13:43:35 From Peter MacKinnon uOttawa Engineering to Everyone:

C: Minor error by Diana. It is not neutrinos that cause carbon isotopes, but rather comic rays which are much larger that neutrinos, which do not interact with Earth or us.

13:50:34 From David Cardill to Everyone:

Q: Knowledge is power. Where do trees (made up of hydrocarbons) get their hydrogen?

14:00:04 From Jean and Dave Dougherty CACOR to Everyone:

Many people have not provided their correct full names in their personal screens (boxes). Please take a moment to rename you box so we all know who you are. Move your cursor to the top right corner of you little box. You'll see a small blue rectangle with there dots. Click that and then choose 'rename.' Thanks.

14:12:17 From Jean and Dave Dougherty CACOR to Everyone:

Q: With 55 Gt of carbon dioxide equivalent emissions last year, assuming we can't get immediate substantial cuts (which we are not doing), how many mature trees would be needed to sequester a single year's worth of emissions?

14:12:22 From Peter MacKinnon uOttawa Engineering to Everyone:

Q: Do you know about the emerging Planetary Boundaries approach to integrating much of what you have talked about, basically seen as a system of systems? If so, can you comment?

14:14:24 From Lalith Gunaratne to Everyone:

Q: I just finished reading the book by Robin Wall Kimmerer called Braiding Sweetgrass--who says that the Humus of the soil gives us oxytocin--the same hormone that comes from the mother child bond... and hugging, etc. What are your thoughts? Would that not be a clue for our realization of our oneness with nature?

14:16:01 From Peter MacKinnon uOttawa Engineering to Everyone:

C: Pollen studies indicate trees migrate from approx. presents to much further south (thousands of km) during the glacial interglacial cycle accompanied by soil changes, too.

14:17:40 From Mary Hegan to Everyone:

C: Diana, you have talked to many people across the planet. You stressed the importance of community action and stewardship of trees. Could you list your favourite community actions to grow and care for trees for the future?

14:25:46 From John Hollins to Everyone:

C: Peter McKinnon is right about neutrinos. Carbon-14 is produced in the stratosphere by nuclear reactions of atmospheric nitrogen with thermal **neutrons** produced naturally by cosmic rays (with the highest production rate 10 to 13 miles above Earth's poles), as well as by atmospheric nuclear weapons testing in the 1950s and '60s. The $_{14}C$ atoms are then rapidly oxidized, first to carbon monoxide

(CO) and then carbon dioxide (CO2), an inert gas that circulates throughout the stratosphere and troposphere.

14:25:56 From John Hollins to Everyone:

https://www.llnl.gov/news/atmospheric-carbon-14-measurements-reveal-natural-production-rate-cosmic-rays#:~:text=Carbon%2D14%20is%20produced%20in,in%20the%201950s%20and%20%2760s.

14:26:42 From John Hollins to Everyone:

Neutrons not neutrinos.

14:27:47 From Ted Manning to Everyone:

Q: Past approaches to valuing trees (and other environments) have focussed primarily on commercial product and their extraction, yet clearly the forests support many more services upon which humanity depends. How do we change this to a more holistic perspective and get them to listen?

14:29:59 From Jean and Dave Dougherty CACOR to Everyone:

Q: The enormous fires we have been experiencing lately have highlighted that a second fire in the same area can permanently change the fundamental ecosystem from forest to savannah. How will we manage to maintain our forests if this happens?

14:50:20 From Lalith Gunaratne to Everyone:

C: Thank you so much Diana. Wonderful and inspirational presentation. Samantha and I did our deed--a small one in planting two mulberry saplings in our backyard yesterday and we went out to talk to them today as the water came from a bit of rain.