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Conservation Officer's Report,

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Copepods are tiny 3 mm long marine animals and they represent a vast reserve of ocean biomass that provides a crucial component of the food chain, and it has been discovered that they use the same buoyancy control as the whale. The Southern Ocean Copepod—a crustacean rich in omega-3 oil ‘hibernates’ in the deep ocean during winter when seas are stormy and food scarce. To reach the ocean depths the copepod’s oily body fluids undergo a remarkable transformation. As the animal swims deeper, water pressure triggers a process that converts their oil to a more solid form rather like the consistency of butter. This change in density acts like a divers weight belt, enabling them to be neutrally buoyant and spend winter in deep waters without wasting energy on constant swimming. It’s fascinating to think that the largest and the smallest marine animals share this remarkable ability to change their body fats to adjust their buoyancy.



Southern Ocean
Copepod

U.S. and European researchers say that forests in many regions are becoming larger carbon sinks thanks to higher density. In Europe and North America, increased density significantly raised carbon storage despite little or no expansion of forest area. Even in the South American areas studied more density helped maintain

regional carbon levels despite deforestation. The researchers analysed information from 68 nations, which together account for 72 % of the world’s forested land and 68% of reported carbon mass, and they conclude that managing forests for timber growth and density offers a way to increase stored carbon, even with no or little expansion of forest area. The study team first focused on The United States and found that while U.S. timberland area grew only 1 % between 1953 and 2007 the combined national volume of growing stock increased by an impressive 51 % and forest density increased substantially. Of 68 nations studied, forest area is expanding in 45,



density is also increasing in 45, and changing area and density combined had a positive impact on the carbon stock in 51 countries.

University of Alberta researchers determined that a fossilized dinosaur bone found in New Mexico, confounds the long established paradigm that the age of the dinosaurs ended between 65.5 and 66 million years ago. The team used a new direct-dating method called U-Pb, (uranium-lead) dating, where a laser beam unseats minute particles of the fossil, which then undergo isotopic analysis. This new technique not only allows the age of the fossil to be determined, but potentially can distinguish the type of food the dinosaur eats. They found that the femur bone of a hadrosaur was only 64.8 million years old. That means that this particular plant eater was alive about 700,000 years after the mass extinction event many palaeontologists believe wiped all non-avian dinosaurs off the face of the earth, forever. The researchers say there could be several reasons why the New Mexico hadrosaur came from a line of dinosaurs that survived the great mass extinction, for it is possible that in some areas the vegetation was not wiped out and a number of the plant eating species like the hadrosaur survived.

There were only 3 reports of Bottlenose Dolphins during June, 7 in mounts Bay on the 19th, 20 off Porthgwarra on the 29th and 2 off Logan Rock on the 30th. Two dolphins seen off Porthgwarra on the 24 were probably also Bottlenose. Two sightings of Harbour Porpoises were off Clodgy Point and Porthgwarra on the 4th and 27th. Common Dolphins were only reported on two occasions, both off the north coast late in the month, 3 of Polzeath on the 28th and 30 off Newquay on the 30th. Single Basking Sharks were seen off St Michael’s Mount on the 11th, St. Ives on the 19th and Porthcurno on the 25th, but 8 were seen off Land’s End on the 28th. Grey Seals were seen off Cape Cornwall, Porth Ledden and Newquay