

PUFFINUS

STORY OF A

SHEARWATER



WRITTEN AND ILLUSTRATED BY
DANIEL COLLIN

Puffinus, Story of a Shearwater

Story written and illustrated by Daniel Collin
Photography credits: Aron Tanti, Benjamin Metzger, Pep Arcos,
Vero Cortes, Hadoram Shirihai, and Victor Paris

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Nathaniel Attard, Steph Leow, Rita Matos, Martin Austad, Marc Schrouffeneger,
Francesca Visalli, Polina Venka and Ricardo Reynolds

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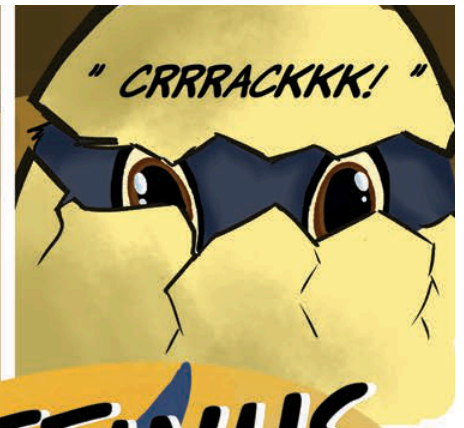
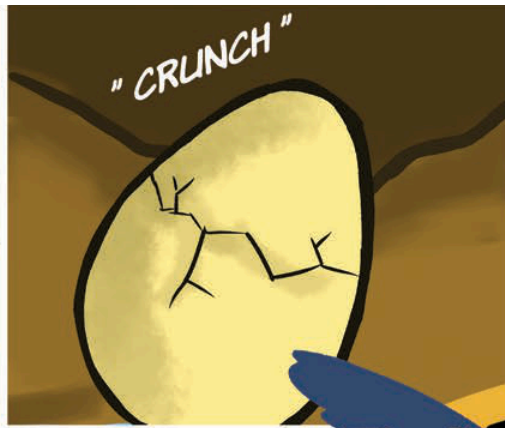
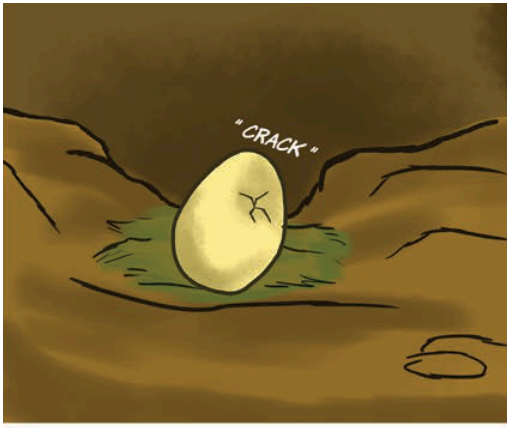
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HELLO, I'M PUFFINUS, AND I KNOW WHAT YOU'RE THINKING,
BUT I'M NOT A PUFFIN. THAT'S JUST A FAMILY NAME.
I'M ACTUALLY A SHEARWATER, YELKOUAN TO BE EXACT!

PUFFINUS

STORY OF A
SHEARWATER



THIS IS MY HOME... SAFE ON THESE CLIFFS THERE ARE NO DANGERS,
SO I CAN GROW STRONG WHILE MY PARENTS BRING ME FOOD.
BUT WHEN I'M OLD ENOUGH, MY HOME WILL BECOME THE OPEN SEA,
WHERE US SHEARWATERS SAIL THE SKIES FREELY FOR OUR WHOLE LIVES.



THIS IS BALLY, SHE'S MY BEST FRIEND AND NEST DOOR NEIGHBOUR.
SHE'S A LITTLE LARGER THAN ME BECAUSE SHE'S A BALEARIC SHEARWATER.

SINCE SHE'S OLDER SHE HAS MORE ADULT FEATHERS THAN ME,
SHE'LL EVEN FLEDGE FIRST,
SO UNFAIR!





ALRIGHT YOUNG ONES,
TIME FOR YOUR LESSON!
EVERYONE GATHER ROUND
AND WE'LL GET STARTED. AHH!
PUFFINUS AND BALLY. LATE AS
USUAL I SEE!

PROFESSOR SCOPOLI TEACHES US THE LESSONS WE'LL NEED
TO LEARN WHEN WE'RE OLD ENOUGH TO HEAD OUT TO SEA.
HE'S TAUGHT US HOW TO FLY, HOW TO CATCH FISH,
EVEN HOW TO NAVIGATE.



HE'S A LITTLE STRANGE, BUT I ALWAYS ENJOY HIS LESSONS.
HE'S ALSO REALLY OLD AND HAS SEEN OVER 30 YEARS,
SO HE KNOWS EVERYTHING THERE IS TO KNOW ABOUT THE SEAS,
EVEN IF SOME OF HIS STORIES CAN BE HARD TO BELIEVE!



NOW THEN CLASS, I'VE TAUGHT YOU THE FUNDAMENTALS
OF FLYING, FISHING, AND NAVIGATING, BUT TODAY WE'LL BE COVERING AN
IMPORTANT TOPIC: THE SPIRITS WHO CONTROL THE SEAS!

SPIRITS?
THAT'S JUST AN OLD
NEST-TIME STORY!



TRUST
A STORM-PETREL
TO THINK HE KNOWS
EVERYTHING!

THE SPIRITS
ARE VERY REAL MY YOUNG FRIENDS,
THEY EFFECT THE SEAS, THE FISH,
EVEN US SHEARWATERS.

BELIEVE ME,
I'VE ENCOUNTERED
THEM!



"SIGH"
YOU LOT AREN'T
GOING TO BELIEVE ME
UNLESS I TELL YOU
THE STORY...
ARE YOU?



OH VERY WELL...
IT HAPPENED MANY YEARS AGO...

I WAS A FLEDGLING ON MY ISLAND,
NOT MUCH OLDER THAN ALL OF YOU,
WITH ONLY A FEW OF MY FLUFF FEATHERS LEFT
BEFORE I WAS READY TO FLY.

LITTLE DID I KNOW
IT WAS THE NEST OF THE SPIRITS,
A SPECIAL DEN THEY ARE ABLE TO MOVE AROUND
WITH THEM WHEREVER THEY GO.

ONE NIGHT, I NOTICED A STRANGE NEST
MADE OF AN UNUSUAL SOFT MATERIAL,
WITH NO REASON TO BE AFRAID,
I WENT CLOSER FOR A BETTER LOOK...

SUDDENLY FROM THIS NEST CAME A BLINDING LIGHT.

BEFORE I COULD REALIZE WHAT WAS HAPPENING,
THEY LOOMED OVER ME AND GRABBED HOLD OF MY BODY...

AND WITH IT, THEY EMERGED. THE SPIRITS!
THESE STRANGE FIGURES STOOD UP LIKE US BUT THEY WERE LARGER,
AND DIDN'T HAVE FEATHERS OR BEAKS.

THEN I SAW SOME STRANGE OBJECT,
LIKE A BIRD'S BEAK,
AS I WAS LOOKING AT IT, THE SPIRITS
PULLED MY LEG CLOSE TO IT.

IT FELT VERY PECULIAR INDEED!
THE SPIRITS WERE GRABBING ME ALL OVER,
I COULDN'T ESCAPE!

AND THEN...

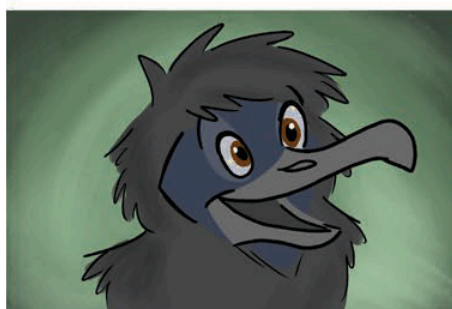
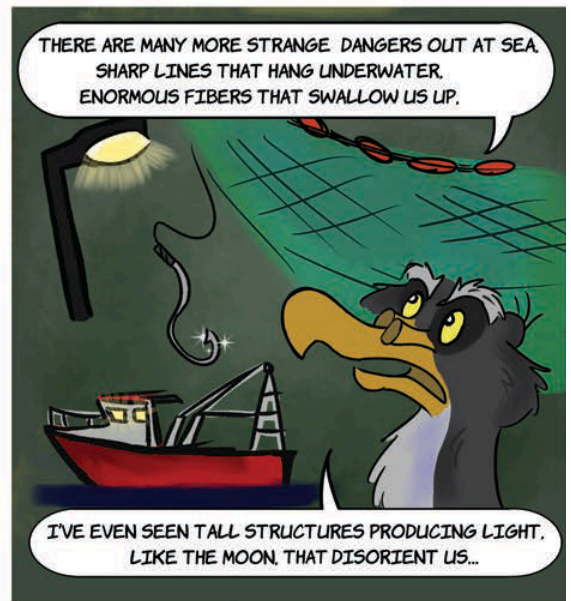
THE OBJECT CLAMPED SHUT
ON MY LEG!

THROUGHOUT THE WHOLE ENCOUNTER I NEVER FELT ANY PAIN,
NONETHELESS IT WAS VERY BIZARRE INDEED,
WHY DID THEY FEEL THE NEED TO DO ALL THIS TO ME?

IT WAS MANY YEARS AGO AND I'VE GROWN OLD SINCE,
BUT I NEVER FORGOT THAT DAY.

EVENTUALLY THEY LET ME GO
AND I SCAMPED AWAY...

AND I HAVEN'T EVEN TOLD YOU THE STRANGEST PART...



LATER THAT EVENING

I CAN'T WAIT TO START EXPLORING THE SEAS BALLY. I HOPE I'M READY SOON!

I KNOW IT'S FRUSTRATING PUFFINUS. I'M OLDER THAN YOU AND I'M STILL NOT READY

BUT LOOK AT MY WINGS. I ALREADY HAVE MY GROWN UP FEATHERS COMING THROUGH! SEE?

NOT AS MANY AS ME THOUGH!

SHOW OFF!

THE ONLY SHOW OFF AROUND HERE IS YOU, PUFFINUS!

FOR NOW, JUST PRACTISE THE WAY I DO!

IT'S FUN AND HELPS OUR WINGS GET STRONGER!

ARE YOU EVEN LOOKING?

BY FLAPPING YOUR WINGS ON THE SPOT LIKE THIS. SEE?

PUFFINUS?

I WASN'T.

I WAS TOO CAPTIVATED WATCHING THE ADULTS FLY...

DIVING UNDER THE WATER TO CATCH FISH

SOARING OVER THE WAVES.

I WAS SO READY TO JOIN THEM

PUFFINUS!!!!

I HADN'T NOTICED HOW CLOSE I WAS TO THE EDGE...





END OF PART ONE...

LESSONS WITH SCOPOLI

PART 1



RIGHT THEN FOLKS!
THIS IS MY FIRST TIME TEACHING HUMAN HATCHLINGS
SO GATHER ROUND AND PAY ATTENTION!
WE'RE GOING TO TAKE A BREAK FROM PUFFINUS AND HIS ADVENTURE
SO I CAN SHARE MY KNOWLEDGE OF US SHEARWATERS
AND THE THREATS WE FACE! READ ON!

Wooooooooooooo



THAT'S THE SPIRIT!

SHEARWATERS GET THEIR NAME FROM THE WAY THEY SMOOTHLY FLY LOW OVER THE SEA, WITH ONE WING ALMOST CUTTING THE SURFACE OF THE WATER. THESE BIRDS HAVE INSPIRED MANY MYTHS AND LEGENDS WHICH HAVE CAPTIVATED HUMANS FOR ALL OF OUR SHARED HISTORY.

ONE SUCH SUPERSTITION IS THAT OF HORROR, BECAUSE OF THE EERIE, OTHERWORLDLY WAILING SOUND SHEARWATERS MAKE ON A NESTING SITE, HUMANS VIEWED THE BIRDS AS DEMONS, OR GHOSTS OF PEOPLE LOST AT SEA. SEEING ONE FLYING OVER THE WATER WAS SEEN AS A SIGN OF IMPENDING DOOM.

THEIR CALLS AND GRACEFUL NATURE ON THE WATER ALSO COULD HAVE LED TO THE ANCIENT GREEKS CREATING THE MYTHOLOGY OF MERMAIDS, HALF HUMAN HALF BIRDS (RATHER THAN FISH AS THEY'RE VIEWED TODAY) WHO LURE UNSUSPECTING SAILORS TO THEIR GRAVE.



KNOW YOUR SEABIRD!

SPECIES: YELKOUAN SHEARWATER

WEIGHT: 330-480 G

WINGSPAN: 70-84 CM

COOL FACT: ALSO KNOWN AS 'LEVANTENE' AND 'MEDITERRANEAN' SHEARWATER



SPECIES: BALEARIC SHEARWATER

WEIGHT: 472-565 G

WINGSPAN: 83-93 CM

COOL FACT: DESPITE BREEDING IN THE MEDITERRANEAN, SOME OF THESE BIRDS WILL RANGE AS FAR AS THE BRITISH ISLES!



SPECIES: SCOPOLI'S SHEARWATER

WEIGHT: 530 G

WINGSPAN: 112-122 CM

COOL FACT: THE STRIKING TUBE-SHAPED NOSTRILS OF THIS SPECIES ARE USED TO FLUSH OUT SEAWATER SALT



SPECIES: STORM-PETREL

WEIGHT: 23-30 G

WINGSPAN: 36-39 CM

COOL FACT: THE NAME 'STORM-PETREL' COMES FROM THE OLD SAILOR'S MYTH THAT THESE TINY BIRDS USHER IN BAD WEATHER!



DID YOU KNOW?

MANY SHEARWATERS BELONG TO THE SCIENTIFIC FAMILY 'PUFFINUS' BUT THEY ARE IN NO WAY RELATED TO PUFFINS!
THE LINK COMES FROM PUFFIN BEING A NAME ORIGINATING IN THE MIDDLE AGES FOR FAT BABY SEABIRDS. AS TIME WENT ON, THAT NAME WAS LESS ASSOCIATED WITH BABIES AND BECAME THE COMMON NAME FOR THE FAMOUS COLOURFUL BIRD WE ALL RECOGNISE!



DO I SERIOUSLY LOOK ANYTHING LIKE THEM?

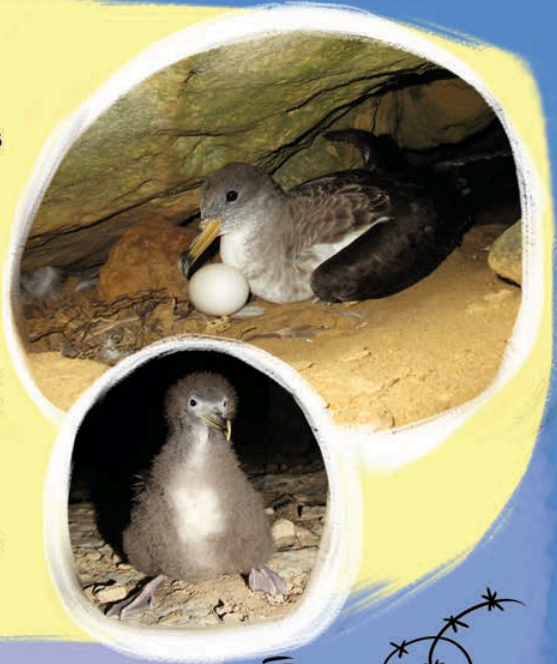
NEST LIFE

LIKE ALL BIRDS, SHEARWATERS START LIFE HATCHING FROM AN EGG IN A NEST. NESTS ARE MADE IN BURROWS AND CREVICES ALONG CLIFFS WHERE THE EGG AND CHICK CAN BE KEPT SAFE.

ONLY ONE EGG IS LAID BY EACH BREEDING PAIR OF BIRDS EACH SEASON AND INCUBATION LASTS BETWEEN 42 AND 56 DAYS.

ONCE THE FLUFFY CHICK HATCHES IT'S UP TO BOTH PARENTS TO HEAD OUT TO SEA AND BRING BACK FOOD FOR THE GROWING INFANTS, STARTING WITH STOMACH OIL AND MOVING ON TO PARTLY DIGESTED FOOD. AFTER 84-104 DAYS THE CHICK FINISHES GROWING ITS FLIGHT FEATHERS, LOSES THE DOWNY FLUFF AND BOTH PARENTS LEAVE THE CHICK TO FEND FOR THEMSELVES!

THIS MEANS THE YOUNG SHEARWATER IS FINALLY READY TO FLEDGE FOR A LIFE AT SEA, ONLY EVER RETURNING TO LAND FOR BREEDING MANY YEARS LATER!



DID YOU KNOW?

BECAUSE OF THE LOCATION AND SIZE OF THEIR LEGS, SHEARWATERS CANNOT MOVE VERY COMFORTABLY ON LAND AT ALL! TO MOVE AROUND THEY MUST SCRAMBLE WITH THEIR WINGS IN A SORT OF 'ARMY CRAWL' WHICH ISN'T VERY EFFECTIVE!



ALIEN INVASION!

SHEARWATERS HAVE EVOLVED OVER MANY GENERATIONS TO RAISE THEIR OFFSPRING IN A PREDATOR FREE ENVIRONMENT. BUT INVADERS INCLUDING CATS, MICE, AND RATS LIKE GALINT HAVE FOUND THEIR WAY INTO MANY COLONIES, AND THEY'RE HUNGRY! WHEN AN ANIMAL IS ESTABLISHED IN AN AREA IT DOESN'T COME FROM, IT'S CALLED AN 'ALIEN' OR 'INVASIVE SPECIES' AND THESE PREDATORS WILL READILY FEED ON EGGS, CHICKS, EVEN ADULTS. WITH NO WAY TO DEFEND THEMSELVES OR THEIR OFFSPRING, WHOLE SHEARWATER FAMILIES ARE LOST TO THESE ALIEN INVASIONS!



PEST CONTROL

ALTHOUGH THESE ANIMALS HAVE A DEVASTATING IMPACT ON SEABIRD COLONIES, IT'S NOT THEIR FAULT. IT IS HUMANS TO BLAME FOR UNLEASHING THESE ALIENS, EITHER BY BRINGING THEM TO THE AREA AS STOWAWAYS OR ENCOURAGING THEM WITH A FOOD SOURCE THAT WOULDN'T NORMALLY BE AVAILABLE. SO IT IS THE RESPONSIBILITY OF HUMANS TO CONTROL THESE COLONY INFESTATIONS AND STOP THEIR SPREAD TO UNINFECTED AREAS. IT'S A DIFFICULT TASK, BUT PROJECTS LIKE LIFE PANPUFFINUS! ARE ON HAND!

EVERYONE, INCLUDING YOU CAN HELP PREVENT THE SPREAD OF INVASIVE SPECIES BY ENSURING YOU DON'T LITTER OR LEAVE DISCARDED FOOD IN AREAS WHERE SEABIRDS NEST. THIS HELPS TO KEEP THE RATS AWAY AND THE SHEARWATERS, EGGS AND CHICKS STAY SAFE.



GLOSSARY

WINGSPAN	THE LENGTH OF A BIRD FROM THE TIP OF ONE OUTSTRETCHED WING TO THE OTHER
SUPERSTITION	IDEAS HELD BY PEOPLE WITH NO SCIENTIFIC EVIDENCE THAT ARE OFTEN NEGATIVE TOWARDS LIVING THINGS
INCUBATION	KEEPING AN EGG ALIVE LONG ENOUGH THAT IT HATCHES
FLEDGE	WHEN A YOUNG BIRD LEAVES THE NEST AND BEGINS TO FLY ON IT'S OWN
INVASIVE	A NON NATIVE ANIMAL WHICH CAUSES PROBLEMS IN A HABITAT WHICH IT DOESN'T BELONG TO

LONG AFTER MY RUN IN WITH GAUNT, THE RAT,
MY ADULT FEATHERS HAD FINISHED GROWING IN
AND I FINALLY BEGAN NAVIGATING THE OPEN SEAS!

I'VE ONLY BEEN TRAVELLING FOR A FEW MONTHS,
BUT I'VE ALREADY VOYAGED ALL OVER THE SEA IN SEARCH OF THE FISH I EAT.

MY FEATHERS ARE WATERPROOF TO HELP ME SWIM AND FISH.
MY DARK COLOURS MAKE ME LOOK MATURE AND
MUCH MORE GROWN UP.

WE ARE NOT ALONE. US SHEARWATERS FLY TOGETHER IN LARGE GROUPS
LOOKING FOR FISH AND FLOATING TOGETHER ON THE WATER TO REST.
THERE SEEMS TO BE LESS AND LESS FOOD SO WE HAVE TO TRY REALLY HARD
TO FIND IT.

I SEE BALLY EVERY NOW AND THEN.
SHE HAS ALSO CHANGED, HER COLOUR HAS BECOME LIGHT BROWN!

LOOK PUFFINUS, FISH BELOW!

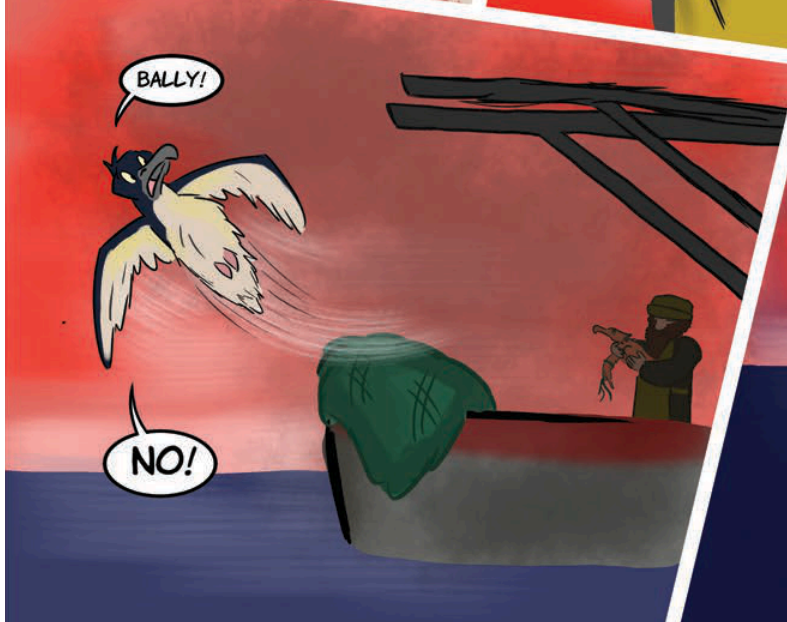
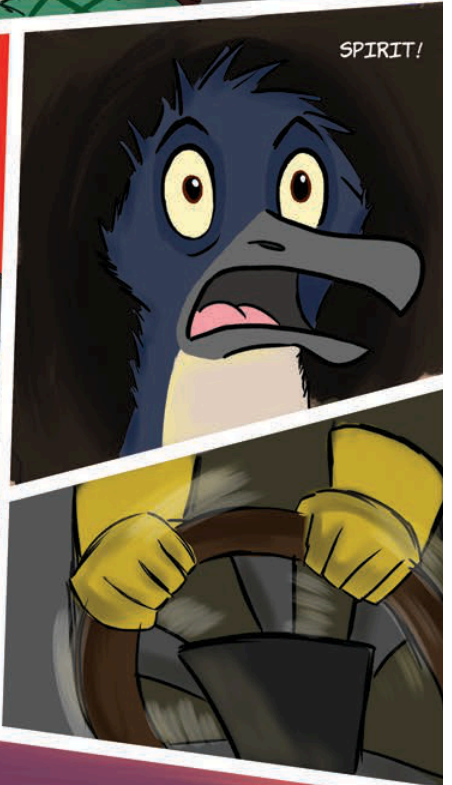
LAST ONE TO CATCH THEM
IS A CRACKED EGG!

BALLY?

I WIN!

BALLY?

DID YOU SEE ME CATCH
THESE BALLY?



I FLEW FOR WHAT FELT LIKE FOREVER...

THE STARS WERE HIDDEN.
I COULDN'T FIND MY WAY

BUT SUDDENLY...

I DIDN'T EAT. I DIDN'T SLEEP

I SAW IT!

THE LIGHT ON THE HORIZON

BUT THIS LIGHT WAS DIFFERENT,
BRIGHTER...

AND IT GREW LARGER.

BEFORE I KNEW WHAT HAPPENED...

THE LIGHT SURROUNDED ME

I WAS CONFUSED.

OVERWHELMED ...

AFRAID...

SUDDENLY I FELT MYSELF FALLING.

BUT THE LIGHT WAS SO BLINDING...

I DIDN'T FEEL MYSELF HIT THE GROUND.

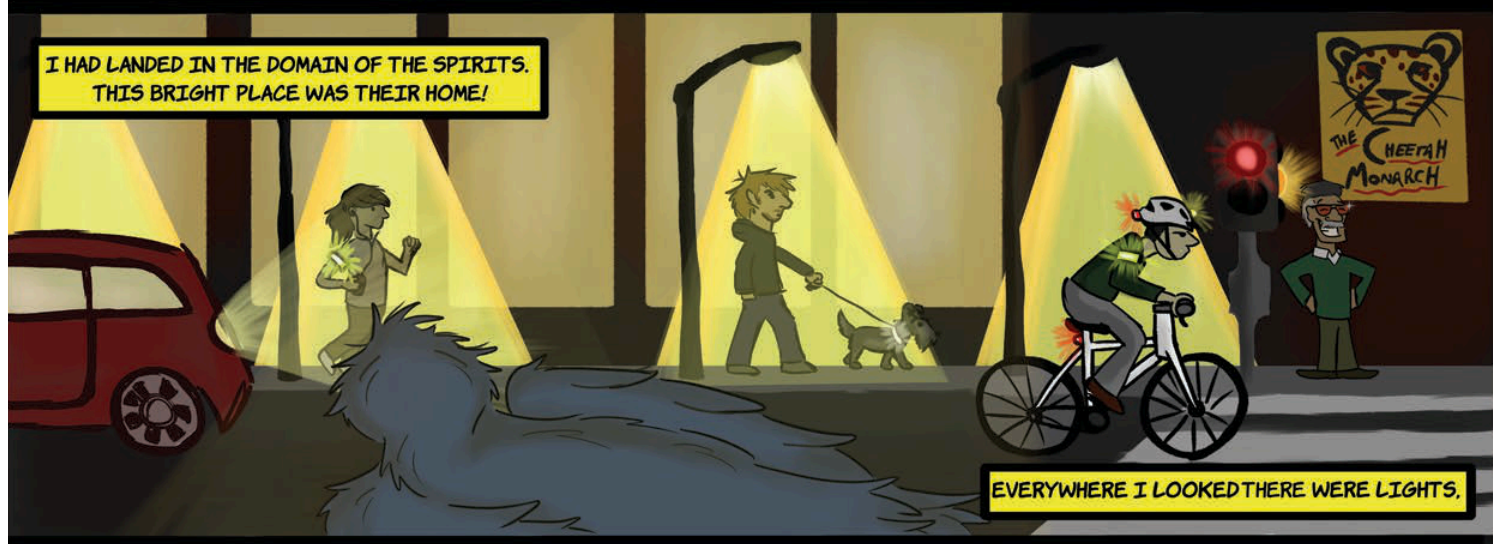


I DON'T KNOW
HOW LONG I WAS
UNCONSCIOUS...

BUT SLOWLY
I AWOKE IN A DAZE...

I STILL COULDN'T SEE WELL,
AND MY HEAD WAS FUZZY.

BUT SUDDENLY, I REALISED TO
MY HORROR WHERE I WAS...



I HAD LANDED IN THE DOMAIN OF THE SPIRITS.
THIS BRIGHT PLACE WAS THEIR HOME!

EVERYWHERE I LOOKED THERE WERE LIGHTS.



ABOVE ME.

MOVING PAST ME.

THE SPIRITS EVEN SHINED
LIGHT ON THEIR FACES.

I COULDN'T UNDERSTAND,
WHAT KIND OF ANIMAL COULD WANT
THIS MUCH BRIGHTNESS?



BUT I HADN'T SEEN THAT
ONE WAS COMING TOWARDS ME

CLOSER...

AND CLOSER...

UNTIL IT WAS REACHING OUT ABOVE ME.

END OF PART 2

LESSONS WITH SCOPOLI

PART 2

MY MY MY!
PUFFINUS ISN'T HAVING A GOOD TIME AT ALL. IS HE? WHAT WILL HAPPEN NEXT?
ARE YOU, SPIRITS, AS FEARSOME AS YOU SEEM?
BEFORE WE FIND OUT, IT'S TIME FOR YOUR SECOND LESSON IN SHEARWATER LIFE!
THIS TIME, I'LL BE TELLING YOU ALL ABOUT WHAT IT'S LIKE FOR ADULT SHEARWATERS.
OUT AT SEA FISHING, NAVIGATING, AND AVOIDING HUMAN THREATS!
HERE WE GO!



CATCH OF THE DAY

AS WE LEARNED IN THE FIRST LESSON, SHEARWATERS SPEND THEIR LIVES AT SEA, ONLY RETURNING TO LAND TO BREED. THE NAME FOR ANIMALS WITH THIS LIFESTYLE IS **PELAGIC**, AND WHILE YOU HUMANS HAVE LEARNED MUCH ABOUT OUR WAYS, A LOT OF OUR LIVES, ONCE WE BEGIN ROAMING THE OCEANS, REMAINS A MYSTERY TO EVEN YOUR SMARTEST SCIENTISTS!

ONE THING YOU DO KNOW IS OUR DIET, WE LOVE SEAFOOD! FISH, SQUID, OCTOPUS, KRILL, AND SHRIMP JUST TO NAME A FEW, SOME OF OUR SPECIES HAVE A FUSSY SPECIFIC TYPE WE PREFER, WHILE OTHERS WILL EAT WHATEVER WE CAN SNATCH UP!
WE CATCH OUR FOOD BY DIVING INTO THE WATER AND USING OUR WINGS TO PROPEL OURSELVES UNDERWATER, SWIMMING IN THE DARK WATERS BELOW!

DID YOU KNOW?

ONE WAY SHEARWATERS CAN FIND FOOD, IS BY HANGING AROUND WHALES! THESE ENORMOUS MARINE MAMMALS SPOOK WHOLE SCHOOLS OF FISH TOWARDS THE SURFACE, MAKING THEM EASY FOR THE SHEARWATERS TO CATCH!
THEY ALSO FOLLOW FISHING BOATS FOR SCRAPS AND DROPPED FOOD, THOUGH THE RESULTS CAN BE LESS FORTUNATE FOR THE SEABIRDS.



ENTANGLEMENT

IT'S GETTING HARDER AND HARDER FOR US SHEARWATERS TO FIND FOOD. COMMERCIAL FISHING BY HUMANS IS CAUSING OUR FOOD SOURCE TO DECREASE. AS IF THAT'S NOT ENOUGH, HUMANS ARE ALSO ADDING DANGEROUS MATERIALS TO THE OCEAN LIKE DISCARDED 'GHOST NETS' MADE OF FISHING NETS. PLASTIC LITTER ALSO BREAKS DOWN AND BECOMES MICROPLASTICS, DAMAGING THE ECOSYSTEM ON A MICROSCOPIC LEVEL. IT SEEMS LIKE THERE'S NOT A DROP OF OCEAN THAT ISN'T AFFECTED BY HUMANS.

COUNTLESS SEABIRDS ARE ENTANGLED IN LITTER OR ACCIDENTALLY CAUGHT BY FISHERMEN AS "BYCATCH". AND IT'S NOT JUST US BIRDS; TURTLES, SHARKS, DOLPHINS AND EVEN OUR WHALE FRIENDS ARE VICTIMS OF BYCATCH AND OCEAN PLASTICS WORLDWIDE.

OF COURSE WE'RE NOT BLAMING THE FISHERMEN, ALL HUMANS NEED TO PLAY A PART IN LIVING OFF THE OCEAN IN A CONSIDERATE WAY JUST LIKE US...
HOW? BY EATING LESS SEAFOOD, SELECTING SUSTAINABLY SOURCED SEAFOOD, LIMITING USE OF PLASTICS, AVOIDING PRODUCTS WITH MICROPLASTICS AND OF COURSE, KEEPING TRASH OUT OF THE OCEAN!

IT'S A BIG CHALLENGE, BUT I THINK YOU GUYS ARE UP TO IT!



DID YOU KNOW?

SHEARWATERS CAN DIVE FOR LONG PERIODS ON A SINGLE BREATH AND REACH DEPTHS OF UP TO 50 METRES WHILE HUNTING FISH! THAT'S THE LENGTH OF AN OLYMPIC SWIMMING POOL AND THE HEIGHT OF THE LEANING TOWER OF PISA!



FAR OUT VOYAGERS

SHEARWATERS NEED A GOOD SENSE OF DIRECTION AS WE DO A LOT OF TRAVELLING. THE MOST OF ANY RECORDED ANIMAL IN FACT. MANY ANIMALS MIGRATE FROM ONE PART OF THE WORLD TO ANOTHER.

BUT NONE CAN MATCH SHEARWATERS! TO MAKE IT EVEN MORE IMPRESSIVE, WE ALWAYS TRAVEL OVER OPEN OCEAN.

YELKOUAN SHEARWATERS, LIKE PUFFINUS WILL TRAVEL AN EXTRA 1,000 KM IF IT MEANS AVOIDING FLYING OVER LAND. SOME SHEARWATER SPECIES CAN MIGRATE AS FAR AS 64,000 KM A YEAR, MEANING IT WOULD ONLY TAKE A SHEARWATER 12 YEARS TO FLY THE DISTANCE TO THE MOON AND BACK ON MIGRATION ALONE!



I MAY BE OLD BUT THESE WINGS STILL HAVE SOME WIND IN THEM!

DID YOU KNOW?

JUST LIKE PROFESSOR SCOPOLI, SEABIRDS ARE INCREDIBLY LONG LIVED. THE OLDEST BIRD EVER RECORDED IN THE WORLD IS AN ALBATROSS NAMED WISDOM WHO HATCHED IN 1951, MAKING HER OVER 70 YEARS OLD!

SHEARWATERS ALSO HAVE A LONG LIFESPAN.

A MANX SHEARWATER WAS CAUGHT BY RINGERS IN 2003 AND DISCOVERED TO HAVE AN EXISTING RING THAT WAS PUT ON WAY BACK IN 1953 AS AN ADULT (AT LEAST FIVE YEARS OLD). THIS PROVES THAT THE INDIVIDUAL WAS AT LEAST 55. BY CALCULATING THEIR YEARLY MIGRATION DISTANCE OF 10,000 KM, THIS SINGLE BIRD HAS TRAVELLED A MINIMUM OF 1,000,000 KM IN ITS LIFE. INCREDIBLE!



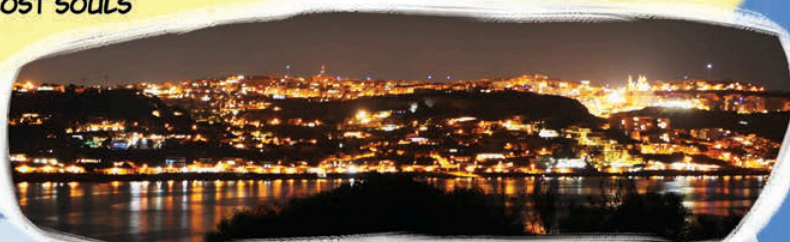
BLINDED BY THE LIGHT!

THERE'S A LOT OF CONFUSION AMONGST HUMANS ON HOW SHEARWATERS ARE ABLE TO NAVIGATE AT SEA. UNLIKE INLAND BIRDS WHO CAN USE VISUAL LANDMARKS AND POSITION OF THE SUN TO FIND THEIR WAY, SHEARWATERS NEED A DIFFERENT METHOD TO AVOID GETTING LOST. SO HOW DO WE DO IT? STARS ARE ONE OPTION. ANOTHER IS MAGNETIC FIELDS. AND SENSE OF SMELL IS THE MAIN WAY WE NAVIGATE. BUT AN IMPORTANT FACTOR IS USING LIGHT. SO HOW DOES THIS WORK FOR A SPECIES TYPICALLY ACTIVE AT NIGHT? WELL, AT NIGHT-TIME ON THE OCEAN, THE BRIGHTEST LIGHT IS OUT ON THE HORIZON AND IT'S BELIEVED THAT THIS GUIDES SHEARWATERS, ESPECIALLY WHEN FLEDGING FOR THE FIRST TIME.

UNDER NORMAL CONDITIONS, TRAVELLING BY LIGHT IS EFFECTIVE, BUT BECAUSE OF HUMANS BUILDING COASTAL TOWNS AND CITIES ALL OVER THE WORLD, THE BRIGHTEST LIGHT IS NO LONGER OUT TO SEA.

THIS EVER GROWING UNNATURAL LIGHT CONFUSES AND DISORIENTS SEABIRDS, ESPECIALLY NEWLY-FLEDGED YOUNGSTERS LEARNING TO FLY FOR THE FIRST TIME. THIS PHENOMENON IS CALLED FATAL LIGHT ATTRACTION AND MANY SHEARWATERS FLY UNWILLINGLY TOWARDS TOWNS AND FIND THEMSELVES STRANDED, CONFUSED, STARVING, AND UNABLE TO FLY.

MANY EVEN LOSE THEIR LIVES TO COLLISIONS, PREDATION OR SIMPLY DEHYDRATING, AND STARVING TO DEATH. THESE LOST SOULS ARE IN SERIOUS DANGER UNLESS RESCUED, BUT WHO CAN PROTECT US?



GLOSSARY

PELAGIC.....	SPENDING THE MAJORITY OF LIFE IN OPEN OCEAN
COMMERCIAL FISHING	TAKING FISH AND OTHER OCEAN RESOURCES TO BE SOLD ON A LARGE SCALE
GHOST NET.....	ABANDONED FISHING NETS LEFT IN THE SEA
MICROPLASTIC.....	TINY FRAGMENTS OF PLASTIC FOUND IN HUMAN PRODUCTS WHICH CAUSE PROBLEMS FOR MARINE LIFE
BYCATCH.....	ANIMALS CAUGHT ACCIDENTALLY IN FISHING GEAR
SUSTAINABLE.....	USING NATURAL RESOURCES IN A WAY THAT THEY CAN BE MAINTAINED
FATAL LIGHT ATTRACTION	ARTIFICIAL LIGHT CAUSING CONFUSION IN BIRDS AND OTHER ANIMALS

WHAT HAPPENED NEXT WAS A BLUR. THE SPIRITS HANDLED ME, STRETCHED OUT MY WINGS, AND PUT A RING ON MY LEG JUST AS THEY DID WITH SCOPOLI.



FINALLY I ENDED UP IN A STRANGE DARK PLACE. I FELT STRONGER AND HEALTHIER, BUT HAD NO IDEA WHAT WOULD HAPPEN NEXT. WHAT DID THE SPIRITS WANT WITH ME?

THEY PUT SOMETHING IN MY MOUTH AND SUDDENLY MY BELLY FILLED WITH A STRANGE MIXTURE. I INSTANTLY FELT BETTER, BUT IT WAS CONFUSING.

WHAT IS GOING TO HAPPEN TO ME?



PUFFINUS?

I RECOGNISED THAT VOICE, IT SOUNDED LIKE...

BALLY?



IS IT REALLY YOU?

YES IT'S ME!

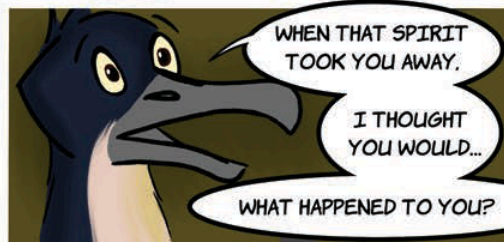
WHAT ARE YOU DOING HERE?

I TRAVELLED THE OCEAN TO FIND YOU!



WHEN THAT SPIRIT TOOK YOU AWAY, I THOUGHT YOU WOULD...

WHAT HAPPENED TO YOU?

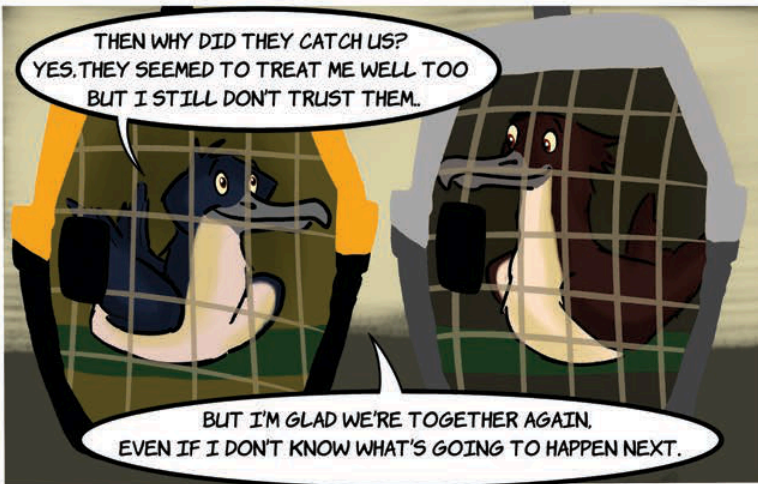


THE SPIRIT UNTANGLED ME, AND GAVE ME TO OTHERS, AND THE WAY THEY TREATED ME... WELL, IT ALMOST FELT LIKE THEY WERE TRYING TO LOOK AFTER ME, AS IF THEY DIDN'T MEAN TO CATCH ME.

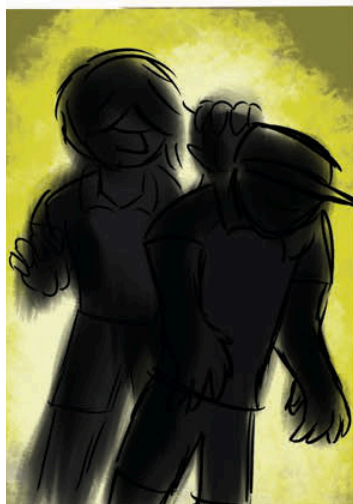


PUFFINUS, I DON'T THINK THESE SPIRITS ARE EVIL, I THINK THEY WANT TO HELP US.

THEN WHY DID THEY CATCH US? YES, THEY SEEMED TO TREAT ME WELL TOO BUT I STILL DON'T TRUST THEM.



BUT I'M GLAD WE'RE TOGETHER AGAIN, EVEN IF I DON'T KNOW WHAT'S GOING TO HAPPEN NEXT.



BALLY, THEY'RE BACK

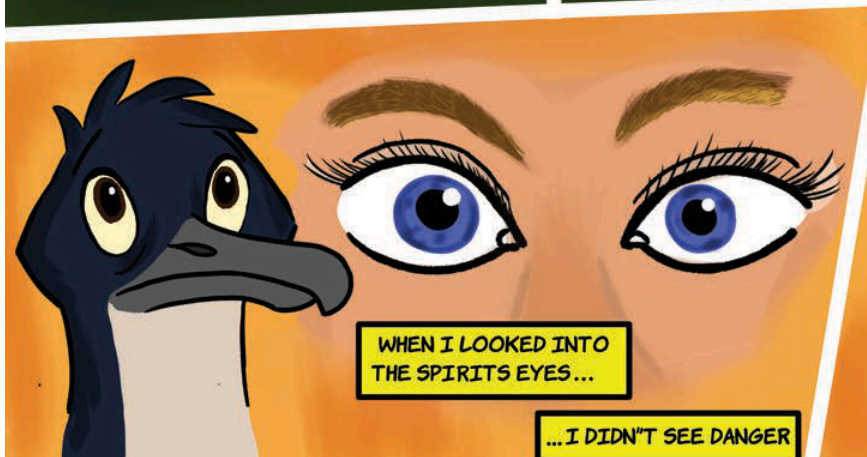
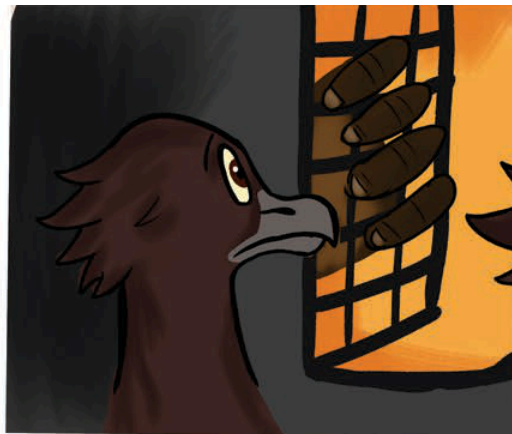
THE SPIRITS ARE BACK!

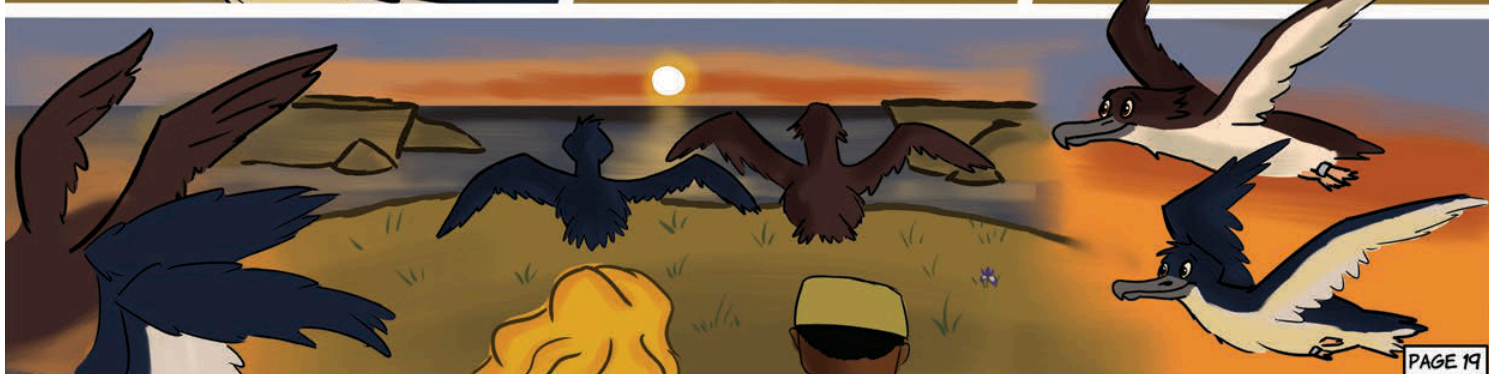
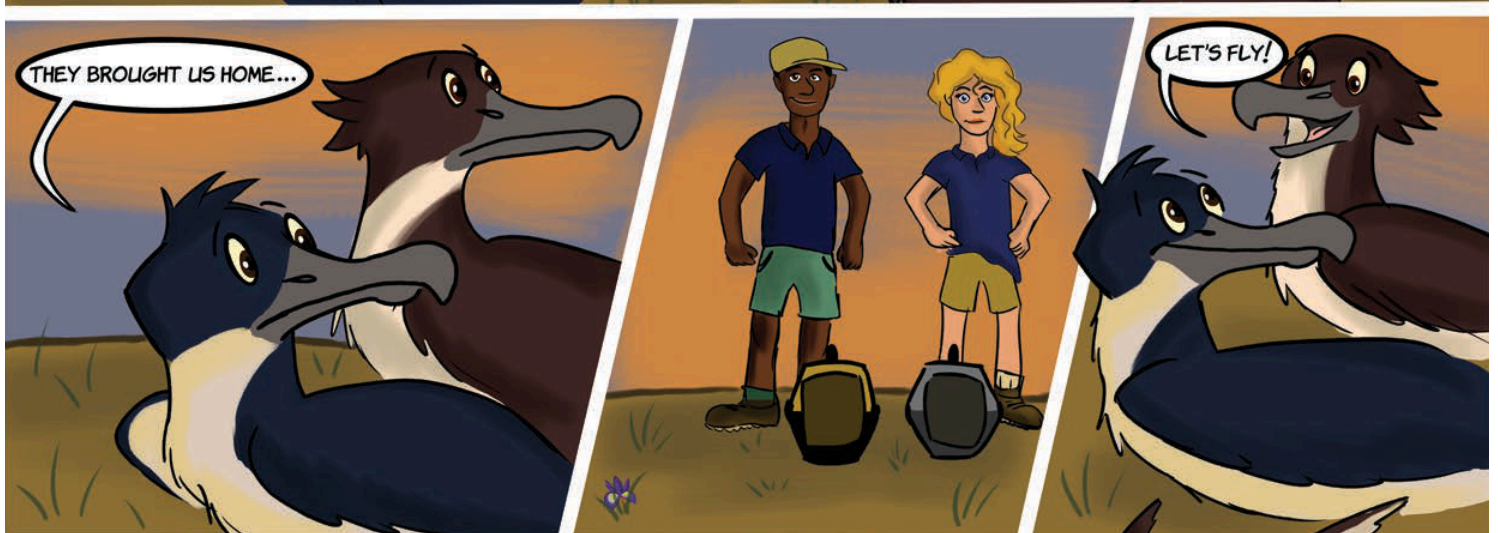
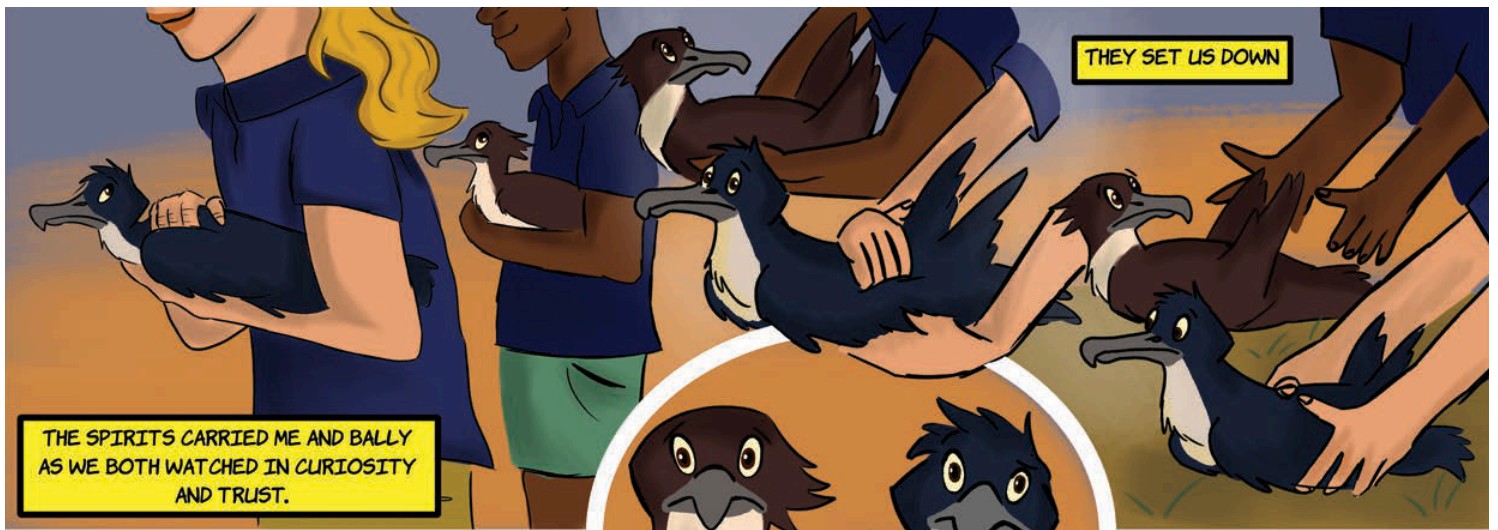
OK PUFFINUS, DON'T WORRY...



THEY'RE TAKING US! THEY'RE TAKING US!

I KNOW PUFFINUS, BUT STAY CALM...







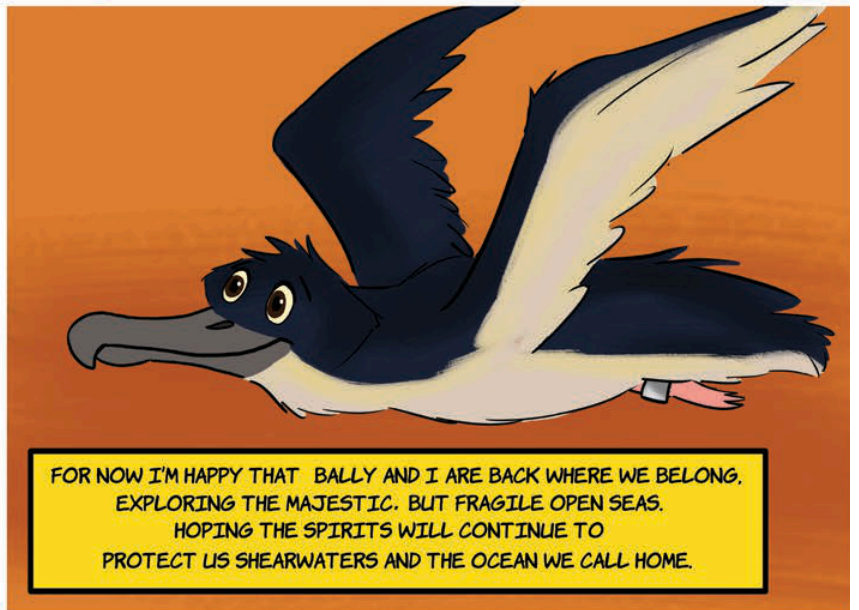
AS I TOOK FLIGHT WITH BALLY, I THOUGHT ABOUT EVERYTHING THAT I LEARNED FROM MY JOURNEY. I WAS WRONG ABOUT THESE SPIRITS. THEY AREN'T AS EVIL AS I BELIEVED THEY WERE.



THEY DEFINITELY HAVE A POWER OVER US SHEARWATERS AND THE SEAS, AND THAT POWER ISN'T ALWAYS FOR GOOD. BUT IT SEEMS LIKE THEY ARE BECOMING AWARE OF THAT POWER AND ARE TRYING TO CONTROL IT RESPONSIBLY.



IF ALL THE SPIRITS ACT LIKE THE ONES WHO SAVED BALLY AND I, THEN I DON'T THINK I NEED TO WORRY ABOUT THEM.



FOR NOW I'M HAPPY THAT BALLY AND I ARE BACK WHERE WE BELONG, EXPLORING THE MAJESTIC, BUT FRAGILE OPEN SEAS. HOPING THE SPIRITS WILL CONTINUE TO PROTECT US SHEARWATERS AND THE OCEAN WE CALL HOME.



The end



WAIT A SECOND!
WHERE DO YOU THINK YOU'RE GOING?!

PUFFINUS MIGHT HAVE FINISHED HIS ADVENTURE
BUT YOU LOT STILL HAVE ONE MORE LESSON WITH ME!
AND THIS IS THE MOST IMPORTANT LESSON OF ALL
BECAUSE IT'S ALL ABOUT HOW YOU SPIRITS
ARE HELPING US SEABIRDS...

PUT A RING ON IT!

BOTH MINE, PUFFINUS, AND BALLY'S INTERACTIONS WITH YOU SPIRITS ENDED WITH US WEARING A SILVER RING. THIS IS AN ANCIENT PRACTICE DONE BY BIRD EXPERTS ALL AROUND THE WORLD FOR OVER A HUNDRED YEARS CALLED 'RINGING'.

WHEN AN EXPERT OR 'RINGER' CAPTURES A BIRD, THEY WILL COLLECT A NUMBER OF MEASUREMENTS INCLUDING WEIGHT, WINGSPAN AND AGE. ALL THIS INFORMATION IS STORED ON A DATABASE AND THE BIRD IS GIVEN A CODE. THIS IS WHAT IS DISPLAYED ON THE RING. THE BIRD IS RELEASED AND SHOULD THEY BE FOUND AGAIN, MORE INFORMATION CAN BE LEARNED. THE REASON YOU SPIRITS KNOW HOW OLD US BIRDS GROW AND HOW FAR WE TRAVEL IS THROUGH INFORMATION COLLECTED WHILST RINGING.

IT WILL ALWAYS BE A CONFUSING AND STRESSFUL EXPERIENCE TO BE RINGED AS I FOUND OUT MANY YEARS AGO. BUT AS TIME HAS GONE BY, RINGING PRACTICE HAS BECOME MORE EFFICIENT, LESS INVASIVE, AND AS STRESS-FREE AS POSSIBLE FOR BIRDS. IT'S ONLY FAIR! YOUR INTERACTIONS WITH US GIVE YOU A BETTER UNDERSTANDING OF THE LIVES OF US SEABIRDS. SOLVING ALL THE MYSTERIES, HIGHLIGHTING WHAT'S AMAZING ABOUT OUR WORLD. AND REVEALING YOUR IMPACT ON IT. JUST AS PUFFINUS LEARNED OF YOUR WAYS THROUGH HIS OWN ADVENTURES!



SAFEGUARDING THE SEABIRDS

FOR ALL THE PROBLEMS SPIRITS CAUSE TO SEABIRDS AND OTHER MARINE LIFE, SO MANY OF YOU ARE WORKING HARD TO RIGHT THE WRONGS CAUSED BY YOUR SPECIES. RECYCLING, CLEARING OCEAN WASTE, PEST CONTROL AND LOBBYING FOR BETTER FISHING TECHNIQUES ALL MAKE A BIG IMPACT IN A POSITIVE WAY.

BUT EVEN ON AN INDIVIDUAL SCALE, FANTASTIC WORK IS BEING DONE. WHEN AN INJURED SEABIRD IS COLLECTED AND LOOKED AFTER BY A SPIRIT IT'S CALLED 'REHABILITATION'. HARDWORKING ORGANIZATIONS AROUND THE WORLD PUT EXTRAORDINARY EFFORT INTO SEABIRDS WHO HAVE SUFFERED AT THE HANDS OF HUMAN IGNORANCE. TREATED FOR THEIR INJURIES, FED ON A HEALTHY FORMULA, AND TRANSPORTED TO A SAFE WILD SPACE TO BE RETURNED TO THE WILD WHEN THE TIME COMES. PUFFINUS' AND BALLY'S JOURNEY IS JUST ONE EXAMPLE OF THE TREMENDOUS WAYS SPIRITS LOOK OUT FOR US SEABIRDS.

WILL YOU BE AMONG THESE HEROIC INDIVIDUALS? I HOPE SO!



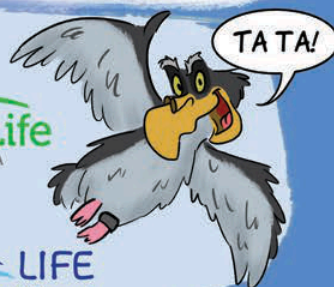
FIND OUT MORE

WELL, THIS IS JUST ABOUT EVERYTHING I CAN TEACH YOU!

I HOPE YOU'VE ENJOYED MY LESSONS AND CAN CALL YOURSELF A GENUINE EXPERT ON US SEABIRDS. AND OUR WAY OF LIFE. HOPEFULLY, YOU'VE ALSO HAD A CRUCIAL INSIGHT ON YOURSELVES AS WELL, AND THE PROFOUND IMPACT YOU HAVE ON US. AND LIFE ACROSS AND AWAY ON THE OPEN SEAS!

IF YOU'RE NOT QUITE SATISFIED, FIND OUT MORE BY GETTING IN TOUCH WITH BIRDLIFE MALTA AND THE LIFE PANPUFFINUS! PROJECT.

HAPPY TRAVELS!



*THIS COMIC BOOK WAS COMPILED AS PART OF THE LIFE PANPUFFINUS! PROJECT.
THIS PROJECT IS A PARTNERSHIP OF SEVEN ENTITIES, FROM FIVE COUNTRIES.*



GOVERNMENT OF MALTA
MINISTRY FOR AGRICULTURE,
FISHERIES AND ANIMAL RIGHTS
DEPARTMENT OF FISHERIES AND AQUACULTURE



Agir pour
la biodiversité



PUFFINUS HAS A PERFECTLY ORDINARY LIFE, A LIFE ANY YOUNG SHEARWATER COULD ASK FOR...

SAFE IN HIS COASTAL HOME, HE ENJOYS TIME WITH HIS FRIEND BALLY, AND ATTENDS ENGAGING LESSONS WITH THE OLD PROFESSOR SCOPOLI. HE CANNOT WAIT FOR THE SPECIAL DAY THAT HE CAN FINALLY FLEDGE FROM THE LAND AND BEGIN HIS LIFE OUT AT SEA. SOARING OVER THE WAVES, CATCHING FISH, AND EXPLORING THE OPEN OCEAN, JUST LIKE THE OTHER SEABIRDS, FAR BEYOND THE HORIZON!

BUT IT SEEMS LIFE IS NOT ALL SMOOTH SAILING FOR THIS YOUNG SEABIRD. AS PUFFINUS COMES OF AGE HE FINDS HIMSELF IN ALL KINDS OF DANGEROUS SITUATIONS. WITH PREDATORS, ENTANGLEMENTS IN NETS, AND STRANGE CONFUSING LIGHTS OUT TO SEA, PUFFINUS AND HIS FRIEND STRUGGLE TO SURVIVE. SOMEHOW, ALL THESE THREATS SEEM TO BE CONNECTED WITH MYSTERIOUS "SPIRITS" WHO ARE IN CONTROL OF THE SEAS.

IT'S UP TO PUFFINUS TO DISCOVER MORE ABOUT THESE STRANGE BEINGS. FIND OUT WHAT ROLE THEY PLAY IN HIS SURVIVAL AND SAVE HIS FRIENDS FROM ALL THESE DANGERS.

IT'S SURE TO BE AN INCREDIBLE ADVENTURE!

AS YOU JOIN PUFFINUS ON HIS JOURNEY, LEARN MORE ABOUT SHEARWATERS, AND OTHER SEABIRDS. TAKING BREAKS FROM THE NARRATIVE FOR LESSONS IN THE SCIENCE AND LEGENDS SURROUNDING THIS UNIQUE GROUP OF BIRDS.

AND MOST IMPORTANTLY, DISCOVER THE IMPACT HUMANS HAVE ON SEA LIFE AND HOW WE CAN EFFECT THEM IN A MORE POSITIVE WAY.

IT'S SURE TO BE AN ADVENTURE OF FUN, THRILLS, AND MYSTERY. FOLLOWING THESE ENIGMATIC VOYAGERS, AS THEY NAVIGATE THE WILD AND ENDLESS SEAS!

