Canal Current

A wave of information for Cape Coral's Canalwatch volunteers

Newsletter: 3rd Quarter 2015

Environmental News

Swales

Swales are engineered water retention areas designed to buffer stormwater runoff, and convey stormwater to nearby canals. Stormwater runoff flows to swales from streets and lawns; the water that is retained in the swale is then "filtered" by the groundcover, such as grass. Swales are periodically re-graded by the City of Cape Coral's Services Division to ensure its functioning properly for flood control. Once re-graded, sod is used to line the swales to prevent sediment erosion. Homeowners can help the city maintain swales by following some common sense tips:

Don't park vehicles in swale areas (also applies to vacant lots). Damaging the vegetation can lead to soil erosion.

Keep the swale and storm drain area free of debris such as trash, leaves or sticks. This could impede flow and create a flood hazard.

Use fertilizers and pesticides sparingly (if at all) in swale areas. The swale is designed to buffer these chemicals, preventing them from reaching the canal waterways.

Never plant anything other than groundcovers in the swale. Trees and shrubs planted in the swale may be removed or damaged when re-grading occurs.

Questions? Comments? Let us know!
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Non-Native Plant profile

Common Lantana

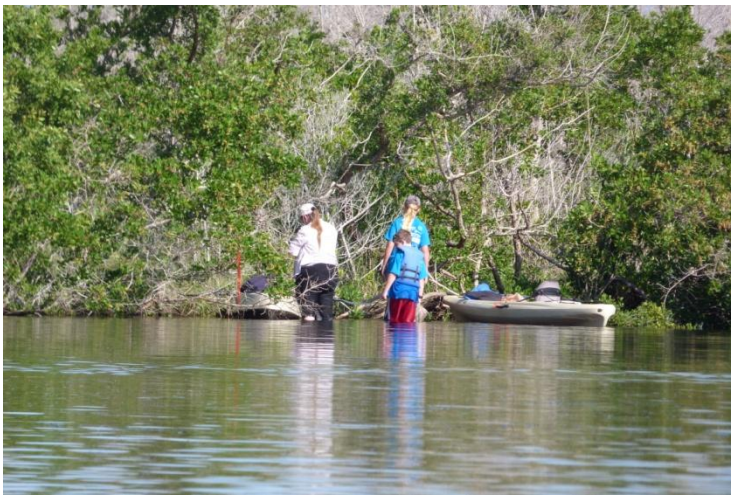
Lantana camara

Non native and invasive: that sums up the profile for this "scary" weed. Lantana camara, native to Central and South America, was introduced to North America, Europe and Asia in the mid-1600's by Dutch explorers. Then it was touted as having medicinal uses, today its continued propagation is for landscape ornamental use. Its spread has come with some unwelcome consequences. In Florida, because it's naturalized, it has become a misrepresentation of the native lantana, *Lantana depressa*. Biologists and ecologists have long known about hybrids between the native and non-native varieties, further worsening the issue. This invasive weed spreads because of its berry like fruit, transported by birds. The fruit and foliage is highly toxic to mammals, and lantana's preference to open sunny areas makes it problematic in pasture lands. Moreover, once established, it often thrives on the fringes of wetlands, hammocks, pine forests and coastal plant communities - areas that are often sensitive or preserved for conservation or wildlife refuges.

1st Annual Mangrove Mania!

On Saturday, September 19th, Over 150 volunteers paddled in kayaks, or was ferried by volunteer boaters to a specified location in Cape Coral's North Spreader Waterway to assist in planting over 10,000 red mangrove seeds. The area was chosen because of recent invasive exotic plant removal. Those invasive plant species (mostly Brazilian pepper and Australian pine) became established in areas where the mangroves were damaged due to Hurricane Charley in 2004.

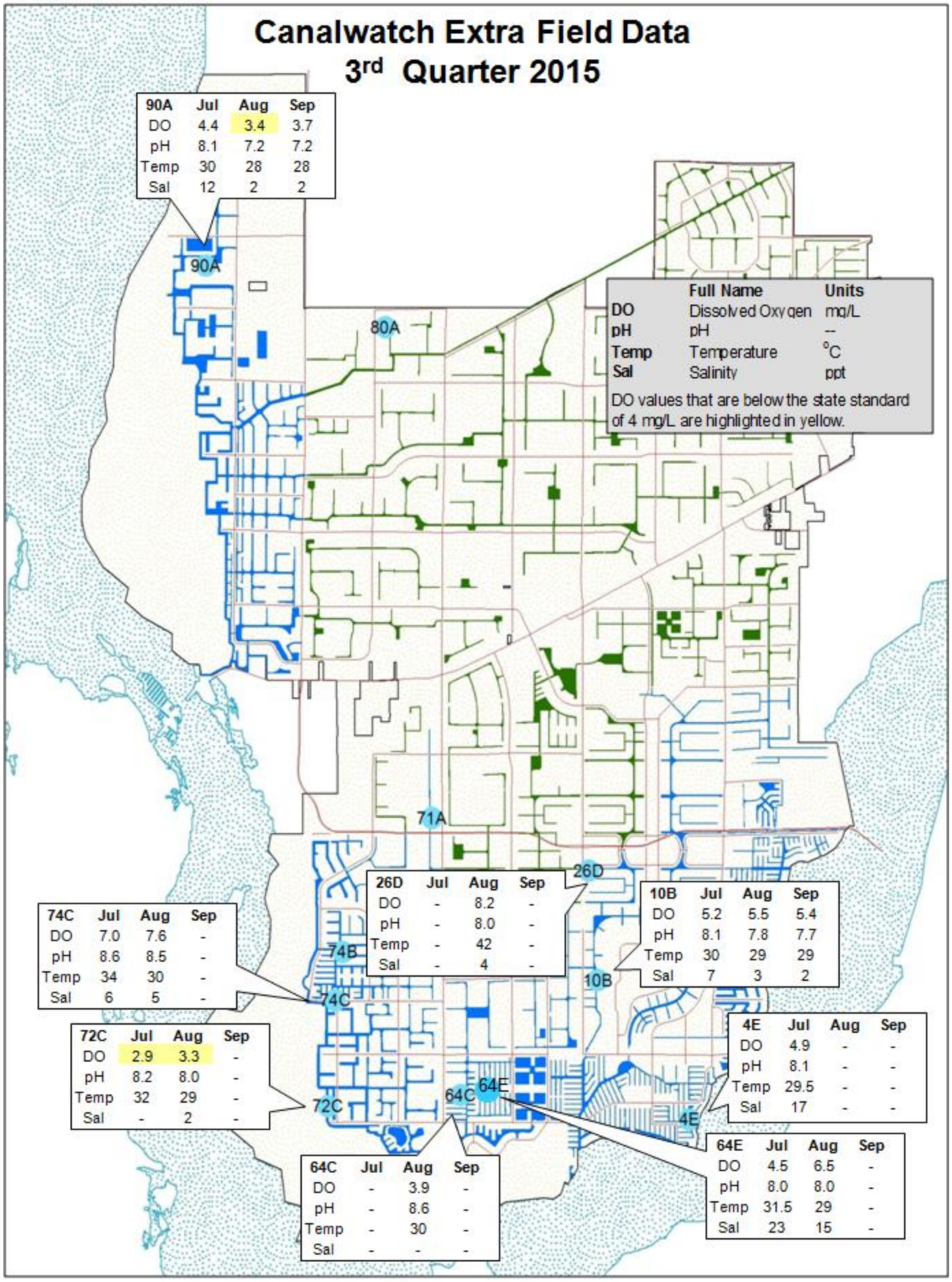
The planting volunteers were also joined by volunteers tasked with litter pick up for the 2015 Coastal Cleanup. Both events were organized by the Keep Lee County Beautiful. Gulf Coast Kayak Club, Captain Jack's Boat Tours, and Cape Coral Police Marine division where there to be sure volunteers had a way to get to the site, and were safe during the event. Many families and school groups and social clubs participated, including 4H of Lee County, and the Northwest Homeowners Association. Dave Scott of Marine Forest Research and Dr. Terry Tatter, a microbiologist from the University of Massachusetts Amherst collected the mangrove seeds prior to the Mangrove Mania event and distributed them to volunteers the day of.



The volunteers were provided lunch from Tropical Smoothie Café after the plantings and litter pick up was complete.
Dave Scott and Dr. Tatter will re-visit the site often over the coming months to measure the success of the project. This is the first annual Mangrove Mania and Keep Lee County Beautiful plans to host more events like these in the coming years, targeting other areas in Lee County where mangrove restoration is needed.

Why are Mangroves Important?

- Mangrove plant communities stabilize the shoreline and buttress coastal development from winds and storm surge associated with tropical weather.
- Mangroves buffer excess nutrients associated with stormwater runoff.
- Red mangrove root structures provide nursery grounds for juvenile fish species. This includes important game species such as snook, tarpon, redfish and mullet.
- Red mangrove root structures also provide substrate for barnacles and oysters to adhere to. Two important shell fish communities for fisheries and also for water quality. Barnacles and oysters filter feed on algae and other particulate matter.
- Mangrove communities provide rookery habitat for a variety of coastal, in-shore and song birds.


Canalwatch Extra Field Data
3rd Quarter 2015
90A Jul Aug Sep
DO 4.4 3.4 3.7
pH 8.1 7.2 7.2
Temp 30 28 28
Sal 12 2 2
90A
80A
Full Name Units
DO Dissolved Oxygen mg/L
pH pH --
Temp Temperature °C
Sal Salinity ppt
DO values that are below the state standard of 4 mg/L are highlighted in yellow.
71A
26D Jul Aug Sep
DO - 8.2 -
pH - 8.0 -
Temp - 42 -
Sal - 4 -
26D
10B Jul Aug Sep
DO 5.2 5.5 5.4
pH 8.1 7.8 7.7
Temp 30 29 29
Sal 7 3 2
10B
74C Jul Aug Sep
DO 7.0 7.6 -
pH 8.6 8.5 -
Temp 34 30 -
Sal 6 5 -
74B
74C
72C Jul Aug Sep
DO 2.9 3.3 -
pH 8.2 8.0 -
Temp 32 29 -
Sal - 2 -
72C
4E Jul Aug Sep
DO 4.9 - -
pH 8.1 - -
Temp 29.5 - -
Sal 17 - -
64C
64E
4E
64C Jul Aug Sep
DO - 3.9 -
pH - 8.6 -
Temp - 30 -
Sal - - -
64E Jul Aug Sep
DO 4.5 6.5 -
pH 8.0 8.0 -
Temp 31.5 29 -
Sal 23 15 -

	bd = below detection				benchmark numbers: Marked data are in the highest 20% of values found by Hand et. al, 1988.														
	July 2015						August 2015						September 2015						
	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
3F													bd	bd	0.05	0.7	0.7	0.05	51.09
4E	bd	bd	0.05	0.8	0.8	0.09													51.58
5D	bd	bd	0.05	0.8	1.0	0.07	bd	bd	0.05	0.6	0.6	0.06	bd	0.06	0.05	0.8	0.86	0.08	54.76
6F	bd	bd	0.05	1.0	0.8	0.11	bd	bd	0.05	0.6	0.6	0.11	bd	0.05	0.05	1.1	1.15	0.17	51.87
9F	bd	bd	0.05	0.8	0.1	0.09	bd	bd	0.05	0.6	0.6	0.08	bd	bd	0.05	1.1	1.1	0.09	55.24
10B	bd	bd	0.05	0.1	1.1	0.04	bd	bd	0.05	0.4	0.4	0.05	bd	0.05	0.05	0.7	0.75	0.04	38.39
11E	bd	0.05	0.05	1.1	1.15	0.11	bd	bd	0.05	0.7	0.7	0.14	bd	0.16	0.05	1.2	1.36	0.16	57.82
12H	bd	bd	0.05	0.8	0.4	0.11	bd	bd	0.05	0.7	0.7	0.06	bd	0.17	0.1	1.0	1.17	0.17	51.71
15F	bd	bd	0.05	0.4	0.0	0.06													55.62
16E	bd	bd	0.05	0.7	0.7	0.03	bd	bd	0.05	0.7	0.7	0.03	bd	bd	0.05	0.6	0.6	0.03	54.13
19D							bd	0.07	0.05	0.8	0.87	0.13	bd	0.20	0.05	0.9	1.10	0.16	55.09
19K	bd	bd	0.05	0.6	0.6	0.11	bd	0.05	0.05	0.7	0.75	0.16	bd	0.11	0.05	1	1.11	0.17	50.45
21D	bd	bd	0.05	0.6	0.6	0.11	bd	bd	0.05	0.6	0.6	0.07	bd	0.06	0.05	0.9	0.96	0.05	53.47
21I							bd	bd	0.05	0.5	0.5	0.05							67.67
26D							bd	bd	0.05	0.8	0.8	0.04							59.03
28D	bd	bd	0.05	0.6	0.6	0.06	bd	bd	0.05	0.5	0.5	0.02	bd	bd	0.05	0.7	0.7	0.02	50.94
38B	bd	bd	0.05	0.5	0.5	0.04	bd	bd	0.05	0.8	0.8	0.03	bd	bd	0.05	1.0	1.0	0.02	51.25
41A	bd	bd	0.05	0.1	0.1	0.02	bd	bd	0.05	0.3	0.3	0.01	bd	0.05	0.05	0.8	0.85	0.01	21.04
41B	bd	bd	0.05	0.1	0.1	0.02	bd	bd	0.05	0.5	0.5	0.02	bd	0.06	0.05	1.0	1.06	0.02	39.56
45D	bd	bd	0.05	0.6	0.6	0.02	bd	bd	0.05	0.4	0.4	0.02	bd	bd	0.05	0.4	0.4	0.01	41.71
48A							bd	bd	0.05	0.4	0.4	0.01							35.40
52B	bd	bd	0.05	bd	bd	0.02	bd	bd	0.05	0.4	0.4	0.01							26.43
58B													bd	0.06	0.05	0.8	0.86	0.03	45.80
58I	bd	bd	0.05	0.9	0.9	0.02	bd	bd	0.05	0.6	0.6	0.03	bd	0.05	0.05	0.9	0.95	0.02	44.06
58J	bd	bd	0.05	0.9	0.9	0.02	bd	bd	0.05	0.6	0.6	0.02							46.01

59B	bd	bd	0.05	0.8	0.8	0.01	bd	bd	0.05	0.5	0.5	0.02	bd	bd	0.05	0.7	0.7	0.02	42.93
59C	bd	bd	0.05	0.6	0.6	0.01	bd	bd	0.05	0.6	0.6	0.03							40.76
64B	bd	bd	0.05	0.9	0.9	0.06													55.83
64C							bd	bd	0.05	0.5	0.5	0.07							42.28
64E	bd	bd	0.05	0.8	0.8	0.05	bd	bd	0.05	0.5	0.5	0.06	bd	0.15	0.1	0.8	0.95	0.11	51.64
65C	bd	bd	0.05	0.9	0.9	0.05	bd	bd	0.05	0.9	0.9	0.06	bd	0.08	0.2	0.8	0.88	0.07	55.67
70G	bd	bd	0.05	0.2	0.2	0.05							bd	bd	0.05	0.7	0.7	0.05	40.65
72C	bd	bd	0.05	0.4	0.4	0.05	bd	bd	0.05	0.7	0.7	0.07							52.43
74C	bd	bd	0.05	0.3	0.3	0.04	bd	bd	0.05	0.7	0.7	0.05							45.70
82A	bd	bd	0.05	1.0	1.0	0.02	bd	bd	0.05	1.2	1.2	0.03	bd	0.06	0.05	0.9	0.96	0.05	55.77
83C	bd	bd	0.05	1.0	1.0	0.02	bd	bd	0.05	0.7	0.7	0.01	bd	bd	0.1	0.5	0.5	0.03	46.59
89A	bd	bd	0.05	1.3	1.3	0.11	bd	bd	0.05	1.1	1.1	0.14	bd	0.17	0.2	1.2	1.37	0.18	65.44
90A	bd	bd	0.05	1.6	1.6	0.02	bd	bd	0.05	1.4	1.4	0.02	bd	bd	0.2	1.4	1.4	0.02	47.44
93C	bd	bd	0.05	0.5	0.5	0.07	bd	bd	0.05	0.7	0.7	0.12	bd	bd	0.05	0.7	0.7	0.08	31.40
Median		**0.05**	**0.05**	**0.80**	**0.70**	**0.05**		**bd**	**0.05**	**0.60**	**0.60**	**0.05**		**bd**	**0.05**	**0.80**	**0.95**	**0.05**	**51.09**
Max		**0.05**	**0.05**	**1.60**	**1.60**	**0.11**		**0.07**	**0.05**	**1.40**	**1.40**	**0.16**		**0.20**	**0.20**	**1.40**	**1.40**	**0.18**	**67.67**

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

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.

All nutrient concentrations shown in mg/L

TSI = Trophic State Index, a quick indicator of canal health. 37 sites this quarter scored as GOOD (<60). 2 sites scored FAIR (60-70), and zero scored POOR (>70).
Rainfall has been prevalent this quarter. But despite the increased freshwater inflows the canals have remained relatively healthy. There has been some instances of duck week (*Spirodela polyrhiza*) in the canals along the Caloosahatchee River. This occurrence is common this time of year and with the increased amount of freshwater from rainfall. Once salinity levels increase, conditions will become less desirable for duck weed and it will dissipate. This rainy season has been a soaker so far, but rain events should taper off with the coming of cooler dryer weather this fall.

October

7th Canalwatch

14th Florida "101" Seminar
1 pm
Rotary Park
Info: 549-4606

21st Guided Tour of
Eco Preserve
9 am - 11 am
Info: 549-4606

23rd Guided Paddle of
Matlacha Pass
9 am - 11 am
Info: 549-4606

24th Fall Kids Festival
10:00 am
Jaycee Park

25th Adam Strongin Kids
Fishing Tournament
Yacht Club Pier
7:00 am
Info at 691-3091

27th Full Moon Guided Paddle
At Eco Park/Four Mile Cove
6:30 – 9:30
Info: 549-4606

November

4th Canalwatch
(at Rotary Park)

9th Reptiles Seminar
-Turtles!
Rotary Park 1 pm - 2 pm
Info: 549-4606

13th Guided Tour of
Yellow Fever Creek
9 am - 11 am
Info: 549-4606

19th Fishing in the Waterfront
Wonderland Seminar
Rotary Park 2 pm
Info: 549-4606

December

2nd Canalwatch

11th Guided Tour of
Yellow Fever Creek
9 am - 11 am
Info: 549-4606

17th Coyotes Seminar
Rotary Park 2 pm
Info: 549-4606

Please RSVP for the November Event by October 30th at 242-3547 or kmcbride@capecoral.net
The November Event will be held at Rotary Park on November 4th.

City of Cape Coral
Environmental Resources
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Cape Coral, FL 33915-0027