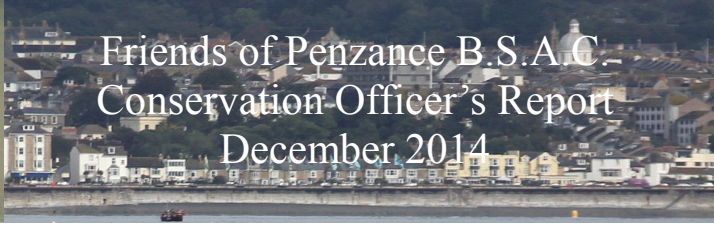
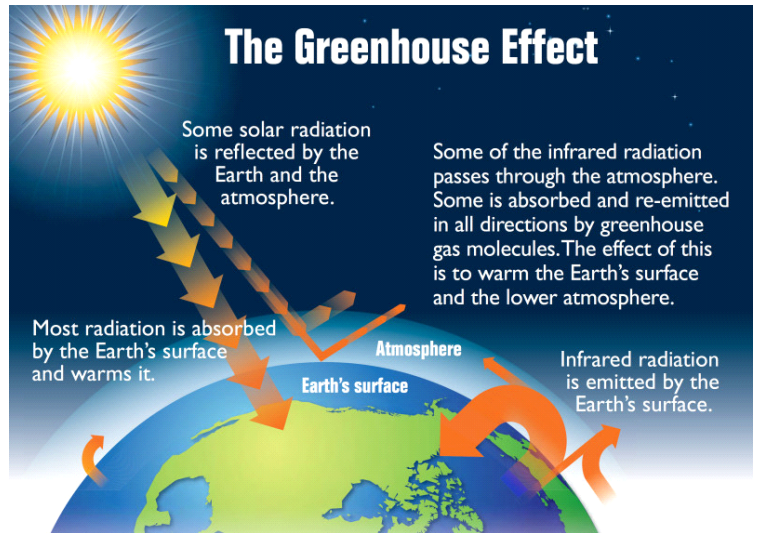


Friends of Penzance B.S.A.C. Conservation Officer's Report December 2014



While computer models churn out bleak forecasts for the planet's future, we also have a more conceptual understanding of what is happening as humans pump carbon dioxide into the air. But the conceptual understanding of carbon dioxide wrapping the planet in a blanket that traps more heat is not quite right. A new study from the University of Washington and the Massachusetts Institute of Technology hopes to complete the understanding of what happens to the planet under climate change. Instead of carbon dioxide, or CO₂, creating a blanket to slowly warm the planet, a paper this week in the Proceedings of the National Academy of Sciences shows the story is a little more complicated -- though the ending is, unfortunately, the same. "This is a neat study in that it changes the way we think about the climate system," said lead author Aaron Donohoe, a postdoctoral researcher at MIT "We looked at processes that are well captured in the models, but the conceptual understanding of how they work hasn't been fleshed out before." When CO₂ is first added, it does act as a blanket, trapping long-wave infrared energy coming off Earth. The atmosphere then emits less of this long-wave radiation to space because the upper atmosphere is cooler than Earth's surface, just as the top of your blanket is cooler than your body. But Earth gradually heats up under this blanket, and hotter objects emit more long-wave radiation, so within about a decade the effect of adding the thicker blanket has been cancelled by the warmer body emitting more energy.

So what keeps the planet warming after the first decade? In the longer term, the study shows that Earth begins to absorb more shortwave radiation -- the high-energy rays coming directly from the sun. Previously people had shied away from talking about shortwave radiation because clouds can reflect this visible light back to space, and clouds remain one of the big unknowns under climate change. Regardless of what happens to clouds, these researchers say, the planet is likely to have less ice and the air will become more humid under climate change, both of which will act to absorb more shortwave radiation from the sun. Those effects will be like putting tanning oil on the planet, letting it absorb more of the sun's incoming rays.



An expedition to Cape York Peninsula in north east Australia has found three vertebrate species new to science, and isolated for millions of years—a bizarre leaf-tail gecko, a golden coloured skink and a boulder dwelling frog. The rugged mountain range of Cape Melville is an amazing place - millions of black granite boulders the size of cars and houses piled hundreds of metres high. Surveys have previously been conducted in the boulder fields around the base but the plateau of



Leaf-tail gecko

boulder strewn rainforest on top had remained largely unexplored. In March this year a crew flew in by helicopter to explore the uplands. The results were incredible. Within a few days they had discovered the three above mentioned new vertebrate species as well as a host of other interesting species that may also be new to science.. Finding three new, obviously distinct vertebrates would be surprising enough in somewhere poorly explored like New Guinea, let alone in Australia, a country we think has been explored pretty well.

There were 3 sightings of Bottlenose Dolphins in November, pod of 5 in Carrick Roads, pod of 15 including 2 juveniles and a baby in Fal Bay on the 1st Nov. and 8 off Towan Head, Newquay on the 18th. An unidentified dolphin seen off Towan Head was probably also a Bottlenose. There were 4 sightings of Common Dolphins, pods of 6 and 10 near The Runnelstone on different days, a pod of about 40 in the area of the Wolf Rock Lighthouse and a Super pod of perhaps as many of 1000 feeding and travelling across Fal Bay breaching as far as the eye could see on the 22nd. 10 sightings of Harbour Porpoises were from Pendeen Watch on the north coast to Fal Bay. Grey Seals were reported 4 times, 2 seen off Porth Joke on the north coast, the others in Fal Bay. A 30ft Minke Whale was seen to surface twice as it headed west off The Runnelstone on the 23rd.