MDPI

Article

HYDROLOGICAL IMPACTS OF PATCH CUTTING

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Simple Summary: A Simple summary goes here.

Abstract: This project aims to monitor forest stand-level environmental variables related to hydrological processes along forest interior-edge-cutblock transects. The research questions to be addressed include: (1) what environmental variables exhibit an observable gradient from forest edges to forest interiors? (2) How can hydrological processes such as flow path, evapotranspiration be affected along the transects? Monitoring and sampling will be carried out along forest edges adjacent to fresh cutblocks (i.e., harvest year 2020). The dataset for this research component will encompass various environmental variables, soil moisture, and soil water isotope signatures. Environmental variables and soil moisture will be continuously monitored, with measurements taken every hour using microcontroller-based sensors (specifically, Arduino Pro Mini). Considering that edge effects can extend up to two to three times the tree height, microcontrollers will be strategically placed: at the edge, 15 m and 30 m from the edge in both opening and interior positions. Soil sampling will be consistent across these locations, targeting depths of 15 cm and 30 cm. Anticipated results include (1) remarkable differences in residence time distributions of soil water between forests and disturbed areas, indicative of distinct prevailing flow paths; (2) notable gradients in soil moisture, temperature, relative humidity, and solar radiation along forest interior-edge-opening transects, which can account for the affected evaporation processes.

Keywords: mock; Rmarkdown; Ecohydrology

1. Introduction

Numerous studies across the world have unveiled the intricate relationship between forests and water [1,2].This profound connection arises from the crucial role that forests play in the water cycle, affecting not only water supply in both social and natural systems but also aquatic habitat and biodiversity conservation.

In British Columbia (BC), where forests cover nearly 64% of the land, watershed management practices involve dealing with a range of forest disturbances from anthropogenic disturbances (e.g., timber harvesting, agriculture) to natural disturbances (e.g., insect infestation, wildfire). Over the past decades, there have been a fair number of studies addressing the forest-water relationship, which confirmed forest cover changes are significantly associated with alterations in streamflow, posing a noticeable threat to water supply.

Literature suggests that... (Figure 1)

2. Materials and Methods

2.1. Study area

Our study area is the Duteau community watershed, located approximately 20 km southeast of the City of Vernon (Figure S1). It has a total drainage area of 213 km2, ranging in elevation from 520 m at its confluence with Bessette Creek to over 1,800 m in the Grizzly Hills. It is a snow-dominated system with peak flows occurring from late-April to mid-June. Since the 1890's, the watershed has been developed for irrigation and water supplies, providing 60 per cent of Vernon's drinking water and serving a population in the Greater

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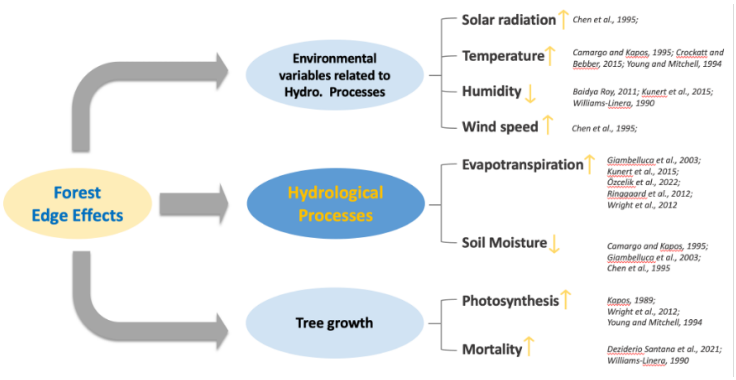

Figure 1. A figure added from a folder.

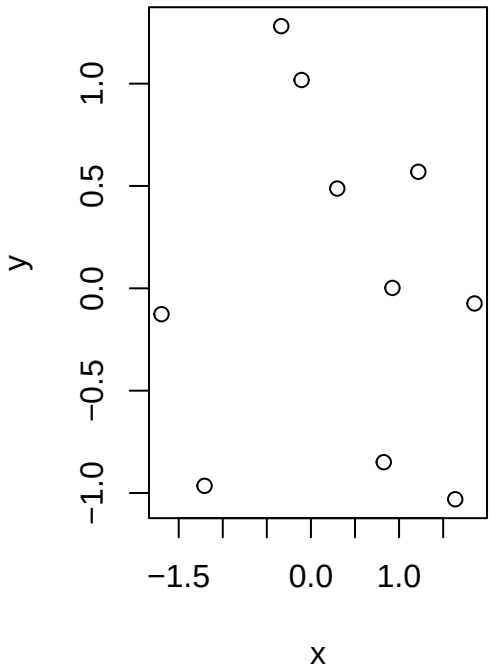

Figure 2. A figure added with a code chunk.

Vernon area of more than 50,000 ## Data processing and analysis Processes include: 1. First step 2. Second step 3. Third step

2.2. Data analysis

$$E = MC^2 \tag{1}$$

3. Results

Results suggested (see 2 and 1):

- First bullet
- Second bullet
- Third bullet

Table 1. Table created based on mtcars.

	mpg	cyl	disp
Mazda RX4	21.0	6	160
Mazda RX4 Wag	21.0	6	160
Datsun 710	22.8	4	108
Hornet 4 Drive	21.4	6	258
Hornet Sportabout	18.7	8	360

4. Discussion

The results are consistent with the previous findings ...

5. Conclusion

We conclude that...

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Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Data Availability Statement: Data available in OSF project https://osf.io/khs4q/?view_only=a7e4c843de094544a75872da5680edd3

Acknowledgments: Thank all very much

Conflicts of Interest: The authors declare no conflict of interest.

Abbreviations

The following abbreviations are used in this manuscript:

MDPI	Multidisciplinary Digital Publishing Institute
LDP	Living Data Project

Appendix F

Appendix F.1

The appendix is an optional section that can contain details and data supplemental to the main text. For example, explanations of experimental details that would disrupt the flow of the main text, but nonetheless remain crucial to understanding and reproducing the research shown; figures of replicates for experiments of which representative data is shown in the main text can be added here if brief, or as Supplementary data. Mathematical proofs of results not central to the paper can be added as an appendix.

Appendix G

All appendix sections must be cited in the main text. In the appendixes, Figures, Tables, etc. should be labeled starting with 'A', e.g., Figure A1, Figure A2, etc.

References

1. Bertrand-Krajewski, J.L.; Chebbo, G.; Saget, A. Distribution of pollutant mass vs volume in stormwater discharges and the first flush phenomenon. *Water Research* **1998**, *32*, 2341–2356.
2. Leutnant, D.; Muschalla, D.; Uhl, M. Stormwater Pollutant Process Analysis with Long-Term Online Monitoring Data at Micro-Scale Sites. *Water* **2016**, *8*, 299. 00000, https://doi.org/10.3390/w8070299.