

## Final Update for 2010



*Common dolphins feeding on red eyes with some decent gannet diving activity above. All photos on this page: Will Robbins and Vic Peddemors*

It is turning into a very good year for the KZN sardine run. Unfortunately, despite (or perhaps because of) the overwhelming abundance of fish off Port St Johns, we did not have the best of sardine runs. Sure, we had quite a few baitballs, and we did manage to deploy our tags, and I did see a sailfish and nearly did get swallowed by a Bryde's whale... but, all things considered, it was a quiet run (off PSJ). We did not get seals, or the abundance of gannets usually associated with the sardine run, although there were more dolphins than you could count. Possibly, a reason for the apparently quiet run this year (off PSJ), is that there was so much fish, that the predators were spread out widely along the coast and across the continental shelf. Certainly, wherever we stopped on the boat, there was a pod of common dolphins foraging. So maybe it wasn't a bad run at all....



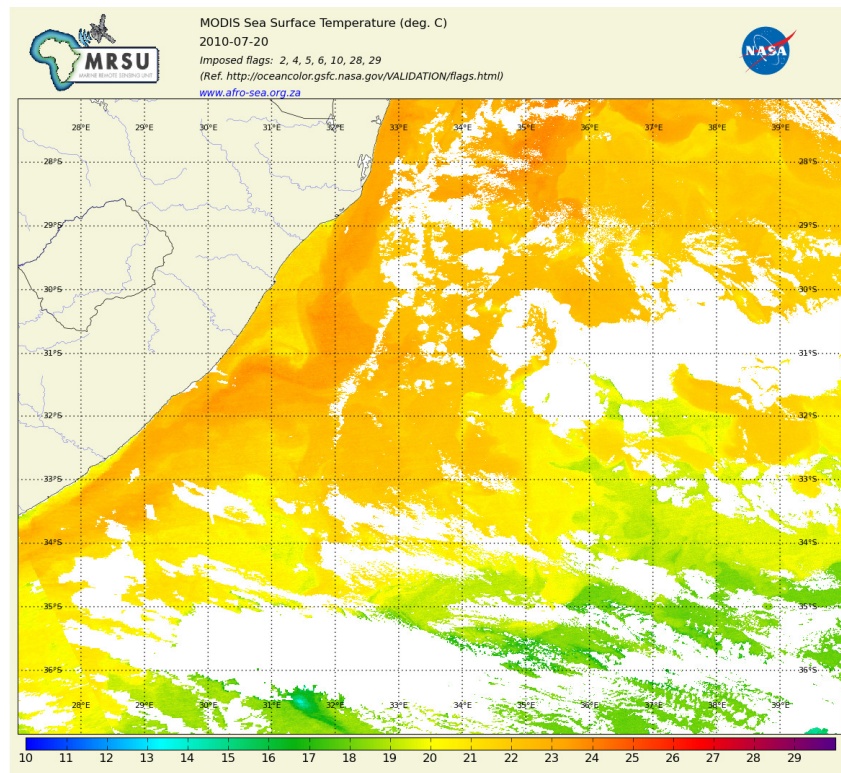
*Gannets finding easy picking with red-eyes on the surface; Bryde's whale surfaces' more feeding common dolphins.*

From our boat fish finder observations and sampling effort, we deduced that the majority of the fish off PSJ were mackerels (*Scomber japonicus*, not *Scomber scomber* as I mistakenly wrote on an earlier blog) and west coast round herring (*Etrumeus whiteheadi*). There was also an undetermined amount of sardine present; because sardine rarely take lure, it was hard to quantify how much was in the water, and we had to rely upon oil slicks and sardine smell to detect their presence. Regardless, it has been nice to see that the movement of fish that we followed during late June and early July has resulted in sardine netting along the KZN coastline.



*Cruising through the big blue and hanging in the big blue.*

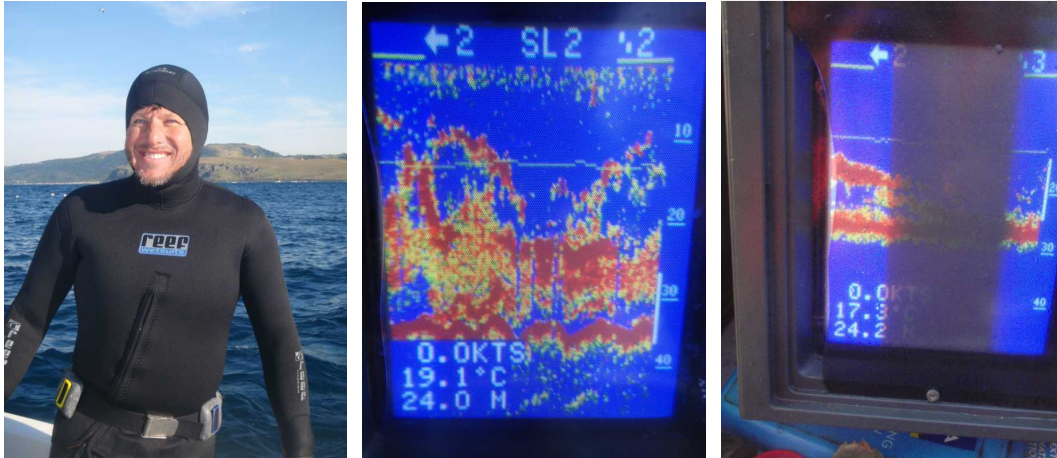
On a beautifully calm and sunny Saturday afternoon, as we were enjoying a genuinely hearty South African braai, we were watching schools of sardine and mackerel swimming northwards past the Bluff shore. Some pockets did get near backline, but nothing looked like beaching. As is often the case for the Upper KZN South Coast, most shoals were within 1 kilometre of the shoreline. The fish have, since then, moved onto the lower KZN North Coast and there has now been a fair bit of netting. Up until last Monday, prices were still high (R500 per basket), but I'm sure they are slipping following the netting over the past couple of days.



*Image courtesy of MRSU. Durban located approximately 30 °S and 30 °E. Note the large meander in the Agulhas Current south of Durban and the cooler temperatures north of Durban compared with south of Durban.*

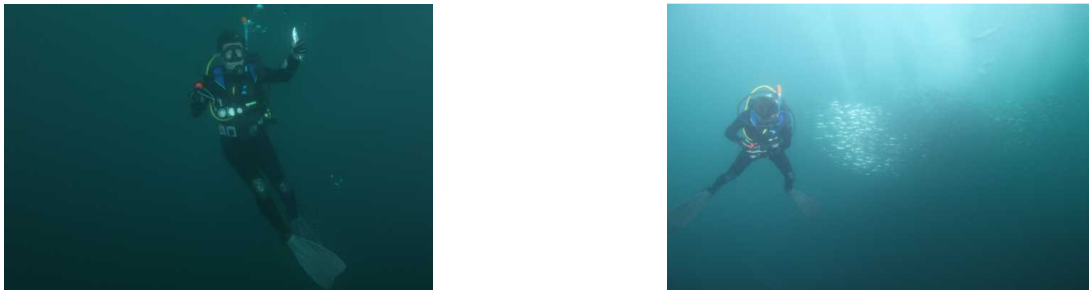
Conditions on the coastline are absolutely ideal for netting with very little swell and largely calm conditions. A look at the current satellite imagery tells a very interesting story. From the image

above, you can see that the coastline north of Durban has the most suitable conditions (with regards temperature), and this is where we're finding the sardine. Is that the beginning of another Natal Pulse just south of Durban? We'll have to watch the satellite images over the next few days... The KZN South Coast has become fairly quiet, and word from PSJ is that there is not much happening (beyond the usual few baitballs). As you can see, temperatures south of Durban are uncomfortably warm (> 22 °C) for a sardine. It is not inconceivable that the sardine could get trapped in the Durban – Mhlanga area, and that we could get some good netting over the next week or two. How much sardine has actually made it up to the KZN coastline remains to be seen. It is great to see these shoals on our shores again, following a number of dismal years.



*One of the rare times I used my wetsuit top; plenty of fish on the finder.*

Interestingly, we've seen very few gannets and dolphins along the KZN coastline north of Scottburgh. It seems that the dolphins decided that they preferred it on the narrow continental shelf of PSJ, and most of the birds appear to not have journeyed much further north than the lower Wild Coast. Pity.



*Vic Peddemors preparing to deploy the transmitter tags on left, and on right after deploying and not realising the bait ball was about to engulf him.*

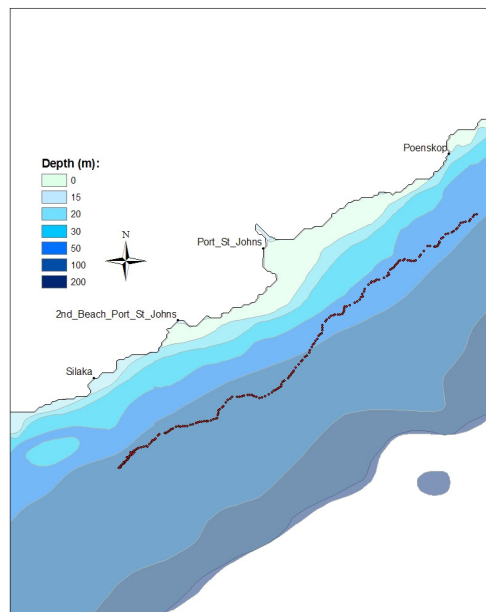
With regards our tagging efforts: we did eventually manage to deploy our three tags. Our last tag was deployed on our last day on the water, so we were quite desperate, and deployed it on a baitball that was far smaller than we would have liked. It is possible that there was so much fish (as reported by our fish finder), that the predators did not need to form baitballs to feed. Of course, we needed large baitballs in order to determine what sharks actually do on a baitball. We did, nonetheless, make some interesting observations:



*Will operates the hydrophone while Vic takes notes and Rod take photos. You can see gannets diving in the background. On the right: the machine that goes “ping”.*

### Shark tag no 1.

We deployed this tag on a 1.8 m (pre-caudal length) bronze whaler (*Carcharhinus brachyurus*). This shark remained at the baitball, which was about 1.5 x the size of our 8m boat, for about an hour. During this time the shark frequently moved up and down in the water column, which we suspect was for predatory behaviour. We have yet to analyse this data, so cannot be sure that the shark was feeding during this time, but it is likely that it was. Following this, the shark swam along the shore (see below) for the rest of the track. Interestingly, the shark regularly moved up and down the water column, and frequently we would subsequently detect fish shoals at the depth at which the shark was detected.

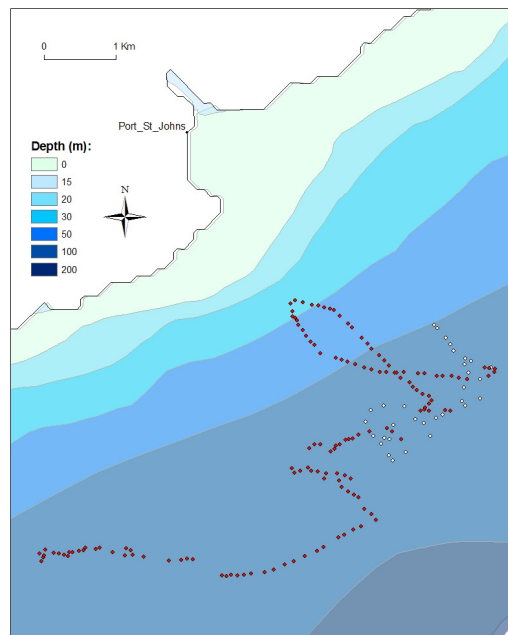


*Shark no. 1 trackline (red dots). Track starts in the south. The coloured shades is the depth through the water column.*

### Shark tag no 2.

Deploying this tag was a bit of a nightmare. There was a lot of bonito in the water, and they repeatedly tried to eat our tagged bait. However, eventually we managed to deploy in another

bronze whaler, also about 1.8 m p.c. length. This shark remained on the bait ball for about an hour and a half (track starts in the south). Thereafter it swam off in a similar direction as shark 1, but in progressively deeper water. Presently, we passed a current line, and noted that the shark started zigzagging across this current line (not visible in the track, only in the direction the hydrophone was pointing at the time). Any fishermen will tell you that if you want to catch fish, find a current line. After about 20 – 30 minutes of this behaviour, the shark did a 90° turn and started heading in a straight line towards some distant (1km) diving birds in the direction of the shore. When we got there, we found 3 small baitballs (with other sardine run boats in attendance), and this shark visited each ball in turn. After about 45 minutes on these balls, the shark once again headed out in an easterly direction, in a straight line. Then we lost him. After about an hour of searching (visible as yellow dots below), we found him heading back towards the same area where he'd been successfully feeding. After a further short while back at the baitball area, this shark headed in a straight line towards shore, with diving gannets visible in the distance. Once he reached this area, he hung around for about ten minutes and then headed straight back towards the area where he'd been successfully feeding previously. This shows, at the very least, site fidelity and an ability to navigate/ return to a successful foraging patch. From the track line, you can see that this shark was 700 m from the baitball when he detected it for the first time!!!

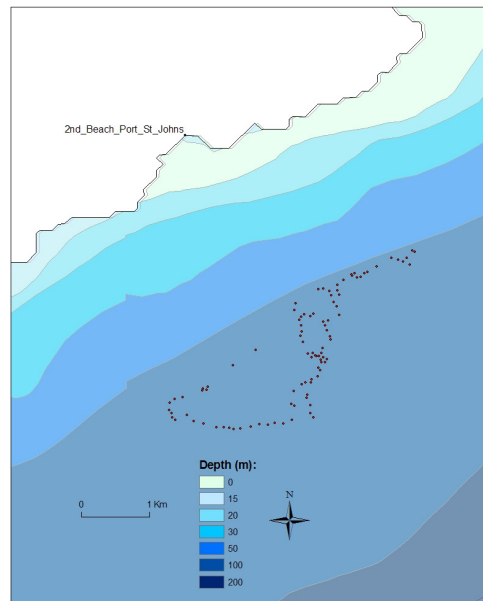


*Shark no. 2 trackline: track starts in the south. Yellow dots represent the time period when we lost the shark and were searching for it.*

### Shark tag no. 3:

We were desperate to get a tag in, so we chose the only ball of the day. A tiny little tennis ball of fish 1/8 the size of our boat. Despite some good predator activity (no doubt driven on by the lack of balling happening anywhere else), our shark, which was about 1.5 m p.c. length, did not hang around, and off we headed to the monotonous sound of ping, ping, ping. With a moderate North Easterly blowing, and a strong N to S current, we found ourselves driving with some decent revs on

on the motors (as much as the vibrating hydrophone pole could withstand), but not moving anywhere along the coast; effectively we were stationary (see first part of the track below, start of the track is from the north):



*Shark no. 3 trackline: track starts in the north.*

The only indication that we had that the shark had not coughed up the bait (again – Vic had a little panic when it coughed it up when it was fed the bait the first time), was that the depth of the tag changed frequently as the shark moved up and down the water column. Was the shark relaxing in the current (with current-driven water passing over its gills) or was it bounce-foraging? 3 different sharks and 3 different behaviours. I think that we are going to need to deploy a few tags next year to determine what is happening with sharks on the sardine run. That means that we will have to return next year, and you won't find any complaints from us in the project (except perhaps about GPRS blogging at night). That is fo'Shor!



*Author loving his PSJ GPRS blogging. Till next year...*