

Seahorse Numbers in Studland Bay: the Truth

by Michael Simons, for Boat Owners' Response Group (BORG), October 2014

Background

There are earlier reports of occasional sightings before and after World War 2, but in 2004 a pregnant seahorse was spotted in Studland Bay by Julie Hatcher of the Dorset Wildlife Trust. The Seahorse Trust (SHT) then started a diving programme in 2008 to study the seahorses in the Bay. There were comparatively large numbers of sightings in the first three years, then sightings declined substantially. The SHT had been trumpeting the importance of this seahorse "colony" and its decrease left them embarrassed and looking for a scapegoat. They fixed the blame on boat anchoring, saying it was destroying the eelgrass habitat, and lurid articles appeared in the press to that effect. This short article exposes the lack of truth behind that false accusation.

Migration

Seahorses are not year-round residents, they migrate into the Bay for 3 or 4 months of the summer, the other 8 or 9 months they are somewhere else in deeper water (exactly where is not known). The "colony" is then a transient affair.

Sightings

Year	2008	2009	2010	2011	2012	2013	2014
Sightings	58	32	66	9	15	7	1

These are total sightings, including repeat sightings of the same seahorses. Actual numbers of individuals will be much lower, for instance in a period in 2009, 29 sightings of tagged seahorses were accounted for by just 5 individuals. So 29 was really 5! Figures taken from SHT publications.

Eelgrass

Seahorse numbers declined from 2011. There is [aerial photographic evidence](#) that the eelgrass beds expanded inshore between 2008 and 2011, i.e. increased in extent, and that there was no increased fragmentation. Professional dived survey work in 2009, 2010 and 2011 showed that there was no significant change in eelgrass % cover or in shoot density in the main anchoring areas in those three years: see pp 24 – 27 of the report [here](#). Yet from 2010 to 2011 seahorse sightings declined from 66 to 9 while measured eelgrass properties remained constant. To claim that this decline was because of changed or reduced eelgrass is to deny the evidence, and resort to sheer fiction.

There are about 100 hectares (1 million sq metres) of eelgrass in the Bay, enough habitat for over 2000 seahorses. There is then no way that lack of eelgrass area can be a limiting factor for the small number of seahorses present, which over the whole period 2009 – 2012 averaged less than 1.5 seahorses on any given dive day, and exceeded four seahorses on only five out of over 96 dive days. (see detailed analysis [here](#)). The alleged "colony" at any given time was actually very small.

Shown below are aerial photographs of the same part of the moorings area where the seahorses were studied, for 2008 and 2011. The 2011 eelgrass edge was 5m nearer the shore, by scaled measurement relative to the beach huts. They are similar, and in no way can any differences explain a 6-fold decrease in seahorse sightings.



So what's happening?

Little is known about seahorse migration, whether they try to return to the same area in the spring, or whether they just end up where tides, waves and currents wash them. They are very weak and slow swimmers, and their arrival will be influenced by random and highly variable factors. There are not enough data to establish any sort of baseline summer migrant population, so there is as yet no “expected” or “normal” number. Many factors might affect how many turn up, including:

- tides, currents, wind, waves and weather
- variable predation: being eaten by predator fish and birds before, during and after migration (bass, pollack, undulate ray and seagulls for example)
- dying during winter storms
- disease
- just ending up somewhere else
- having visible tags attached: the SHT tied an undisclosed number of plastic identification tags round their necks from 2009 – 2012: tags can disrupt seahorse camouflage and attract the attention of predators, and could cause other problems. We understand that no tagged seahorse has been found to return to the Bay the following year. The tags could be a cause of seahorse mortality. (See pp 2, 11 of report [here](#))
- general disturbance by divers searching for them

As well as variability in number of seahorses actually present, there is variability in detection: 260 dive hours were spent searching for seahorses in 2009, 365 hrs in 2010, then a steep decline in dive hours in subsequent years. Fewer divers, fewer sightings. And if the water is cloudy, fewer sightings.

In summary:

Seahorse sightings declined although the eelgrass properties in Studland Bay were constant and its extent increasing. There is sufficient eelgrass to support over one thousand times the average observed population in the Bay. To blame the seahorse decline on lack of eelgrass is ridiculous.

There are many other variable factors which can influence the summer migration into the Bay. These are where the explanation(s) of the recent drop in observed seahorse numbers must lie.

Finally, it is worth pointing out that assigning the wrong cause to a possible problem does no favours for conservation: it could waste scarce conservation resources by trying to cure the “wrong disease” or to solve a non-existent problem, as well as trashing the reputation and credibility of the conservation body concerned.

Appendix: relevant articles

The above is a concise outline, more detailed, fully referenced information is available in the BORG publications listed below. Also two SHT references are given, plus a paper on seahorse tagging.

<http://boatownersresponse.org.uk/Great-Seahorse-Deception.pdf>

<http://boatownersresponse.org.uk/seahorses%20like%20moorings.pdf>

<http://boatownersresponse.org.uk/Studland-Seahorse-Population.pdf>

<http://boatownersresponse.org.uk/> - comprehensive set of technical articles on eelgrass & seahorse issues

[http://www.theseahorsetrust.org/userfiles/Year 5 report on the Tagging of Seahorses at Studland Bay i Dorset.pdf](http://www.theseahorsetrust.org/userfiles/Year%205%20report%20on%20the%20Tagging%20of%20Seahorses%20at%20Studland%20Bay%20i%20Dorset.pdf)

<http://www.theseahorsetrust.org/userfiles/PDF/BSS%20Report%202011.pdf>

[http://seahorse.fisheries.ubc.ca/sites/seahorse.fisheries.ubc.ca/files/documents/news/uploads/Tagging Seahorses.pdf](http://seahorse.fisheries.ubc.ca/sites/seahorse.fisheries.ubc.ca/files/documents/news/uploads/Tagging_Seahorses.pdf)