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LETTERS

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THE AMERICAS

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Taking Stock of Chile's Valdivian Temperate Rainforest

Developing Incentives to Encourage Private-Sector Conservation

By Peter Keller

JUNE 7, 2001

VALDIVIA, Chile—"Psst! Hey, you! Want a stock tip? Buy 2,000 shares of ESL at the option price of \$2.50, you'll be doing yourself a favor." In this case ESL is neither a high-tech stock nor an energy company, but rather an enterprise dedicated to buying land and developing nature reserves.

Wall-Street type thinking, among other concepts, is being considered in Chile as a means of encouraging conservation of private lands. Various groups in Chile are exploring possibilities for using financial and market-based mechanisms for saving a variety of ecosystems, including some of the last vestiges of Valdivian temperate rainforest. Whether these groups are successful depends largely on the level of private- and public-sector cooperation to develop policies and market conditions that provide incentives for conservation.

One of the groups leading this effort is the Santiago-based Center for Environmental Research and Planning (CIPMA). CIPMA's regional office in Valdivia, a city of 110,000 named after Spanish conquistador Pedro de Valdivia, is leading the charge in a Valdivian rainforest conservation project. To learn more about this project, based in Chile's 10th Region, I met with regional project coordinator Claudia Sepúlveda. Her office on the University of Southern Chile campus was being remodeled, so we met at her temporary conference space, The Last Frontier café in downtown Valdivia. Fresh from a press-conference presentation attended by the country's leading news agencies, she told me that the Valdivian temperate rainforest is one of five temperate rain forests remaining in the world. "Protection



Regional coordinator for a World Bank-funded Valdivian forest conservation project, Claudia Sepúlveda, next to a map highlighting private protected areas in Chile's 10th region



of this forest is a priority for many groups, such as the World Wildlife Fund, The Nature Conservancy and the World Bank," said Sepúlveda. Valdivian temperate rainforests are characterized by a rich species-diversity of evergreen trees up to 50 meters tall, with some trees estimated to be 4,000 years old. The forest is under threat from logging, grazing and forest fires. It is estimated that 45 percent of the original forest cover has been lost and nearly 75 percent of the remaining forest is considered to be seriously at risk.

Sepúlveda, who has a degree in sociology, coordinates the work of a broad-based steering committee comprising public- and private-sector stakeholders who have an interest in Valdivian forest conservation. Committee members include the Chilean park service, World Wildlife Fund, National Committee for the Defense of Flora and Fauna, the Chilean environmental protection agency, University of Southern Chile, UN Food and Agriculture Organization and the National Association of Forest Industries — among others. The committee's role is to disseminate information about private, protected-area management and develop proposals that encourage conservation by means of tax structuring, conservation easements and equities, to name a few.

The idea for creating a publicly traded company for conserving land began in Australia. Sepúlveda's group has taken an interest in how this concept could be adapted within Chile. Earth Sanctuaries Limited (ESL) is the Australian company that has put this concept into action. The company's mission is to rehabilitate land that they have purchased to a condition and species-diversity that existed 200 years ago. For 15 years ESL has been managing nature reserves; it now has ten reserves, of which five are open to the public. The company owns over 90,000 hectares and has successfully reintroduced 16 species of rare, threatened and endangered native wildlife.

Shares of ESL were issued in June 1994, at a price of \$1.05 Australian dollars (about 50 cents U.S.). The company was listed on the Australian stock exchange beginning in May 2000. Prices have reached as high as AUD\$2.50, but as of May 2001 the price was AUD.90¢. Currently, over 6,800 investors have ESL stock in their portfolios. Shareholders are entitled to a 20 percent discount on purchases at each sanctuary and are invited to special shareholders' weekends throughout the year.

Earth Sanctuaries Ltd. generates revenue from 14 different program areas. These include gift-shop sales, wedding and facilities rentals, education programs, filming and photography (for TV programs and professional photographers), consultation services, contract management, captive-animal sales (fish and wildlife sold to zoos) and wildlife sales (animals sold to sanctuaries outside the ESL network). However, the top four money earners are food and beverage sales, donations, guided tours and overnight accommodations. These accounted for nearly 80 percent of ESL revenue in 2000. In its latest six-month report, ESL announced an operating profit of AUD\$1.052 million, up 27 percent from last year. It also reported revenue

up 18 percent from the 1999 mark.

ESL stock is not for those looking to make a quick, easy buck. With the stock price falling, returns to ESL investors are minimal to zero, except for the peace of mind resulting from that they are saving Australian wildlife. This presents a dilemma: is it more effective to invest in "green" stocks, which unfortunately have low returns, or in aggressive real-world stocks for a high return and use that money for conservation projects? Answers differ. My brother-in-law, an avid stock-market investor, has told me on more than one occasion, "Peter, if you want to make a difference, invest in a high-yield stock and use that money to support conservation." That may be fine for dispassionate investors, but I often wonder how environmental groups allocate investments — is it with a green conscience or for a high-yield portfolio? Unfortunately, I have not encountered conservation groups willing to discuss investment portfolios.

The Valdivian forest-conservation steering committee has been looking at the ESL model, but with adjustments for Chilean conditions. One approach to privately protected areas is to sell small parcels that are suitable for development, and then use the revenue to fund conservation work.

Another way to fund and encourage the conservation of private protected areas is to modify the taxation structure. In other Latin American countries a variety of fiscal incentives have been implemented. For example, in Brazil private protected areas are exempt from property taxes. In Venezuela, those completing projects to restore habitat or protect threatened species are eligible for an income-tax exemption of 50 percent. In Costa Rica, a five-percent tax on gasoline goes toward an environmental fund for private protected areas.

These are among the ideas the steering committee will examine during the life of this three-year project, scheduled for completion in September 2003. Besides developing policy proposals and market-based alternatives for conservation, Sepúlveda is coordinating two other aspects of a U.S.\$1 million World-Bank-Global-Environment-Facility-funded Valdivian forest conservation initiative (CIPMA-GEF).

The second aspect of the CIPMA-GEF project consists of developing educational workshops for private-property owners who want to conserve their land. This aspect of the project is being led by the Center for Environmental Studies (CEA) and The Committee for the Defense of Flora and Fauna (Codeff), both with offices in Valdivia. They have jointly developed courses for those interested in conserv-



The heart and soul of field work, Biodiversity Program Coordinator Claudio Delgado recording data at Curiñanco reserve, a private nature reserve purchased by The Nature Conservancy and Codeff

ing private lands. Courses include protected-area management, conserving biodiversity, plant identification, restoration ecology, developing tourism projects and administration/planning of private protected areas. The educational workshops will be offered in the coming months. Organizers hope workshop participants will include landowners of the nearly 30 private protected areas already identified in the 10th region (most of the areas are just a few hundred hectares in size, aside from Pumalín Park at more than 260,000 hectares). Besides serving the group of already identified private protected areas, workshop leaders want to drum up interest among other landowners who are currently saving native forests or would consider such an option. Workshops are being advertised through local newspapers and posters distributed throughout the region.

The third aspect of the CIPMA-GEF project is to develop management plans at demonstration sites selected specifically for this project. The four sites, totaling 3,200 hectares: Oncol Park, owned by the timber company *Forestal Valdivia*; the Darwin Path Biological Station based on Chiloé Island near Ancud; San Pablo de Tregua reserve, owned by the University of Southern Chile; and Curiñanco reserve, managed by Codeff.

To get a better idea of what work is being done on the ground at these reserves as a result of the CIPMA-GEF project, I spent a day in the field at Curiñanco with Codeff Biodiversity Program Coordinator Claudio Delgado and his team of biologists. The reserve is about an hour's drive from Valdivia, north along the Pacific Ocean coast. Curiñanco is a 51-hectare reserve purchased earlier this year by The Nature Conservancy (U.S. based) and Codeff.¹

¹ The Nature Conservancy (TNC) initiated its Chile program in 1997. TNC does not have an office in Chile, but rather manages the program through its headquarters in Arlington, Virginia. As official partners, Codeff and TNC have teamed up on one other project, Nevados de Chillán, in Chile's 8th Region.



"No, this is not a man practicing to become an astronaut, but rather protecting himself from viruses spread by rodents. Biologist Ricardo Figueroa weighs a mouse caught in live traps. Data collected will be used to develop a management plan for Curiñanco reserve."

Claudio, with a biology degree from the University of Southern Chile in Valdivia, coordinates a crew of biologists that are conducting species-specific inventory studies.

When I joined them in the nature reserve they were finishing a weeklong inventory of rodent populations. Traps were set in four different environments, with 30 traps in each zone. Rodents enter the metal boxes looking for food, thus triggering a trap door. Once biologists record which species they've caught, along with their weight and sex, the rodents are set free. Claudio's field partner, Ricardo Figueroa, wore a space-age type mask and medical gloves to work with the rodents. Serious precautions were taken to prevent any exposure to Hantavirus pulmonary syndrome carried by the rodents. Everything touched by the rodents is sprayed with a bleach solution. On each of the trap lines, rodents are caught in an average of 30 percent of the traps. Species caught include the native *Olivaccio* mouse and the more common long-tail mouse, plus the non-native European rat. Other studies are done throughout the year to collect information on different species of fauna including sea otter, also known as *nutria*, and a variety of birds.

This information will be used to write a management plan for the area. In the future Curiñanco managers would like to enlarge the site and buy adjacent lands. After completing the management plan, possible implementation action includes fencing the reserve to keep cows out, building a visitor center, developing interpretation trails and offering guided tours led by school children from a village near the reserve. They would also like to make this site a field-trip destination for students of the Valdivia elementary school system.

Besides the multi-faceted GEF-funded project, another committee of sorts is waging a campaign to conserve for-

ests that are not protected and could therefore be depleted in the coming years. This committee is called the *Coastal Range Conservation Coalition*; it began in March of 2000 with ten initial member groups. Currently, 12 groups are coalition members and four more may soon join. Members of the coalition include Codeff, World Wildlife Fund, Darwin's Path Foundation, CEA and a variety of Huilliche indigenous groups. The principal goal of the coalition is to protect remaining native coastal forests that are threatened by the development of a coastal highway.

A 200-kilometer section of rugged coastline south of Valdivia currently is relatively roadless, except for a few short sections. The landscape of Chile's coastline in the 10th Region is much like that of the northern California coast between Mendocino and the Oregon border, where U.S. Highway 1 retreats inland, defeated by unrelenting storms and undulating mountains. In three years of work done by the Chilean equivalent of the Army Corps of Engineers only 27 kilometers of road have been built. The first sections of the coastal highway project were approved in 1995 by the Chilean public works department. However, only six kilometers of the proposed two-lane gravel road were required to be approved by Conama (Chile's version of the EPA) through an environmental-impact study. Why only six kilometers? The nation's primary environmental law, passed in 1994, requires environmental impact studies only for highways (plus airports, bus stations and



Valdivian temperate rainforest with a stand of Olivillo trees in the 51-hectare Curiñanco Reserve. The Pacific Ocean can be seen in the background.



“A remote section of Chile’s south-central coast where the government has approved the construction of a coastal highway. A coalition of environmentalists is working to reroute the project and protect this section of Valdivian temperate rainforest from further road development that would lead to large-scale logging.” — Photo courtesy of Francisco Solís, Coastal Range Conservation Coalition.

rail lines) that may affect protected areas. Since few protected areas exist along this section of the coast, only a small fraction of the project’s scope was considered in the impact statement.

The coalition has pooled their resources to hire staff to develop a high-profile campaign about the importance of the coastal range, which contains large sections of intact Valdivian temperate rainforest. Coalition coordinator Francisco Solís told me during a visit to his office that, “only two percent of the coastal range is protected. Construction of the coastal highway along the current path will result in the destruction of more native forests. It has been largely overlooked because it doesn’t have lakes and volcanoes like the Andes range.”

As an initial step, Coalition members and staff are working with Mapuche indigenous groups that live along the coast, like the Huilliche, to help them obtain official land-title documents. Who has official title to the land is a crucial element in determining the fate of the forest.

One of the reasons for constructing the road is somewhat out-of-date. Government officials maintain it will be an alternative to the Pan-American Highway, also known as Route 5, which bisects the nation like a coronary artery feeding the heart of Santiago. However, the project to widen

Route 5 to four lanes is nearly complete, so any perceived congestion has already been relieved.

The coastal-highway project is seen by the Coalition as a subsidy for forestry companies, because they will be the main benefactors of a coastal road. Much of the wood already cut in the 10th Region is used for firewood, estimated at 60 percent by the Chilean Forestry Institute. If opened up to logging by road access, a majority of these forests would be used to supply the demand for heating. Since this is a significant factor in the depletion of native forests, the Chilean forestry service, two German aid agencies and the World Wildlife Fund are collaborating to develop solutions that will reduce firewood demand. Initial ideas include improving building-standard codes so that homes will be better insulated, discouraging use of fuelwood that has not been dried and instituting a certification program for firewood production similar to the one endorsed by the U.S.-based Forest Stewardship Council.

On the day I interviewed Francisco Solís he was also interviewed by a reporter from *CNN en español*. The coalition has been effective in getting the attention of government officials and the press. Recently, coalition members, local politicians and government representatives met to discuss the route planned for the coastal highway. Solís presented an alternative route, 25 kilometers inland, that would

save construction dollars and forests. The Ministry of Public Works reviewed the coalition's proposal and promised to reply by June 5th. When *CNN en español* arrived, the government was already two days overdue on its response. In late June, government officials finally responded, but not favorably. They concluded the proposal was not feasible. In other words, "Political pressure ruled the day," as Francisco said, discouraged by the outcome. Thus, they will continue building the road along the coast – but at least they will complete an environmental-impact study for the upcoming section of road planned.

What's most interesting about the CIPMA-GEF project and the Coalition's campaign is that both efforts are approaching conservation from the perspective of influencing social behavior. Basically, they are looking at the core of what motivates people to conserve nature and how the process

can be manipulated or changed to reach desired results.

Considering some of the high-profile issues in Chile — like jump-starting the economy (unemployment is at 10 percent) and improving education and health-care systems — chances that Chilean legislators or bureaucrats will create new conservation policies are slim. However, the work done now will hopefully plant a seed that will sprout in the coming decade. Possibly with the passing of time, Chilean landowners of biologically diverse habitats may have incentives available that will motivate land conservation. They could opt to protect their land and receive tax breaks, or even create a nature-sanctuary business, with an Initial Public Offering to raise capital for starting such an enterprise. However, don't look for me scanning the ticker tape or the local business channel. As my brother-in-law likes to tell me, I invest like a "grandma." □

INSTITUTE OF CURRENT WORLD AFFAIRS

Fellows and their Activities

Shelly Renae Browning (March 2001- 2003) • **AUSTRALIA**

A surgeon specializing in ears and hearing, Dr. Browning is studying the approaches of traditional healers among the Aborigines of Australia to hearing loss and ear problems. She won her B.S. in Chemistry at the University of the South, studied physician/patient relationships in China and Australia on a Thomas J. Watson Fellowship and won her M.D. at Emory University in Atlanta. Before her ICWA fellowship, she was a Fellow in Skull-Base Surgery in Montreal at McGill University's Department of Otolaryngology.

Wendy Call (May 2000 - 2002) • **MEXICO**

A "Healthy Societies" Fellow, Wendy is spending two years in Mexico's Isthmus of Tehuantepec, immersed in contradictory trends: an attempt to industrialize and "develop" land along a proposed Caribbean-to-Pacific containerized railway, and the desire of indigenous peoples to preserve their way of life and some of Mexico's last remaining old-growth forests. With a B.A. in Biology from Oberlin, Wendy has worked as a communications coordinator for Grassroots International and national campaign director for Infact, a corporate accountability organization.

Martha Farmelo (April 2001- 2003) • **ARGENTINA**

A Georgetown graduate (major: psychology; minor, Spanish) with a Master's in Public Affairs from the Woodrow Wilson School at Princeton, Martha is the Institute's Suzanne Ecke McColl Fellow studying gender issues in Argentina. Married to an Argentine doctoral candidate and mother of a small son, she will be focusing on both genders, which is immensely important in a land of *Italo/Latino machismo*. Martha has been involved with Latin America all her professional life, having worked with Catholic Relief Services and the Inter-American Development Bank in Costa Rica, with Human Rights Watch in Ecuador and the Inter-American Foundation in El Salvador, Uruguay and at the UN World Conference on Women in Beijing.

Gregory Feifer (January 2000 - 2002) • **RUSSIA**

With fluent Russian and a Master's from Harvard, Gregory worked in Moscow as political editor for *Agence France-Presse* and the weekly *Russia Journal* in 1998-9. Greg sees Russia's latest failures at economic and political reform as a continuation of failed attempts at Westernization that began with Peter the Great — failures that a long succession of behind-the-scenes elites have used to run Russia behind a mythic facade of "strong rulers" for centuries. He plans to assess the continuation of these cultural underpinnings of Russian governance in the wake of the Gorbachev/Yeltsin succession.

Curt Gabrielson (December 2000 - 2002) • **EAST TIMOR**

With a Missouri farm background and an MIT degree in physics, Curt is spending two years in East Timor, watching the new nation create an education system of its own out of the ashes of the Indonesian system. Since finishing MIT in 1993, Curt has focused on delivering inexpensive and culturally relevant hands-on science education to minority and low-income students. Based at the Teacher Institute of the Exploratorium in San Francisco, he has worked with youth and teachers in Beijing, Tibet, and the Mexican agricultural town of Watsonville, California.

Peter Keller (March 2000 - 2002) • **CHILE**

Public affairs officer at Redwood National Park and a park planner at Yosemite National Park before his fellowship, Peter holds a B.S. in Recreation Resource Management from the University of Montana and a Masters in Environmental Law from the Vermont Law School. As a John Miller Musser Memorial Forest & Society Fellow, he is spending two years in Chile and Argentina comparing the operations of parks and forest reserves controlled by the Chilean and Argentine governments to those controlled by private persons and non-governmental organizations.

Leena Khan (April 2001-2003) • **PAKISTAN**

A U.S. lawyer previously focused on immigration law, Leena is looking at the wide-ranging strategies adopted by the women's movement in Pakistan, starting from the earliest days in the nationalist struggle for independence, to present. She is exploring the myths and realities of women living under Muslim laws in Pakistan through women's experiences of identity, religion, law and customs, and the implications on activism. Born in Pakistan and immersed in Persian and Urdu literature by her grandfather, she was raised in the States and holds a B.A. from North Carolina State University and a J.D. from the University of San Diego.

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