

Meet the Locals

Activity Presentation

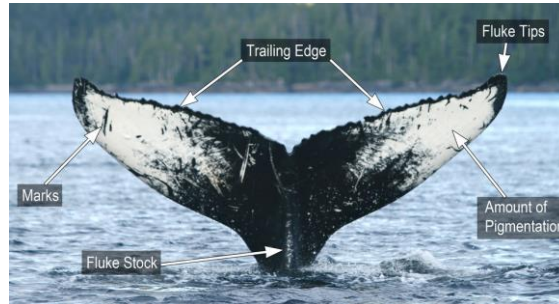
Bottlenose Dolphins

- Marine mammal
- Order Cetacea (Baleen & Toothed Whales)
 - > **Suborder Odontoceti - Toothed Whales (~70 species, including bottlenose dolphins)**



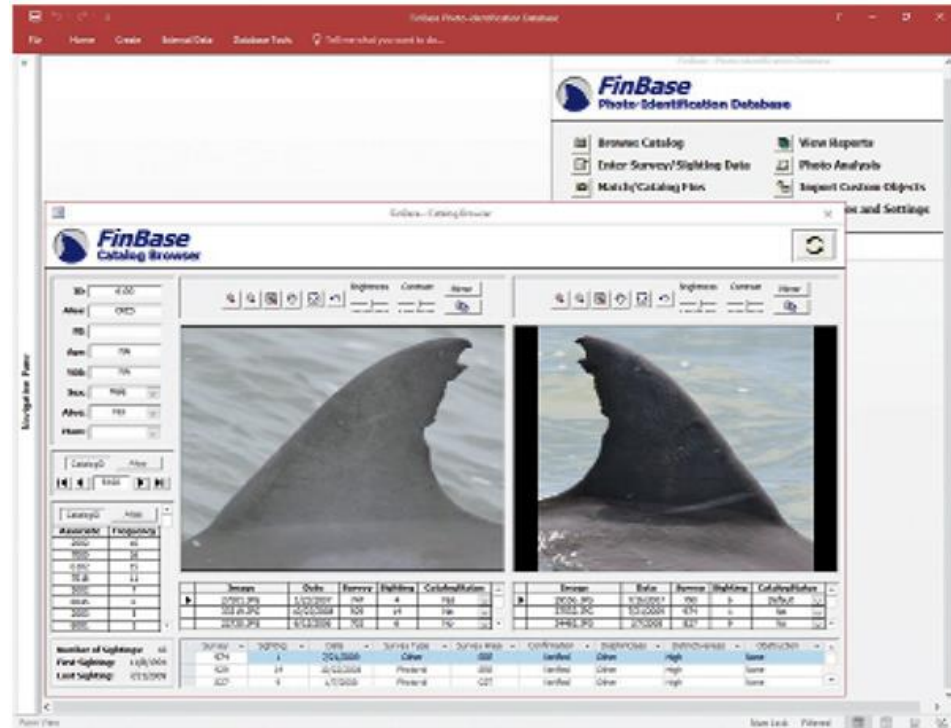
Who are they?

- Photo Identification
 - > **ID method where dorsal fins are photographed and compared**
 - Specifically nicks, marks, or unique traits
 - > **For some baleen whales, pictures of their flukes (tails) are used to identify individuals**



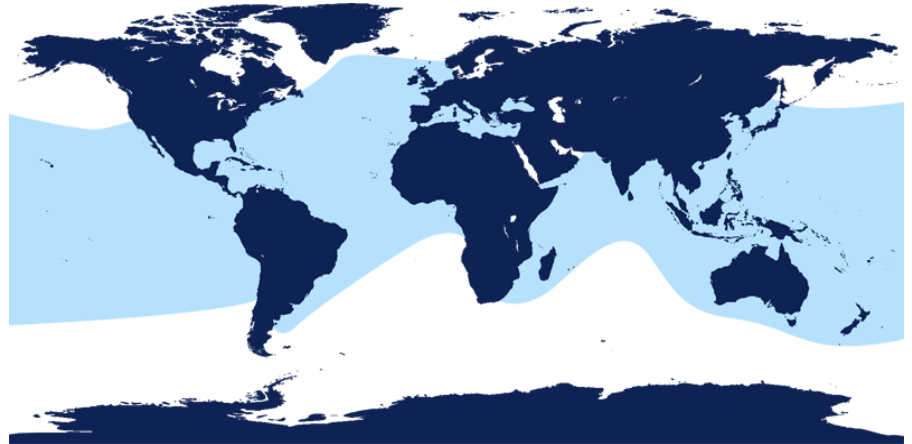
Who are they?

- FinBase
 - > Photos downloaded into research software that analyzes dorsal fin shape and unique characteristics to identify an individual dolphin



Where do they live?

- Most common dolphin species off the East coast of US
- Worldwide distribution in tropical & subtropical water



Bottlenose dolphin's worldwide range (light blue) from *Voices in the Sea*

Where do they live?

- **Stocks:** group of animals of the same species that interbreed and that occupy the same geographical area.
 - > **61 bottlenose dolphin stocks in US waters**
 - > **5 off the coast of South Carolina**
- **Migratory:** animals that migrate with the seasons to feeding and breeding grounds.
- **Residential:** animals that stay within the same geographic region year round.

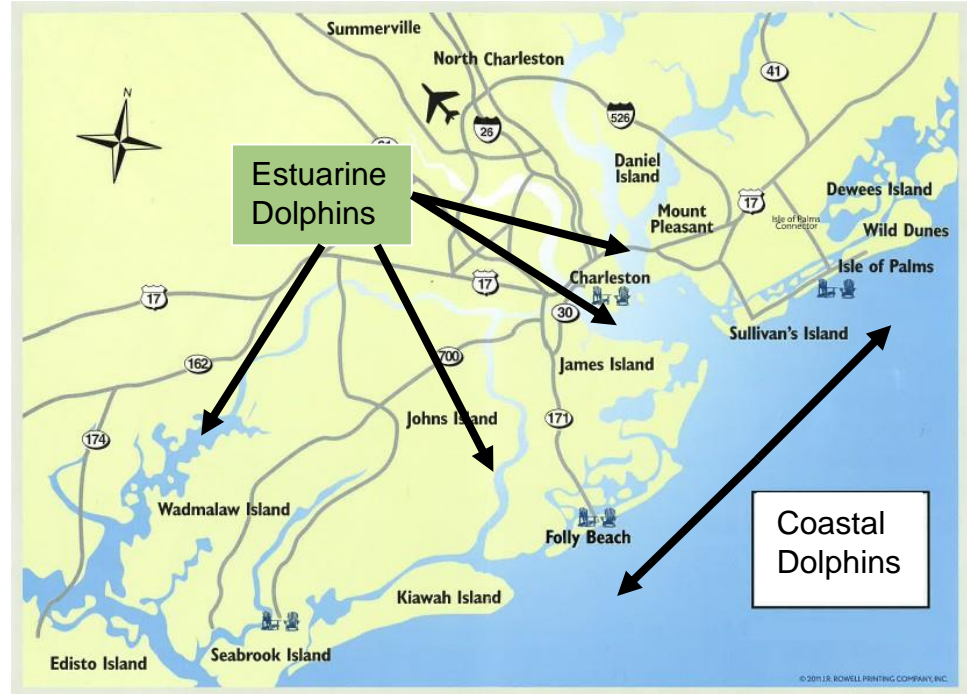
Where do they live?

- 5 South Carolina Stocks
- 4 are Residential
 - > 1 - Northern South Carolina Estuarine
 - > 2 - **Charleston Estuarine**
 - > 3 - Southern South Carolina
 - > 4 - South Carolina-Georgia Coastal
- 1 is Migratory
 - > 5 - Southern Migratory



Activity Focus Stock

- Charleston Estuarine System Stock (CESS)
- ~300-900 dolphins
- Estuarine Dolphins: live where rivers meet the ocean
- Coastal Dolphins: live where ocean meets land



Sentinel Species

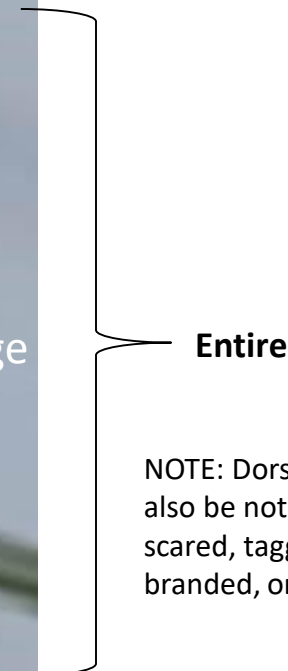
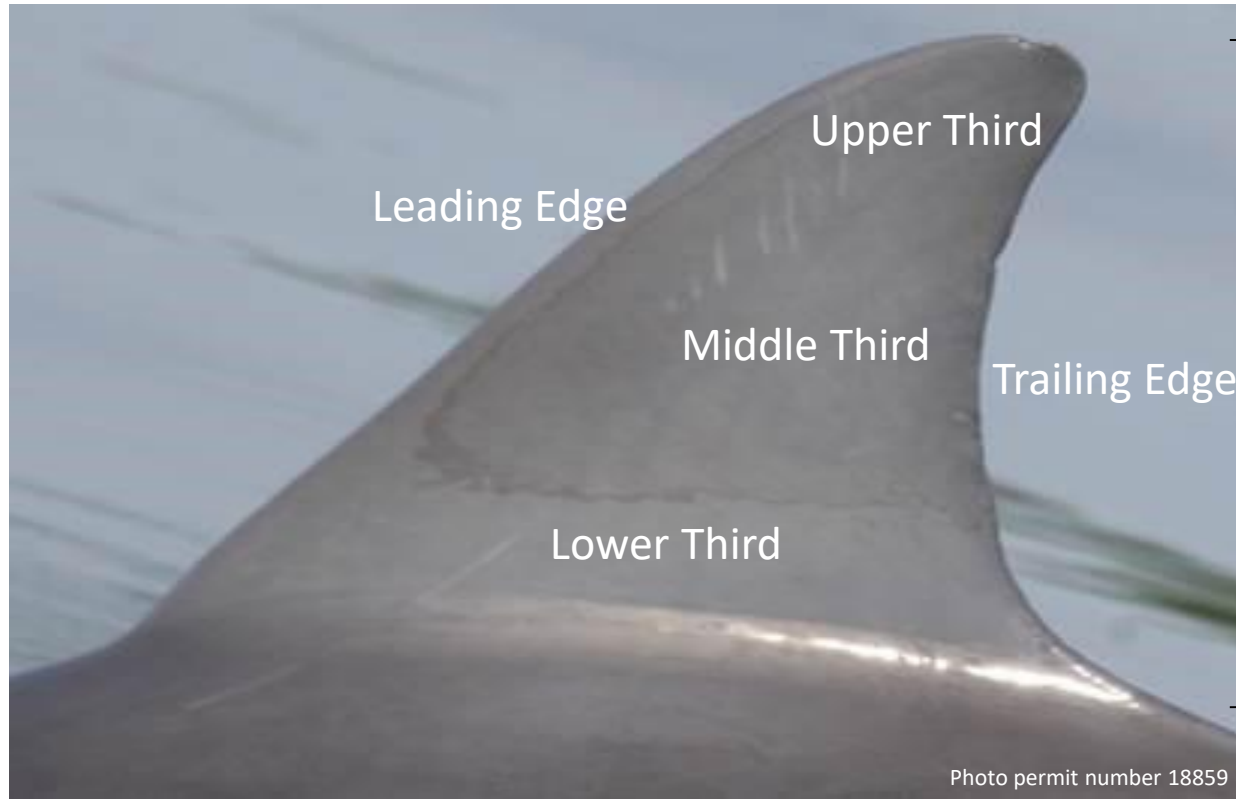
- An animal that provides a warning sign regarding human health
 - > **Example: canary in the coalmine**
- Common characteristics of a sentinel species
 - > **Widespread and abundant**
 - > **Habitat overlaps with the range studied**
 - > **Easily handled or observed**
 - > **Have a measurable response to the hazards in question**

Journal Prompt :

- Why is it important to know who the local bottlenose dolphins are and where they are found?

- Write answer on Meet the Locals Worksheet.

Parts of a Dorsal Fin



NOTE: Dorsal fins can also be notched, scared, tagged, branded, or missing.

A



B



C



D



E



1

2

3

4

Clue 1

- This bottlenose dolphin has been sighted 56 times throughout the Charleston and Stono estuaries. The age is unknown but it is at least 16 years old since it was first sighted in 1994 and most recently in 2010. The sex of this dolphin is a female and she has had at least one calf. Researchers have noticed severe entanglement marks. The dorsal fin is very unique with its atypical shape, a big portion of the trailing edge missing between the middle third and upper third. Also, the apex of the fin is notched with a slight bump on the lower third of the leading edge. Due to her very unique dorsal fin shape, researchers have nicknamed her Cap, but her Dolphin ID number is 3000.

Clue 2

- This bottlenose dolphin has been sighted just 8 times in a 4 year period and only in the Stono estuary. Researchers do not know much about this individual dolphin except that the dorsal fin has a small notch in the middle third of the trailing edge as well as a wavy texture on the bottom third of the trailing edge. In addition the dorsal fin has several scars of unknown origin. This dolphin's ID number is 7423.

Clue 3

- This bottlenose dolphin has been sighted 40 times between the years of 2004 and 2017, so it is at least 13 years old. All 40 sightings happened within the Charleston estuary. Researchers have spotted this individual as a calf with a mom, but not with a calf of its own so its reproductive history is unknown. The dorsal fin on this individual is clean with no significant injuries but potentially small rake lines on the top and middle third between the leading and trailing edges. The dolphin's ID number is 12835.

Clue 4

- This bottlenose dolphin has been sighted 49 times. Its age is unknown but it is at least 19 years old as the earliest sighting was in 1998 and the most recent as in 2017. Researchers are not positive on the sex, but believe they saw this dolphin with a calf. Due to this, they would hypothesize it is a female. This dolphin has been seen almost exclusively in the Charleston estuary but was witnessed twice in the Stono estuary. The dorsal fin is unique with a notch found in the middle third of the trailing edge. Otherwise it looks to be a clean fin. This bottlenose dolphin's ID number is 7083.

Clue 5

- This bottlenose dolphin has only been sighted along the coast, but was sighted 13 times between 2004-2008. The dorsal fin of this individual has several notches along the entire trailing edge with the largest on the bottom third. Researchers think this could potentially be from an entanglement but are unsure. Additionally the dorsal fin has some mild scarring. This dolphin's ID number is 8134.

Clue 6

- This bottlenose dolphin is a commonly sighted one with 89 separate sightings between the years of 2002 to 2017. The sightings were along the coast and within the Charleston estuary. This dolphin is a female and researchers believe she is 20 years old. She has two significant notches which are both from tagging as well as a faint freezebrand (FB) number on her fin. A dolphin with a freezebrand number indicates it was an individual that was studied as a part of a health assessment in 2013. Freezebranding large numbers on the dorsal fin is a safe way to mark specific dolphins so researchers can tell who is who, even from afar. The FB number is 833 but her ID number is 13023.

Clue 7

- This bottlenose dolphin is a male and has been sighted 46 times between the years of 2001 to 2017. All of the sightings occurred in the Charleston estuary. This dolphin's dorsal fin is very noticeable with a severe entanglement and/or boat strike injury that has healed. The top and middle third of the leading edge of the dorsal fin is not attached to the bottom third, which created his nickname, Flip. Flip's Dolphin ID number is 1020.

Clue 8

- This bottlenose dolphin was sighted 26 times from 2004 to 2009. Researchers sighted this male dolphin in the Charleston estuary and along the coast. This male has a very unique “chopped” dorsal fin because the top half is missing. Researchers believe this injury is due to a boat strike and/or a sever entanglement. There are also some scarring and several notches on the lower third of the trailing edge. This dolphin’s ID number is 1028.

Journal Prompt :

- What is a sentinel species?
- Do you agree that this population of bottlenose dolphins is a good sentinel species? Why or why not?

- Write answers on worksheet then turn in worksheet to teacher.

Sentinel Species – Bottlenose Dolphins

- Charleston Estuarine Dolphins are sentinel species because:
 - > Widespread and abundant – **yes, very common dolphin**
 - > Habitat overlaps with the range studied – **yes, residential**
 - > Easily handled or observed – **can be photographed**
 - > Have a measurable response to the hazards in question – **blubber holds toxins that can be measured**

Sentinel Species – Bottlenose Dolphins

- Watch this 2 min [news clip](#) to hear what authorities have to say on this topic.
- <https://www.live5news.com/2019/04/29/water-contamination-study-underway-concerns-grow-following-rise-dolphin-strandings/>