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The Puelo River Valley, in Chile's Los Lagos Region, has been part of the Bosques Templados Lluviosos de los Andes Australes biosphere reserve since 2007.

Why Protecting Chilean Patagonia's Freshwater Is Crucial

Together with local organizations, scientists, and academics, Pew seeks to protect some of the region's rivers

Overview

Chilean Patagonia is known around the world for its extraordinary and relatively pristine ecosystems. With old-growth forests, peat bogs, and fjords that are highly resilient against climate change, the area serves as a large carbon sink and has even been called a climate refuge.

Chile's 1,251 rivers, however, are completely unprotected, with no laws or other holistic and lasting mechanisms in place to safeguard them.¹

Globally, the degradation of rivers and freshwater ecosystems—due to human consumption of water, irrigation, mining, and hydroelectric activities, among other factors—is progressively diminishing local communities' ability to count on clean drinking water and food. And although freshwater systems cover only 1% of the Earth's surface,

they support 10% of all known species and a third of vertebrates.² What's more, the United Nations notes that freshwater species are becoming extinct faster than marine or terrestrial species are.³

That led the International Union for Conservation of Nature to encourage governments in 2020 to “work with civil society, communities, Indigenous groups, the private sector, and others to identify, restore, and protect free-flowing rivers or stretches, and their associated ecosystems, that provide essential services or resilience in a changing climate” and to “balance development by enacting durable legal protections and enhanced governance for rivers, including riparian buffer protections.”⁴

On the flip side, recent studies have shown that rivers that flow freely and without interruption offer enhanced benefits—such as increased fishery yields and flood plain agriculture—to nearby communities and the river species and ecosystems themselves.⁵

The Chilean case

The lack of legal protection for Chile's rivers constitutes a serious threat, given the country's high vulnerability to climate impacts such as floods, landslides, droughts, and wildfires, as well as pollution and excessive depletion of water resources.⁶

The good news is that almost all rivers in Chilean Patagonia remain free-flowing and relatively intact from an ecological point of view. But the challenging news is that the pressures on the region's freshwater ecosystems are increasing.

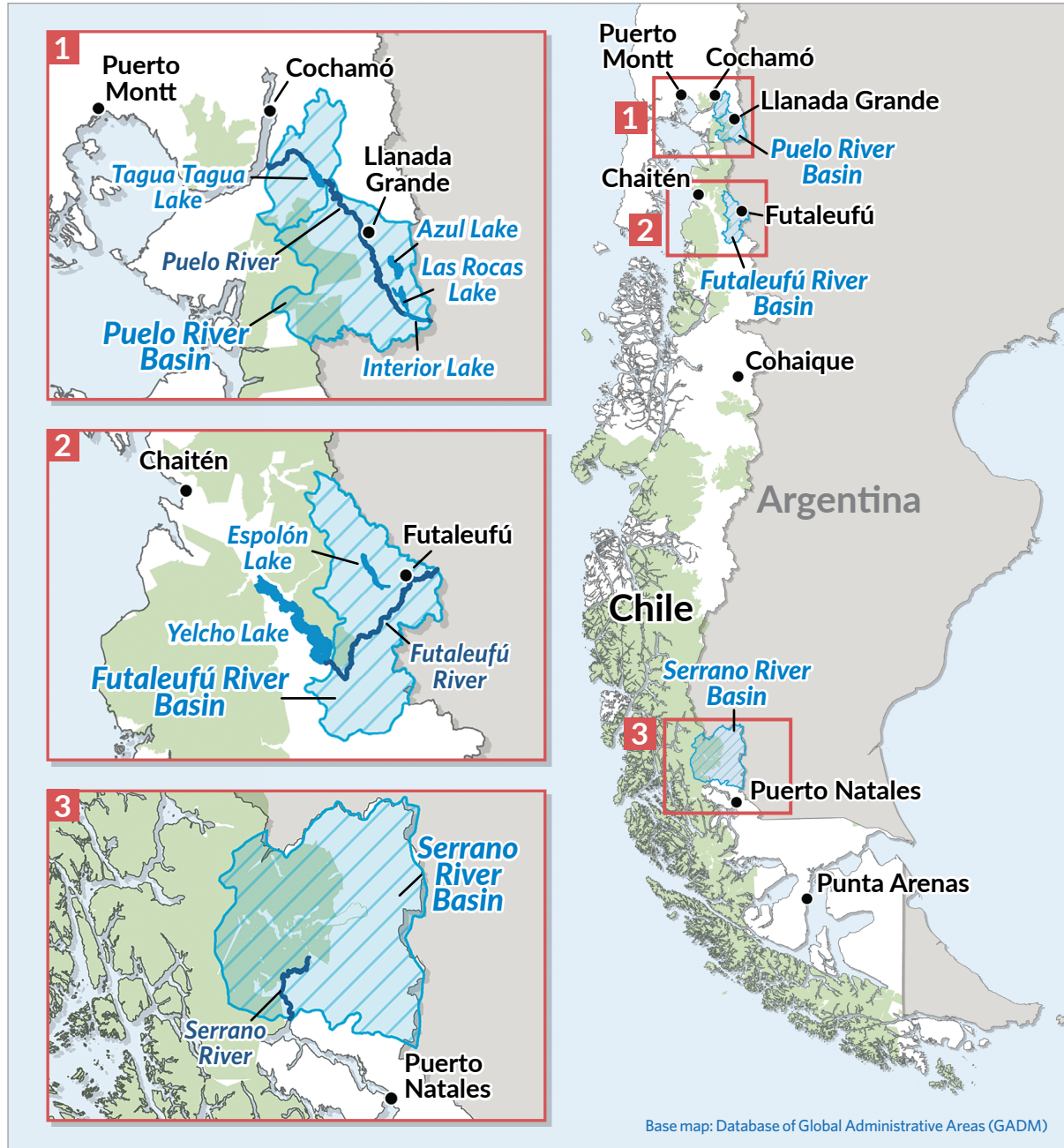
Because there is currently a window of opportunity to implement conservation measures for the country's rivers, associated freshwater ecosystems, and their watersheds, in 2021 The Pew Charitable Trusts—along with the Universidad Austral de Chile's Southern Patagonia Program—began supporting existing efforts and organizations dedicated to protecting freshwater flows in selected river basins and establishing a foundation for broader and more lasting protection of freshwater in the region.

This work has included evaluating legal tools for protecting rivers and their watersheds; scientifically assessing freshwater biodiversity and potential strategies by watershed; and developing an official register of Patagonian rivers in need of protection, beginning with three rivers: the Puelo, Futaleufú, and Serrano.

Figure 1

Pilot Areas for Conserving Chilean Patagonia's Freshwater

The program's efforts will focus on protecting the Puelo, Futaleufú, and Serrano river basins



Sources: Universidad Austral de Chile, "Mapa Interactivo Patagonia Chilena: Parques Nacionales"; Ministerio de Bienes Nacionales, Gobierno de Chile, "Catastro de Bienes Nacionales: SNASPE"; Biblioteca del Congreso Nacional de Chile, Masas Lacustres, 2019; Humanitarian Data Exchange, "HOTOSM Chile Waterways (OpenStreetMap Export)"; Dirección General de Aguas, Gobierno de Chile, "Subcuencas"; Ministerio del Medio Ambiente, Gobierno de Chile, "Vulnerabilidad y Adaptación"; Biblioteca del Congreso Nacional de Chile, "Mapas Vectoriales: Mapoteca"

The project, which also involves the Centro de Investigación en Ecosistemas de la Patagonia, is designed to synthesize and evaluate information on the state of conservation of the entire region's river systems. In addition, the project's main organizations have formed coalitions with local nongovernmental organizations to strengthen their efforts to advance watershed conservation. The goal is to extend the collaborative work to local and regional governments, whose support will be essential for the success of freshwater conservation efforts in Chilean Patagonia.

The work in the Puelo, Futaleufú, and Serrano basins is designed to be a case study as part of the national need for permanent protection and restoration of Chile's freshwater, as well as to face the challenges that climate change and water scarcity will pose in the coming years.

Puelo River



Located in the Los Lagos Region, with headwaters in the lake of the same name in Argentina. Because it flows toward Chile through the Andes and into the Seno de Reloncaví estuary, its waters are vital to the estuary's marine environment. The Puelo is environmentally and culturally important for the surrounding communities and provides a livelihood for small farmers, ranchers, and muleteers. Its scenic value has also made it an important source of employment in the region. As one of Chile's five largest rivers, the Puelo has been the target of several hydroelectric projects—none of which have thrived, although they continue to be among the greatest latent threats to the river's free flow.

Futaleufú River



Located in the Los Lagos Region, the northernmost of Chilean Patagonia's three regions, Futaleufú—which means “big river” in the Indigenous Mapudungun language—is one of Chile's largest (by volume) and fastest-flowing rivers, traversing a basin that runs from the Argentine side of the Andes to Yelcho Lake and the Pacific Ocean, covering nearly 4,250 square miles (11,000 square kilometers). Its valleys are carved by glaciers and surrounded by native forests, and its rapids make it a world-class rafting and kayaking destination.

Serrano River



The river's basin covers some 145 square miles (378 square kilometers) in the Magallanes Region. It includes almost all of Torres del Paine National Park—one of Chile's most popular tourist destinations—and adjacent private lands as well as part of Bernardo O'Higgins National Park. The river provides freshwater and nutrients to estuaries within the recently declared Kawésqar National Reserve, making it a major contributor of freshwater to this marine area and crucially important to maintaining this ecologically valuable estuarine system.

Endnotes

- 1 Ministerio de Obras Públicas y Dirección General de Aguas, "Atlas del Agua Chile, 2016" (2016), <https://dga.mop.gob.cl/DGADocumentos/Atlas2016parte1-17marzo2016b.pdf>.
- 2 D.L. Strayer and D. Dudgeon, "Freshwater Biodiversity Conservation: Recent Progress and Future Challenges," *Journal of the North American Benthological Society* 29, no. 1 (2010): 344-58, <https://doi.org/10.1899/08-171.1>.
- 3 UN-Water, "Water and Ecosystems," United Nations, <https://www.unwater.org/water-facts/water-and-ecosystems>.
- 4 IUCN World Conservation Congress, "Protecting Rivers and Their Associated Ecosystems as Corridors in a Changing Climate," International Union for Conservation of Nature, <https://www.iucncongress2020.org/motion/009>.
- 5 D.A. Auerbach et al., "Beyond the Concrete: Accounting for Ecosystem Services From Free-Flowing Rivers," *Ecosystem Services* 10 (2014): 1-5, <https://doi.org/10.1016/j.ecoser.2014.07.005>.
- 6 Ministerio del Medio Ambiente de Chile, "Vulnerabilidad y Adaptación," <https://mma.gob.cl/cambio-climatico/vulnerabilidad-y-adaptacion/#:-:text=Chile%20es%20un%20pa%C3%ADs%20altamente,notar%20en%20el%20territorio%20nacional>.

Notes

For further information, please visit:
pewtrusts.org/projects/chilean-patagonia

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