

# The Pilbara dolphin odyssey

by Margie Mobring  
and Holly Raudino



*A project to identify critical habitat for marine fauna, specifically dugongs, humpback whales and coastal dolphin species in the Pilbara has provided insight into the distribution of these magnificent creatures. For Parks and Wildlife researchers involved in the project, it was a journey of a lifetime.*

**Above** A pod of bottlenose dolphins.  
Photo – Holly Raudino/Parks and Wildlife

*Opposite page*

**Right** The spectacular Montebello Islands.  
Photo – Col Roberts/Lochman Transparencies

**Inset top** The elusive snubfin dolphin.  
Photo – Alex Brown, MUCRU/WWF-Australia

**Bottom** Australian humpback dolphin.  
Photo – Holly Raudino/Parks and Wildlife

by Holly Raudino

The sunlight glitters off the still ocean waters of the Pilbara, the tiny six-seater plane buzzes along only 500 feet above the swell. Five enthusiastic Parks and Wildlife researchers peer out their windows desperately scouring the water below for tell-tale ripples. With their eyes peeled and their microphone recorders at the ready, they hope that today will be the day they spot the elusive snubfin dolphin.

## WHERE, WHEN, WHAT AND HOW

The search for marine fauna along the Pilbara coast was carried out as part of Wheatstone Offset funding to identify critical habitat for marine fauna, specifically dugongs, humpback whales and coastal dolphin species. ‘Critical habitat’ is an area where activities occur that are essential to the survival of a species, such

as resting, feeding, nursing and calving. We know of at least two dolphin species that live in the coastal waters of the Pilbara, the bottlenose dolphin (*Tursiops aduncus*), and the less common Australian humpback dolphin (*Sousa sahulensis*) but their population status is uncertain. The Australian humpback dolphin was only recognised as a new species in 2014. Originally assumed to be the same as the Indo-Pacific humpback dolphin found across Asia (*Sousa chinensis*), this new species is recognised to be restricted to northern Australia and Papua New Guinea. The Australian snubfin dolphin (*Orcaella heinsohni*), also recently described as a species in 2005 and only found in northern Australia, is occasionally sighted in Pilbara coastal waters but there are no known resident populations and it is presumed to be an occasional visitor from the Kimberley region.



Very little is known about dolphins in the Pilbara region, so these broad-scale aerial surveys and targeted boat-based surveys help answer questions on population size, distribution and habitat use and preferences. By surveying along set transect lines and using mathematical models we can calculate dolphin abundance and density and identify 'hot spot' areas. From boats we use photo-identification of the individual dorsal fins to track individual dolphins and investigate habitat use and ranging patterns on a smaller scale, including understanding whether individual dolphins are faithful to particular sites or whether they are transient. The aerial surveys help us to understand the species' distribution at a regional level and the dolphin's habitat requirements and preferences. It also helps us answer questions such as whether they prefer particular water depths and

distances from the coast, or whether they are dependent on rivers or offshore islands. We aim to eventually be able to predict their distribution over larger areas based on the environmental factors of where we observed them during aerial and boat surveys.

To do this, we need many sightings as these models require a substantial amount of data. In the meantime we can work out basic encounter rates and density, based on our survey effort and the number of sightings. There is concern at a national level that Australian humpback dolphins are widely distributed across northern Australia but in low densities, which has implications for their conservation status. Exceptional areas for humpback dolphins include Ningaloo Reef and the North-West Cape, which has previously been recognised as a hotspot. We are increasing our survey efforts of the Exmouth Gulf

and Dampier Archipelago because we have had the most sightings in these areas and believe they may be important for this species. To date, we have had enough sightings to estimate that the population size of bottlenose dolphins in the Pilbara region is in the low thousands of individuals. But we require more sightings of humpback dolphins to estimate their population size. Unfortunately it is not as simple as just counting the dolphins we see. We also need to understand how many dolphins we might miss, how long each species spends on the water surface and how long they dive so that we can correct our population estimates for the time that they are not available to be observed and recorded. It is exciting – for the first time we are beginning to understand the habits of these coastal dolphin populations.

And so the odyssey begins...





by Margie Mohring

## FLIGHT 1 EXMOUTH First day success

After spending time yesterday preparing for our month-long aerial survey, including going over the logistical details, meeting the pilot and getting to know our team members, my head was certainly spinning. Today, we were up bright and early and eager to get started. After a detailed safety briefing our little plane raced along the rough dirt track and leapt into the air. The conditions were perfect. First up, some training transects where we spotted a few turtles. Then, after a couple more practise runs, we started the much-anticipated survey. Up and down the Exmouth Gulf many times, with a few detours to circle some big groups of dolphins to count numbers. We saw several dugongs – they were easy to spot as they leave behind long plumes of sediment where they plow through the mud, snuffing up the seagrass. One herd of dugongs had more than 30 individuals. There was also some excitement when the port-side observers briefly spotted a dwarf minke whale.

The afternoon's trip started by bumping along in the thermals right to the bottom of the Gulf. The stunning, meandering, mangrove-lined rivers were spectacular, especially when you can see their inhabitants: the turtles, manta rays and sharks. Out further you can see the rising tide, sweeping over the burnt dry desert sand. Then, all of a sudden, the sightseeing was interrupted by a commotion in the plane thanks to a possible sighting of a pair of snubfin dolphins. We circled low but did not see them again, so photos and confirmation

would have to wait for another day. But the team was buoyed by the knowledge that the elusive snubfin dolphin was out there.

## FLIGHT 3 ONSLOW Cities in the desert

Day two started with a slightly longer journey as we headed to Onslow, taking us more than 30 minutes to reach the transects. But it was a stunning journey! We were able to see the amazing rivers rushing into the sea and the massive Wheatstone LNG development, which stands like a mini city in the desert. When we arrived on the transect we spotted a good scattering of dolphins, a couple of dugongs, lots of turtles and a surprising number of sea snakes. A particularly exciting moment was when I spotted a group of dolphins which I thought had at least six individuals. The protocol is to circle if there are more than five to ensure a good count, and this time was well worth the effort as there were another six dolphins.

This particular morning was so still, not a breath of wind. And when it is warm and still, the *Trichodesmium* algal blooms and forms long plumes in the tide lines. This mixes with rafts of *Sargassum* macroalgae that can be seen from miles away. This phenomenon would normally be dispersed by any winds and choppy waves.

Before we knew it, it was time to head back as we could only fly for about 3.5 hours before we needed to land and re-fuel. But our return journey was made more special when I spotted a pod of large marine mammals (possibly false killer whales) from 1000 feet.

## FLIGHT 6 MANGROVE ISLANDS Getting the job done

Today the weather presented questionable conditions so we checked and re-checked the forecast. We formulated several plans and used the weather readings to decide whether it was viable to venture out. The plane can only do 50 hours before it must be serviced –

marking the end of the survey – so we must be selective on when and how long we fly. We decided to fly through the Mangrove and Passage islands and were relieved with the favourable conditions.

We saw some stunning coral-lined islands and a few sparse humpback dolphins but the transects were long and slow.

We headed to Exmouth, bumped along the dirt runway, and then prepared to relocate to Karratha. We flew along at 7,500 feet and the views across the desert, mines, blue tributaries and islands were absolutely stunning.

## FLIGHT 8 MONTEBELLO ISLANDS Marathon of the Montes

We took to the air shortly after first light, slightly concerned that the overcast sky might turn to rain, but knowing that it was still good conditions for the survey. It was a fair journey out to the Montebello Islands and our eyes were glued to the horizon the whole way. The first glimpses were of the massive oil storage tanks on Barrow and Varanus islands. We started surveying our transects, but quickly crossed onto the stunning, complex islands. The islands – too many to name – were separated by beautiful azure water and joined by tiny bridges of land and reefs. The water was crystal clear and provided glimpses of the stunning reefs beneath the surface, and the quiet

Above left The survey team sets off, full of optimism on day one.  
Photo – Jane Kennedy

Opposite page

Flight 1 Humpback dolphins in Exmouth Gulf.

Flight 3 A *Trichodesmium* algal bloom could be seen from the air.

Photos – Holly Raudino/Parks and Wildlife

Flight 6 Favourable conditions on flight six made surveying Mangrove and Passage islands possible.

Flight 8 A large group of bottlenose dolphins.

Photos – Margie Mohring/Parks and Wildlife

protected lagoons surrounding on all sides. Out from the northern tip the ocean was boiling, with big swells rolling in. Here it was like 'turtle soup' and the sighting calls were flying thick and fast. At one point there were more than 100 turtles seen. There were even a few groups of dolphins among the islands, including a big pod of bottlenose, and even a couple of dugongs. As we left the Montebello Islands behind, the general sentiment among the team was that we'd rather be swimming in the beautiful water than in the air.



Montebello/Barrow Island Marine Reserves

Barrow Island Nature Reserve



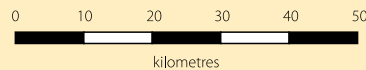
Mangrove Islands



Onslow



Pilbara Region



Ningaloo Marine Park

Exmouth

Cape Range National Park



Exmouth Gulf



Hear more from the authors

Scan this QR code or visit Parks and Wildlife's 'LANDSCOPE' playlist on YouTube.



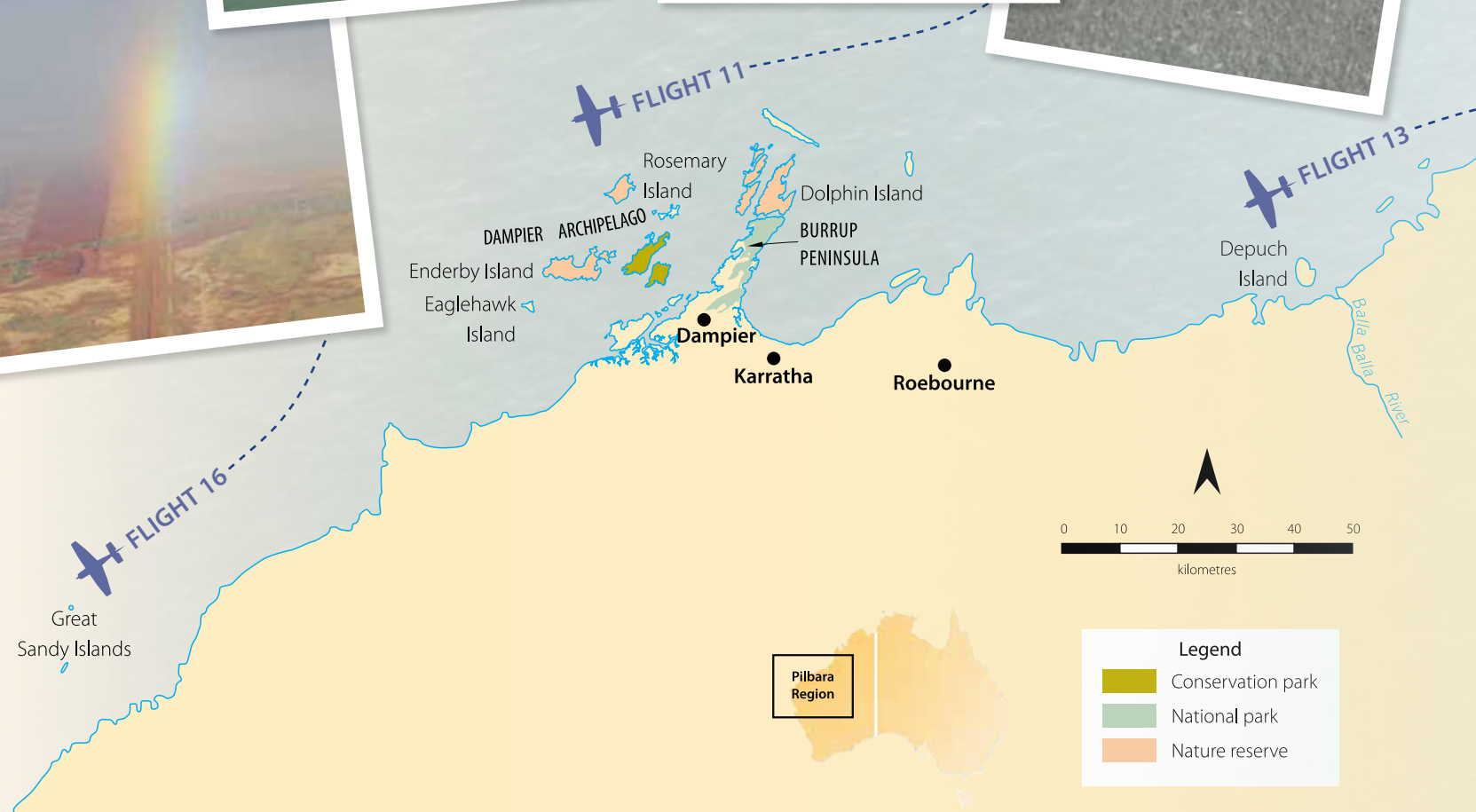
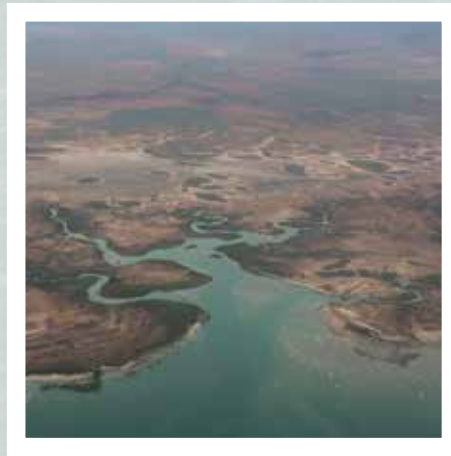
Legend	
	Conservation park
	Marine park
	Marine reserve
	National park
	Nature reserve

# FLIGHT 11 DAMPIER Welcome to red dog country

Another early start revealed a stunning back drop and a clear calm day. We took off and headed east of the airstrip towards our first transect. We cruised low over a beautiful mangrove-lined coast, and then back and forwards along the transects. We constantly crossed over stunning islands, deep red in colour and

looming. Some were quite high which meant the pilot needed to ascend from 500 feet altitude to keep us safe. One island – Eaglehawk Island – even had a shipwreck on it. Dramatic red cliffs drop straight into the blue ocean, and protected lagoons are formed between the islands, with massive coral bommies clearly visible below the surface. The outer edges of the archipelago are weather-beaten and exposed, but the calm conditions meant we saw hundreds and hundreds

of turtles, forming groups and rafting up. As we flew, the dolphin sightings mounted up, with one group of bottlenose dolphins comprising as many as 33 individuals. We even noticed a couple of humpback dolphins trying to blend in with the crowd. And then, as though the day couldn't get any better, an observer on the starboard side of the plane spotted a snubfin dolphin in the shallow mangrove-lined area close to the mainland – our second observation for the survey!

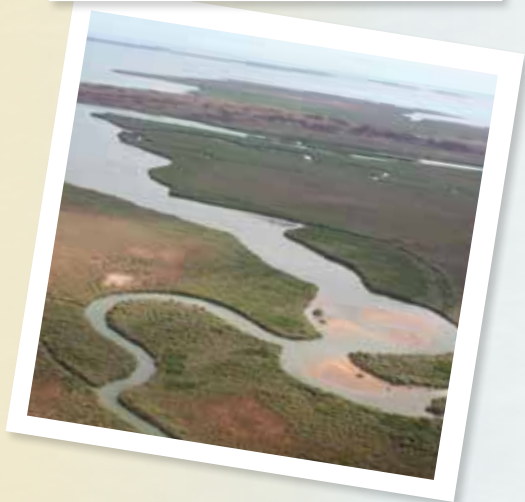


Favourable weather conditions meant we could go on and we managed to churn through 12 transects – making this our longest flight – and we touched down just before our mandated four-hour limit.

## FLIGHT 13 BALLA BALLA She sees sea snakes

Today we had a 30-minute transit over to Balla Balla – east of Karratha. The first feature we noticed was Depuch Island, a massive rock looming out of the water, far from anywhere, at the mouth of the Balla Balla River. We dived here last year, when we were observing the stunning sponge gardens, with soft corals and sea whips. During that visit we were accosted by many curious sea snakes – and this time was no different.

What we saw here was quite astounding, there were jellyfish bobbing out where the water is 20 metres deep, floating along in the tide lines. And with



“Then, in the final minutes of our last transect (literally metres from the shore) we saw a herd of about 50 dugongs leaving a massive plume of silt in their wake as they foraged in the mud for seagrass.”

them were so many sea snakes we could hardly keep count. The cries of ‘sea snake’ through the microphone were non-stop. We also had a few big groups of dolphins too, one with 20 individuals, and a few groups with more than 10.

## FLIGHT 16 GREAT SANDY ISLANDS The grand finale

What better way to set the scene for our final flight than rolling thunder and heavy squalls of rain. But the wind this morning was not too bad and, with only a few transects left, we were optimistic that we could squeeze them in between the storms. So we started extra early, bumped our way through the deluge and reached 3,000 feet to race over to the Great Sandy Islands. And, low and behold, right where we needed to work there was a gap in the clouds, with blue sky shining through, and even a rainbow. It would have been poetic if we spotted another snubfin dolphin, but we did see three humpback dolphins, a few sea snakes and a couple of turtles. Then, in the final minutes of our last transect (literally metres from the shore) we saw a herd of about 50 dugongs leaving a massive plume of silt in their wake as they foraged in the mud for seagrass. We circled several times, got some photos and good counts and flew off with smiles on our faces. It was a perfect end to our Pilbara odyssey.

*Opposite page*

**Flight 16 (top)** The last herd of dugongs for the survey.

**Flight 16 (bottom)** A break in the stormy weather.

*Photos – Holly Raudino/Parks and Wildlife*

**Flight 11 (left)** The spectacular Pilbara landscape.

**Flight 11 (right)** Dugongs create plumes while eating.

**Above** Searipple Passage on the stunning Pilbara coastline.

**Flight 13 (left)** Depuch Island at the mouth of Balla Balla River.

**Flight 13 (below left)** The intricate coastline.  
*Photos – Margie Mohring/Parks and Wildlife*

**Below** Fin markings and shapes can be used to identify individuals.

*Photo – Holly Raudino/Parks and Wildlife*



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