FROM: Scientists Concerned for Yasuní National Park

TO: Ingeniero Lucio Gutiérrez
President of the Republic of Ecuador

Luiz Inácio Lula da Silva
President of the Federative Republic of Brazil

José Eduardo de Barros Dutra
President and CEO of Petrobras

CC: Ingeniero Eduardo López
Minister of Mining and Energy, Republic of Ecuador

Dr. Fabián Valdivieso
Minister of the Environment, Republic of Ecuador

Sebastiao Manchineri
President, COICA

Leonidas Iza
President, CONAIE

Juan Enomenga
President, ONHAE

Rodrigo de Rato y Figaredo
Managing Director of the International Monetary Fund

The Courts of the Republic of Ecuador, including the Constitutional Tribunal of Ecuador

RE: **Proposed Petrobras road into Yasuní National Park**

DATE: November 25, 2004

Distinguished Leaders:

We respectfully write you to express our opposition to the approved Petrobras plan to construct a 54-kilometer road from the Napo River into Yasuní National Park to facilitate oil extraction. Yasuní is the largest national park in Ecuador, and has been internationally recognized for its importance, receiving designation as a UNESCO Man and The Biosphere Reserve in 1989. The road will extend 24 kilometers into one of the most intact portions of the park.

We represent leading scientists of Yasuní National Park, and other tropical researchers concerned for the future of Yasuní. We come from Ecuador, Panama, Peru, Denmark, England, Germany, Greece, Scotland, Spain, and from across the United States including Puerto Rico. Together we have well over 100 years of experience conducting research in the park. We have studied many aspects of its biodiversity — plants, amphibians, insects, birds and mammals — as well as the impacts of the Maxus Road, which was built in 1994 into northwest Yasuní for petroleum activities. We have also studied the cultural, economic, and hunting systems of peoples living in the area.

We feel it is our duty as scientists to inform you of our three central conclusions about Yasuní, drawn directly from our own and others' research, and synthesized at the Yasuní Day Research Symposium in Mindo, Ecuador, October 11–13, 2004.

Our first conclusion is that Yasuní National Park protects a region of extraordinary value in terms of its biodiversity, cultural heritage, and largely intact wilderness. This region — the Napo Moist Forests of the Western Amazon — has levels of diversity of many taxonomic groups that are locally and globally outstanding. For example, with an estimated 2,274 tree and shrub species, Yasuní protects a large stretch of the world's most diverse tree community. In fact, there are almost as many tree and shrub species in just one hectare of Yasuní's forests as in the entire United States and Canada combined. Yasuní has 567 bird species recorded — 44% of the total found in the Amazon Basin — making it among the world's most diverse avian sites. Harboring approximately 80 bat species, Yasuní appears to be in the world's top five sites for bat diversity. With 105 amphibian and 83 reptile species documented, Yasuní National Park appears to have the highest herpetofauna diversity in all of South America. Yasuní also has 64 species of social bees, the highest diversity for that group for any single site on the globe. Overall, Yasuní has more than 100,000 species of insects per hectare, and 6 trillion individuals per hectare. That is the highest known biodiversity in the world.

Reflecting its biological uniqueness, World Wildlife Fund scientists have declared this region one of the 200 most important in the world to protect. Yasuní also conserves one of the larger contiguous tracts of the Amazonian rainforest, a broader region identified as one of the world's 24 wilderness priority areas. Furthermore, Yasuní and adjacent areas are home to the indigenous Huaorani, who have relatively uncontacted communities in the park.

Our second conclusion is that Yasuní National Park has major global conservation significance, for the following reasons. The park is one of the few "strict protected areas" in the whole region of the Western Amazon (National Parks of IUCN Category II). Only 8.3% of the Amazon currently falls within any type of protected area. The park harbors a total of 25 mammal species protected under CITES and/or listed as Endangered, Vulnerable, or Near Threatened, as well as many other "species of concern" in groups such as amphibians, reptiles, birds, and plants. For example, the park is one of the most important refuges for the Giant Otter (*Pteronura brasiliensis),* a Critically Endangered species within Ecuador and Endangered globally. The Giant Otters use a large part of the Tiputini River and watershed in Yasuní, and one of the confirmed populations is very close to the construction zone of the proposed Petrobras road. Yasuní also harbors the Amazonian Manatee (*Trichechus inunguis*), another Critically Endangered species within Ecuador that is Vulnerable globally.

If Yasuní is strongly protected, it could be one of the few places to provide long-term protection to viable populations of these and thousands more Amazonian species in the region. Yasuní is in a section of the Amazon predicted to experience minimal weather changes from global warming. The intact forest that Yasuní protects will only increase in value as the surrounding forests are subjected to climate changes and are destroyed for agriculture and other uses.

Our third conclusion is that the negative impacts of roads have proven largely uncontrollable in Yasuní National Park and surrounding forests. Yasuní National Park is at the edge of one of 14 major deforestation fronts in the world. The northern Ecuadorian Amazon is being deforested at a rate of approximately 0.65% per year (40,000 ha per year). At this pace, within the next 150 years, approximately 70% of the region's forest will be gone. Potentially irreversible impacts on

the region's biodiversity can be expected much sooner due to habitat fragmentation and disproportionate clearing of areas with better soils.

Roads are among the main catalysts for the deforestation. A recent study suggests that for every new kilometer of road built in the region, an average of 120 hectares of forest are lost to agriculture. Forests near Yasuní are under tremendous land use pressure as a result. For example, the Canton of Shushufindi lost 19.3% of its forests between 1986 and 2001.

Although Yasuní is supposed to be a "strict protected area," the building of the Maxus Road into the park has provided an entry point for migration, colonization, and deforestation. While rates for these activities are slower within the park boundaries, they are still significant. Analysis of satellite images spanning the 10 years since the road's construction illustrate that, if present trends continue, half of the forest within 2 km of the road will be deforested within 50 years. Many farms and entire towns have been constructed in the park along the road. Additionally, on roads just to the north and west of Yasuní, there have been large-scale deforestation and increasing resource extraction, including illegal logging, which threaten to encroach on the park.

Furthermore, the Maxus Road and oil company activities are causing substantial changes to the Huaorani's economic activities, diet, and culture. The road has also led to increased subsistence and illegal commercial hunting within the park. These documented impacts indicate the proposed Petrobras road will be a catalyst for migration, colonization, deforestation, illegal logging, and increased subsistence and illegal hunting inside Yasuní. Thus, the proposed new road represents a grave threat to the park's biodiversity and cultural heritage.

Based on these three conclusions, we strongly oppose the construction of a new road into Block 31 and any other parts of the park. We advocate enactment of an Ecuadorian law prohibiting road-building in national parks for resource extraction, so that the parks maintain their biodiversity over the long-term.

We recommend that the Ecuadorian government require companies to implement "off-shore" drilling techniques to access Yasuní and other environmentally sensitive areas, using helicopters or monorails for transport. The "off-shore" oil drilling model is currently implemented in oceans around the globe, and is an industry standard with which companies have long-term experience. These practices are already being implemented in Ecuador's Block 10 in Amazonian forest near Yasuní, and were nearly implemented by Shell in the Camisea project in Peru with advice from the Smithsonian Institution.

We also urge you to fully consider the economic opportunities presented by tourism and research in Yasuní National Park. Significant revenues and employment are generated by the ecotourism lodges already operating in the park's buffer zone and by the national and international institutions conducting long-term scientific research in Yasuní. The continuation of these activities depends upon maintaining the park's biodiversity and natural ecology. While, at current extraction rates, the oil under Yasuní and its associated revenues will be gone within 50 years, the park itself and its species could serve as long-term economic resources for Ecuador if safeguarded from further road-building and associated impacts.

We have written the attached technical advisory report on Yasuní's biodiversity and conservation significance, the known impacts of roads, and our formal position. We respectfully inform you that we are submitting it to both you and the Ecuadorian courts, where there are cases pending on the Petrobras license for Block 31.

We hope this letter and report will be useful in your decision-making about Yasuní. Those decisions will have major long-term positive or negative ramifications for the park and the conservation of biodiversity in the Western Amazon. We would be pleased to provide you with additional information, and look forward to your reply.

Sincerely,

Scientists Concerned for Yasuní National Park
(*The institutional affiliations of the following 59 scientists are included for reference, and do not imply an institutional stance on this issue.)*

Patricio Asimbaya	Ecuador Programs Coordinator Finding Species Republic of Ecuador
Henrik Balslev, Ph.D.	Professor University of Aarhus Department for Systematic Botany Denmark
Amanda Barrera	Country Coordinator Wildlife Conservation Society – Ecuador Republic of Ecuador
Margot S. Bass	Executive Director Finding Species USA
Richard Bilsborrow, Ph.D.	Research Professor Carolina Population Center University of North Carolina at Chapel Hill USA
Finn Borchsenius, Ph.D.	Associate Professor University of Aarhus Department for Systematic Botany Denmark
Robyn J. Burnham, Ph.D.	Associate Professor Ecology & Evolutionary Biology University of Michigan USA
Chris Canaday, Ph.D.	Board of Directors EcoEcuador Republic of Ecuador
John G. H. Cant, Ph.D.	Professor and Chairperson Department of Anatomy University of Puerto Rico School of Medicine Puerto Rico USA

Maria De Angelo	Ph.D. Candidate Department of Ecology & Evolutionary Biology Yale University USA
Abigail Derby	Ph.D. Candidate Department of Anthropology State University of New York at Stony Brook USA
J. Larry Dew, Ph.D.	Assistant Professor, Research Department of Biological Sciences University of New Orleans USA
Anthony Di Fiore, Ph.D.	Assistant Professor Department of Anthropology New York University USA
Youlatos Dionisios, Ph.D.	Lecturer Department of Zoology School of Biology Aristotle University of Thessaloniki Greece
Louise Emmons, Ph.D.	Research Associate Division of Mammals Smithsonian Institution USA
Terry L. Erwin, Ph.D.	Research Entomologist Department of Systematic Biology Smithsonian Institution USA
Paul Fine, Ph.D.	Postdoctoral Fellow Department of Ecology & Evolutionary Biology University of Michigan USA
Matt Finer, Ph.D.	Staff Ecologist Save America's Forests USA
Margaret Franzen	Ph.D. Candidate Department of Anthropology Ecology Graduate Group University of California, Davis USA
Chris Funk, Ph.D.	Postdoctoral Fellow Integrative Biology University of Texas USA

Jonathan Greenberg	Ph.D. Candidate Center for Spatial Technologies and Remote Sensing Ecology Graduate Group University of California, Davis USA
Juan Ernesto Guevara	Associate Botanical Researcher Finding Species Republic of Ecuador
Denise Guillot	Ph.D. Candidate Department of Anthropology Boston University USA
Grady Harper, M.Sc.	Tropical Forest Mapping Specialist Conservation International South America
Paul Herbertson	Master of Science Candidate Geography Research King's College London England
Flora L. Holt, Ph.D.	Assistant Professor Department of Anthropology & Curriculum in Ecology University of North Carolina at Chapel Hill USA
Jeffrey P. Jorgenson, Ph.D.	Wildlife and Conservation Biologist Researcher Republic of Ecuador
Nils Koster	Ph.D. Candidate Nees Institute for Biodiversity of Plants University of Bonn Germany
Holger Kreft	Ph.D. Candidate Nees Institute for Biodiversity of Plants University of Bonn Germany
William F. Laurance, Ph.D.	Staff Scientist Smithsonian Tropical Research Institute Republic of Panama
Manuel J. Macía, Ph.D.	Researcher Real Jardín Botánico de Madrid (CSIC) Spain
Else Magaard, M.Sc.	Biologist Stavtrup Denmark

Laura K. Marsh, Ph.D.	Staff Scientist Ecology Group Los Alamos National Laboratory USA
Shawn McCracken	President TADPOLE Organization USA
Amy Mertl	Ph.D. Candidate Department of Biology Boston University USA
Margaret Metz	Ph.D. Candidate Department of Integrative Biology University of California, Berkeley USA
Hugo Mogollon	Associate Botanical Researcher Finding Species & Researcher NUMASHIR Fundación para la Conservación de Ecosistemas Amenazados Republic of Ecuador
Nathan Muchala	Ph.D. Candidate Department of Biology University of Miami USA
Jacob Nabe-Nielsen, Ph.D.	Postdoctoral Fellow Royal Veterinary and Agricultural University Denmark
Sean O'Donnell, Ph.D.	Associate Professor Psychology (Animal Behavior) University of Washington USA
Nigel Pitman, Ph.D.	Science Director Amazon Conservation Association Peru
Simon A. Queenborough	Ph.D. Candidate Department of Plant and Soil Science University of Aberdeen Scotland
Tom Quesenberry	Director Mindo Biological Station Republic of Ecuador

Claus Rasmussen	Ph.D. Candidate Department of Entomology University of Illinois at Urbana-Champaign USA
Morley Read, Ph.D.	Consulting Biologist Republic of Ecuador
Galo Zapata Ríos, M.Sc.	Wildlife and Conservation Biologist Republic of Ecuador
David Romo, Ph.D.	Co-Director Tiputini Biodiversity Station San Francisco University of Quito Republic of Ecuador
David Roubik, Ph.D.	Staff Scientist Smithsonian Tropical Research Institute Republic of Panama
Santiago Ron, M.Sc.	Ph.D. Candidate Integrative Biology The University of Texas at Austin USA
Rodrigo Sierra, Ph.D.	Director Center for Environmental Studies in Latin America & Assistant Professor Department of Geography and the Environment University of Texas at Austin USA
Stephanie Spehar	Ph.D. Candidate Anthropology Department New York University USA
Jens-Christian Svenning, Ph.D.	Assistant Professor Department of Biological Sciences University of Aarhus Denmark
Kelly Swing, Ph.D.	Professor of Environmental Sciences & Founding Director of Tiputini Biodiversity Station San Francisco University of Quito Republic of Ecuador
Victor Utreras	Wildlife and Conservation Biologist Republic of Ecuador
Gorky Villa, M.Sc.	Botanical Researcher Yasuní National Park Republic of Ecuador

Corine Vriesendorp, Ph.D.	Conservation Ecologist Environmental Conservation Program Field Museum of Natural History USA
Florian A. Werner	Ph.D. Candidate University of Goettingen Germany
Peter Wetherwax, Ph.D.	Assistant Professor Department of Biology University of Oregon USA
S. Joseph Wright, Ph.D.	Senior Scientist Smithsonian Tropical Research Institute Republic of Panama