Canal Current

A wave of information for Cape Coral's Canalwatch volunteers

Newsletter: 3rd Quarter 2014

Environmental News

Irrigation Watering Schedule

As summer comes to a close and consistent afternoon showers end, it's important to remember the local watering restrictions for irrigation.

All residents in Cape Coral are allowed to water two days each week regardless of the source for the irrigation water. Whether you use the City's dual-water system or a private well, you must follow the two-day watering schedule.

The "address" is the last number of your "house" address. For example, if your address is 1926 SW 15th Avenue, the "6" in 1926 is the guiding number.

Here is the two-day schedule that is in effect for all of Cape Coral:

Monday and Friday:
Midnight to 4 a.m. for addresses ending in 0
Monday and Friday:
4 a.m. to 8 a.m. for addresses ending in 1
Wednesday and Saturday:
Midnight to 4 a.m. for addresses ending in 3 and 5
Wednesday and Saturday:
4 a.m. to 8 a.m. for addresses ending in 7 and 9
Thursday and Sunday:
Midnight to 4 a.m. for addresses ending in 2 and 4
Thursday and Sunday:
4 a.m. to 8 a.m. for addresses ending in 6 and 8

Native Plant profile

Brazilian Pepper

Schinus terebinthifolius

Non native and invasive: that sums up the profile for this "scary" weed. The Brazilian pepper, native to South America, was introduced to Florida in the mid-1800's as an ornamental. It has spread throughout the southern portion of the state, and constitutes a large eradication effort by land managers, biologists and ecologists. This invasive weed is quick to spread because of its abundance of fruit, often transported by wildlife. Once established it dominates areas that include wetlands, hammocks, pine forests and coastal plant communities - areas that are often sensitive or preserved for conservation or wildlife refuges.

Inside This Issue:

Questions? Comments? Let us know!

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Secchi Disk Depth and Water Color

A 22 cm disk painted alternately black and white was included in your Canalwatch sampling tool kit. Now known as the Secchi disk, it was the invention of Jesuit priest, Father Pietro Angelo Secchi in 1865. A method of visualizing the transparency of water was needed by the Papal Naval Commander Alessandro Cialdi. Cialdi employed then astronomer Secchi and his invention to conduct a series of water clarity experiments from his vessel, the *SS L'Imacolata Concezione* (Immaculate Conception). From then on, the Secchi disk was the standard method of measuring water clarity and transparency. Although the Secchi disk has had many revisions to its appearance over the past 150 years, its purpose has remained the same. While there are more modern techniques for measuring water clarity, the Secchi disk method is just as viable among professional and citizen scientists due to its affordability and reliability.

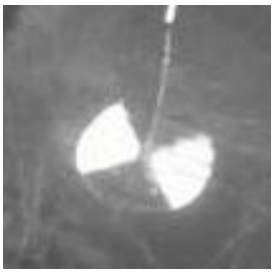
Below are techniques relating to the use of the Secchi disk and an overview of some of the results visualized.

- Remove sunglasses.
- Lower the Secchi disk into the water until it is no longer visible.
- Raise it slowly to a point where the black and white are visible.

The distance between the surface of the water and the just visible disk is the Secchi disk depth. Secchi depth indicates how far sun light can penetrate the water's surface - the photic zone. Clear water lets light penetrate more deeply into water than darker or turbid water.

Another function of the Secchi Disk is determining water color, if present. To observe color, look at the water covering the white sections of the Secchi Disk. Green, yellow-green, light brown, dark brown or even orange can be notable observations.

The presence of algae is a major influence on water clarity. Secchi disk depth can often be used as a simple indicator of algal abundance and productivity. Pollen, silt or soil particles, and other materials suspended in the water can also decrease water clarity. Changes in the clarity and color of a water body can be influenced by rainwater and, most importantly, by the availability of sunlight. Stormwater inflow of excess nutrients and debris such as yard waste or grass clippings can nourish algae; silt or sediment from construction activities can cloud water; and water clarity is generally lessened on overcast days.

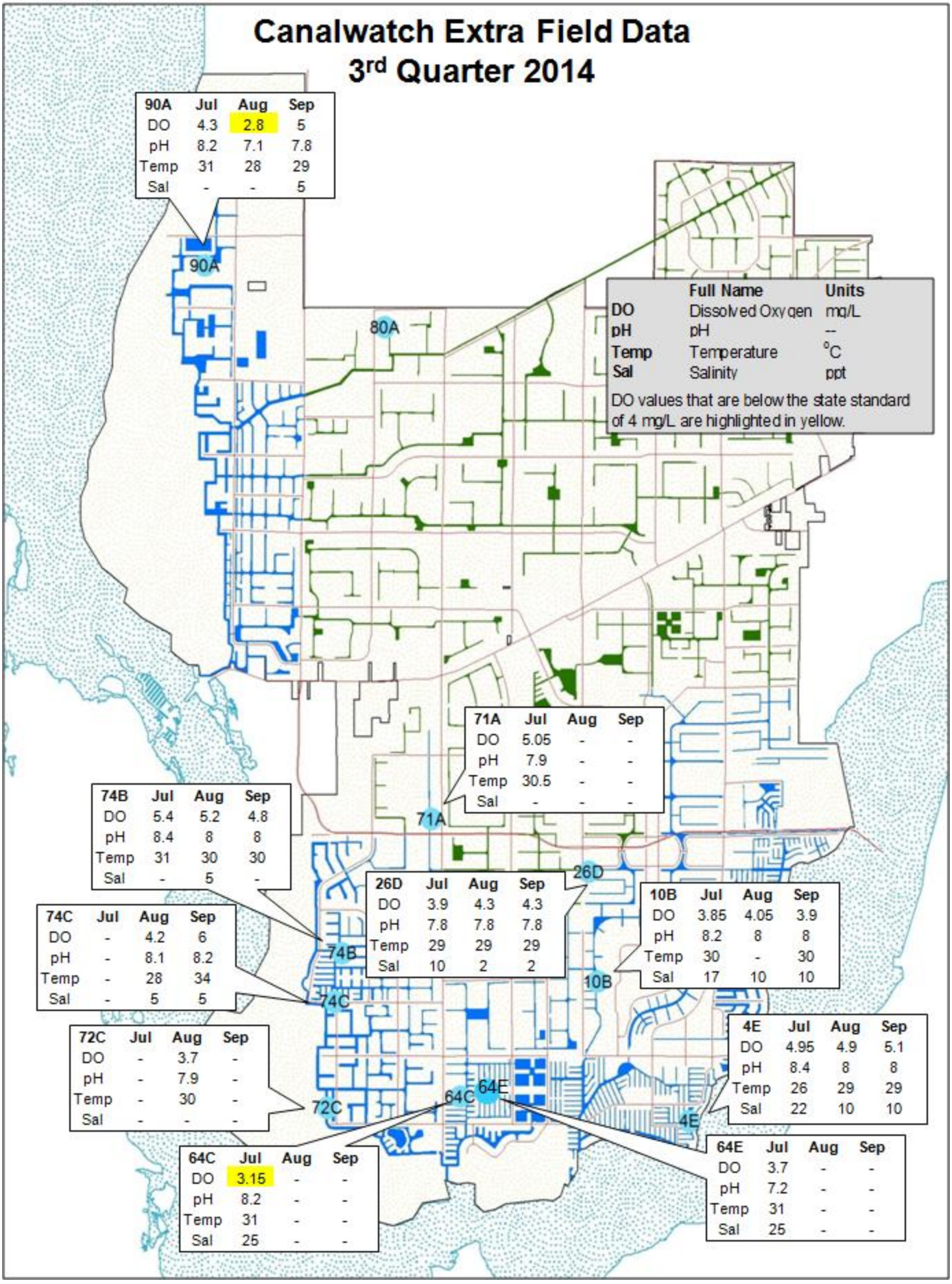


Clear water often indicates low nutrient levels and low production of biomass.

Yellow-green indicates higher nutrient and phytoplankton concentrations, as well as increased tannins and dissolved organic matter.

Green water can indicate increased nutrient and phytoplankton levels, as well as the presence of minerals and dissolved organic material.

Light to dark brown waters often have an extremely high concentration of tannins or humic acids, which is typical for canals, rivers, and estuaries.


Canalwatch Extra Field Data
3rd Quarter 2014
90A Jul Aug Sep
DO 4.3 2.8 5
pH 8.2 7.1 7.8
Temp 31 28 29
Sal - - 5
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 Jul Aug Sep
DO 5.05 - -
pH 7.9 - -
Temp 30.5 - -
Sal - - -
71A
74B Jul Aug Sep
DO 5.4 5.2 4.8
pH 8.4 8 8
Temp 31 30 30
Sal - 5 -
26D Jul Aug Sep
DO 3.9 4.3 4.3
pH 7.8 7.8 7.8
Temp 29 29 29
Sal 10 2 2
26D
10B Jul Aug Sep
DO 3.85 4.05 3.9
pH 8.2 8 8
Temp 30 - 30
Sal 17 10 10
10B
74C Jul Aug Sep
DO - 4.2 6
pH - 8.1 8.2
Temp - 28 34
Sal - 5 5
74B
74C
4E Jul Aug Sep
DO 4.95 4.9 5.1
pH 8.4 8 8
Temp 26 29 29
Sal 22 10 10
72C Jul Aug Sep
DO - 3.7 -
pH - 7.9 -
Temp - 30 -
Sal - - -
72C
64C
64E
4E
64C Jul Aug Sep
DO 3.15 - -
pH 8.2 - -
Temp 31 - -
Sal 25 - -
64E Jul Aug Sep
DO 3.7 - -
pH 7.2 - -
Temp 31 - -
Sal 25 - -

	bd = below detection				benchmark numbers: Marked data are in the highest 20% of values found by Hand et. al, 1988.													
	July 2014						August 2014						September 2014						
	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	0.03	0.03	0.05	1.1	1.1	0.05	0.03	0.03	0.05	0.8	0.8	0.06	0.03	0.05	0.1	0.9	0.95	0.06	51.90
4E	0.03	0.03	0.05	1.2	1.2	0.07	0.03	0.03	0.05	1.0	1.0	0.11	0.03	0.14	0.1	1.1	1.24	0.11	58.83
5D	0.03	0.03	0.05	1.2	1.2	0.07	0.03	0.03	0.05	1.0	1.0	0.07	0.03	0.05	0.05	0.9	0.95	0.08	50.94
5F	0.03	0.03	0.05	1.0	1.0	0.06	0.03	0.03	0.05	0.8	0.8	0.08	0.03	0.03	0.05	0.9	0.9	0.08	56.33
6F	0.03	0.03	0.05	1.2	1.2	0.07	0.03	0.03	0.05	0.9	0.9	0.11	0.03	0.03	0.05	1.2	1.2	0.13	54.19
9F	0.03	0.03	0.05	1.4	1.4	0.09	0.03	0.03	0.05	1.2	1.2	0.11							62.67
10B	0.03	0.03	0.05	1.0	1.0	0.06	0.03	0.03	0.05	0.7	0.7	0.06	0.03	0.03	0.05	0.7	0.7	0.06	53.75
11E	0.03	0.03	0.05	1.1	1.1	0.10	0.03	0.03	0.05	1.1	1.1	0.14	0.03	0.23	0.05	1.2	1.43	0.08	60.47
12H	0.03	0.03	0.05	1.2	1.2	0.10	0.03	0.03	0.05	1.1	1.1	0.13	0.03	0.03	0.05	1.0	1.0	0.13	55.71
15F	0.03	0.03	0.05	1.2	1.2	0.16							0.03	0.03	0.05	0.7	0.7	0.05	57.76
16E	0.03	0.03	0.05	1.33	1.3	0.04	0.03	0.03	0.05	1.3	1.3	0.04	0.03	0.03	0.05	1.1	1.1	0.03	59.15
19D							0.03	0.08	0.05	1.1	1.18	0.02	0.03	0.05	0.05	1.0	1.05	0.17	52.51
19K	0.03	0.03	0.05	1.3	1.3	0.15	0.03	0.03	0.05	1.1	1.1	0.16	0.03	0.05	0.05	1.2	1.25	0.17	59.02
21D	0.03	0.03	0.05	1.1	1.1	0.11	0.03	0.03	0.05	0.8	0.8	0.13	0.03	0.07	0.05	1.1	1.17	0.14	56.52
21I							0.03	0.06	0.05	0.6	0.66	0.10							53.28
26D	0.03	0.03	0.05	1.6	1.6	0.08	0.03	0.16	0.05	1.2	1.36	0.05	0.03	0.03	0.05	1.1	1.1	0.04	59.15
28D	0.03	0.03	0.05	0.7	0.7	0.04	0.03	0.05	0.05	0.7	0.75	0.04	0.03	0.03	0.05	0.9	0.9	0.04	54.26
30C	0.03	0.03	0.05	1.1	1.1	0.01													45.37
41A							0.03	0.03	0.05	0.6	0.6	0.03	0.03	0.03	0.05	0.7	0.7	0.01	34.90
45D							0.03	0.03	0.05	0.8	0.8	0.03	0.03	0.06	0.05	0.6	0.66	0.03	55.49
48A	0.03	0.03	0.05	0.4	0.4	0.01	0.03	0.03	0.05	0.6	0.6	0.01	0.03	0.03	0.05	0.4	0.4	0.01	39.39
50A	0.03	0.03	0.05	0.7	0.7	0.03	0.03	0.03	0.05	0.6	0.6	0.04	0.03	0.03	0.05	0.4	0.4	0.03	52.62
52B							0.03	0.03	0.05	0.5	0.5	0.03	0.03	0.03	0.05	0.5	0.5	0.02	41.68
58F	0.03	0.03	0.05	1.3	1.3	0.04	0.03	0.03	0.05	0.7	0.7	0.03	0.03	0.03	0.05	0.8	0.8	0.02	47.22
58G	0.03	0.03	0.05	1.2	1.2	0.03	0.03	0.03	0.05	0.6	0.6	0.04							49.26
58I							0.03	0.03	0.05	0.7	0.7	0.04							44.22
58J							0.03	0.03	0.05	1.4	1.4	0.04	0.03	0.03	0.05	1.2	1.2	0.02	48.18
59B	0.03	0.03	0.05	1.3	1.3	0.03	0.03	0.03	0.05	0.8	0.8	0.03	0.03	0.03	0.05	0.8	0.8	0.20	47.50

59C	0.03	0.03	0.05	1.2	1.2	0.03	0.03	0.03	0.05	0.8	0.8	0.03	0.03	0.03	0.05	0.7	0.7	0.02	46.10
60C	0.03	0.03	0.05	1.2	1.2	0.03	0.03	0.03	0.05	0.4	0.4	0.03	0.03	0.03	0.05	0.6	0.6	0.03	44.61
64B	0.03	0.03	0.05	1.0	1.0	0.06							0.03	0.05	0.05	0.9	0.95	0.08	52.71
64C	0.03	0.03	0.05	1.0	1.0	0.05													49.84
64E	0.03	0.03	0.05	0.9	0.9	0.05													54.14
65C	0.03	0.03	0.05	1.3	1.3	0.07	0.03	0.03	0.05	1.0	1.0	0.06	0.03	0.03	0.05	0.8	0.8	0.06	58.22
66A							0.03	0.03	0.05	0.8	0.8	0.03	0.03	0.03	0.05	0.5	0.5	0.01	40.59
70G	0.03	0.03	0.05	0.9	0.9	0.05	0.03	0.03	0.05	0.6	0.6	0.05	0.03	0.03	0.05	0.6	0.6	0.03	62.52
71A	0.03	0.03	0.05	0.8	0.8	0.03													55.45
72A							0.03	0.03	0.05	0.8	0.8	0.08	0.03	0.03	0.05	0.8	0.8	0.06	53.51
72C							0.03	0.03	0.05	0.8	0.8	0.06	0.03	0.03	0.05	0.9	0.9	0.06	55.12
74B	0.03	0.03	0.05	1.2	1.2	0.04	0.03	0.03	0.05	1.0	1.0	0.07	0.03	0.03	0.05	0.8	0.8	0.06	54.12
74C							0.03	0.03	0.05	0.9	0.9	0.06							50.19
82A	0.03	0.03	0.05	2.0	2.0	0.06	0.03	0.03	0.05	0.8	0.8	0.03	0.03	0.03	0.05	0.6	0.6	0.02	56.58
83A	0.03	0.03	0.05	1.5	1.5	0.05	0.03	0.03	0.05	0.8	0.8	0.03	0.03	0.03	0.05	0.6	0.6	0.01	43.39
83C							0.03	0.03	0.05	0.8	0.8	0.03	0.03	0.03	0.05	0.8	0.8	0.01	52.08
89A	0.03	0.03	0.05	1.1	1.1	0.13	0.03	0.05	0.1	0.9	0.95	0.17	0.03	0.12	0.05	1.0	1.12	0.17	61.50
89C	0.03	0.03	0.05	1.8	1.8	0.12	0.03	0.03	0.05	0.9	0.9	0.17	0.03	0.03	0.05	1.6	1.6	0.17	59.01
90A	0.03	0.03	0.05	2.5	2.5	0.04	0.03	0.03	0.05	1.3	1.3	0.03	0.03	0.03	0.05	1.2	1.2	0.03	53.09
93C	0.03	0.03	0.05	1.0	1.0	0.03	0.03	0.03	0.05	0.8	0.8	0.09	0.03	0.03	0.05	0.9	0.9	0.06	52.65
Median		**0.03**	**bd**	**1.20**	**1.20**	**0.05**		**bd**	**bd**	**0.80**	**0.80**	**0.05**		**bd**	**bd**	**0.90**	**0.90**	**0.06**	**53.40**
Max		**0.03**	**0.05**	**2.50**	**2.50**	**0.16**		**0.16**	**0.10**	**1.40**	**1.40**	**0.17**		**0.23**	**0.10**	**1.60**	**1.60**	**0.20**	**62.67**

NO2 = Nitrite (inorganic)	TKN = Total Kjeldahl Nitrogen (organic + NH4)
NO3 = Nitrate (inorganic)	TN = Total Nitrogen (inorganic + organic)
NH3 = Ammonia (inorganic)	TP04 = 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. 44 sites this quarter scored as GOOD (<60) and 4 sites scored FAIR (60-70).
Despite the rainfall for this past quarter the water quality has faired well. Some things to expect as the dryer months continue; low water levels in the canals and lakes and improved clarity. This past year so far the canals have trended, "better" than the previous years 3rd quarter results. Perhaps this is an indicator of the achievement of Cape Coral's fertilizer ordinance, which is been in effect for its forth year.

November

5th Canalwatch
(at Rotary Park)

6th Guided Tour of
Yellow Fever Creek
9 am - 11 am
Info: 549-4606

7th Florida Yards &
Neighborhoods 1 pm - 4 pm
Rotary Park
Info: 549-4606

7th Full Moon Guided Paddle
At Eco Park/Four Mile Cove
5:30 – 8:30
Info: 549-4606

15th Nature of Cape Bus Tour
8 am - 1 pm
Meets at Rotary Park
Info: 549-4606

21st Guided Paddle of Matlacha Pass
Both 9 am - 11 am
Info: 549-4606

December

3th Canalwatch

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

12th Guided Tour of
Eco Park/Four Mile Cove
9 am - 11 am
Info: 549-4606

15th Nature Seminar
- Snakes!
Rotary Park 1 pm - 2 pm
Info: 549-4606

20th Nature of Cape Bus Tour
8 am - 1 pm
Meets at Rotary Park
Info: 549-4606

January

7th Canalwatch

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Environmental Resources
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