

# Change Over Time: What Happens to the **River Supply?**

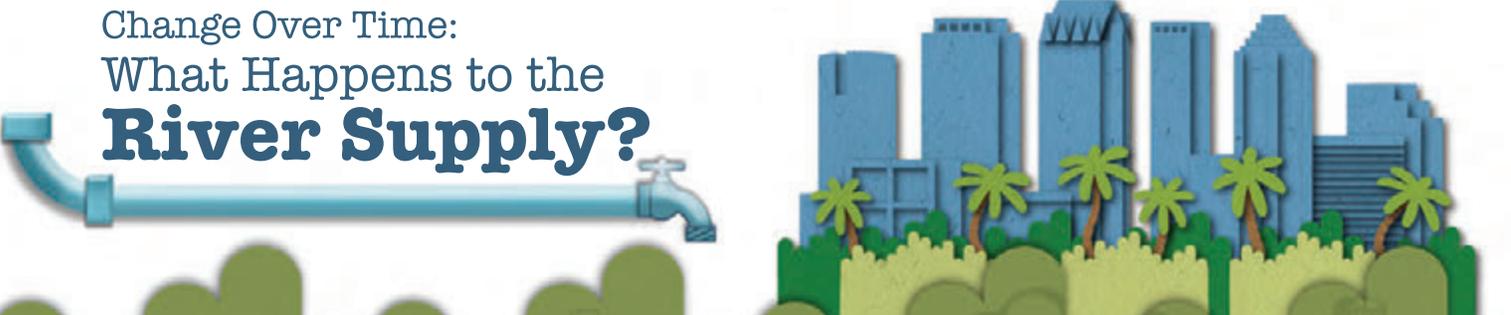
## Enough Water for Everyone

**The City of Tampa is home to almost 400,000 people. On a daily average, we use almost 77 million gallons of water.** The City of Tampa depends on the **Hillsborough River** as its main source for potable drinking water. The size of the river and the quality of the water make it a viable renewable source that can sustain our great city. On a regular basis, scientists and city planners gather to project the needs of the Tampa citizens for future water use. They take into consideration the current population of the city, projected population, the amount of rain we've received over the year and plan out how to allocate the water in such a way as to make sure that everyone in the city can have some. To conserve water the City maintains outdoor water use restrictions all year. Sometimes, people see this as an inconvenience, but in the long run this assures that everyone in the city will have the water they need to live comfortably.

## How does the River flow?

Rivers do not stand alone. They are a water way that is one part of the overall water system on our planet. The Hillsborough River connects a larger water source to many smaller sources, ultimately bringing water into our homes. During its route, the Hillsborough River goes through many changes from its point of origination to its final destination in the Hillsborough Bay.

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The Hillsborough River flows first from the Green Swamp that stretches over northern Hillsborough County, Pasco and Polk counties. It then flows 54 miles through Pasco and Hillsborough counties to reach the Hillsborough Bay. Over the course of this journey, the Hillsborough River takes on many forms, from the still and quiet waters of the Green Swamp to the flowing current of the body of the river, to the brackish water as the river meets the bay. Hillsborough River has been making this journey for centuries and over the course of time, the water has changed the surface of the land. In the Hillsborough River, the slowly moving current wears away at the bottom and shore of the river, carrying sand, gravel and rocks. This process is called **erosion**. With this process, the face of the river changes and the capacity of the river to hold more water changes with it. The changes to the land around the river also impacts the habitats that we find along the river. Birds must move their nests to accommodate the changing shoreline and fish and alligators feed and raise their young at different points of the river where the water is high enough to protect them.



### What can we do?

The erosion process is naturally occurring all through nature. We as good citizens of the city need to do our part to make sure we don't impact the course of the river. On the bright side, we can help preserve the habitats of the Hillsborough River. Several non-profit groups work hard to keep the river clean and protect the habitats. Ask your parents to help you get online to find one of these groups or ask the City of Tampa Water Department for their recommendation.

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**Word Search**

Q B H K I N G M J W C W U D Z D B T C A T N D U W  
 F L Z I N O I T A L U P O P R G P Z S F I X O Y P  
 G O E N L U L K I C K Z N O D T R F S D N A L S T  
 V X W A D L Y T I C Z Z U A K N M G V H G X H B C  
 G L W T E L S Z S V G G L S S Z L K X W P Y S S P  
 F E U F D I O B G H H L A B P H B F Q H H F R E X  
 X M M W O C Z K O T U W M U H T U C A B A O N A A  
 A R B J O O E D N R N G F O H Q D Y K J Q T F I V  
 H T P P N N Y P L G O R F S S M F X Q S Q W R K Q  
 S O O P R N M C X W M U I H N B N I F A O P H L E  
 S G R E E N S W A M P K G T O H A L A N T K A M M  
 J N T I L Y W T D G A Z J H I E T P N D J P B O I  
 A Z O K A I D B W R S S M N S R I G M V A N I Z A  
 D E D I N D X Y B H Q C J C O O Z F C A A K T O G  
 E D C C T V Y N I P P Y B X R N I B X W T J A O D  
 G Y U O S C Q O A K R L R Q E Q X I X O I W T F R  
 Y J G P J T I N U B A B K X T H Y M T V K Q R E H  
 O Y V A B Q I R Z B E L Q H C C A N F W P E V H T  
 L F S I S U Y J T I B Q C C Z N D D U A B I M N T  
 N M Q B O L S O J S M L Z J G Y G G S R R V J G W  
 R O T A G I L L A A E S K R W B X J M T I V K K H  
 M Y L L H X T I O U Z R O A P L D O I M O Y L L A  
 Y Q V E R B U B A C O V E R N P L U N T T X L Q M  
 W K K K I J T Z E K E Z M M G M X L Z Q Q W C N U  
 P T E J N G C E K Z B L M C T G V F E L B A T O P

**ALLIGATOR**

**CITY**

**DROUGHT**

**EROSION**

**GREENSWAMP**

**HABITAT**

**HERON**

**HILLSBOROUGH**

**MANGROVE**

**POPULATION**

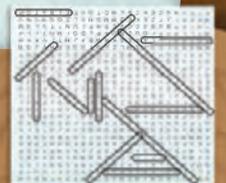
**POTABLE**

**RESTRICTIONS**

**RIVER**

**TAMPA**

**Answer**  
 (backwards)



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### Directions

1. Use the tracing paper and a regular pencil to trace the river on the 1843 map. Mark the natural habitat areas with crayons or colored pencils.
2. Repeat Step 1 with the 2015 map. The location of Tampa's water plant, the David L. Tippin Water Treatment Facility is marked on the map for you.
3. Take the tracing paper from the 1843 map and lay it over the 2015 map. Observe changes in natural habitat, river course and land use.
4. Discuss changes observed in Step 3.
  - a. What changes in natural habitat do you see? What things may have contributed to those changes?
  - b. How might the changes you see affect the river's water quality?
  - c. What can you do to protect the river for the future?

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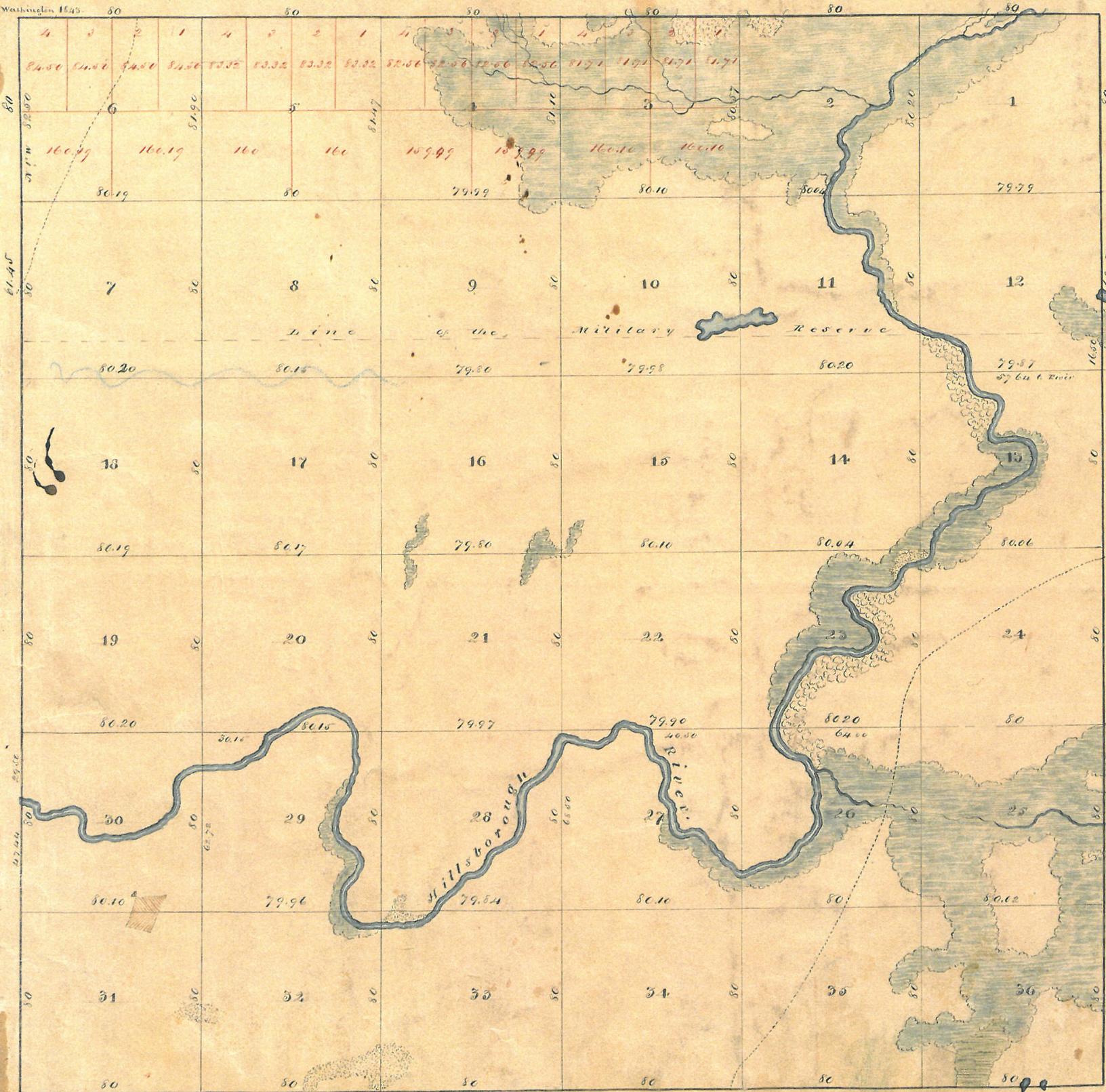
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FLORIDA  
East Florida.

Part of the letter of August 1852

Vol 28 - Fla

Scale 1/2 in. to an Inch.



Contents.					
Sec	Area	Sec	Area	Sec	Area
1	640.	13	640.	25	640.
2	643.24	14	640.	26	640.
3	647.04	15	640.	27	640.
4	650.22	16	640.	28	640.
5	653.38	17	640.	29	640.
6	656.58	18	640.	30	640.
7	640.	19	640.	31	640.
8	640.	20	640.	32	640.
9	640.	21	640.	33	640.
10	640.	22	640.	34	640.
11	640.	23	640.	35	640.
12	640.	24	640.	36	640.
7782.26		7680.00		7680.00	
Total 23,092.26 Acres.					

Entered

The N. Boundary is a Basis Parallel, Var. 4° 50' N.  
 The E. & W. Boundaries, North from the Line of the  
 Military Reserve, were Surveyed by Arthur M.  
 Randolph D.S. in 1843.

The E. Boundary, S. from the Line of the Military  
 Reserve; the W. Boundary, N. to the said line,  
 and the S. Boundary, were Surveyed; and the  
 residue of the West Boundary, N. to the Basis  
 Parallel, resurveyed: - Also the Section Lines  
 were Surveyed, in the Month of March 1852,  
 by Charles F. Hopkins, Dep. Surveyor.

Variation 4° 50' East.

Andrew Paeetty } Chainmen.  
 Caspar Carreras }

Examined, Compared with Field notes, and Approved,  
 21. August 1852.  
 P. A. Putnam  
 Surveyor

Land Surveyed	By Whom	Date of Land	Ints	Ch.	Sq.	cont.	Amount
Township Lines	Chas F. Hopkins	Jan 7 1852	12	02	50		
Section Lines			60	06	35		
			72	8	85	6.	432.66

Surveying & subdividing paid for  
 per Annual Land Office Report  
 for 1852



The screenshot displays the USGS Mapper interface. On the left is a search panel with a "Search" field and a "Surface-Water Sites" filter. Under "Surface-Water Sites", there are two sections: "Active Sites" and "Inactive Sites". Each section has radio buttons for "Any data", "Instantaneous data", "Daily data", "Water-quality data", "Peak data", "Measurements", and "Annual Report". Below these are icons for "Groundwater Sites" (red circle), "Springs" (purple circle), "Atmospheric Sites" (blue circle), and "Other Sites" (green circle). The main map area shows a street map of Tampa, Florida, with a blue arrow pointing to a specific location labeled "David L. Tippin Water Treatment Facility". The map includes street names like E Fowler Ave, SR-582, and E Riverhills Dr. At the bottom of the map is a "Site Information" panel. The browser window at the top shows the URL and various browser tabs and menus.

David L. Tippin  
Water Treatment  
Facility