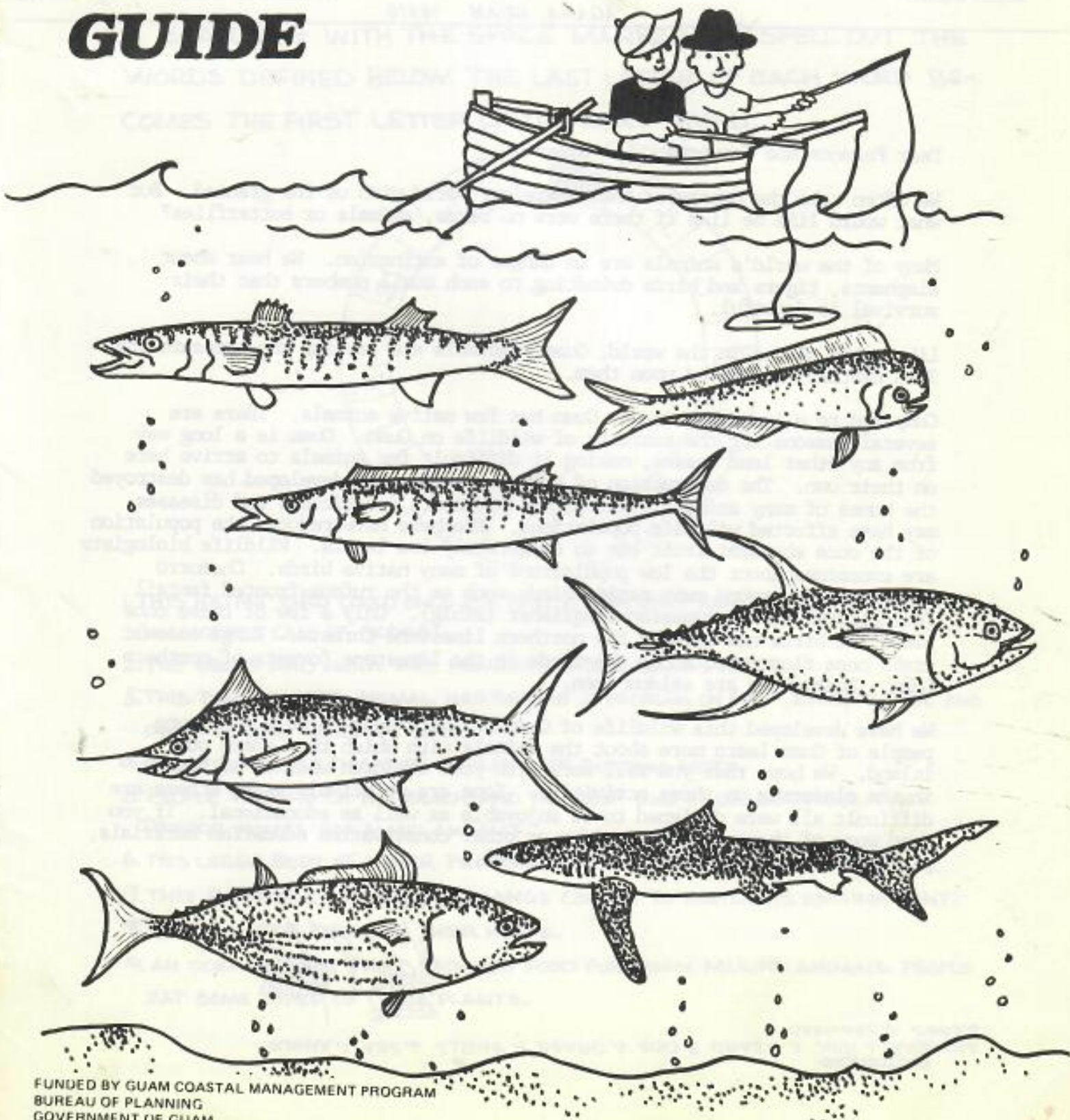




DIVISION OF AQUATIC & WILDLIFE
RESOURCES
DEPARTMENT OF AGRICULTURE
GOVERNMENT OF GUAM

GUAM WILDLIFE ACTIVITY GUIDE



ANTONIO S. QUITUGUA

Director



VICTOR T. ARTERO

Deputy Director



Agricultural Development Services 734-3947

Aquatic & Wildlife Resources 734-3945

Forestry & Soil Resources 734-3948

Animal Industry 734-3940

Plant Industry 734-3949

Sales & Permit Info 734-3943

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AGANA, GUAM 96910

Dear Parents and Teachers:

We often take the creatures that share our world with us for granted. But what would life be like if there were no birds, animals or butterflies?

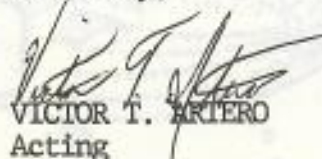
Many of the world's animals are in danger of extinction. We hear about elephants, tigers and birds dwindling to such small numbers that their survival is doubtful.

Like other places in the world, Guam's animals are feeling the pressure the 20th century has placed upon them.

Compared to a large continent, Guam has few native animals. There are several reasons for the scarcity of wildlife on Guam. Guam is a long way from any other land masses, making it difficult for animals to arrive here on their own. The destruction of habitat as Guam has developed has destroyed the homes of many animals. Introduced predators, pesticides and diseases may have affected wildlife populations. Poachers have reduced the population of the once abundant fruit bat to dangerously low levels. Wildlife biologists are concerned about the low populations of many native birds. Chamorro legends focus around many native birds such as the rufous-fronted fantail (chichirika) and Micronesian kingfisher (sihig). Only a few of these once plentiful birds now live in the northern limestone forests. Large coconut crabs once flourished along the roads in the limestone forests of northern Guam. Today they are seldom seen.

We have developed this wildlife of Guam activity book to help the young people of Guam learn more about the animals with which they share our island. We hope that you will work with your children whether at home or in the classroom on these activities. Some are relatively easy; others are difficult all were designed to be enjoyable as well as educational. If you need more of these activity guides or other conservation education materials, please contact Judy Beaver at 734-3944/45.

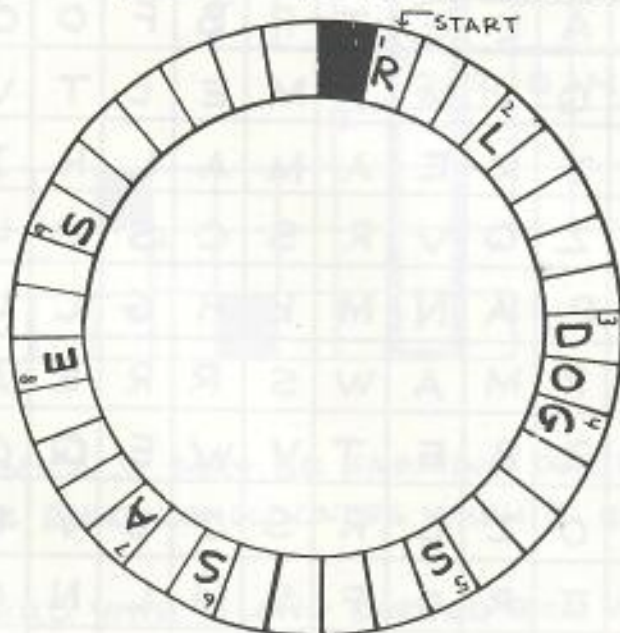
Sincerely,


VICTOR T. ARTERO
Acting

Enclosures

ROUND & ROUND PUZZLE

STARTING WITH THE SPACE MARKED "1", SPELL OUT THE WORDS DEFINED BELOW. THE LAST LETTER OF EACH WORD BECOMES THE FIRST LETTER OF THE NEXT WORD.



1. THIS NATIVE BIRD COULD ONCE FLY. NOW IT CAN ONLY RUN ALONG THE GROUND. CHAMORROS CALL IT "KOKO".
2. THE GECKO AND SKINK ARE MEMBERS OF THIS ANIMAL GROUP.
3. THIS DOMESTICATED ANIMAL HAS BECOME A PROBLEM ON GUAM, RUNNING LOOSE AND OVERTURNING GARBAGE CANS.
4. MANY BIRDS USE THIS TYPE OF PLANT FOR BUILDING NESTS.
5. PEOPLE WALKING ON THE BEACH AND THE REEF LIKE TO COLLECT THESE. THEY PROVIDE HOMES FOR MANY ANIMALS.
6. THIS LARGE BODY OF WATER PROVIDES A HOME FOR MANY MARINE ANIMALS.
7. THIS BEAUTIFUL LIZARD CAN CHANGE COLORS TO MATCH ITS ENVIRONMENT.
8. BIRDS HATCH THESE IN THEIR NESTS.
9. AN OCEAN PLANT THAT PROVIDES FOOD FOR MANY MARINE ANIMALS. PEOPLE EAT SOME TYPES OF THESE PLANTS.

ANSWERS: 1. RAIL 2. LIZARD 3. DOG 4. GRASS 5. SHELLS 6. SEA 7. ANOLE 8. EGGS 9. SEAWEED

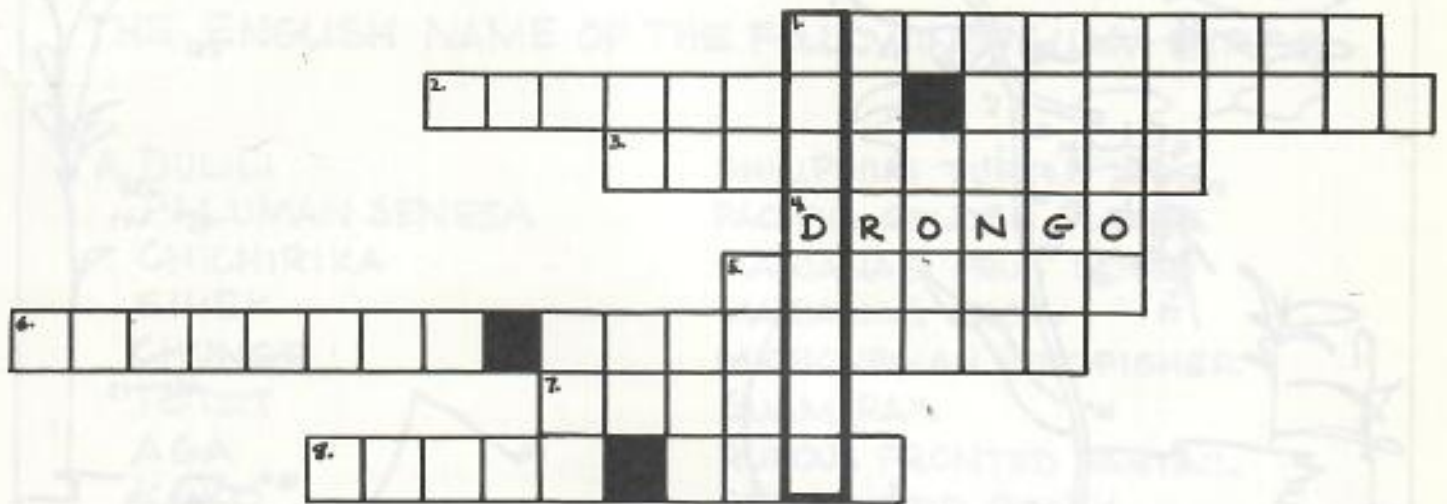
HABITAT HIDEOUT

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

"HABITAT" IS WHERE AN ANIMAL LIVES, IT'S HOME ADDRESS. HABITAT PROVIDES FOOD, WATER, COVER AND A PLACE TO RAISE BABIES. THIS PUZZLE CONTAINS 18 "HABITAT" WORDS. THEY RANGE IN LENGTH FROM 4 LETTERS TO 9 LETTERS. THEY MAY BE IN THE 'ACROSS' OR 'DOWN' ORDER USED IN CROSSWORD PUZZLES, BUT IF ACROSS, THEY MAY READ FROM LEFT TO RIGHT OR RIGHT TO LEFT. IF DOWN, THEY READ FROM THE TOP DOWN OR BOTTOM UP. SOME WORDS ARE ON A DIAGONAL READING EITHER FROM THE HIGHER TO THE LOWER POINT OR FROM THE LOWER TO THE HIGHER. 15 OF THE WORDS ARE THE NAMES OF "HABITAT". 3 ARE BASIC ELEMENTS OF "HABITAT".

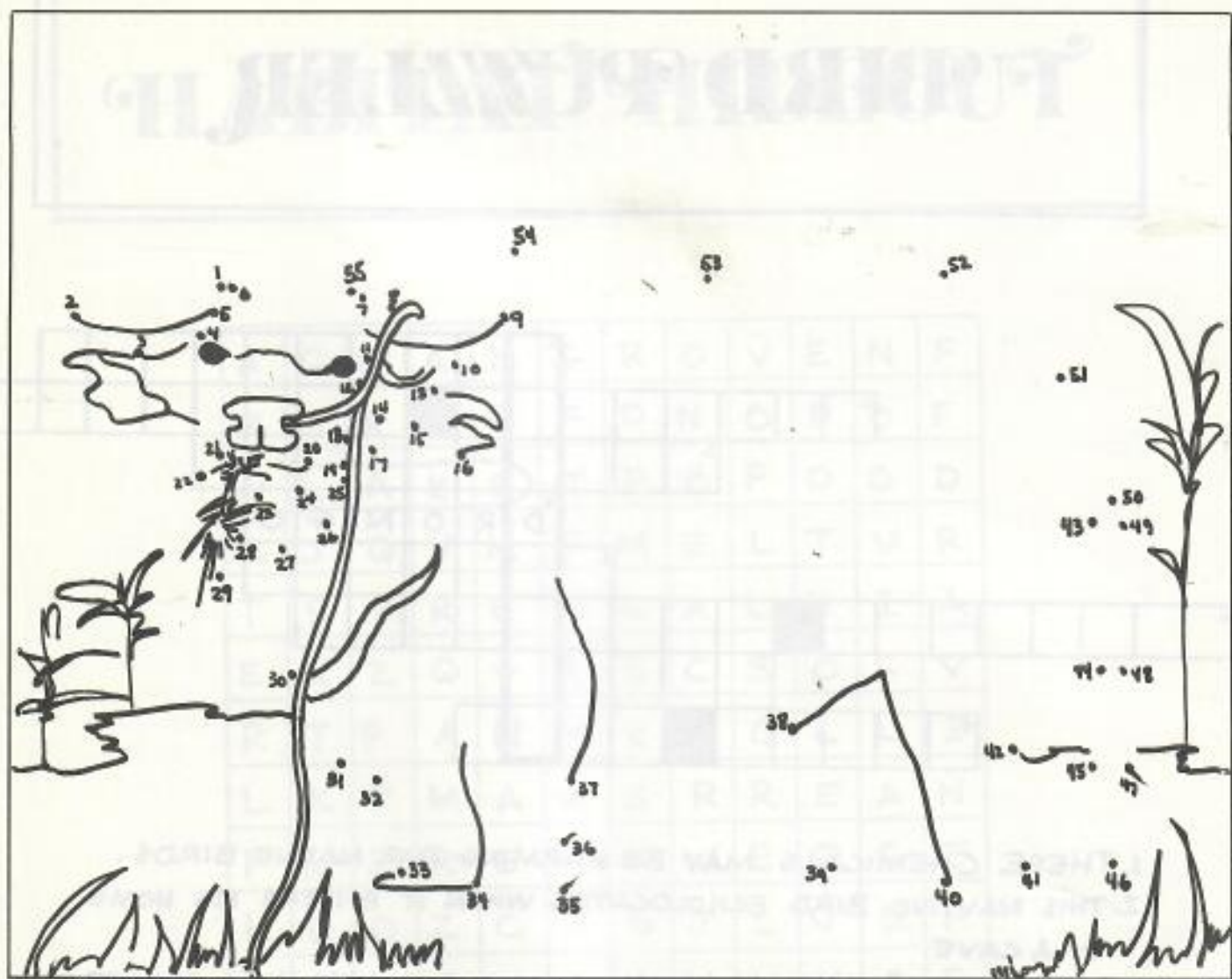
HABITAT HIDEOUT ANSWERS: POND, POTHOLE, OCEAN, LAKE, STREAM, SWAMP, RIBBY CAVE, MANGROVE, FOOD, WATER, COVER, FOREST, GRASSLAND, BEACH, VILLAGE, FARM, RAVINE

BIRD PUZZLER



1. THESE CHEMICALS MAY BE HARMING OUR NATIVE BIRDS.
2. THIS NATIVE BIRD ECHOLOCATES WHEN IT ENTERS ITS HOME IN A CAVE.
3. A NATIVE BIRD WITH A LONG CURVED BILL WHO EATS FLOWER NECTAR.
4. THIS GLOSSY BLACK BIRD WITH A FORKED TAIL IS VERY AGGRESSIVE AND MAY BE PREYING ON NATIVE BIRDS.
5. WATER, FOOD AND COVER ARE PART OF AN ANIMALS' _____.
6. THIS BEAUTIFULLY COLORED BIRD EATS FRUIT AND IS OUR TERRITORIAL BIRD.
7. THIS LIZARD LIKES TO LIVE AROUND PEOPLE. IT'S A FAVORITE FOOD OF MANY BIRDS.
8. "CHUNGE" IS THE CHAMORRO NAME FOR ONE OF GUAM'S MOST COMMON SEABIRDS.

ANSWER: PREDATOR
 5. HABITAT 6. MARIANAS FRUIT DOVE 7. GECKO 8. FAIRY TERN
 1. PESTICIDES 2. VANIKORO SWIFLET 3. HONEYEATER 4. DRONGO



CARABAO

Carabao were brought to Guam from the Philippines in the late 1600's. Because of their great strength they were used by farmers to pull plows and carts and have been called "living tractors." In recent years, however, they have been largely replaced by machine tractors. At one time there were several thousand carabao on Guam, but now fewer than a hundred may remain on farms. A wild population of about 400 animals also lives in the savanna and forests of southern Guam.

Carabao are closely related to the American bison, but look like cattle. Adults weight 700-800 kilograms and have fairly long gray or black hair thinly covering their huge bodies. They have a tuft of hair on their forehead and at the tip of their tail. Normally they are silent, but they will give a trembling snort if they are surprised. Both males and females have massive horns. Since carabao have no sweat glands, they cool themselves by lying in water holes or mud during the heat of the day. Mud caked onto their bodies also protects them from bothersome insects.

Carabao eat grass and other vegetation, feeding mainly in the cool of the mornings and evenings.

In some places of the world carabao are used for milk just like a cow, or they may be eaten. They live to be about 18 years old and have one calf each year.

CHAMORRO SERAMBLE

DRAW A LINE FROM THE CHAMORRO NAME TO THE ENGLISH NAME OF THE FOLLOWING GUAM BIRDS.

A. DULILI
PALUMAN SENESA
CHICHIRIKA
SIHEK
CHUNGE
TOTOT
AGA
KOKO
LUAN

PHILIPPINE TURTLE DOVE
PACIFIC GOLDEN PLOVER
MARIANAS FRUIT DOVE
MARIANAS CROW
MICRONESIAN KINGFISHER
GUAM RAIL
RUFOS FRONTED FANTAIL
RED FOOTED BOOBY
FAIRY TERN

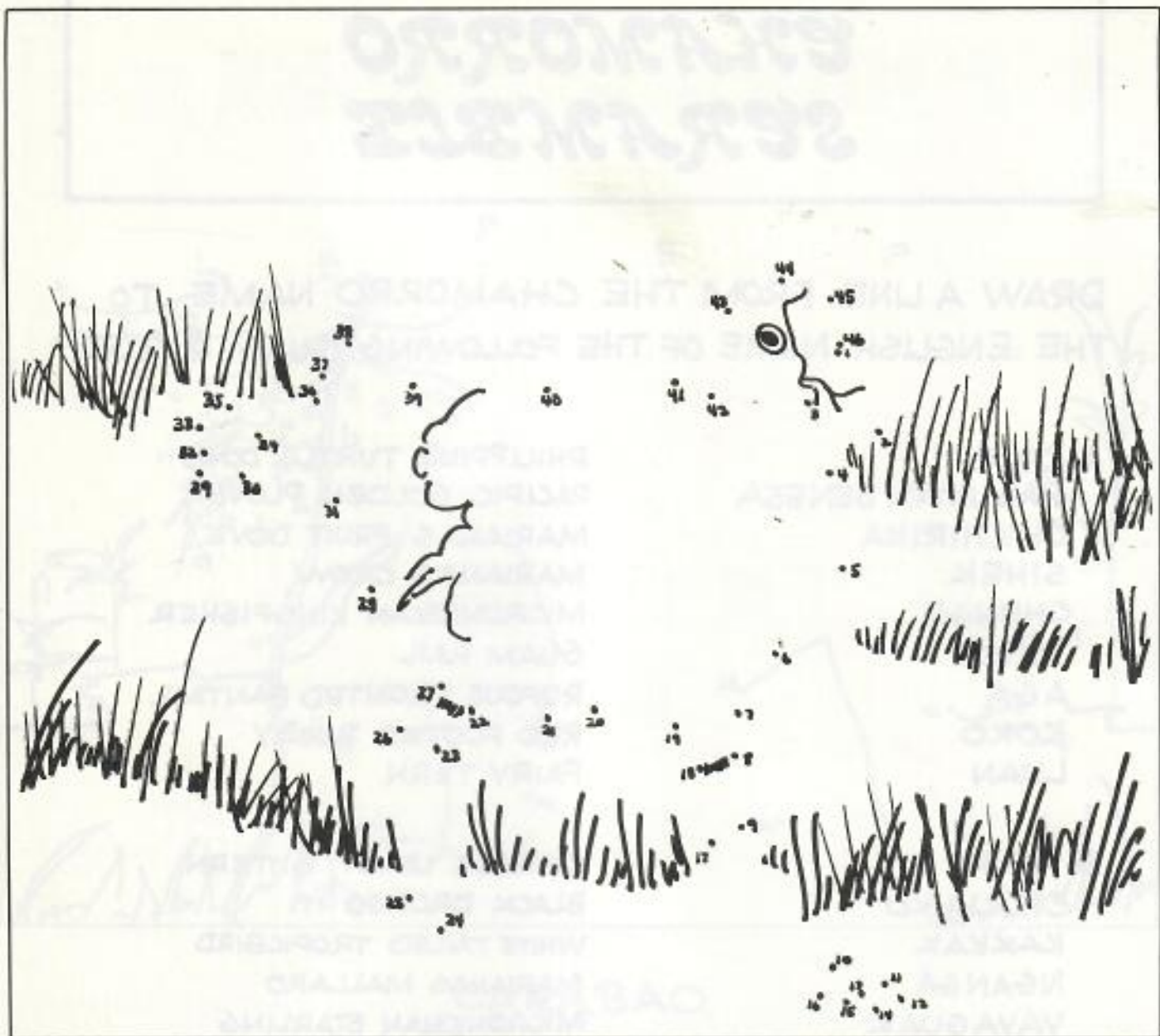
B. FAKPE
CHUCHUKO
KAKKAK
NGANGA
YAYAGUAK
SALI TAIWAN
SALI
EGIGI
NOSSA'

CHINESE LEAST BITTERN
BLACK DRONGO
WHITE TAILED TROPICBIRD
MARIANAS MALLARD
MICRONESIAN STARLING
REEF HERON
BRIDLED WHITE EYE
VANIKORO SWIFTLET
CARDINAL HONEYEATER

B. FAKPE - WHITE TAILED TROPICBIRD
CHUCHUKO - REEF HERON
KAKKAK - CHINESE LEAST BITTERN
NGANGA - MARIANAS MALLARD
YAYAGUAK - VANIKORO SWIFTLET
SALI TAIWAN - BLACK DRONGO
SALI - MICRONESIAN STARLING
EGIGI - CARDINAL HONEYEATER
NOSSA' - BRIDLED WHITE EYE

A. DULILI - PACIFIC GOLDEN PLOVER
PALUMAN SENESA - PHILIPPINE TURTLE DOVE
CHICHIRIKA - RUFOS FRONTED FANTAIL
SIHEK - MICRONESIAN KINGFISHER
CHUNGE - FAIRY TERN
TOTOT - MARIANAS FRUIT DOVE
AGA - MARIANAS CROW
KOKO - GUAM RAIL
LUAN - RED FOOTED BOOBY

ANSWERS:



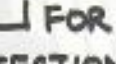



MARIANAS GALLINULE ENDANGERED SPECIES

This ducklike bird is really a member of the rail family. Adults are purplish-black with a red forehead and beak. They live in wetland areas such as Fena Lake and Agana Swamp. They spend part of their time in the water and part in the reedy areas along the shore. Although the gallinule's feet are not webbed, their long toes make it possible for them to walk across plants floating on the water.

The Marianas gallinule eats plants, insects and snails. They make a hidden nest in the reeds, complete with an escape ramp to the water for the baby gallinules to use when danger threatens. The mother lays 6-13 eggs. Both parents sit on the eggs. When the babies hatch they are covered with fluffy black down. They have white feathery eyebrows and a white beak. Like most ground nesters, the babies are able to run and protect themselves from predators when only a few hours old. As they grow, their feathers slowly turn purple black and their beaks and forehead turn red.

These interesting birds were once fairly common in Guam's wetlands. Since large areas of our wetlands have been drained for development and less taro and rice is grown than in the past, there is less habitat for these birds, and they are now endangered. These native birds still live on other islands in the Marianas.

DECODING DOTS

EACH LINE FIGURE BELOW MATCHES ONE YOU CAN FIND IN THE KEY SHOWN UNDER THE MAGNIFYING GLASS. THE DOTS INSIDE THE FIGURES SHOW WHERE EACH OF THE LETTERS FROM THE ALPHABET IS PLACED. THE FIGURE  FOR EXAMPLE, MATCHES THE SECTION AROUND A B AND C. IF THE DOT IS ON THE LEFT LIKE THIS , THE LETTER YOU ARE LOOKING FOR IS A.  = B,  = C. WORK FROM LEFT TO RIGHT & WRITE DOWN ALL THE LETTERS IN SENTENCE FORM, THEN SEPARATE THEM INTO WORDS.

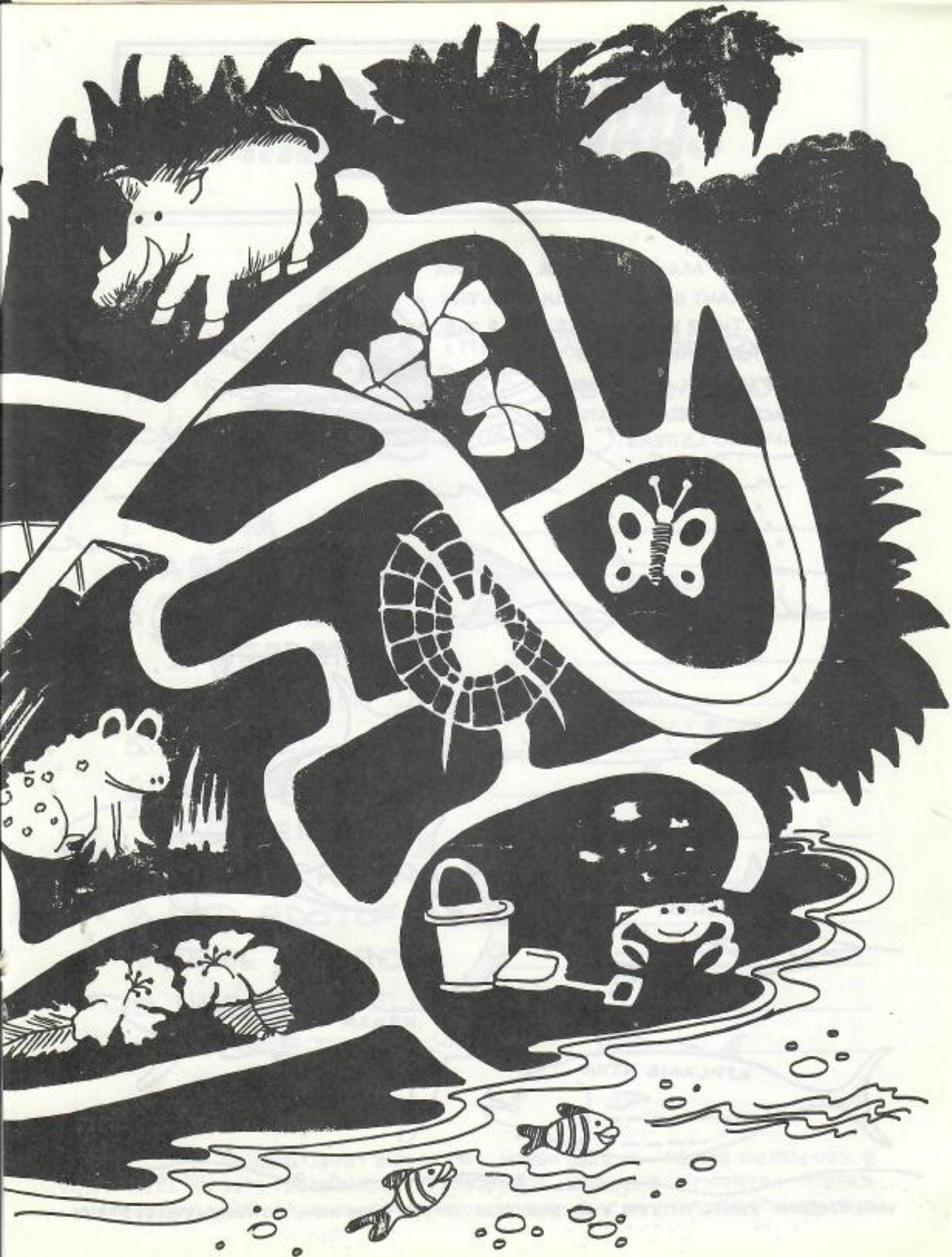
A	B	C	D	E	F	G	H	I
J	K	L	M	N	O	P	Q	R
S	T	U	V	W	X	Y	Z	

• S	• P	o •	N •	• G	E •	• S
F •	I •	L •	T •	E •	R •	
• W	• A	T •	E •	R •		
• T	H •	R •	O •	u •	• H	• H
• T	• H	• E	• I	• R		
• B	o •	• D	• I	E •	• S	

ANSWER: SPONGES FILTER WATER THROUGH THEIR BODIES.

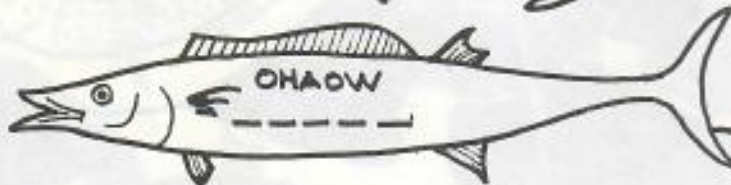
CAN YOU FIND YOUR
WAY TO THE BEACH?





TROLLING SCRAMBLE

THESE FISHERMEN ARE TROLLING FOR DEEP SEA FISH. BUT THEY CAN'T CATCH THE FISH UNTIL THEY UNSCRAMBLE THEIR NAMES. UNSCRAMBLE THE LETTERS TO FORM THE NAMES OF THESE DEEP SEA FISH. WRITE THEM ON THE SPACE PROVIDED BENEATH THE SCRAMBLED LETTERS.



ANSWERS: BARRACUDA, MAHI MAHI, Wahoo, YELLOWFIN TUNA, MARLIN, SHARK, SHIPJACK TUNA

MIXED-UP BIRDS

UNSCRAMBLE THE WORDS BELOW AND YOU WILL UNSCRAMBLE THE NAMES OF SOME OF GUAM'S BIRDS.

1. AGUM AIRL _____
2. ABCKL ORNOGD _____
3. NSEMANRIICO _____
IFSRKHENIG _____
4. CKALB NNFOIRCLA _____
5. NOPGEI _____
6. AILACRND _____
HYTAERENEO _____
7. YRAIF RTEN _____
8. DER EDOTOF BBOOY _____
9. FERENHREO _____
10. HESCIEN TELAS _____
TNBRIET _____

ANSWERS: 1. GUAM RAIL 2. BLACK DRONGO 3. MICRONESIAN KINGFISHER
4. BLACK FRANCOLIN 5. PIGEON 6. CARDINAL HONEYEATER 7. FAIRY TERN
8. RED-FOOTED BOOBY 9. REEF HERON 10. CHINESE LEAST BITTERN

OCEAN HIDEOUT

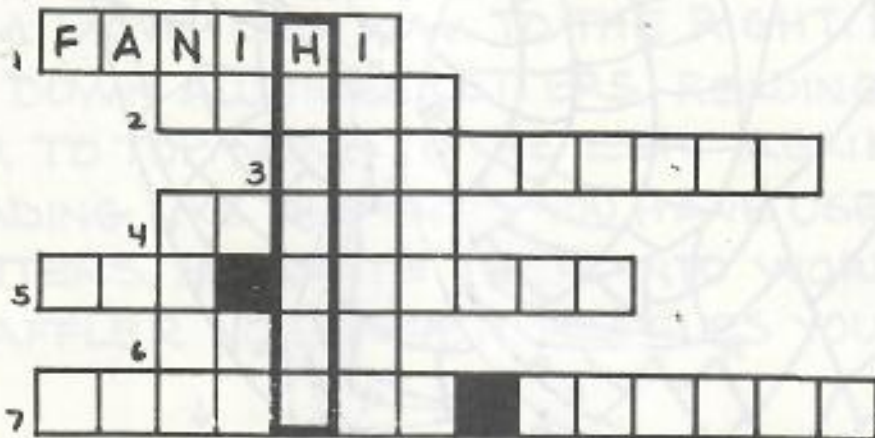
Z	L	P	T	L	A	R	O	C	K	M	R	B
S	T	A	R	F	I	S	H	L	U	G	L	A
R	B	K	N	B	P	H	A	O	M	F	J	R
E	C	R	A	B	L	L	K	W	N	A	Z	R
B	R	Z	A	S	G	L	F	N	J	B	L	A
M	Q	R	N	A	L	K	J	F	V	D	K	C
U	C	J	E	L	L	Y	F	I	S	H	T	U
C	K	K	M	P	S	T	B	S	Q	Z	E	D
U	L	Z	O	J	R	N	S	H	E	L	L	A
C	E	G	N	O	P	S	B	A	J	R	T	L
A	V	K	E	O	C	T	O	P	U	S	R	Z
E	C	L	S	G	N	F	W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

THE OCEAN PROVIDES A HOME FOR MANY PLANTS AND SEA ANIMALS. THIS PUZZLE CONTAINS 16 THINGS YOU MIGHT SEE ON THE REEF OR IN THE OCEAN. THEY RANGE IN LENGTH FROM 4 LETTERS TO 11 LETTERS. THEY MAY BE IN THE "ACROSS" OR "DOWN" ORDER USED IN CROSSWORD PUZZLES, BUT IF ACROSS THEY MAY READ FROM LEFT TO RIGHT OR RIGHT TO LEFT. IF DOWN THEY MAY READ FROM THE TOP DOWN OR BOTTOM UP. SOME WORDS ARE ON A DIAGONAL READING EITHER FROM THE HIGHER TO THE LOWER POINT OR FROM THE LOWER TO THE HIGHER.

ANSWERS: CORAL, SEA CUCUMBER, BARRACUDA, TURTLE, ANEMONE, ANGEL-FISH, CLOWNFISH, STARFISH, ALGAE, SPONGE, SHELL, CLAM, OCTOPUS, CRAB, TELLYFISH, ROCK.

WILDLIFE CROSSWORD

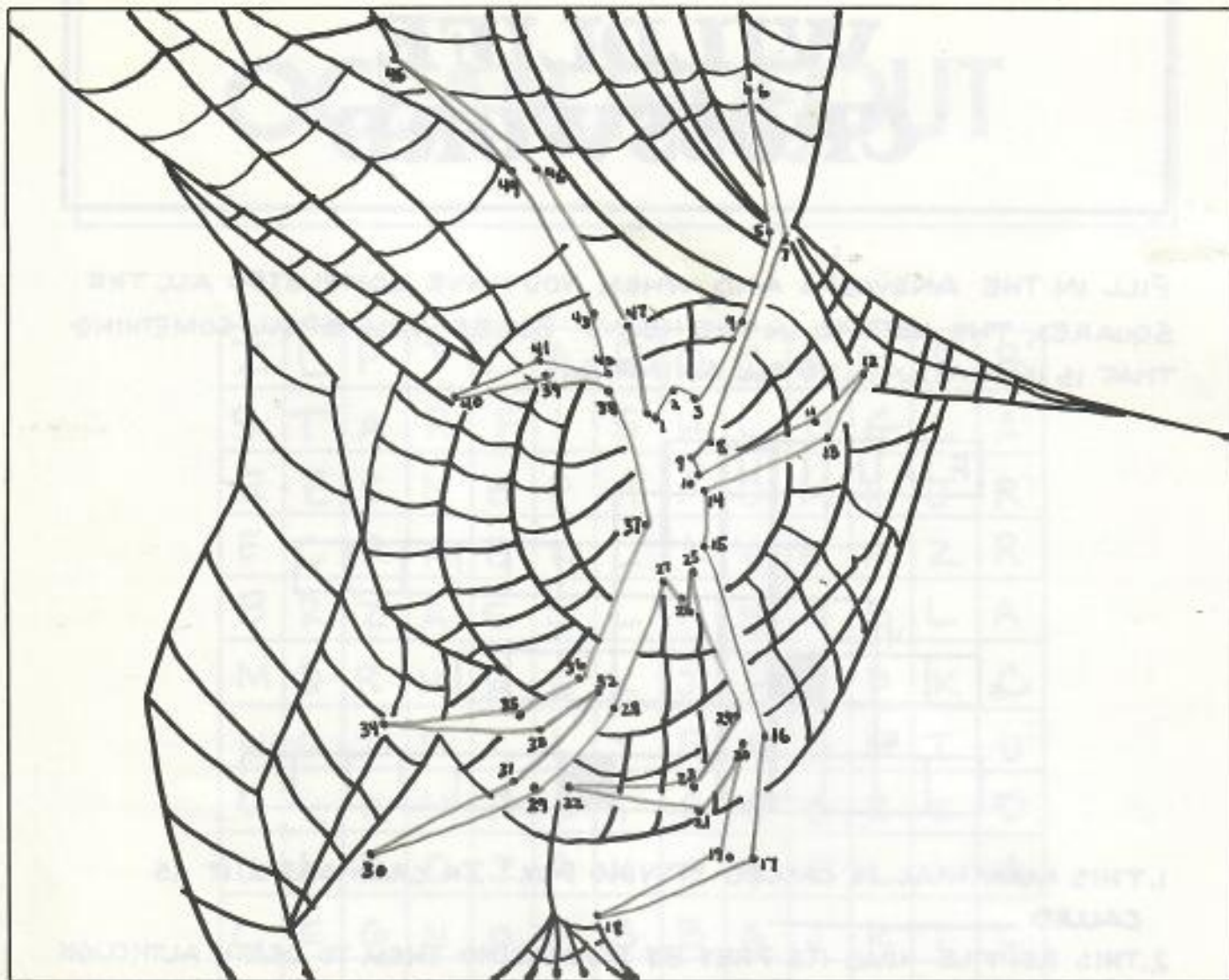
FILL IN THE ANSWERS AND WHEN YOU HAVE COMPLETED ALL THE SQUARES, THE LETTERS IN THE HEAVY BOXES WILL SPELL SOMETHING THAT IS IMPORTANT TO ALL ANIMALS.



1. THIS MAMMAL IS CALLED "FLYING FOX." IN CHAMORRO IT IS CALLED _____.
2. THIS REPTILE KILLS ITS PREY BY SQUEEZING THEM TO DEATH. ALTHOUGH IT IS POISONOUS, IT IS NOT A THREAT TO PEOPLE, BUT IT DOES EAT BIRDS AND THEIR EGGS.
3. THIS BEAUTIFUL INSECT WITH BLUE SPOTS EATS NECTAR. IT PROVIDES FOOD FOR MANY OF GUAM'S BIRDS.
4. THESE FAST MOVING LIZARDS HAVE SCALES LIKE SNAKES. UNLIKE GECKOS, THEY LIKE TO AVOID PEOPLE.
5. THESE REPTILES SPEND MUCH OF THEIR TIME IN THE OCEAN. THEY HAVE BEEN HUNTED FOR THEIR MEAT, SHELLS & EGGS. NOW THEY ARE PROTECTED BY LAW AND CANNOT BE HUNTED.
6. CHAMORROS CALL THIS DELICACY "AYUYU". THEY DIG A HOLE IN THE SAND DURING THE DAY TO HIDE IN & HUNT FOR FOOD AT NIGHT. COOKED IN COCONUT MILK, THESE CRUSTACEANS ARE A FIESTA FAVORITE.
7. THIS JUNGLE LIZARD IS CALLED "HALITAI" BY CHAMORROS. IT CAN GROW UP TO SIX FEET LONG. FEMALES LAY EGGS IN A HOLE UNDER A TREE OR ROCK.

ANSWER: HABITAT

1. FANINI 2. SNAKE 3. BUTTERFLY 4. SKINK 5. SEA TURTLE 6. CRAB 7. MONITOR LIZARD



SPIDERS

Many people think spiders are insects, but they are arachnids. Instead of an insect's three main body parts and three pairs of legs, spiders have two main body parts, the head-thorax and the abdomen and four pairs of legs. Arachnids have poison glands and strong jaws. The bite of Guam's spiders is not considered dangerous to people.

Many female spiders have silk glands at the end of their abdomen. Their silk is used to build webs, wrap prey and make egg cases. Spiders live on their webs and insects are caught by the web for the spider to eat.

Spiders kill their prey by injecting their bodies with a liquid that digests the prey's insides. The spider then sucks up this digested food, discarding the outer parts.

Guam has two main types of spiders. Those that build webs are called sanye' ye. Those that don't build webs are payu'ak.

The largest Guam spider, payu'ak, looks like a wolf spider. They have large hairy bodies and live mostly in ranch houses. They hunt insects at night. Females carry eggs in a silk case on their abdomen.

The beautiful garden spider, sanye'ye (shown in the picture) is beneficial to man because it traps crop damaging insects in its web. The small house spider also builds webs to trap insects. Female house spiders lay 10 to 25 eggs which hatch in a week. Female spiders usually try to eat the male spider after they have mated.

BACKWARD BAFFLER

START AT THE UPPER LEFT CORNER OF THE BLOCK. WRITE DOWN THE LETTERS IN SENTENCE FORM, READING FROM TOP TO BOTTOM. MOVE ONE ROW TO THE RIGHT. NOW WRITE DOWN ALL THOSE LETTERS READING FROM BOTTOM TO TOP. MOVE TO THE LEFT AGAIN. KEEP ON READING LIKE THIS UNTIL YOU HAVE USED UP ALL THE LETTERS. SEPARATE THEM INTO WORDS UNTIL THE BAFFLER NO LONGER BAFFLES YOU!

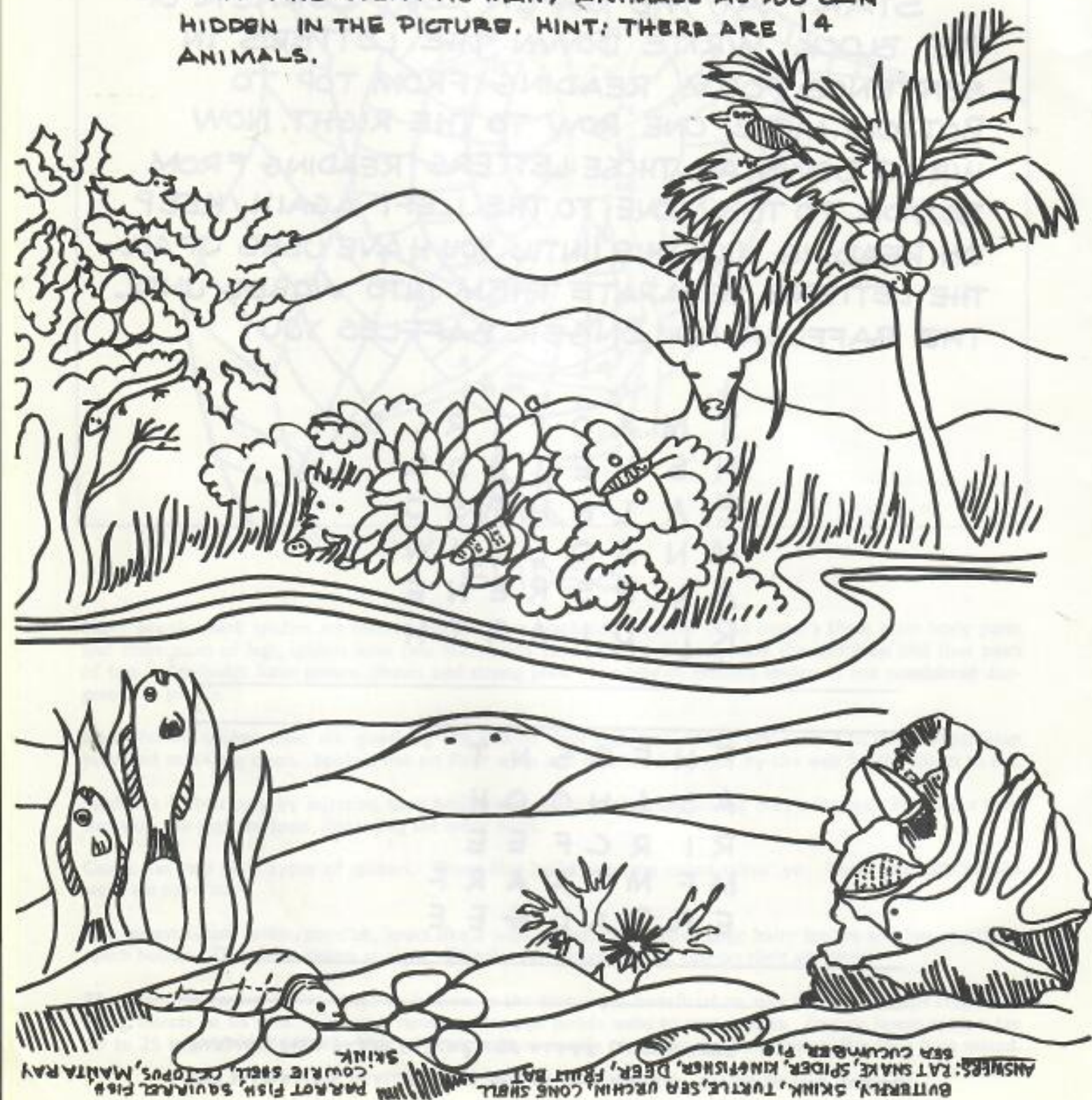
↓
T M A O F I R L D
H S L E T B D R
E A L N H T S O
M N A O E S I W
A A R S R E N E
R I D I A R T H

F H F E S N T
A S A H O O H
R I R C F E E
M F M T A A R F
E R P A L G E E

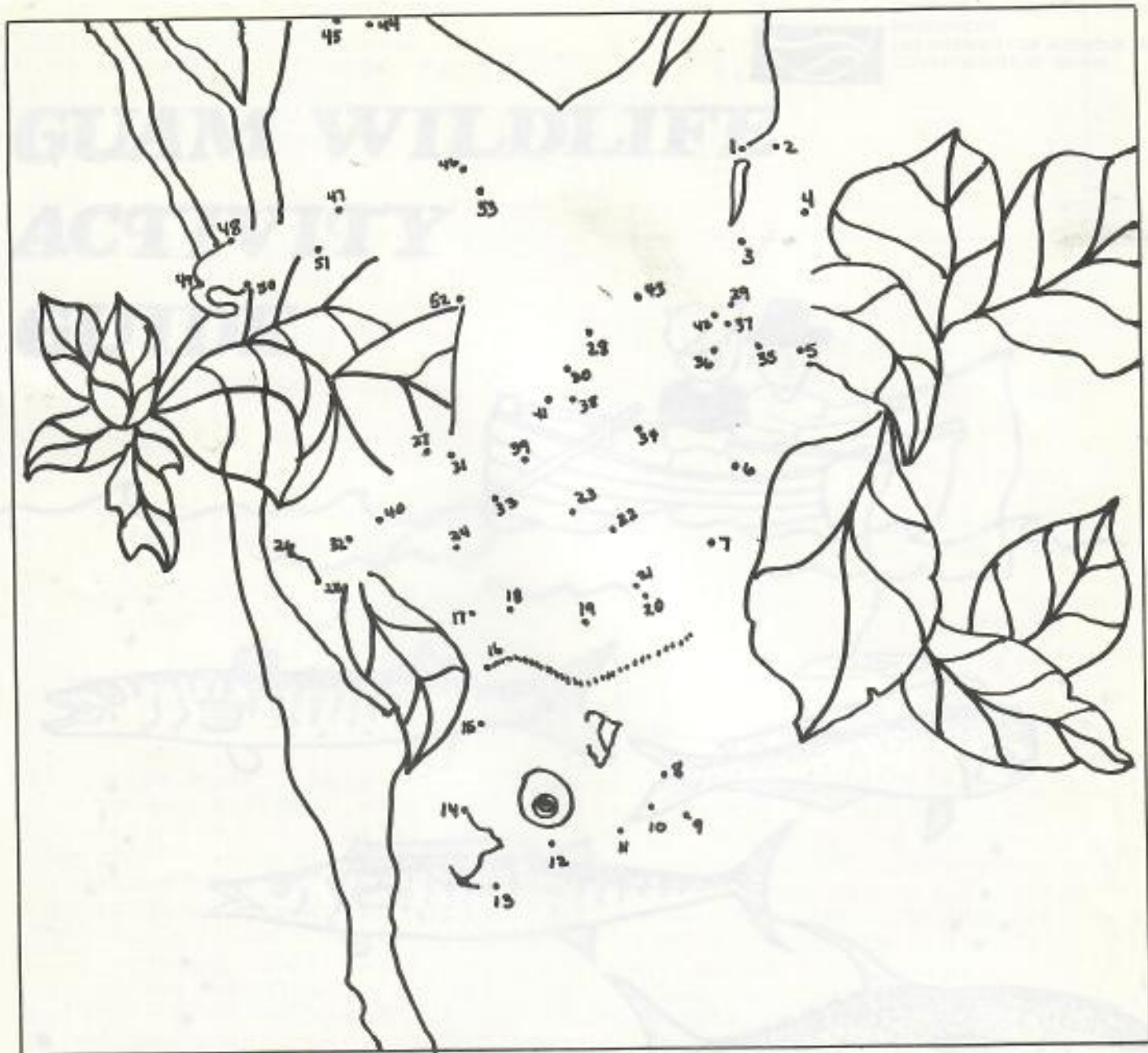
1. THE MARIANAS MALLARD IS ONE OF THE RAREST BIRDS IN THE WORLD.
2. FARMER FISH FARM PATCHES OF ALGAE ON THE REEF.

REEF & FOREST HIDEOUT

FIND AND COLOR AS MANY ANIMALS AS YOU CAN
HIDDEN IN THE PICTURE. HINT: THERE ARE 14
ANIMALS.



ANSWERS: BAT SNAKE, SPIDER, KINGFISHER, DEER, FRUIT BAT
BUTTERFLY, SKINK, TURTLE, SEA URCHIN, CONE SHELL
PARROT FISH, SAUVAGE FISH
SKINK
COWRIE SHELL, OCTOPUS, MAINTA RAY
SEA CUCUMBER, FISH



MARIANAS FRUIT BAT ENDANGERED SPECIES

Guam's fruit bat, "fanihi," is an endangered species. At one time huge flocks of bats filled the evening sky, but now there are only a few hundred left. The Marianas fruit bat lives only on Guam and some of the Northern Marianas Islands.

Fruit bats roost in trees. They live together in groups or colonies. They have good eyesight and are most active during the early morning and evening hours. These graceful flyers eat guavas, custard apples, bananas, pandanas fruit, breadfruit, banyan fruit, papayas and many other fruits and blossoms. Fruit bats are mammals and have only one baby a year. The young bat clings to its mother and nurses her for milk until it is old enough to find food on its own.

Bats live deep in the forest where there is lots of fruit and where they will be undisturbed by people. Since most of Guam's forest has been destroyed, there is not much room left for bats. Another problem is that bats are good to eat. Too many are being shot and eaten by people who don't care whether we have any bats in the future. Fruit bats on Guam are completely protected by law and may not be hunted or chased.

GREEN & BROWN TROPICAL

FOR THE TROPICAL...
THE TROPICAL...
THE TROPICAL...

MADAGASCAR FRUIT BAT

The Madagascar fruit bat is a...
It is found in the...
The fruit bat is a...
It is found in the...
The fruit bat is a...
It is found in the...

The Madagascar fruit bat is a...
It is found in the...
The fruit bat is a...
It is found in the...
The fruit bat is a...
It is found in the...