



Canal Current

A wave of information for Cape Coral's Canalwatch volunteers

Newsletter: 2nd Quarter 2021

Environmental News

The 'buzz' on Beemats Floating Islands

You have probably heard the most important factor in real estate is location. The border of our waterbodies is prime real estate. Natural vegetated shorelines are beneficial for habitat and water quality. They support 9 times more fish and 5 times more birds. Plants associated with this area slow down water flowing into the canal, decreasing sediment and removing nutrients. The plants at the water edge are typically weed-whacked or sprayed, so shoreline plantings gradually decline. In many cases, this shoreline is replaced by a seawall. If no shoreline vegetation is present, more nutrients are available for excessive aquatic vegetation and algae growth. Martin County found \$1 worth of fertilizer costs between \$1,000 and \$10,000 to remove from waterways. One way to provide beneficial ecosystem functions is with Beemats. These are floating islands with cutouts for potted plants, which can be used in freshwater or saltwater. They are constructed of soft, flexible materials, so boat impacts are non-damaging. The mats float but are anchored in place, so pose no risk of stormwater obstruction. Beemats work as a shoreline alternative while addressing shoreline constraints



such as seawalls. The plantings can be catered towards height, color or wildlife attraction, while incorporating species known for superior nutrient uptake. Plants chosen include pickerelweed, duck potato, canna lily, blue flag iris, rushes & seashore paspalum. Previous studies have shown reductions in nitrogen up to 12% and phosphorus up to 17%.

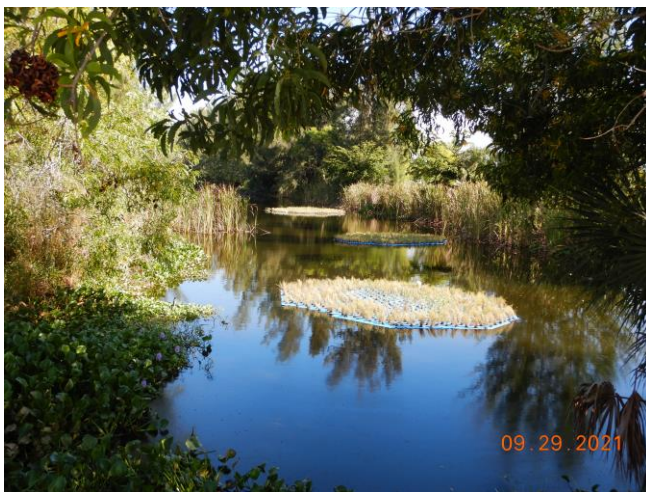
The floating islands were installed at the end of September in 5 freshwater sites, 4 of which are adjacent to saltwater systems. City staff will assess the amount of nutrients removed, wildlife use, predation on the plants and maintenance costs. If successful, the use of floating islands may be expanded, including in saltwater areas.

Questions? Comments? Let us know!

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Photos: Kraig Hankins
 Top left: Map of Beemats locations.
 Top right: Wetland plants ready for planting.
 Center left: Beemats at Veterans and SW 20th Ave.
 Center right: Beemat assembly at Reflection Park pond.
 Bottom: Beemats at Veterans Pkwy and Kamal Pkwy.

Previous page: Beemats at Veterans Pkwy and Kamal Pkwy.

Native Plant Profile:

Red Maple *Acer rubrum*

The red maple, sometime referred to as the swamp maple, is a native tree to the Southeast United States including Florida. One of the few deciduous trees found in south Florida, this fast-growing tree can reach a height of 75 feet. However, landscape varieties usually don't reach that height due to the maple's preference to wetter soils, hence the name "swamp maple". While red maples may become more majestic due to their size in zones north of USDA zone 9, dryer conditions and infrequent irrigation result in a more gradual growth rate. The density of wood in these trees make them an ideal tree for storm scaping. Healthy maples can withstand relatively high winds from tropical storms and hurricanes. Other notable maple trees are the silver maple (*Acer saccharinum*), boxelder (*Acer negundo*), and the sugar maple (*Acer saccharum*) of which maple syrup is produced from its sweet sap. Since maples are deciduous trees, leaves begin to turn red in the fall (although often delayed in south Florida) and drop during the winter months. In spring, budding begins for emerging leaves and diminutive red flowers. Once seeds begin to form, this is a sign that spring is at its peak and the seeds of red maples often whirl like helicopters to the ground. An adaptation to allow the seed to be transported farther away than the mother tree. The seeds are also a good food source for squirrels and birds.



Above: Red maple (in foreground) used in a retention pond planting.

Photo: Harry Phillips

Right: Red maple in fall colors.

Photo: Gitta Hasing, UF/IFAS



	bd = below detection		benchmark numbers: Marked data are in the highest 20% of values found by Hand et. al, 1988.																
	April 2021						May 2021						June 2021						
	NO2	NO3	NH3	TKN	T-N	T-PO4	NO2	NO3	NH3	TKN	T-N	T-PO4	NO2	NO3	NH3	TKN	T-N	T-PO4	Avg
	<1.0	<1.0	none set	<2.0	<0.46		<1.0	<1.0	none set	<2.0	<0.46		<1.0	<1.0	none set	<2.0	<0.46		TSI
2B	0.025	0.05	0.4	0.5	0.5	0.10	0.025	0.05	0.2	0.6	0.6	0.10							39.17
3F	0.025	0.05	0.4	0.5	0.5	0.05	0.025	0.05	0.3	0.3	0.3	0.10							40.24
4-2A	0.025	0.05	0.7	0.7	0.7	0.10	0.025	0.05	0.3	0.4	0.4	0.10							43.40
5D	0.025	0.05	0.2	0.6	0.6	0.10							0.025	0.05	0.1	0.5	0.5	0.10	46.63
6F	0.025	0.05	0.2	0.8	0.8	0.10	0.025	0.05	0.2	1.0	1	0.10	0.025	0.4	0.1	0.9	1.3	0.38	55.12
7E	0.025	0.05	0.3	0.6	0.6	0.10	0.025	0.05	0.2	0.9	0.9	0.10	0.025	0.1	0.1	0.5	0.6	0.10	45.15
9H	0.025	0.05	0.3	0.7	0.7	0.10	0.025	0.05	0.2	1.1	1.1	0.10	0.025	0.05	0.05	0.5	0.5	0.10	52.28
12H							0.025	0.05	0.2	0.4	0.4	0.10							37.86
13B	0.025	0.05	0.3	0.8	0.8	0.11	0.025	0.05	0.3	0.6	0.6	0.10	0.025	0.05	0.1	0.5	0.5	0.10	47.56
16E	0.025	0.05	0.2	0.7	0.7	0.05													51.65
16H	0.025	0.05	0.2	0.8	0.8	0.10													51.58
16I	0.025	0.05	0.3	0.7	0.7	0.05							0.025	0.05	0.1	0.5	0.5	0.05	50.96
16K	0.025	0.05	0.4	0.5	0.5	0.05													39.52
18K	0.025	0.05	0.1	0.9	0.9	0.10													60.07
18L	0.025	0.05	0.2	0.9	0.9	0.14	0.025	0.05	0.2	0.7	0.7	0.12	0.025	0.1	0.1	0.5	0.6	0.10	52.23
18M	0.025	0.05	0.2	0.6	0.6	0.10							0.025	0.05	0.1	0.5	0.5	0.10	61.34
19D													0.025	0.1	0.05	0.7	0.8	0.12	51.58
21D	0.025	0.05	0.4	0.6	0.6	0.10	0.025	0.05	0.2	0.5	0.5	0.10	0.025	0.05	0.1	0.7	0.7	0.10	46.16
24D	0.025	0.05	0.4	0.6	0.6	0.05	0.025	0.05	0.3	0.6	0.6	0.05							50.12
30D	0.025	0.05	1.2	0.7	0.7	0.05													51.65
41B	0.025	0.05	0.3	0.7	0.7	0.05	0.025	0.05	0.3	0.4	0.4	0.05	0.025	0.05	0.2	0.6	0.6	0.05	53.16
44A	0.025	0.05	0.7	0.6	0.6	0.10	0.025	0.05	0.3	0.6	0.6	0.10	0.025	0.05	0.1	0.6	0.6	0.10	48.69

48A													0.025	0.05	0.2	0.6	0.6	0.05	54.82
58I	0.025	0.05	0.3	0.6	0.6	0.05	0.025	0.05	0.2	0.2	0.2	0.05							42.22
59C	0.025	0.05	0.2	0.5	0.5	0.05							0.025	0.1	0.1	0.6	0.7	0.10	39.52
64H	0.025	0.05	0.3	0.4	0.4	0.10	0.025	0.05	0.2	0.8	0.8	0.10	0.025	0.1	0.1	0.5	0.6	0.10	44.00
69A	0.025	0.05	0.4	1.3	1.3	0.05													39.52
71B	0.025	0.05	0.2	0.8	0.8	0.10							0.025	0.05	0.1	0.7	0.7	0.10	29.47
72C							0.025	0.05	0.2	0.8	0.8	0.05	0.025	0.05	0.1	0.7	0.7	0.11	53.29
74C	0.025	0.05	0.2	0.7	0.7	0.10													48.94
82A	0.025	0.05	0.2	1.1	1.1	0.05	0.025	0.05	0.3	0.8	0.8	0.05	0.025	0.05	0.4	0.8	0.8	0.05	59.15
96A	0.025	0.05	0.5	0.8	0.8	0.05	0.025	0.05	0.2	0.6	0.6	0.10							49.43
Median	0.05	0.30	0.70	0.70	0.70	0.10	0.05	0.20	0.60	0.60	0.10		0.05	0.10	0.60	0.60	0.10		49.19
Max	0.05	1.20	1.30	1.30	1.30	0.14	0.05	0.30	1.10	1.10	0.12		0.40	0.40	0.90	1.30	0.38		61.34

NO2 = Nitrite (inorganic)	TKN = Total Kjeldahl Nitrogen (organic + NH4)	High levels of nutrients in our canals can indicate the presence of fertilizer runoff or effluent from wastewater or septic systems. Excessive nutrients can lead to nuisance plant growth and algal blooms.
NO3 = Nitrate (inorganic)	TN = Total Nitrogen (inorganic + organic)	
NH3 = Ammonia (inorganic)	TP04 = Total Phosphate	

All nutrient concentrations shown in mg/L

TSI = Trophic State Index, a quick indicator of canal health. 32 sites this quarter scored as GOOD (<60). Two sites scored FAIR (60-70), and zero scored POOR (>70). Water quality remained consistent (GOOD) with last quarter and this is attributed to the lack of rainfall during the course of 2nd quarter. Very little rain was reported on the April, May data sheets so the dry season was indeed dry. By the mid part of June rainfall increased. While no reports of blue green algae occurred in Cape Coral's canals, a significant filamentous algae bloom occurred in the Rubicon Canal and adjacent canals beginning in late spring and persisted thru the summer.

For up to date City of Cape Environmental Resources Division water quality data visit https://www.capecoral.net/departments/public_works/quarterly_water_quality_reports.php



Upcoming Events:

Guided Nature Preserve Hikes

Join an expert on Florida environments in one of Cape Coral's nature preserves. Eco Park (Four Mile Eco Preserve) and Rotary Park Environmental Center are two of the preserves that Cape Coral offers. For more information, please call 239-549-4606 for more information. Available dates, 12/8 and 12/22. Tours begin at 9:00 am and are \$5 per person.

Florida Friendly Landscaping Classes

Interested in making your landscape more environmentally friendly. Learn what Florida friendly plants to use and where, create a beautiful and eco-friendly yard, conserve water and have less impact on the environment. This class is FREE, but please RSVP on Eventbrite with The Lee County Extension Office.

For registration information, please call 239-549-4606. Classes will be held on 1/7/2022 and 2/8/2022 from 1:00 to 3:00 pm.

Gardening for Butterflies

Learn all about local and common butterflies and what plants to include in your landscape to best attract them. A tour of the Tom Allen Butterfly House and Gardens is also a part of this class.

\$15 per household. 2/4/2022 from 1:00 to 3:00 pm. For more information or registration, please call 239-549-4606.

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C/O Canalwatch Volunteer Program
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