

The effect of Lake Champlain's water quality on tourism and recreation

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Introduction



- Water quality is a major issue around the world for domestic, industrial and recreational use.
- Its importance in tourism and recreation impacts the economic activity of any country.
- Lake Champlain is the host of many recreational activities.

Introduction



- There have been cyanobacteria blooms in the lake that threaten human health.
- As individuals avoid recreational sites subject to these blooms, there may be a decrease in the recreational and touristic activities in or near the lake.
- **This research will look for the relationship between the attendance of visitors to Vermont State Parks, the meal and room tax and the levels of phosphorus and nitrogen during summer.**

Introduction



It will show how recreation and tourism in the parks has fluctuated due to variation in water quality, which is due to the algal blooms, while controlling for fluctuations across space, time and other influences.

Relationships



I will investigate some relationships among recreational activities:

- The first relationship will be the attendance of visitors to Vermont State Parks between May and October.
 - The state parks are the ones located in Franklin, Chittenden, Addison and Grand Isle.
 - The information was gathered from the Department of Forests, Parks and Recreation.

Relationships



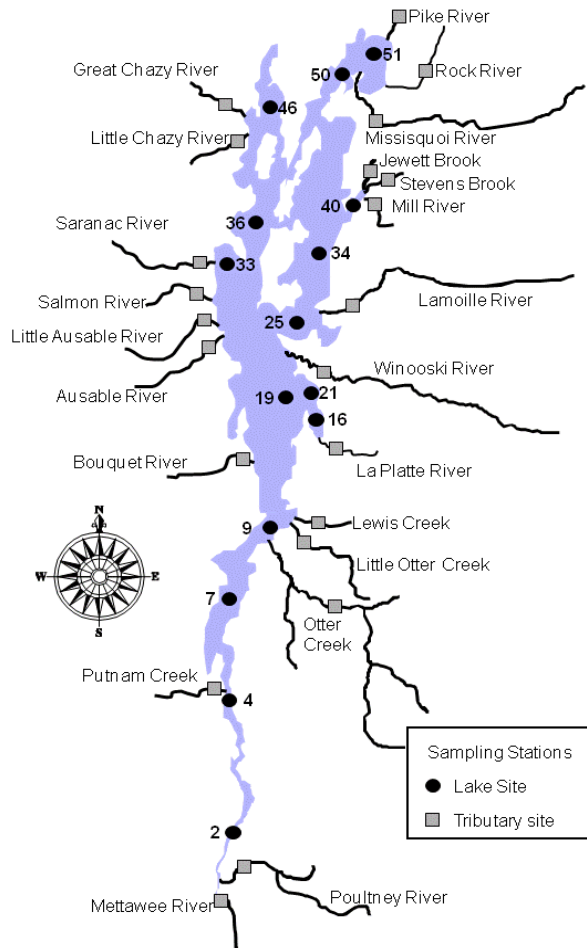
- The second relationship will be the levels of Total Phosphorus in Lake Champlain between May and October.
 - The information was gathered from the Lake Champlain Long-term Water Quality and Biological Monitoring Project.

Hypothesis



It is expected that the recreational and touristic activities in the state parks of the counties next to the Lake Champlain decrease with a raise in the Phosphorus and Nitrogen levels.

Methods



- The levels of Phosphorus and Nitrogen will be given by 14 lake stations located at the lake.
- Lake stations are visited regularly from late April through October each year.
- The chosen data was from May through October on 2012.

Methods



- The attendance of the parks that are in Franklin, Chittenden, Addison and Grand Isle will be compared within the county to see if there is any difference because of the interaction with Lake Champlain.
- I will look for the comparisons over time within the state parks, particularly looking for the drops offs in attendance at a given park as water quality worsens.

Methods



- Also, I will have in mind some controls of what the parks have to offer such as park accessibility, parking and admittance cost.



Vermont State Parks At A Glance

Key: • = Available

PT = Partial

F = Full

C = Close (< miles)

N = Near (<5 miles)

P = Proximity (<0 miles)

M = Marina

CT = Car Top

VT State Parks	CAMPING							ACTIVITIES					FACILITIES			
Park	Tent/RV (No Elec)	Lean-to	Cabins	Cottages	Group	Hot Showers	Dump Station	Swimming	Boat Launch	Boat Rental	Fishing	Hiking	Picnic Shelter	Playground	Snack Bar	Accessible
NORTHWEST																
Alburg Dunes								•	CT	•	•					PT
Burton Island	17	26				•	M	•		•	•	•		•	•	PT
Grand Isle	115	36	4			•	•	•	•	•	•	•		•	N	PT
Kill Kare								•	•	•	•		•	•		F
Knight Island	1	6						•	CT		•	•				
Knight Point								•	N	•	•	•	•	•	N	PT
Lake Carmi	137	35	2			•	•	•	•	•	•	•		•	N	PT
Niquette Bay								•			•	•				
North Hero								•	•		•	•		•	N	PT
Sand Bar								•	CT	•	•			•	•	PT
Underhill	11	15			•						N	•	•		N	PT
Woods Island	5							•			•	•				

Results

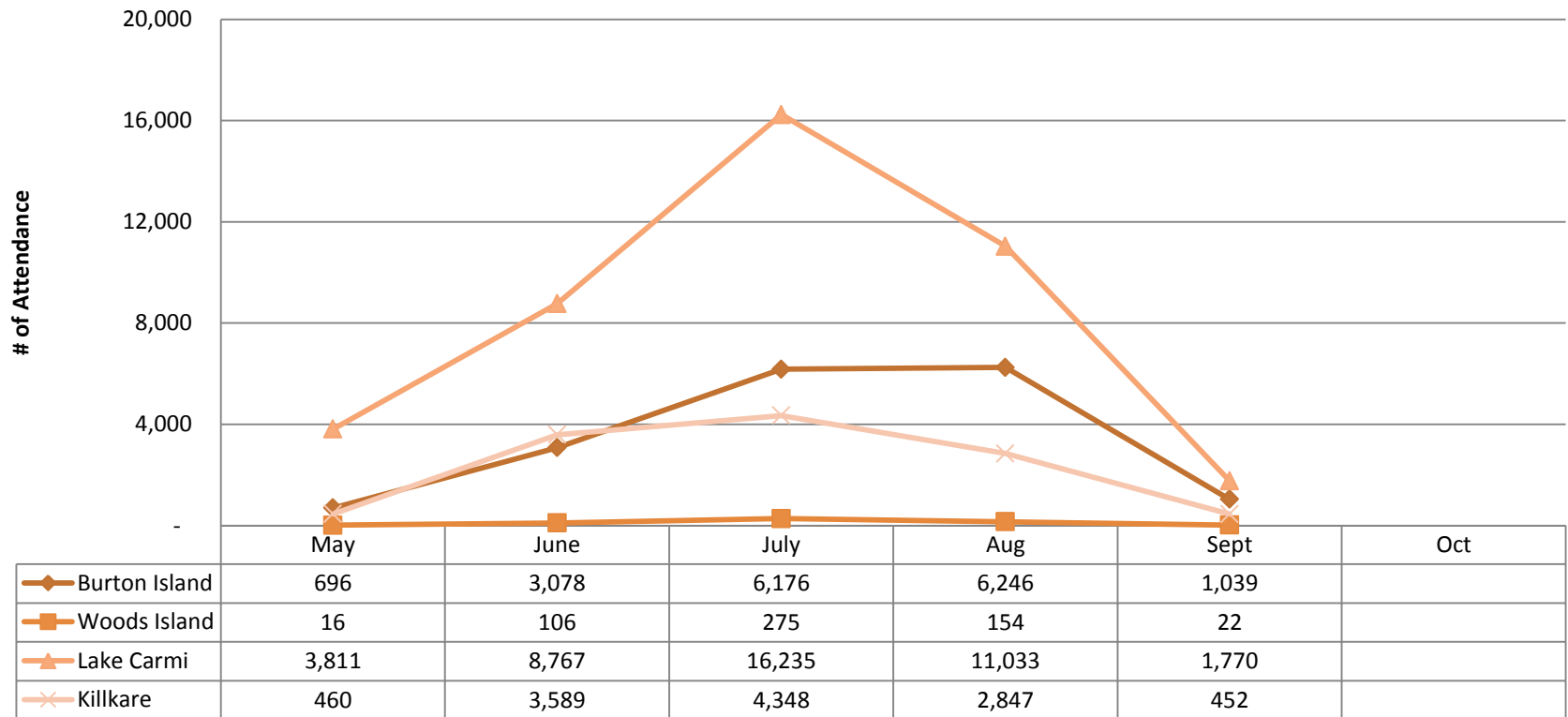


- A chart was made for every county describing the attendance of each park, the room and meal tax receipt and the levels of phosphorus and nitrogen from May through October 2012.
- For each county there are four state parks.

Franklin



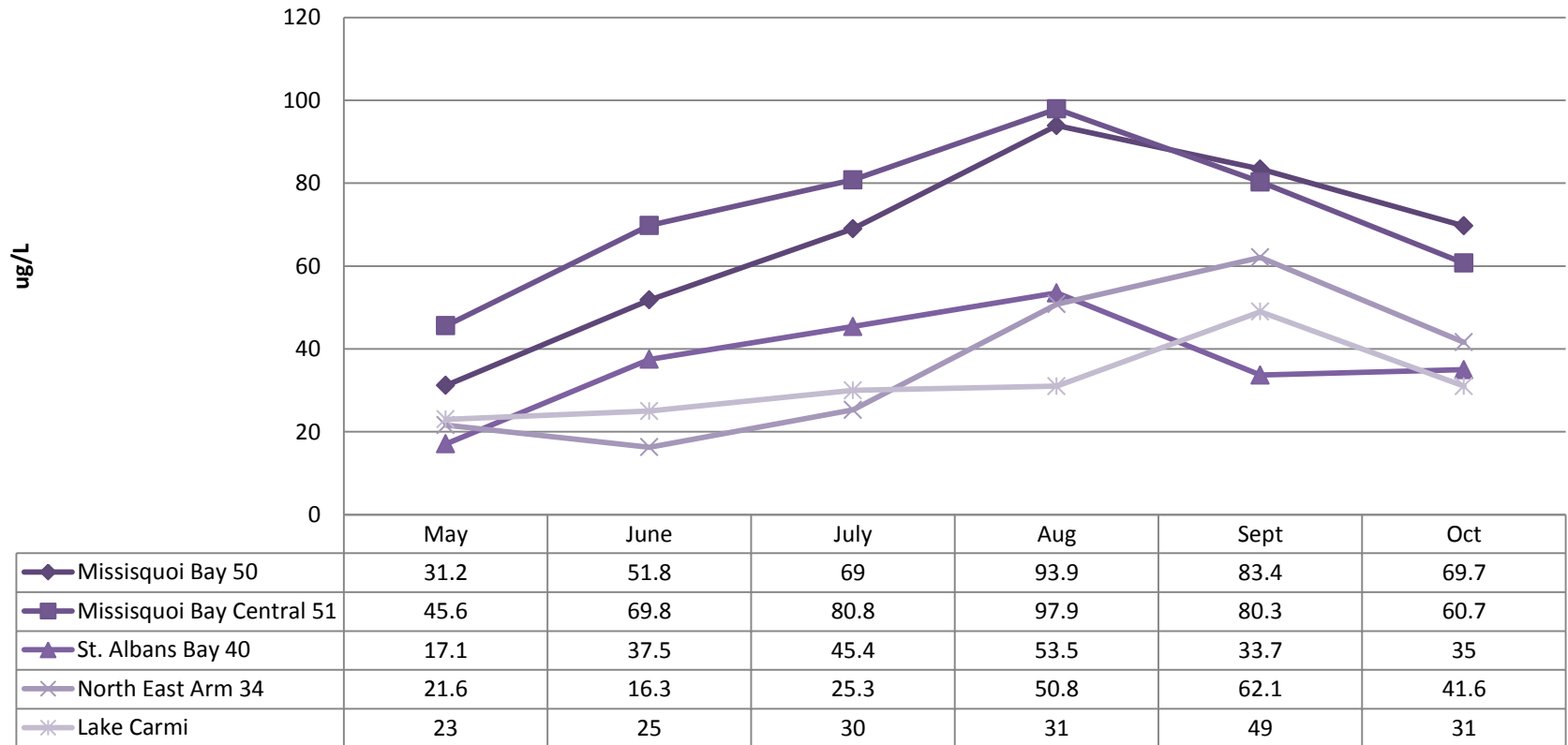
Franklin Attendance State Parks. This chart shows the state park attendance for this county between May and October 2012.



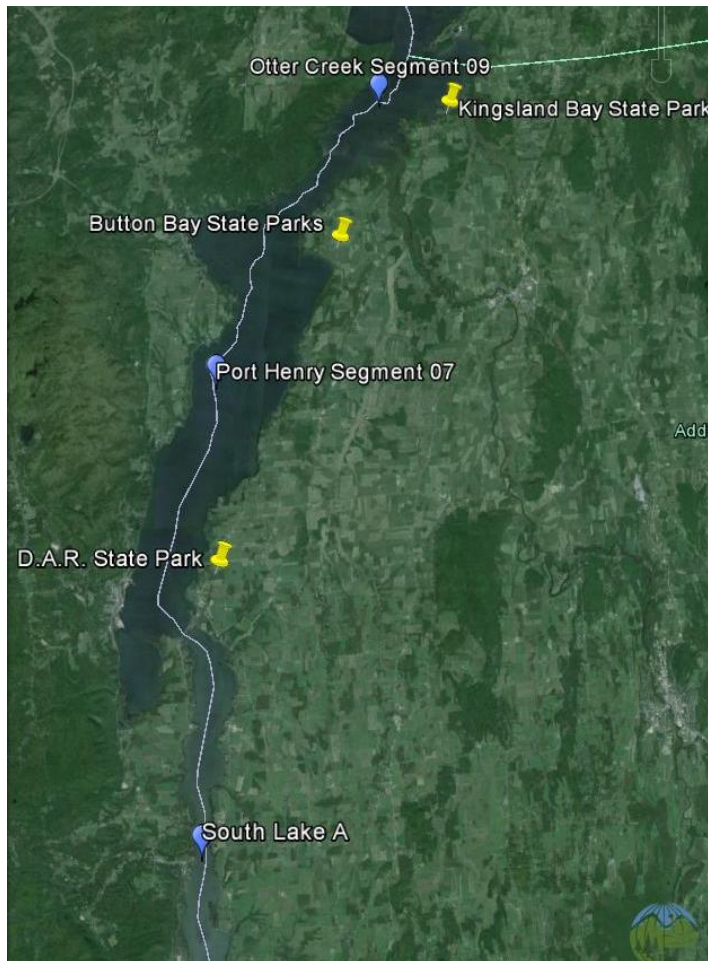
Franklin



Total Phosphorus in Franklin Lake Stations. This chart shows the phosphorus levels in the lake stations near the Franklin state parks between May and October 2012.



Addison

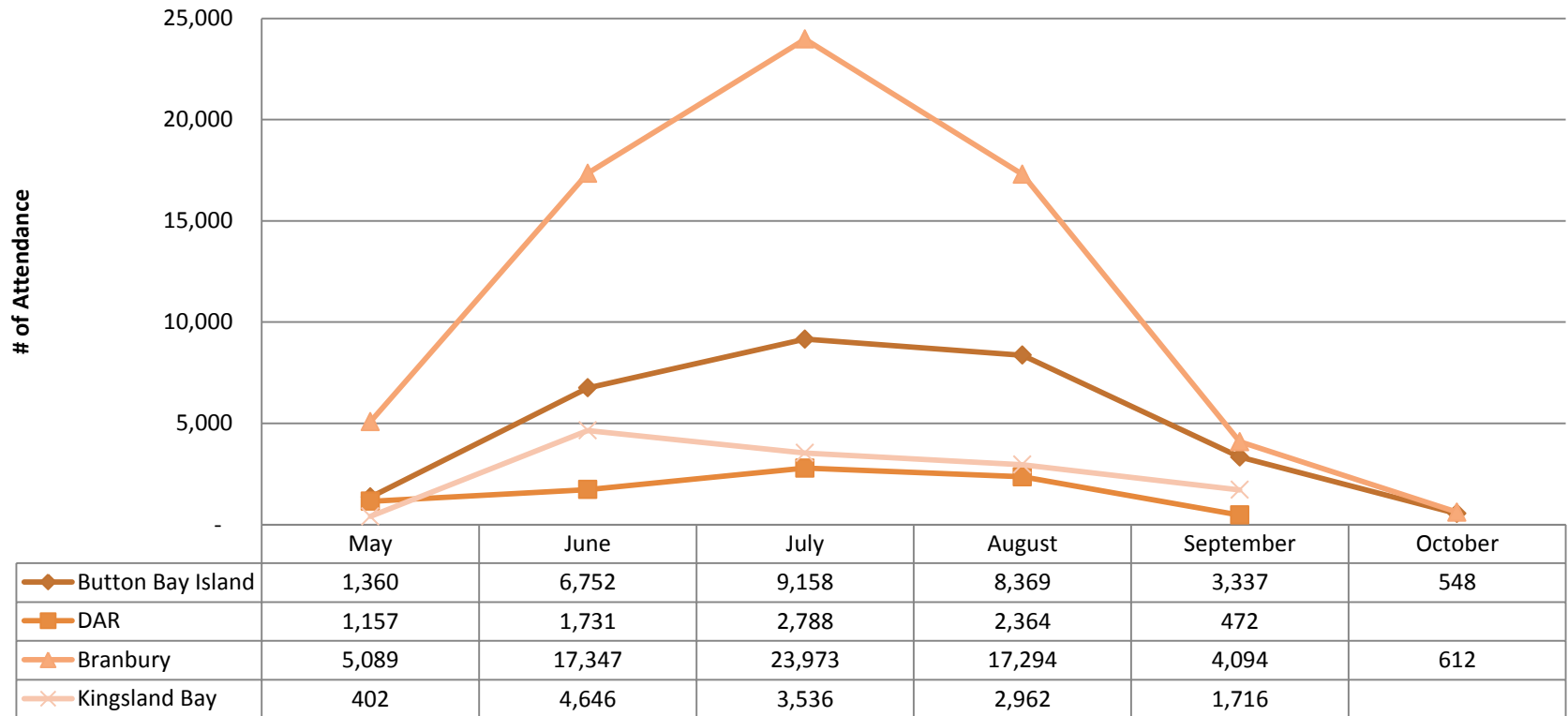


- This county has Kingsland Bay State Park, Button Bay State Park, DAR State Park and Branbury State Park.
- Branbury State Park is located next to Lake Dunmore.

Addison



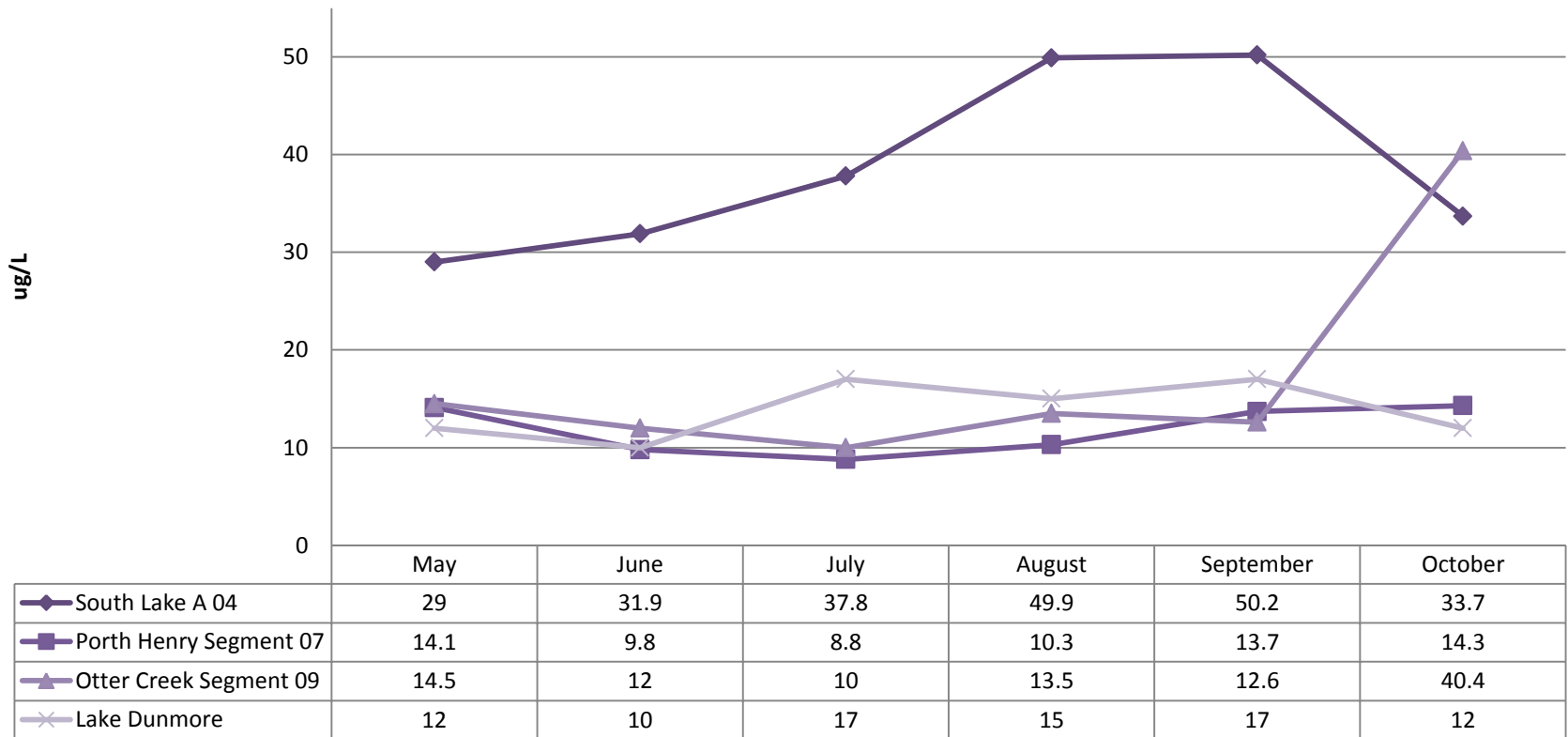
Addison Attendance State Parks. This chart shows the state park attendance for this county between May and October 2012.



Addison



Total Phosphorus in Addison Lake Stations. This chart shows the phosphorus levels in the lake stations near the Addison state parks between May and October 2012.



Future Work



- Continue working with the analysis of my research.
- I expect to present a full poster with my complete research findings.