Canal Current

A wave of information for Cape Coral's Canalwatch volunteers

Newsletter: 1st Quarter 2010

Environmental News

Native Plant Sale

Rotary Park, located at 5505 Rose Garden Road, will be hosting a native plant sale on Saturday, April 17th from 9 am to 2 pm. This event will include many vendors and have a great selection of native shrubs, trees, and flowers.

What better way can there be to celebrate Earth Day than by planting a butterfly-attracting garden or native trees in a home landscape!

For more information on this event, log on to www.capecoral.net and follow the link for Cape Coral Parks and Recreation home page or call 549 – 4606.

This event is sponsored by the Coccoloba Chapter of the Florida Native Plant Society. Information on this plant sale, future plant sales or membership to the Florida Native Plant Society can be found at www.fnpscoccoloba.org

Inside This Issue:

Questions? Comments? Let us know!
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Native Plant profile

Slash Pine
Pinus elliottii

Pine trees and their habitat (sometimes referred to as pine flatwoods) are a common sight throughout south Florida, despite their relationship with man. Clearing for pasture lands and construction, logging, and the turpentine industry have all contributed to pine flatwoods fragmentation or disappearance. Of the few species of pine that exist in Florida, long leaf pine (*P. palustris*), loblolly pine (*P. taeda*), and pond pine (*P. serotina*), the slash pine is quickly becoming the dominant species. However, north of Orlando the long leaf pine is still prevalent.

Slash pines have a mixed use in landscaping. Most often if a pine is left undisturbed at time of construction it can be incorporated into the home or development landscaping. Most homeowners are reluctant to plant pines because of the pine needle litter that drops throughout the year. Nonetheless, others are pleased to plant this fast growing conifer that creates its own mulch. Moreover, the slash pine is adapted to varying soils and moisture levels and provides habitat and seeds for wildlife.

What are those brown bottles for?

You may have noticed some brown bottles in the Canalwatch cooler the last couple of months. They're used to collect a water sample that will be tested for chlorophyll *a*. So what is this, and why does it have to be in a brown bottle?

Chlorophyll is the molecule that plants, algae, and photosynthetic bacteria use to collect energy from the sun and turn that energy into sugars. We collect it in brown bottles because it is sensitive to light, and we don't want chlorophyll breaking down before the sample can be analyzed.

Chlorophyll *a* is an indicator of how much phytoplankton – single-celled, photosynthesizing algae and bacteria – is present in the water. Knowing how much phytoplankton is in the water can tell us when too many nutrients (think: fertilizers) are entering a water body. It's not quite that simple – is it ever? – because excess nutrients can also fuel the growth of submerged vegetation (those weeds growing on the bottom of canals). That submerged plant growth isn't accounted for in a water column measurement of chlorophyll *a*. But the chlorophyll reading can still shed light on the dynamics of your canal. Is your area dominated by phytoplankton, or by submerged vegetation? And does that change seasonally? It may not, but it certainly can. Light, temperature, and salinity all vary with the seasons, and those factors all affect plankton and rooted plants.

Chlorophyll *a* is measured in micrograms per liter (μg/L). The nutrients you normally sample for are measured in milligrams per liter (mg/L). There are 1000 μg in 1 mg – so we're looking at much lower concentrations of chlorophyll *a*. The current state standards for chlorophyll *a* are ≤11 μg/L in marine waters and ≤20 μg/L in freshwater. The EPA, as part of its process to determine numeric nutrient criteria, has proposed an upper limit of 4 μg/L for south Florida canals.

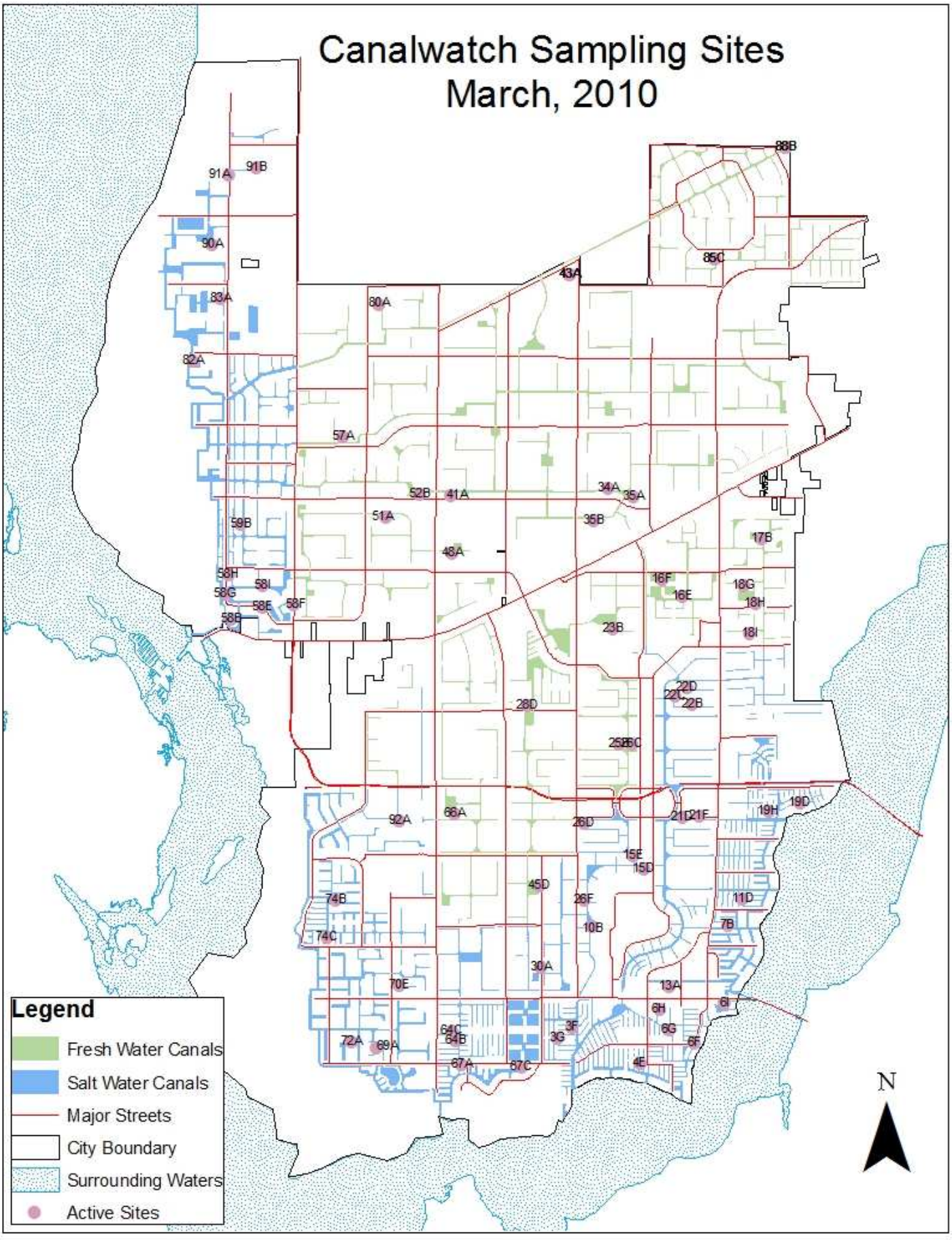
Will I be getting a brown bottle?

Yes! But not every month. Chlorophyll samples need to be processed within a few hours of sample collection, so to avoid swamping the lab, only certain sites will bring in a chlorophyll sample each month. Canalwatch volunteers that are currently measuring the extra field parameters of dissolved oxygen, pH, salinity, and temperature will monitor chlorophyll monthly. Everyone else will receive a chlorophyll sample bottle twice per year – once during the rainy season and once during the dry season. We'll start giving out bottles in May. When you get a brown bottle, you'll bring that to us *in addition to* your normal water sample.

Chlorophyll sampling is easy!

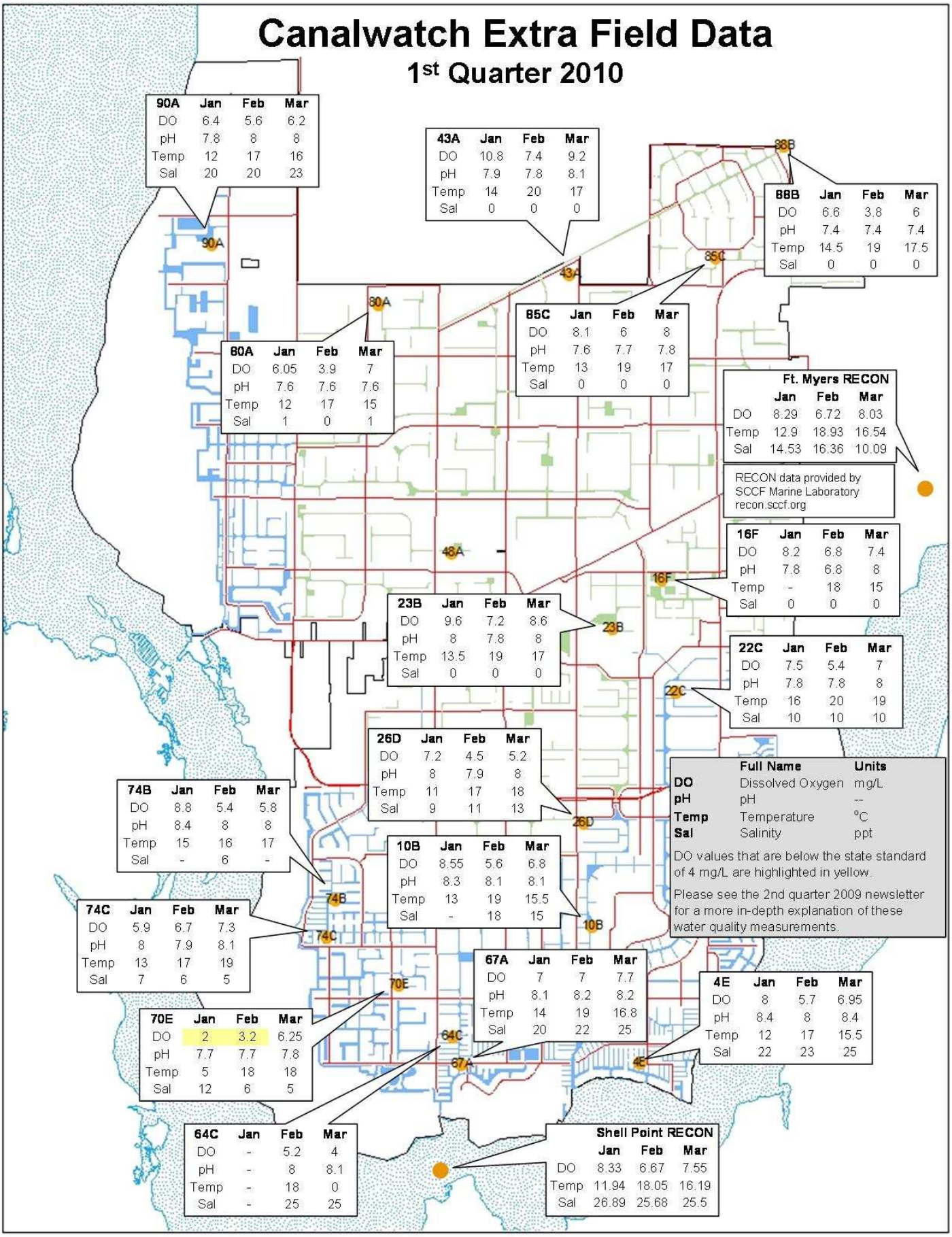
Sampling for chlorophyll is just like your normal sampling: rinse the bottle 3 times, then fill and cap it. It's especially important for chlorophyll to remain cool during transport, so make sure you put it on ice as soon as possible after collection. The only difference with this sampling is that the bottle you'll use is brown.

Please contact us at 574-0785 if you have any questions.


Canalwatch Sampling Sites
March, 2010
Legend
Fresh Water Canals
Salt Water Canals
Major Streets
City Boundary
Surrounding Waters
Active Sites
N
91A
91B
90A
83A
82A
88B
85C
43A
80A
57A
52B
41A
34A
35A
51A
35B
59B
48A
17B
58H
58I
58G
58E
58F
58B
16F
16E
18G
18H
18I
23B
22D
22C
22B
28D
25B
25C
92A
66A
26D
21D
21F
19H
19D
15E
15D
45D
74B
26F
11D
74C
10B
7B
30A
70E
13A
6I
6H
6G
6F
64C
64B
3F
3G
72A
69A
67A
67C
4E

Canalwatch Extra Field Data

1st Quarter 2010



90A	Jan	Feb	Mar
DO	6.4	5.6	6.2
pH	7.8	8	8
Temp	12	17	16
Sal	20	20	23

43A	Jan	Feb	Mar
DO	10.8	7.4	9.2
pH	7.9	7.8	8.1
Temp	14	20	17
Sal	0	0	0

88B	Jan	Feb	Mar
DO	6.6	3.8	6
pH	7.4	7.4	7.4
Temp	14.5	19	17.5
Sal	0	0	0

85C	Jan	Feb	Mar
DO	8.1	6	8
pH	7.6	7.7	7.8
Temp	13	19	17
Sal	0	0	0

80A	Jan	Feb	Mar
DO	6.05	3.9	7
pH	7.6	7.6	7.6
Temp	12	17	15
Sal	1	0	1

Ft. Myers RECON	Jan	Feb	Mar
DO	8.29	6.72	8.03
Temp	12.9	18.93	16.54
Sal	14.53	16.36	10.09

RECON data provided by SCCF Marine Laboratory recon.sccf.org

16F	Jan	Feb	Mar
DO	8.2	6.8	7.4
pH	7.8	6.8	8
Temp	-	18	15
Sal	0	0	0

23B	Jan	Feb	Mar
DO	9.6	7.2	8.6
pH	8	7.8	8
Temp	13.5	19	17
Sal	0	0	0

22C	Jan	Feb	Mar
DO	7.5	5.4	7
pH	7.8	7.8	8
Temp	16	20	19
Sal	10	10	10

26D	Jan	Feb	Mar
DO	7.2	4.5	5.2
pH	8	7.9	8
Temp	11	17	18
Sal	9	11	13

	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.

Please see the 2nd quarter 2009 newsletter for a more in-depth explanation of these water quality measurements.

74B	Jan	Feb	Mar
DO	8.8	5.4	5.8
pH	8.4	8	8
Temp	15	16	17
Sal	-	6	-

10B	Jan	Feb	Mar
DO	8.55	5.6	6.8
pH	8.3	8.1	8.1
Temp	13	19	15.5
Sal	-	18	15

74C	Jan	Feb	Mar
DO	5.9	6.7	7.3
pH	8	7.9	8.1
Temp	13	17	19
Sal	7	6	5

67A	Jan	Feb	Mar
DO	7	7	7.7
pH	8.1	8.2	8.2
Temp	14	19	16.8
Sal	20	22	25

4E	Jan	Feb	Mar
DO	8	5.7	6.95
pH	8.4	8	8.4
Temp	12	17	15.5
Sal	22	23	25

70E	Jan	Feb	Mar
DO	2	3.2	6.25
pH	7.7	7.7	7.8
Temp	5	18	18
Sal	12	6	5

64C	Jan	Feb	Mar
DO	-	5.2	4
pH	-	8	8.1
Temp	-	18	0
Sal	-	25	25

Shell Point RECON	Jan	Feb	Mar
DO	8.33	6.67	7.55
Temp	11.94	18.05	16.19
Sal	26.89	25.68	25.5

Canal Cleanup 2010

The third annual Canal Cleanup Day was held on Saturday, March 27th. 125 volunteers removed almost 2.5 tons of debris from the Cape! Many of the boaters and kayakers in the Yacht Club area said they didn't find as much this year, and what they did find was lighter material – mainly plastic and Styrofoam. Volunteers on canal banks and in the Lake Kennedy Chain made up for it by finding large items – including an engine, TVs, tires, and a fence.

Photo courtesy of Gabriel Kamener

Thanks to our co-sponsors: Keep Lee County Beautiful, Waste Management, and the Charlotte Harbor National Estuary Program.

What can you do to prevent the litter problem?

While the amount of debris removed during the annual Canal Cleanup is always an impressive indicator of volunteers' enthusiasm and dedication, it would be even better if that trash never got out there in the first place. So how can you help?

- Tie up your trash bags. This will prevent trash from blowing out while it's awaiting pickup.
- Secure items in your car or truck. Make sure there's nothing that will blow out as you're driving.
- Secure items that you throw into a dumpster – loose items like a cup from a fast food restaurant could blow away when the dumpster is emptied. It's best to bag trash.
- If you use a dumpster, close the lid. Again, this comes back to items being blown out by wind.
- If you have a large item to get rid of, or something that you're not sure what to do with, call Waste Management at 334-4115 or Lee County Solid Wastes at 533-8000.

Earth Day Trash Bash

Keep Lee County Beautiful holds the Earth Day Trash Bash, a county-wide cleanup event, every April. The event runs from 9 am to noon, and there are two sites in Cape Coral this year:

- Big John's Parking Lot – contact: Frank Cassidy, 574-0684
- Burnt Store Boat Ramp (the 14th year for this site!) – contact: David Scott, 283-9251

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

	Jan 2010						Feb 2010						Mar 2010						
	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	0.5	0.8	0.80	bd							bd	0.23	bd	1	1.23	bd	41.47
3G	bd	bd	0.2	0.8	0.80	bd	bd	0.38	bd	1.2	1.58	0.05	bd	0.45	bd	0.8	1.25	bd	45.77
4E	bd	bd	0.8	1	1.00	0.05	bd	0.24	bd	1.3	1.54	0.05	bd	bd	bd	1.1	1.10	bd	50.34
6F	bd	bd	0.2	1	1.00	0.08	bd	0.26	bd	0.8	1.06	0.06	bd	bd	bd	0.9	0.90	0.06	57.61
6G							bd	0.30	bd	0.7	1.00	0.06							
6H	bd	bd	0.8	0.7	0.70	0.07	bd	0.24	bd	0.9	1.14	0.07	bd	0.08	bd	0.8	0.88	0.07	58.67
6I													bd	bd	bd	1.1	1.10	0.05	56.13
7B	bd	bd	bd	0.8	0.80	0.05	bd	0.24	bd	0.9	1.14	0.05	bd	bd	bd	0.9	0.90	bd	48.79
10B	bd	bd	0.5	0.6	0.60	bd	bd	0.32	bd	1.1	1.42	0.07	bd	bd	bd	0.9	0.90	bd	48.98
11D	bd	bd	0.2	0.8	0.80	0.06	bd	0.22	bd	0.8	1.02	0.07	bd	bd	bd	0.9	0.90	0.05	55.77
13A	bd	bd	bd	0.7	0.70	0.05	bd	0.08	bd	1.2	1.28	0.05	bd	bd	bd	0.9	0.90	bd	49.52
15D	bd	bd	0.9	0.8	0.80	bd	bd	0.59	bd	0.8	1.39	0.14	bd	bd	bd	0.7	0.70	bd	51.42
15E	bd	bd	0.4	1	1.00	bd	bd	0.25	0.1	1.1	1.35	0.07	bd	bd	bd	0.9	0.90	bd	48.07
16E	bd	bd	0.4	0.5	0.50	bd	bd	0.10	0.2	0.5	0.60	bd	bd	bd	bd	0.3	0.30	bd	44.93
16F	bd	bd	0.6	0.8	0.80	bd	bd	bd	0.4	0.9	0.90	bd	bd	bd	bd	0.6	0.60	bd	42.21
17B							bd	0.07	bd	0.7	0.77	bd	bd	bd	bd	0.5	0.50	bd	50.28
18G							bd	bd	bd	0.6	0.60	0.05	bd	bd	bd	0.9	0.90	bd	51.58
18H	bd	bd	bd	1	1.00	bd							bd	bd	bd	0.6	0.60	bd	58.13
19D	bd	bd	0.2	0.8	0.80	0.07	bd	0.06	bd	1.1	1.16	0.07	bd	bd	bd	0.9	0.90	bd	52.45
21D	bd	bd	0.3	0.7	0.70	0.06	bd	0.05	bd	0.7	0.75	0.06	bd	bd	bd	0.7	0.70	bd	50.86
21F							bd	0.07	bd	1	1.07	0.06	bd	bd	bd	0.8	0.80	bd	48.69
22C	bd	bd	0.2	1	1.00	0.08	bd	bd	bd	1.6	1.60	0.08	bd	0.25	bd	1.2	1.45	bd	55.08
23B	bd	bd	bd	0.1	0.10	bd	bd	0.07	bd	0.5	0.57	bd	bd	bd	bd	2.1	2.10	bd	31.68
26C	bd	bd	bd	0.4	0.40	bd	bd	0.05	bd	0.4	0.45	bd	bd	bd	bd	0.5	0.50	bd	56.02
26D	bd	0.08	bd	0.8	0.88	bd	bd	0.07	0.2	0.8	0.87	bd	bd	bd	0.1	0.9	0.90	bd	47.01
26F	bd	bd	0.3	0.7	0.70	bd	bd	0.07	0.1	0.8	0.87	bd	bd	0.06	bd	0.8	0.86	bd	43.86
28D	bd	0.12	bd	0.2	0.32	bd	bd	0.06	bd	0.4	0.46	bd	bd	0.08	bd	0.2	0.28	bd	38.21
30A	bd	bd	bd	0.7	0.70	bd	bd	0.05	bd	0.5	0.55	0.05	bd	bd	bd	0.7	0.70	bd	46.96
34A							bd	bd	bd	0.1	0.10	bd	bd	bd	bd	0.2	0.20	bd	17.27
35A							bd	bd	bd	bd	bd	bd	bd	bd	bd	0.1	0.10	bd	20.37
35B							bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	30.32
41A	bd	bd	bd	bd	bd	bd	bd	bd	bd	0.2	0.20	bd	bd	bd	bd	0.1	0.10	bd	21.62
43A	bd	bd	bd	0.1	0.10	bd	bd	bd	bd	0.6	0.60	bd	bd	bd	bd	0.3	0.30	bd	30.30
45D	bd	0.20	bd	0.4	0.60	bd	bd	0.10	bd	0.3	0.40	bd	bd	bd	bd	0.4	0.40	bd	45.52

48A	bd	0.08	bd	bd	bd	bd							bd	bd	bd	0.1	0.10	bd	29.24
51A	bd	0.14	bd	0.6	0.74	bd	bd	0.07	bd	0.2	0.27	bd							40.76
52B	bd	bd	bd	0.4	0.40	bd	bd	0.05	bd	bd	0.05	bd	bd	bd	bd	0.2	0.20	bd	31.37
57A	bd	bd	bd	0.3	0.30	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	0.1	0.10	bd	25.85
58B							bd	bd	bd	1	1.00	bd	bd	bd	bd	1.1	1.10	bd	48.49
58E	bd	bd	0.9	2.1	2.10	0.07	bd	bd	bd	1.1	1.10	bd	bd	bd	bd	1.2	1.20	bd	48.91
58F	bd	bd	0.9	1.8	1.80	0.06	bd	bd	bd	1.2	1.20	bd	bd	bd	bd	1.2	1.2	bd	46.90
58G	bd	bd	0.9	1.4	1.40	0.06	bd	0.05	bd	1	1.05	bd	bd	bd	bd	1.3	1.30	bd	47.72
58H	bd	bd	1	1.7	1.70	0.06	bd	bd	bd	1	1.00	bd	bd	bd	bd	1.5	1.50	bd	48.36
58I	bd	0.07	0.7	1.7	1.77	0.06	bd	bd	bd	2	2.00	bd	bd	bd	bd	0.9	0.90	bd	48.43
59B	bd	0.06	0.4	1.6	1.66	bd							bd	bd	bd	1.1	1.10	bd	42.62
64B	bd	0.07	0.4	1	1.07	bd	bd	0.10	bd	2	2.10	bd	bd	bd	bd	0.9	0.90	bd	41.47
64C							bd	0.08	bd	0.9	0.98	0.05	bd	bd	bd	1.1	1.10	bd	48.23
67A	bd	0.05	0.1	1.4	1.45	0.05	bd	bd	bd	1.9	1.90	bd							50.17
67C	bd	0.07	1	1.5	1.57	0.06							bd	bd	bd	0.9	0.90	bd	46.04
69A	bd	bd	bd	1.2	1.20	bd	bd	0.11	0.1	1	1.11	0.11	bd	bd	bd	0.9	0.90	bd	48.83
70E	bd	bd	0.3	1.3	1.30	0.07	bd	0.05	bd	0.6	0.65	0.06	bd	bd	bd	0.6	0.60	bd	49.74
72A	bd	bd	0.2	1.2	1.20	bd							bd	bd	bd	0.8	0.80	bd	40.30
74B	bd	bd	bd	1.2	1.20	bd	bd	bd	bd	0.6	0.60	bd	bd	bd	bd	0.7	0.70	bd	45.03
74C	bd	bd	bd	0.9	0.90	bd	bd	bd	bd	1	1.00	bd							40.27
80A	bd	0.05	bd	0.2	0.25	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	bd	31.88
82A	bd	bd	1.8	1.4	1.40	bd	bd	bd	bd	1.3	1.30	bd	bd	bd	bd	1.3	1.30	bd	49.74
83A	bd	bd	0.8	1.7	1.70	bd	bd	bd	bd	1	1.00	bd	bd	bd	bd	1.1	1.10	bd	45.82
85C	bd	bd	bd	0.9	0.90	bd	bd	bd	bd	0.1	0.10	bd	bd	bd	bd	0.7	0.70	bd	32.36
88B	bd	0.06	bd	0.9	0.96	bd	bd	0.05	bd	0.9	0.95	0.05	bd	0.07	bd	0.5	0.57	bd	46.44
90A	bd	bd	0.8	1.8	1.80	bd	bd	bd	bd	0.9	0.90	bd	bd	bd	bd	1.3	1.30	bd	45.88
91A	bd	0.07	bd	0.9	0.97	bd	bd	bd	bd	0.3	0.30	bd	bd	0.05	bd	0.3	0.35	bd	38.88
91B	bd	0.09		0.8	0.89	bd	bd	bd	bd	0.3	0.30	bd	bd	0.06	bd	0.4	0.46	bd	39.78
Median		**0.07**	**0.50**	**0.85**	**0.90**	**0.06**		**0.08**	**0.15**	**0.90**	**1.00**	**0.06**		**0.08**	**0.10**	**0.85**	**0.90**	**0.055**	**46.90**
Max		**0.20**	**1.80**	**2.10**	**2.10**	**0.08**		**0.59**	**0.40**	**2.00**	**2.10**	**0.14**		**0.45**	**0.10**	**2.10**	**2.10**	**0.07**	**58.67**

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.

TSI = Trophic State Index, a quick indicator of canal health. All 62 sites this quarter scored as GOOD (<60). None scored as FAIR (60-70) or POOR (>70).

All nutrient concentrations shown in mg/L

April

7th Canalwatch

10th Kayak Demo Day
9am to 1pm
Yacht Club Beach
Info: 574-0806

13th EPA Numeric Nutrient Criteria Public Meetings
12-4 and 6-9 pm
Harborside Event Center
Info: http://www.epa.gov/waterscience/standards/rules/florida/

17th plant sale at Rotary Park
Cape Coral
info: fnpscoccoloba.org

April (cont.)

22nd **Earth Day**

24th Cardboard Boat Regatta
8am to 2pm Rotary Park
Info: capecoralregatta.com

24th Household Hazardous Waste Drop Off Day
8am to 2pm Everest Complex
Info: leecounty.com/solidwaste

24th Earth Day Trash Bash
Big John's Parking Lot
Site info: 574-0684
Burnt Store Boat Ramp
Site info: 283-9251

May

1st Kids All Exotics Fishing Jamboree at Sunsplash Boardwalk
Info: 549-4606

5th Canalwatch

31st Memorial Day

June

2nd Canalwatch

City of Cape Coral
Environmental Resources
P.O. BOX 150027
Cape Coral, FL 33915-0027