

Towards Sustainable Water on Bowen Island

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Bowen Island



Grafton Lake, 2023

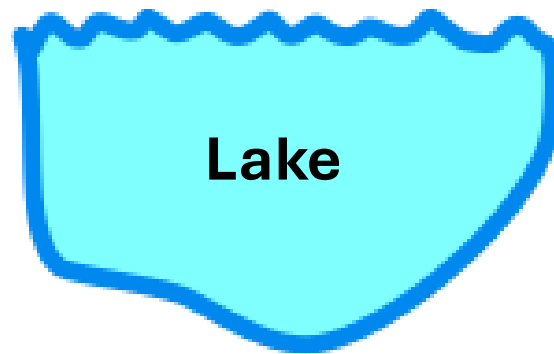
**Nature provides Bowen Island's water.
Nature and Humans use it.**

SUPPLY

DEMAND

Stream inflow

Groundwater

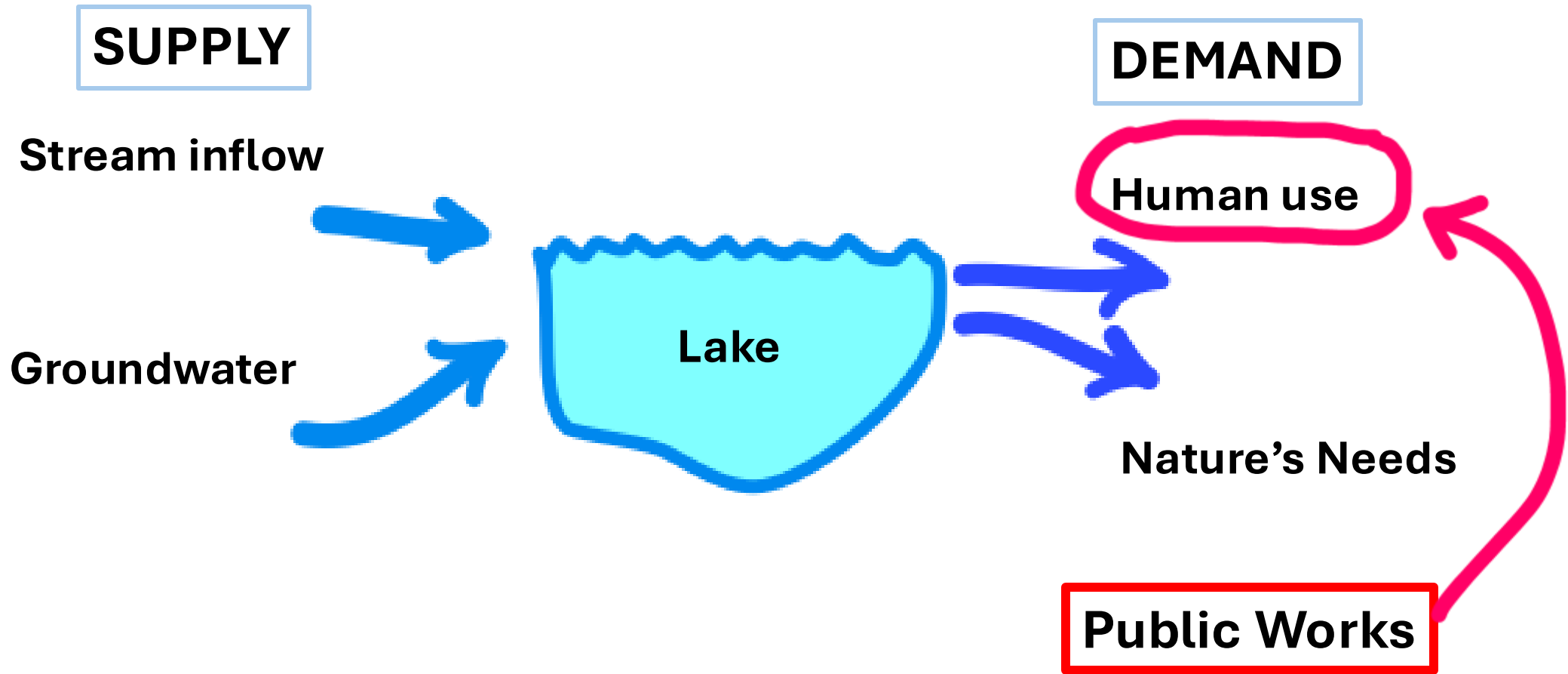


Human use

Nature's Needs



Traditionally, Public Works has managed human use of water for the island



However, to protect Nature's water supply, we also need land use planning to protect Nature's capacity to deliver that water.

SUPPLY

DEMAND

Stream inflow

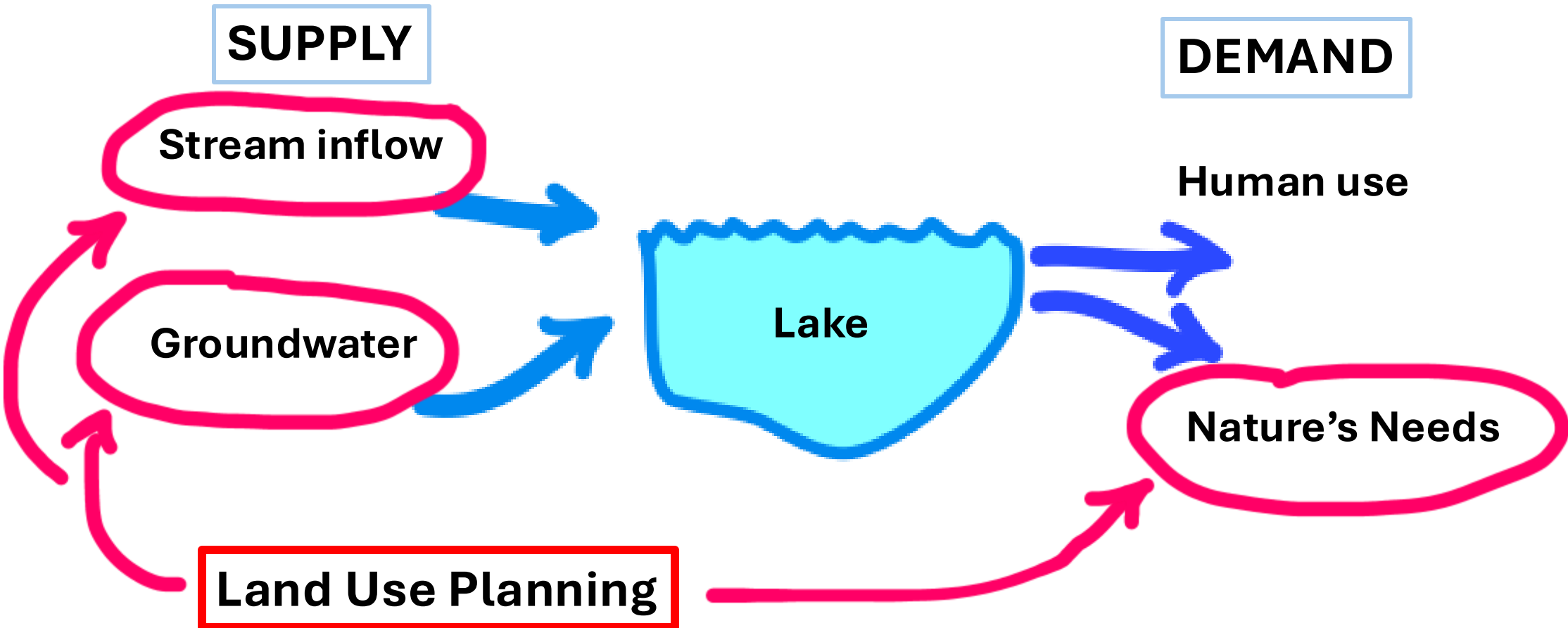
Groundwater

Lake

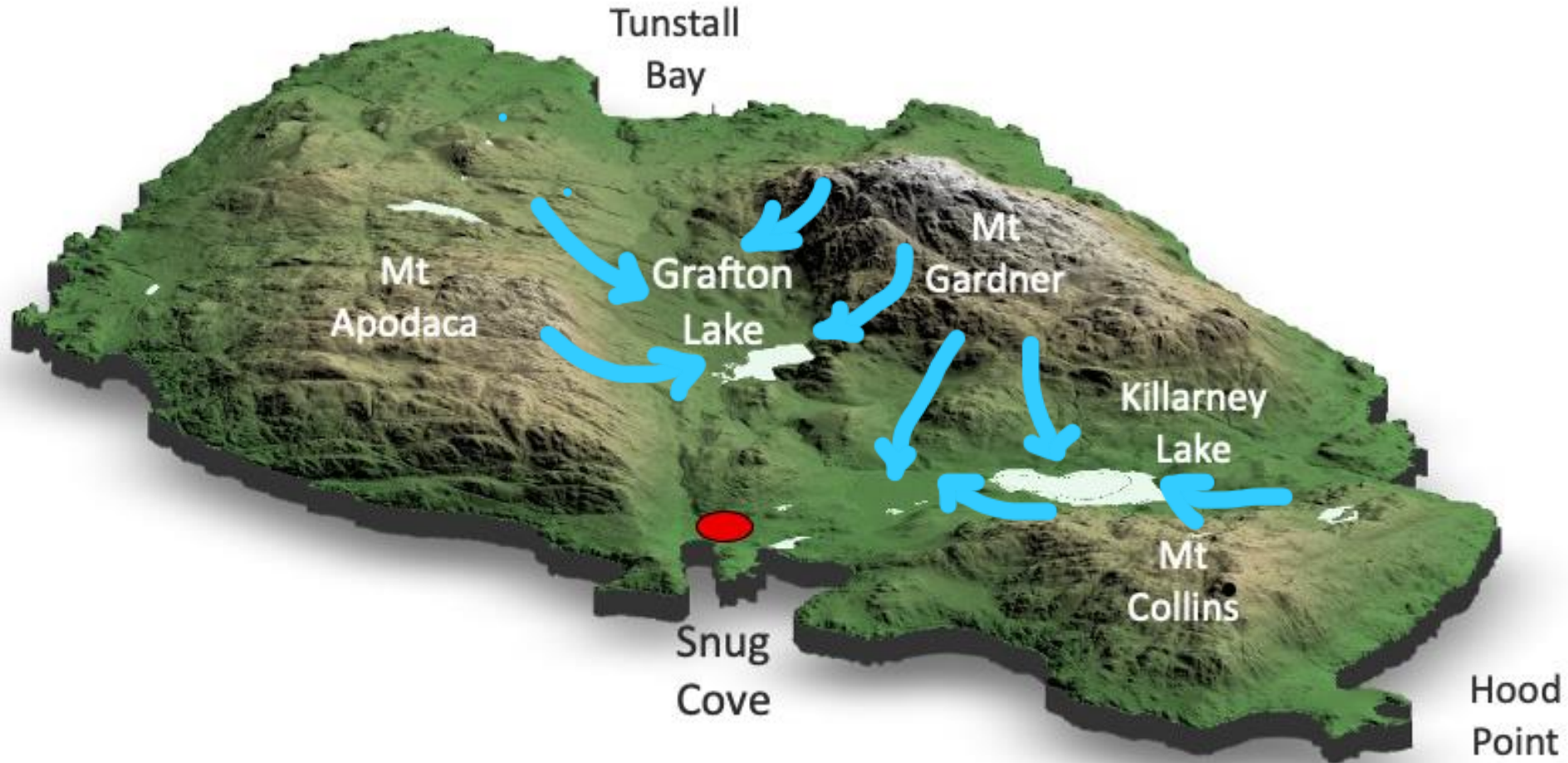
Human use

Nature's Needs

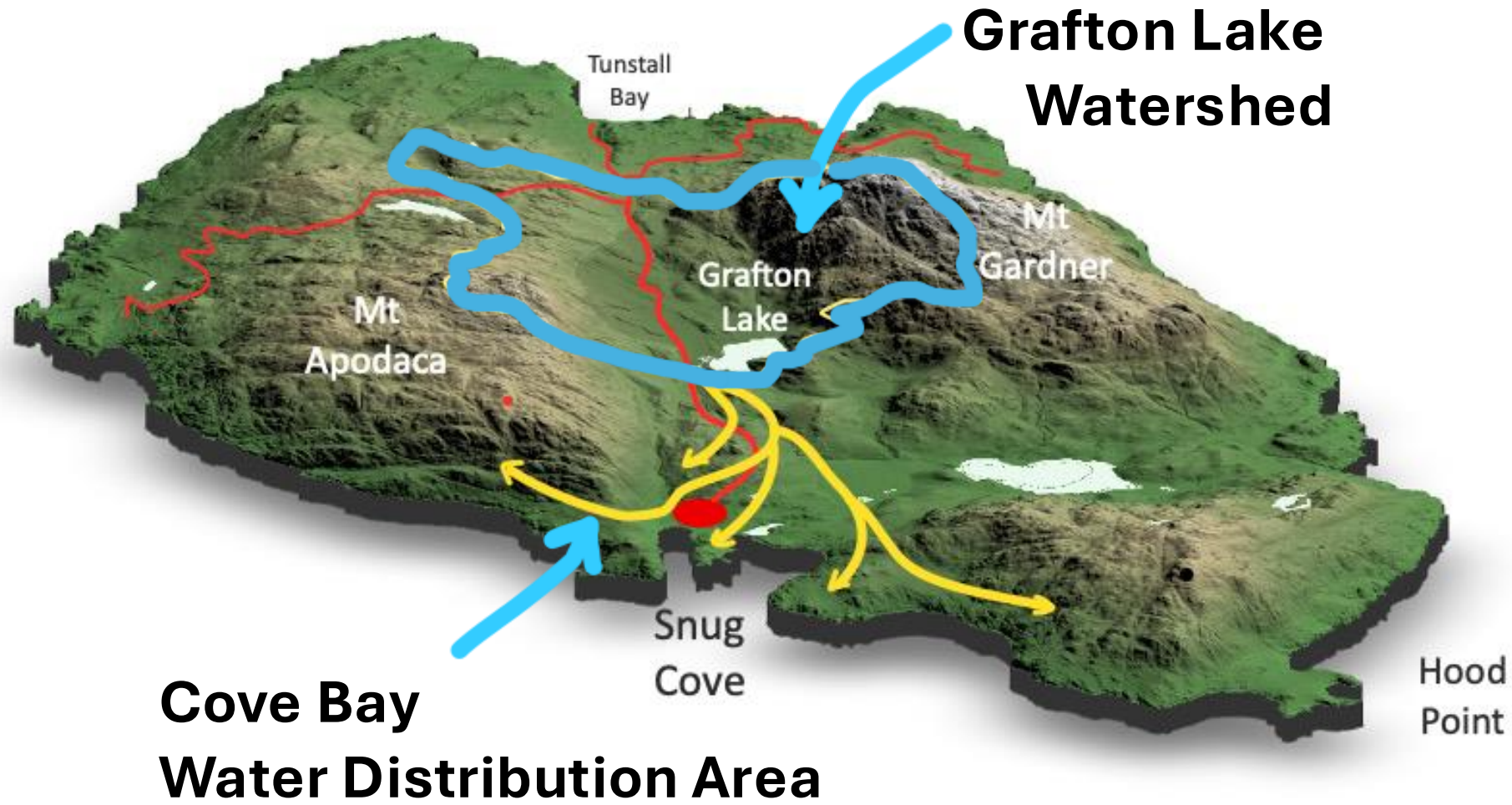
Land Use Planning



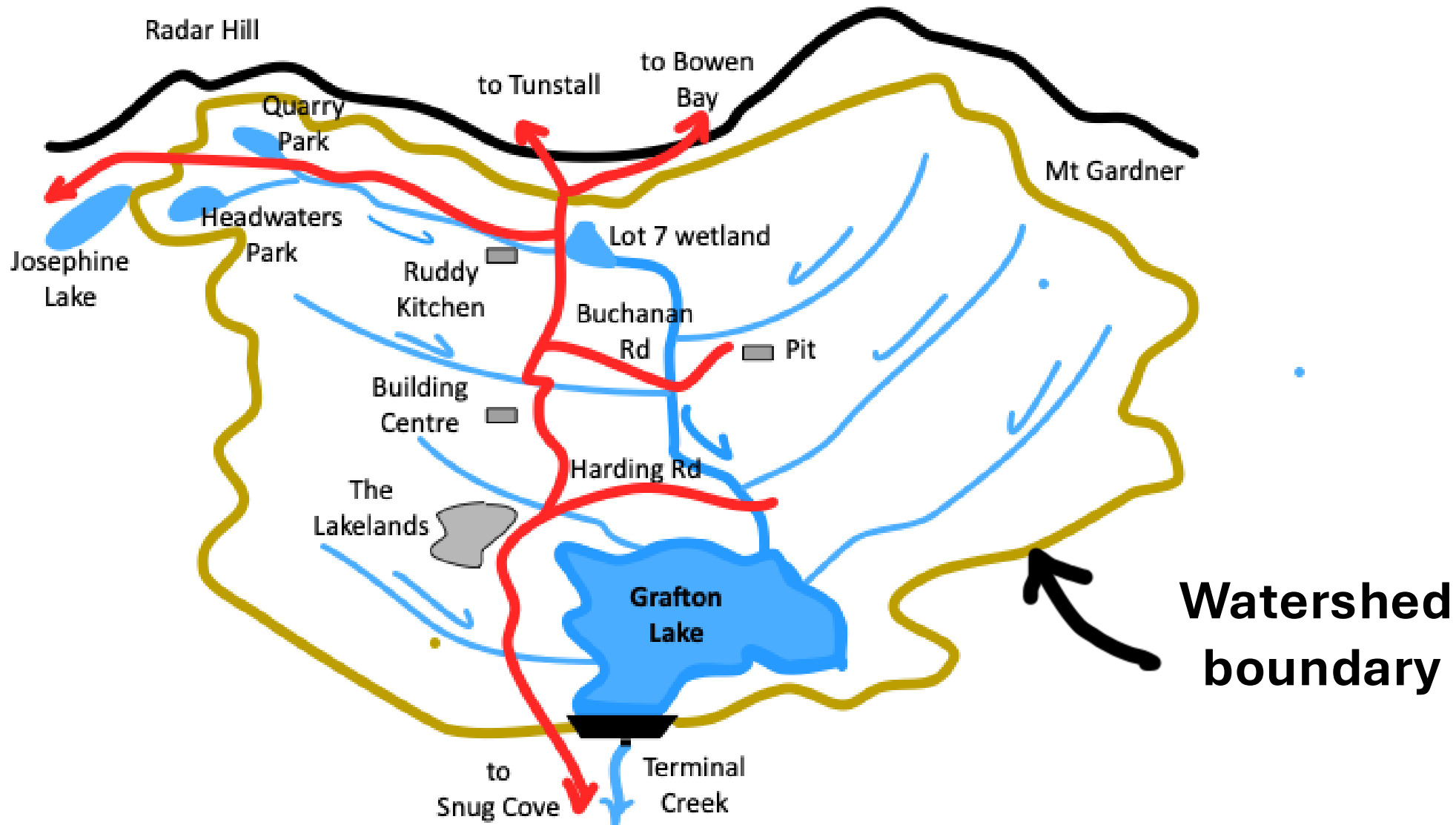
**Our island: 3 mountains and two valleys.
Valleys are natural rainwater collection hollows**



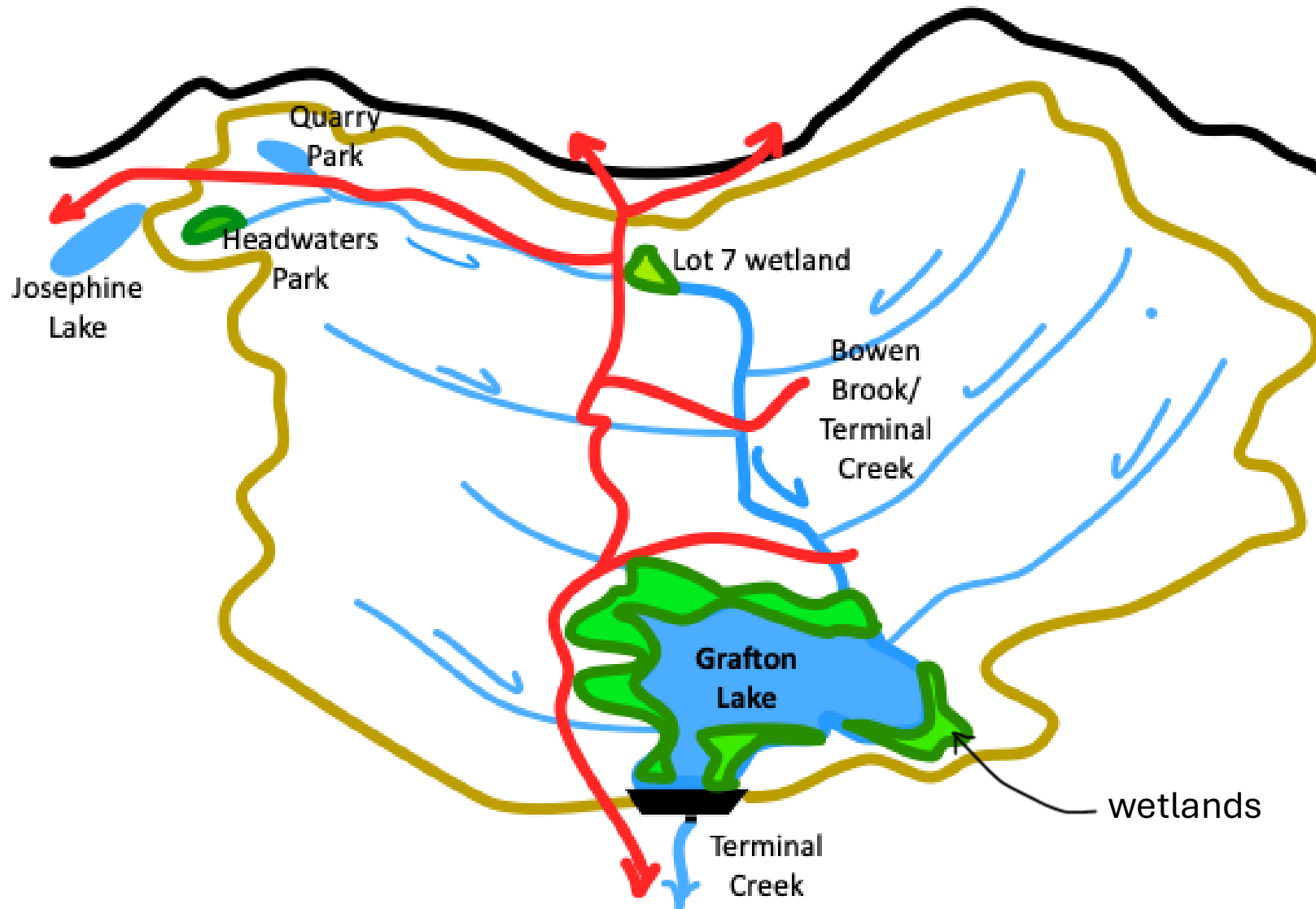
Grafton Lake: the island's major water source



There's a lot going on in the Grafton Lake watershed



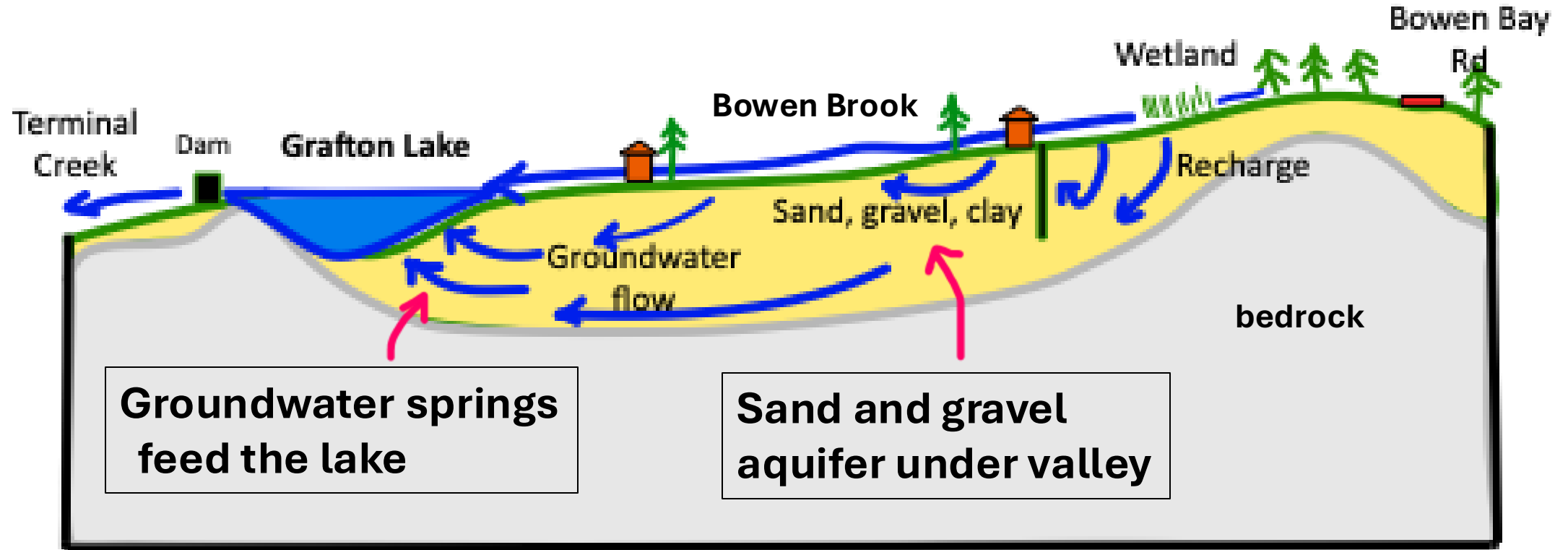
Nature's water supply system: forests, streams, wetlands, ponds, lakes, and



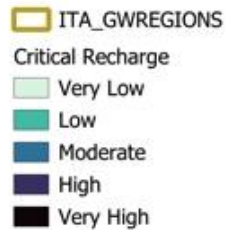
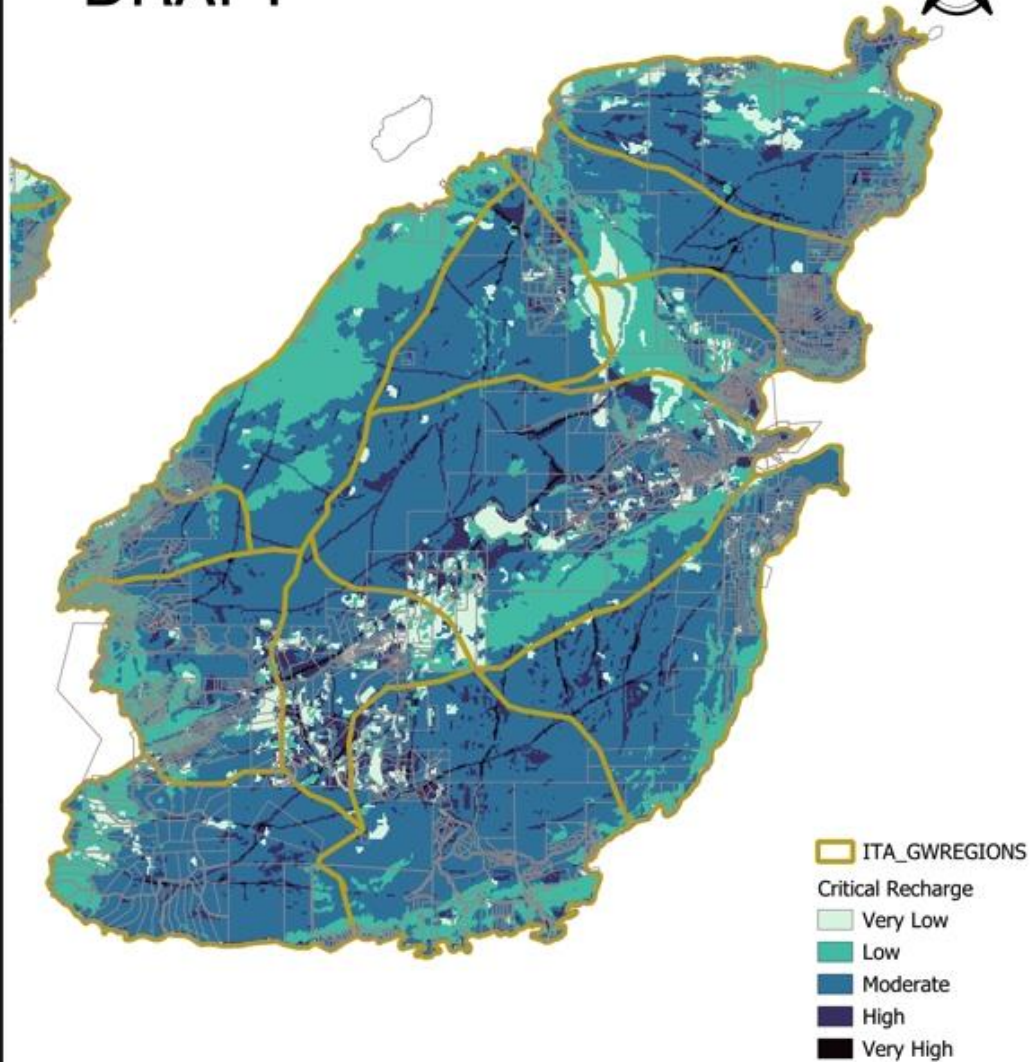
**We need to protect
this green
infrastructure
- for human use
- for Nature's needs**

Groundwater: Nature's hidden component of Grafton Lake water system:

We need to protect the recharge of groundwater reserves from surface waters



DRAFT



Groundwater Sustainability Science Program
Bowen Island Groundwater Recharge Potential

Notes:
Drawn by: William Shulba, P.Geo
Drawn on: May 2025
Data Source: Islands Trust Area Groundwater Recharge Mapping Project



We now have a tool to help us protect our groundwater system - mapping of groundwater recharge potential

Critical Recharge

Very Low

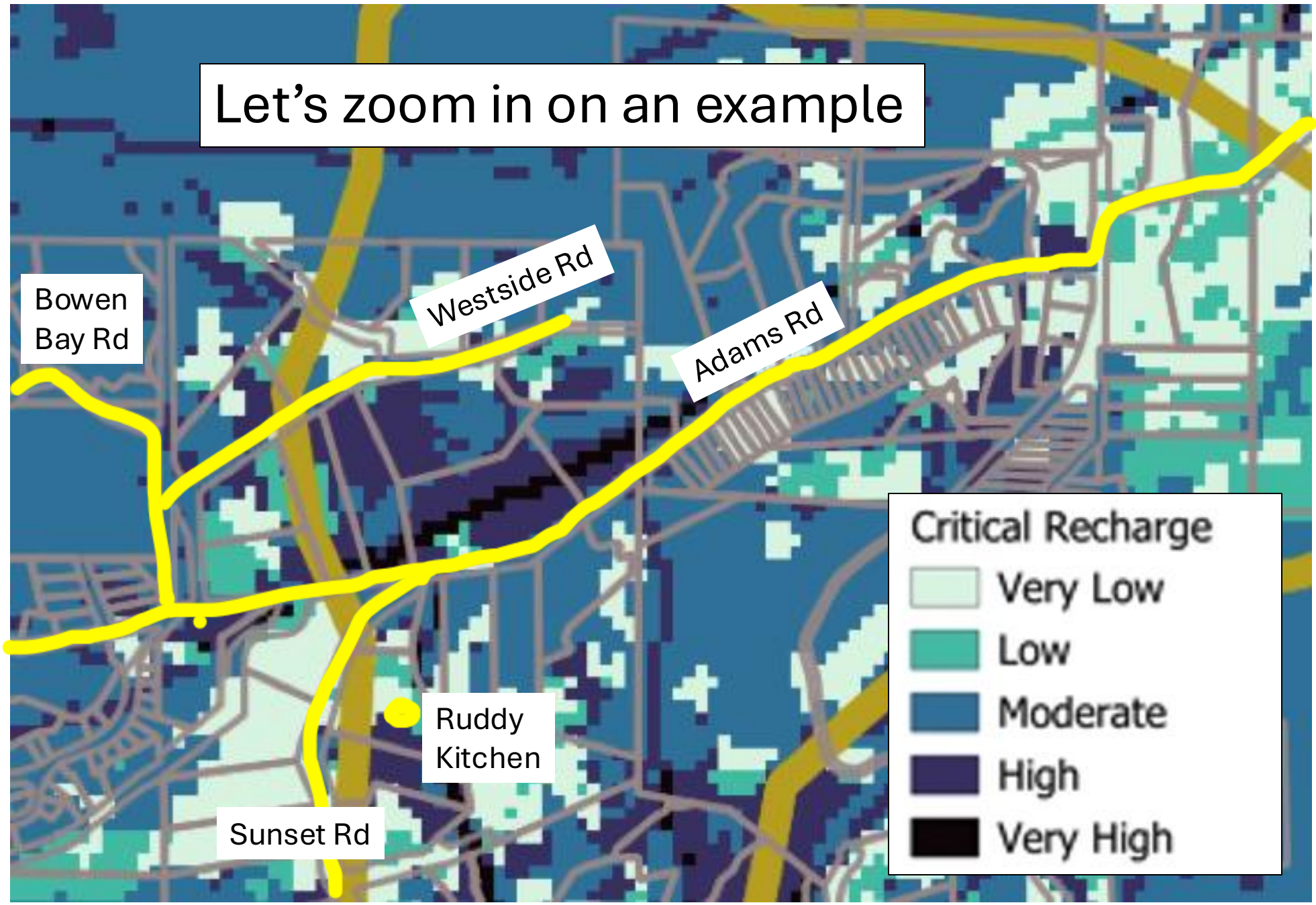
Low

Moderate

High

Very High

Let's zoom in on an example



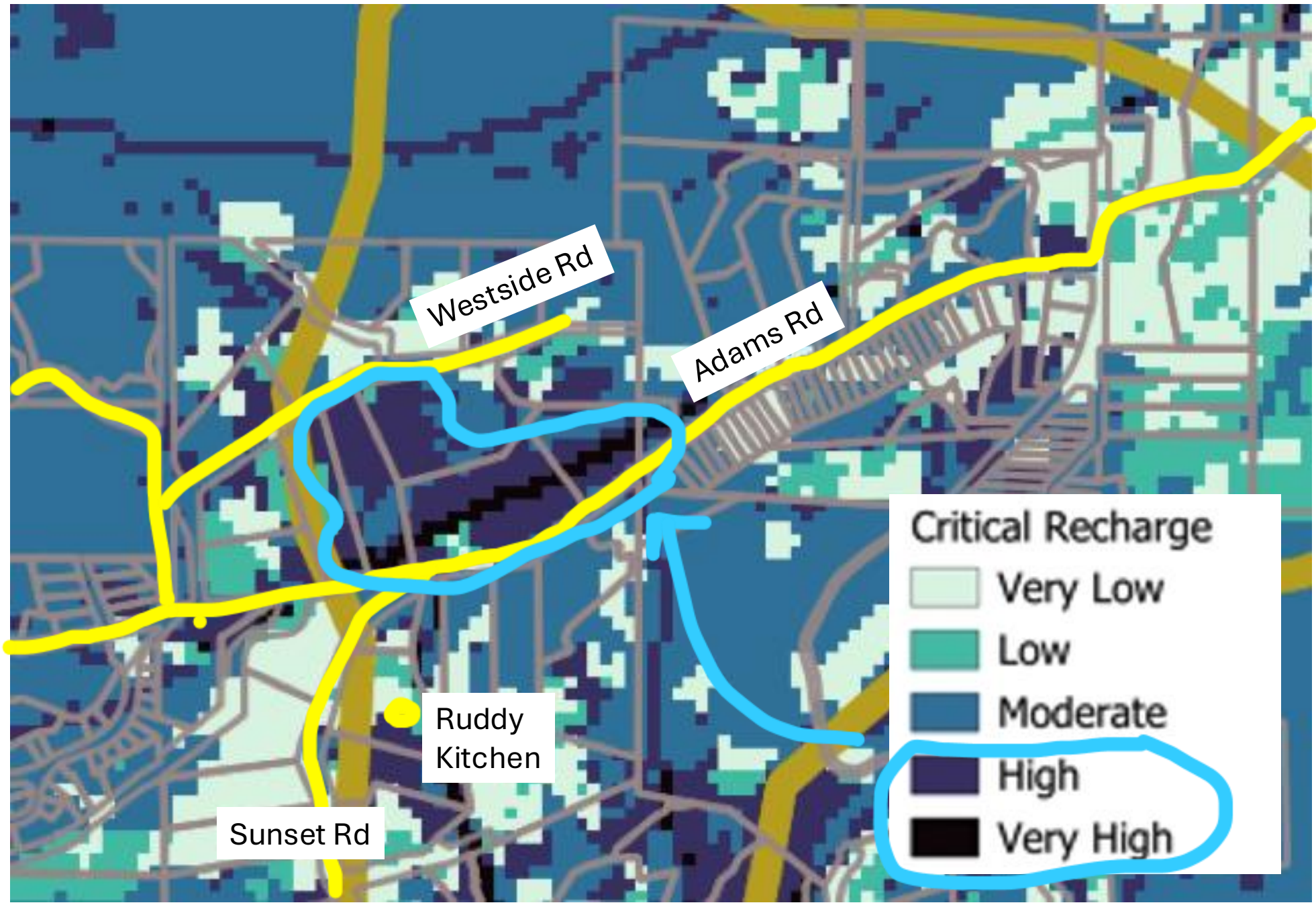
Bowen Bay Rd

Westside Rd

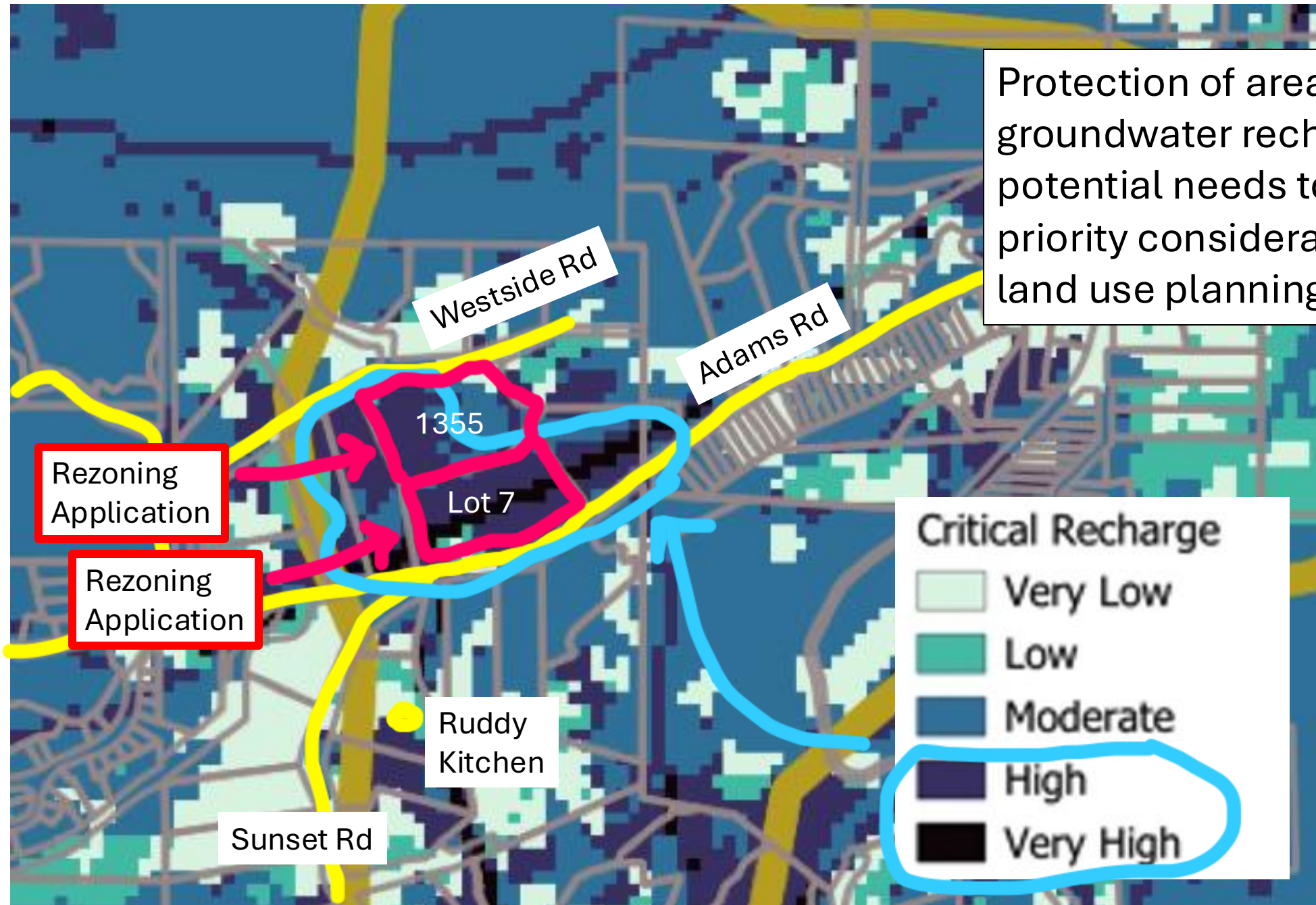
Adams Rd

Ruddy Kitchen

Sunset Rd



Protection of areas with high groundwater recharge potential needs to be a priority consideration during land use planning



Rezoning Application

Rezoning Application

Westside Rd

Adams Rd

Sunset Rd

Ruddy Kitchen

1355

Lot 7

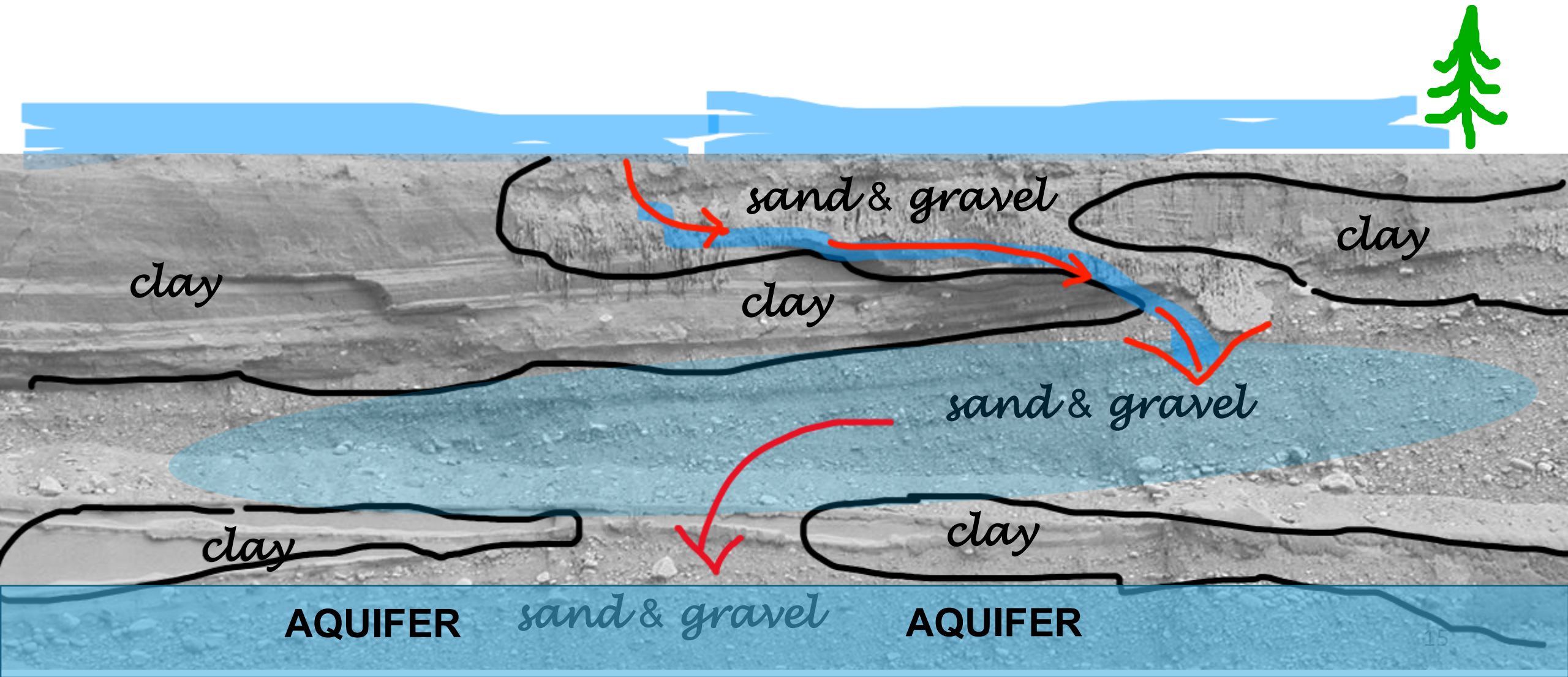
Critical Recharge

- Very Low
- Low
- Moderate
- High
- Very High

Key Thoughts

- 1) Bowen Island needs a comprehensive water protection strategy
- 2) Surface water and groundwater are a single water system; both need to be assessed, monitored and protected.
- 3) Whereas island water security in the past has been the domain of Public Works, it now requires proactive land use planning as well.
- 4) Land use planning protection of water supplies should start now; no need to wait for completion of the OCP.

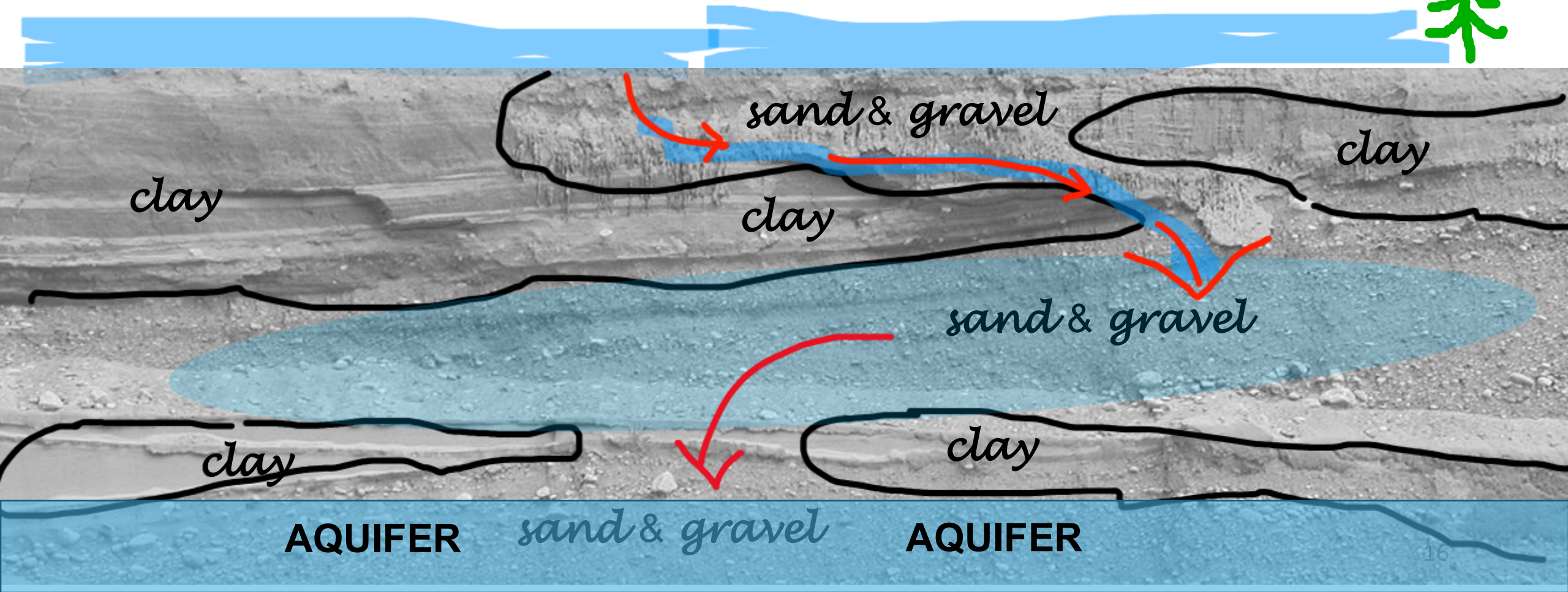
Geologic characteristics of optimal site to maximize quantity and rate of recharge:
Interconnected pathways of coarse-grained materials – *fastpaths*



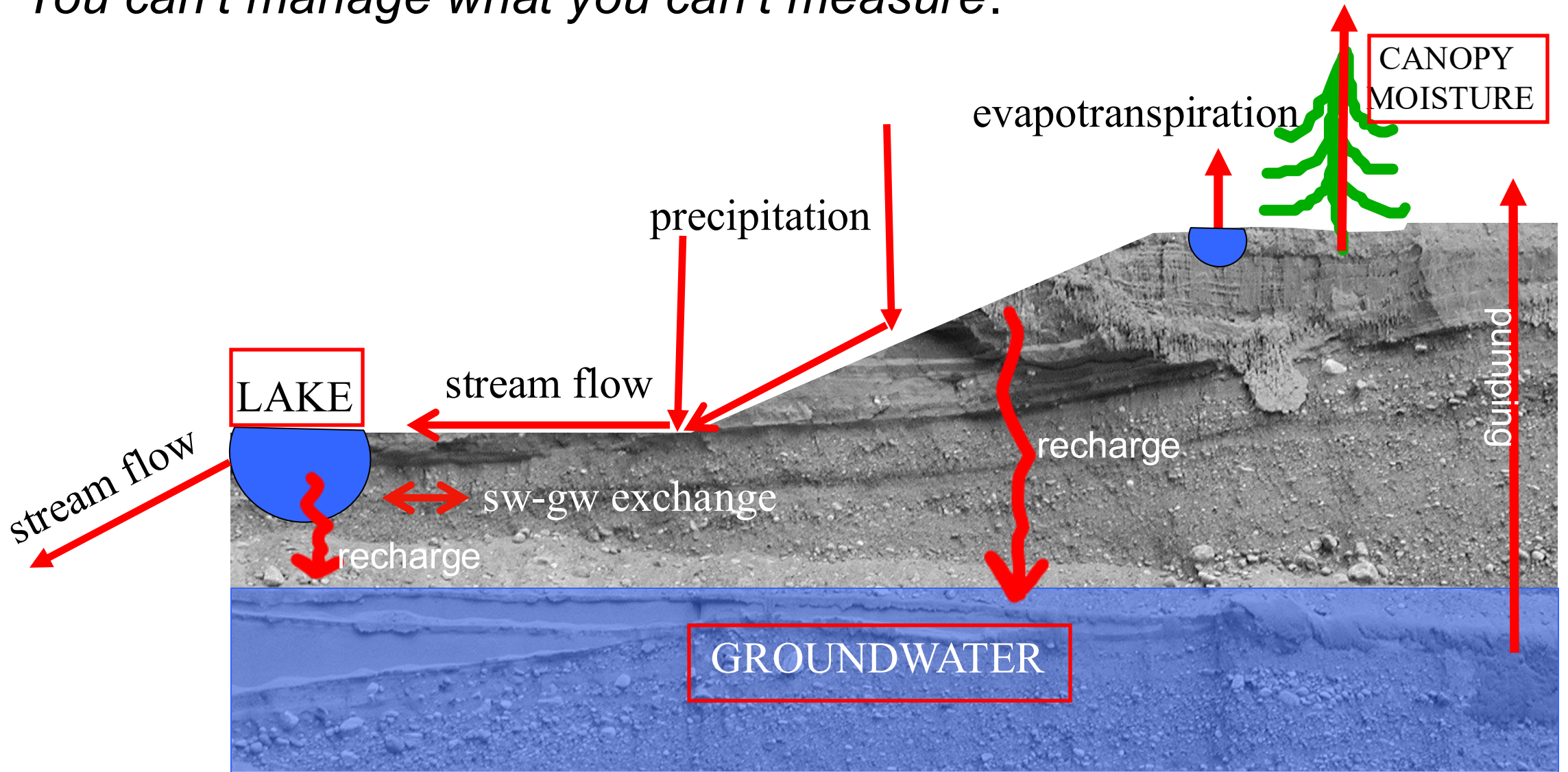
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Interconnected pathways of coarse-grained materials – *fastpaths*

fastpaths for water and contaminants

Maps of Recharge = Maps of Aquifer Vulnerability

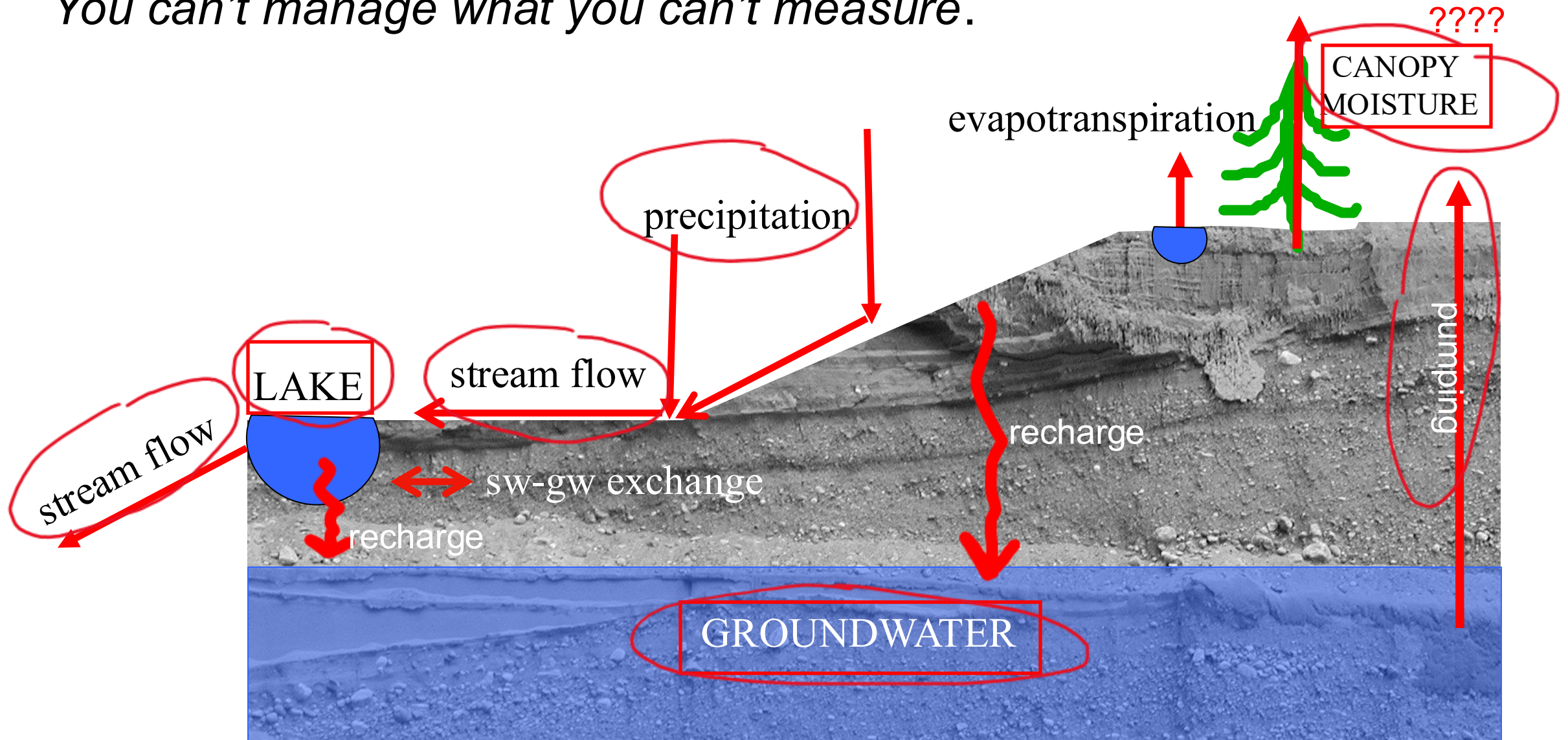


You can't manage what you can't measure.



Complex system of fluxes and **WATER STORAGE LOCATIONS**

You can't manage what you can't measure.



Complex system of fluxes and **WATER STORAGE LOCATIONS**