India, Costa Rica, Mexico, Indonesia, South

Africa, Japan, and Denmark, are remarkable resources upon which we can all call for support and guidance.

Last month, I asked Ulie what guidance he could provide to me and to the CBSG. His response was that the CBSG has the people and the philosophy it needs to make a difference to conservation around the world. He said that specific advice from him is unnecessary and unwarranted, as the organization needs to continue to grow in whatever directions we can all take it, making maximal use of our talents, resources, and passion to conserve the natural world that sustains us. It is up to us to determine where Ulie's legacy will lead, which is as he always wanted it to be. I very much look forward to working with all of CBSG's members, partners, colleagues, and staff as we continue and grow the efforts and successes of the CBSG.

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A letter from Onnie Byers

Dr. Ulysses S. Seal, one of the conservation world's most effective leaders, was born 13 June 1929 in Mullens, West Virginia, and died on 19 March 2003 in Burnsville, Minnesota. It may seem strange, at least for those who don't know him, that when I think of the future of conservation I think of Ulie. Those of you who are familiar with the personality, impact and reach of this man, will understand that he is not just the past and present but also the future.

Ulie originally trained as a psychologist before receiving his PhD in biochemistry. Following a post-doc in endocrinology, he took a position at the Veterans Administration Hospital in Minneapolis, MN, in the US where he spent the majority of his career conducting research on prostate cancer. During this time he became interested in developing safe techniques for wildlife anesthesia and contraception, conducting research on a variety of species, including white-tailed deer, wolves and Siberian tigers. His interest in applying science to endangered species conservation continued to grow.

In 1973, he developed the International Species Information System, ISIS, a record keeping system for zoos, which grew into a fully functional entity of its own. In 1979, Sir Peter Scott appointed Ulie Chairman of the IUCN/SSC's Conservation Breeding Specialist Group (CBSG). In the early 1980s Ulie developed the first model for Species Survival Plan programs on which most SSP/EEP-type captive population management programs have been based. In the mid-1980s, when, in the southwestern US, the black-footed ferret was discovered to have been reduced to just 18 animals, Ulie became a champion of interdisciplinary collaborations to solve complex conservation problems. This theme continued to play a key role in Ulie's long-term philosophy.

Over the years, Ulie combined social processes with biological science to address a significant number of complex problems and to turn conservation theory into conservation action. Ulie and CBSG conducted more than 300 species-based conservation workshops in over 60 countries. Ulie commanded the respect of international leaders in conservation, zoo directors, scientists and wildlife managers throughout the world. He was a recognized leader.

I had the privilege of spending time with Ulie, after his illness was diagnosed, talking to him about his life and what he saw as the reasons for his success and that of CBSG. The man was a genius but he did not talk about intellect as the factor responsible for his effectiveness. He talked about emotional qualities that have been with him since childhood. These are qualities such as being a good listener, being respectful and accepting, making people feel valued, viewing everyone as a potential partner and making people believe in themselves.

Ulie's academic and emotional intelligence led him to develop a unique, influential organization and a set of species-based processes for biodiversity conservation. He influenced people all over this planet, many of whom think, work and live their lives differently and more effectively because of their interaction with him. This is why Ulie Seal was a world leader and catalyst in the conservation community and why he will live on as the future of conservation. I was honored to be a part of this man's life and his death and I learned as much from him in his dying as I did in his living. Our work will always be a tribute to him.

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NEWS

OFFICIAL LIST OF BRAZILIAN FAUNA THREATENED WITH EXTINCTION - 2003

A workshop, involving about 200 Brazilian and international specialists, was held from 9-12 December, 2002, in Belo Horizonte, Minas Gerais, to revise the Official List of Brazilian Fauna Threatened with Extinction (*Lista Oficial da Fauna Brasileira Ameaçada de Extinção*). The previous revision was in 1989 (Edict 1.522, 19th December, 1989; Bernardes *et al.*, 1990). The workshop was coordinated by the Fundação Biodiversitas, in collaboration with the local NGO Terra Brasilis, Conservation International do Brasil, the Sociedade Brasileira de Zoologia (SBZ), and the Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis (IBAMA). Sponsorship was provided by the Projeto de Biodiversidade (PROBIO) of the Ministry of the Environment (MMA), Shell do Brasil, Grupo Odebrecht,

and Conservation International do Brasil, and support from the US Fish and Wildlife Service and Avina.

Demonstrating the importance given to this workshop as a major evaluation of the status of the Brazilian fauna by the scientific community, the opening ceremony was attended by the Minister of the Environment, José Carlos Carvalho; the Minas Gerais State Secretary for the Environment, Celso Castilho; the President of Biodiversitas, Roberto Messias Franco; the President of IBAMA, Rômulo José Fernandes Barreto Melo; the President of SBZ, Olaf Mielke; the Director President of CI do Brasil, Roberto Brandão Cavalcanti; and the Director of Terra Brasilis, Sonia Rigueira.

Prof. Ângelo B. M. Machado, world expert on Neotropical dragonflies, and Professor of Zoology at the Federal University of Minas Gerais, led the assessment process in 1989 (Bernardes *et al.*, 1990), representing the Sociedade Brasileira de Zoologia (SBZ). He was again the driving force for the 2002 re-assessment of the Official List of Brazilian Fauna Threatened with Extinction. This time, representing the Fundação Biodiversitas, he was general coordinator for the workshop and the assessment, and most competently supported by the staff, who are uniquely experienced in carrying out these sorts of workshops (see, for example, Fonseca *et al.*, 1994; Lins *et al.*, 1997; Machado *et al.*, 1998; Mendonça and Lins, 2000), and deserve special acknowledgment: Gláucia Moreira, Cassio Soares Martins, Cláudia Costa, Livia Vanucci Lins and Gisela Hermann. Considerable support was also provided by Mônica Fonseca and Adriano Paglia of Conservation International do Brasil, Belo Horizonte.

The Official List of Brazilian Fauna Threatened with Extinction was published by the Ministry of the Environment (MMA), through the Brazilian Institute for the Environment and Renewable Natural Resources (IBAMA), on 22 May, 2003 (website: <<http://www.mma.gov.br/port/sbf/fauna/index.cfm>>).

The Primate Assessment

The list of threatened species tripled from 218 in the 1989 revision to 627 species with two extinct in the wild (still maintained in captivity) and a further nine extinct. The increase in numbers was due to the inclusion of new groups (fish and invertebrates) which had not been assessed previously, but also to an increase in our knowledge of the status of the country's fauna. Of the 26 primates placed on the list, 24 are endemic to Brazil. The criteria used to evaluate threatened status were those of the IUCN – World Conservation Union Species Survival Commission (SSC), Version 3.1 (IUCN, 2001).

Adriano Chiarello was the coordinator for the Mammal Group, and Anthony Rylands was coordinator of the Primates Sub-group. Prior to the workshop, information and the opinions of numerous biologists and conservationists were solicited through a site on the