



Water Supply in Alpine Environments

Analyzing Climate Change-Driven Challenges and Opportunities Based on Mountain Huts in French-Speaking Switzerland

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Global warming is changing mountain environments and weather patterns. Glaciers are retreating, eternal snows are becoming rarer, periods of drought are getting longer and stormy weather is becoming more frequent. At the same time, mountain huts are consuming more water because of the large number of people visiting them.

What about the water supply situation in mountain huts during the summer season?

To answer this question, I developed a cartographic tool that allowed me to visualise the supply situation of different huts.

Provenance of water:

	Glacier capture
	Firn capture
	Rainwater
	Spring water
	Groundwater
	Lake pumping
	Other

Size:

	0-40 beds
	40-80 beds
	80-120 beds

Water shortages:
Experiencing shortages

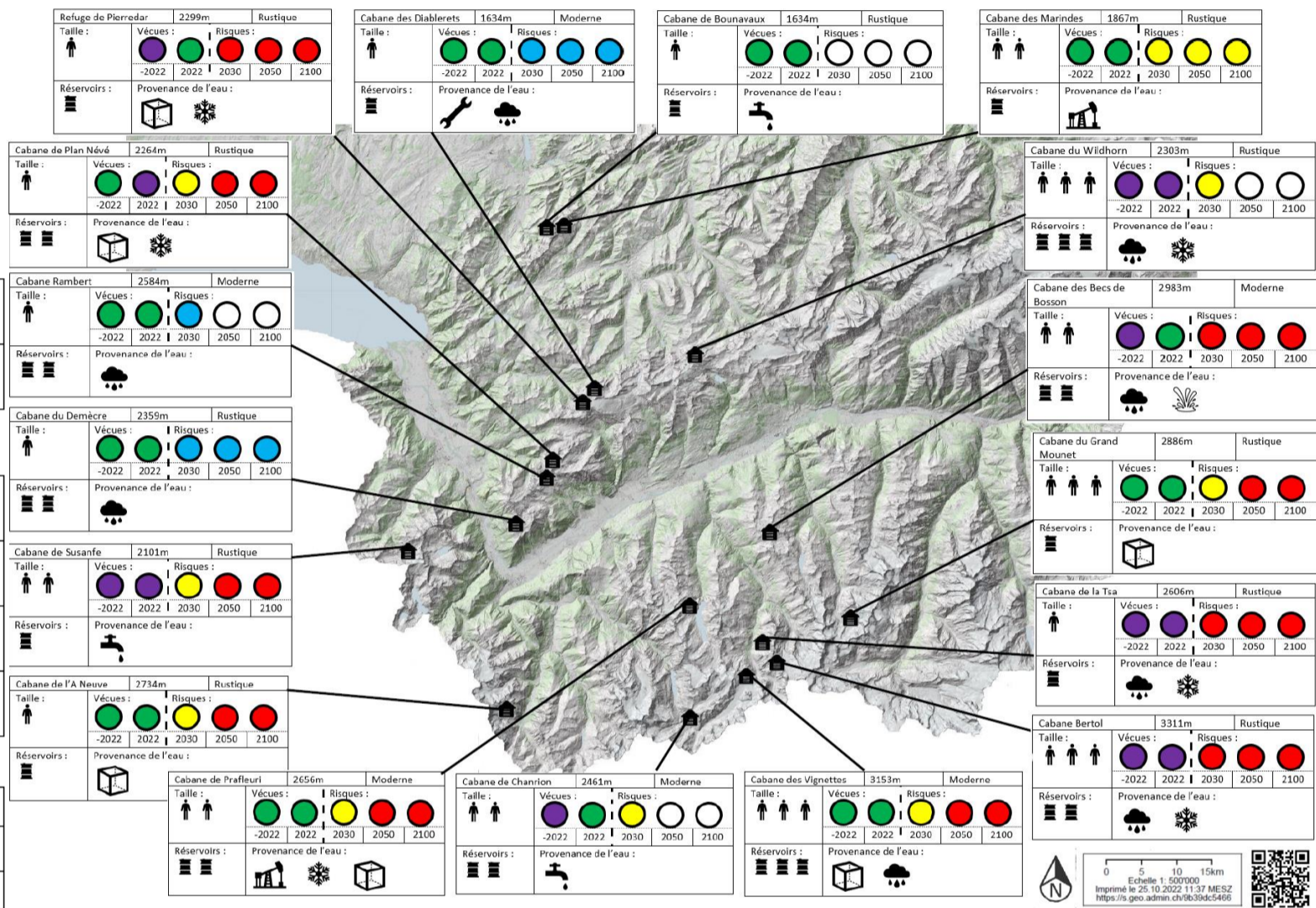
	No shortages
	Has suffered from shortages

Future risks of shortages

	Low risk
	Medium risk
	High risk
	No opinion

Tank sizes:

	0-4'000l
	4'000-12'000l
	12'000-20'000l



Glacier capture	No problem at all Melting glaciers release large quantities of water.
Firn capture	Problematic Firn are less voluminous and melt at the beginning of summer.
Rainwater	No problem at all -Complementary method -Large tanks

Spring water	Variant Depending on the size and characteristics of the aquifer.
Lake pumping	No problem at all A lake is a large natural reservoir.
Modern rustic	Modern cabins have a system adapted to their needs and conditions.

What are the current and possible solutions?

Consumption		Restricting the use of water		Limiting accommodation capacity
Water supply		Search for water further away		Collecting water from the clouds
Management		Increase water storage capacity		Good pipework to prevent water leaks

The water supply situation therefore depends on three factors:
-The geographical location of the hut, - Its supply system, - Water management.

It was concluded that the water supply situation for mountain huts during the summer season varies depending on the specific location. Access to water will become a critical issue in the future for all communities worldwide. Global warming is not limited to the Swiss mountains; it is a phenomenon that affects the entire planet, regardless of geographical features.