

## Meeting with Friends of Robert's Bird Sanctuary

**RE: Flooding and Climate Change Impacts to the Sanctuary Monday**

**October 28<sup>th</sup>, 2019; 11am – 12pm**

### **Attending:**

**MPRB: Rachael Crabb, Water Resources Supervisor  
Natalie Brown, Water Resources Program Aide  
Kaitlin Ryan, Horticultural Supervisor**

### **Friends of Roberts Bird Sanctuary:**

**Connie Pepin, Friends of Roberts Bird Sanctuary Board Member  
Steve Greenfield, Friends of Roberts Bird Sanctuary Board Member**

**MCWD: Tiffany Schaufler, Project and Land Manager**

### Hydrology Study

- Would it be important to look @ hydrology? – help us learn how to adjust for climate change
- Rachael noted that we need to prioritize a hydrology study based on plans for work in Roberts – as indicated in the management plan – plan to do a study in association with a prioritized project
- Need to do a study under more “normal” water level conditions to have results applicable to restoration
- The hydrology study in the Roberts Plan was intended to inform a future restoration project – there are currently no restoration projects funded or planned – so no current plans to do a hydrology study
- Friends would like to expedite a hydrology study – they will ask the Friends group for funding potential under the interest of habitat protection in the Sanctuary
- Rachael noted that the hydrology study itself would have to take place over the course of multiple years

### Bridge pond pumping

- After a major rain event in 2019 MPRB staff would pump excess water from the pond to a stormwater drain in the parking lot (that is believed to drain to the Sanctuary)
- MPRB staff are requesting to have the pond dredged to give more space for water
- MPRB staff have not treated the turf for broadleaf weeds since 2017.
- Magnolia scale was treated in the garden in 2019 using a neem oil product.
- Conifer fungal issues are present and have been treated in the spring in past seasons as needed.
- The idea of pumping the water to the Sanctuary so that it is filtered rather than straight to Lake Harriet
- MPRB maintenance practices have been moving away from chemical controls in favor of mechanical controls over the past two seasons. Each issue identified is approached starting with the lowest risk solution and elevating from that point.
- It was noted that the amount of water being pumped is very minimal and unlikely the source of high water in the Sanctuary

### Stormwater Management System in the Cemetery

- ✓ Is there a stormwater management system in the cemetery? ✓ Has runoff increased?
- ✓ Is there an agreement regarding stormwater from cemetery into Roberts?
- Neighborhood or Friends group could work together to work with Cemetery
- Friends is asking MPRB to talk to Lakewood
  1. Can they manage their own runoff?
  2. Can there be better stormwater management (keep own water)?
  3. Can they use less pesticides? (what is pesticide impact to Roberts from cemetery runoff?)
- Unless the cemetery does a new project, there is no regulation to require the property to do additional work.
- MPRB does not have any regulatory authority.
- If we have high rain levels, more water will be shed from the sanctuary's watershed

### Tree Loss due to High Water

- What can be done to mitigate tree loss? What will MPRB do? (covered extensively in previous meeting with MPRB Forestry)
- Tiffany noted that the larger trees in the area are flood tolerant varieties (indicating frequent flooding)
- NOTE from MPRB Forester: 9/2019 Forestry staff meeting with Friends Re: Water levels in the Sanctuary and impacts on trees: *Some trees may die. However, small seedlings are already present (which could be seen at the edges of the water) that will start the regeneration process. Tree tubes could also be planted in areas where there isn't as much natural generation and species selection could be climate change adaptive species.*

### Cemetery Creek

- Over its banks and doesn't appear to be draining well
- Concerns about the muddy/grey color of the water and observed churning
- MPRB and Minneapolis Public Works working to investigate possible obstruction of the outlet pipe.

### What Can be Done in view of Climate Change?

- Planting water tolerant trees – MCWD can provide a list of water tolerant trees and a list of wetland plants that can tolerate larger water level fluctuations.
- Planting native plants and trees, shift to wetter conditions in general.
- The group observed native wetland species in several areas: sedges near the culvert under the path and hard stem bulrush in another area.

### Other questions?

- What is the stormwater flow into the Sanctuary? Where can we find out that information?
- Stormwater flow to the Sanctuary includes:
  - overland flow from the Cemetery, ○ some piped flow from the Cemetery including from the pond. ○ Overland and piped flow from the Peace Garden and Parking lot ○ Piped flow from the parkway
- Some information on stormwater is in the Roberts Management Plan

Wetland ponds in Roberts are an expression of shallow groundwater. A potentially blocked pipe may also be exacerbating flooding in the sanctuary, and MPRB is working with the City of Minneapolis to address this pipe. We do not yet know what the “new normal” precipitation will look like on the landscape, and I do not believe we can assume current water levels are the new normal. At this point, we have had 6 consecutive years of record precipitation and we should conservatively assume that recent precipitation patterns could occur again, but we should not assume that we will never have dry years again. From climate models, we know it is likely that Minnesota will have more and more frequent rainfalls greater than one inch than we have had in the past, so wet periods like we are experiencing may no longer be unprecedented. It is also possible that there will be increased rainfall during times when rainwater is more likely to soak into the ground and become groundwater. The effect of increased groundwater recharge and higher groundwater levels will be first visible in locations where the groundwater table intersects the surface of the land at lakes, ponds, and wetlands

Dredging the ponds will not create additional storage for water or decrease the level of water in the sanctuary since the water level in the ponds the same level as shallow groundwater. Dredging would have a very temporary effect (potentially as short as hours) since groundwater would immediately fill the space left behind by removing dredge spoils. Dredging the sanctuary under wet and flooded conditions would be very difficult and very disruptive. If dredging was done to create a different type of landscape it would have to be carefully planned (ideally under dry or frozen conditions for the least damage) and MPRB would have to determine that the long term benefit outweighed the short term disruption.

MPRB staff and park patrons have typically observed turtles moving overland. I do not know with certainty if turtles use pipes for movement between waterbodies, but would not rule it out. The end of the Sanctuary pipe at Lake Harriet is submerged offshore, and I do not know if a turtle would enter a submerged pipe to swim upstream. I don't know enough about the condition of the pipe or if there are any water control structures inside of it that would inhibit wildlife movement, but we may be able to make better assumptions after the City of Minneapolis does more investigation on the pipe. My understanding is that turtles search for sandy uplands to lay their eggs in spring, and use wetlands and lakes to find spots to hibernate for winter.

The overall landscape at Roberts has been disrupted and changed by both natural and human caused events many times over the past 100 years. The area was once likely shallow marsh, and then was ditched. The ponds were created, used for fish rearing, and later reconfigured. Dredge spoils from the ponds was used to create and potentially raise some of the upland. The current vegetation cover was modified by a tornado in the past, and is now being modified by EAB and flooding, as well as being modified by plantings to enhance the existing native plant population.

In this current period of landscape change due to tree disease and climate change, we can nudge the sanctuary vegetation towards types more useful to wildlife through thoughtful planting. Dredge spoils spread in the sanctuary previously may now act a seed bank during wetter conditions, helping the sanctuary habitat to shift towards wetter conditions.

Rachael Crabb  
MPRB