

# Wet and Wild:

DIY Floating Treatment Wetlands  
for Homeowners

“Hot chocolate colored.  
Opaque.  
And occasionally smelly.”

“What we CAN do about our water,”  
*Gulfshore Life Magazine, June 2019*

# Seagull Estates “West Lake”



# Sanibel Communities for Clean Water

City of Sanibel

Sanibel-Captiva Conservation Foundation  
Marine Lab

# Sanibel Communities for Clean Water

Sampling of inland water bodies on Sanibel,  
with data posted in 2016 and 2018

Water bodies' health scored based upon levels  
of inorganic nitrogen, orthophosphate,  
chlorophyll, and Trophic State Index (TSI)

# Seagull Estates “West Lake”

Score (2016): 16 / 78



Elevated inorganic nitrogen and orthophosphate = **excess nutrients.**

Elevated chlorophyll = indicator of **algal/plant biomass.**

Elevated TSI = **high biological activity.**

# Floating Treatment Wetlands

Floating substrate supports aquatic plants

Growing plant roots sequester excess nutrients

Plants replaced periodically as they mature

Removed plants can be incorporated into landscape

# Beemat

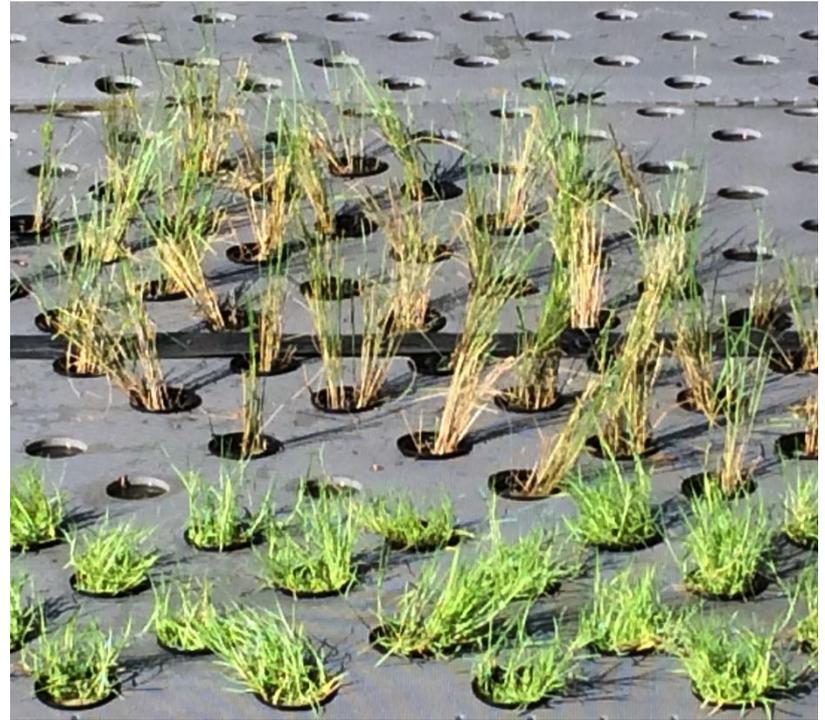
Commercial product

Foam mat, approximately 8x10 feet

Pre-cut holes for 4-inch aquatic plant pots

Supported approximately 200 plants

# Beemat



# Beemat

Expensive to purchase and replant

Plants replaced roughly every 6-12 months

Replanting is labor-intensive

# DIY Floating Treatment Wetlands

The bottom of the slide features a decorative graphic consisting of several overlapping, wavy lines in various shades of blue and white, creating a sense of movement and depth.

# DIY Floating Treatment Wetlands

Foam flooring mats

Aquatic plant baskets

Coir (coconut fiber) sheet

Cable ties

# DIY Floating Treatment Wetlands

Electric knife

Hollow punch drill bits

Power drill

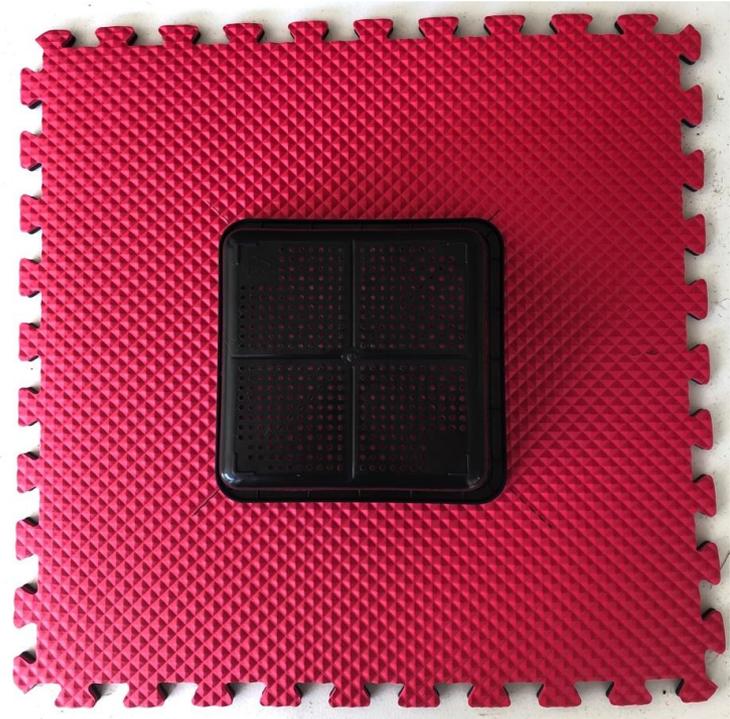
Nylon rope

Anchor weight (if needed)

# DIY Floating Treatment Wetlands

Mark the center of the mat.

Mark the basket dimensions.



# DIY Floating Treatment Wetlands

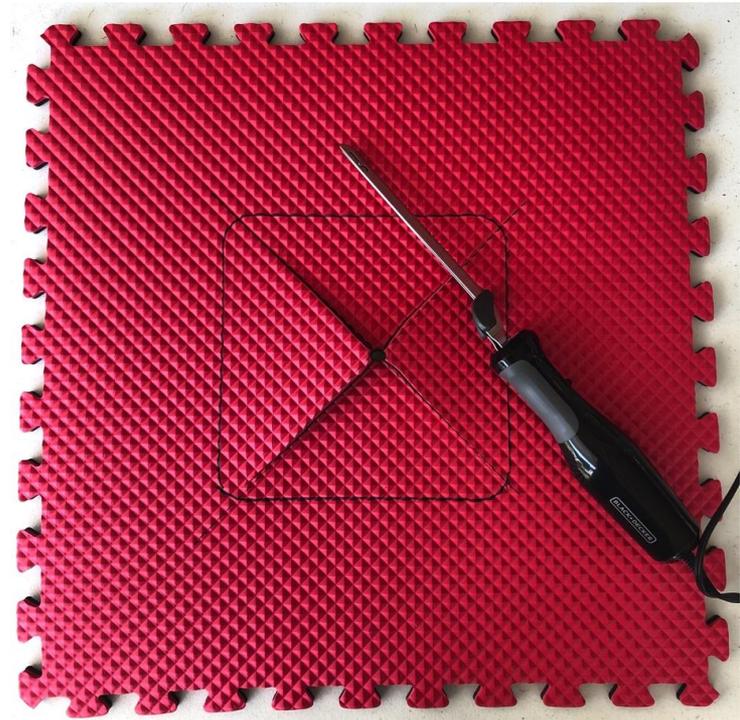
Holes are created with hollow punch bits and a power drill.



# DIY Floating Treatment Wetlands

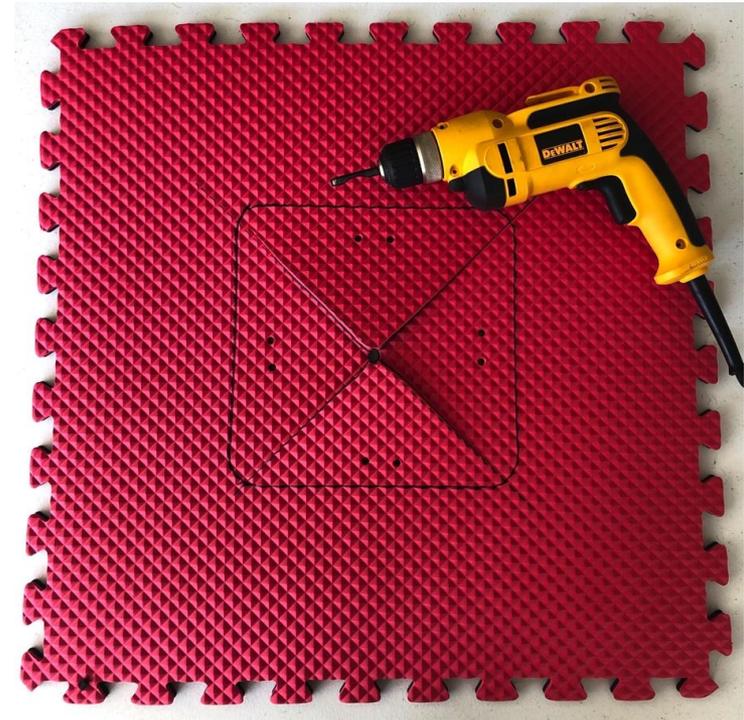
Create a center hole in the mat.

With the electric knife, cut an “X” slightly smaller than the basket dimensions.



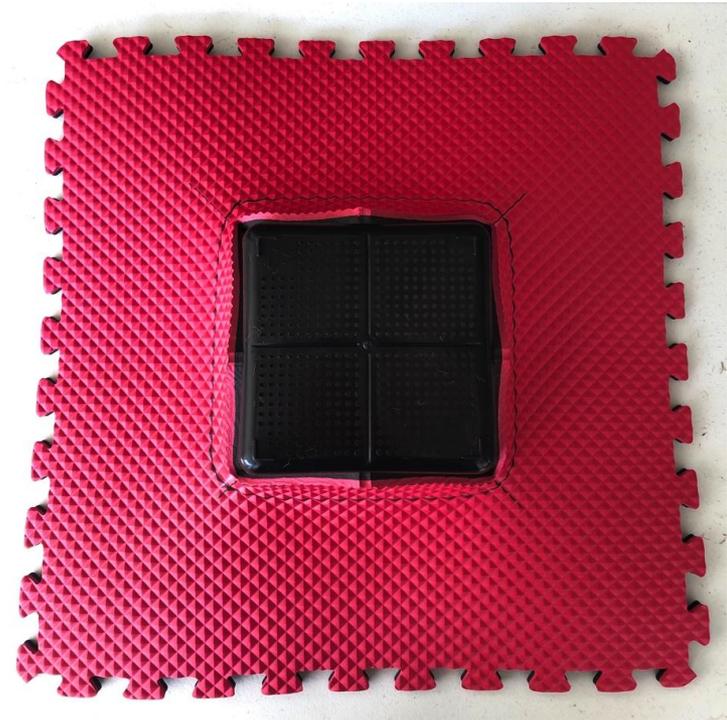
# DIY Floating Treatment Wetlands

Use a small hollow punch bit to drill two holes, about 1 ½ inches apart, in each of the flaps created by the “X” cut.



# DIY Floating Treatment Wetlands

Ease an aquatic plant basket through the “X” until the rim makes good contact with the mat surface.



# DIY Floating Treatment Wetlands

Secure the basket with an 8-inch cable tie on each side, threading it through the holes.



# DIY Floating Treatment Wetlands

Using the electric knife, make deep cuts in the coir sheet.



# DIY Floating Treatment Wetlands

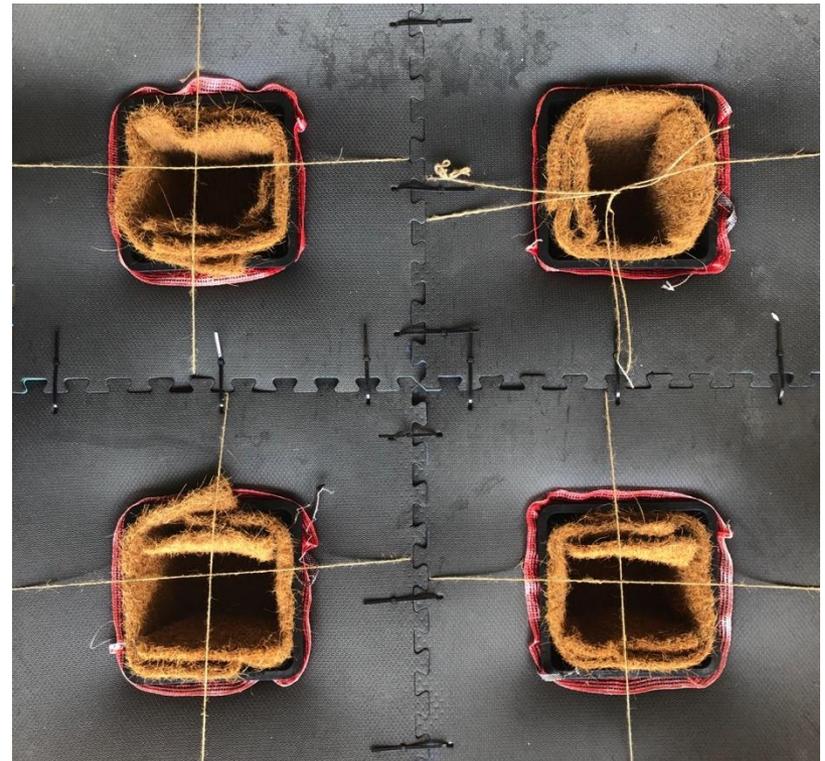
Line the interior of the plant basket with the coir sheet, overlaying flaps.



# DIY Floating Treatment Wetlands

To join mat units, drill three evenly-spaced holes along each joining edge.

Thread an 11-inch cable tie through each pair of holes and secure firmly.



# DIY Floating Treatment Wetlands

Place one or more plants in each basket, using firmly-tamped soil.

Taller plants can be anchored across the top of the basket with cable ties.



# DIY Floating Treatment Wetlands

Improved plant survival

Easier maintenance and replanting

Less expensive to create and plant

# DIY Floating Treatment Wetlands

## Materials Price List:

Mats, pack of 8, \$22 (Sam's Club)

Baskets, \$2.60 each (Home Depot)

Coir, 20ft. x 36", \$48 (Amazon)

8-inch cable ties, \$0.02 each

11-inch cable ties, \$0.06 each

14-inch cable ties, \$0.15 each

Electric knife, \$18 (Amazon)

Hollow punch bits, \$17 (Amazon)

Nylon rope, \$13/100ft (Home Depot)

# DIY Floating Treatment Wetlands

## Materials Price List:

Mats, pack of 8, \$22 (Sam's Club)  
Baskets, \$2.60 each (Home Depot)  
Coir, 20ft. x 36", \$48 (Amazon)  
8-inch cable ties, \$0.02 each  
11-inch cable ties, \$0.06 each  
14-inch cable ties, \$0.15 each  
Electric knife, \$18 (Amazon)  
Hollow punch bits, \$17 (Amazon)  
Nylon rope, \$13/100ft (Home Depot)

## Price of a 4-unit mat:

Mats	\$11.00
Plant baskets	\$10.40
Coir sheet	\$7.40
8-inch cable ties	\$0.32
11-inch cable ties	\$0.72
<b>Total</b>	<b>\$29.84</b>

# DIY Floating Treatment Wetlands

The original Beemat was modified to accommodate 18 large aquatic plant baskets.



# Seagull Estates “West Lake”

Score (2018): 20 / 78



Improvement in **levels of nitrogen and phosphorus.**

Improved **water clarity** and **markedly decreased odor.**

Increased numbers of **fish, turtles, and waterfowl.**

# Seagull Estates “West Lake”

Score (2018): 20 / 78

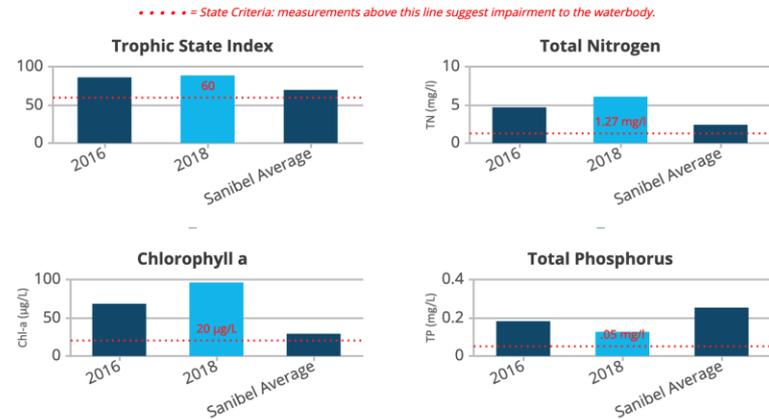


Nutrients	2016	2018
<a href="#"><u>IN</u></a>	0.035	0.026
<a href="#"><u>TN</u></a>	4.67	6.1
<a href="#"><u>OP</u></a>	0.085	0.052
<a href="#"><u>TP</u></a>	0.18	0.13
<a href="#"><u>Chl-a</u></a>	68	95.8
<a href="#"><u>TSI</u></a>	86.5	88.1
<a href="#"><u>Salinity</u></a>	3.3	4.5
<a href="#"><u>DO</u></a>	5.5	6.8

Source: [sanibelcleanwater.org](http://sanibelcleanwater.org)

# Seagull Estates “West Lake”

Score (2018): 20 / 78



Source: sanibelcleanwater.org

# Seagull Estates “West Lake”

Before



After



# DIY Floating Treatment Wetlands



# DIY Floating Treatment Wetlands



Thank you.

