



# SHARKSMART

A WORKBOOK FOR STAGE 1 / Years 1-2



*DRONE*  
SURVEILLANCE



SHARK LISTENING  
*STATIONS*



SMART *DRUMLINE*



*TAGGING*  
& TRACKING



# RESPECT THE OCEAN, SHARKS ARE IMPORTANT FOR HEALTHY SEAS

DON'T  
SWIM OR  
SURF ALONE—  
ALWAYS  
BUDDY UP

SWIM  
BETWEEN THE  
FLAGS



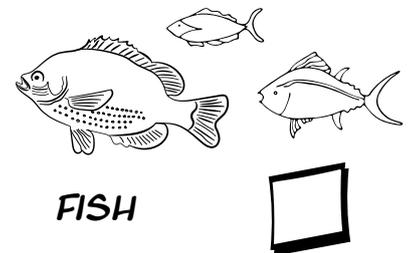
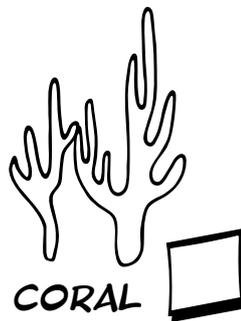
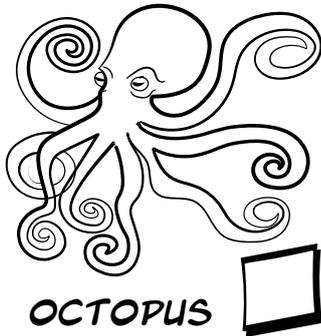
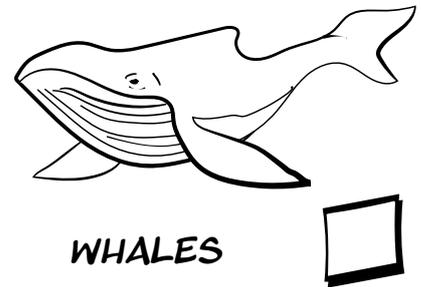
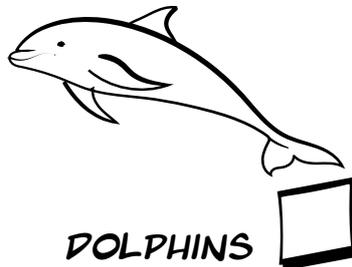
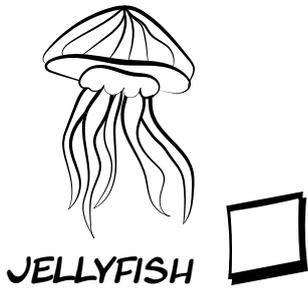
The NSW Department of Primary Industries (DPI) has done lots of research as part of the NSW Shark Management Strategy. The research has told us a lot about sharks and where they live. This workbook will help you explore the work of the Strategy. The NSW SharkSmart website, YouTube videos (search for the Primary School SharkSmart playlist) and social media channels will help you complete these pages.

IF YOU SCAN THESE QR CODES YOU WILL LINK TO THE RELEVANT INFORMATION



# WHAT ARE SHARKS?

Sharks are closely related to many other animals that live in the ocean, which ones do you think they are most closely related to?



# WHAT DO YOU KNOW ABOUT SHARKS?

Where do they live? \_\_\_\_\_

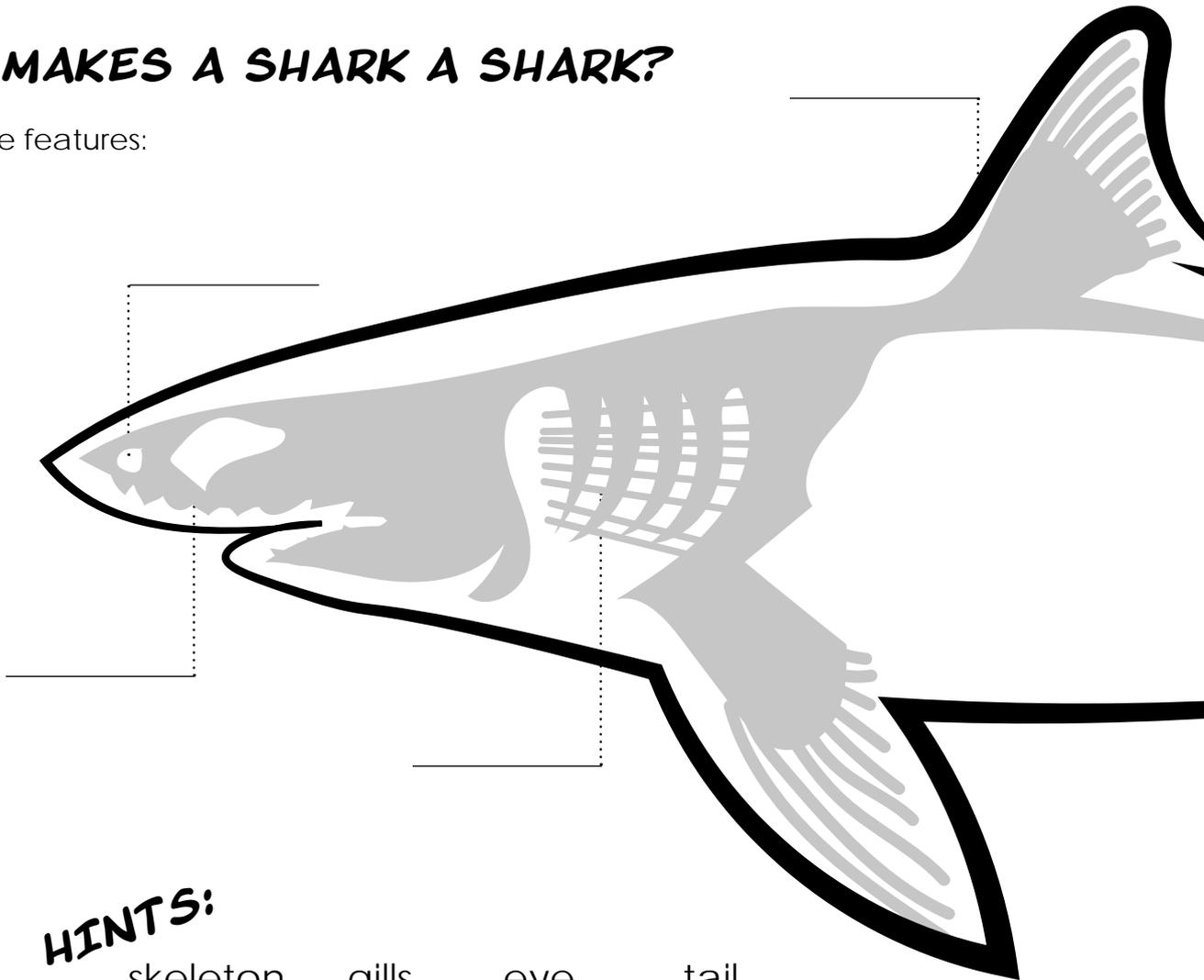
What do they eat? \_\_\_\_\_

How do they breathe? \_\_\_\_\_

# SHARKS ARE AMAZING!

## WHAT MAKES A SHARK A SHARK?

Label these features:



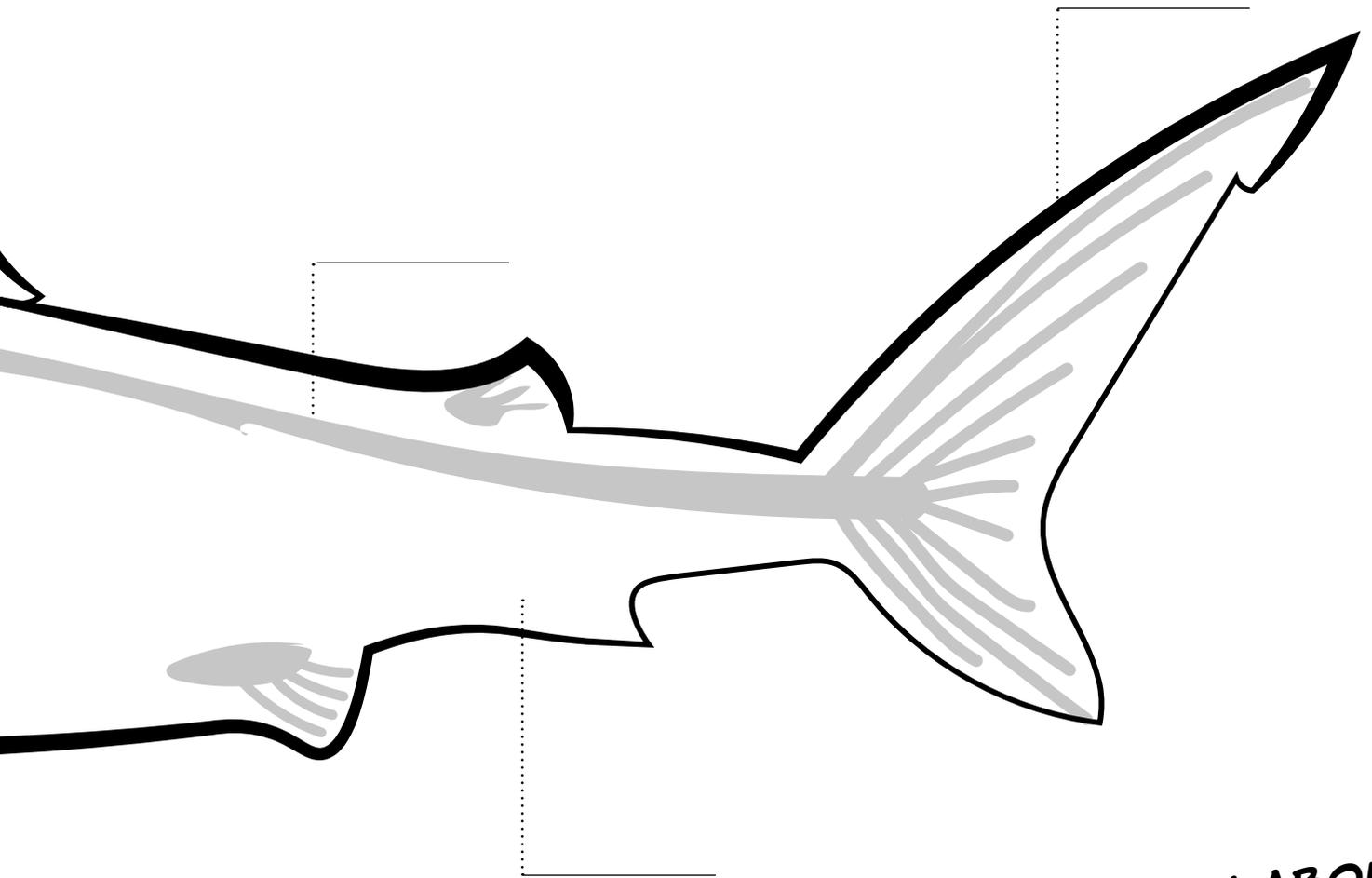
### HINTS:

skeleton    gills    eye    tail  
fins    teeth    skin

How do you feel about sharks? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



**IF YOU WANTED TO KNOW ABOUT SHARKS, WHAT WOULD YOU DO?**

Who would you talk to or where would you go? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

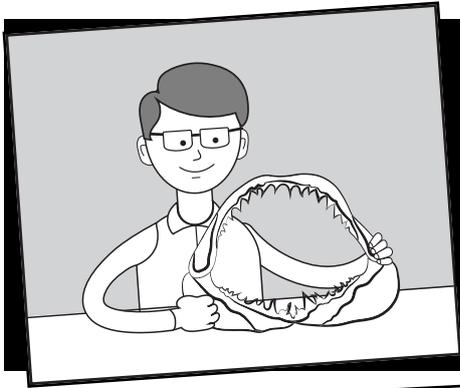
What would you ask? \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Well the NSW Department of Primary Industries (let's call them DPI for short) wanted to know more about the sharks we see around New South Wales beaches, so they have a team of people, working together on the NSW Shark Management Strategy.

# THE SCIENTISTS



## Dr Vic Peddemors

studies the sharks that are found around NSW beaches. Information comes to Vic about sharks caught in shark nets, from the sharks caught on SMART drumlines and sometimes from shark bites.

## Dr Amy Smoothery

studies where sharks live and where they travel to at different times of the year by tagging and tracking sharks. She also studies shark biology – that's how fast they grow, what they eat and how they fit in with the other animals in the ocean.



## Dr Paul Butcher

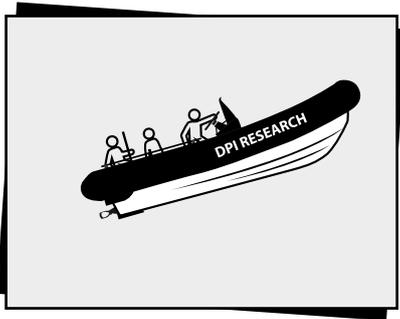
studies how to best keep sharks and people apart! We love the sharks in the ocean but when they come in contact with people it's pretty scary and sometimes really dangerous. Paul is most interested in how the SMART drumlines help us to keep our distance and tracking sharks to see where they move.



Vic, Amy and Paul work with a team of people who help with tagging sharks and watching where they go as well as looking after the technology. Some are working on different research projects using drones, video cameras and information from the tags. They all work together to help keep people and sharks from getting in each other's way. The more we know about sharks the better we are at looking out for them ... *and looking after them!*

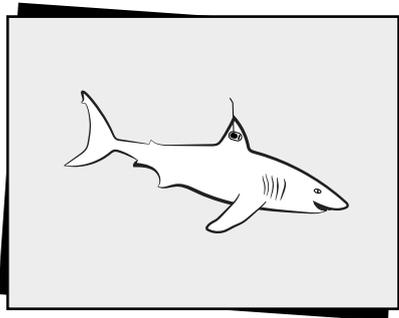
# TOOLS OF THE TRADE

What are the tools below used for?



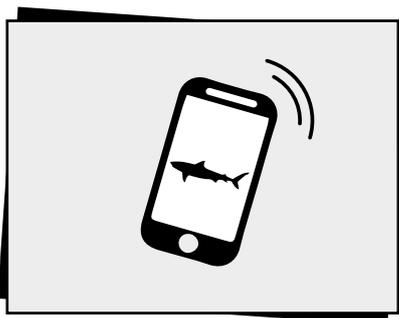
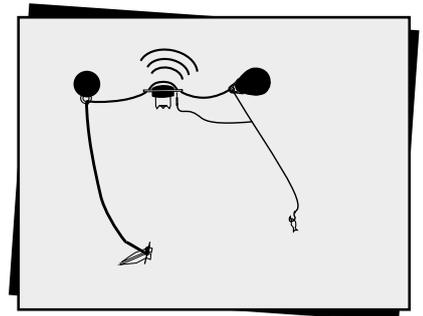
Boat: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Drone: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

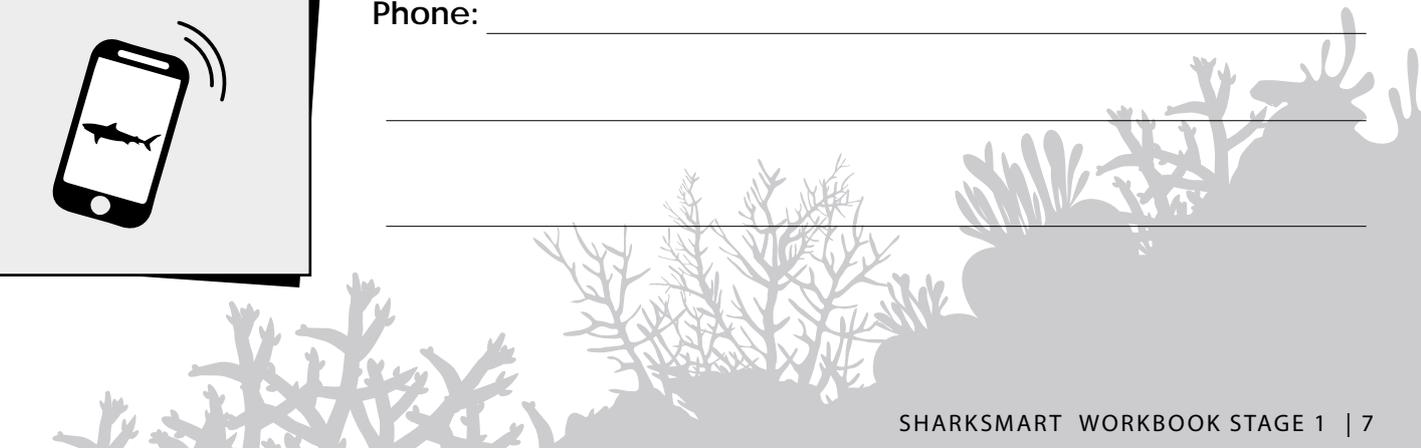


Tag: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

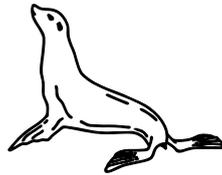
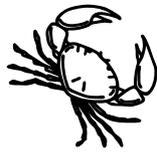
SMART drumline buoy: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



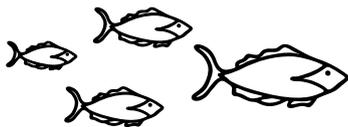
Phone: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



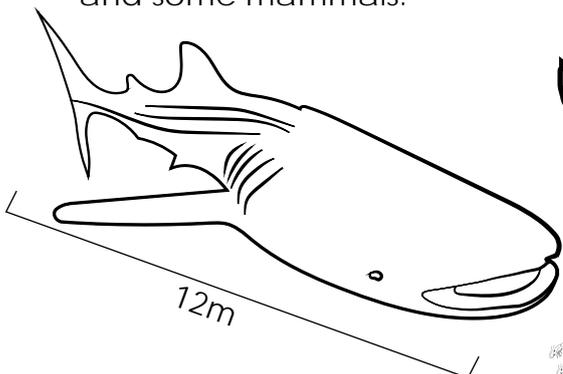
# WHAT HAVE WE LEARNT SO FAR?



Different species of sharks eat different types of food, and what they eat changes as they get older. Sound familiar?



Smaller bull sharks eat small fish and rays. Adult bull sharks eat other sharks and larger animals like turtles and some mammals.



Did you know, the biggest shark, the whale shark, growing up to 12 m in length, eats tiny krill and plankton!



WHAT DO YOU THINK ARE THE GREATEST THREATS TO SHARKS?

ARE THERE THINGS THAT YOU EAT NOW THAT YOU DIDN'T LIKE WHEN YOU WERE YOUNGER?

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HINT: THE WAY WE LOOK AFTER THE ENVIRONMENT CAN MAKE A BIG DIFFERENCE!

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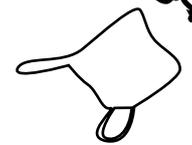


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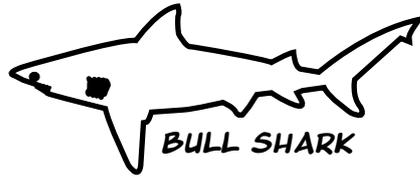


Lots of great white sharks also swim up and down the coast from Victoria to Queensland.

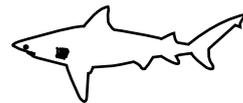
Others swim huge distances; one white shark swam to New Zealand and then Papua New Guinea, another shark swam all the way around to Western Australia and back... three times!



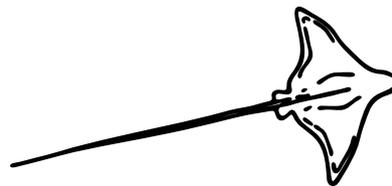
Sharks swim really long distances,  
and most keep moving!



Larger bull sharks spend summer  
around the NSW coast and in  
winter they travel to Queensland.



Young bull sharks stay in the rivers  
year round until they are old  
enough to be in the open ocean.



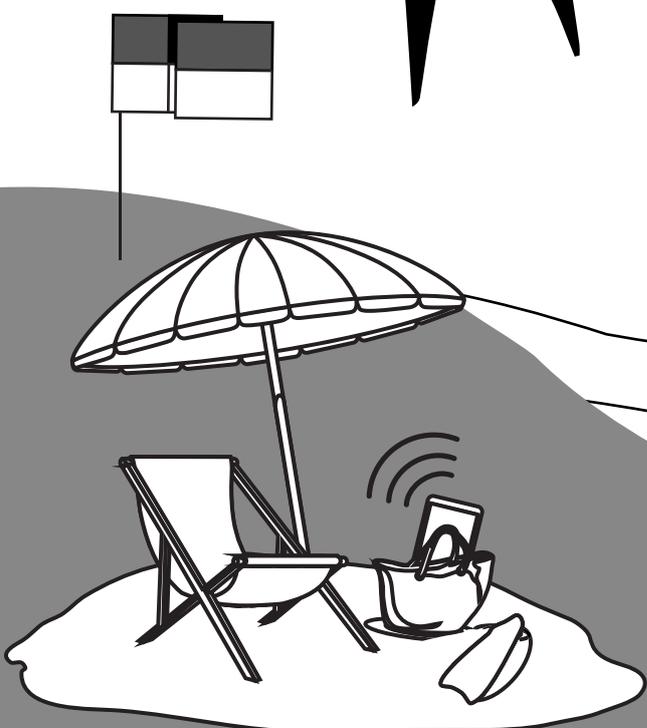
# CAN TECHNOLOGY HELP US LIVE WITH SHARKS?

Draw a line between the notes and the technology that DPI is using to help us understand sharks.

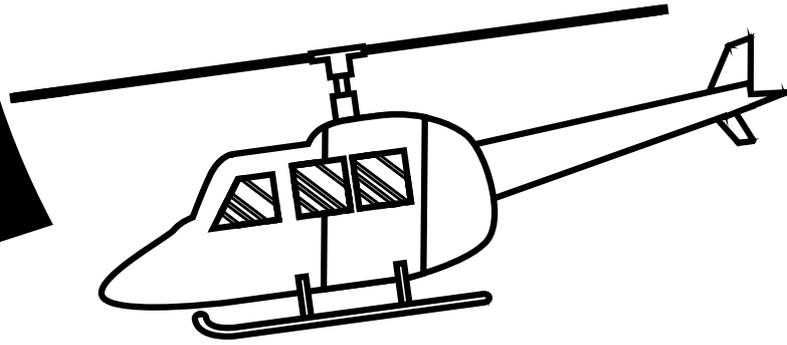
SMART DRUMLINES CATCH SHARKS THAT GET TOO CLOSE TO POPULAR BEACHES. THESE SHARKS ARE TAGGED AND RELEASED FURTHER AWAY.

THE SHARKSMART APP HELPS SWIMMERS TO MAKE DECISIONS ABOUT WHEN TO SWIM BY WARNING THEM IF A SHARK HAS BEEN SPOTTED NEARBY.

HELICOPTER CREWS ARE OUT ON BUSY DAYS LOOKING OUT FOR SHARKS AND WARNING SWIMMERS IF THERE IS A SHARK NEARBY.

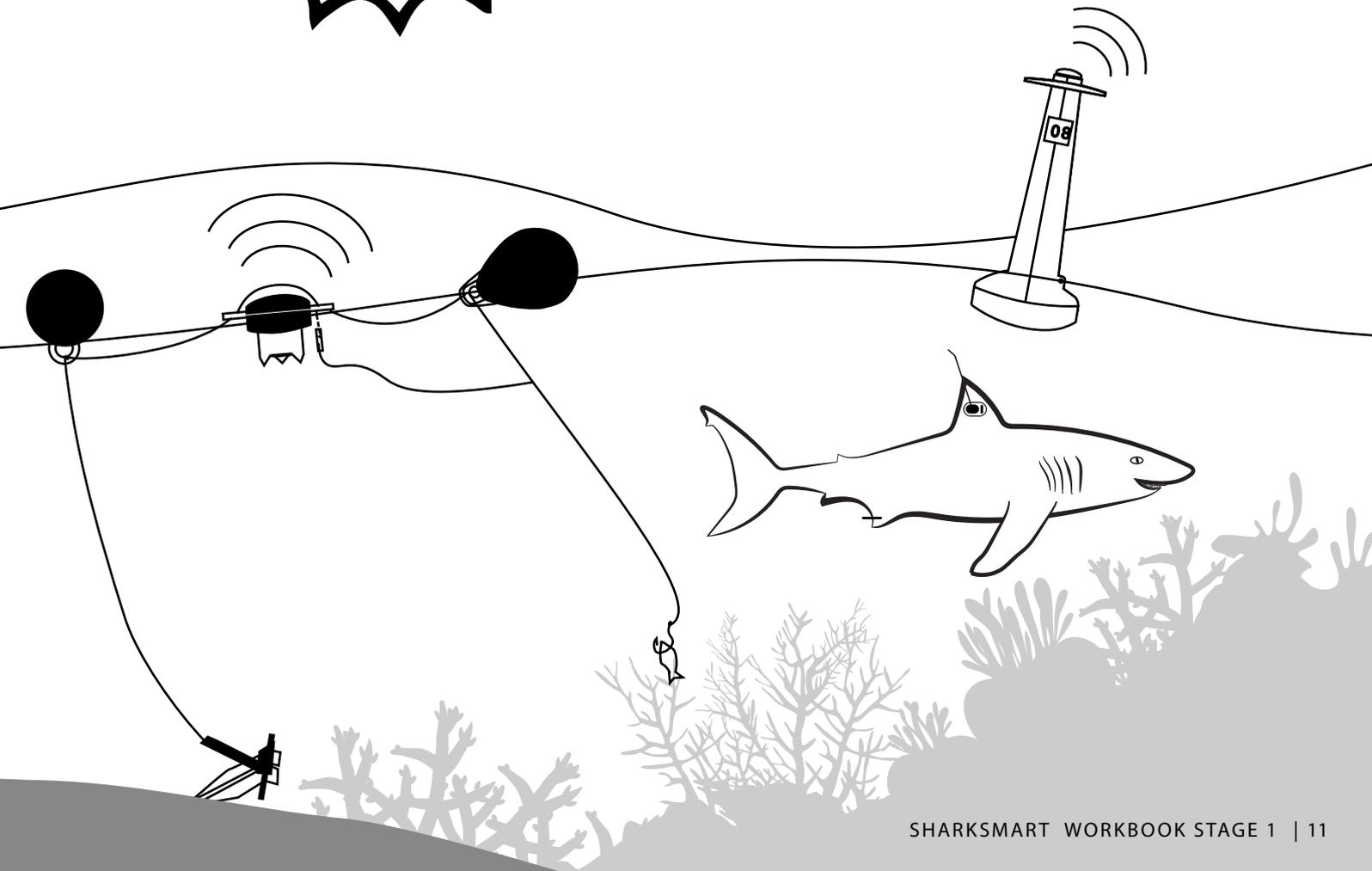


**DRONES ARE USED BY SURF LIFESAVERS TO SEE IF THEY CAN SEE ANY SHARKS SWIMMING CLOSE TO THE BEACH. IF THERE IS, THEY CAN WARN SWIMMERS TO HOP OUT UNTIL THE SHARK HAS MOVED ON.**



**TAGGED SHARKS ARE TRACKED TO HELP US TO UNDERSTAND SHARKS BETTER.**

**LISTENING STATIONS ALERT PEOPLE AND SCIENTISTS WHEN A TAGGED SHARK SWIMS PAST SO WE CAN SEE WHERE THEY ARE TRAVELLING.**



# STAYING SAFE AT THE BEACH AND IN THE OCEAN

*Tick the ways that you stay safe when you are at the beach*

Always make sure an adult you trust knows where you are

Protect yourself from the sun with a hat and sunscreen

Always swim with an adult who is a good swimmer

Check the SharkSmart app to see if there has been any sharks spotted nearby today

Swim between the flags at patrolled beaches

Avoid swimming at dusk and dawn

Avoid swimming where there are fishing boats

Watch for diving birds or fish activity in the water

## **WHAT ELSE WOULD YOU LIKE TO KNOW ABOUT SHARKS?**

Write some questions here: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

If you would like to know more you can find lots of information on the SharkSmart website: [www.sharksmart.nsw.gov.au/](http://www.sharksmart.nsw.gov.au/)

**DONT SURF  
OR SWIM AT  
DAWN**

**BE AWARE  
IF YOU SEE BIRDS  
DIVING & BAITFISH,  
SHARKS MAY BE  
PRESENT**

**SURFERS  
CHECK  
CONTITIONS AND  
ASSESS THE  
RISKS**

**AVOID  
RIVER MOUTHS  
AND STEEP  
DROP-OFFS  
SHARKS COULD BE  
PRESENT**

**DON'T SWIM  
OR SURF IN  
MURKY  
WATERS**



# SHARKSMART



**HELICOPTER  
SURVEILLANCE FLIGHTS**



**SHARKSMART  
APP**

**SCIENCE &  
RESEARCH**



**PERSONAL SHARK  
DETERRENT  
DEVICE**