School Daze 2020

Fisheries Independent Monitoring Offshore Research Program

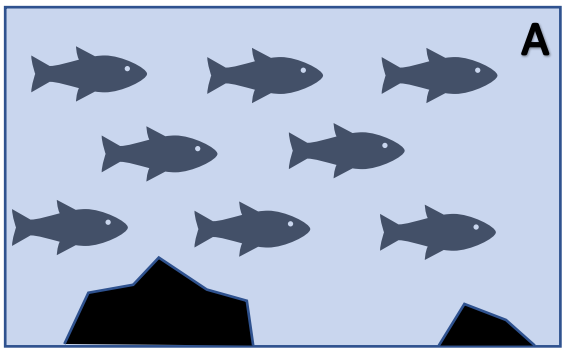
Student Activity Guide

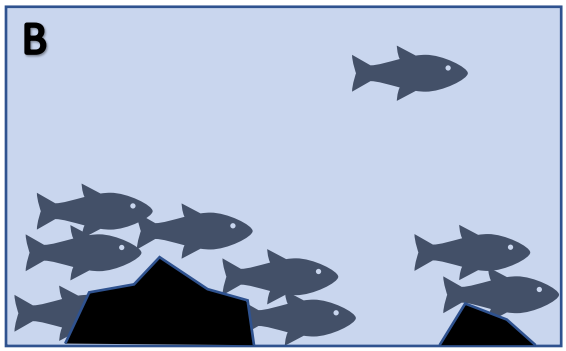
The Fisheries-Independent Monitoring (FIM) program studies fish in the offshore waters of the Gulf of Mexico to better understand where they live, how they interact and how their populations change through time. These data provide important information for making decisions about fishing regulations, such as, how many fish can a fisherman keep, how big do they need to be to keep them, how can fishermen minimize their impacts to fish populations and what areas should be protected to ensure Florida's fish are around for many years to come. To collect these data, scientists spend a lot of time at sea. From single day trips to multi-week trips offshore, the FIM crew works in all types of conditions to make sure they are collecting the best data possible for the preservation of Florida's fish species and the benefit of fishermen everywhere.

It's an awesome job, and a huge responsibility!!

Section 1: *Sea floor mapping*

1) Circle the picture below best shows how fish live in the ocean?





If you answered B, that is correct. Fish gather around different types of habitat based on their needs as a species. Some fish may congregate around rocks, some may spread out on the sand and still others may live up near the surface of the water. As scientists that study fish, it is important that we understand where different types of habitats are located on the sea floor.

2) What type of equipment do fisheries scientists use to locate habitat on the sea floor?

A) RADAR
B) Laser Beams
C) Dolphins with cameras on their heads
D) SONAR

3) What property does SONAR use to map the sea floor?

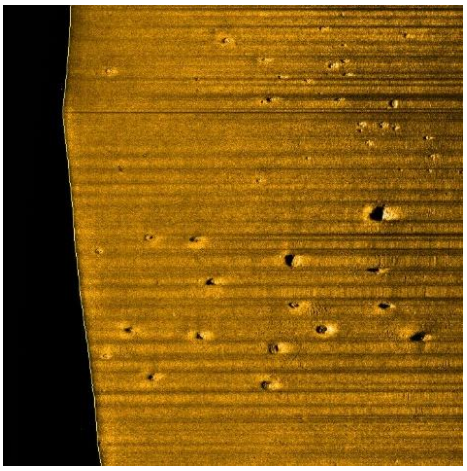
A) Light
B) Sound
C) Odor
D) Touch

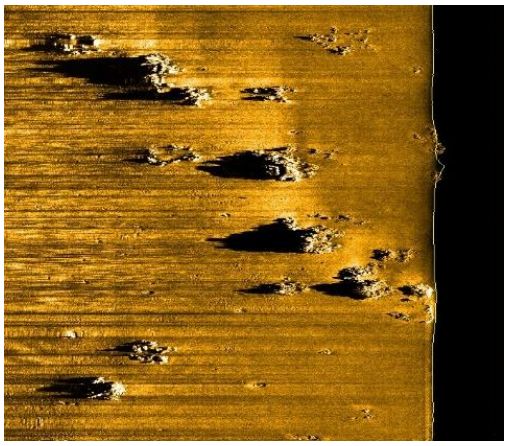
4) How do FIM Scientists get their SONAR equipment in the water?

A) From a satellite
B) From a stationary underwater platform
C) Tow it behind a Boat
D) Attach it to a tiger shark

SCIENCE TIME: Here's your chance to be a FIM scientist…

Below are images of side-scan sonar data that show different types of seafloor habitats. Using the key, draw a line to match the Habitat type with the corresponding image.





HABITAT TYPES

SHIPWRECK

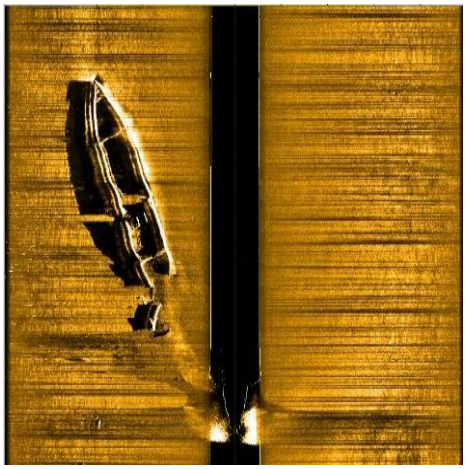
BOULDER FIELD

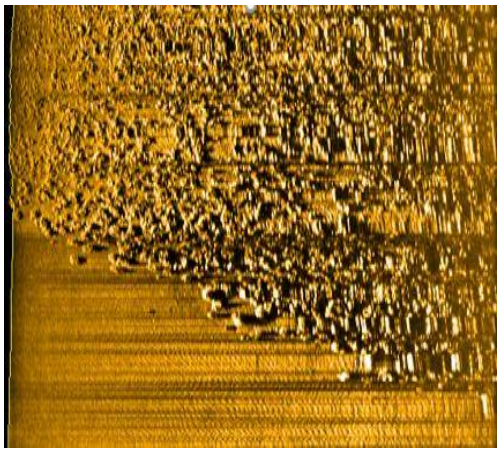
POTHOLE FIELD

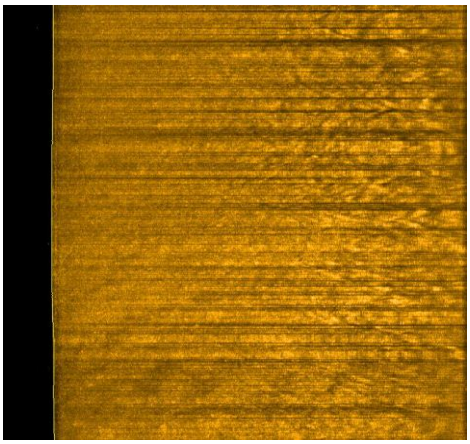
SAND

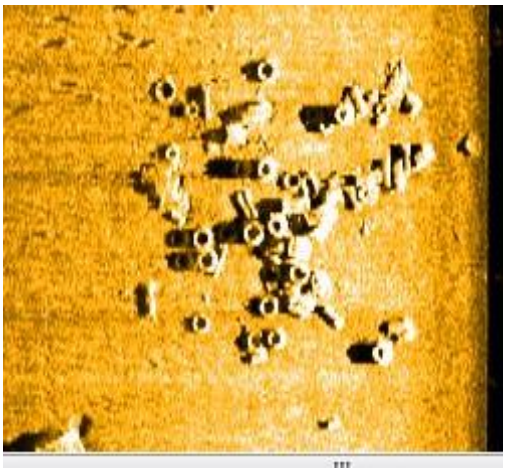
CORAL REEF

TIRES



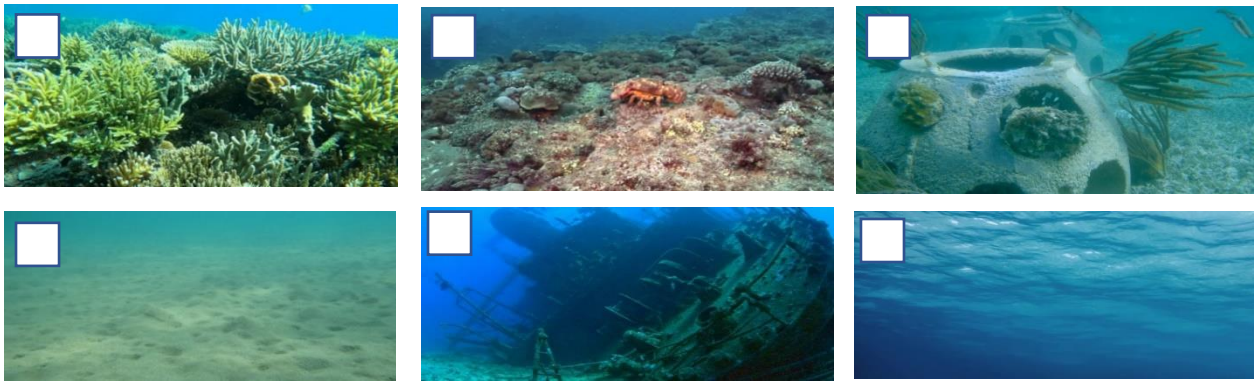






Section 2: *Reef Fish Survey*

1) **In this study, FIM scientists are studying fish that live on reefs. Check all the pictures below that contain reef habitat…**



2) **To study fish that live on a reef, what type of equipment could a fisheries scientist use? (circle all that apply)**
   A) Submarine
   B) SCUBA equipment
   C) Underwater cameras
   D) Fishing rods
   E) A sea turtle helmet cam

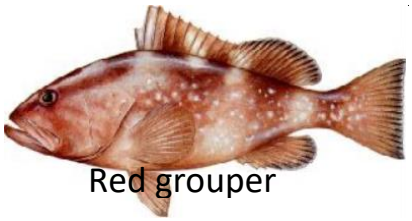
3) **Which one of the answers above do <u>FIM</u> scientists use?**
   _____

Extra Credit*: Worth 5 Sand Dollars* Why?_____

4) **FIM scientists review underwater video in a laboratory after it is collected at sea. What type of data do these scientist record?**
   A) Type of Fish
   B) Number of Fish
   C) Length of Fish
   D) All the Above

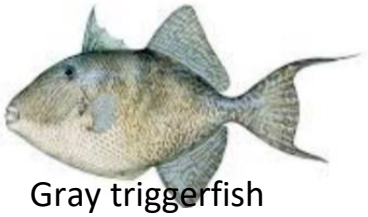
SCIENCE TIME: ANOTHER chance to be a FIM scientist…

Match the fish species on the left with the underwater video image that contains that species.



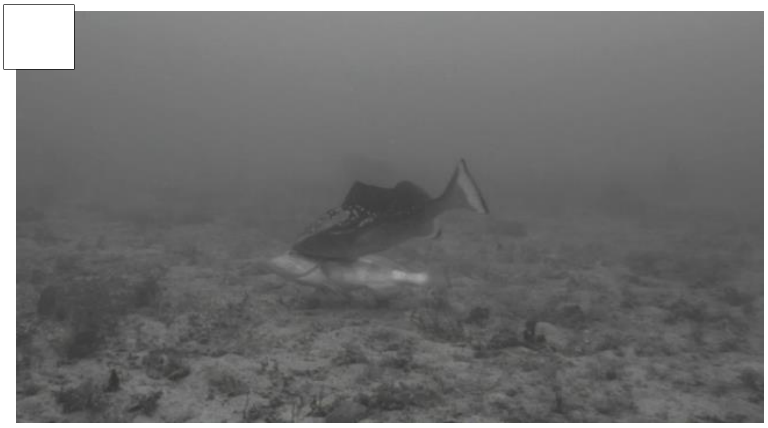
Red grouper

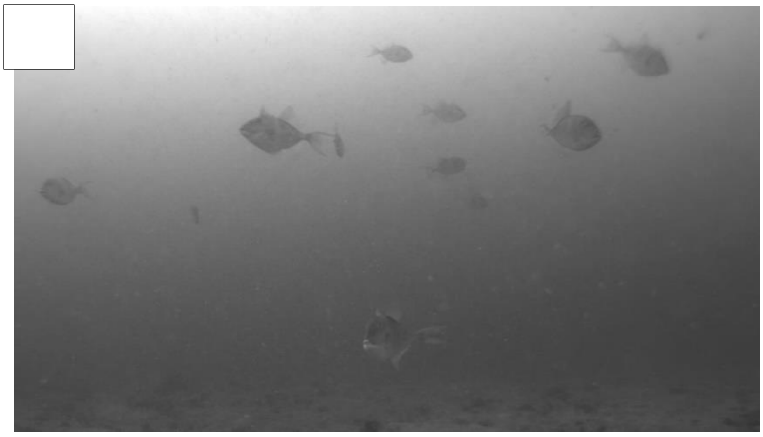
Red snapper



Gray triggerfish

Tuna





Extra Credit (worth 1 million points):

Write the number of fish in each picture

1)_____

2)_____

3)_____

4)_____

Section 3: *Benthic Trawl Survey*

1) **Using a trawl net towed behind a research vessel circle the picture of the habitat FIM scientists' sample?**




2) **Using the words in the key, write the parts of the trawl on the line provided.**

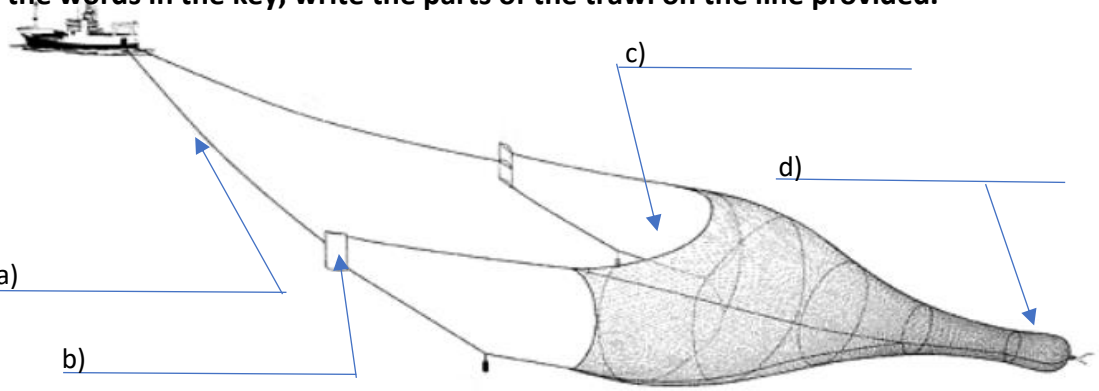
KEY:

Trawl Door

Mouth

Cod End

Bridle



3) **How do scientists know where to tow the net to avoid disturbing reef habitat or tearing their nets?**

A) A team of specially trained dolphins telling them where to go
B) Use the data from the SONAR survey
C) Just trawl in the same place every single time
D) Use satellite pictures like the ones on Google Earth

4) **What data do scientists collect from a trawl sample?**

A) Types of fish
B) Numbers of fish
C) Weight of fish
D) Length of fish
E) All the above

5) **Circle TRUE or FALSE: Sometimes scientist collect fish to learn more about them.**

6) **What can scientists learn from a dead fish?**
   A) It's age
   B) It's weight
   C) What it ate for dinner
   D) Where it came from
   E) All the above

SCIENCE TIME: What!? ANOTHER chance to be a FIM scientist! This is awesome…

Circle the animals that you would expect to find in a trawl sample.

a) 

b) 

c) 

d) 

e) 

f) 

g) 

h) 

i) 

Extra Credit: Bragging rights for the rest of the year!!

Name the critter in the picture:

a)_____

b)_____

c)_____

d)_____

e)_____

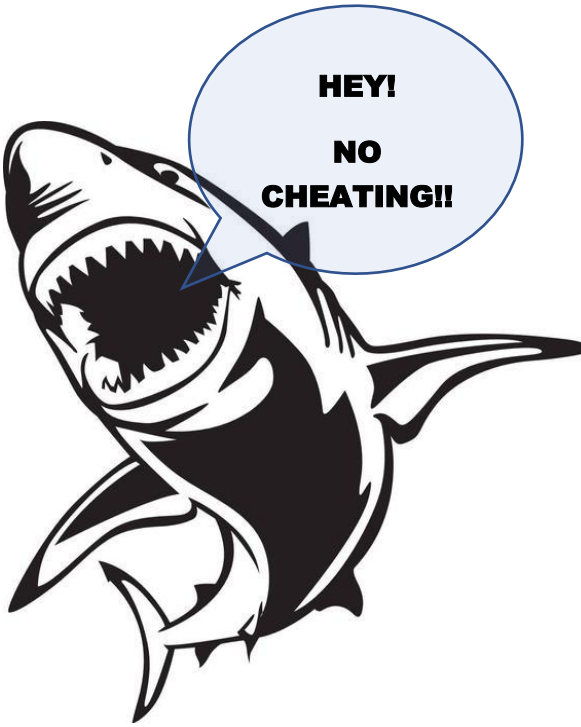
f)_____

g)_____

h)_____

i)_____

ANSWER KEY:



Section 1:

1) B
2) D
3) B
4) C

Science Time Exercise:
Top Left = Pothole Field
Middle Left = Shipwreck
Bottom Left = Sand
Top Right = Boulder Field
Middle Right = Coral Reef
Bottom Right = Tires

Section 2:

1) All three in the top Row and the middle one in the bottom row
2) All answers are acceptable
3) Underwater Camera
   Extra Credit: Because they work in many different water depths, habitats and sea conditions.
4) D

Science Time Exercise:
1) Red Snapper: 6
2) Tuna: 4
3) Red Grouper: 2
4) Triggerfish: 11

Section 3:

1) Top Right
2) a) Bridle; b) Trawl Door; c) mouth; d) Cod End
3) B
4) True
5) E

Science Time Exercise:
a, b, c, d, f, h and i
Extra Credit:
a) Shame face crab
b) Flounder
c) Sea robin
d) Juvenile snapper
e) Goliath grouper
f) Filefish
g) Mako shark
h) Puffer fish
i) lionfish