WILLOW RIPARIAN BUFFERS

BY-THE-NUMBERS

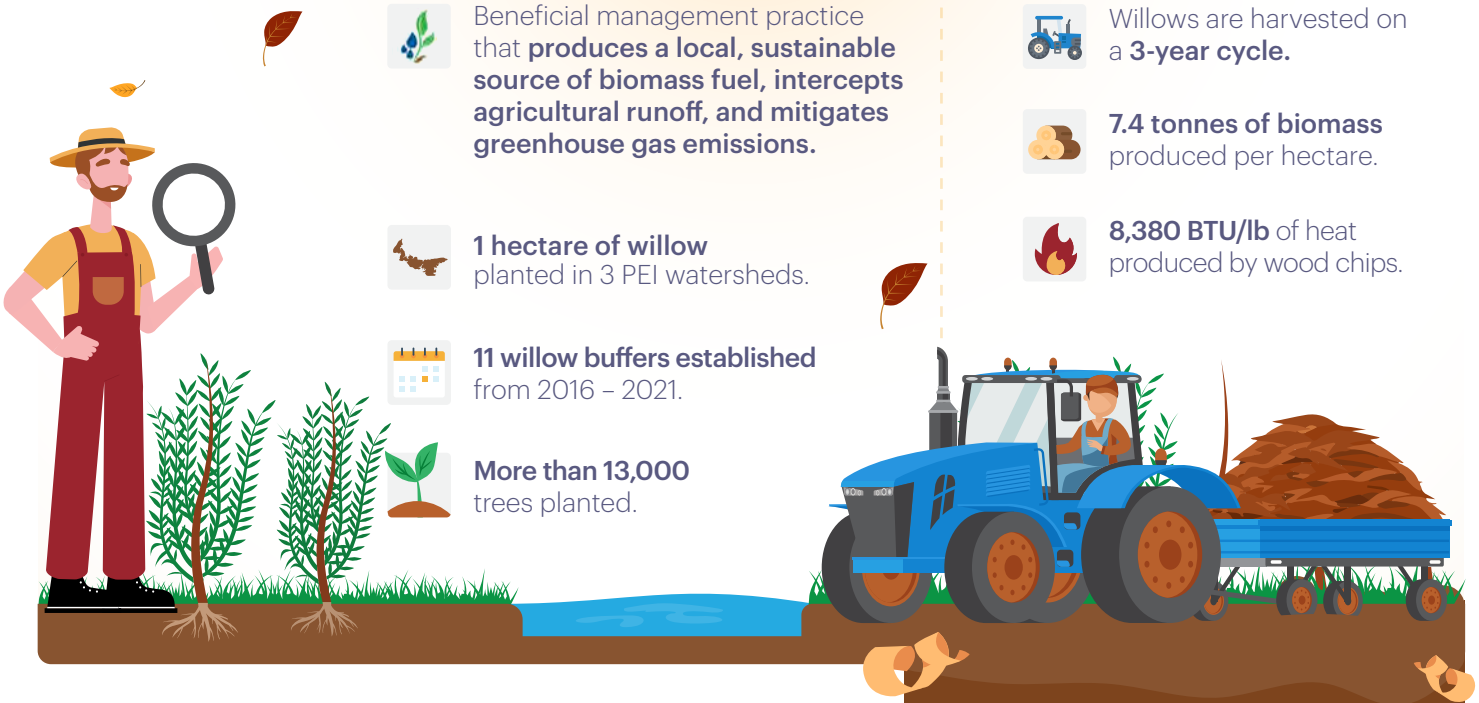
OVERVIEW

Beneficial management practice that **produces a local, sustainable source of biomass fuel, intercepts agricultural runoff, and mitigates greenhouse gas emissions.**

1 hectare of willow planted in 3 PEI watersheds.

11 willow buffers established from 2016 – 2021.

More than 13,000 trees planted.



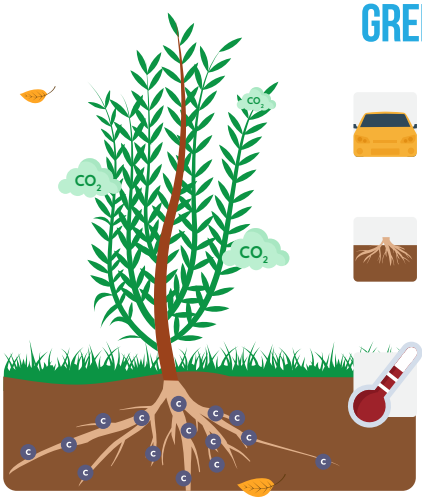
BIOMASS

Willows are harvested on a **3-year cycle.**

7.4 tonnes of biomass produced per hectare.

8,380 BTU/lb of heat produced by wood chips.

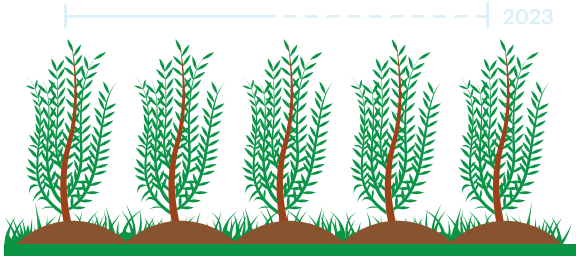
GREENHOUSE GAS MITIGATION



29 tonnes CO_2 captured - equivalent to the annual emissions from 6 cars!

Most carbon storage in roots where the average willow **root:shoot ratio was 0.55.**

The average global warming potential of willows was **613 kg CO_2e ha^{-1} lower than fields.**



NUTRIENT INTERCEPTION

Willow buffers manage agricultural runoff, preventing sedimentation and nutrient movement into rivers, creeks or other water bodies.

103 kg nitrogen and 14 kg phosphorous intercepted.

Nutrient interception by 1 hectare of willow is proportionate to **agricultural nutrient applications on 1 hectare of crop.**

CONCLUSION

We anticipate increased biomass yields and nutrient uptake during the second harvest cycle (2021-2023). **More extensive root growth will improve the commercial and ecological value of the purpose-planted willows.**