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— L'eau dans la ville | Urban water

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L'eau dans la ville | Urban water

Perceptions et usages des riverains de différents types de bassins d'eaux pluviales urbains

Perceptions and uses from riverine residents of different types of urban stormwater infrastructures

Matisse Petit-Prost, Marylise Cottet, Monique Poulin, Isabelle Lavoie



- **Several roles :**
Water regulation, pollutant retention, aesthetic rôle, habitats



- **Several roles:**

Water regulation, pollutant retention, aesthetic rôle, habitats

- **Several types:**

Dry basins (-24h retention time)

Wet basins (+24h retention time)

Retention ponds (permanent water)

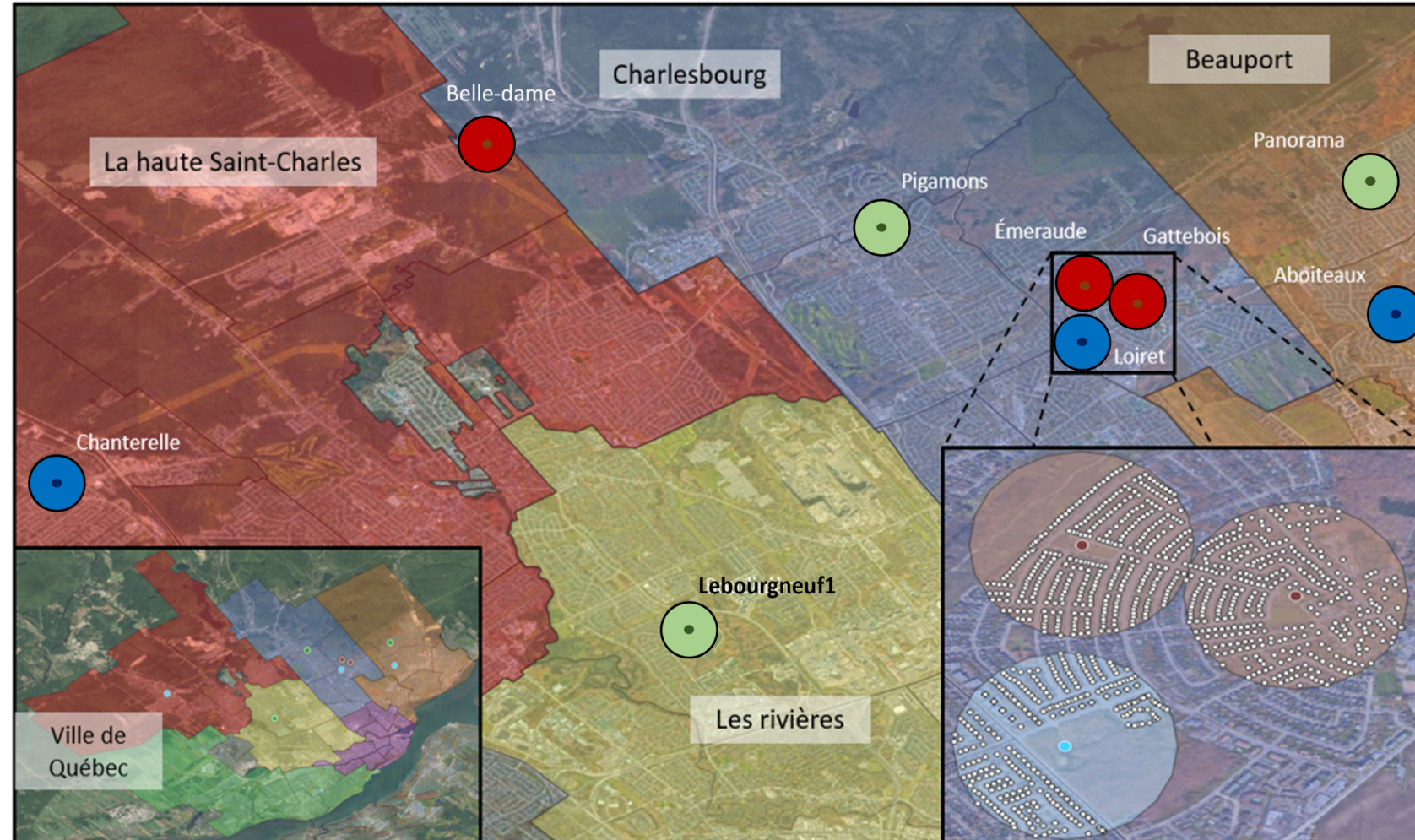
(settling ponds, infiltration basins, etc)



- What are the advantages, disadvantages and risks perceived by citizens living in proximity?
- What are their preferences in terms of infrastructure?
- What should be the key roles of these infrastructures in terms of functionality?
- What are the differences in responses according to socio-demographic profiles and the infrastructure type in proximity?

Sampling method

- 9 infrastructures (3 types)
- In-person survey/door-to-door, 400m radius
- 270 participants (30 per site)



Légende :

● Dry basin

● Wet basin

● Retention pond

○ 400m radius

○ Targeted houses

Photoquestionnaire

Sampling method

Without installation



Bench/path installation



Playground equipment



Dry basin



Wet basin



Retention pond

- Type & installation differences

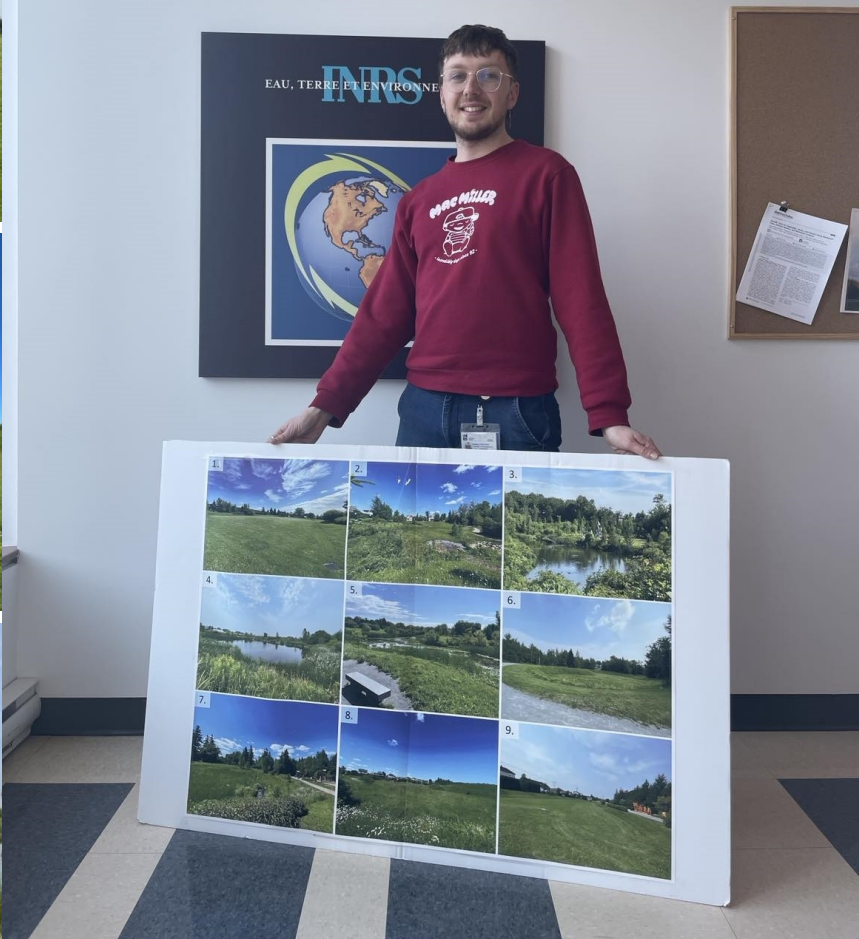
Photoquestionnaire

Sampling method

Without installation

Bench/path installation

Playground equipment



Dry basin

Wet basin

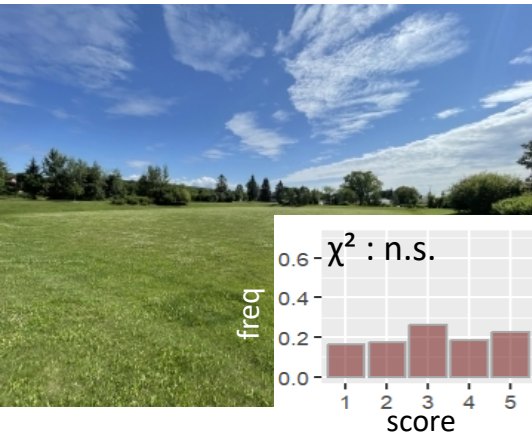
Retention pond

- Type & installation differences

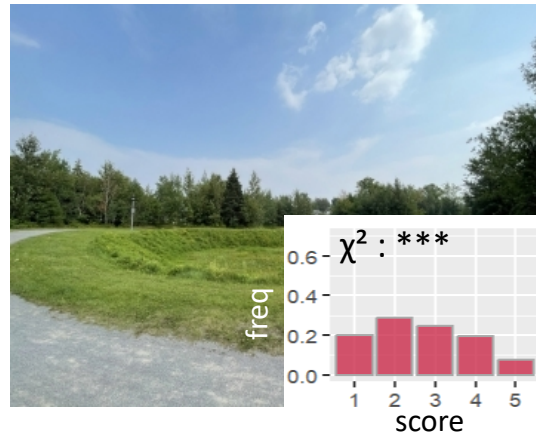
- What are the preferences in terms of infrastructure type ?

Results

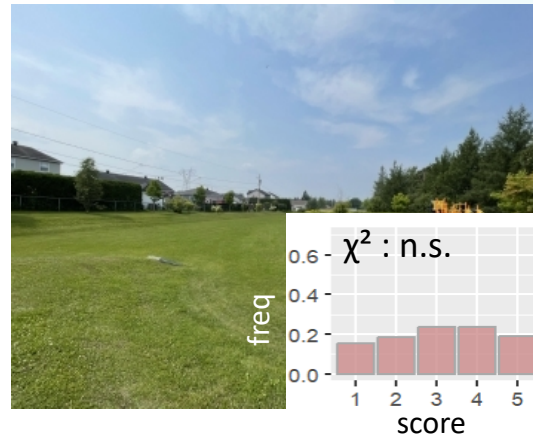
Without installation



Bench/path installation



Playground equipment

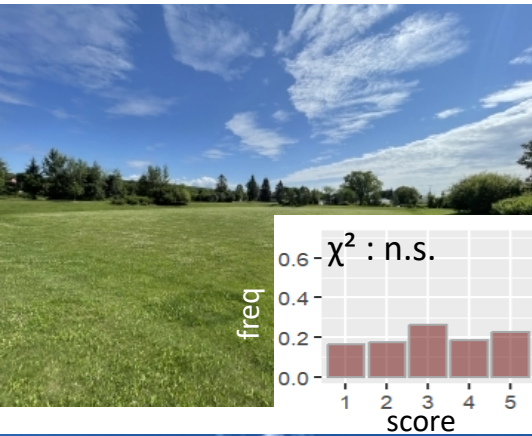


Dry basin

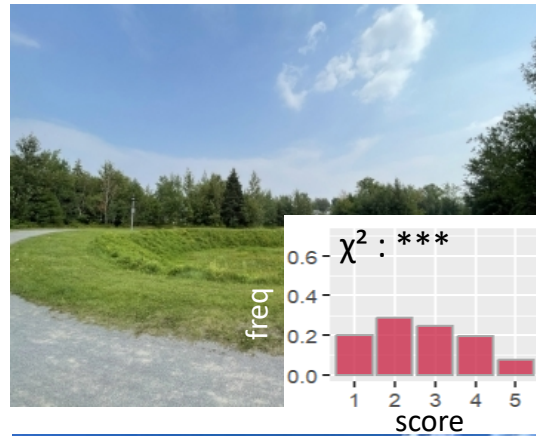
→ Scores with equal proportions for dry basins (except with path)

Results

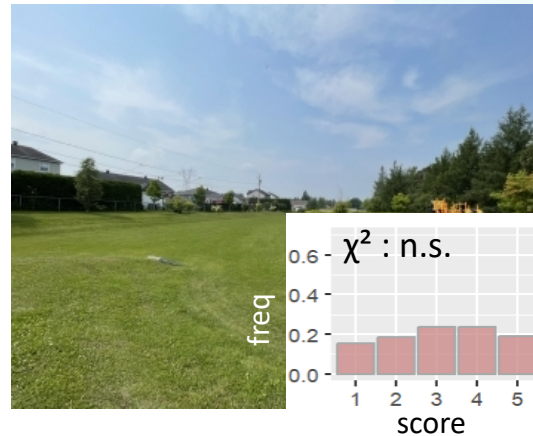
Without installation



Bench/path installation

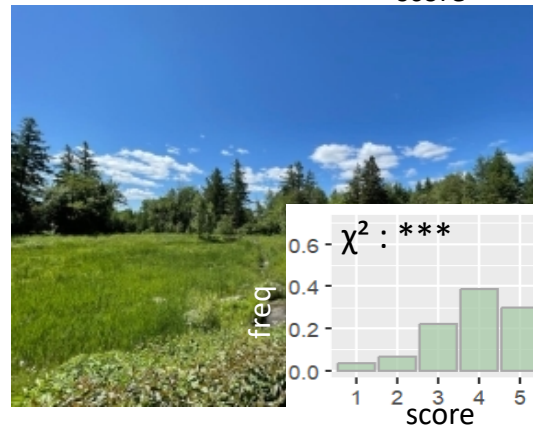
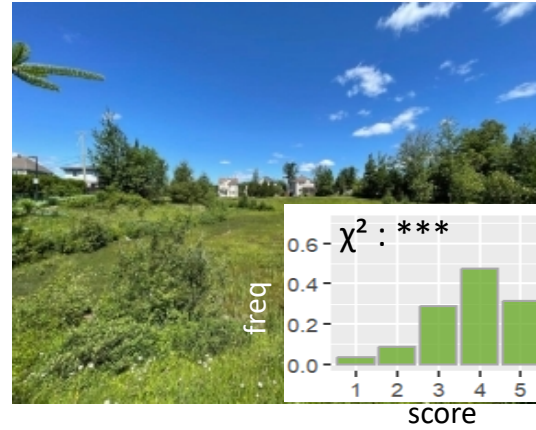
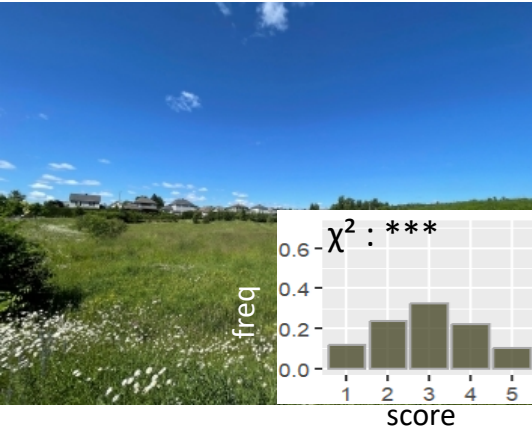


Playground equipment



Dry basin

→ Scores with equal proportions for dry basins (except with path)

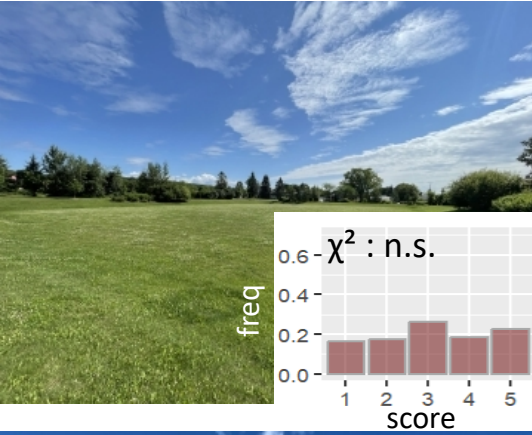


Wet basin

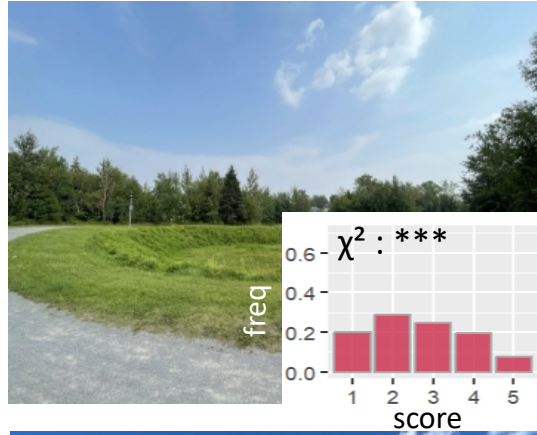
→ Top scores for wet basins with installations

Results

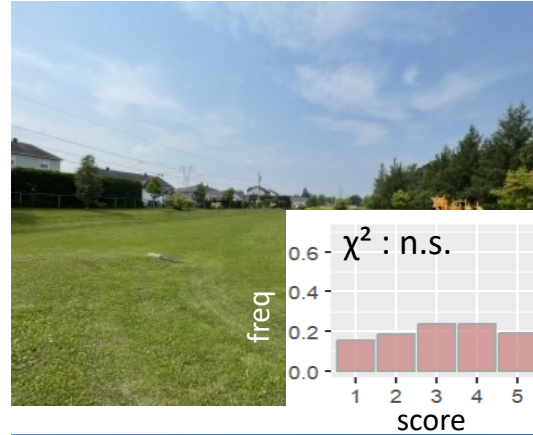
Without installation



Bench/path installation

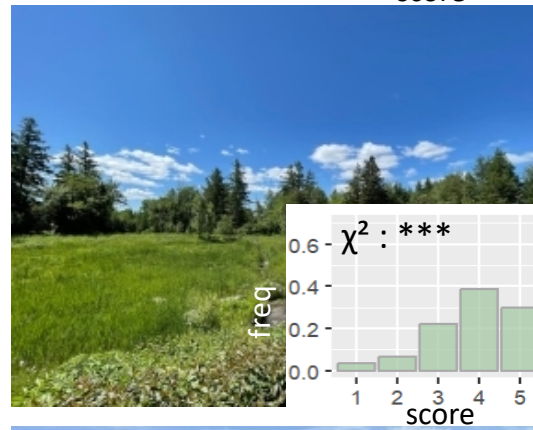
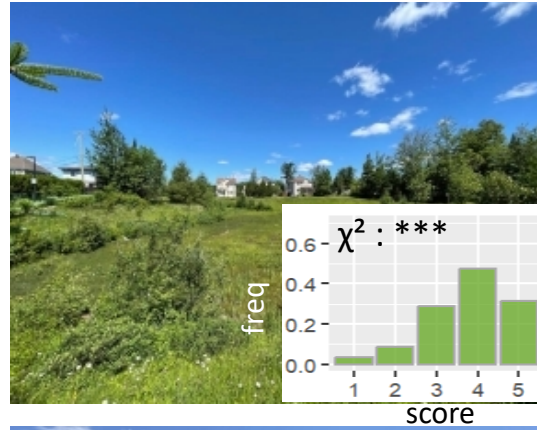
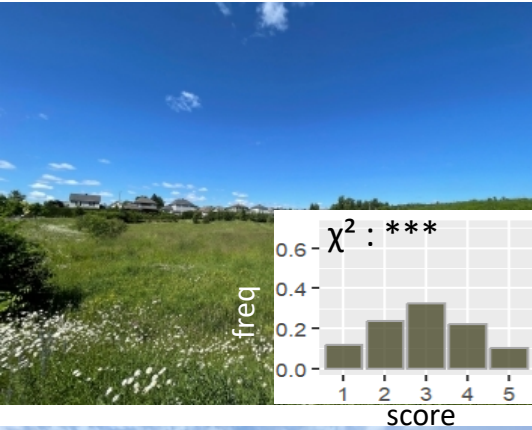


Playground equipment



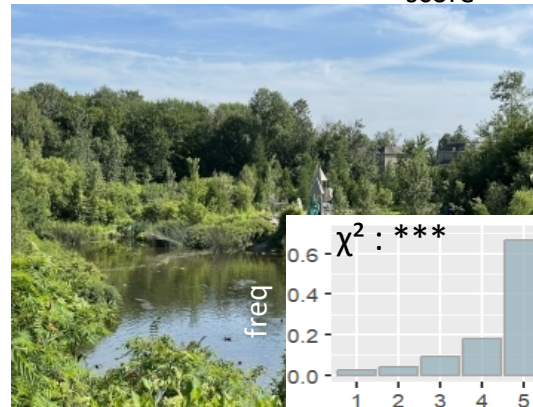
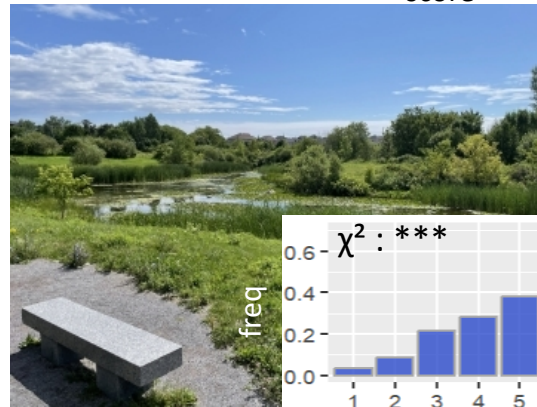
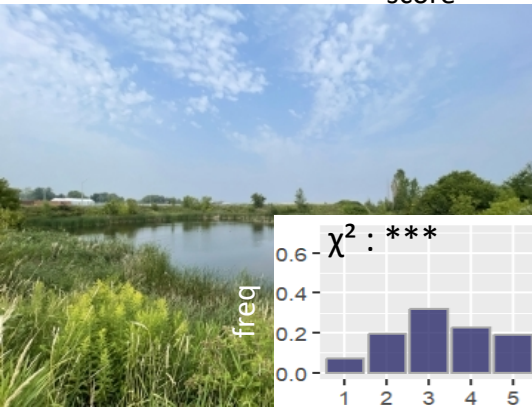
Dry basin

→ Scores with equal proportions for dry basins (except with path)



Wet basin

→ Top scores for wet basins with installations

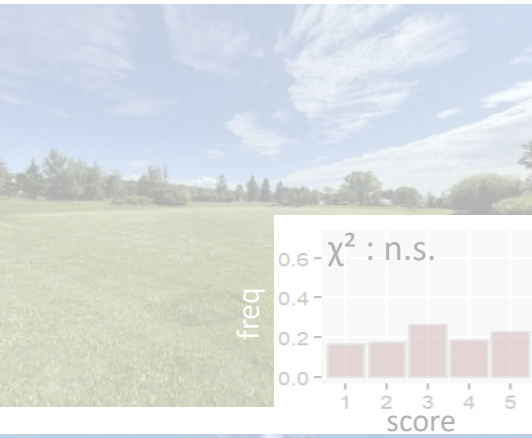


Retention pond

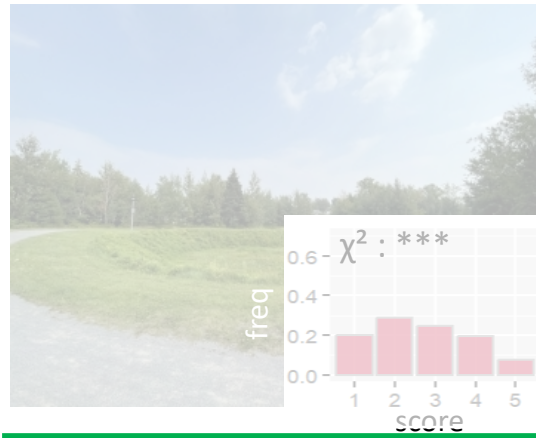
→ Top scores for retention basins with installations

Results

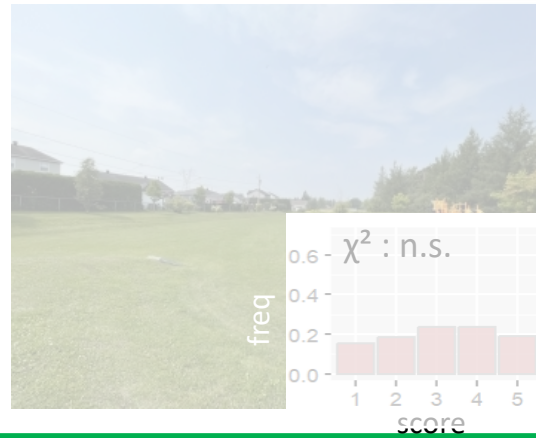
Without installation



Bench/path installation

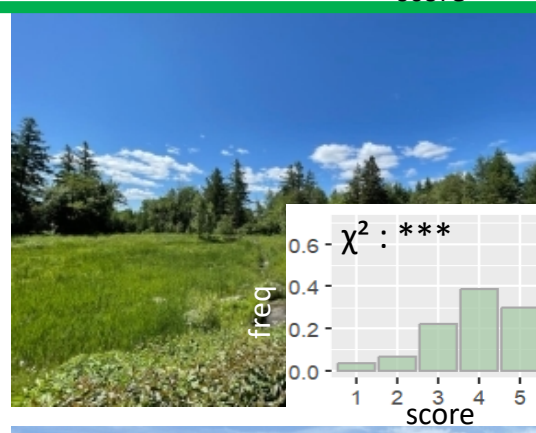
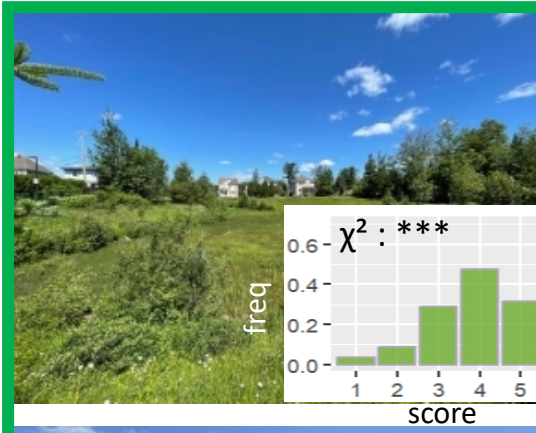
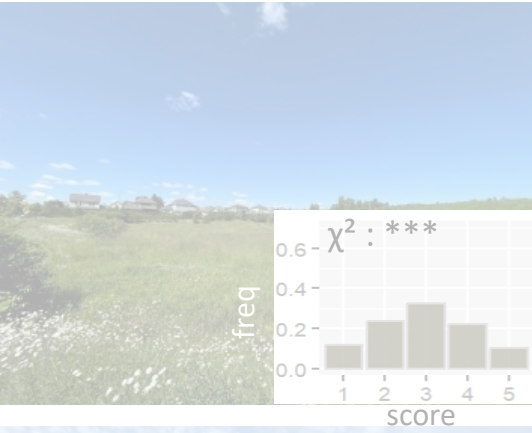


Playground equipment



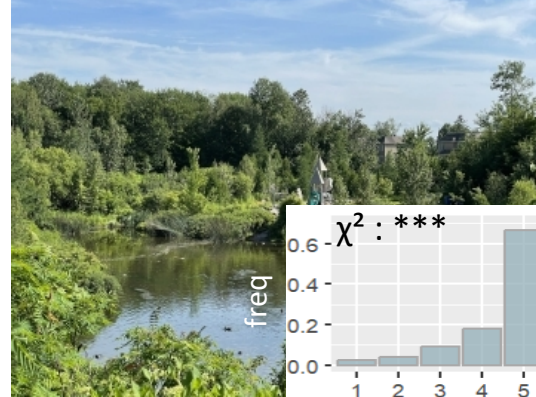
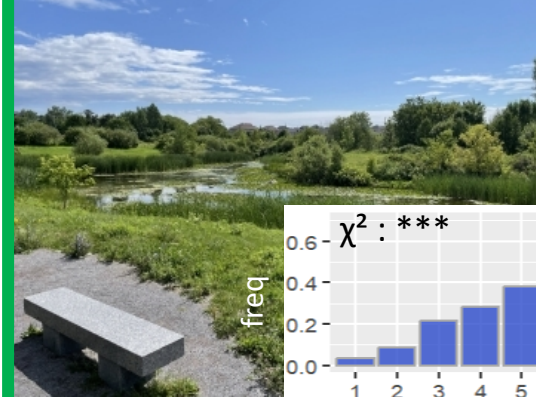
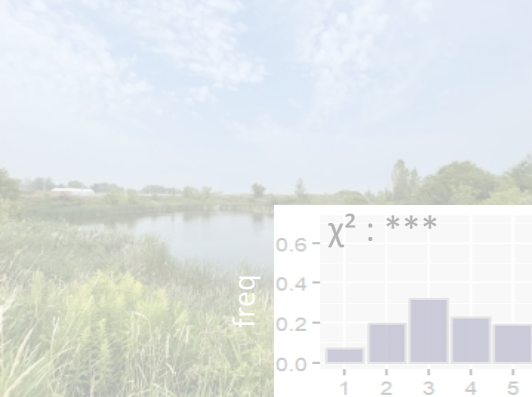
Dry basin

→ Scores with equal proportions for dry basins (except with path)



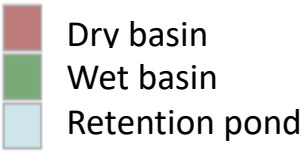
Wet basin

→ Top scores for wet basins with installations



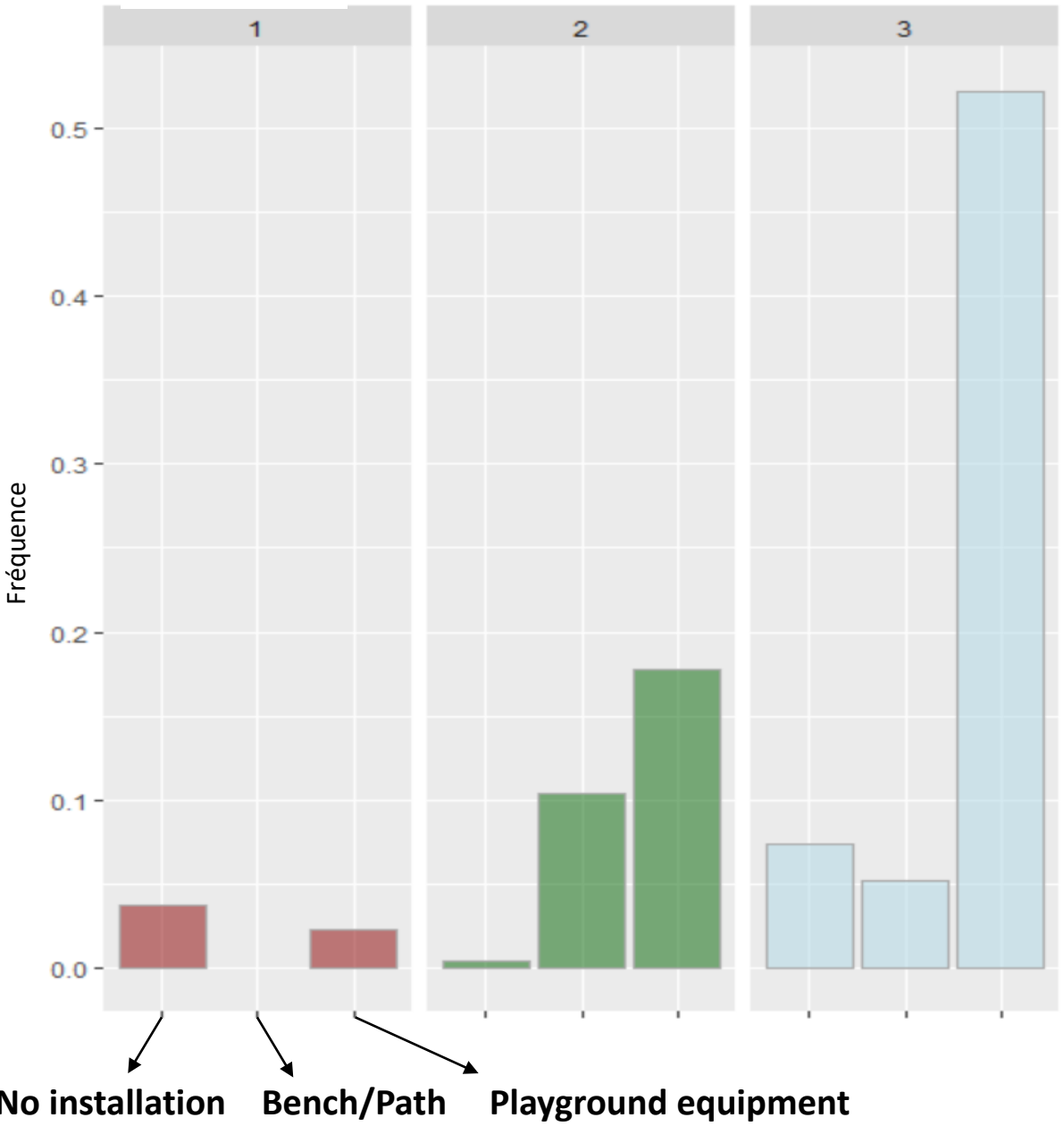
Retention pond

→ Top scores for retention basins with installations



Frequency of the best score

Results



➔ Top scores go to the retention and wet pond with playground equipment

« Attrayant, aire de jeux, plan d'eau, verdure, faune »
 « Complet, beau, naturel, jeux »

« Jeux, petit sentier, naturel »
 « Végétation, sentier, entretenu, naturel, diversité »

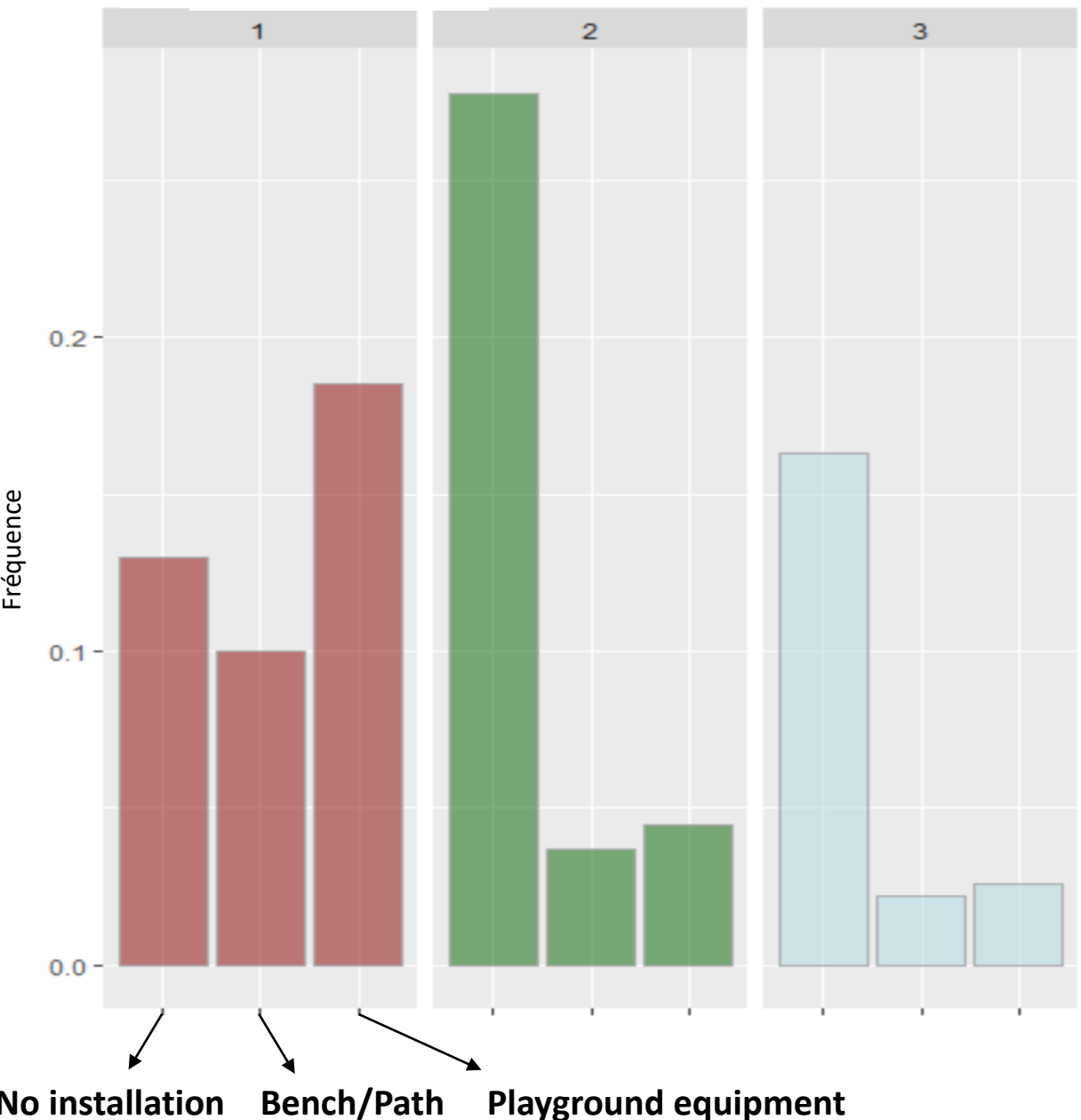
« Faune, accessible, promenade, lecture, bon entre-deux »
 « Accessible, juste milieu entre nature et aménagement »



Results

Frequency of the worse score

- Legend**
- Dry basin
 - Wet basin
 - Retention pond



- ➔ The worst scores are given to ponds with no installation (except for grassed basins)
- ➔ Dry basins cover more than 40% of the worse scores

« Terrain vague, négligé »
« Pas d'espace sport, sentier ou jeux, pas d'eau »

« Pas d'aménagement, trop entretenu, pas flore »
« Pas grand-chose, pas de végétation, manque de vie »

« Pas d'aménagement, pas accessible »
« Pas d'accessibilité, pas de jeux/espace pour enfant, pas aménagement »



In a nutshell:

- Grassed ponds are less popular
- Ponds with installations are more popular
- Other influences may be considered (landscape, nature)



- What should be the key roles of these infrastructures in terms of functionality?

Score assessment according to:

- Sex
- Age
- Children or not
- Type of the infrastructure nearby
- Education
- Private garden
- Animal or not

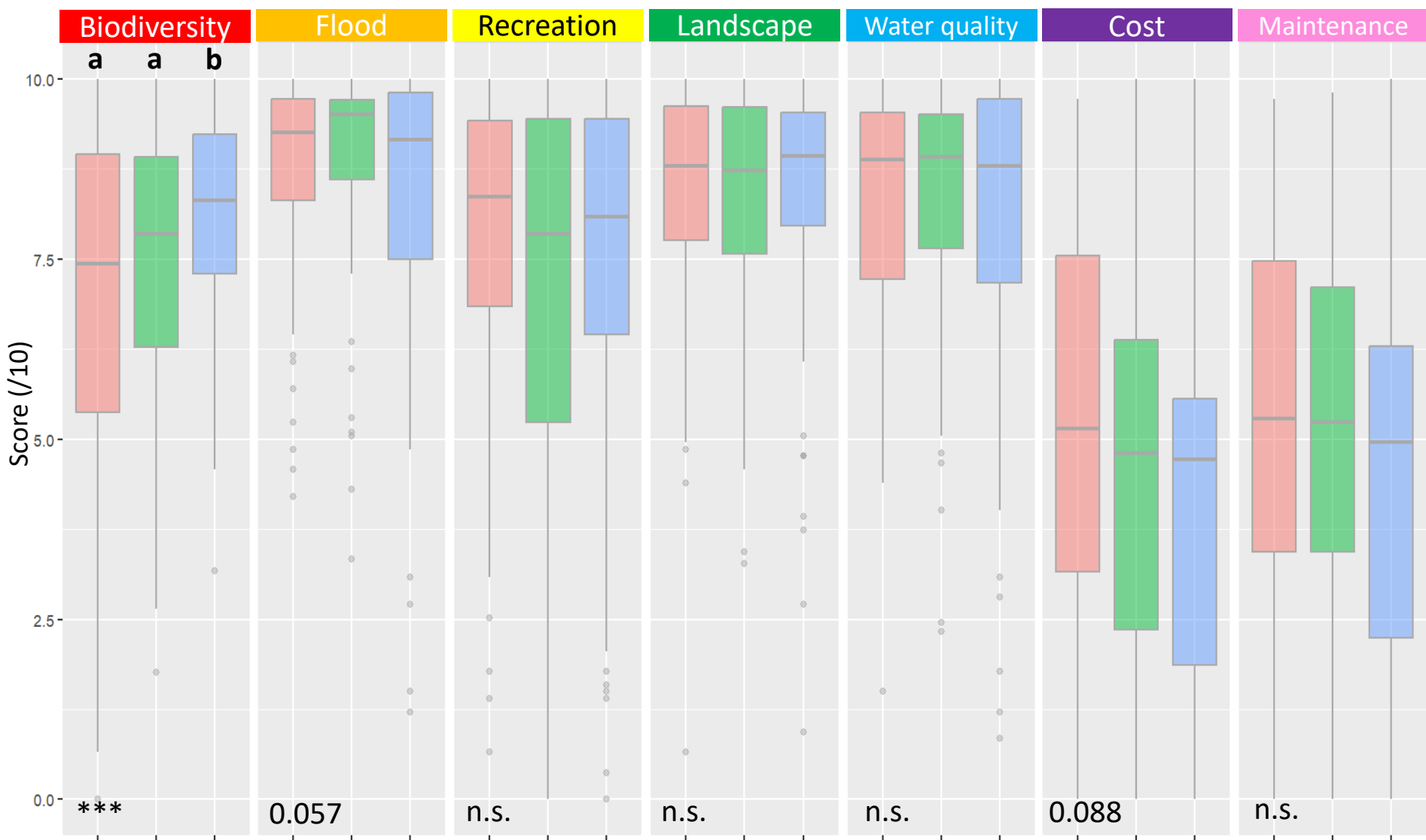
Results

Important functions

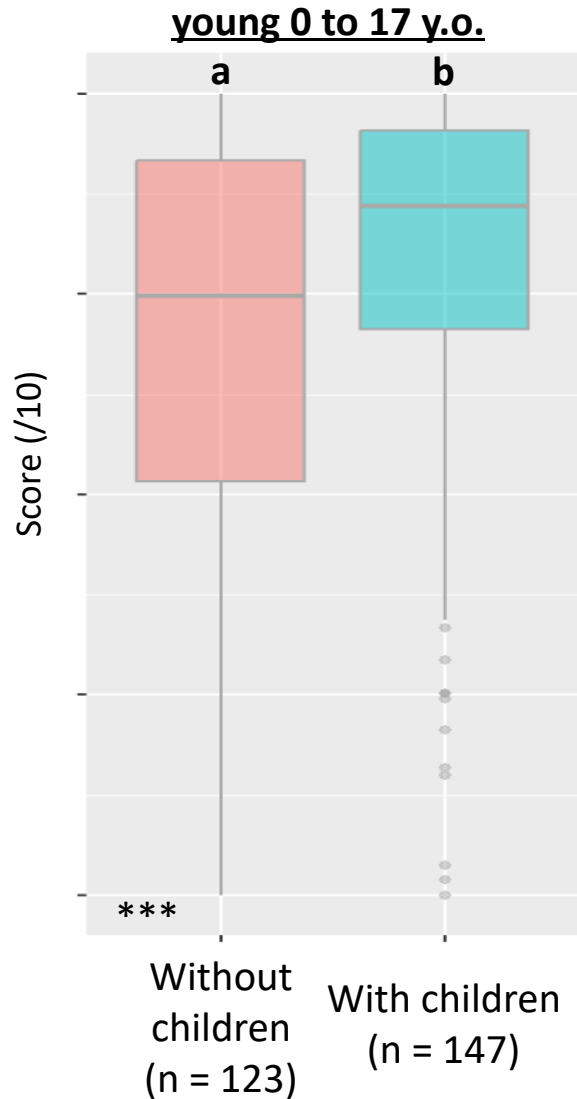
People living near dry basins :



How important do you think it is for a stormwater infrastructure to fulfil the following functions in an urban context?



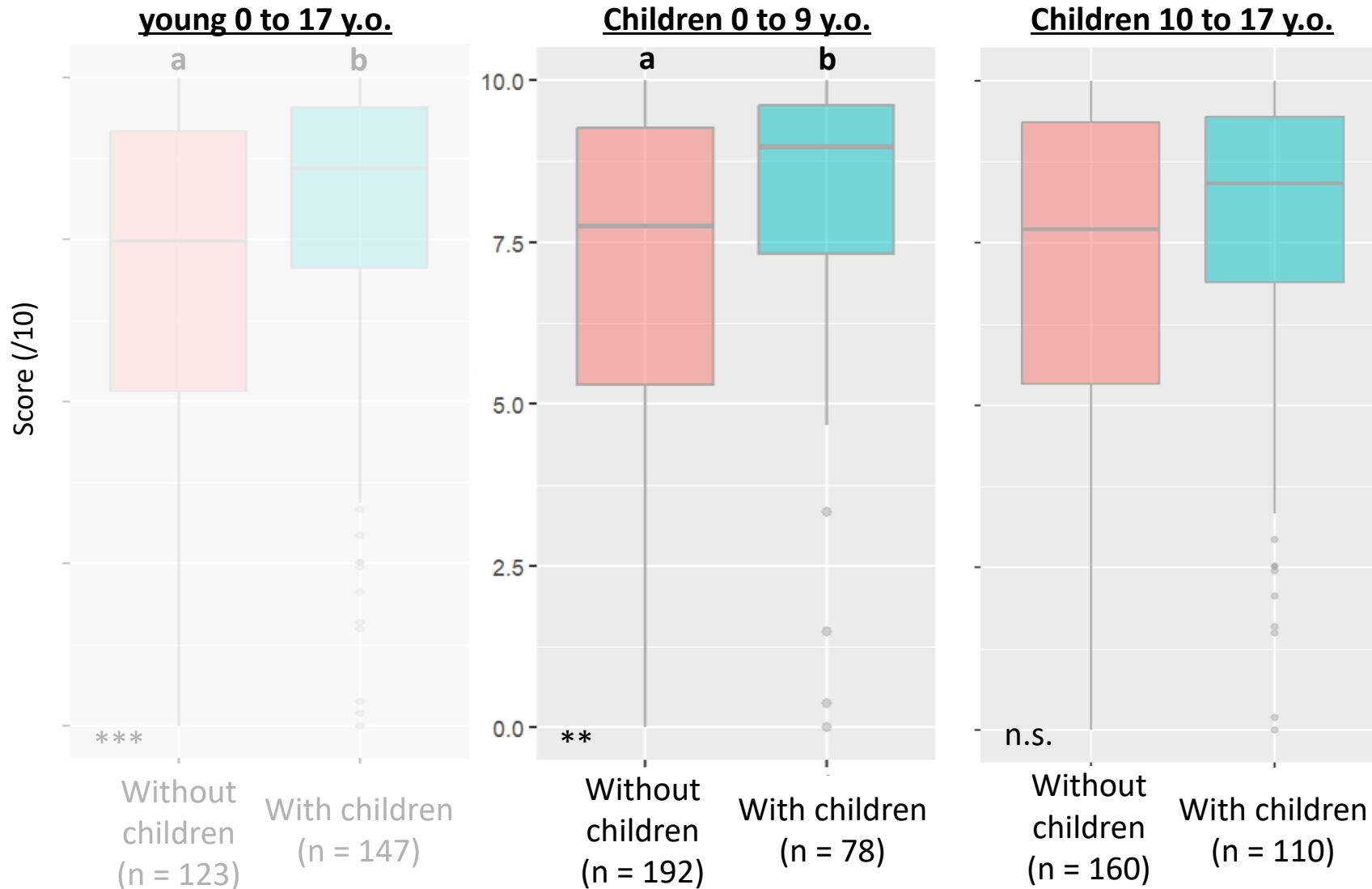
- ➔ Good scores for all functions
- ➔ Higher score for rich biodiversity when in close proximity to a retention pond
- ➔ High variability in willingness to pay more for pond construction and maintenance



→ People with children put more emphasis on the presence of recreational spaces

Fonctions de production de lieux de loisirs

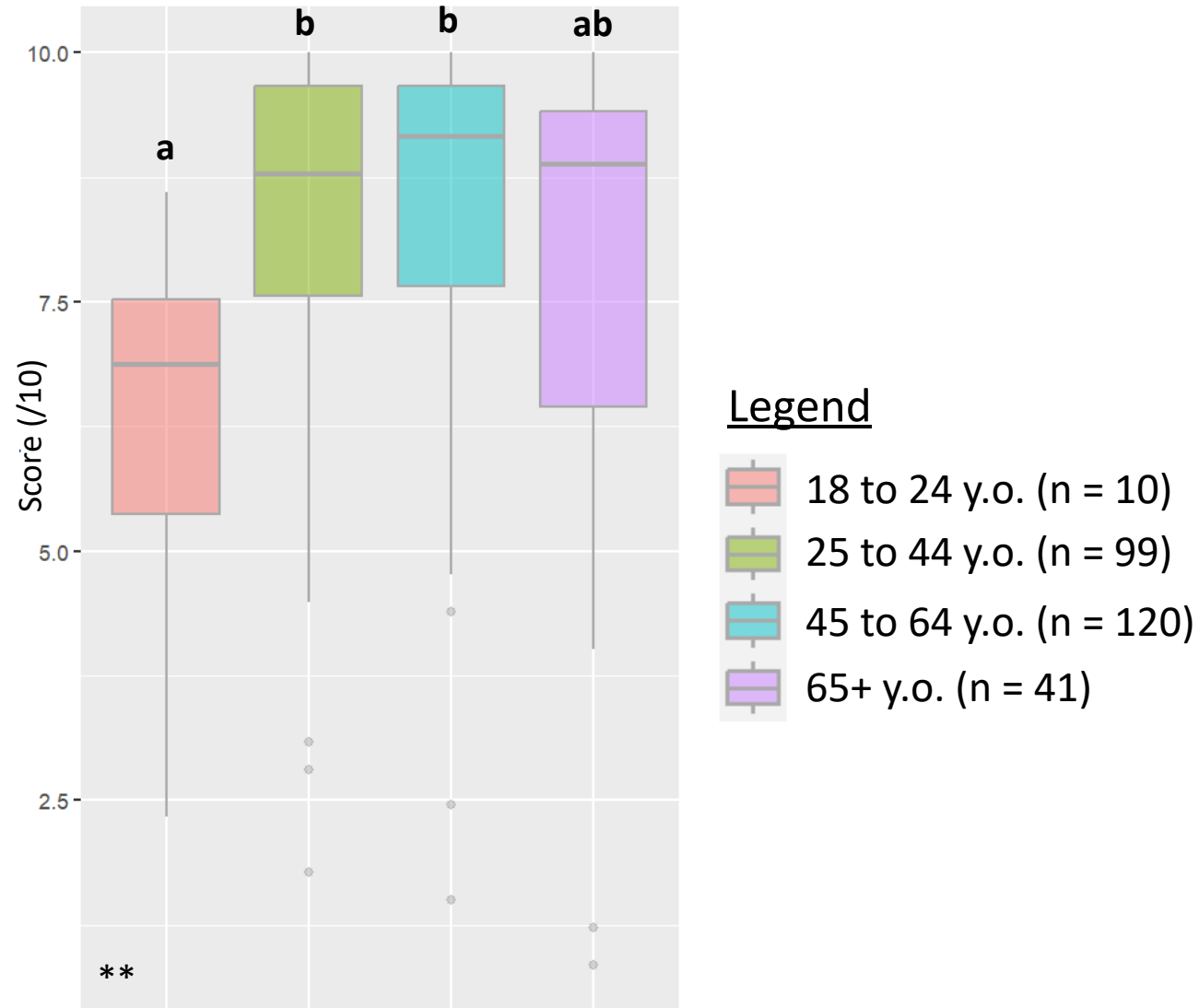
Results



➔ People with children put more emphasis on the presence of recreational spaces

➔ ... no difference when families with children above the age of 10

By age group



→ Younger people consider it less important to improve water quality

→ Elders have an intermediate position

→ Not many 18 to 24-year-olds responded

→ Education : young people do not have knowledge about this “epuration” function ?

Summary:

- A multifunctional vision of stormwater infrastructures for citizens, more than just a hydraulic/hydrologic function
- A preference for wetland/aquatic environments with installations
- The value given to biodiversity varies according to the type of pond nearby
- Adaptation to different neighborhoods and target populations?

Perspectives:

- Further analysis of perception (vision and knowledge of biodiversity, plant maintenance)

Thank you for your attention !

Don't hesitate to contact me : matisse.petit-prost@inrs.ca

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