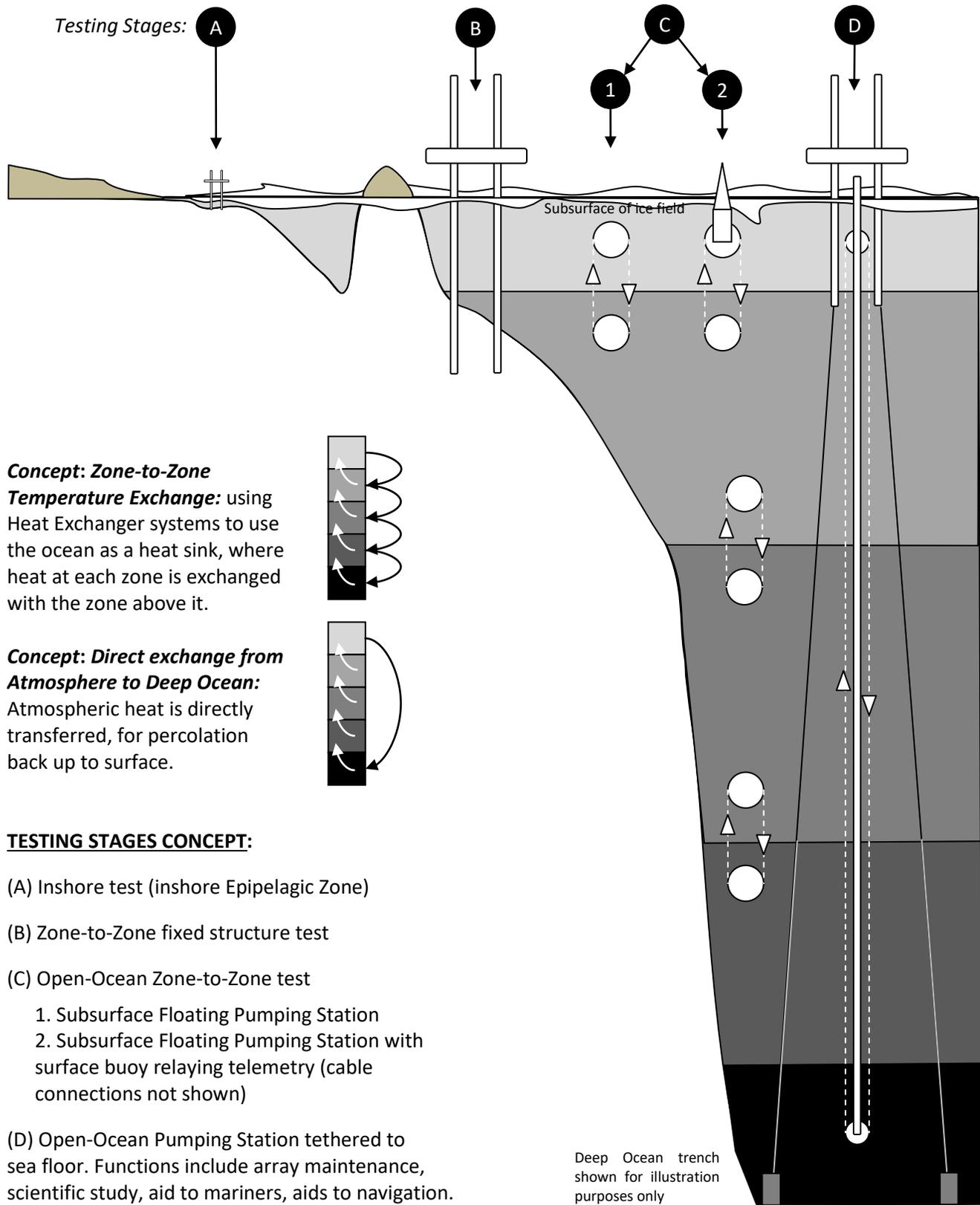
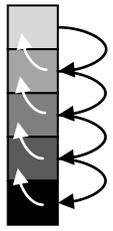


POLAR REFREEZING CONCEPT (A, PART 1 of 2):

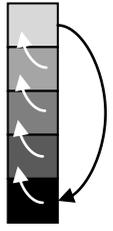
Use differentials (temperature, salinity, pressure, etc.) as heat exchange mechanism ^(note1)



Concept: Zone-to-Zone Temperature Exchange: using Heat Exchanger systems to use the ocean as a heat sink, where heat at each zone is exchanged with the zone above it.



Concept: Direct exchange from Atmosphere to Deep Ocean: Atmospheric heat is directly transferred, for percolation back up to surface.

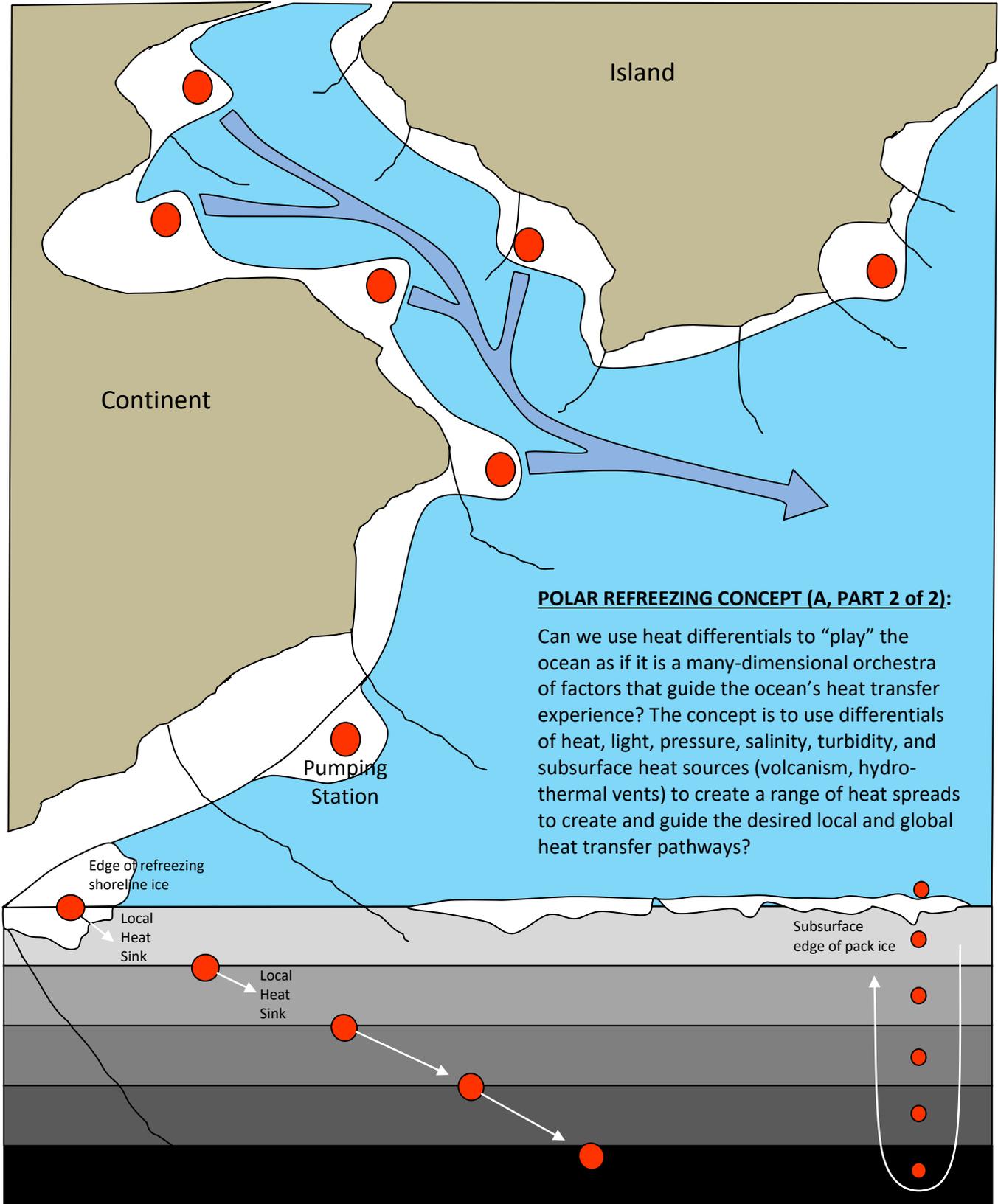


TESTING STAGES CONCEPT:

- (A) Inshore test (inshore Epipelagic Zone)
- (B) Zone-to-Zone fixed structure test
- (C) Open-Ocean Zone-to-Zone test
 - 1. Subsurface Floating Pumping Station
 - 2. Subsurface Floating Pumping Station with surface buoy relaying telemetry (cable connections not shown)
- (D) Open-Ocean Pumping Station tethered to sea floor. Functions include array maintenance, scientific study, aid to mariners, aids to navigation.

Deep Ocean trench shown for illustration purposes only

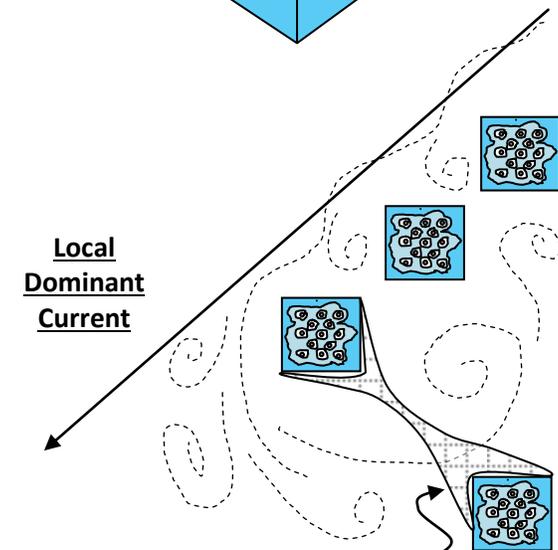
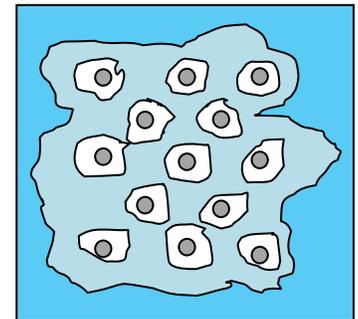
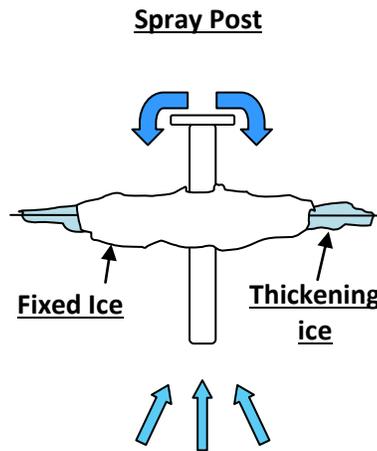
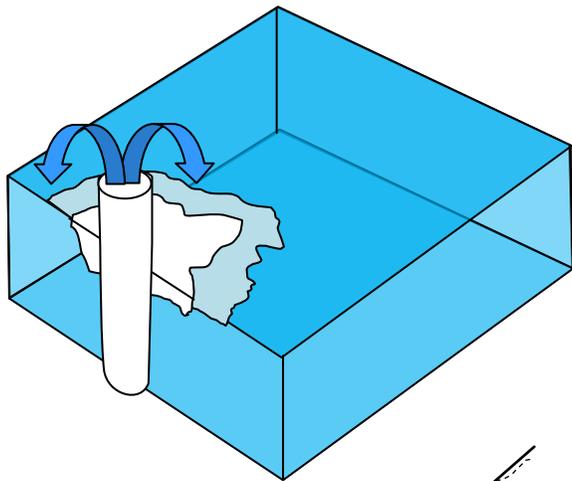
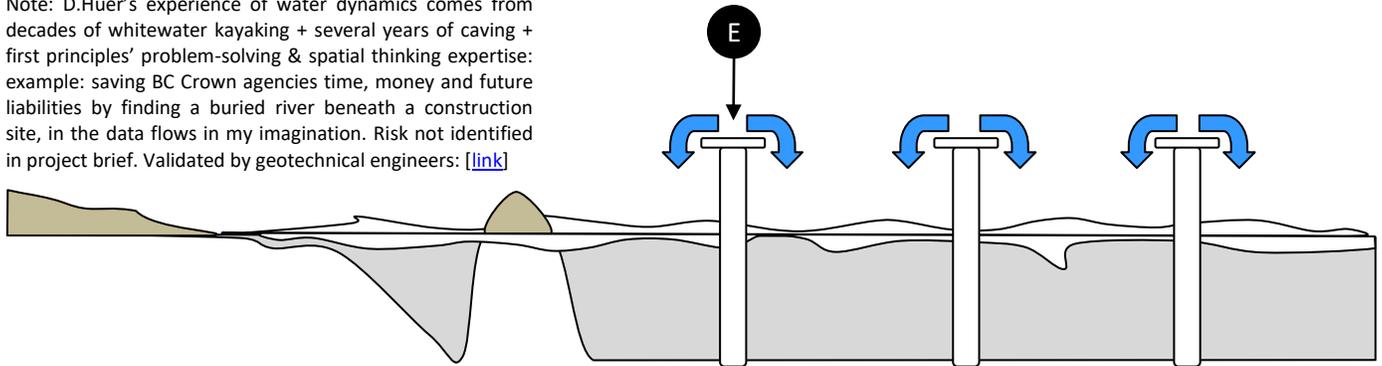
(1) *Knowledge example:* During Crown-funded 'flood control' consulting work (link, p3), theorizing that there was a worsening of the [2009 Cowichan River flood](#), by hypothesizing creation of a *Salt Wedge Dyke* (coined term) in hemmed-in estuaries; in which salt/freshwater density differentials creates a liquid sea wall or dyke, which induces floodwaters' upstream rebounding. Summary available. A Euro scientist told me that this is a rarely studied phenomenon. The *Salt Wedge Dyke* hypothesis has been passed to Dutch authorities via *Amsterdam in Business*, and to Cowichan First Nation.



POLAR REFREEZING CONCEPT (B) = “SPRAYING POSTS” & “SPRAYING POST ARRAYS”:

Use Spraying Posts to create islands of fixed ice; to invite temperature changes; to invite growth of thickening ice; to invite growth of surrounding ice fields. This simultaneously aids restoration of local habitats. *Posts* could be a new design or repurposed Oil & Gas (O&G) Drilling Rigs.^(note 2) Must minimize contamination of local ecosystems. Designs must be modular; to cut installation & operating costs to achieve economies of scale.

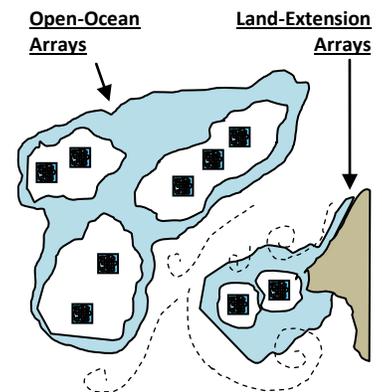
Note: D.Huer’s experience of water dynamics comes from decades of whitewater kayaking + several years of caving + first principles’ problem-solving & spatial thinking expertise: example: saving BC Crown agencies time, money and future liabilities by finding a buried river beneath a construction site, in the data flows in my imagination. Risk not identified in project brief. Validated by geotechnical engineers: [\[link\]](#)



Could experiments include such ideas as bio-netting, to capture windblown spray?

Map bathymetry to map local flows of currents. Identify sites to install single *Spraying Posts* and *Spraying Post Arrays*.

The aim is to create “fixed ice obstructions”; which invites re-direction (localizing sub-flows of the local dominant current); which creates eddies; which invites further slowing of those newly localizing currents; which invites local icing; with aim to create ice-bridges across the local ocean expanse.



Could this create a systems-wide reinvigoration of polar ice-generating systems (local Arrays linking together into “islands” of ice-generating regions that link larger areas)?

(2): Repurposing O&G Rigs offers certain benefits: (a) Riggers are experienced in ocean operations = valuable expertise. (b) Donation or at-cost sale of rigs to the program offers tax benefits to operators vs. write-down/write-off. (c) O&G operators could enjoy market benefits; however their involvement could be intended to be part of a greenwashing campaign, so it may be prudent to restrict involvement to O&G firms who completely transform themselves to Clean Energy companies (must cap wells, wind up operations, return licenses to governments, and not sell licenses and operations to other companies).