

Pristine Streams in the Hill Country

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 hill country alliance





What makes a stream pristine?

To be considered "**pristine**" waterways must have very low - **0.06 mg/L or less** - of phosphorus.

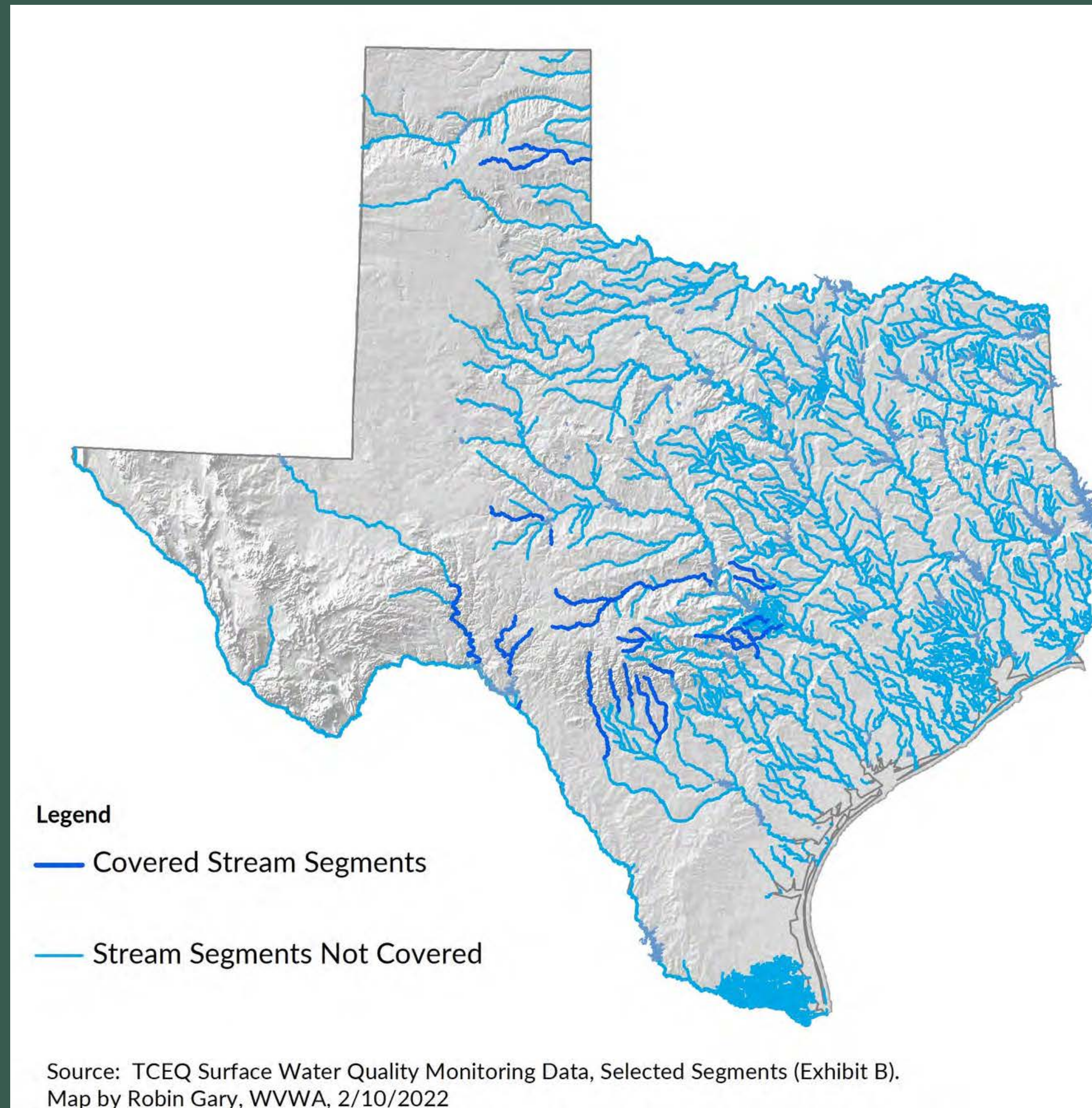
Less than 1% of all classified stream segments in Texas have such low levels of phosphorus.

The vast majority are in the Hill Country.

Where are the pristine streams in Texas?

The TCEQ's water quality data identifies **22 stream segments** covering 1,373 miles of pristine waterways.

Ninety miles of the **Upper and Lower Blanco River** segments are included as pristine.



Why are there so many Pristine Streams in the Hill Country?

- Unique geology
- Flow Regimes
- Hill Country Ecology



A photograph of two young boys jumping off a rocky cliff into a river. The boy in the foreground is wearing a red shirt and dark pants, and is in mid-air. The boy in the background is wearing a black shirt and dark pants, and is also in mid-air. The river is surrounded by lush green trees and vegetation. The sky is blue with some white clouds.

Unique Geology

Hill Country creeks and rivers have a **karst geology** composed of limestone.

Limestone dissolves easily to create fissures, caves and sinkholes that route water back down to the aquifer (carrying along any pollutants).

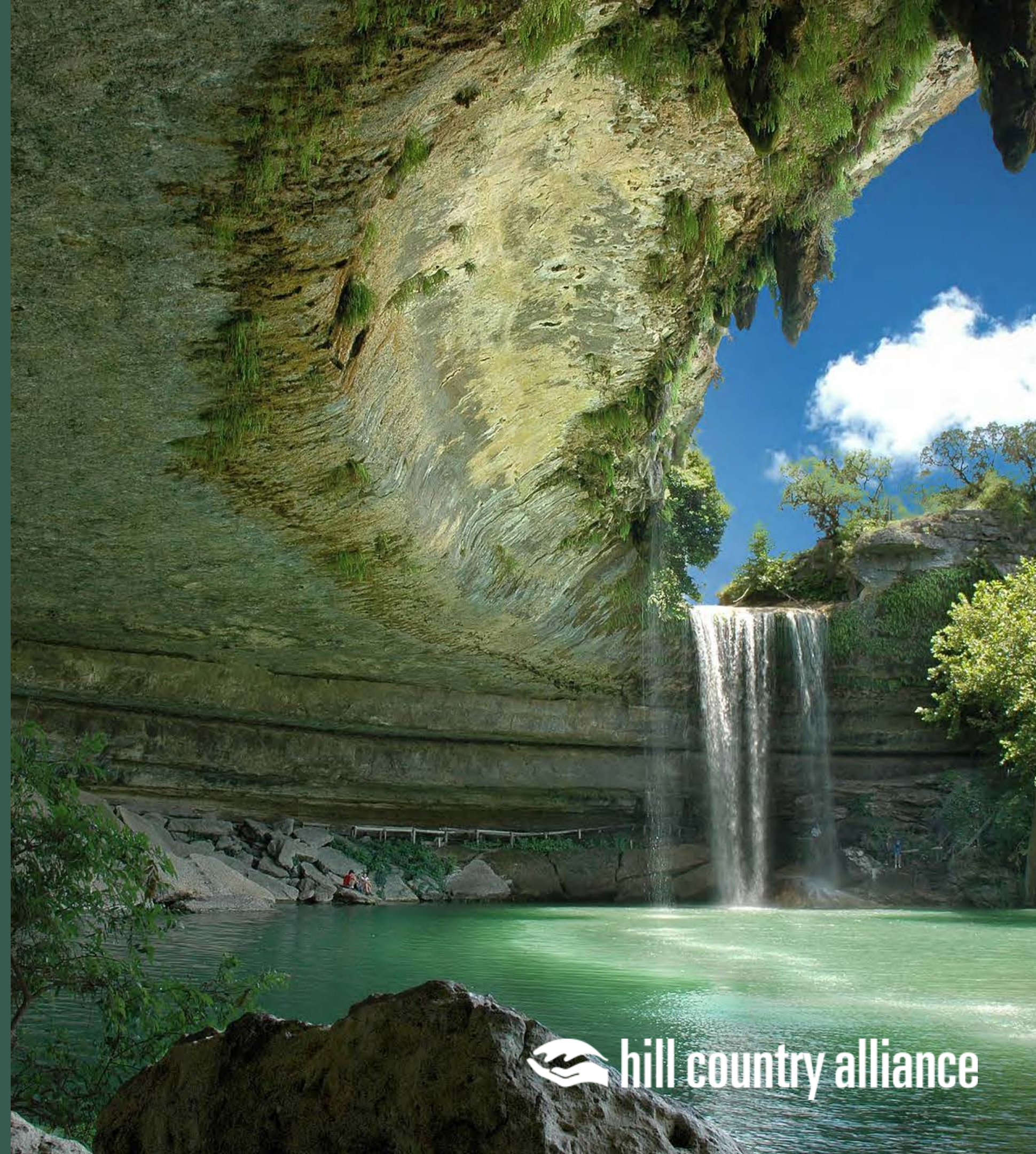
The chemical interactions between the limestone and water tends to reduce the amount of phosphorous in the water that is available for plants and animals.

Flow Regimes

Many Hill Country creeks are **intermittent** - or seasonal - in nature. They go dry or disappear underground in times of drought.

These creeks and rivers don't have the volume of flow to absorb or dilute pollutants and become **overburdened** by the volume of treated effluent being discharged.

Powerful Hill Country **floods** scour the creekbeds, making it hard for plants to take root or soil to accumulate, so there is far less plant life present to take up excess nutrients than there are in other regions.





Unique Ecology

Because of its geology and semi-arid climate, the Hill Country is naturally less nutrient rich than many other regions.

Accordingly, Hill Country streams support a unique ecology of plant life that has evolved for very low-nutrient conditions.

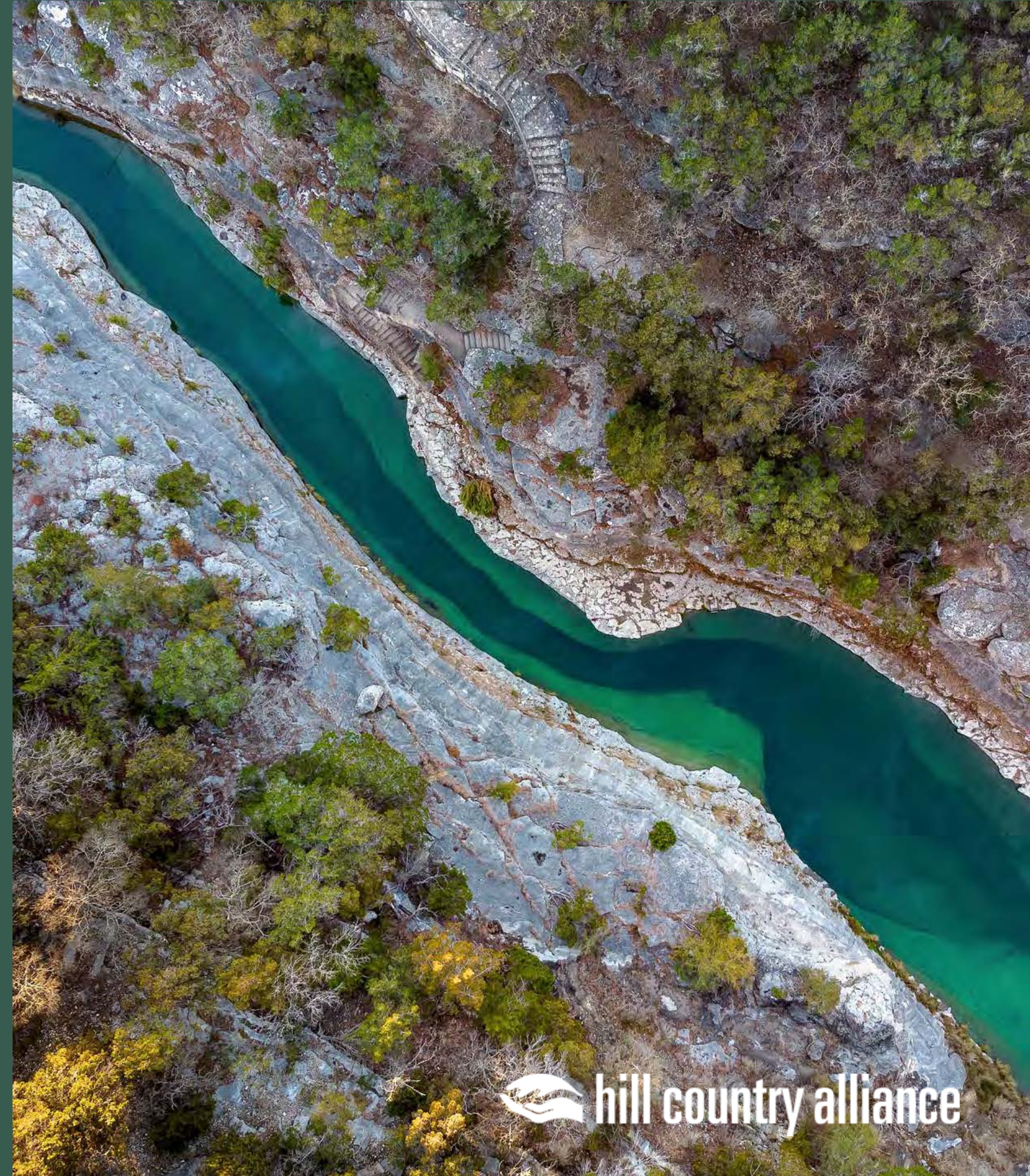
When we import nutrients into the region, in the form of food and fertilizer, and introduce a portion of those nutrients into our streams, the stream ecology is easily overwhelmed, resulting in algae blooms.

What is Phosphorus?

Phosphorus is a basic nutrient. It is also a byproduct of treated wastewater, which causes **algal blooms** when discharged into streams.

Additional growth across the Hill Country is prompting a significant increase in new **wastewater discharge permits** to the TCEQ.

The TCEQ is the state agency responsible for managing nutrient levels in our rivers.



Why is phosphorus bad for pristine streams?

Even highly treated wastewater contains more phosphorus than is present in the streams, **degrading water quality** and producing **algal blooms**.

Algal blooms can severely impact the ability of the creek or river to support bugs, fish, and other wildlife . **They can also make creeks and rivers unsafe and unpleasant for human recreation, consumption and contact.**



*Photo: Stephanie Ryder Morris
South San Gabriel, Williamson County*

Questions?

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