Earth Care Habitat Proposal

The Earth Care Committee is proposing to convert an under-utilized, semi-paved area of church property to habitat, in order to improve stormwater management; to benefit imperiled wild species such as frogs, bees, and butterflies; and to enhance the property for the enjoyment and enrichment of the congregation and visitors.

Current Condition

The area between the parking lot and the detention basin/woods is currently covered in asphalt millings, with some possible areas of actual old, degraded pavement. In its current condition, the area has several disadvantages.

- The area is not used for any significant church purposes other than the new Rooted in Love raised vegetable garden beds.
- Under current regulations, asphalt millings are prohibited to be used as a final resurfacing material (when not bound up with hot asphalt or concrete) due to the potential for the millings to leach harmful chemicals.[i]
- The area contributes to the problems associated with impervious surface, with stormwater running off quickly instead of seeping slowly into the ground.[ii]
- The area does not provide habitat for plants or animals.

WHY SHOULD WE CARE FOR THE EARTH?

Our faith urges us to strive for eco-justice: defending and healing creation while working to assure justice for all of creation and the human beings who live in it. This call is rooted in the human vocation of "tilling and keeping" the garden from Genesis 2:15, as well as Christ's charge to work with and for the most vulnerable. Because of their love for Christ who is firstborn of all creation (Colossians 1:15), churches are challenged to live in a manner consistent with God's call to not only care for creation, but commune with creation.

Excerpt from "Earth Care Congregations: A Guide to Greening Presbyterian Churches," Version 4, 2018

Proposed Habitat Project

The Earth Care Committee proposes to work with a contractor to remove asphalt millings and other impervious materials from roughly 0.22 acre behind the parking lot. We propose using volunteers to plant a variety of native species in order to convert the area to a combination of rain garden and pollinator meadow habitats. Finally, we propose to control a few small areas of invasive plant species that can be harmful if left unchecked (e.g., an area of *Phragmites* reeds).

- One low spot of about 0.02 acre would be further excavated to create an additional stormwater storage area adjoining the existing detention basin (pond). Material excavated from this area would be used to create a low berm around its perimeter. This low spot would be planted as a rain garden, and would hold excess water during wet periods when the basin may overflow.

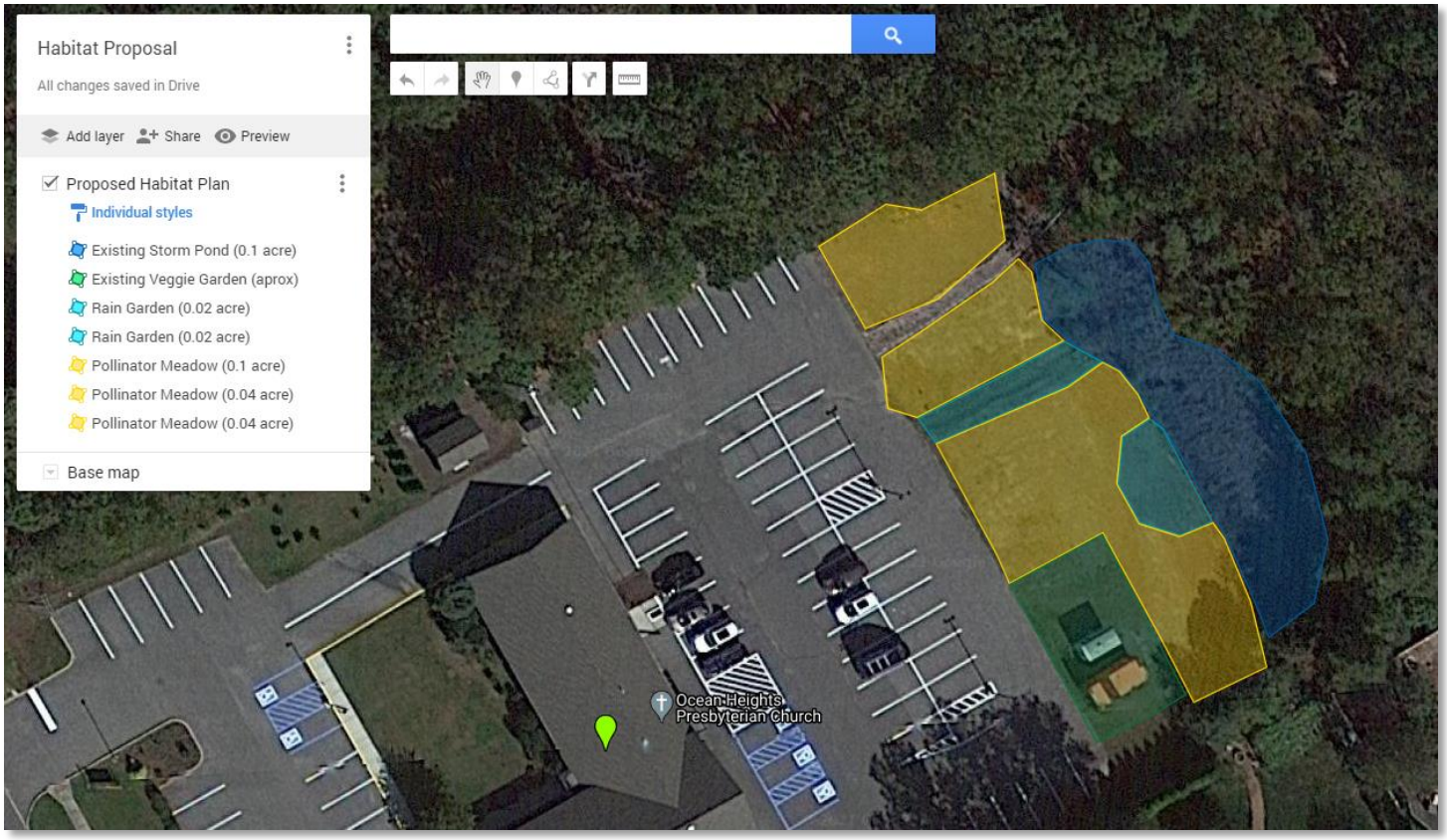
- A second area of about 0.02 acre would be planted as a rain garden along the existing drainage channel that has formed between the parking lot and the basin. This linear rain garden would help slow, filter, and absorb stormwater running off the parking lot.

- The rest of the area, following removal of the asphalt millings, would be planted as an upland pollinator meadow, totaling about 0.18 acre across three separate sections. Optionally, we may wish to add small structural components such as a bird nest box, bat box, or pollinator habitat box.

Maintenance

Native habitats require minimal maintenance once established. However, in the first one or two growing seasons the area will need to be monitored and annually mowed high (8-12"). The area might benefit from watering only during the first 1-2 years, and only during prolonged dry periods. No fertilizers, pesticides, mulch, etc. area needed. Starting in the second year, the area should be inspected each fall for small trees and shrubs, which can be removed by hand cutting to

prevent natural succession, and for problematic outbreaks of invasive plants, which should be controlled by very targeted and careful herbicide application to prevent them taking over and crowding out the native plants upon which the wildlife depends. Note that native perennials typically do not flower until the 2nd or 3rd growing season. But once they are established, they come back every year and require very little maintenance.



Expected Project Benefits

1. Eliminate asphalt millings as a potential source of pollution.

2. Reduce pollution loading to the basin by filtering stormwater runoff from the parking lot.[iii]

3. Increase stormwater storage capacity.

4. Slow down parking lot runoff and allow more of it to seep in, replenishing the groundwater. [iv]

5. Improve aesthetics.

6. Provide an outdoor resource for recreational, educational, and spiritual experiences.

7. Improve water quality and habitat for frogs and other amphibians using the pond.[v] Frogs and toads are experiencing severe declines caused by habitat loss, pollution, disease, and climate change.[vi]

8. Provide habitat for native pollinators, such as bees and butterflies, which benefits both the pollinators themselves and also potentially helps our Rooted in Love community vegetable garden. Many pollinator species are declining due to habitat loss, invasive species, disease, and pesticides.[vii] Monarch butterflies were recently made a candidate for listing under the Endangered Species Act. Monarchs require native milkweed plants. Different bees have specific needs, but all require habitat that provides an abundant native flowering plants, nesting sites, and protection from pesticides.[viii]

Possible Plantings

Actual species plantings will depend on availability and cost of plant plugs and seeds. The goal will be a diverse assemblage of native, perennial, non-woody plants that are known to support pollinators, and to slow and filter stormwater runoff.

Possible Rain Garden Plantings:[ix]	**Possible Pollinator Meadow Plantings:**[x]
Perennials	***Perennials***
Swamp milkweed (Asclepias incarnata)	Common milkweed (Asclepias syriaca)
Turtlehead (Chelone glabra)	Wild bergamot/ beebalm (Monarda fistulosa)
Joe Pye Weed (Eupatorium dubium)	Purple coneflower (Echinacea purpurea)
Swamp sunflower (Helianthus angustifolius)	Lanceleaf tickseed (Coreopsis lanceolata)
Blue flag iris (Iris versicolor)	Blue false indigo (Baptisia australis)
Virginia iris (Iris virginiana)	Butterfly milkweed (Asclepias tuberosa)
Cardinal flower (Lobelia cardinalis)	Canada goldenrod (Solidago canadensis)
Blue lobelia (Lobelia siphilitica)	Blazing star (Liatris spicata)
Ladies trusses orchid (Spiranthes cerna)	Wild columbine (Aquilegia canadensis)
Culver root (Veronicastrum virginicum)	***Grasses***
New England aster (Aster novaeangliae)	Big bluestem (Andropogon gerardii)
Ferns	Switchgrass (Panicum virgatum)
Ostrich fern (Matteuccia struthiopteris)	
Cinnamon fern (Osmunda cinnamomea)	
Royal fern (Osmunda regalis)	
Grasses	
Grays sedge (Carex grayii)	
Palm sedge (Carex muskingumensis)	
Tussock sedge (Carex stricta)	
Switch grass (Panicum virgatum)	

Timeline and Budget

- Review rain garden and pollinator information resources.[xi] - Seek support from experts such as US Fish & Wildlife Service, Watershed Ambassadors, Jersey Friendly Yards, Rutgers, and NJ Native Plant Society. - Seek grant funding and/or donations of plant material.	August/September	$0
Remove asphalt millings and other impervious materials	September (2 days via contractor)	$5,500
- Control *Phragmites* and other problematic invasives. - Prepare soil in the habitat area for planting. [xii]	September through early October	$0 (volunteers)
Seeding/planting[xiii]	Late October through early December	$0 to $1,000 (seeking donations + volunteer labor
Install optional small structures (e.g., bird/bat/insect boxes)	March	$0 (donations)
Total		**$5,500**

References Cited:

[i] https://www.morriscountynj.gov/files/sharedassets/public/departments/health-mngmt/2014-06asphaltrecy_mcohm.pdf

[ii] https://www.cleanwaternj.org/faqs.html

[iii] https://www.epa.gov/soakuptherain/soak-rain-rain-gardens

[iv] https://www.groundwater.org/action/home/raingardens.html

[v] https://dwr.virginia.gov/blog/frog-friday-create-a-rain-garden-to-enhance-frog-habitat/

[vi] https://www.usgs.gov/faqs/why-are-frog-and-toad-populations-declining?

[vii] https://www.fws.gov/pollinators/

[viii] https://xerces.org/endangered-species/wild-bees

[ix] https://rutgersgardens.rutgers.edu/gardens/rain-garden/

[x] https://www.fws.gov/northeast/njfieldoffice/pdf/partners%20pollinator%20plant%20chart.pdf

[xi] https://www.jerseyyards.org/create-a-jersey-friendly-yard/rain-gardens/
https://www.jerseyyards.org/create-a-jersey-friendly-yard/pollinators/

[xii] https://www.americanmeadows.com/fall-planting-wildflower-seeds

[xiii] For example: https://www.pinelandsnursery.com/pollinator-meadow-mix--1