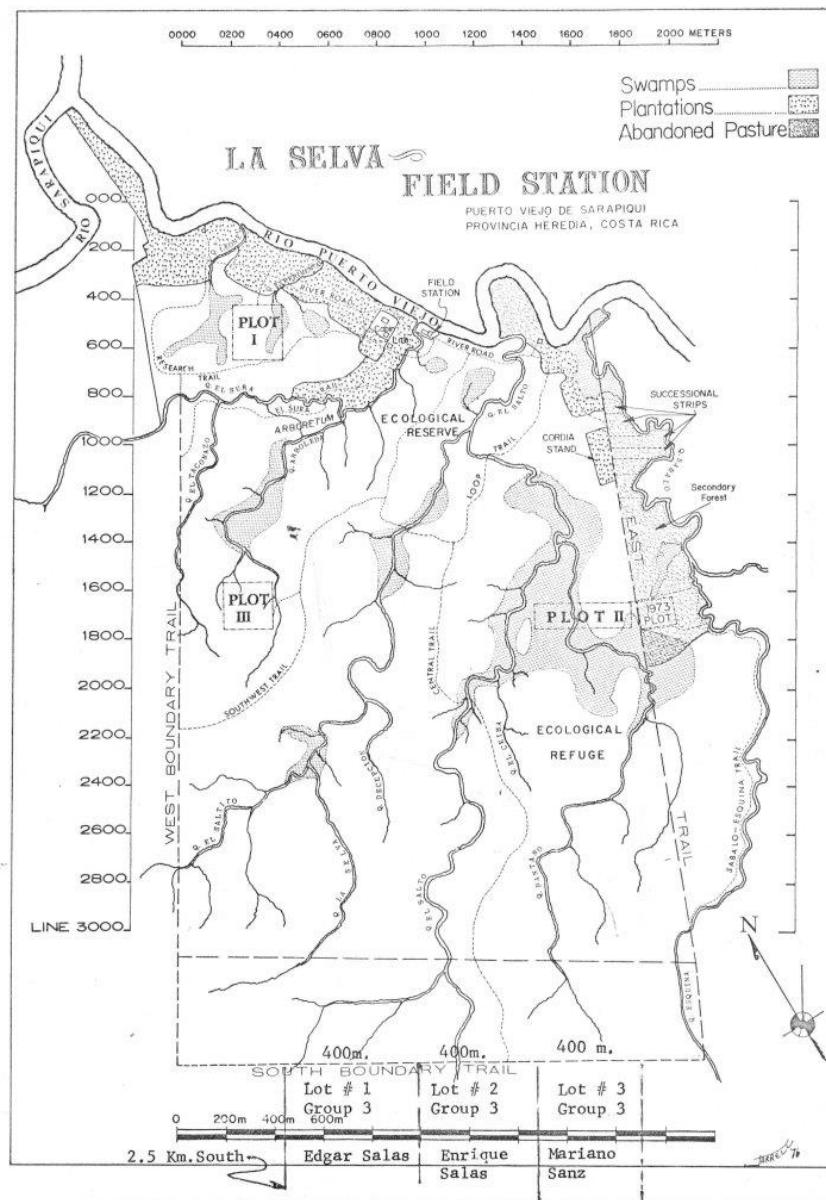


Initiating a Rain Forest Conservation Project in Costa Rica

When I was in Costa Rica in the summer of 1977 as a graduate student at Harvard University, I became concerned about the future of the La Selva Biological Station operated by the Organization for Tropical Studies (OTS). Everybody was in agreement that La Selva was doomed to be an island of forest in a sea of cow pasture, however nobody seemed motivated to do anything about it. I decided to try to organize people to the goal of expanding the La Selva property. The idea I had was to at least expand the property to natural boundaries that would include the complete watersheds of all of the streams that flowed through the property. This would have meant roughly doubling the size of the property.



Thomas Lovejoy:



I began speaking of this to every senior researcher that I came in contact with. Everyone agreed with me and encouraged me, but no one offered any help of any kind. When I returned to Cambridge, I soon came into contact with Tom Lovejoy of the World Wildlife Fund, and he agreed to meet with me to discuss the La Selva situation. We examined the maps of the area, and it became clear to me that Tom was thinking in much larger terms than I had been. He was considering the possibility of establishing a full scale park contiguous with La Selva. This was encouraging and caused me to begin to think on a larger scale. Tom told me that we need to determine if there is anything special about the La Selva area that would justify making such a park there.

After Tom left I kept looking over the maps, and I noticed that there was a very large forest reserve marked on the map in the mountains fifteen kilometers to the south of La Selva. I wrote him a letter on 25-9-77 in which I proposed the idea of connecting La Selva with this reserve, and discussed





possible boundaries. At about that time, unknown to us, the Braulio Carrillo National Park was being formed within the forest reserve, for the purpose of providing watershed protection for the Guapiles road project. When we found out about this, the idea was changed to one of connecting the park (22 km to the south), rather than the forest reserve with La Selva. In the mean time, Tom Lovejoy made some trips to Costa Rica in which he raised the idea with outgoing President Daniel Oduber, incoming President Rodrigo Carazo, the Director of National Parks Alvaro Ugalde, and the Presidential Science Advisor Mario Boza.

I sent out a letter in April 1977 to many biologists who might be interested (over one hundred names). I used the OTS mailing list provided by Don Stone (the Executive Director of OTS), as well as any other names I could get. The letter produced a large volume of response. One of the most significant results of the circular was Gary Stiles' letter of 17-10-77 indicating that the transect would protect altitudinally migrating birds, which probably could not be protected anywhere else in Central America.

HARVARD UNIVERSITY
THE BIOLOGICAL LABORATORIES



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The recent establishment of Parque Nacional Braulio Carrillo in the mountains north of San Jose has raised hopes that the boundaries might be extended to the north to include the wet forested slope into the lowlands between the Río Puerto Viejo and the Río Sarapiquí. The attached map shows the boundaries of the new park and the proposed extension. The combined boundaries of the extension and the Park reflect the shape of a large island of undisturbed wet forest. The land on all sides of this boundary has been deforested (with the exception of the mountains to the east of the Río Corinto) and the clearing is encroaching rapidly on the existing forest from all directions, particularly from the northwest. I am writing you because you have worked in this area and might be able to provide information on the wildlife found there. Please provide me with two things: 1) A letter describing in your own words the value to Costa Rica, conservation, and science (not OTS), of the proposed extension. If possible, mention the value of the elevational gradient (from 3000 m. to less than 50 m.). Your letter will ultimately be sent to Costa Rica's new President Rodrigo Carazo and the Director of Parks Alvaro Ugalde. The letter should be typed on your letter-head and addressed to: Thomas E. Lovejoy, World Wildlife Fund, 1601 Connecticut Avenue, N. W., Washington D. C. 20009. 2) A list of species known to occur in the proposed extension, for whatever taxa you have studied. The list should be annotated such that each species can be placed in one of three categories: a) occurs in the proposed extension, and in other parks or preserves in Costa Rica b) occurs in the proposed extension, but not in any other park or preserve in Costa Rica c) occurs in the proposed extension, and nowhere else in the world (remnant populations in endangered habitat should not be considered). We want your species list even if your knowledge extends to only one small genus. This is the only way that we can piece together a picture of the flora and fauna of the area under consideration, and make our case for the preservation of this rich habitat. If for any reason you are not able to provide a species list, we would nonetheless welcome your letter of support. Your prompt attention to this matter will be appreciated. Send all materials to Tom Lovejoy. I thank you in advance for your help.

Tom Ray

When I arrived in Costa Rica to be the manager of La Selva in the summer of 1978, I talked to Alvaro Ugalde about the project. Alvaro was interested in the project, but didn't have the time or the resources to do anything about it. I asked him what needed to be done, and he said that he needed to know the condition of the forest in the area of the proposed extension, and also how many people live in the area. Since he couldn't seek this information himself, I set out to get it for him. I went to the Geographic Institute, and was able to obtain low elevation aerial photos of most of the area, taken within the last two years. I put together a photo-mosaic, and from that I drew a detailed map of forest coverage. I also found out that the Malaria Institute knows how many people live in the area. I took the map to Ugalde, and told him about the information at the Malaria Institute.

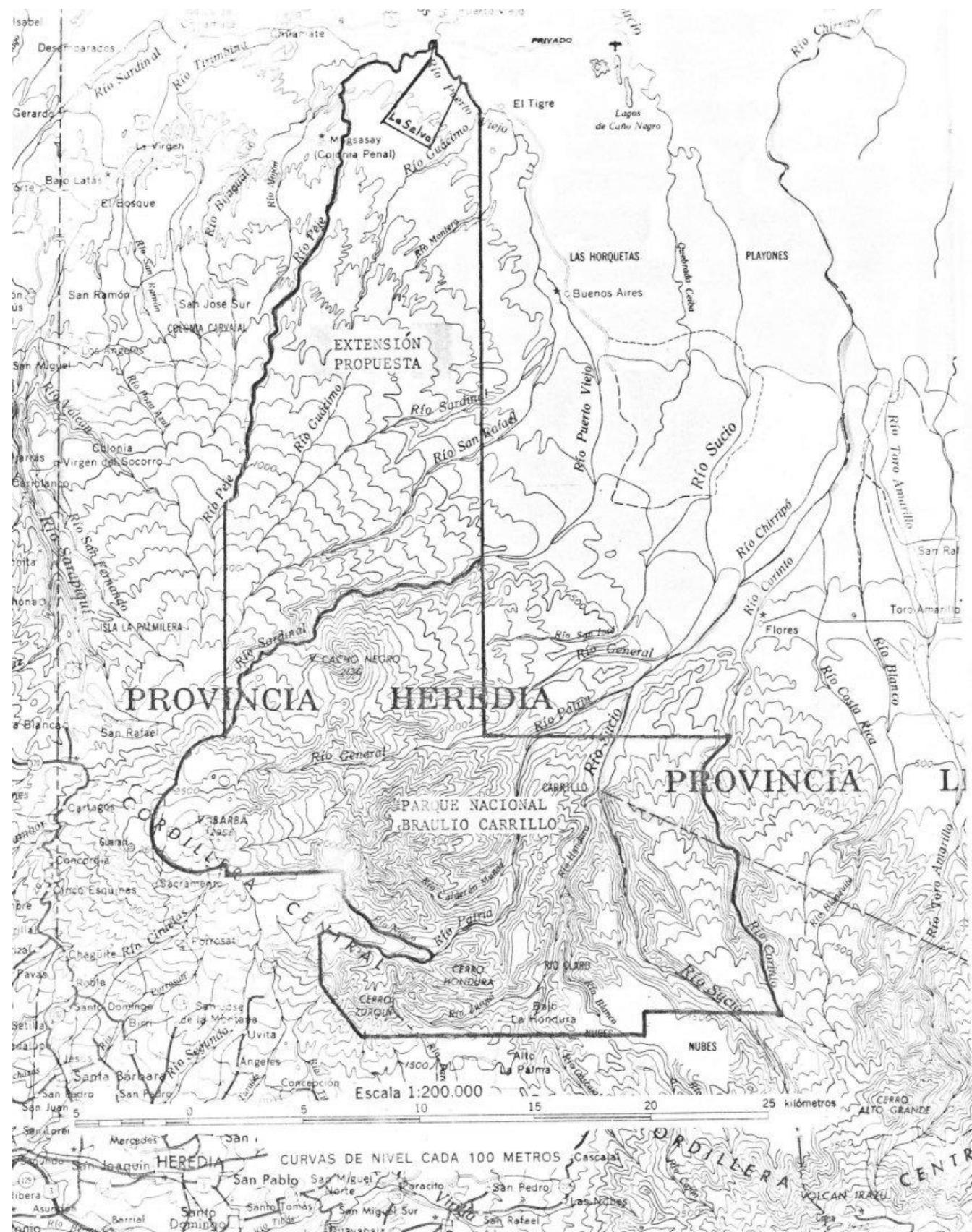


Mario Boza (left), Alvaro Ugalde (right)

At some time in late October I met with Mario Boza, the science advisor to president Carazo, and showed him the map of forest coverage. Together we drew up a set of boundaries for the proposed extension. These were to be the first "official" boundaries. Boza then took the map to President Carazo and made the formal proposal to him. Carazo accepted Boza's recommendation to extend the park. As expressed in his letter of Nov. 6, '78, Carazo told the director of the Geographic Institute, that if he could confirm the accuracy of my map of forest coverage, he would go ahead with the park project.

Boza then asked me to write an essay explaining why the park should be extended. My essay was translated into Spanish by OTS, and much to my surprise, a full page article appeared in the national newspaper La Nación, with photos and maps, and the headline "They will extend Braulio Carrillo National Park". The text of the article was my essay verbatim, and it was signed by Mario Boza. Documentation of this history is available here:

<http://tomray.me/park/ParkExtension1977.pdf>





Rodrigo Carazo

PRESIDENTE DE LA REPUBLICA DE COSTA RICA

6 de Noviembre de 1978

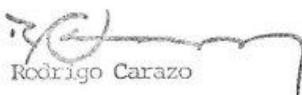
Señor
Ing. Fernando M. Rudín Rodríguez
Director
Instituto Geográfico Nacional
Ministerio Obras Públicas y
Transportes - M.O.P.T.
Ciudad

Estimado señor:

Con base en las diversas conversaciones que he mantenido con científicos de la Organización de Estudios Tropicales, del Fondo Mundial para la Naturaleza (W.W.F.) y de la Universidad de Costa Rica, he decidido, en principio, extender el Parque Nacional Braulio Carrillo hacia el norte hasta el área conocida como Finca La Selva, con el propósito de que esta área silvestre incluya una muestra completa de los hábitats de la vertiente Atlántica de Costa Rica.

Con el propósito de tomar una decisión definitiva sobre este asunto, y de planificar las acciones correspondientes, le solicito se sirva indicarme mediante reconocimientos, en un plazo no mayor de 3 semanas, si el mapa adjunto muestra la ubicación y extensión correctas de los sitios colonizados en el área de interés.

Atentamente,


Rodrigo Carazo

Anexo : mapa arriba mencionado

cc.: Dr. Jay Savage, Presidente O.T.S.
Dr. Donald Stone, Director Ejecutivo O.T.S.
Dr. Tom Ray, O.T.S.
Dr. Thomas Lovejoy, Presidente W.W.F.
Dr. Hernán Fonseca Z., Ministro M.A.G.
Prof. José J. Muñoz B., Presidente Ejecutivo I.T.C.O.
Dr. Guillermo Chaverri B., Director Ejecutivo Asignaciones Familiares
Biol. Alvaro Ugalde, Director Parques Nacionales
Ing. Mario A. Boza, Coordinador Recursos Naturales

Ampliarán Parque Nacional Braulio Carrillo



Finca La Selva, una estación de investigaciones científicas tropicales localizada cerca de Puerto Viejo en Sarapiquí. Pertenece a la Organización de Estudios Tropicales (OTSI).



Vegetación típica del área anexada al Parque Nacional Braulio Carrillo. Se trata de una de las zonas de mayor riqueza y diversidad de flora y fauna. (OTS)



Mario A. Boza (Coordinador del Programa de Recursos Naturales

El Parque Nacional Braulio Carrillo, establecido en abril de 1978, se encuentra en la Cordillera Central e incluye los volcanes Cacho Negro y Barva. El parque abarca terrenos cuya elevación altitudinal va desde los 500m. hasta los 2906 m.; la mayor parte del área, sin embargo, está por encima de los 1000 m. Esta región es una de las más húmedas de Costa Rica, y por esta razón el Parque es fundamental para la protección de cuencas

hidrográficas. La extensión del mismo vendría a proteger la pendiente norte boscosa hasta las llanuras del Atlántico, un área silvestre excepcional e importante para la investigación científica y protección de la cuenca del río Puerto Viejo.

La extensión tiene características topográficas que hacen de esta área una valiosa reserva (ver mapa). En este sector está incluida una pendiente suave, cuya elevación máxima alcanza los 2906 m. de la cima del volcán Barva hasta los 35 m. en la Finca La Selva (una estación biológica experimental de la Organización de Estudios Tropicales), a 35 kilómetros de distancia. La uniformidad de la pendiente sobre la gran distancia horizontal que se incluye entre los puntos más alto y más bajo de la misma, posee una topografía en la cual todas las elevaciones intermedias están representadas sobre una superficie considerable de terreno. Por lo tanto, en esta pendiente, todas las comunidades ecológicas húmedas características en el rango elevacional de los 35 m. a los 2906 m., están completamente desarrolladas y ordenadas en una enorme comunidad con transiciones continuas de un tipo a otro. No existe en ningún otro sitio en Costa Rica, y probablemente en todo Centro América, una área tan extensa de bosques de elevación baja, media y alta contiguas. La presencia de esta gran diversidad de hábitats en una sola pendiente, permite interacciones biológicas dinámicas, tales como las migraciones altitudinales. Los tipos de vegetación varían desde los bosques tropicales altos a bosques montaños tropicales húmedos achaparrados, apenas bajo la línea de tolerancia de los árboles en la cumbre del volcán Barva.

Existen tres razones importantes para incluir esta área en el Parque: 1. La protección de este hábitat silvestre excepcional; 2. La protección de la estación biológica experimental, Finca La Selva, un centro mundial de investigación en ecología tropical; y 3. La protección de cuencas hidrográficas. La extensión del parque protegería casi toda la vertiente del río Puerto Viejo, cuyas aguas han subido, en ocasiones, a un nivel de 9 m., después de copiosos aguaceros sobre la pendiente norte del volcán Cacho Negro, amenazando viviendas a lo largo del río y al pueblo de Puerto Viejo.

Actualmente, el Sistema de Parques Nacionales Costarricenses no incluye ni: 1. Un perfil altitudinal completo; 2. Un parque de elevación media; 3. Un bosque tropical húmedo en el Atlántico. El único bosque de importancia en las llanuras del Atlántico es Tortuguero, que es principalmente un bosque pantanoso que no representa un componente substancial del bosque tropical húmedo. La extensión del Parque Nacional Braulio Carrillo vendría a incluir estas tres necesidades dentro del Sistema de Parques Nacionales Costarricenses.

Esta región es biológicamente muy diversa y rica, y representa un recurso importante para el país y para el resto del mundo. Tan rica es esta región, en realidad, que la documentación que a la fecha existe sobre la misma, no refleja la realidad de su diversidad; su flora y su fauna, por ejemplo, no han sido completamente clasificadas. Existen, por ejemplo, de 10 a 20 especies de árboles nuevas para la ciencia. Solamente Finca La Selva tiene el mayor número de especies de murciélagos que cualquier otra área equivalente en el resto del mundo. De 50 a 100 especies de aves dependen de migraciones sobre el perfil longitudinal continuo. Muchas de estas aves, incluyendo el bellísimo pájaro paraguas con cuello desnudo y el campanero tricarunculado, importantes para el turismo naturalista, estarían posiblemente condenados a desaparecer si esta área no se protege.

El Instituto Interamericano de Ciencias Agrícolas ha estimado que el 37% del territorio costarricense es apto para uso forestal y el 10.4% para protección absoluta de cuencas hidrográficas y recursos biológicos. Para hacer uso racional de mucho de nuestro suelo, debemos apoyar la investigación básica necesaria para desarrollar prácticas forestales eficientes en condiciones tropicales. A través de 25 años, la estación biológica experimental, Finca La Selva, ha producido gran riqueza de conocimientos sobre el funcionamiento de los bosques tropicales. Existen actualmente cuatro proyectos de investigación en La Selva, de interés inmediato para nuestro país, financiados en su totalidad por la Fundación Nacional de Ciencias de los Estados Unidos, con un costo conjunto de US. \$190,000.00. Estos estudios incluyen investigación sobre la biología reproductiva y genética de árboles del bosque húmedo tropical, dinámica de reforestación y regeneración del bosque. El conocimiento básico de los patrones reproductivos de los árboles y los procesos regenerativos que ocurren en los claros naturales del bosque, lo mismo que en potreros abandonados, es esencial para cualquier plan de reforestación que tenga como meta la producción forestal sostenida. La investigación a largo plazo, como la que se hace hoy día en La Selva, solamente podría ser continuada en el futuro si esta pequeña reserva se incorpora a un parque nacional más extenso. Como nota de interés, la comisión de planeamiento de la Fundación Nacional de Ciencia de los Estados Unidos plantea un nuevo programa a largo plazo, de seguimiento de los hábitats más representativos. Finca La Selva ha sido incluida en este plan, como el único sitio de los Estados Unidos donde se planea llevar a cabo este programa. Sin embargo, la Fundación Nacional de Ciencia ha demostrado su preocupación para que el área alrededor de Finca La Selva sea protegida. Este programa de seguimiento significa una instalación permanente de equipo que necesitaría de costarricenses para su manejo.

At this point everyone was ecstatic, and we thought it was done. In time we began to realize that nothing was happening. No park guards had arrived. When we asked what was going on, we were informed that the government was broke, and there were no funds available. By this time, OTS was willing to become actively involved in the project, and they began to consider the problem of fund raising for the project. I no longer felt that I needed to play a central role in the effort, as other persons who were better connected and equally energetic were now quite dedicated to the project (e.g., Peter Raven, Don Stone).

When the Clarks took over the administration of La Selva, they became dedicated to the purchase of the “Vargas property”. Although I saw some benefit to the idea, I was strongly opposed to it because it diverted attention from the more important project of the park extension, and the Vargas land was very expensive, as it included road front property that was fairly well “developed”. Once the effort to raise funds for the Vargas property was well underway, it was clear that the park extension would get no attention at least until the Vargas property was purchased. Therefore, even though I did not support the Vargas project, I called Arthur D. Little, and arranged for him to contact Peter Raven so that he could donate \$25,000 to the Vargas project. Although I was quite skeptical at that time, my hope was that if the Vargas project could be gotten out of the way, attention could be re-focused on the park extension. In retrospect, we had our cake and ate it too.

In 1982, President Rodrigo Carazo issued a decree that officially designated 7,368 hectares as “Zona Protectora La Selva”. Protection status means that land owners can continue existing farming practices, but conversion or alteration of forest is prohibited. This was intended as a holding measure while funds to purchase the property could be raised.

On a bird-watching expedition in 1984, Murray Gell-Mann, a Nobel laureate in physics and member of the Board of Directors of the John D. and Catherine T. MacArthur Foundation, heard about the Zona effort. As a result of this contact, later the same year the board of the MacArthur Foundation voted unanimously to grant one million dollars, on a one-to-one challenge basis, towards the purchase of the land. Within a year, the challenge was met by a fund raising effort by a consortium including the Nature Conservancy, the World Wildlife Fund-US, the Organization for Tropical Studies, the Costa Rican Park service and the Costa Rican National Parks Foundation. On 13 April 1986, President Luis Alberto Monge officially incorporated the 13,500 hectare extension of Braulio Carrillo Park into the Costa Rican National Park System. The history of these conservation efforts is described in Keller (1986) and Pringle (1988).

Subsequently I began a new solo effort by campaigning for the protection of additional lands around and to the north of the extension mentioned above (<http://tomray.me/pubs/reserves/node10.html>). My efforts led to a second matching grant from John D. and Catherine T. MacArthur Foundation (<http://tomray.me/pubs/reserves/node23.html>). This was a grant of \$250,000 on a 1:2 basis, bringing the total to \$375,000.

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THE JOHN D. AND CATHERINE T.
MACARTHUR FOUNDATION

July 5, 1994

Thomas S. Ray
Invited Researcher
ATR Human Information
Processing Research Laboratories
2-2 Hikaridai, Seika-cho Soraku-gun
Kyoto 619-02
JAPAN

Dear Dr. Ray:

It is my pleasure to inform you that the MacArthur Foundation's Board of Directors has approved a grant of \$250,000 to support stages four and six of the project described in "A proposal to consolidate and stabilize the rain forest reserves of the Sarapiqui region of Costa Rica." As you know, the area in stages four and six of your proposal is our first priority because of our earlier \$1,000,000 challenge grant which helped to establish the Zona Protectora.

Our grant for this land purchase was made to the Organization for Tropical Studies and passed through the National Fish and Wildlife Foundation (NFWF). This arrangement makes it possible to obtain a matching award from NFWF on a 1:2 basis, bringing the total to \$375,000.

I am glad that the Foundation can continue to be involved in this important area, and I hope you are able to move things along for the area north of La Selva that is your first priority.

With every best wish,

Sincerely yours,



Dan M. Martin
Director
World Environment and
Resources Program

This continued effort on my part also brought the participation of the Swiss philanthropy Ecovida (<http://www.ecovida.ch/index.php?id=9&L=1>). In 2007 Ecovida first bought the property marked in pink on the map below, but have continued purchasing additional properties to the north, with the goal of constructing a biological corridor. As of 2015 they have acquired three properties totaling 1,670 hectares, at a cost of \$2,500,000. This is an ongoing project and Ecovida continues to seek the purchase of additional properties.

Keller, W. Eric. 1986. Phenomena, comment and notes: An unusual international revolution is going on deep inside the jungles of Costa Rica – and biologists are leading it. *Smithsonian* 17(4): 28-32. (<http://tomray.me/park/Keller1986ZonaProctectora.pdf>)

Pringle, Catherine M. 1988. History of conservation efforts and initial exploration of the lower extension of Parque Nacional Braulio Carrillo, Costa Rica. *In* Frank Almeda and C. M. Pringle [eds.]: The tropical rainforests: diversity and conservation. California Academy of Sciences and Pacific Division, AAAS, San Francisco, CA. California Academy of Sciences Memoir No. 12. Pp. 225-241. (<http://tomray.me/park/Pringle1988History.pdf>)

