1. The oceans seemingly limitless, invoke in us a sense of awe and wonder and also sometimes fear.
2. They cover 70% of the surface of our planet, and yet they are still the least explored.
3. Hidden beneath the waves right beneath my feet, there are creatures beyond our imagination.
4. With revolutionary technology, we can enter new worlds...and shine the light on behaviours in ways that were impossible just a generation ago.
5. We've also recognized an uncomfortable fact.
6. The health of our ocean is under threat.
7. They're changing at a faster rate than ever before in human history.
8. Never has there been a more crucial time to reveal what is going on beneath the surface of the seas.
9. In this first episode, we will journey across the globe from the warm waters of the tropics to the coldest around the poles.
10. To bring us a new understanding of live beneath the waves.
11. This is Blue Planet II.
12. The surface of the ocean conceals the many creatures that live beneath but not all.
13. Bottlenose dolphins.
14. They're extremely intelligent.
15. And with this intelligence comes playfulness.
16. They surf.
17. And as far as we can tell, they do so for the sheer joy of it.
18. But to properly appreciate their true character, you have to travel with them into their world.
19. A pod of bottlenose dolphins is visiting a coral reef in the Red Sea.
20. For the youngsters, there are things to be learned here.
21. The adults lead a calf to a particular bush-like coral called a Gorgonian.
22. And here, the adults behave rather strangely.
23. They deliberately rub themselves through the fronds.
24. Their calf seems reluctant to do so.
25. By watching his elders, he may be realizing that this is something he ought to do.
26. Gorgonia fronds, in fact, are covered with a mucous that can have anti-inflammatory and antimicrobial properties.
27. So maybe the adult dolphins are doing this to protect themselves from infection.
28. The dolphins' intimate knowledge of the reef is spurring us to search for new medicines here, too.
29. Tropical coral reefs occupy only a tenth of one percent of the ocean floor.
30. But their shallow warm waters and stable year round conditions, support some of the most crowded and varied communities to be found anywhere in the oceans.
31. And there are new discoveries to be made on every one of them.
32. One creature on Australia's Great Barrier Reef is challenging our understanding of fish intelligence.
33. A tusk fish.
34. And you can see why it gets its name.
35. He does something few would have believed a fish could do.
36. Every morning, he travels to the edge of the reef.
37. He's searching for something special to eat amongst the coral and sand.
38. Here's one.
39. A small clam.
40. But how to crack it open and get to the meat?
41. He takes it all the way back to his special kitchen.
42. A bowl-shaped coral that has a particular bump on the inside that he always uses.
43. It's not easy if you have no hands.
44. Whoops.
45. There he goes again.
46. But he's got great determination and surprising accuracy.
47. At last.
48. So here is a fish that uses tools.
49. Some fish are much cleverer than you might suppose.
50. The density of the animals on tropical reefs makes competition inevitable and extreme.
51. Not only for those that lived within the reef, but for the birds that fly above them.
52. During the dry season, over half a million terns crowd onto this remote atoll in the Indian Ocean.
53. Their chicks are still in their dark, juvenile plumage.
54. They vary in age.
55. Whilst the more advanced chicks take to the air, others aren't quite ready yet.
56. Those just starting to learn to fly use the shallow lagoon that occupies the centre of the atoll as their training ground.
57. It's difficult for some of them to stay aloft for long.
58. Giant trevallies.
59. Usually, they're solitary hunters, but about 50 of them have come here from neighbouring reefs attracted by this abundance of potential prey.
60. The fledglings stay out of the water if they can, they even drink on the wing.
61. If the trevally are to catch one now, they have to up their game.
62. So there is a fish here that amazingly has a brain capable of calculating the airspeed, altitude and trajectory of a bird.
63. The time comes when every fledgling has to take to the air and collect food for itself.
64. Their parents lead them to the training grounds.
65. If they're to survive, they must learn quickly.
66. After a month of practising over the lagoon, the youngsters start to leave and take their chances out over the open sea.
67. The oceans hold 97% of all the water in the world.
68. As the sun warms their surface, water evaporates.
69. The vapour rises into the sky until it cools and condenses into towering clouds.
70. And they generate huge storms.
71. The spin of the earth deflects these storms north and south into cooler latitudes.
72. As they travel across the sea, storm-driven winds create huge swells.
73. When the swells reach shallower waters, they rise into gigantic waves.
74. In its lifetime, a large storm can release energy that is the equivalent of 10,000 nuclear bombs.
75. These are the seasonal seas.
76. And when they warm in spring, they can suddenly explode with life.
77. Mobula rays have gathered in Mexico's Sea of Cortez in vast numbers.
78. Why do they leap?
79. Is it to tell others that they're here?
80. No one knows.
81. They feed mostly at night for that is when vast swarms of plankton rise from the depths.
82. The disturbance in the water stimulates many of the planktonic creatures to luminesce.
83. Only now do we have the technology to record their faint glow.
84. The feasting rays swim through them creating an extraordinary ballet of life and death.
85. The richness of these waters is based on microscopic plants, phytoplankton, which bloom on such a massive scale they benefit us all.
86. They, together with seaweeds and seagrasses, produce as much oxygen as all the forests and grassy plains on land.
87. Every spring off New Zealand, the seasonal bounty draws in rare visitors.
88. False killer whales.
89. They're relatives of the orca, six metres long and weighing over a tonne.
90. They appear to be searching for dolphins.
91. And there are many in these coastal waters.
92. Here, bottlenose dolphins stick together constantly chattering with whistles and clicks.
93. Such a din carries for miles underwater.
94. The false killers have detected them.
95. Travelling at ten knots, the killers quickly close in on them.
96. But then, something truly extraordinary happens.
97. The dolphins turn as if to greet their pursuers.
98. They seem to change their course.
99. Could it be that they're attempting to communicate?
100. Scientists studying this annual encounter, now think that individuals may recognize one another.
101. Almost unbelievably, it seems that these different species appear to be old friends.
102. Together they're gathering as one unified army up to a thousand strong.
103. This formidable hunting party now harvests the riches that come with New Zealand's summer.
104. All across the higher latitudes, seasonal seas flourish under the summer sun.
105. Here in Alaska, sea otters lounge in the canopy of great submarine forests.
106. Giant kelp, the biggest seaweed of all is home to all kinds of life.
107. On the forest floor, spiny sea urchins munch through the kelp.
108. Elsewhere there are continuously hungry sea cucumbers.
109. And in the tangled undergrowth, wonderfully camouflaged sea dragons.
110. In the underwater forests of northern Japan, the residents of this sunken wreck are waiting for the summer temperatures to reach 16 degrees Celsius.
111. That for some is the time for mating.
112. A kind of giant wrasse called a Kobudai.
113. This is a male.
114. And in female terms, he's particularly handsome.
115. He's a metre long and weighs 15 kilos.
116. Much larger than the diminutive female, and he is ready to breed.
117. He attempts to mate with her and with any of the dozen or so females that live in his territory, whenever he gets the chance.
118. But females from around ten years old take little notice of his advances.
119. This is because when any large female reaches a critical body size, she can begin a dramatic transformation.
120. Over just a few months, particular enzymes inside her body cease to work, and male hormones start to circulate.
121. As time passes, her head expands and her chin gets longer.
122. A she has changed into a he.
123. And with this comes a change in temperament.
124. The old male who rules all the females here is challenged to a face off.
125. The more bulbous the head, the more it intimidates an opponent.
126. The territory has a new ruler.
127. Only the largest females transform themselves in this way.
128. But the change enables them to have more mates, so they will have many more offspring carrying their genes.
129. But a new male can't afford to be complacent.
130. Inside the body of every Kobudai female, there is a new male in waiting.
131. The closer we travel towards the poles, the colder the seas become.
132. Icebergs appear.
133. Huge slabs that have broken away from glaciers that are sliding into the sea.
134. And then the surface starts to freeze.
135. While the lights of the aurora play above, even in the depths of midwinter, there are a few places well north of the Arctic circle that are still open.
136. The fjords of northern Norway remain ice free because a giant current, the Gulf Stream, flows up here from the south bringing warmth all the way from the Caribbean.
137. And every winter, billions of herring come here for shelter.
138. And following them...Orca.
139. There are up to a thousand of them.
140. It's possibly the greatest gathering of orca on the planet.
141. The herring maybe plentiful but in these winding fjords they're not always easy to track down.
142. These particular orca, however, are fish hunting specialists.
143. They work as a team, coordinating their approach by calling loudly to one another.
144. They herd the herring into tighter and tighter shoals.
145. They swim below them, trapping them against the surface of the sea.
146. And now the orca deploy their special weapon.
147. They beat their tails with such force, that the shock waves stun the herring.
148. And then the senseless victims are easily collected.
149. But all this underwater noise attracts others.
150. Humpback whales.
151. They move in on the action.
152. They approach the shoal from beneath and then lunge upwards, gathering up to a hundred kilos of herring in a single mouthful.
153. The humpbacks are comparative newcomers.
154. They only started coming here within the last decade.
155. But these polars seas are so rich that there appears to be enough food for everyone.
156. Nonetheless, few if any of these riches would be here were it not for the Gulf Stream.
157. Ocean currents, in fact, are crucial to the well being of our planet.
158. They distribute the sun's heat towards the poles all the way from the equator, maintaining a climate favourable for life almost everywhere.
159. From creating the weather to producing oxygen, the seas keep our world healthy.
160. But there are now worrying signs that conditions in the oceans that have remained relatively stable for millennia are changing radically.
161. Nowhere is this more evident than in the Arctic.
162. Here in the past 30 years, the extent of the ice in summer has been reduced by 40%.
163. This sudden warming, most likely a consequence of human activity, is having a profound impact on its wildlife.
164. Walruses are among those that are seriously affected.
165. Every adult female needs to find a safe place where her 80-kilo pup can rest.
166. The sea ice is retreating from much of the walrus' traditional range, so they now have to haul out on dry land.
167. But a herd of hundreds of quarrelsome mothers, some weighing almost a tonne, is not an ideal nursery.
168. Walruses on land stick together for good reason.
169. Polar bears.
170. A full grown male walrus is gigantic, too big for even a polar bear to tackle.
171. So the bear is looking for a walrus baby.
172. The scent of the bear spreads alarm through the colony.
173. The walruses retreat into the sea.
174. The bear knows it won't be able to catch them there.
175. But she too has young ones to feed.
176. What is a mother to do?
177. A mother walrus still needs to find a place where her young can rest.
178. A melting iceberg might do, but she is not the first to find this one.
179. Suitable places are already taken.
180. Other mothers don't want to share.
181. They, too, need a patch of ice where they can protect their young.
182. A desperate mother has no choice but to barge her way in.
183. So this time everyone loses.
184. Finding the right place on these melting shores gets harder and harder.
185. Solving these problems together helps create a bond so strong that the mother will stay in contact with her young for the rest of her life.
186. But who knows now what their future will be.
187. As we understand more about the complexity of the lives of sea creatures, so we begin to appreciate the fragility of their home.
188. Our blue planet.
189. Blue Planet II has been four years in the making.
190. The teams have explored every ocean, seeking extraordinary untold stories, many new to science.
191. Bringing a new understanding of life beneath the waves.
192. The latest diving technology producing no bubbles or noise has allowed our teams longer and closer encounters.
193. To explore our final frontier, the deep, we have spent a thousand hours in submersibles over half a mile below the surface.
194. Innovative new camera technology makes it possible to film moments never seen before.
195. Low-light cameras capture magical events almost invisible to the naked eye.
196. Probe cameras give a completely fresh perspective into the lives of tiny creatures.
197. Here he comes, here he comes.
198. While suction cameras take us on a giant's eye view of the ocean.
199. But the sea is an unpredictable and dangerous place to work.
200. Nowhere more so than the so called wild coast of South Africa.
201. Home to surfing dolphins.
202. The team's mission here is to ride alongside the dolphins and record their surfing behaviour in closer detail than ever before.
203. These are treacherous seas, so the film crew enlists local professional surfers to guide them.
204. But this year, the waves are bigger than anyone had anticipated.
205. A daunting prospect for surf cameraman, Chris Bryan.
206. Yeah, I'm feeling pretty nervous, the, uh...It's a big swell out there.
207. Really big swell. Like there's 20-foot waves out there, and, um, yeah this will probably be the biggest seas I've ever been out in.
208. No risks, no reward, I guess.
209. Chris has a high-speed camera to shoot super slow motion action in the waves.
210. The challenge is to get as close to the wave-riding dolphins as possible.
211. The good news is that the dolphins have been spotted on the horizon.
212. Um, they said this was gonna be the biggest swell of the year and...Hey, I've never seen anything like this.
213. This is much bigger that I'd possibly imagined.
214. In these waves, the only way to get out to the dolphins is with a jet ski.
215. It's gonna be enough of a challenge for them to just kind of weave their way out.
216. At last, the driver's detailed knowledge gets them safely through the massive breakers, but the dolphins are nowhere to be seen.
217. Leaving the crew to face the hair-raising task of getting back to shore.
218. Keep going, keep going!
219. Whoa!
220. How was that?
221. That was pretty wild, yeah.
222. The wave actually hit the back of the sled, and I was like, "Go, go. Get out of here, guys. Get out of here."
223. Heard a big bump and almost bounced off trying to hold the camera and, um, just rode out of there, but, yeah, it was hectic.
224. Just another day at the office.
225. The next day brings a sudden change in conditions.
226. Plenty of dolphins...but a calmer sea.
227. We've got a complete lack of any wave at all.
228. Look out, look out, look out.
229. As so often in the ocean, if you know you're in the right place, you just need the patience to wait for the perfect moment.
230. A week later and a storm is once again brewing off the wild coast and surf is building.
231. Feel like a nervous excitement.
232. The conditions are absolutely perfect. It's what we've been waiting for.
233. And the dolphins seem to know it.
234. But Chris is struggling to get a steady shot.
235. Look at that.
236. Hello, gentleman. Uh, this is tricky.
237. Little tricky no the jet ski, uh, just trying to get the right angle.
238. So, I'm gonna have a go on the zodiac and hopefully have better luck on that one.
239. The inflatable boat gives Chris a larger, more stable filming platform.
240. At last, he's in exactly the right place at exactly the right time.
241. And the results are spectacular.
242. That's amazing!
243. Mission accomplished.
244. And this intimate footage is now available as part of wider scientific studies.
245. Supporting evidence that dolphins surf to strengthen friendships, develop social skills and for the sheer exhilaration of it.
246. Next time.
247. The deep.
248. A world richer than we ever thought possible, where creatures thrive, in the most extreme conditions on earth.