#### **Dreamtime Painters**

Narrator: N

Thompson Yulidgirru (Australian Rock Artist): TY Ian Morris (Naturalist): IM

- N: Australia is a very large country with a varied landscape. It has rainforests, the outback desert, and the seaside. It also has an area in the North where there's art that's over 30,000 years old; the rock paintings of the Dreamtime Painters. Long before there were roads and towns, Aboriginal rock artists painted the dreamtime, the Aboriginal story of the beginning of the world. There are large numbers of these paintings under the ground of Kakadu National Park, which is actually owned by the Aboriginal people. Thompson Yulidgirru is an artist who still paints in the traditional Aboriginal way.
- TY: When I used to go stay with my grandfather, I used to tell him, please, tell me the stories from my ancestors.
- N: Ian Morris is a naturalist who has spent most of his life in Australia. He has studied these paintings, and feels they are unlike any other paintings in the world.
- **IM:** They say the rock art here goes back almost as far as any known civilisation. They're the oldest art records of human civilisation in the world.
- N: The Aboriginal people have most likely lived in what is now Australia for at least 40,000, possibly 100,000, years. This means that they are the oldest continuous human culture on Earth. The ancient art of the Aboriginal people is like a history book and a guide to everyday life. Their pictures tell stories about birds that tell kangaroos when hunters are approaching. They also tell stories of war. Long ago, Aboriginal people believed that the paintings had special power. They believed that if they painted a lot of fish, they would catch a lot of fish. The seasons of the year were important as well. They painted certain images only at specific times of the year. Certain groups painted certain animals. For example, if a group painted turtles, that's the only thing they painted. They didn't paint kangaroos. These painters saw their art as special and thought it kept the earth healthy. However, some things have now changed. The last real rock artists died in the 1960s. Today, Aboriginal artists paint on bark, paper and wood. That way, they can carry it and sell it easily. Nowadays, Aboriginal

art is also getting more and more famous. People everywhere want to buy it and prices are sometimes very high. One piece of Aboriginal art can now cost tens of thousands of Australian dollars. Unfortunately, there's now a problem with the original rock paintings. Many of them are losing their colour due to time and bad weather. Insects and reptiles also walk over the paintings and make them lose their colour.

- **IM:** There are all these agents of deterioration acting on the art. We can only slow that down.
- N: Fortunately, there's a lot of rock art in Australia, and they're finding more all the time. Many Aboriginal people are trying to keep in contact with their history in modern times. The rock art of the Dreamtime Painters may just help them. Hopefully, these paintings will help save the memories of the great civilisation who owned this land long ago, and who still own it now.

### Marfa Lights

#### Narrator: N

Sherri Eppenauer (Marfa Resident): SE Felicia Woods (Marfa Resident): FW Fritz Kahl (Marfa Resident): FK

- N: In the desert of West Texas, there's not a lot of activity. It's hot and dry, and not many people live here. But on this ancient land there is a mystery. And the best place to see this mystery is at the viewing site, just east of Marfa on the highway called US90. From here, on almost any night, you can watch the mysterious Marfa Lights. What do the lights look like? Well, it depends on who you talk to. One Marfa resident talks about the first time she saw them.
- **SE:** I remember the night well that I saw the Marfa Lights for the first time.
- N: They appeared suddenly, she says, and were very fast. They divided into two bright lights, then into four.
- **SE:** I've seen them several times, but they never appear the same way. Each time they're a little different when I've seen them.
- N: Another local resident tells her story.
- FW: Well, it was about six years ago, and the strangest thing happened to me. I was living out in the Chenocktee Mountains on the ranch out in West Texas, and getting ready to go to bed that evening, got in the bed, turned out the lights and a bright light just showed up.
- N: According to Woods, the light shone through her window, changed colours, and stayed there for a few minutes. Then, it headed off into the distance. The appearance and disappearance of the lights were seen by pilots flying here many years ago too. Here you can find an old World War II training site. In the mid-1940s, many of the pilots saw the mysterious lights during their flights. Fritz Kahl was one of them.
- FK: We discovered these by chance off in the distance, close to the ground, very small, very soft, and it's a phenomenon that they tell me exists over other parts of the world. This happens to be our local chapter of that book, of phenomena in the mystery world.

N: But who can explain where the lights come from? Where are they actually located? How long have they existed? Despite efforts to explain the phenomenon, some are doubtful that these questions will ever be answered. Another local resident says that the mystery is not a bad thing. If the mystery is unanswered [Jim Kitchens] says, people will keep investigating, keep looking for the answer. Whatever these lights really are, their mystery and magic goes on.

#### The Science of Stress

#### Allysa: A Narrator: N Dr Kathy Matt (Arizona State University): Dr KM

- A: Hello, good morning! How was your sleep?
- N: 6am and the stress of everyday life kicks in. Family, home, work, over and over again. We need at least a minimal amount of stress to give us enough energy to get through the day. But a busy daily lifestyle can have a negative effect on our bodies. In a special lab at Arizona State University, researchers are investigating exactly what stress does to a body. Kathy Matt and her research team are proving what most of us already know deep inside. That stress is not just in our mind.
- Dr KM: Stress, good or bad, is not just psychological. It's physiological as well.
- N: So, stress from rush hour traffic actually shows up as a chemical in the blood.
- **Dr KM:** In these samples we are measuring cortisol, which is a stress hormone.
- N: When our body detects stress, it lets out two hormones: adrenaline, to help our body react quickly and with more force; and cortisol, which gives us the energy we need for that quick physical push. That's great when you're being chased by a lion. But when the baby is crying, you don't need a physical boost. Unfortunately, the body can't tell the difference between the two types of stress.
- **Dr KM:** But in a psychological stress, you're not utilising fuel. You're not depleting fuel sources and yet you are increasing this cortisol.
- N: Dr Matt and her team have assembled a series of tests to show the effects of stress on the body. As the speed of the treadmill goes up, so does the heart rate and breathing. Right now, the adrenaline and cortisol levels are booming. And while the heart rate and oxygen levels shows this woman is releasing a lot of stress hormones, she's also exploiting every bit of energy they create. So, she passes the first test. Her body deals with physical stress pretty well. But what about mental stress?
- **Dr KM:** It's vital that you perform at your highest capable level for each of the tests.

- N: With the pressure on...
- Dr KM: Come on Allysa, as fast as you can.
- N: ...the heart races, the blood pressure rises. Again, those stress hormones are kicking in. This time, the chemicals do not seem as compatible with the situation. Under constant psychological stress, the body releases cortisol but doesn't burn the extra fuel. And that leads to all sorts of problems.

This machine checks bone density. Too much cortisol erodes the bone, potentially leading to problems that can affect our longevity.

- **Dr KM:** Here's your bone density. So you're really right on this norm.
- N: So far so good. According to the researchers' guidelines, this woman shows no long term effects from psychological stress. But that doesn't mean she can just ignore it. Putting the body through the stress of exercise trains it to relieve psychological stress, and keeps us lean too! And remember, not all stress is bad. Every now and then we need a good dose of those hormones to help us get to the end of the day.

#### Solar Power

Narrator: N David Rib (Vice President, Kramer Solar Junction): DR

N: The most powerful source of energy on the planet is actually out in space. It's our sun. More energy falls as sunlight on the US in a single day than the US uses in a year. But it's been difficult to turn that sunlight into electricity. Many people already utilise some solar energy. But the world's need for power is great, and for solar power to be a real substitute for other energy sources, it has to be both affordable and dependable.

> A major advocate for solar energy can be found in California. Sacramento, the state capital, is one of the nation's leaders in solar power. Many new homes in Sacramento are equipped with solar cells. And solar panels shade parking lots and city buildings. But most importantly, Sacramento has shown that by buying a lot of solar power at one time, it's possible to significantly reduce the price per unit, so people can actually save money using solar power or make money. California, along with many other states, has started 'net metering'. Net metering lets citizens profit from their extra solar power by selling it back to the utility company for exactly the price they would normally pay for it. If they use less power than they produce, the utility company sends them a cheque for the difference.

> In California's Mojave Desert, there is a solargenerating plant that makes all other solar plants seem small by comparison. The Kramer Solar Junction power facility covers over 400 hectares of land. It creates more energy from solar power than every other solar panel in America combined, a total of 150 megawatts.

- **DR:** Which at that full capacity is enough power for the residential needs of about half a million people.
- N: Unlike photovoltaic systems, which capture the energy in sunlight directly, these mirrors reflect the sunlight onto a tube filled with a special oil. The hot, 700 degree oil then goes into a boiler that powers an electric turbine. Each section also has a natural gas generator so the plant can guarantee a supply of power, even during periods of bad weather. Furthermore, it can do all this while creating very little carbon dioxide or pollution. So long as the sun rises, solar power will continue to offer hope for a dependable and cleaner solution to the world's energy needs.

### **Crossing Antarctica**

Narrator: N Ann Bancroft (Explorer): AB Liv Arnesen (Explorer): LA

- N: They were two women with one goal. Liv Arnesen and Ann Bancroft dreamed of being the first women in history to ski across Antarctica. And on February 11<sup>th</sup> 2001, they achieved their goal. The crossing had been completed only once before, by a team of two male explorers. The story of Liv and Ann's unparalleled adventure became the basis for a book, *No Horizon Is So Far*, in which they shared their reasons for exploring the planet.
- **AB:** When people ask us 'what is there left to explore'? There's certainly you to explore, you know, internally, and these trips draw out new things in you as an individual. You never know how you're going to be in your moment of truth.
- N: Prior to leaving for Antarctica, the two women undertook a demanding training schedule. They practised skiing down roads, pulling tyres behind them. The hardships got worse when they arrived in Antarctica. There were very strong, sometimes unpredictable winds of up to 160 kilometres an hour. And of course, it was extremely cold. Sometimes they had to use their food to warm their fingers to get the blood moving again. During their adventure, Liv and Ann shared their story with people from 150 countries through an online journal.
- AB: I think the thing that's fabulous about opening the story up to others is it comes back. And it's not just remarking on what we're doing. What we ended up getting were other people's dreams.
- N: The internet site enabled the two women not only to share their own adventures but also to relate to other people's experiences in different parts of the world.
- LA: What do you think of this, Ann?
- AB: A little scary.
- AB: We all understand overcoming struggles, for instance, finding support, you know, you never do anything alone, those kind of themes.

N: Despite their remote location, the women still felt connected with people around the planet. Liv and Ann are now planning their next adventures. Their next goal is to travel to the other end of the world and to become the first women in history to cross the Arctic Ocean.

### Giza Pyramids

Narrator: N Zahi Hawass (Archaeologist): ZH

- N: Giza. Home of the Pyramids, one of the Seven Wonders of the Ancient World. Tourists from all over the world come to Egypt to visit these amazing structures. But some people are worried.
- **ZH:** It's like a zoo. I mean the Pyramids, which contain one of the seven wonders of the world the only one that still exists to be as though it's like a zoo. It's a crime.
- N: A zoo? For archaeologist Zahi Hawass, the problem is that around the Pyramids there are camels and horses everywhere. There are also crowds of people competing to sell souvenirs to the tourists. It's difficult, he says, for ordinary visitors to feel how magical and mysterious the Pyramids really are. Zahi Hawass is leader of the expert archaeological team responsible for maintaining the Giza Pyramids. He plans to bring back the ancient wonder of the Pyramids and protect them from the physical damage caused by tourism. He says if the task isn't done now, the Pyramids could disappear in a hundred years. Giza is home to the most famous ancient monuments in the world: the Great Pyramid of Khufu, his son Khafre, and grandson Menkaure. And watching over all three, the Great Sphinx. Egyptians are proud of these timeless monuments. But moving closer to the Pyramids are the houses of Cairo residents, approaching from all directions. According to Hawass, the houses seem to be 'attacking', almost killing, the Pyramids.
- **ZH:** I always say the Pyramids can never be killed. Now it can be killed.
- N: Giza is home not only to the Pyramids, but more than four million people. It's a large, crowded suburb, an area just outside Cairo, with lots of noise and traffic. Even though the officials can't just bring the building down, they can stop the city getting closer by building this – a wall. Hawass says the wall is designed primarily to control the number of people entering the Pyramid site. It's a wise development, he says. The role of the wall is to protect tourists from all the camels and horses, and to keep the area of the Pyramids more peaceful. Visitors, as Hawass says, will now be able to feel the magic of the Pyramids in their heart.

The Giza Project is also finding and protecting a number of ancient objects. Although not as famous as the giant Pyramids, these smaller tombs are also being carefully protected. Labourers here are finding and working with the artefacts. One day, sites like this one will be open to tourists. This will take away traffic and stress from the three big Pyramids and the Sphinx. Even after centuries of digging and discovering amazing monuments in Giza, the team are still making new discoveries. You never know, says Hawass, what secrets are here. He believes that, across the centuries, the kings of Egypt are saying thank you to today's Pyramid protectors.

### Tornado Chase

Narrator: N Tim Samaras (Tornado Expert): TS Carsten Peter (NG Photographer): CP Engineer: E Lisa Ling (NG Reporter): LL

- N: With wind speeds of up to 300 miles-an-hour and billion-dollar paths of destruction, tornadoes are some of the least understood phenomena in nature. For years, meteorologists and scientists have been trying to understand how and when tornadoes form. They hope to develop more accurate warning systems that will give people sufficient time to escape. That's why tornado expert Tim Samaras and his team travel straight into the action when everyone else runs away. They're searching for information that will help scientists better forecast tornadoes. To get the data they need. Samaras and his group travel around the US. With the help of high-tech tracking devices, they hope to get closer to a tornado than anyone has ever been.
- **TS:** We're getting hailed upon marble to golf ballsized hail.
- N: While the average storm chaser watches and takes pictures from one or two kilometres away, Samaras and his group head straight to the centre of the storm. They want to get as close as they can to the part of the storm that produces the tornado, which is sometimes called 'bear's cage'.
- **TS:** My mission is to get right up close to it, get in its path, deploy various pressure probes. So, you know, my adrenaline is flowing.
- N: In order to deploy his equipment quickly, Samaras keeps six weather probes, each weighing 45 pounds, ready to go. They're packed with instruments that measure barometric pressure, wind speed and direction, temperature and humidity. Any measurements these probes get at the centre of the tornado could help scientists better understand how tornadoes form and maintain their strength.
- **TS:** So a lot of times, because of what I'm doing, I don't get a chance to really look out and see that tornado, just appreciate its beauty.
- N: For that reason, it's helpful for Samaras to have a photographer with him on a tornado chase. This time, it's National Geographic photographer, Carsten Peter.

- **CP:** It was important to be in the field with the scientists and to be on the frontiers of science.
- N: Peter wanted to be a part of a mission that was attempting to discover new things. Apparently, he took that idea very seriously. He now wants to take pictures from inside a tornado, but this requires planning and preparation. First, National Geographic photo engineers design their own photographic probe and fill it with still cameras and video cameras.
- **E:** They don't want to open the door while they're out there.
- N: Then, they check and recheck the probe to be sure it can survive one of these violent storms. At last the photographic probe is ready, but deploying it is just one of the challenges Peter faces.
- **CP:** For me as a photographer, the chasing is quite a big problem because we're sitting all the time in the car. It's very speedy. We have to catch up with the clouds and we have to zigzag around the clouds. And it's sometimes difficult to shoot or to get some time for shooting.
- N: He then explains that the average speed of the car is between 60 and 80 miles an hour, which makes it difficult to get a good shot.
- **CP:** The hardest for me was to drive in a situation when I pass the most unbelievable pictures. Yeah! Lights and storm situations I have never seen before I would have liked to photograph. Lightening, wow! And you have to pass them because there was the likelihood that a tornado could form and we have to be at the right time at the target.
- N: If the team manages to set down a probe directly in a tornado's path, will it be able to record any internal information or will it be destroyed by the power of the storm? At this point, no one knows; but first, they must worry about other things, like, is a tornado going to happen at all?

In the spring, warm humid air that is rushing up from the south sometimes collides with cooler dry air, pushing down from Canada. When this happens, fierce storms called 'super cells' can be formed. When these super cells collide, conditions are ready for tornado formation. However, scientists still aren't certain exactly what aspects of these conditions cause a tornado to form. And, although they generally form under the same conditions, tornadoes come in all shapes and sizes. Approximately 1,000 tornadoes occur every year in the US. Of these, the majority of them form in a part of the central plains known as 'Tornado Alley'. This region, which is made up of about six states, has experienced some of the most powerful tornadoes in history. But the team still must be in the right place at the right time.

- **TS:** First, you got to have a storm. Then you got to have a good to excellent road network of being able to get there. If you can't get there, it's no use.
- **CP:** It's the impossible assignment. You are trying to do something which is, in a way, impossible.
- TS: Certainly, it's difficult at best. Maybe like two days before you can kind of narrow it down to maybe a state, like Kansas. And then maybe the day before, well, it looks like maybe north central Kansas. And so by mid to late afternoon, we'll have it down to a specific town or maybe within a twenty-five-mile radius. We average maybe anywhere between 500 to 1000 miles a day driving. That means I change my oil every four days.
- N: The team first set out in early May towards Texas, where a promising set of conditions for a tornado existed. Over the next six weeks, they drove over 25,000 miles as they travelled across eight states searching for the perfect location for a tornado. The trip was filled with long days and nights and a lot of time when the group just sat around, waiting for something to happen.
- **TS:** We generally spend hours out in a field like this waiting for storms, just, you know, the wind blowing, it's hot and it's sticky and humid, watching clouds go up and there are days we're trying to watch storms, sometimes they don't form. We'll be out there for hours. We'll watch the sun go down, no storms.
- N: But during tornado season, things can change very rapidly! Suddenly there's a report of a tornado nearby.
- TS: Have to work. It's great!
- N: Samaras needs less than ten seconds to place the probe, turn the switch on, make sure the probe is facing north, and then run quickly back to the car. He's ready, but unfortunately, the storm isn't. At the last minute, the tornado moves away and Samaras and his team are frustrated once again. But it isn't always so frustrating. Sometimes everything comes together and the team is in the right place at the right time.

At one point in the chase, Samaras takes time to talk to reporter, Lisa Ling. As he does so, he recalls a recent tornado in Manchester, South Dakota.

- **TS:** We'd just arrived in the area around 6pm local time. And we heard of the tornado warning, and off to our west, probably about 15 miles, we could actually see what we call the 'developing wall cloud'. And we knew that this storm was about to produce a tornado.
- N: In Manchester, the storm chasers were lucky. They managed to position their probes just minutes before a huge tornado hit.
- LL: So, Tim, this was the actual probe that was used?
- **TS:** Yes, this is it. This is probe three. You can actually tell this side of the probe was actually the one that was facing the tornado. As you can see, there is a lot of debris pocks where who knows what actually impacted the probe.
- LL: Everything else in the path of that tornado was destroyed, including houses, but somehow this remained intact and functional.
- TS: That's right.
- N: The probe that survived the Manchester tornado provided Samaras with some very surprising new data; the barometric pressure inside a tornado drops further than anyone had ever realised. This may help explain how some tornadoes can maintain their strength. The storm also passed directly over Peter's camera probe. However, it only recorded images from the edge of a tornado, none from inside. Still, Peter is determined to try again.
- **CP:** The closer I come to that type of natural phenomena, the more you detect, the more you can discover, the bigger the satisfaction.
- LL: You've chased maybe a hundred or more tornadoes. Is it as exciting as always?
- **TS:** Absolutely, because that's the beauty of it. Every day you don't know what's going to happen. What kind of tornado are we going to see? What kind of conditions are going to exist? What's going to happen today? You may have had a frustrating taste the day before, but with the new day dawns a new set of circumstances, another chance for some terrific storms!

### History of Film

#### Narrator: N

N: For more than a hundred years, film has entertained people around the world. Movies let us see new things, experience history, and dream about living like actors on a movie screen. In the 19<sup>th</sup> century, inventors learnt that they could create moving images by showing a series of pictures very quickly. In 1891, in the United States, Thomas Edison and William Dickson designed and created a machine called a kinetoscope. People could pay a fee to look into the machine and watch simple movies. Before long, a machine called a projector could show movies to large groups of people. People loved this new technology. Everyday life was much more exciting when it was shown in a movie. The first movies were of simple things like trains, but these were soon followed by movies with longer and more complex stories. By the 1920s, several movie studios had opened in Hollywood, California. Crowds of people went to see their productions, and new 'movie palaces' were built to show them in. Actors like Mary Pickford and Charlie Chaplin became famous around the world.

> But outside of Hollywood, film was being used in other ways, allowing us to experience the world in a different way. At the beginning of the 20th century, movie directors began to record real happenings and important events. They filmed presidents, explorers and any kind of human experience, including the Wright Brothers' early flights. In the hands of filmmakers, cameras can also show us the traditions of people living in other parts of the planet, and take us far away from our homes.

Since those early days, documentary filmmakers have learnt to use film in ways that explain how the world really is. Technology can help us see things much faster than they really happen. It can also let us see things much more slowly, like the movement of a hawk. In the future, film technology may show us new ways to understand the world. Over the years, ideas from Hollywood have helped documentary filmmakers develop their art. Actors, lighting and even computer animation are now used to teach us about the real world. Now, we can experience other places and other times in history in ways people before us could only dream of. In only a hundred years, film making has changed completely. Those early simple pictures have now become our window to the world.

### Wildfire Photographer

#### Narrator: N

Mark Thiessen (National Geographic Photographer): MT

- N: This is where photographer Mark Thiessen likes to spend his vacation.
- **MT:** For me it's an adventure. All your senses just come alive when you're in the middle of photographing fire.
- N: Mark says his occupation as a National Geographic photographer is not always as exciting as you might think. He spends most of his time taking photos of things like dinosaur bones or people. He doesn't get to photograph things like dangerous wild animals. But instead of running after wild animals, Mark runs after wildfires. He tells the story of how he became a photographer as a child.
- MT: I knew I wanted to be a photographer since I was a little kid.
- N: As a child, Mark would listen to police radio messages at night. When he heard of a fire, he would wake up his mum and they would race to see it.
- MT: I guess once you get bit by the bug, even at a young age, you just never want to stop.
- N: So every summer, Mark takes his photographic equipment and drives west to photograph wildfires. This year his first stop is the state of Idaho, where wildfires occur frequently. On this night Mark gets lucky. He rides along through a huge fire that is spreading across the Idaho desert.
- MT: It's like a tornado going across the front of the truck.
- N: Why is Mark so interested in these fires? He says one of the reasons is that you never know what's going to happen next. That makes it interesting but also dangerous, sometimes terrifying. A powerful wind is blowing, and pushing against the truck. To the left, a huge wall of fire is advancing in Mark's direction. It's best to keep moving. The fire can act in strange ways. On his left, Mark can see a 'fire whirl'. That's when some of the flames start twisting together, creating a fire tornado that can reach a height of ten metres. Mark is in fact a skilled and capable wild land firefighter himself. His goal is to photograph the men and women who have the tough responsibility of fighting this kind of fire.
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- MT: There's great people to meet who have great stories to tell and great pictures to be taken.
- N: When Mark is with the firefighters, he feels part of a team; a team that's employed to do a very important job. And of course, he is always trying to find the best photographs of the fire. Although Mark knows that fires have the potential to destroy a lot of land, he is also amazed by their great beauty. He says the sight of trees damaged by fire can be quite beautiful, almost magical. The opportunity to see and photograph something special brings Mark Thiessen back to the fires every summer. Every time he finishes taking photographs of a fire, he feels tired but also excited. He feels that he's really been alive. And it's clear he plans to continue for many years to come.

### The Exciting Streets of Barcelona

Narrator: N Barcelona Resident: BR Barcelona Artist: BA Barcelona Musician: BM Barcelona Performance Artist: BPA

- N: When walking through the centre of Barcelona, Spain, one is surrounded by the sights and sounds of entertainers expressing themselves artistically. The unique and stimulating atmosphere of this Mediterranean city makes visitors feel like they're attending a party that never ends.
- **BR:** There's something very special about Barcelona. Like, any time you go out of your house, there's always something going on. You'll always find a friend on the streets. It's where living is. You're not in your place, you're on the streets. Things happen, but they're not organised. Like this group you just saw, the circus group, they're just doing it on their own. Mixing with this group of jazz musicians and just do it – improvising.
- N: The Ramblas is a wide, pedestrian-only boulevard that cuts through the middle of the Catalan city and ends at the harbour. Lined with trees, cafés and market stalls, it often serves as a visitor highlight and meeting place for people of all ages.
- BA: You can go out in the street at night and it's always lively. It's never 'nobody in the Ramblas', for example. There's always, every hour of a day, there's life. I came here I felt somehow better than in Amsterdam or more alive, more vital. That makes it very enjoyable, at least for me, and inspiring too.
- **BM:** It's a very nice place, because in the Ramblas you can find theatre, music from Argentina, from Spain, from Africa, from all the world.
- N: On the Ramblas, exciting and remarkable things just seem to happen in an impromptu fashion, without any need to practise.
- BM: Things that happen on the street, never really happen in a theatre. For example, if we play and like ten or 15 people start to dance at one time for example, then you think like, yeah, this is beautiful, you know. The Ramblas is the street in Barcelona and I think in Europe and maybe in the world, that like, you're going to be entertainedno matter how! I mean if you walk past, by the flower shops, the way they build it up is beautiful. Even the street is decorated. I mean you get entertained. It's worth coming to Barcelona.

- N: In Barcelona, a gangster statue on a dais in the street is a common site, but these statues are different. They'll sometimes suddenly move. This often shocks onlookers and results in laughter from spectators who may have been wondering whether the statue was a performer or not!
- **BPA:** Preparation is waking up in the morning and putting on your clothes, there's nothing more to it. You know, I sit down in front of a mirror. I get a little bit of makeup. I put it on my face. I put it in my hair, and then I put it on my hat, I put it on my suit. I have one look in front of the mirror and then I hit it. It's a way of life. Ramblas is... you have everything. You have traffic. You have people. You have tourists. You have thieves. You have performers. Ramblas is everything. It's a vibrant life. It's a way of life. It's truly a way of life. I love it!
- N: It's easy to see how residents and visitors alike can love this vibrant city and its spontaneity. The exciting streets of Barcelona make life here 'vital'!

#### Cambodia Animal Rescue

Narrator: N Matt Young (Wild Aid): MY Shiree Harris (Free the Bears): SH

- N: Dara the tiger loves lying around and relaxing. She also likes to be touched and talked to. And, like many other animals, she loves to play. Unfortunately, Dara and the other animals at the Phnom Tamao Rescue Centre, are all victims of the illegal poaching of wild animals in Cambodia. Many animals at the centre are brought in by a special team called the Wilderness Protection Mobile Unit, or the MU. The MU rescues animals from poachers. With the support of the government of Cambodia, they're working to stop poaching. In many cases, rescued animals can be returned to the wild. In others, like these crested eagles, the animals need special care. Matt Young works for Wild Aid, a US group that sponsors the MU and the Rescue Centre.
- MY: Once we're sure they're nice and healthy again, we can get them out to Kirirom and re-release them.
- N: These wild eagles are hand-fed or given their food by hand, and they don't always like it!
- MY: Did you get that? Fantastic!
- N: The crested eagles will probably be released back into the wild someday. However, many of the animals here will need human help forever. This little gibbon lived in a bird cage at a petrol station for two years. She's now at Phnom Tamao. They're helping her to become healthy but they probably won't be able to release her again. She'll likely be safer and happier at the centre.

Mimi was also someone's pet. A volunteer who works for 'Free the Bears', which sponsors Mimi, explains.

- **SH:** The family bought it for their little daughter, but they only kept her for, I think they said four weeks and then they realised she was too hard to handle; a bit nippy and everything, so they brought her in.
- N: Like the little gibbon, if Mini were in the wild, she probably wouldn't have the skills to survive. The best place for her, too, is clearly the Rescue Centre. Unfortunately, there is one thing many of these animals have in common, poachers want them! If many of these beautiful animals were not at the Rescue Centre, they would be dead.

The leader of Wild Aid explains what part of the problem is for tigers. She says that poachers can make a lot of money by selling a tiger's body parts illegally. In some Asian countries, certain parts of the tiger are ground into powder. This powder is processed and sold as an expensive traditional medicine. People think that taking the product will improve their health. No one knows if this is true, but it's definitely not good for the tigers. The Phnom Tamao Rescue Centre cares for over 800 animals and 86 different types or species, including this friendly elephant. Lucky was saved from poachers two years ago. Little Sima has been at Phnom Tamao for six months. It's hard to think that these animals may never return to their home in the wild. They can't survive without support and help from humans. The Phnom Tamao Rescue Centre is helping poaching victims in Cambodia. Unfortunately, the bigger problem of illegal poaching is still around. It will be, as long as there's a demand for products that are made from these animals. For now, we can only hope that the MU can help stop more wild animals from being endangered. Thanks to the Phnom Tamao Rescue Centre, they'll have a safe place to go.

### The Art of Making Silk

Narrator: N Sabine Pretsch (Factory Director): SP Stefano Benelli (Silk Craftsman): SB

- N: The ancient city of Florence changes slowly. Its narrow stone streets are much the same as when the Medici family ruled more than 500 years ago. The city has seen the Renaissance, the Industrial Revolution, and the World Wars. All have affected it, but at one factory here, the ways of the past remain the same, 'the Antio Setificio Fiorentino', the Ancient Silk Factory of Florence. Here, the continuous noise of the old mechanical looms brings one back to the past. These noisy 19th century looms create some of the world's finest silk fabrics for curtains and upholstery. But here, they are the 'new' machines. In another part of the factory, one can find the real pieces of history, looms that have been around for centuries! Stefano Benelli is a weaver who makes the silk fabrics that machines alone cannot create. He stands over a huge loom and works slowly and carefully, weaving one thread at a time. Above him, there are special paper cards that carry the designs for complicated patterns. These looms were built in 1780 and they apply the same principles of weaving that were used for hundreds of years before that.
- SP: Everything is done like it was done in the ancient times. But we continue to do an evolution. Continuously, we invent. We create continuously but using the old looms.
- N: After the Second World War, other Italian silk manufacturers threw away their slower hand looms. That left the Setificio alone in the handmade silk industry. There's a big difference between industrially produced silk and handwoven silk. Industrially produced silk usually has three to four thousand threads running in one direction on a full piece of fabric. The silk produced on the old hand looms has 12,000 threads in the same amount of space. That's up to four times the number of the threads that are used! This affects the quality of the silk, including how it looks, sounds and feels. Factory Director Sabine Pretsch points out that the colour of the fabric is affected by the weaving process. Handwoven threads don't twist so they show the full range of colour in the silk. Hand weaving also brings out a slight red colour and a beautiful softened effect in the fabric. Handmade silk also makes a special noise and better holds its shape.

Even before the weaving begins, the silk threads are processed on machines that are 150 years old. Then, the threads are prepared according to how they will be used. The threads used for the wide part of the fabric are called the weft. These are carefully placed on a bobbin so that the threads are not twisted. The threads used for the warp, or the long part of the fabric, are gathered together to create long groups. But again, not twisted. The fabrics made at the Setificio can't be found in stores or anywhere else. Every piece of cloth is custom-made. But what may seem like difficult and boring work to some people is enjoyable to a craftsman like Benelli.

- **SB:** The mind is okay. No stressful!
- N: It's been said that no other city has maintained the art and beauty of the Renaissance like Florence. It may be appropriate, then, that here at the city's Antico Setificio Fiorentino, style and tradition come together in beautiful handwoven silk fabrics. It seems that Setificio has perfected the art of making silk.