

## RIVERS OF NORTH AMERICA

13 PART SERIES

ARKANSAS  
COLORADO  
COLUMBIA / SNAKE  
CONNECTICUT  
HUDSON  
INDIAN / INLAND WATERWAY  
LOWER MISSISSIPPI  
UPPER MISSISSIPPI  
MISSOURI  
OHIO  
POTOMAC  
RIO GRANDE  
SACRAMENTO / AMERICAN

### Consider Visiting These Web Sites:

<http://www.fcsc.usgs.gov/>

<http://dhr.dos.state.fl.us/flafacts/shorthis.html>

[http://www.fosusa.org/envirom/Indian\\_River.htm](http://www.fosusa.org/envirom/Indian_River.htm)

<http://www.ifas.ufl.edu/~veroweb/HABITAT/IRL.HTM>



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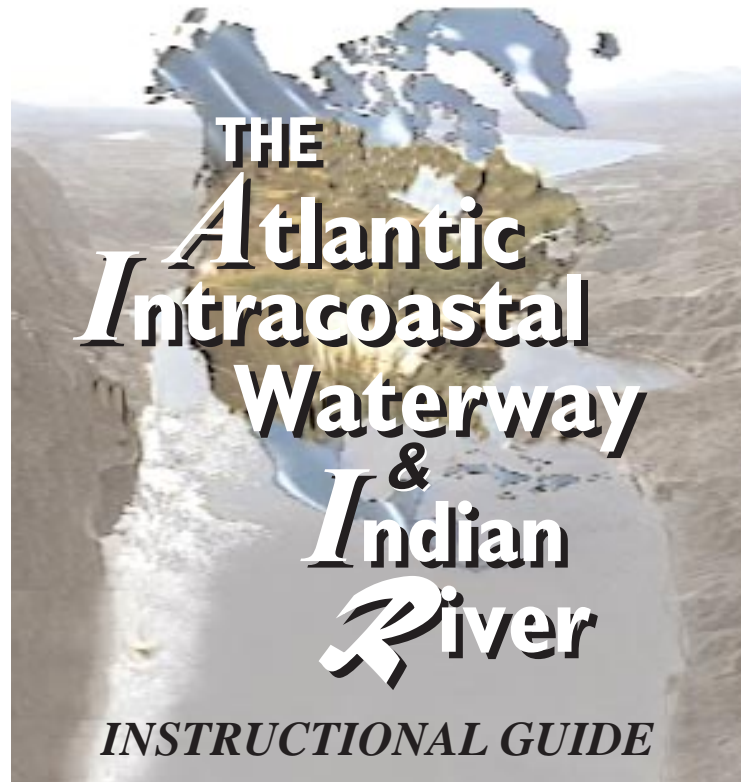
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Presents

# *Rivers of North America*

13 Part Series



Florida's east coast is famous for its wildlife refuges especially near Merritt Island. On paper or a computer describe the variety of species you may observe while visiting one of Florida's wildlife refuges and explain why some species living in south and central Florida are at risk of extinction. If needed use the photograph below or if possible draw your own graphics (use a computer).



## **INTRODUCTION TO SERIES**

Rivers of North America Series brings a unique perspective to the role great rivers have played in the early development and subsequent settlement of a region and a nation. Each river has its own unique story to tell, it's own geology, geography and history.

As a complementary device with each video, an instructional guide suggests exercises to help teachers, parents and students. These interactive exercises will reinforce and further develop a student's level of comprehension.

The instructional guide provides:

**Vocabulary**  
**Chronology / Q & A**  
**Native People / Explorers**  
**Discussion Points / Activities**  
**Geography / Geology**  
**River / Cities Development**

**Permission granted to copy the exercises provided in this guide. For educational use ONLY.**

E-Guides available at  
[www.filmideas.com](http://www.filmideas.com)

## Geology of The Intracoastal Waterway & Indian River

One of the most unique geological features along the coast of Florida are the formations of coral reefs. On paper or a computer, explain and illustrate what coral reefs are and how they are formed. If needed use the photo below or if possible draw your own graphics (use a computer). Gather information on the internet. <http://www.uncwil.edu/nurc/aquarius/prel3.htm>



### NOTES:

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## The Atlantic Intracoastal Waterway & Indian Rivers

The Atlantic Intracoastal Waterway travels 2,000 miles south, along the east coast of the United States, from the Annisquam River, near Boston, Massachusetts to Key West, Florida. Its natural waterway primarily consists of rivers, bays and sounds. But over time water channels have been cut into the land connecting its separate parts and making it into the continuous route it is today. As the Atlantic Intracoastal Waterway enters the east coast of Florida, the Indian River becomes a part of its route for 150 miles. From Mosquito Lagoon, near the Kennedy Space Center, to Stuart, Florida, the Indian River becomes an estuary where its fresh water mixes with ocean salt water.

The first humans to inhabit the Atlantic Intracoastal Waterway & Indian River region were Paleo-Indians. These nomadic tribes arrived in the area nearly 12,000 years ago and followed giant herds of animals known as megafauna for food & clothing. The earliest European reference to Florida is from an unknown Portuguese Navigator in 1502. In 1513 Spanish explorer Juan Ponce De Leon mounted an expedition from the Caribbean Island of Puerto Rico to explore the region. Other Europeans soon followed mostly from France & Britain. Control for Florida caused many disputes among these early European settlers. However by 1821 European strength dissolved and Spain offered Florida as part of a treaty to the United States. In 1828 President Andrew Jackson declared all Native American Indians be removed from Florida & sent to reservations in Oklahoma.

Industry and wildlife is also a part of Florida's coastal waterway history. Florida's citrus fruit industry is famous for its ruby red grapefruit, oranges and lemons. The Merritt Island Wildlife Refuge is home to 330 species of birds, 312 kinds of mammals, 117 types of fish and 65 different amphibians and reptiles. However because of the constructions for housing developments, shopping malls and golf courses recent studies indicate 45 species of fish are threatened by extinction.

During its history, the Atlantic Intracoastal Waterway and the Indian River have witnessed a variety of human interaction. From its vast wildlife to its arrival of Indian and European settlers, Florida's coastal water region bears a wealth of North American heritage and natural beauty.

**INDIAN RIVER (The):** Part of the Atlantic Intracoastal Waterway route along 150 miles of Florida's east coast from Mosquito Lagoon to Stuart, Florida.

**ATLANTIC INTRACOASTAL WATERWAY (The):** Travels 2,000 miles south, along the east coast of the United States, from the Annisquam River, near Boston, Massachusetts to Key West, Florida. Its natural waterway primarily consists of rivers, bays and sounds. But over time water channels have been cut into the land connecting its separate parts and making it into the continuous route it is today.

**BRACKISH WATER:** The water containing both the fresh water from a river and salty water from an ocean. (i.e. Indian River & Atlantic Ocean)

**CORAL REEFS:** Formations created from the skeletons of millions of tiny sea creatures called polyps. As living polyps attach to dead ones the reef continues to grow larger in size.

**ESTUARY:** The area where the fresh water from a river mixes with the salt water from an ocean. (i.e. Indian River and Atlantic Ocean).

**HENRY FLAGLER:** An industrialist and oil tycoon who in the early 1900's built a popular railroad and resort hotels along Florida's east coast.

**JUAN PONCE DE LEON:** Spanish explorer who in 1513 mounted one of the first European expeditions into Florida's east coastal region.

Letters A thru C describe three of Florida's east coast cities. Write the name of the city on the solid black line. Then with a black marker write the letter **A**, **B**, **C** to indicate where on the Florida map each city is located.

**A)** Famous for its lighthouses \_\_\_\_\_ is the oldest permanent European settlement in the United States.

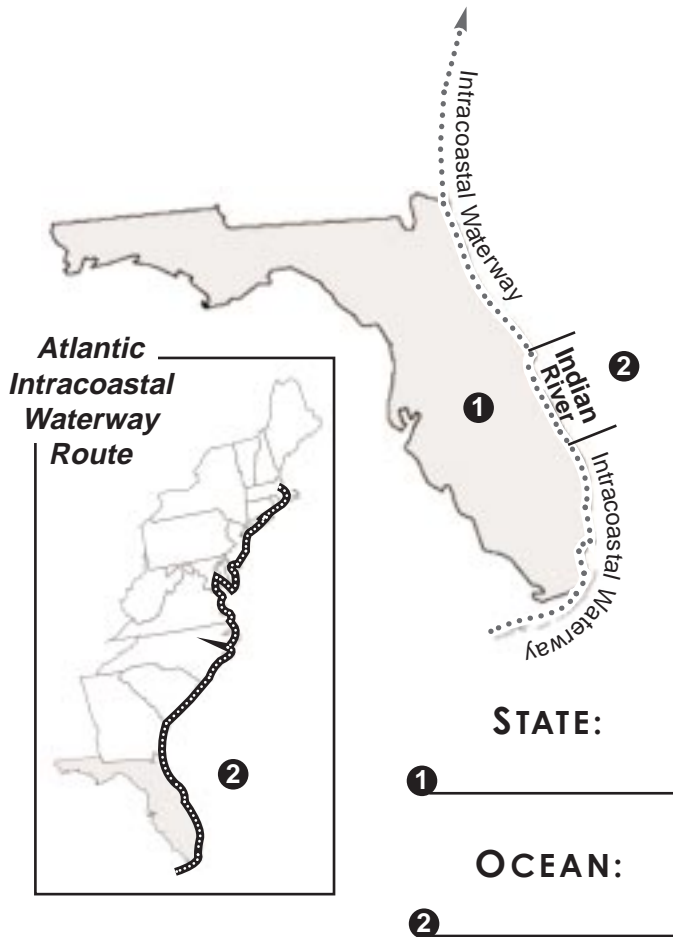
**B)** Known as "Little Havana" \_\_\_\_\_ is home to some of the most popular beaches in the U.S.

**C)** The Atlantic Intracoastal Waterway ends its 2000 mile journey at \_\_\_\_\_.



## GEOGRAPHY of The Intracoastal Waterway & Indian River

When the **Indian River** becomes part of the **Atlantic Intracoastal Waterway** it travels along one U.S. state and its fresh water mixes with the salt water of an Ocean. On the solid black line name each of these areas.



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**INLETS:** A narrow water passage between peninsulas or through a barrier island leading to a bay or lagoon.

**LAGOON:** A shallow sound, channel, or pond near a larger body of water. (Indian River)

**LIMESTONE:** The rock formed mostly by organic remains of which the underlying bedrock for the Florida region was created 2 million years ago when the area was under ocean waters.

**MEGAFUNA:** Large extinct animals which were once hunted by nomadic Indian tribes who inhabited the Florida region.

**MERRITT ISLAND WILDLIFE REFUGE:** A 220 square mile area and is home to 330 species of birds, 312 kinds of mammals, 117 types of fish, and 65 different amphibians and reptiles.

**PALEO-INDIANS:** The first human inhabitants of the intracoastal waterway and Indian River region. These first inhabitants arrived in the area nearly 12,000 years ago.

**SEMINOLES:** Creek and Yamassee tribes mixed to create a new tribe known as Seminole Indians who became native to Florida. The word Seminole means "Runaway".

**ST. AUGUSTINE:** In 1565, King Philip II of Spain sent 600 spanish soldiers lead by Don Pedro Menendez Aviles to recapture territories threatened by France. The first of these settlements eventually became known as St. Augustine.

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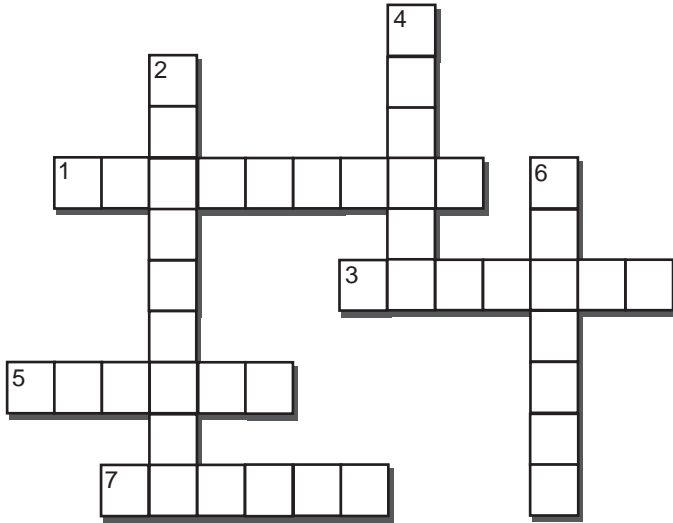
## Discussion Points / Activities

1. If possible visit some of the locations along Florida's east coast water region as discussed in the video. SEE Pg. 5 of this guide. Also checkout the internet for web sites about the coastal waters rich heritage. SEE Back Page.
2. Like a science project, build a model river using paper mache , clay, dirt / mud etc. to illustrate the characteristics of the Atlantic Intracoastal Waterway and the Indian River.
3. Discuss how each of the following events have affected the past and present-day conditions of the Atlantic Intracoastal Waterway and the Indian River:
  - 1) Building housing, shopping malls & golf courses
  - 2) Railroads
  - 3) The arrival of Indian cultures & European explorers
  - 4) Development of cities
4. The ecosystems along rivers and other bodies of water sustain many different life forms. If possible visit a river or waterway (Atlantic Intracoastal Waterway and the Indian River) and imagine you are an ecologist. Study these different life forms and document their relationships with the water environment. i.e. bring binoculars, take photographs, paint a river scene, write a poem, sample various vegetation to view under a microscope etc.

## CHRONOLOGY of The Intracoastal Waterway & Indian River

- 2 million years ago: Florida region is under ocean water and the underlying bedrock made of limestone is created.
- 12,000 years ago: Paleo-Indian tribes migrate into Florida's east coast water region.
- 1502: The earliest European reference to Florida is documented by an unknown Portuguese explorer.
- 1564: French explorers Jean Ribaut & Rene De Audonniere establish a colony near present-day Jacksonville.
- 1565: King Phillip II of Spain assigns 600 Spanish soldiers lead by Don Pedro Menendez Aviles to reclaim Florida for Spain. St Augustine is established as a settlement.
- 1821: Spain offers Florida to the United States by treaty.
- 1828: President Andrew Jackson declares all Native American Indians to be removed from Florida and sent to the reservations in Oklahoma.
- 1838: Fort Pierce is established.
- 1845: Florida admitted to the Union as the 27th state.
- 1861: Civil War begins and Florida seceded from the Union and joins the Confederacy.
- late 1800's - early 1900's: Industrialist Henry Flagler builds railroads and hotel resorts along Florida's east coast.
- 1973: The bald eagle, a popular species in the Florida wetlands, is placed on the endangered list.

Use the words described in this guide on pgs. 2, 3, 4 & 5 to complete the crossword.



**ACROSS:**

- 1) Native Florida Indians.
- 3) Area where fresh water mixes with salt water.
- 5) Shallow pond near larger body of water.
- 7) Spanish explorer who led one of the first European expeditions into Florida.

**DOWN:**

- 2) Underlying bedrock of Florida region.
- 4) Narrow water passages which lead to a bay or lagoon.
- 6) Built popular railroads and hotels along Florida's east coast.

**ANSWERS:**  
 Across-1) Seminoles, 3) Estuary, 5) Lagoon, 7) De Leon  
 Down - 2) Limestone, 4) Inlets, 6) Flagler

**E**XPLORERS of The Intracoastal Waterway & Indian River

**JUAN PONCE DE LEON:** Spanish explorer who in 1513 mounted one of the first European expeditions along Florida's east coastal region.

**JOHN RIBAUT & RENE DE AUDONNIERE:** French explorers who in 1564 establish a colony near present-day Jacksonville.

**DON PEDRO MENENDEZ AVILES:** A Spanish explorer who in 1565 was sent by King Philip II of Spain to reclaim Florida territories.

**PLACES OF THE INTRACOASTAL WATERWAY & INDIAN RIVER:**

**MERRITT ISLAND:** Sites include Kennedy Space Center and Cape Canaveral.

**MERRITT ISLAND WILDLIFE REFUGE:** A 220 square mile area and is home to 330 species of birds, 312 kinds of mammals, 117 types of fish, and 65 different amphibians and reptiles.

**SABASTIAN STATE PARK:** A popular inlet located near Melbourne, Florida. Activities include wildlife viewing, swimming and fishing.

**CITIES OF FLORIDA'S WATERWAY REGION:**

- St. Augustine
- Ft. Pierce
- Miami
- Key West

1. For 150 miles, the Indian River becomes part of the Atlantic Intracoastal Waterway along the east coast of what U.S. state?

2. The Atlantic Intracoastal Waterway travels 2000 miles south along the east coast of the United States. Where does the Atlantic Intracoastal Waterway begin its journey? Where does it end its journey?

3. The water in the Indian River is described as brackish. Define the term brackish.

4. Who arrived 12,000 years ago and became the first human inhabitants of Florida's coastal water region? Who became the first known European to lead an expedition near modern day St. Augustine in 1513?

5. How did the arrival of the first European explorers change the lives of the Native American Indians?

6. Before Florida became part of the United States European countries established settlements in the region. Name two of these European Countries.

7. Florida's east coast water region is famous for its natural wildlife. What species inherit Florida's east coast as their home and explain the reasons why some of these species are at risk of becoming extinct?

**Fill in the blank by selecting the words from the answers list:**

**ANSWERS LIST :**

St. Ambrose • Sea Gulfs • Disney World Refuge  
 Coral Reefs • Geobeasts • St. Augustine  
 Megafauna • Merritt Island Wildlife Refuge

8. **A)** A 220 square mile area known as the \_\_\_\_\_ is home to 330 species of birds, 312 kinds of mammals, 117 types of fish, and 65 different amphibians and reptiles.

**B)** \_\_\_\_\_ became the first Spanish settlement in 1565, when King Philip II sent 600 Spanish soldiers lead by Don Pedro Menendez Aviles to recapture territories threatened by France.

**C)** Formations called \_\_\_\_\_ are created from the skeletons of millions of tiny sea creatures called polyps.

**D)** \_\_\_\_\_ are large extinct animals which were once hunted by nomadic Indian tribes who inhabited the Florida region.