

## Clearwater Lake Community Runoff Mini-Grant, 2018

### Table 2: Outcomes

#### Clearwater Community Runoff Mini-Grant Summary

Planting Area Type	SQ Feet Planted	Plants
Emergent in Willow / Wet Meadow	4,818	3,708
Upland	3,538	2,615
Rain Gardens	912	192
Shrubs and Woody Vegetation	550	180
<b>Total Planting</b>	<b>9,818</b>	<b>6,695</b>

Stabilization	Square Feet	Linear Feet
Willow Wattle		768 Linear Feet
Bio-Engineered Coir and C700 Stabilization Steps		116 Linear Feet
Bio-Engineered Curlex Erosion Blanket	2,664 Square Feet	
<b>Total Stabilization</b>	<b>2,664 Square Feet</b>	<b>884 Linear Feet</b>

<b>Rain Gardens</b>		<b>4</b>
<b>Slope Checks</b>		<b>3</b>
<b>Vegetated Swales</b>		<b>1</b>
<b>Runoff Reduction</b>		<b>220,872 Square Feet</b>

In-Kind Labor Hours	Hours	Value
Administration	86	\$1,720.00
Education	87	\$1,740.00
Installation	463.75	\$9,275.00
<b>Total In-Kind Hours</b>	<b>637.75</b>	<b>\$12,735.00</b>

Payment	Value	% of Project
Grant Funds	20,000.00	48%
Participant Out of Pocket Cost	\$9,175.00	22%
In-Kind Labor**	\$12,735.00	30%
<b>Total Project Cost</b>	<b>\$41,911.00</b>	<b>100%</b>

\*\* Distribution to individual projects was estimated.

# Clearwater Lake Community Runoff Mini-Grant, 2018

## Clearwater Forest Camp

### Project Summary

Planting Area Type	SQ Feet Planted	Plants
Emergent in Willow / Wet Meadow	780	720
Upland	450	360
Shrubs and Woody Vegetation	500	105
<b>Total Planting</b>	<b>1,730</b>	<b>1,185</b>

Stabilization	Square Feet	Linear Feet
Willow Wattle		210 Linear Feet

Runoff Reduction		134,731 Square Feet
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In-Kind Hours	181.75	\$3,635
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### Key Areas

- Worship Area
  - Install 30' x 2' of willow wattle, Install 15' x 20' upland bank planting
- Swim/Boat/Kayak Launch Area
  - Install 120' x 2' of willow wattle, Install 10' x 15' upland bank planting, Plant shrubs along 500 feet of shore
- Chickadee Day Camp
  - Install 60' x 2' of willow wattle

### Worship Area and Water Recreation Areas



**Before**



**After**





## Clearwater Lake Community Runoff Mini-Grant, 2018



**Teaching the Next Generation**



**41 Elementary and Middle School Age Environmentalists!**



**Before**



**After**





# Clearwater Lake Community Runoff Mini-Grant, 2018

Chickadee Day Camp – Managed by Eagle Scout Candidate





# Clearwater Lake Community Runoff Mini-Grant, 2018

## Green Project

### Project Summary

Planting Area Type	SQ Feet Planted	Plants
Emergent in Willow / Wet Meadow	450	390
Rain Gardens	120	60
Upland	1,550	1,200
Shrubs and Woody Vegetation	25	25
<b>Total Planting</b>	<b>2,145</b>	<b>1,675</b>

Stabilization	Square Feet	Linear Feet
Willow Wattle		150 Linear Feet
Coir and C700 Stabilization Steps		60 Linear Feet 20 Linear Feet
Curlex Erosion Blanket	120 Square Feet	

<b>Runoff Reduction</b>		6,551 Square Feet
<b>Rain Gardens</b>		1 - repaired

<b>In-Kind Hours</b>	59	\$1,180.00
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### Key Areas

- Damaged Banks Repaired
  - Install 2, 1' x 30' C700 steps
  - Install 1, 1' x 20' C700 steps
  - Repair damaged bank 8' x 15' with Curlex Erosion Blanket. A large amount of concrete and trash was removed from the shoreline prior to installation.
- Willow Wattle Install
  - 150' x 2' of willow wattle
- Upland Buffers
  - Plant 3 Upland Buffers 10' x 50', 9' x 30', and 10' x 28'
  - One upland Buffer 500 square feet *on hold* until retaining wall can be repaired. This part of the project will not be paid with grant funds.
- Rain Garden
  - Repair and Replant an existing rain garden 8' x 15'

### Damaged Banks Repaired



**Bio Engineered Steps**



## Clearwater Lake Community Runoff Mini-Grant, 2018

**Before**



**After**



**Willow Wattle Install**





# Clearwater Lake Community Runoff Mini-Grant, 2018

## Upland Buffers



## Rain Garden





# Clearwater Lake Community Runoff Mini-Grant, 2018

## Guth / Seliski Project

### Project Summary

Planting Area Type	SQ Feet Planted	Plants
Emergent in Willow / Wet Meadow	440	408
Shrubs and Woody Vegetation	25	25
<b>Total Planting</b>	<b>465</b>	<b>433</b>

Stabilization	Square Feet	Linear Feet
Willow Wattle		140 Linear Feet

Runoff Reduction		9,957 Square Feet
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In-Kind Hours	34	\$680.00
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### Key Areas

- Willow Wattle Install
  - 120 feet willow wattle installed
  - An additional 20 feet were installed post project with extra supplies.
- Runoff Area
  - A low area next to the dock

### Willow Wattle Install



### Runoff Area





# Clearwater Lake Community Runoff Mini-Grant, 2018

## Johnson Project

### Project Summary

Planting Area Type	SQ Feet Planted	Plants
Emergent in Willow / Wet Meadow	24	24
Upland	228	228
<b>Total Planting</b>	<b>252</b>	<b>252</b>

Stabilization	Square Feet	Linear Feet
Willow Wattle		12 Linear Feet

Runoff Reduction		6,952 Square Feet
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In-Kind Hours	32	\$640.00
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### Key Areas

- Willow Wattle Install
  - 12' x 2' of willow wattle installed
- Runoff Area
  - 36' x 3' of bank planted to capture and filter runoff, stabilize the bank
  - 20' x 6' of upland area planted in runoff area

### Willow Wattle Install

**Before**



**After**





# Clearwater Lake Community Runoff Mini-Grant, 2018

## Runoff Area

**Before**



**After**



## Upland Planting



# Clearwater Lake Community Runoff Mini-Grant, 2018

## Peterson Project

### Project Summary

Planting Area Type	SQ Feet Planted	Plants
Emergent in Willow / Wet Meadow	440	318
Upland	540	287
Rain Gardens	792	132
Shrubs and Woody Vegetation		25
<b>Total Planting</b>	<b>1,772</b>	<b>762</b>

Stabilization	Square Feet	Linear Feet
Willow Wattle		56 Linear Feet 100 Linear Feet (preproject)
Coir and C700 Stabilization Steps		36 Linear Feet
Curlex Erosion Blanket	60 Square Feet	

<b>Rain Gardens</b>		3
<b>Slope Checks</b>		3
<b>Vegetated Swales</b>		1
<b>Runoff Reduction</b>		6,234 Square Feet

<b>In-Kind Hours</b>	51	\$1,020
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### Key Areas

- Rain Gardens
  - 3 Rain Gardens install on south and south east side of house.
  - 3 slope checks were installed
  - Large upland area that had major erosion damage was planted
- Willow Wattle Install
  - 56 feet of willow wattle installed in 2018
  - 100 feet installed prior to project kickoff and not paid for with Grant Funds. This was done to understand the type of project and help decide if a grant should be applied for.
- Restructured Damaged Kayak Access
  - Damaged ice ridge restructured with 3 steps 12' x 1' feet of stabilization with Coir Logs for access to lake for kayak launching
  - 12' x 5' foot section restructured with Curlex erosion blanket
- Vegetated Swale behind a Historic Ice Ridge
  - An area behind a historic ice ridge that drains into a fresh spring break in the ridge was planted to slow runoff
- Damaged Banks
  - There was more ice damage over the winter and the area would need an erosion blank installed before planting. The contractor is not available until next year. This part of the project will not be paid with grant funds.



# Clearwater Lake Community Runoff Mini-Grant, 2018

## Rain Garden 1 with Large Eroded Slope

**Before**



**After**



**View from Bottom of slope**



**View from Top of slope**





# Clearwater Lake Community Runoff Mini-Grant, 2018

## Rain Gardens 2 and 3



## Willow Wattle Install



**Before**



**After**



# Clearwater Lake Community Runoff Mini-Grant, 2018

## Restructured Damaged Kayak Access

**Before**



**After**





# Clearwater Lake Community Runoff Mini-Grant, 2018

## Vegetated Swale behind a Historic Ice Ridge

**Before**



**After**





# Clearwater Lake Community Runoff Mini-Grant, 2018

## Swanson Project

### Project Summary

Planting Area Type	SQ Feet Planted	Plants
Emergent in Willow / Wet Meadow	1800	1200
Upland	560	360
<b>Total Planting</b>	<b>2,360</b>	<b>1,560</b>

Stabilization	Square Feet	Linear Feet
Bio-Engineered Erosion Blanket	1800 Square Feet	

<b>Runoff Reduction</b>		46,440 Square Feet
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<b>In-Kind Hours</b>	73	\$1,460
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### Key Areas

- Rip Rap Area
  - 150 feet by 12 feet bank re-stabilized using Curlex and Cocomat 700 blankets
- North and South Upland Areas
  - 560 square feet of upland terraces were planted behind the restabilized rip rap area.
- Upland Slope planting
  - 1200 square feet was postponed to next summer. This part of the project will not be paid with grant funds.

### Rip Rap Area

#### Before



#### After





# Clearwater Lake Community Runoff Mini-Grant, 2018

## South and North Upland buffers

**After**





# Clearwater Lake Community Runoff Mini-Grant, 2018

## Vandenberghe Project

### Project Summary

Planting Area Type	SQ Feet Planted	Plants
Emergent in Willow / Wet Meadow	684	588
Upland	210	180
<b>Total Planting</b>	<b>894</b>	<b>768</b>

Stabilization	Square Feet	Linear Feet
Bio-Engineered Erosion Blanket	684 Square Feet	

<b>Runoff Reduction</b>		46,440 Square Feet
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<b>In-Kind Hours</b>	33	\$660
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### Key Areas

- Upland Shady Buffer
  - Created a 15' x 14' upland shady buffer above shoreline
- Damaged Rip Rap Area
  - 50' x 6' of ice damaged riprap pulled lake ward and re-stabilized
  - 64' x 6' of ice damaged riprap pulled lake ward and re-stabilized

### Upland Shady Buffer





# Clearwater Lake Community Runoff Mini-Grant, 2018

## Ice Damaged Riprap Area

**Before**



**Ice Push**



**After**





# Clearwater Lake Community Runoff Mini-Grant, 2018

## Bonus Project – Park Estates Townhouses

### Project Summary

Planting Area Type	SQ Feet Planted	Plants
Emergent in Willow / Wet Meadow		60
Total Planting		60

Stabilization	Square Feet	Linear Feet
Willow Wattle		200 Linear Feet
Total Stabilization		200 Linear Feet

