

In memoriam: Dr. Virginia Sanz D'Angelo, 1964–2024

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At the beginning of this year, the sudden and unexpected passing of Dr. Virginia Sanz D'Angelo left the entire Venezuelan ecological and ornithological community in shock and completely saddened. With her passing, we lost a good friend and a remarkable ecologist and conservationist who dedicated her life to researching and protecting the biodiversity of the Caribbean islands of eastern Venezuela, mainly Margarita Island. From a very young age, Virginia had a deep interest in nature, especially animals. This led her to study biology at the Universidad Central de Venezuela in Caracas, where she earned her degree in 1991. While studying biology she participated as a field assistant in projects related to the diet of the Venezuelan red howler (*Alouatta seniculus*) and to the biology of the Green-rumped Parrotlet (*Forpus passerinus*) in the Venezuelan llanos. Then, she did her undergraduate thesis on the distribution of the Margarita monkey (*Sapajus apella margaritae*), a subspecies endemic to Margarita Island whose biology was practically unknown at that time. From that moment on, she developed a deep affection and genuine interest in the nature and the people of Margarita Island.

In 1992, she started working on that island as coordinator of the Yellow-shouldered Parrot (*Amazona barbadensis*) conservation project, which was carried out by the Venezuelan NGO Provita. During the years she worked on the project, she spent most of her time searching for nests and monitoring active ones, locating communal roosts, conducting annual surveys to estimate population size, placing artificial nests, keeping confiscated parrots in captivity, and organizing environmental education activities aimed at different actors involved in the conservation of this parrot. She was also in charge of releasing and the subsequent radio telemetry monitoring of eight captive-raised parrots, demonstrating, for the first time, that a successful rein-



Fig. 1. Virginia Sanz D'Angelo, measuring a Vermilion Cardinal (*Cardinalis phoeniceus*) on Margarita Island, Venezuela. Photo: Elysa Silva.

roduction of an *Amazona* parrot was possible (Sanz and Grajal 1998). She also helped to create the first protected area proposal for the Macanao Peninsula, the western portion of Margarita Island where parrots are currently restricted. In addition to her role as project coordinator, Virginia spent those years learning as much as she could about other bird species that live in the same arid scrubs as the Yellow-shouldered Parrots, and about the vegetation of this habitat and the dry forests along the dry riverbeds where parrots nest. She also built strong, long-lasting relationships with people from local communities that lasted until her passing. Even after she stopped working for the project, Virginia continued to support it, giving good advice to the coordinators and technicians who came after her, and co-authoring the working protocols for the project that are still followed today. Later, she analyzed the tons of data generated by the project, with significant outcomes including identifying the main factors affecting the reproductive success of the parrot on Margarita and La Blanquilla islands (Sanz and Rodríguez-Ferraro 2006, Rodríguez-Ferraro and Sanz 2007), and demonstrating the success of some management techniques (e.g., foster nests, artificial nests) used in the conservation project to recover parrot populations (Sanz and Rojas-Suárez 1997, Sanz *et al.* 2003). Undoubtedly, Virginia will always be known for her work with the Yellow-shouldered Parrot. Furthermore, she chose this parrot as the focus of her doctoral dissertation entitled "Ecology of *Amazona barbadensis* (Aves: Psittacidae): characterization and habitat use in the Macanao Peninsula (Margarita Island) at

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Cite this article as:

Rodríguez-Ferraro, A., S. Giner, G. Angelozzi, J.C. Azpúrua, W. Bernay-Alfonzo, C. Bosque, S. Caula, D. Carrillo, Ma.A. García-Amado, A. Grajal, K. López, J.M. Nassar, L. Oviol, J. Pérez-Emán, F. Rojas-Suárez, and E. Silva. 2024. In memoriam: Dr. Virginia Sanz D'Angelo, 1964–2024. *Journal of Caribbean Ornithology* 37:51–59. <https://doi.org/10.55431/jco.2024.37.51-59>



Fig. 2. Surveying shorebirds in Cuare Wildlife Refuge (Falcón state, Venezuela) with Sandra Giner. Photo: Frank Espinoza.

different spatial and temporal scales," a comprehensive publication about the biology of this parrot with which she obtained her doctoral degree in ecology in 2004 at the Universidad Central de Venezuela.

In 2005, she began her postdoc at the Laboratory of Organismal Biology at the Instituto Venezolano de Investigaciones Científicas (IVIC), the main research institute in Venezuela. There, while mentoring undergraduate students on their theses, she initiated two projects: one related to the structure of bird communities at several arid scrubs on Margarita Island, and another focused on monitoring aquatic birds on the beaches, lagoons, and salt flats on the island. In 2008, she joined the same laboratory as a researcher. At IVIC, Virginia continued working on projects related to the biodiversity of Margarita Island. These included frugivory and animal-plant interactions, the impact of land use change on the island's avifauna, and the effect of open-pit sand mining on biotic communities (plants, birds, and arthropods) inhabiting arid scrubs across a degradation gradient.

Throughout her life, she was deeply involved with the local communities around her research sites. Thus, she prioritized creating awareness about the native and exotic species on Margarita Island, and socializing and sharing knowledge about its biodiversity, with a focus on vulnerable ecosystems and threatened and endemic species. Beyond her love for Margarita Island's birds, Virginia also collaborated with numerous colleagues from Venezuela and other countries in various projects, such as the dispersal and predation of seeds from the palm *Wettinia prae-morsa*, the microbiome of birds with different foraging habits, the prevalence and distribution of *Vibrio* spp. in waterbirds, landscape ecology, the distribution of Venezuelan psittacids, and the ecology of the Green-rumped Parrotlet in the Venezuelan llanos. During her time as a professor at IVIC, Virginia coordinated the graduate program in ecology and taught graduate courses such as general ecology, ecology of biotic interactions, plant-animal

interactions, identification and surveys of coastal birds, and GIS applied to bird monitoring. From 2005 to 2023, Virginia was the academic advisor of five undergraduate theses, two master's theses, and three doctoral dissertations, two of which she was unable to see completed. She left a mark on a generation of young biologists, with whom she shared her love for fieldwork and rigorous research, and in whom she always encouraged critical thinking.

Virginia also carried out an exhaustive review of the aquatic avifauna present on the islands of Margarita, Coche, Cubagua, and Los Frailes since the end of the 19th century. Her interest in aquatic birds started with her participation in the Neotropical Waterbird Census (CNAA for its Spanish acronym) coordinated by the Venezuelan Ornithologists' Union since 2006. This led her to have her first undergraduate student, and together they did a thorough assessment of the distribution and status of aquatic birds on Margarita Island (Oviol 2008). Based on this study, she continued monitoring waterbirds at those sites that she identified as important for their diversity and abundance in the CNAA, and this constitutes the longest-running waterbird monitoring program in Venezuela. This program allowed updates of the avifauna list associated with the island's wetlands and a comparison of their diversity with other Venezuelan islands in the Caribbean, highlighting the importance of these places, especially for migratory waterbirds. The results of Virginia's project contributed to an increase in the number of waterbird species recorded on the islands of Margarita, Coche, Cubagua, and Los Frailes, as well as showing that some of them reproduce there (Sanz and Oviol 2009, Sanz et al. 2010). From these surveys, she also documented the recovery of the Caribbean Flamingo (*Phoenicopterus ruber*) population on Margarita Island, providing data about increases in abundance, its distribution, and the location of breeding colonies (Sanz D'Angelo 2020) and the status, colony size, and movements of the Brown Pelican (*Pelecanus occidentalis*) on the island. In all her publications and presentations, Virginia always stressed the value of regional conservation efforts to keep effective protected areas and good quality habitats available for waterbirds, and the potential for developing nature tourism in these areas.

Virginia was particularly interested in the temporal dynamics of shorebird populations—both migratory and resident species that inhabit various wetlands on the island. Her passion for this avian group led her to assess the populations of Wilson's and Snowy Plovers (*Anarhynchus wilsonia* and *A. nivosus*), which have important breeding populations on Margarita and Coche islands (Sanz D'Angelo 2023). She fervently believed in sharing knowledge, so she often gave talks about her results to different audiences on Margarita Island. While giving a talk at the Universidad de Oriente, she met a marine biology student who did his undergraduate thesis on the temporal dynamics of migratory bird populations, the diet of *Calidris* species, and prey availability in Punta de Mangle, one of the lagoons with the highest abundances of Semipalmated Sandpiper (*Calidris pusilla*) on the island (Angelozzi 2020). All these studies showed how important the sites on Margarita and Coche Islands are for conserving shorebirds in the Western Hemisphere. Virginia talked about this at the workshop "Identification of priority sites for the conservation of shorebirds in Venezuela" which was held

in Falcón state in 2016, where she suggested some important sites for the Western Hemisphere Shorebird Reserve Network. In recent years, Virginia's research focused on the reproduction of *Anarhynchus wilsonia cinnamominus* on Margarita Island. This project was a collaboration with ELVONAL Shorebird Science (University of Debrecen, Hungary), using camera traps to monitor nests in order to assess the reproductive success of this species on the island and to understand the factors that could potentially be affecting it. She was also collaborating with CORBIDI (Centro de Ornitología y Biodiversidad de Perú) on a project about plastics as key limiting factors for shorebird populations to understand whether migratory shorebirds in the Boca del Río lagoon on Margarita Island were consuming microplastics. At the same time, she was raising awareness among the local communities near this area about all the problems plastics

member when it came to keeping the UVO website updated. A titanic task Virginia performed for UVO was the compilation of the entire ornithological bibliography of Venezuela from 1784 up to 2023.

Virginia was very active and energetic, and she was always involved in many things at once. This led her to establish professional relationships with ornithologists and ecologists throughout Venezuela, the Caribbean, and the Neotropics. Since January 2023, she was part of the board of directors of the Parrot Research Group where she was respected and admired for her work towards parrot conservation. Virginia was known as being a very responsible and rigorous scientist, for which she served on the scientific committee of many congresses and as a reviewer of countless articles for many peer-reviewed journals, as well as an Associate Editor for this journal.



Fig. 3. Virginia with students during an ornithology course in the Venezuelan llanos. Photo: Adriana Rodríguez-Ferraro.

can cause in nature.

Virginia was key in the creation of the Venezuelan Ornithologists's Union (UVO for its acronym in Spanish). She was present at the 1999 meeting of ornithologists at the VI Neotropical Ornithology Congress in Monterrey, Mexico that laid the foundation for the future creation of this organization in 2006. She was one of the founding members of UVO and helped to write the organization's by-laws as well as the guidelines for the working committees. Within UVO, she was a member of the first board of directors (2006–2009) and served on the board until 2012. She was also a fundamental part of the organizing committee of the VIII Neotropical Ornithology Congress held in Maturín, Venezuela in 2007, the I Venezuelan Ornithology Congress held in Barquisimeto in 2009, and the I Virtual Venezuelan Ornithological Congress held in 2022. Virginia was loved and respected by all UVO members for her commitment and dedication to this organization. She was always a critical voice at meetings, making sure everything was done right, and she was the most insistent

We have gathered some testimonials from friends, colleagues, and students who were lucky enough to work with, learn from, or spend time with Virginia. They all agree that Virginia was a kind woman, a fun and caring friend, a great researcher, and a motivated teacher with a great ability to share her knowledge and a deep love for the birds and the people of Margarita Island. It's still hard to believe that she's not here with us anymore. We'll never forget her.

Adriana Rodríguez-Ferraro

I met Virginia in 1995 when she interviewed me to replace her as the lead biologist for the Yellow-shouldered Parrot conservation project being carried out by the NGO Provita on Margarita Island. During the interview we discovered that we had a lot in common: we were both Uruguayans who had migrated to Venezuela as children, we loved the arid scrublands of Margarita Island, and we had a great passion for bird conservation. I had received my biology degree four months before the interview

and at that time I had little experience as a field biologist, but Virginia had trust in me and hired me. From that moment on, we began a great friendship and a fruitful professional relationship that lasted until her death.

Shortly after I was hired, we traveled to the Macanao Peninsula on Margarita Island for my training period. During those first 15 days that we worked together in the field, I could see how much Virginia knew about the biodiversity of the arid scrubs, her love for Yellow-shouldered Parrots, her strength in the field, her amazing capacity for work, and how much she was loved by the local people in the villages of Boca de Río, San Francisco, and Comején. Virginia taught me not only about the biology of the Yellow-shouldered Parrot and the methods used to study it, but also about the importance of engaging with the local communities where we work and learning from local people about the biodiversity and the culture of the Macanao Peninsula, things that biologists do not learn at university.

Over the years, Virginia and I shared a lot of good moments in the field, writing articles and projects, organizing or attending conferences, and planning various activities for UVO, and we always had a great time together. Virginia was very hard-working and tireless in the field, but she always knew how to enjoy the special little moments when she was in the Macanao Peninsula, such as tasting a “yaguarey” (the fruit of the columnar cactus *Stenocereus griseus*), taking a new picture of the landscape even though she already had many, watching a group of parrots fly by and being amazed by their beauty, stopping at the top of a hill to watch the sea, or having a fried fish for lunch. As a scientist, Virginia was extremely rigorous and methodical, qualities I always admired in her when we were planning a project or analyzing data for a paper. Nothing was impossible for Virginia; she was extremely optimistic, so it was always great to plan projects or activities with her, as her tenacity and perseverance ensured that everything she set out to do would go well.

Virginia left us too soon and it is still hard to believe that she is no longer with us. We were left with many things to do, data to analyze, articles to write, projects to complete, courses to organize, and trips to share, that will not be the same without her.

I believe that her spirit will always be in the Macanao Peninsula, protecting the parrots she loved so much and the mountains

that she never tired of walking.

Sandra Giner

Conocí a Virginia en la universidad, pero fue cuando nos encontramos en el Congreso de Ornitología Neotropical en Monterrey, México, cuando tuvimos la oportunidad de compartir, junto a otros venezolanos en el congreso, nuestro deseo de formar una sociedad ornitológica en Venezuela. A partir de ese momento, comenzamos a participar en la organización y fundación de la Unión Venezolana de Ornítólogos, y creció nuestra amistad. En el año 2009, participamos en la organización del primer Congreso Venezolano de Ornitología, en Barquisimeto, y luego como parte de la junta directiva de la UVO entre 2009 y 2013. Siempre fue un reto trabajar junto con Virginia; era una investigadora muy tenaz, organizada, con muchas ideas y proyectos en ornitología, ecología y conservación de aves, siempre dispuesta a aportar sus conocimientos y su entusiasmo en cada proyecto. Con un profundo sentido de la responsabilidad y ética en el trabajo, siempre estaba preocupada por las comunidades donde realizaba las investigaciones. Virginia ha sido una de las principales ornítólogas de Venezuela, con un gran compromiso con la conservación de las aves y el quehacer científico. Trabajar con Virginia siempre fue un aprendizaje, ella tenía una perspectiva que generaba discusión en las reuniones de la UVO.

Nuestras investigaciones conjuntas sobre aves playeras fortalecieron nuestra amistad, trabajando en el campo y recorriendo sitios de parada de estas aves en las costas del país, observando y documentando las diversas especies que habitaban en estas áreas. Su compromiso con la conservación y el estudio de las aves no solo enriqueció nuestro trabajo, sino que también inspiró a muchos otros a participar en estos proyectos.

Virginia fue inspiradora y una amiga muy querida; la extrañaré. Siempre que retorne a los sitios a observar las aves, su presencia estará allí.

Gianco Angelozzi

Conocí a Virginia en 2013, cuando fue invitada por el Dr. Edlin Guerra, profesor de la cátedra de Ecología General de la Universidad de Oriente, a dictar una charla sobre la avifauna de la Isla de Margarita. En aquel entonces, yo estaba inmensamente contento de poder conocer finalmente a la autora de “La Avifauna del Estado Nueva Esparta”. Al finalizar la clase, me ofrecí como voluntario en sus salidas de campo, a lo cual aceptó con el entusiasmo que la caracterizaba. En los siguientes dos años, tuve la oportunidad no sólo de ser voluntario en los proyectos que estaba llevando a cabo en las islas de Margarita, Coche y Cubagua con aves terrestres y acuáticas, sino que también me motivó a trabajar en su laboratorio en el IVIC, donde trabajé durante mis vacaciones por tres años consecutivos, aprendiendo desde identificación de plantas hasta taxonomía de hormigas de los cardonales de la Isla de Margarita. Vale la pena resaltar que, en aquel entonces, Virginia estaba interesada en conseguir un estudiante interesado en otro tópico muy diferente: la ecología alimentaria de las aves playeras. A ella no le gustaban los barros de las lagunas costeras, mientras que yo estaba fascinado con esas comunidades y no me molestaba para nada el barro, por lo que fue la combinación perfecta y ese proyecto terminó siendo mi trabajo de grado, con el cual ganamos, inesperadamente, un



Fig. 4. Virginia with local children on Cubagua Island, Venezuela. Photo: Elysa Silva.

premio en un congreso internacional. De ahí en adelante, seguimos trabajando y aprendiendo el uno del otro hasta su muerte. Virginia fue una de las figuras más importantes en mi formación como científico, pero también como ser humano. Su calidez, su alegría y entusiasmo siempre estaban presentes, no importaba la circunstancia. Virginia no sólo fue una de las científicas más importantes de Venezuela, sino que fue una excelente tutora, colega y amiga, y su legado y amor por la conservación, especialmente en su amada Isla de Margarita, perdurarán en todos los que tuvimos la oportunidad de conocerla y trabajar con ella.

J. Camilo Azpúrua

Sería a finales de 2006 o principios de 2007 en Caracas, en un evento en la Sociedad Venezolana de Ciencias Naturales. Yo estaba recién graduado de la Escuela de Biología, y al finalizar mi presentación, una mujer que no conocía me hizo varias preguntas y comentarios. Fue, con diferencia, la persona de la audiencia que se mostró más interesada. Unos cuatro años después, ya trabajando con ella como asistente de investigación en el Centro de Ecología del IVIC, supe que ese era justamente uno de los rasgos distintivos de Virginia: lo involucrada que era. Durante tres años trabajé con ella en varios proyectos en la isla de Margarita y el Hato Masaguaral. Conocí a una profesional muy completa, trabajadora, comprometida, fortísima en campo, generosa con sus colegas, colaboradores y estudiantes, y con aquellos que alguna vez fuimos parte de su equipo. También conocí a Virginia la persona: buena, buenísima, sencilla como ella sola, amiga, viajera consumada. Vi el cariño y aprecio que le tenía mucha gente en muchas partes, desde Caracas hasta los rincones más profundos de la isla de Margarita y del llano. La recuerdo con su pelo gris, su andar ligero pero firme sobre sus viejas botas de campo con las que parece haber recorrido medio mundo. Me quedo con los atardeceres en Punta de Arenas; el pescado frito en Boca de Río; los almuerzos en el comedor del IVIC y el café cerrero que me enseñó a tomar sin azúcar; los muchos amaneceres metidos en el monte; los mediodías de descanso en la piscina de La Fuente; los miles de kilómetros de carretera repletos de buenas conversaciones. Fue todo un gusto. ¡Un abrazote Virginia!

Wilber Bernay-Alfonzo

Conocí a Virginia en el año 2011, cuando era estudiante de pregrado de la Escuela de Ciencias Aplicadas del Mar de la Universidad de Oriente (ECAM-UDO) en la Isla de Margarita. Ella era investigadora del Laboratorio de Biología de Organismos del Centro de Ecología del Instituto Venezolano de Investigaciones Científicas (IVIC) en los Altos Mirandinos. En esa época, Virginia desarrollaba varios proyectos de conservación de aves acuáticas y de ecología del paisaje en la isla, por lo que ella y su grupo de trabajo se alojaban en la universidad durante sus salidas de campo. De esa manera coincidimos; su sonrisa y amabilidad me motivaron a acercarme a ella con interés en sus investigaciones y salidas de campo. Así, descubrí que compartíamos un profundo interés por la tierra margariteña, su cultura, su biología, su paisaje y la idiosincrasia de su gente. Con el paso del tiempo, y los regresos anuales de Virginia a la universidad, se forjó nuestra amistad, colaborando según mis posibilidades en sus laboriosas, pero siempre agradables jornadas de campo.

En los años 2018-2019, cuando ya había egresado como Licen-

ciado en Biología Marina, tuve la oportunidad de trabajar formalmente con ella, en el proyecto titulado "Ecología de psitácidos neotropicales: efecto del clima en el éxito reproductivo del Periquito Mastranero (*Forpus passerinus*) en los llanos de Venezuela". Virginia era una apasionada por la enseñanza; aprender de sus experiencias en este proyecto, fue un verdadero placer para mí. Posteriormente, en el año 2021, a pesar de la pandemia, y los recursos limitados del laboratorio, Virginia, valiente y comprometida profundamente con la investigación en Venezuela, decidió iniciar un nuevo proyecto titulado "Biología reproductiva del Playero Pico Grueso (*Anarhynchus wilsonia*) en la isla de Margarita, estado Nueva Esparta", en el cual trabajamos juntos hasta el año 2023, tras su inesperada y, a mi manera de ver, muy temprana despedida de este plano existencial.

Virginia, entre un océano de cariño, el recuerdo imborrable de su sonrisa, la admiración por su forma de trabajar, el ejemplo de su integridad y gentileza, y muchas vivencias de inmensurable valor, me regaló su pasión por las aves acuáticas, ya que antes de trabajar con ella, las estrellas de mar acaparaban mi interés de investigación. Por mi parte, siempre agradeceré a Virginia todas las oportunidades que me brindó, el hecho de ampliar mi curiosidad científica y todo el cariño y respeto que compartió conmigo. Venezuela, con su partida, perdió a una investigadora ejemplar, pero siempre conservará el legado de todos los años de su trabajo por la conservación de los recursos naturales en Venezuela.

Carlos Bosque

Virginia was a great, active and enthusiast participant of ornithological activities in Venezuela. She was a very good organizer because she was very disciplined, demanding, and vehement. Her qualities and willingness to collaborate were very important in the organization and realization of the VIII Neotropical Ornithological Congress in Maturín. Very importantly, Virginia established a warm relationship with the inhabitants of the areas where she carried out her ornithological research.

Sabina Caula

Virginia y yo estudiamos juntas en la Universidad Central de Venezuela, donde cursamos la licenciatura en Biología y nuestros postgrados en Ecología. Fue en esa época que establecimos una relación cercana. Ambas nos inclinamos hacia el estudio de las aves, lo que fortaleció aún más nuestro vínculo de amistad. Ella venía de Uruguay, mis padres eran argentinos y mi esposo uruguayo, así que compartíamos también ese origen sureño, lo que nos unía aún más.

Virginia y yo llevamos a cabo trabajos de investigación en conjunto, pero también participamos voluntariamente, ayudándonos en trabajos en los cuales no estaba establecida una colaboración formal. Los proyectos emprendidos con Virginia siempre fueron muy fructíferos; ella era muy sabia al trabajar en grupo y tenía esa capacidad, casi mágica, de identificar lo que le apasionaba a los otros y en qué podían ser buenos. Esto hacía que los grupos funcionaran de forma eficiente y armónica. Trabajar con ella significaba abordar el trabajo con pasión, dedicación y mucha alegría. Nunca olvidaré el esfuerzo del trabajo de campo en la Isla de Margarita y las risas y el disfrute de ese paisaje caribeño al terminar la jornada.

Virginia dejó una huella indeleble en el estudio y conservación

de la avifauna venezolana, pero también dejó una huella importante en mi vida en cuanto a la forma de abordar el trabajo con profesionalismo y a la vez disfrutar de la vida. Estoy segura de que su legado perdurará a través de los ecosistemas y especies que ayudó a proteger, así como perdurará en mi vida.

Daniel Carrillo

Virgina Sanz, mi gran amiga en la biología, en las artes visuales y escénicas, en el compartir ciudadano y en la cultura de los viajes en Venezuela y otros lugares. Coincidimos en 1982 en la Universidad Central de Venezuela durante nuestros estudios de la Licenciatura en Biología en Caracas, aunque fue a partir de 1993, en la isla de Margarita, donde surgió una importante amistad al compartir roles en la investigación biológica, la educación ambiental y el trabajo comunitario para la protección y conservación de psitácidos amenazados como la Cotorra Margariteña (*Amazona barbadensis*) y el Nángaro (*Thectocercus acuticaudatus neoxenus*) en sus respectivos hábitats xerófilos y lacustres, rodeados de una imponente cultura oriental hermosamente matizada por agricultores, acuicultores, arquitectura, gastronomía y fiestas tradicionales. La convivencia diaria durante varios años y el trabajo en equipo destacaron en ella la voluntad y entusiasmo de la investigación progresiva, la autoformación y la pedagogía para la formación de estudiantes universitarios, así como de niños y adolescentes, alcanzando un doctorado y la concreción de obras importantes como la declaratoria de un área protegida para la Península de Macanao, hábitat de la Cotorra Margariteña y muchas otras especies emblemáticas de aves, mamíferos y reptiles. Virginia tenía el don y la virtud de expresar constantemente un "PERO..." y con ello rendía culto al empeño de insistir en la ardua lucha conservacionista, en producir, promover y divulgar la información científica y, muy especialmente, en acompañar el trabajo de los investigadores a su lado. Su legado científico es la impronta imperecedera en el contexto de Venezuela y el mundo, y su espíritu poético descansa en nuestras letras, pinturas y canciones.

Ma. Alexandra García-Amado

I met Virginia on Margarita Island when Adriana Rodríguez-Ferraro introduced us. Coincidentally, Virginia and I started working at IVIC in the same year and then we began to interact more. At that time, we decided to carry on our first collaborative research project to find bacteria of the genera *Vibrio* and *Helicobacter* in the guts of birds living on Margarita Island. This project was very successful since we complemented each other, since Virginia knew the ecology of wild birds and I knew microbiology. Later on, we worked together on many more projects related to the digestive microbiology of wild birds in other Venezuelan locations, such as the Cuare Wildlife Refuge (Falcón state), IVIC (capital district), and Hato Masaguaral (Guárico state). Virginia was always a great collaborator since she was not only in charge of going to the field to take samples, but also helped with the analyses and discussion of the results. Furthermore, with every problem, doubt or complication that one mentioned to Virginia, she was always eager to help and she came up with a possible solution. We did not only collaborate on research projects, we were also members of the IVIC bioethics commission, where Virginia's ethics and conciliatory capacity were very useful in the

commission's discussions. We were both members of the first UVO board of directors and together with other Venezuelan ornithologists, we organized several symposia, conferences, and courses in the field of ornithology with the aim of integrating Venezuelan ornithologists and training a new generation of ornithologists. Virginia had a great work ethic; she was a very collaborative person, a hard worker, and an excellent scientist with a great capacity for organization and integration of scientific knowledge, and for these reasons was wonderful to discuss any topic with. Furthermore, as a person she was an unconditional, warm, and funny friend who was impossible not to love.

Alejandro Grajal

I only have fond memories of Virginia Sanz. She always carried an intriguing mix of stern curiosity and a smile that would open the world. We collaborated on several projects, and her optimism was always contagious. One of our most productive projects was tracking the fate of reintroduced Yellow-shouldered Parrots in the Macanao Peninsula on Margarita Island, Venezuela. Every year, a number of chicks and fledglings were routinely confiscated from illegal traders, and these birds were often cared for and then released into their natural habitat. The project was carried out in 1992, and Virginia had recently graduated from the Universidad Central de Venezuela and was a member of Provita's staff in Caracas. At that time, a few studies had documented limited success in parrot reintroductions. The resulting paper (Sanz and Grajal 1998) marked a precedent of how to approach reintroductions of socially complex species. Virginia did the bulk of the fieldwork and data analysis, with months of radio-tracking parrots in the spiny, dry, and hot conditions of Margarita Island. She had a fantastic flair for connecting with everyone, and quickly gained the respect of locals. We kept in touch after all these years, and she always continued to be involved in the exciting edge of science and conservation. I am really going to miss her warm optimism and her inquisitive mind. She left us way too early.

Karen López

The first thing that comes to mind when I hear Virginia's name is Margarita Island. Her incredible knowledge of the island and its bird life was impressive. I deeply admired her expertise, but I was also affected by her kind-hearted personality, evidenced by how well-known and loved she was in the Macanao Peninsula.

Virginia instructed me on new techniques for collecting samples in a totally new environment for me, how to make traps to collect insects and seeds, and how to conduct bird surveys. Additionally, she taught me the importance of integrating the local community in field and conservation work.

Her departure not only leaves a gap in the knowledge of the biology, ecology, and conservation of biodiversity on Margarita Island but in each one of us who had the pleasure of knowing her and working with her! Thank you for teaching me so much, Virginia.

Jafet M. Nassar

I met Virginia in 1985, when we were both studying biology at the School of Biology, Faculty of Sciences, Universidad Central de Venezuela (UCV), in Caracas, Venezuela. She was the teaching



Fig. 5. Virginia showing the important sites for waterbirds on Margarita Island during the workshop "Identification of priority sites for the conservation of shorebirds in Venezuela". Photo: Sandra Giner.

assistant for the Laboratory of Plant Biology. It was then that she gave me her first smile and a lot of help to understand, with enjoyment, the anatomy and morphology of plants. From that moment on, we traveled together the path of friendship, the life of university students, the life of scientists, and the pleasure of discovering so many secrets of the natural world that surrounded us.

We shared a workplace for almost 20 years as researchers at the Organismal Biology Laboratory of the Ecology Center at the Venezuelan Institute for Scientific Research (IVIC). Together, we taught courses in the ecology of biotic interactions, both in short and semester courses at IVIC. Despite sharing the same laboratory, only once we worked together in a study on frugivory and seed dispersal of the Turk's hat cactus (*Melocactus curvispinus*). However, we always kept a close eye on each other and shared the progress of our research and our lives.

Virginia was a passionate and tireless ecologist, who devoted much of her energy to the study and conservation of terrestrial and aquatic bird communities, addressing a wide range of topics, including habitat use, reproductive ecology, the effect of microplastics on shorebird migration, trophic ecology, frugivory and seed dispersal, land-use change, habitat connectivity, protected areas design, and environmental education. Margarita Island was the geographical space of many of her studies, where she concentrated her efforts to encourage the conservation of its ecosystems. She dreamed of moving to live and work on the island, where she was loved by many people. Her research yielded 43 scientific articles and 100 communications in congresses, symposia, and related events. She was also co-founder of the Venezuelan Ornithologists' Union (UVO) and advisor of bachelor, master, and doctoral students, leaving a legacy of young ornithologists and ecologists who today open their own path, accompanied by the strength of spirit and encouragement of their unforgettable mentor.

For many, Virginia was a close and loving friend, a brilliant and approachable colleague, a reliable and demanding academic advisor, an excellent teacher, an exemplary citizen, always con-

cerned about her second homeland, Venezuela, and the world. She gave us all a little bit of her life. Virginia, although you migrated without warning, you have left indelible marks on all of us who were lucky enough to cross your path.

Laura Oviol

I met Virginia in 2004 or 2005, not so sure but I met her at the IVIC. We met because I was looking for an academic advisor for my undergraduate thesis and she was looking for a student, so it was perfect. She told me about the project on Margarita Island, where she was going to study the terrestrial and aquatic birds and I said yes without any doubt. We worked on the thesis for approximately two years, during which I learned a lot about aquatic and terrestrial birds and survey techniques. I got to know Margarita Island like almost no one else in Venezuela.

Virginia also knew how to teach; I don't know if she ever wanted to be a professor but she was very good at it. She also knew how to transmit her love for the island. Virginia was a very responsible person, who loved her job, who loved birds, and was doing everything possible to learn, know and teach other people about them. We will miss her forever; people like her should be eternal, and we have all lost with her early departure. I will always remember you!

Jorge Pérez-Emán

Virginia era mi amiga. En muchas de nuestras conversaciones siempre le decía que en el momento que decidiera abandonar el mundo académico me iría a una casa frente al mar; hoy, mientras escribo estas líneas, con apoyo de mi esposa Susi (quien también la conoció y disfrutó de su compañía), espero que Virginia esté en un lugar así, sentada, mirando el mar, avistando aves y con esta revista en la mano, leyendo todo lo maravilloso que sus amigos y colegas tienen que decir de ella.

Nuestra amistad comenzó hace más de 35 años por los llanos del Hato Masaguaral, estado Guárico, yo intentando estudiar matos (*Tupinambis teguixin*), ella aragatos (*Alouatta seniculus*). Eran nuestros años de estudiantes de la carrera de biología, yo

en la Universidad Simón Bolívar, ella en la Universidad Central de Venezuela. Además de compartir bellos momentos en el campo, mi gusto por el jazz empezó gracias a ella, quien me puso a escuchar a Billie Holiday y Elis Regina. De allí compartimos grandes momentos con muchos amigos de Venezuela y países vecinos en el I Curso Internacional sobre Biología de la Conservación, organizado por Wildlife Conservation International y la Asociación EcoNatura, para luego embarcarnos en un viaje a Puerto Ayacucho, estado Amazonas, con otros amigos, para conocer la zona y yo aprovechar a preparar la logística para lo que fue mi tesis de licenciatura. Al final terminamos estudiando monos y tortugas, pero poco tiempo después enfocaríamos nuestras líneas de investigación para dedicarnos a la ecología y ornitología.

La trayectoria de más de tres décadas como colegas nos llevó a transitar muchos caminos juntos. Durante estos años, tuve el honor de asistir a su tesis de licenciatura (la primera tesis a la que asistí en la Universidad Central de Venezuela), ser parte del comité asesor de su tesis doctoral, compartir la dirección de sus primeros tesis de pregrado, trabajar en proyectos, publicar y asistir a congresos juntos, organizar eventos que han sido importantes para la ornitología de Venezuela, como el VIII Congreso de Ornitología Neotropical en Maturín, el I Congreso Venezolano de Ornitología y la entonces naciente Revista Venezolana de Ornitología, y finalmente ser parte de la subcomisión evaluadora ad hoc para su ascenso a Investigador Asociado Titular en el IVIC. Quiero resaltar, de manera general, su dedicación a la docencia de pregrado y postgrado, así como su incansable investigación en varios frentes, incluyendo la coordinación de varios de los pocos proyectos de larga duración que se han realizado en Venezuela, como son los estudios de la ecología de la *Amazona barbadensis* y el *Forpus passerinus*. En cada una de esas actividades, Virginia mostró su gran dedicación a la investigación y enseñanza, su manera correcta de hacer las cosas, su atención al detalle, su responsabilidad, su rigurosidad y, al mismo tiempo, su capacidad de buscar soluciones, trabajar en equipo, su empatía y disposición por ayudar y motivar a estudiantes y equipos de trabajo y, sobre todo, su amor y dedicación que fue infinita en todo lo que hacía.

Virginia deja un legado de investigación incalculable, una forma de hacer docencia e investigación especial, siempre con una rigurosidad académica impecable, acompañada de una sensibilidad muy especial hacia todos con los que trabajaba. Como amiga, fue un gran apoyo en los momentos más difíciles de mi vida y alguien con quien siempre podía conversar sobre la ciencia y la vida. Te extrañamos demasiado, tu energía y legado seguirán adelante en todo y todos a quien tocaste a lo largo de tu vida.

Franklin Rojas-Suárez

Conocí a Virginia cuando estudiábamos biología en la Universidad Central de Venezuela. Aunque éramos contemporáneos, ella me adelantaba varios años en la carrera. Nos unía la pasión por la biodiversidad tropical y su conservación. Coincidimos en el Hato Masaguaral, en los llanos de Guárico, cuando ella participaba en el estudio sobre el *Forpus passerinus*. Luego, compartimos mucho más en la Isla de Margarita durante su tesis de grado sobre el amenazado mono *Sapajus apella margaritae*, mientras yo estudiaba a la *Amazona barbadensis*, en el otro lado de la isla. Tuve la inmensa suerte y felicidad de contar con Virginia para

coordinar el proyecto de la cotorra de Provita, lo cual hizo por tres años. Recuerdo que en esa época el proyecto carecía de coche, y ella no dudó en usar su propio vehículo. No solo era una gran conservacionista, sino que era una brillante científica, logrando subir el nivel y producir algunos de los mejores resultados y publicaciones. Haría su tesis de doctorado sobre la ecología de la Cotorra Margariteña, a la vez que usaba la información para el diseño de lo que sería la Reserva de Fauna Silvestre Macanao. Virginia fue pieza clave en esta declaratoria tan necesaria, y aún quedan pendientes sus propuestas para la ampliación de las áreas protegidas del este de la isla, para garantizar la conservación del mono margariteño. Todo esto es apenas una pequeña parte del trabajo que logró Virginia en investigación, en la formación de profesionales, en aportes para la educación ambiental, en el diseño de áreas protegidas, y para la conservación de la biodiversidad venezolana en general, con énfasis en las aves. Su trabajo siempre se caracterizó por su rigurosidad y excelencia, y ella misma, por su amabilidad, integridad y calidad humana. Prueba de esto es que es valorada y querida, tanto por baquianos como por científicos y gestores. Su temprana partida deja muchos proyectos pendientes, pero ahora es un ejemplo para las generaciones venideras.

Elysa Silva

I met Virginia by chance when she became a surrogate member of the academic committee for my undergraduate thesis. From that moment on, she guided me through my first steps as a biologist. Working alongside her has been an invaluable experience. Virginia taught me to approach science with love and joy, to savour fieldwork, and to develop a deep affection for Margarita Island. She showed me that collaboration is essential in science and that we must engage closely with local communities wherever we go. With unwavering ethics and an extraordinary ability to collaborate across various fields, Virginia produced a wealth of valuable research, primarily focused on the conservation of biodiversity on Margarita Island, especially birds, and the importance of environmental education. Always kind and cheerful, with a big smile and wise words, Virginia was not only an outstanding researcher but also a very dear friend whom I will always miss deeply.

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