



CONSERVATION POLICY IN BRIEF

DECEMBER 2015 | N°.27
conservation-strategy.org

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CONSERVATION
STRATEGY FUND

PEOPLE, POWER-LINES AND NATURE: LINKING COUNTRIES WITHOUT LOSING HERITAGE

There is only one place in all the Americas where a person can walk from the Pacific Ocean to the Atlantic without crossing a road. It's the so-called Darien Gap in the extreme east of Panama on the border with Colombia. The remote roadless area is home to forests, wetlands and indigenous reserves. This area of globally recognized natural marvels and unique culture is also unfortunately a haven for armed groups taking advantage of the lack of government presence.

Another thing it doesn't have is electric power-lines. Since 1998 Panama and Colombia have discussed connecting their electric grids to increase flexibility and lower costs. They have generally proposed passing the wires through the Darien Gap. Conservation Strategy Fund joined the Panama Ministry of the Environment recently to examine alternatives to this route, weighing financial construction costs, potential ecological and cultural damage and national security risks.

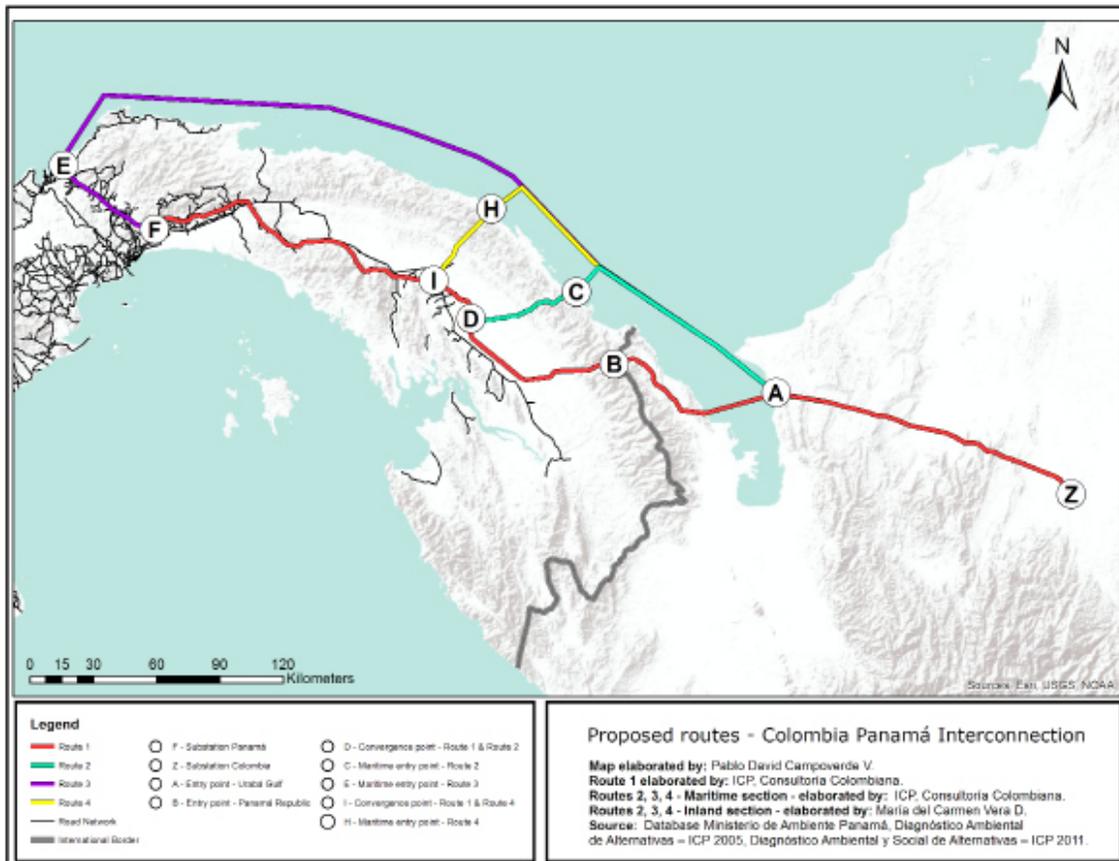


Misty rainforest at dawn, seen from Cerro Pirre, in Darien national park, Republic of Panama.

We found a clear tradeoff between financial construction costs and risks to the environment and indigenous culture; the least expensive option is the riskiest. The option that avoids almost all risk by putting the power lines underwater is by far the most expensive. Using multi-criteria analysis – a method where options are rated according to an array of different criteria – we assigned an overall risk index to each option and estimated each route's total construction cost.

Route 1 (see map, page 2) would pierce the Darien Gap, passing through an Emberá indigenous territory, known as a “comarca”, as well as the Alto Darién Protection Forest. Because it penetrates a border area susceptible to illegal and armed activity, it was the option with the highest national security risk. Its overall risk index is 63 on a 100-point scale (100 being the riskiest). Its construction cost for Panama would be \$217 million (half the total cost, of which Colombia would pay the other half).

At the other extreme, Route 3 would be almost entirely underwater, with a risk index of just 12, but a construction cost for Panama of \$458 million. Route 2 rated worse than Route 1 on both risk and cost. It would pass through both Embera and Guna Yala indigenous comarcas and the Serranía del Darién Watershed Reserve, and come close to the land border of the two countries, an area where sabotage is a real risk.



Panamá's Ministerio de Ambiente and CSF added a fourth route to the analysis to lower the risks while staying within a cost range deemed realistic. Route 4 shortens the terrestrial portion of the power-line and avoids protected areas. It crosses the Guna Yala comarca, so development of the project will depend on alignment with Guna priorities. The cost of this route would be \$298 million, \$81 million more than the more risky Route 1. Its risk index is 48.

Looked at purely in terms of deforestation, the three mostly terrestrial routes hardly differ. For all three we projected deforestation of around 10,000 hectares. But multi-criteria analysis allows a more nuanced look at impacts. It differentiates areas according to risks to specific key species, cultural values, archeological sites, land tenure and national security and other important features of marine and terrestrial environments. Taking these specific factors into account, Route 4 emerges as substantially less risky than the other overland routes.

It's also worth noting that our deforestation modeling took a relatively conservative approach. For example, we did not fully explore the extent of possible damage if a power-line along Route 1 leads to a permanent highway with international traffic along the same route, a project not currently under consideration but not implausible if a right-of-way were established for the power-line.

The multi-criteria analysis presented here is not the same as a feasibility study for the power line. It does not tell us whether financial costs exceed the benefits or vice versa. It does enable a comparison of projects with different costs and different

environmental and social implications. Decision-makers may explore these comparisons further by altering the weight given to the various impact criteria. And the information presented can certainly be used as inputs to such a feasibility study.

To consult the executive summary and full report (in Spanish), please follow this link: <http://www.conservation-strategy.org/en/publications>

Acknowledgements: This study was made possible by the partnership and financial support of Panama's Ministry of the Environment. We also thank the collaboration of the following institutions: Interconexión Eléctrica Colombia Panamá (ICP), Banco Interamericano de Desarrollo (BID), Secretaría Nacional de Energía, Empresa de Transmisión Eléctrica (ETESA), Servicio Nacional de Fronteras (SENAFRONT), Fundación Panthera, Instituto Smithsonian de Investigaciones Tropicales Panamá. Also, we want to thank the Environmental System Research Institute (ESRI) for the GIS tools available in their website.

We also thank Juan Robalino for supervising the deforestation model, Hedley Grantham for the support provided to the Multi-Criteria Analysis and John Fay for the guidance provided on applying the Least-Cost Path method.

The views expressed herein are of the authors and do not necessarily reflect views of Panama's Ministry of the Environment or collaborators.



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