Canal Current

A wave of information for Cape Coral's Canalwatch volunteers

Newsletter: 4th Quarter 2020

Environmental News

Artificial Reefs

Artificial reefs, whether an unintentional shipwreck or an intentional man-made structure, have been around for centuries. The idea is simple; sink an assemblage of hard materials to attract marine life in areas that would otherwise be void of reef substrate.

Rip-Rap in a canal, encrusted with small bivalves.

Fundamentally, any materials thrown into a marine environment will attract colonizing organisms. Either natural substance, such as rock or wood, or man-made elements, such as metals or plastics, is adequate to provide habitat for marine life.

However, there are serious concerns about certain artificial reefs and their long-term effects. This includes the problem of micro-plastics and other marine debris finding its way in coastal and ocean habitats and within the food web. Boating navigation issues with unpermitted or unauthorized artificial reefs. As well as impacts on protected species that have certain habitat requirements. An example being the federally endangered Smalltooth Sawfish, may prohibit the use of artificial habitats in many of Cape Coral's saltwater canals and surrounding coastal areas because of the species preference for shallow, sandy expanses.

Shopping cart reef?

As mentioned above, interference with navigation of boats is also a concern. The Florida Department of Environmental Protection (DEP) regulates the placement of artificial mini reefs, which are required to be positioned beneath a dock pier with pilings to ensure it stays in place and does not affect navigation.

Currently artificial reef construction can only be completed by state or local coastal governments (County or City) in authorized permitted areas. The Army Corps of Engineers (ACOE) does not issue artificial reef permits directly to the general public due to long-term liability coverage requirements.

Any placement of artificial reef materials outside a valid ACOE artificial reef permitted areas is a violation of the ACOE permit and may constitute illegal ocean dumping.

ACOE Permitting Requirements:
- Minimum vertical clearance & buffer areas
- Deployment methodologies
- Survey areas (Pre & Post)
- Reef material must be effective for a minimum of a 25-year storm event
- Structure must be stable & not move or break up with resultant loss of habitat
- The Permittee shall be responsible for the ownership, maintenance & liability of the project site.

Allowable materials for artificial reef construction include concrete material, limestone boulders and heavy- gauge steel (1/4-inch-thick minimum). Materials for artificial reef use are determined by ACOE and DEP permit criteria. Deployed material is required to be heavy, stable, durable, and non-polluting and provided long-term habitat enhancement. Prohibited items include tires, fiberglass boats, plastic, automobiles, and appliances.

In Cape Coral we follow Lee County and the state of Florida's permitting and regulations pertaining to Under-dock Reefs. For information on permitting of an under-dock reef in Cape Coral please contact Lesli Haynes at Lee County Natural Resources at 239-533-8566.

Questions? Comments? Let us know!

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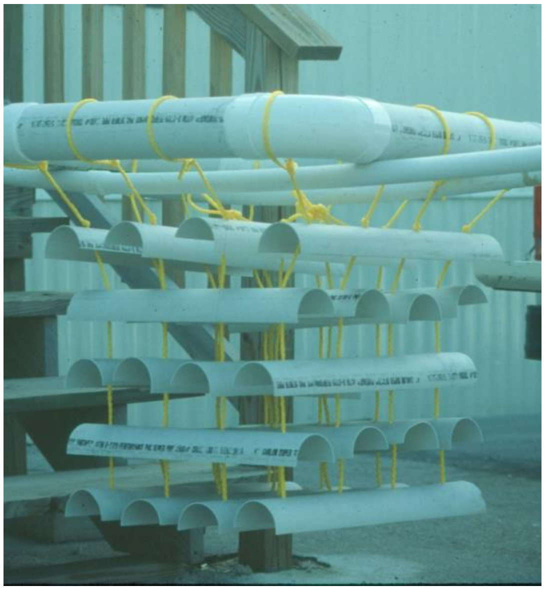


Above: Previous designs relied on PVC plastic.
Below: Concrete reef balls. (Photo: Reef Ball Foundation.

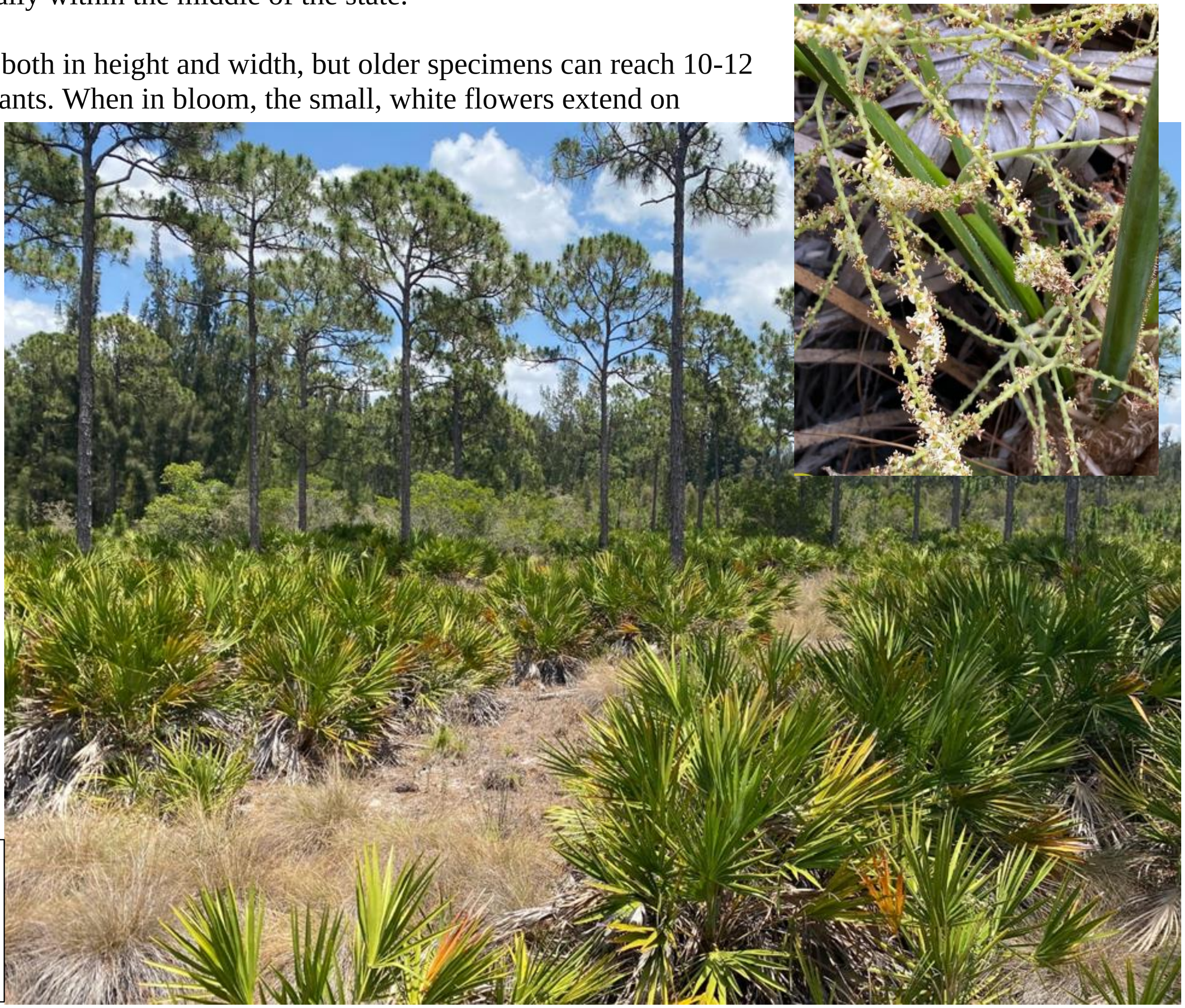
Native Plant Profile:

Saw Palmetto

The saw palmetto is fittingly named because of the saw-like, serrated spines along the palm leaf stalk or petiole. Like other palms, the saw palmetto has fan-shaped leaves, but unlike many palms it grows in horizontal branches as opposed to a single trunk tree. The palm leaves are typically green but there is a silvery-white variety that is sometimes seen in its environment. Saw palmettos are often found in and among pine trees, providing the low understory for those lofty trees in pine flatwoods. It is also a primary plant of Florida scrub habitats, accompanying smaller oak species and the Florida rosemary, in these dryer sandy areas typically within the middle of the state.

A single saw palmetto often grows to about 6 feet both in height and width, but older specimens can reach 10-12 ft. Especially if trying out compete neighboring plants. When in bloom, the small, white flowers extend on "feather" plume-like stalks that emerge from the palm leaf axils. These flowers are a favorite of bees, butterflies and other pollinators, giving way to fruit that are yellow orange to black when ripe. The fruits are edible, though their flavor has been deemed "ripe cheese steeped in tobacco" and may give pause to those wanting to sample these palm dates.

If you dare try this unique flavored fruit, be cautious where you harvest, as many saw palmettos and their fruit are protected in the park or preserve setting. Because of its pharmacological properties in certain cancer medicines, harvesting saw palmetto berries in Florida requires a permit from the Florida Department of Agriculture and Consumer Services (FDACS).



Saw palmetto among slash pines
Upper Right: Saw palmetto flowers.
Photos: Harry Phillips

bd = below detection | benchmark numbers: Marked data are in the highest 20% of values found by Hand et. al, 1988.

	January 2021						February 2021						March 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	0.05	0.11	0.1	0.5	0.6	0.05							0.05	0.05	0.05	0.2	0.2	0.05	38.96
3F							0.05	0.05	0.05	0.2	0.2	0.05	0.05	0.05	0.05	0.2	0.2	0.05	29.57
5D							0.05	0.05	0.05	0.3	0.3	0.05	0.05	0.05	0.05	0.3	0.3	0.05	32.16
5H	0.05	0.10	0.1	0.5	0.6	0.05													50.12
6F	0.05	0.10	0.1	0.5	0.6	0.10	0.05	0.05	0.05	0.5	0.5	0.05	0.05	0.16	0.05	0.5	0.66	0.11	49.99
7E	0.05	0.12	0.1	0.7	0.8	0.05	0.05	0.05	0.05	0.6	0.6	0.05	0.05	0.05	0.05	0.4	0.4	0.05	43.85
9H	0.05	0.24	0.1	0.7	0.9	0.10	0.05	0.05	0.05	0.5	0.5	0.05	0.05	0.05	0.05	0.4	0.4	0.10	46.98
12H	0.05	0.14	0.1	0.6	0.7	0.10	0.05	0.05	0.05	0.5	0.5	0.05	0.05	0.05	0.05	0.4	0.4	0.05	45.41
15B							0.05	0.10	0.05	0.5	0.6	0.05							24.42
16E	0.05	0.05	0.1	0.6	0.6	0.05	0.05	0.05	0.05	0.4	0.4	0.05	0.05	0.05	0.05	0.4	0.4	0.05	41.95
16H	0.05	0.05	0.1	0.5	0.5	0.05													48.32
16I	0.05	0.05	0.1	0.3	0.3	0.05	0.05	0.05	0.05	0.2	0.2	0.05	0.05	0.05	0.05	0.3	0.3	0.05	29.48
16J													0.05	0.05	0.05	0.3	0.3	0.05	24.42
18K	0.05	0.05	0.1	0.6	0.6	0.05	0.05	0.05	0.05	0.3	0.3	0.05	0.05	0.05	0.1	0.5	0.5	0.10	52.4
18L	0.05	0.10	0.1	0.9	1.0	0.10	0.05	0.05	0.05	0.3	0.3	0.05	0.05	0.05	0.05	0.6	0.6	0.10	46.79
18M	0.05	0.05	0.1	0.6	0.6	0.10	0.05	0.05	0.05	0.6	0.6	0.10	0.05	0.05	0.1	0.6	0.6	0.10	56.47
21D	0.05	0.17	0.1	0.7	0.9	0.10	0.05	0.05	0.05	0.5	0.5	0.05	0.05	0.05	0.05	0.4	0.4	0.10	51.53
21I	0.05	0.26	0.2	0.7	1.0	0.05	0.05	0.10	0.05	0.5	0.6	0.05							52.45
24D	0.05	0.05	0.1	0.5	0.5	0.05	0.05	0.10	0.05	1.4	1.5	0.05	0.05	0.05	0.05	0.5	0.5	0.05	51.95
24H	0.05	0.10	0.1	0.5	0.6	0.05													24.42
30D	0.05	0.05	0.1	0.8	0.8	0.05	0.05	0.10	0.05	0.4	0.5	0.05	0.05	0.05	0.05	0.3	0.3	0.05	46.76
41B							0.05	0.05	0.05	0.4	0.4	0.05	0.05	0.05	0.1	0.4	0.4	0.05	37.86
44A							0.05	0.10	0.2	0.5	0.6	0.10	0.05	0.05	0.05	0.3	0.3	0.10	39.02

45D	0.05	0.10	0.1	0.6	0.7	0.05	0.05	0.05	0.05	0.4	0.4	0.05	0.05	0.05	0.05	0.3	0.3	0.05	49.91
58I	0.05	0.10	0.1	0.4	0.5	0.05	0.05	0.05	0.05	0.5	0.5	0.10	0.05	0.05	0.1	0.2	0.2	0.05	41.15
59C							0.05	0.05	0.05	0.3	0.3	0.05	0.05	0.05	0.05	0.1	0.1	0.05	32.29
64H													0.05	0.05	0.05	0.1	0.1	0.10	10.41
69A							0.05	0.05	0.1	0.9	0.9	0.10	0.05	0.05	0.2	0.8	0.8	0.10	52.74
71B	0.05	0.05	0.1	0.7	0.7	0.05	0.05	0.05	0.1	0.8	0.8	0.10	0.05	0.05	0.05	0.6	0.6	0.05	61.47
72C	0.05	0.05	0.1	0.5	0.5	0.05	0.05	0.05	0.05	0.5	0.5	0.05	0.05	0.05	0.05	0.1	0.1	0.05	42.99
74C	0.05	0.05	0.1	0.4	0.4	0.10	0.05	0.05	0.05	0.5	0.5	0.10	0.05	0.05	0.05	0.3	0.3	0.10	37.43
82A	0.05	0.10	0.1	0.6	0.7	0.05	0.05	0.05	0.1	0.6	0.6	0.05	0.05	0.05	0.05	0.3	0.3	0.05	52.37
96A							0.05	0.05	0.05	0.4	0.4	0.05	0.05	0.05	0.05	0.4	0.4	0.05	48.11
Median		**0.10**	**0.05**	**0.60**	**0.60**	**0.05**		**0.05**	**0.05**	**0.50**	**0.50**	**0.05**		**0.05**	**0.05**	**0.35**	**0.35**	**0.05**	**45.41**
Max		**0.26**	**0.20**	**0.90**	**1.00**	**0.10**		**0.10**	**0.20**	**1.40**	**1.50**	**0.10**		**0.16**	**0.20**	**0.80**	**0.80**	**0.11**	**61.47**

NO2 = Nitrite (inorganic)	TKN = Total Kjeldahl Nitrogen (organic + NH4)
NO3 = Nitrate (inorganic)	TN = Total Nitrogen (inorganic + organic)
NH3 = Ammonia (inorganic)	TPO4 = Total Phosphate

All nutrient concentrations shown in mg/L

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.

TSI = Trophic State Index, a quick indicator of canal health.
32 sites this quarter scored as GOOD (<60). One site scored FAIR (60-70), and zero scored POOR (>70).
First quarter 2021 water quality rebounded in TSI values for January, because of the onset of the dry season late in 2020. TSI values made a quick turnaround in December largely because of dryer conditions. By the beginning of the new year, many canals began to exhibit excellent water clarity and increased salinities for the tidal areas and continued for the reporting period. This reflects that many sites recorded ideal Secchi disk values (such as greater than depth) for the first quarter months.

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

Upcoming Events:

Introduction to Florida Friendly Landscaping (Virtual)

Join in for the online Zoom class to discuss the nine principles of the Florida Yards and Neighborhoods program to help create a sustainable, environmentally friendly landscape for your home. Friday July 23rd, 6:00 to 8:00pm. Registration can be found here: https://www.eventbrite.com/e/introduction-to-florida-friendly-landscaping-registration-150536537837?aff=ebdssbeac

Rain barrel Workshop (Virtual)

A virtual workshop led by Master Gardeners with UF/IFAS. Upon registration, you will receive a link to a Zoom meeting to be held at 10:00am on Saturday, July 24. The class fee covers the cost of a 55-gallon rain barrel that will be built with the hardware installed, and ready for you to pick up and install at your home. For registration, please call 239-549-4606.

Summer Native Plant Sale

Native, edible and butterfly attracting plants will be on sale at Rotary Park Environmental Center from local vendors. Knowledgeable staff will be available for questions during the event to help you choose the best plant for you and your yard. Saturday, July 24th from 9:00 am to 1:00 pm. Come early for the best selection.

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Environmental Resources Division
C/O Canalwatch Volunteer Program
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