Canal Current

A wave of information for Cape Coral's Canalwatch volunteers

Newsletter: 2nd Quarter 2007

Canalwatch is Cutting Back on Forests

Canalwatch is working to reduce the use of paper for this newsletter. Please be sure to get your correct email address to your coordinator. We will not share your email address with anyone. You have the option to receive a paper copy if this is what you prefer. This change will greatly reduce our paper and postage requirements.

Data in Review

We at Canalwatch would like your opinion about how the data in these Newsletters can be presented in a more understandable way for our volunteers. Email suggestions to kcressman@capecoral.net or let us know at the next Canalwatch sampling day.

In This Issue:

Native Plant Profile

Pawpaw
Asimina reticulata

Endemic to Florida, Pawpaw is a woody shrub found in pine flatwoods and coastal scrub habitats throughout the state. Pawpaws are deciduous, but usually begin to bloom fragrant white flowers in January and continue through July. The fruit of the pawpaw is edible but is relished more by wildlife than by humans. Pawpaws can grow in all light conditions and compliment landscapes with a tropical ambiance.

Environmentally Speaking

The Smelly Truth of Fish Kills

When you think of a fish kill, what comes to mind? Red tide, which releases a compound that is toxic to fish? Toxic chemicals, like pesticides? These events could cause Fish kills, but in Cape Coral, the most likely culprit is low dissolved oxygen (DO).

The organism that causes red tide is restricted to saltwater; therefore Cape Coral's freshwater canals would be unaffected by its impact. Other types of algae also produce toxins, but have not been known to cause fish kills in this city. Pesticide toxicity, while a potential concern, would be localized near the point of origin where the pesticide was dumped. It would not cause a canal-wide fish kill, and this occurrence is also uncommon in Cape Coral.

Low DO can occur through:

1) **Algae bloom.**
   This occurs after a major rainfall, as runoff containing fertilizers flows into the canals. In the same way that fertilizer makes your plants grow, it also makes microscopic algae grow – and too much of it can cause a population explosion, also known as a bloom. Algae, like plants, photosynthesize during the day and produce oxygen. However, at night algae use oxygen, and this can make DO levels plummet. A bloom does not always develop after a storm because temperature, light, and other environmental conditions must be ideal and in unison for it to result.
2) **Turnover.**
   This occurs after a storm, usually in winter. The rainwater causes water sitting at the bottom of the canal, which can have a low DO level, to mix with the top layer of water. This can cause low DO levels throughout the water column (the water column is the vertical cross-section of a canal).

So what can we do about a fish kill? Not much, once it starts. Prevention is crucial. Minimize your use of fertilizer, or use one with slow-release nitrogen (it will be labeled as such on the package, and most likely it will also say something like "fertilizes for 3 months!"). Spread the word to your neighbors so they can also make sure their fertilizing habits are good.

If you happen to notice multiple fish dying in your canal, don't wait until it smells bad to call us – the earlier we know it's happening, the easier it will be to figure out why. Then, if it is caused by toxic algae or pesticides, we can warn people to stay out of the water. But again, usually it's just low DO due to turnover or a bloom of benign algae. Now, you don't need to call if you only see one or two fish, but if there are a lot, please let us know.

Once you notice a fish kill, you can help us determine the cause by keeping track of the answers to the following questions:

1) What time of day are most fish dying – dawn, dusk, during the day, during the night?
2) Which fish were affected first?
   a. Which sizes – large, small, or a variety?
   b. Which species – any one in particular, or a mix?
3) How does the water look and smell – is it turbid? Does it smell strange? (I'm not referring to the smell of rotting fish here – that's a given, unfortunately!)

Our phone number is 574-0785 – give us a call if you have questions or concerns about your canal. We hope this information is useful, and we also hope that you won't *need* to use it! Remember, what you do out of the water is just as important as what you do in the water, and by educating your family and friends, you are helping to preserve the health of our canals!

Canal Watch Data - Second Quarter 2007

	April						May						June					
STATION	NO2	NO3	NH3	TKN	T-N	T-PO4	NO2	NO3	NH3	TKN	T-N	T-PO4	NO2	NO3	NH3	TKN	T-N	T-PO4
1A	<0.05	0.30	0.1	0.1	0.40	0.09	<0.050	0.26	0.2	0.23	0.49	0.10	<0.05	0.20	0.2	3.7	3.90	0.20
1C	<0.05	0.28	<0.1	<0.1	0.28	0.05	<0.050	0.27	0.2	1.9	2.17	0.09	<0.05	0.23	0.2	1.7	1.93	0.07
1D	<0.05	0.24	<0.1	<0.1	0.24	0.05	<0.050	0.23	0.1	2.4	2.63	0.07	<0.05	0.18	0.2	1.6	1.78	0.06
3D													<0.05	0.19	0.1	4.5	4.69	0.07
3F	<0.05	0.20	<0.1	<0.1	0.20	<0.05	<0.050	0.25	0.2	2.5	2.75	0.06	<0.05	0.17	<0.1 u	1.8	1.97	0.05
4D	<0.05	2.00	<0.1	<0.1	2.00	<0.05	<0.050	0.24	0.3	2.1	2.34	0.05	<0.05	0.17	0.3	2.6	2.77	0.06
4E													<0.05	0.16	0.4	1	1.16	<0.05
6F	<0.05	0.24	<0.1 u	0.1	0.34	0.06	<0.050	0.26	0.4	2.4	2.66	0.09	<0.05	0.19	0.2	2.2	2.39	0.08
7B	<0.05	0.21	<0.1	<0.1	0.21	0.06	<0.050	0.23	0.2	2.2	2.43	0.07	<0.05	0.19	0.1	1.9	2.09	0.08
10B	<0.05	0.19	0.1	0.1	0.29	<0.05							<0.05	0.15	0.1	1.8	1.95	0.06
11C	<0.05	0.23	0.1	0.1	0.33	0.05	<0.050	0.21	0.2	2.2	2.41	0.40	<0.05	<0.05	0.1	2.1	2.10	0.12
11D	<0.05	0.19	<0.1	<0.1	0.19	0.07	<0.050	0.24	0.3	2.3	2.54	0.09	<0.05	0.22	0.2	2.3	2.52	0.08
13A	<0.05	0.21	<0.1	<0.1	0.21	0.06	<0.050	0.22	0.2	2.1	2.32	0.08	<0.05	0.21	0.4	2.6	2.81	0.13
16B	<0.05	0.17	<0.1	<0.1	0.17	<0.05	<0.050	0.18	0.2	1.9	2.08	<0.05	<0.05	0.21	0.2	1.5	1.71	0.07
16D	<0.05	0.22	<0.1	<0.1	0.22	<0.05	<0.050	0.24	0.2	1.4	1.64	<0.05						
19D	<0.05	0.22	<0.1	0.1	0.32	0.06	<0.050	0.18	0.2	2.5	2.68	0.10	<0.05	0.20	<0.1 u	1.4	1.60	<0.05
19E	<0.05	0.22	<0.1	<0.1	0.22	0.05	<0.050	0.25	0.2	2.4	2.65	0.10	<0.05	0.22	0.6	2.9	3.12	0.14
19G	<0.05	0.24	<0.1	<0.1	0.24	0.06	<0.050	0.22	0.4	2.0	2.22	0.09	<0.05	0.21	0.2	7.7	7.91	0.58
20E	<0.05	0.19	<0.1	0.1	0.29	0.05	<0.050	0.23	0.2	2.2	2.43	0.07						
21D	<0.05	0.21	<0.1	<0.1	0.21	0.06	<0.050	0.23	0.3	2.4	2.63	0.06	<0.05	0.21	0.4	2.3	2.51	0.09
22B							<0.050	0.26	0.3	2.5	2.76	0.12						
22C	<0.05	0.19	<0.1	<0.1	0.19	<0.05	<0.050	n/a	n/a	1.4	n/a	0.06	<0.05	0.22	0.2	2.8	3.02	0.11
22D							<0.050	0.25	0.3	2.5	2.75	0.09						
22F	<0.05	0.25	<0.1	<0.1	0.25	0.07	<0.050	0.17	0.2	2.6	2.77	0.08	<0.05	0.23	0.1	2.4	2.63	0.11
26A	<0.05	0.15	0.1	0.1	0.25	0.05	<0.050	0.25	0.1	2.2	2.45	0.09	<0.05	0.18	0.1	3.1	3.28	0.13
26C	<0.05	0.19	<0.1 u	<0.1	0.19	<0.05	<0.050	0.22	0.2	1.9	2.12	<0.05						
26D	<0.05	0.19	<0.1	<0.1	0.19	0.05	<0.050	0.22	0.2	2.7	2.92	0.11	<0.05	0.19	<0.1 u	2.0	2.19	0.10
28D	<0.05	0.20	<0.1	<0.1	0.20	<0.05	<0.050	0.26	0.2	2.7	2.96	0.06	<0.05	0.19	0.1	4.2	4.39	0.11
35A							<0.050	0.23	0.1	1.4	1.63	0.06	<0.05	0.23	0.2	2.6	2.83	<0.05
41A	<0.05	0.17	<0.1	<0.1	0.17	<0.05	<0.050	0.22	0.1	1.4	1.62	<0.05	<0.05	0.21	0.2	0.6	0.81	<0.05
43A	<0.05	0.22	<0.1	<0.1	0.22	0.09	<0.050	n/a	n/a	1.4	n/a	<0.05	<0.05	0.24	0.3	0.9	1.14	0.05
48A	<0.05	0.19	<0.1 u	<0.1	0.19	<0.05	<0.050	0.18	0.1	1.0	1.18	<0.05	<0.05	0.22	<0.1 u	<0.1 u	0.22	<0.05
49A	<0.05	0.25	<0.1	<0.1	0.25	<0.05	<0.050	0.20	0.4	1.1	1.30	<0.05	<0.05	0.21	<0.1 u	<0.1 u	0.21	<0.05
52B	<0.05	0.22	<0.1 u	<0.1	0.22	<0.05 u	<0.050	0.22	0.1	1.3	1.52	<0.05 u	<0.05	0.19	<0.1 u	1.0	1.19	<0.05
55B													<0.05	0.15	<0.1 u	4.7	4.85	0.05
58E	<0.05	0.18	<0.1	<0.1	0.18	<0.05							<0.05	0.19	0.2	2.4	2.59	0.05
58F	<0.05	0.20	<0.1	<0.1	0.20	0.05	<0.050	0.11	0.2	2.2	2.31	0.06	<0.05	0.22	<0.1 u	2.0	2.22	<0.05 u
58G	<0.05	0.25	<0.1	<0.1	0.25	<0.05	<0.050	0.23	0.4	2.0	2.23	<0.05	<0.05	0.05	0.1	1.8	1.85	<0.05
59B	<0.05	0.29	<0.1	<0.1	0.29	<0.05	<0.050	0.21	0.1	1.9	2.11	<0.05	<0.05	0.26	0.1	4.7	4.96	<0.05
60A	<0.05	0.27	<0.1	<0.1	0.27	<0.05	<0.050	0.17	0.2	2.0	2.17	<0.05	<0.05	0.21	<0.1	3.1	3.31	<0.05
62C	<0.05	0.24	<0.1	<0.1	0.24	<0.05	<0.050	0.18	0.5	0.9	1.08	<0.05 u	<0.05	0.21	0.1	2.8	3.01	<0.05
64B	<0.05	0.24	<0.1	<0.1	0.24	<0.05	<0.050	0.17	0.1	1.4	1.57	<0.05	<0.05	0.20	0.1	2.7	2.90	0.05
64C	<0.05	0.22	<0.1	<0.1	0.22	<0.05	<0.050	0.17	0.1	9.5	9.67	0.05	<0.05	0.20	0.2	1.5	1.70	0.06
66A	<0.05	0.23	<0.1	<0.1	0.23	<0.05	<0.050	0.16	<0.1	2.1	2.26	<0.05						
67A	<0.05	0.24	<0.1	<0.1	0.24	<0.05	<0.050	0.24	0.4	1.6	1.84	0.05	<0.05	0.26	0.3	3.3	3.56	<0.05
69A	<0.05	0.20	<0.1	<0.1	0.20	<0.05	<0.050	0.21	0.2	1.9	2.11	<0.05						
70B	<0.05	0.31	<0.1	<0.1	0.31	<0.05							<0.05	0.18	<0.1	3.6	3.78	<0.05
70D	<0.05	0.28	<0.1	<0.1	0.28	<0.05	<0.050	0.18	<0.1	2.1	2.28	0.05	<0.05	0.15	<0.1	3.5	3.65	0.06
70E	<0.05	0.27	<0.1	<0.1	0.27	<0.05	<0.050	0.14	<0.1	2.2	2.34	<0.05	<0.05	0.21	0.1	3.8	4.01	0.06
72A	<0.05	0.25	<0.1	<0.1	0.25	<0.05	<0.050	0.19	<0.1	1.8	1.99	<0.05	<0.05	0.17	0.1	3.8	3.97	0.05
74B	<0.05	0.26	<0.1	<0.1	0.26	<0.05	<0.050	0.18	<0.1	1.9	2.08	<0.05	<0.05	0.20	<0.1 u	3.5	3.70	<0.05
83A	<0.05	0.24	<0.1	<0.1	0.24	<0.05							<0.05	0.21	0.3	3.6	3.81	0.06
85C	<0.05	0.25	<0.1	<0.1	0.25	<0.05	<0.050	0.18	<0.1	2.1	2.28	<0.05	<0.05	0.20	<0.1	2.5	2.70	<0.05
88B	<0.05	0.26	<0.1	<0.1	0.26	0.05	<0.050	n/a	n/a	4.1	n/a	<0.05	<0.05	0.15	<0.1	1.6	1.75	0.11
90A	<0.05	0.26	<0.1	<0.1	0.26	<0.05	<0.050	0.20	0.1	1.8	2.00	<0.05	<0.05	0.21	<0.1	3.1	3.31	<0.05
WQ	1.0	1.0	≈	≈	2.0	0.46	1.0	1.0	≈	≈	2.0	0.46	1.0	1.0	≈	≈	2.0	0.46

Laboratory Analysis	FL Storm Water Quality Standard
NO2 = Nitrites	< 1.0 mg/L
NO3 =Nitrates	<1.0 mg/L
NH3 =Ammonia	= No limit set
TKN = Total Kjeldahl Nitrogen	= No limit set
TN = Total Nitrogen	<2.0 mg/L
T-PO4 = Total Phosphorus	< 0.46 mg/L

WQ = Florida State Storm Water Quality Standard

Cape Coral's freshwater canal system is our secondary line of stormwater treatment; therefore, your samples are compared to the Florida State Storm Water Quality Standards.

= No Sample Supplied.

≈ = No Water Quality Standard set for this limit.

All Units: mg/L = milligrams/liter

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Events

July	August	September	October
Independence Day 4th	**Canalwatch 1st**	Labor Day 3rd	**Canalwatch 3rd**
Canalwatch 5th		**Canalwatch 5th**	
Native Plant Sale Rain Barrel Class Rotary Park 28th		National Estuaries Day 29th	

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