

Macroinvertebrate and waterfowl communities of rotationally grazed prairie pothole wetlands

Carly A. Silver¹ and Steven M. Vamosi²

¹TERA Environmental Consultants, Calgary, AB, Canada and ²University of Calgary, Calgary, AB, Canada

Introduction

- Estimated that > 50% of Prairie Pothole Region (PPR) wetlands have been converted to agricultural land (Dahl 1990).
- Temporary PPR wetlands serve as valuable habitat for a large number of organisms including macroinvertebrates and waterfowl.
- Rotational grazing has cattle in one pasture spring through early summer (early grazed) and in another pasture late summer through fall (late grazed).
- Impact of rotational grazing on macroinvertebrate and waterfowl communities in temporary PPR wetlands previously unexplored.

Main Questions

- Is macroinvertebrate abundance and diversity higher in late grazed wetlands?
- Do waterfowl preferentially use late grazed wetlands?



Methods

- Repeatedly sampled macroinvertebrate and waterfowl communities in 13 temporary PPR wetlands near Calgary, Alberta, Canada.
 - 7 wetlands grazed May through June when wetlands contained water.
 - Early grazed wetlands
 - 6 wetlands grazed August through October when wetlands were dry.
 - Late grazed wetlands
- Macroinvertebrates were sampled using a sweep net.
- Waterfowl present at the wetlands were counted.

Prairie pothole region (Mann 1974)

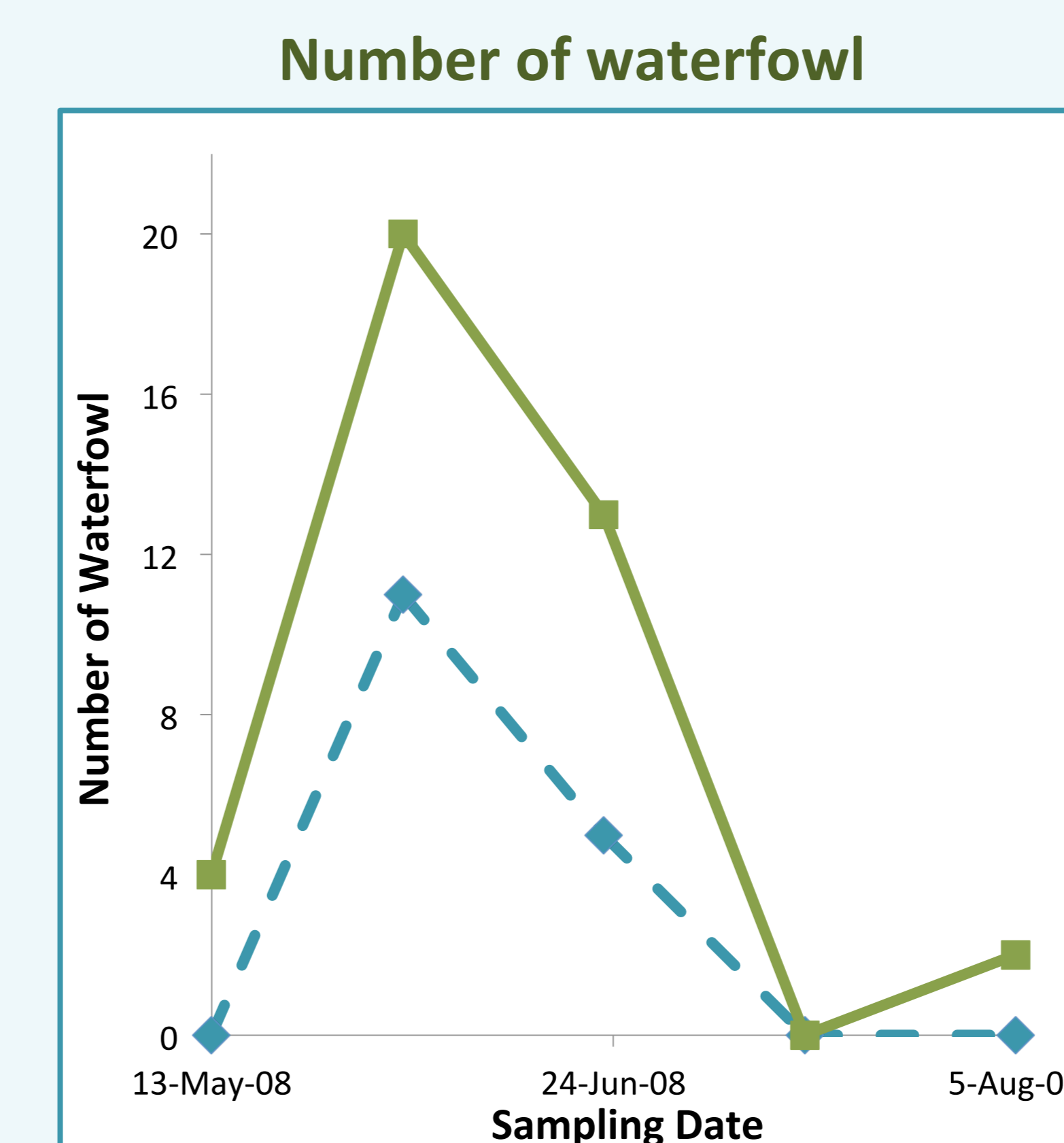
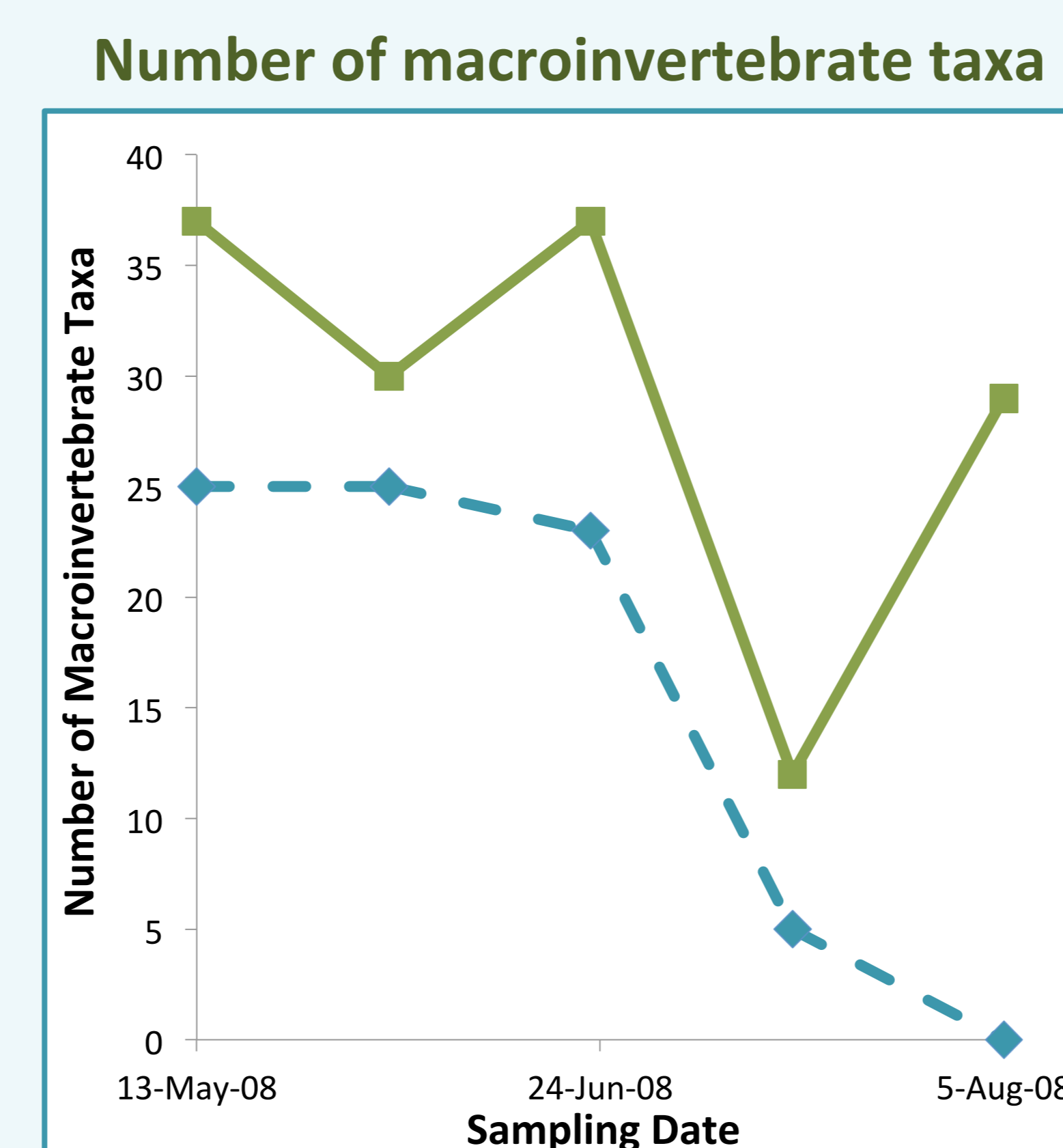
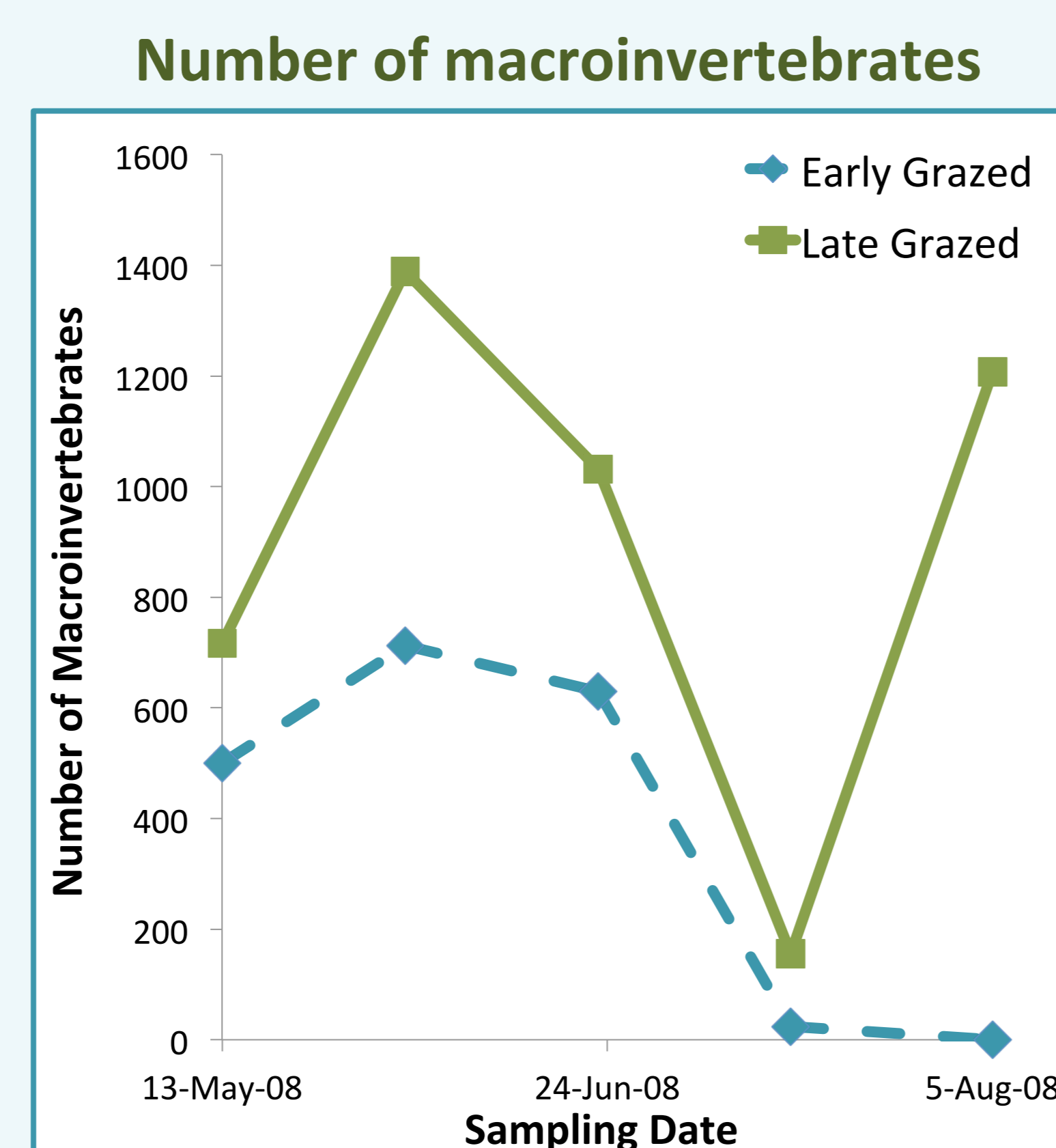


Results

- Macroinvertebrate abundance and diversity higher in late grazed wetlands.
- Waterfowl more abundant on late grazed wetlands.

Comparison of early and late grazed wetlands

Parameter	Early Grazed	Late Grazed	Total
Macroinvertebrates sampled	1,866	4,500	6,366
Macroinvertebrate taxa present	44	58	65
Waterfowl observed	16	39	55



Discussion

- Rotational grazing appears to create distinct differences between early and late grazed wetland communities.
- Both early and late grazed wetlands show seasonal changes in the macroinvertebrate and waterfowl communities as wetlands fill with water in the early spring then slowly dry through the summer.
- Reprieve from grazing during the wet period for late grazed wetlands appears to have favourable impact on macroinvertebrate and waterfowl communities.

Conclusions

- Rotational grazing has a positive impact on macroinvertebrate and waterfowl abundance and diversity.
- Rotational grazing should be considered a preferable alternative to traditional, all-season access, grazing regimes for managing and protecting wetland habitat in pastures.



Literature Cited

Dahl. 1990. Wetland losses in the United States 1780's to 1980's. U.S. Fish and Wildlife Service, Washington, D.C.
 Mann.1974. The prairie pothole region – a zone of environmental opportunity. Naturalist 25:2 (map).

Further Information

For further information, please contact Carly Silver at 403-265-2885 or csilver@teraenv.com.
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