

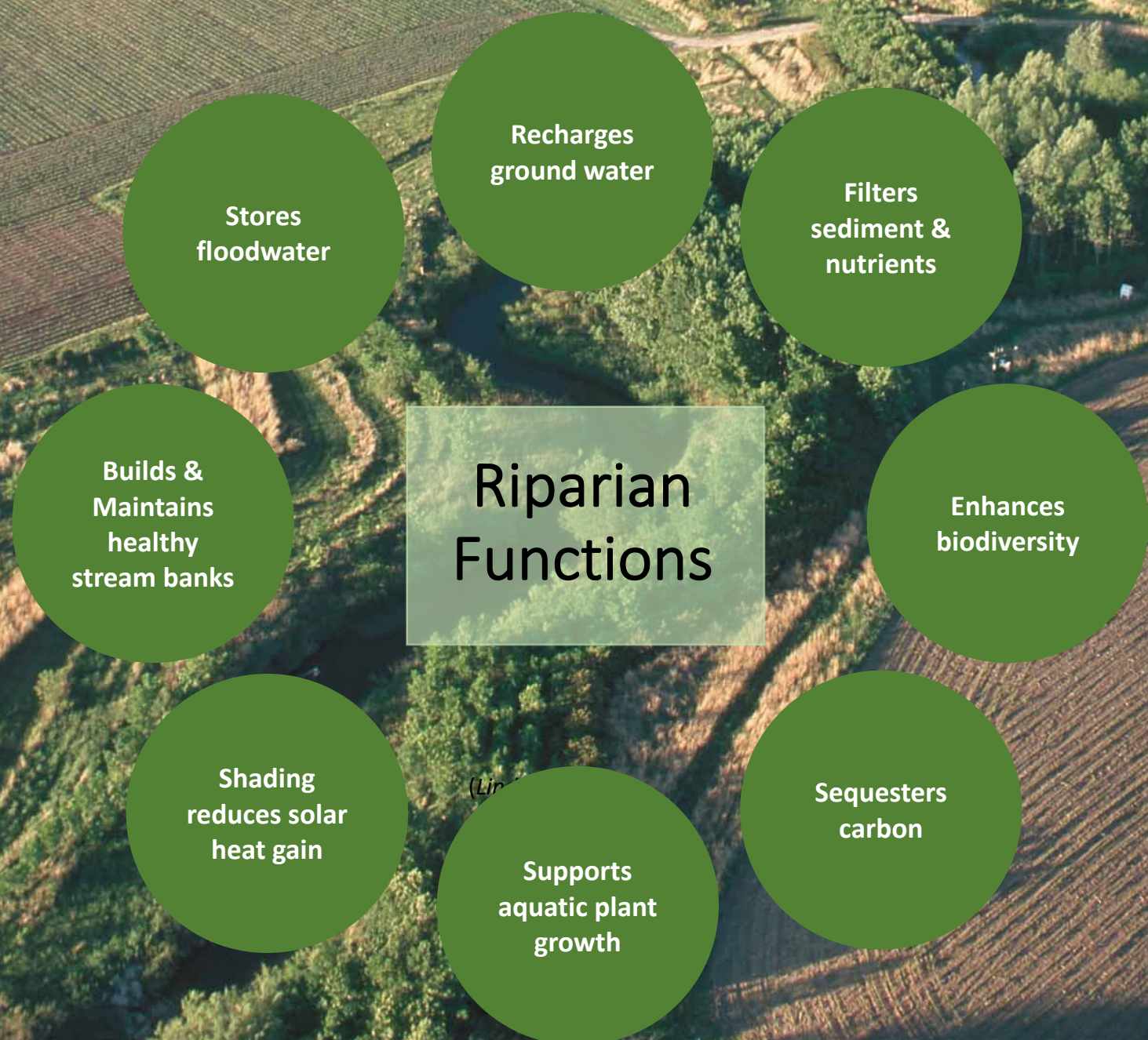
# Riparian Buffer Subsidies

## A solution to agricultural pollution in streams

**Nitrogen** and **phosphorus** are essential nutrients to support life in aquatic ecosystems, but when human convert land from natural landscapes to **urban or agricultural land this increases the amount of nutrients** in the water to unhealthy levels. This creates a boom in aquatic plant and algae production and when the plant and algae decompose this **reduced oxygen levels** in the water. Significantly reduced oxygen levels is known as hypoxia which can harm or even **kill fish** populations.

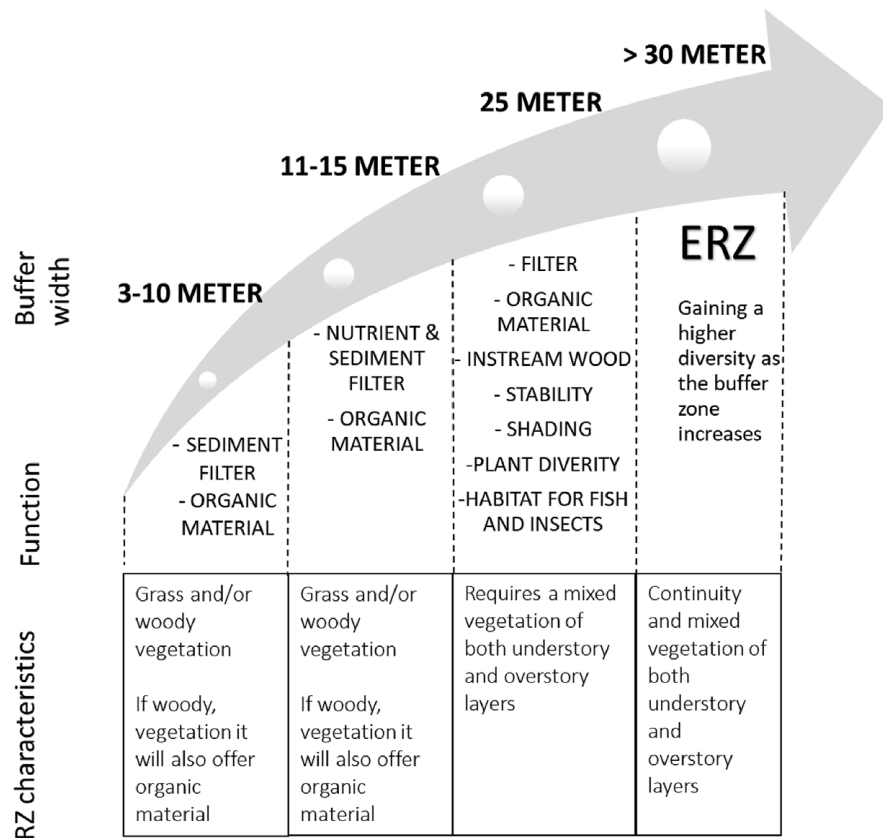
This can have large implications on the **socio-economic** importance of surrounding commercial and recreational fisheries.

**What is a riparian buffer?** → the vegetated area near a stream that helps protect the stream from surrounding land use impacts.



**9-11 m = min. 75%  
reduction in pollution**

**21 m = stable water  
temperatures**



Lind et al., 2019

There is NO law in BC stating that farmers must leave any riparian vegetation on their land if a stream runs through their property



## Policy Options

**1.) Non-profit grants** → Ex. The Shuswap Watershed Council now has a Water Quality Improvement Grant created to help farmers, agri-businesses, and landowners reduce or divert the flow of nutrient-rich waters or effluent away from waterbodies in the Shuswap watershed.

**2.) Government grants** → The BC government has the Beneficial Management Practices (BMP) Program that funds up to 100% to a maximum of \$70,000 per farm operation. The government funds a variety of projects such as Irrigation Projects, Riparian Projects, Equipment Purchases, Energy/Greenhouse Gas Projects, Engineering/Technical Design Projects, Construction Projects, or Supplementary Management Projects.

## Policy Implications

Both funding programs fail to address **WHY** farmers are reluctant to keep/build riparian buffers on their land. The government may fund up to 100% of the cost to build riparian buffers, but does not consider the **loss of profit** that accompanies the conversion of profitable agricultural land to riparian buffers.

When comparing all of the funded project types, riparian buffers provide the most diverse benefit to stream ecosystems. Yet, the lack in knowledge of profit loss deters farmers from this project type.

**Possible Solution** → Fund **research** that investigates the loss in profit associated with converting agricultural land to riparian buffers. Use the findings to provide a **guideline for subsidies**.

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