Remaining Questions and Answers

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Question	Answer
Does increased winter rain contribute to aquifer recharge and potentially offset groundwater impacts from summer drought?	That depends on the ability of the soils to absorb precipitation. In the case of extremely heavy rainfall events, unless the soils have already had time to absorb moisture, they are unable to take in water quickly enough, and most such rainfall will be lost as surface flow unless there are wetlands, vegetation etc to slow the flow (and allow the time needed to penetrate into the soil). However, if soils are dry (due to drought or the absence of vegetation during summer months etc), they become compacted, which makes it more difficult for water to percolate into them. These soils are highly prone to erosion.
I understand that the direct management technique manages toward a specific future state, stewarding change toward a desireable outcome. Do you know of any examples of direct management of tidal wetlands to maintain biodiversity in the face of cllimate change?	I am also interested in this question, as protecting and restoring marine ecosystems can have many benefits to biodiversity, sequestering carbon, and reducing the intensity of storm surge. But this is not my area of expertise. There are a number of interesting initiatives working on marine restoration. For example, https://clamgarden.com/; https://seaforest.ca/our-story/ https://stewardshipcentrebc.ca/green-shores-home/gs-about/; https://www.cascadiaseaweed.com/about. Also, not in our region, but interesting: Greenwave offshore - https://www.greenwave.org/our-model) I have worked mostly overseas are are more familar with mangrove restoration and how you can use such a measure to buffer storm surges and coastal erosion, while providing habitats for fish and other marine life. However, I found this article that may be of interest to you. https://www.researchgate.net/publication/259200817_Tidal_wetland_stability_in_the_face_of_human_impacts_and_sea-level_rise I also suggest you take a closer look at these resources related to the RAD Framework that I was referring to in my presentation. In this Powerpoint presentation here you can see a tangible example of how the three different management approaches - Resist, Accept and Direct - have been applied to three different coastal National Wildlife Refuges in the US in response to sea-level rise. So this example may be of particular relevance to you. https://www.fws.gov/uploadedFiles/Morton_JM_2019h.pdf
Do you agree that the most important aspect of climate change adaption is to provide additional water storage both at a community level and at individual residences?	I do agree that promoting better water conservation through actions such as water harvesting and better storage should be a strong priority for our island communities. However, I think we need to refrain from trying to identify ONE adaptation measure as being the most important one. First of all, a given selection of adaptation measures very much depend on a given context and the specific climate impacts in that given location. Moreover, we generally need a **combination** of adaptation measures to enhance both the

	resilience of ecosystems and our island communities as we are being faced with a host of different climate impacts that all need targeted responses. In other words, there are wonderful actions we can take that mutually reinforce each other. What I mean by that is we, for example, focus on better protecting water AND soil quality AND plant diversity - all these actions are inter-related and will help make us more resilient than if we only focused on ONE aspect.
There's a contradiction between the recommendation to revegetate barren areas and fire smarting recommendations to clear a wide area around your house from all ground cover. How do these balance in practice?	FireSmart Guidelines presently available in our area were not developed for our coastal environment and so, the best approach is to understand risk in order to identify whether there are danger trees or dry material fuels that need managing. Also, whether or not plants around your home may be flammable (some ornamentals for example), and what constitutes danger trees (or tree limbs that may need to be managed to reduce 'laddering' etc). Retaining moisture and green vegetation slows the spread of fire, including mossy logs and materials on the ground, Coastal Douglas fir, Salal... and other species will slow fire (and can help reduce wind sheer effects). Moist soils and protected stands of trees bring benefits. There is no single answer, but starting by understanding what is and what is not a risk is important. And to find out what tree and plants you SHOULD plant.
Have wildfire experts reviewed the reducing-fire-risk slides of Ruth's, starting 7:30? Beyond local Salt Spring fire officials? If so, do they agree?	Yes, local ecologists and native plant groups have been working with our local Fire and Rescue Fire Smart community outreach staff member (including the lists of appropriate plants).
What are some ways an average person can help educate others on these issues?	A very good question. There are not yet a lot in the way of resources, because the circumstances are so specific to a particular area, and the conditions in that area. In my experience, local conservation groups are the best holders of knowledge in your local area. I would contact them, ask them to host a seminar, etc. Gardening clubs can also be a fantastic resource, and permaculturalists. Any of these groups can offer insights that would be helpful. Hereby some concrete places you can find helpful information to help better educate yourself and your friends and family: Be the Change Earth Alliance have some wonderful activities and training materials you may find inspiring - https://www.bethechangeearthalliance.org/ For example, take a look at their Action Guides. They also work with youth as Climate Ambassadors and work very closely with schools on climate education.
Does your fire prevention information suggest vegetation free zone around house - is this applicable here?	It is the choice of vegetation, the health of the vegetation, and the removal of potential risks (fuels, flammable materials) that matters, not removing vegetation.

In the context of diversity, are there trees that capture more carbon than others?	There is no straightforward answer to this question, as it depends on the health, location, age, and species of tree. But, in general, the older trees are capturing more carbon, which is why we identified protecting existing forest stands and trees as being the most important action to take. As I mentioned, we had forest carbon experts calculate the carbon emissions from a small, 10 ha clearcut. It contained a number of trees around 90 years old, among others (CDF and other tree species). The total carbon lost was not just from the immediate emissions, burning, but also losses from the soil over time. It would take around 100 years just to recover the lost emissions (to become net zero again). In that interim, we have also lost the ongoing carbon storage by these mature trees. We need to restore vegetation, but it is more important to keep what we have.
Is the IT going to do Climate change mitigation and adaptation plans for the other Gulf Islands?	Currently, Islands Trust is working on a regional Climate Action Plan which includes mitigation and adaptation actions. The Islands Trust and Islands Trust Conservancy are working on an ecosystem based approach for their Coastal Douglas Fir Strategy. Connecting forest stands, creating protected buffers, increasing forest structural and species diversity are all elements. Protected Areas are definitely a key tool. You may be interested in knowing the following: To enhance the health benefits of urban nature and protected areas, many cities are launching programmes based on the Health Parks, Healthy People model by Parks Victoria, Australia. This Programme involves developing park-based activities for people, building awareness of parks, producing evidence of their benefits and informing cross-sector policies and plans. For example, Parks Canada collaborates with community groups on health initiatives in Rouge National Urban Park, Canada's first national urban park, including the Mood Walks programme to improve symptoms of anxiety and depression through guided walks in nature. The British Trust for Conservation Volunteers promotes Green Gyms as a way to combine physical exercise with nature conservation action, boosting participants' mental health, social integration and activity levels. These programmes bring benefits for both the biodiversity of cities and the wellbeing of the people who live in them. These are ideas that we could replicate here on the Gulf Islands.
Many "old-school" systems and guidelines are proving to be ineffective (monoculture, fire control, etc.) moving into the future. How can we as people influence policy changes and create larger scale change?	I agree. Elected officials (all of them, MLA, Trustees, etc) need to hear from residents and island groups about what is important. They also need support as they introduce new ideas. Getting involved locally is important, but so is getting behind your elected officials and their staff to support the work that they do.
Is there a plan to control the deer? They devastate the native flora.	This is an important issue. The deer populations have been able to increase beyond the capacity of our local systems to support them. When this happens, disease often arises naturally, as a side effect. Deer in

	some Gulf Islands appear to be succombing to illness and this has reduced deer populations in some areas noticeably. https://news.gov.bc.ca/releases/2020FLNR0061-001863 The issue of managing deer in the absence of natural predators to reduce the stress and disease in their populations is being discussed.
Should the dying cedars be cut or left up? We have many dying on Gambier Island.	Without a site visit, I would not want to advise. Standing dead trees and coarse woody debris are important for soils and provide essential wildlife habitat and food resources. However, if cedars are in exposed areas and/or isolated, creating a fire hazard this may be required.
Do we need to be careful - priorites driven by public awareness vs actual (more signficant/high impact) risks. The two do not necessarily align (yet)?	Yes, often the things we are most concerned about may not be the things that will have the greatest impact on us. The risk of a large scale fire like those that we have seen in California (or in Alberta or northern BC) are not a risk for us on the Gulf Islands according to members of our local Fire Department. This is why an ecosystem based approach is so useful - we are not focusing on just fire, we are protecting forests and building understorey to reduce our risk from drought, enhance the native ecosystems, and support our island watersheds! (while reducing our fire risk).