The Political Ecology of the Cryosphere: Theory and Praxis

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Globalization is not just a process of technological and economic interconnection but of the symbolic transformation of the geophysical world into social objects. As the planet warms, it has become a thinly-veiled doctrine among the world's nations and industries that state and market control over and access to the polar regions, and their high mountain counterparts, is a geopolitical and economic imperative. Whether in the Arctic, Antarctic, or the “Third Pole”, human conceptions of the cold are understood as increasingly driven by anthropogenic state changes in the cryosphere itself and by contradictions of the market economy. An approach to accurately grasp the breadth and diversity of human perspectives, uses, and valuations of the cold thus requires deep contextualization and a theoretical approach. In this paper, we propose to synthesize core social findings about the nature of the cryosphere and its changes, centering the knowledge of Indigenous residents, and working outward through other layers of stakeholder groupings and positions. Broadly, we identify sites of conflict and alignment among stakeholder positions related to permafrost, sea ice, snow, and land ice (e.g. direct users, “downstream” users, state administrators, corporate interests, scientists) to create a comprehensive framework of current services and hazards with flexibility for ongoing changes. We build on the development of the IPBES framework initiative (Diaz et al., 2015), its recent future-oriented adaptation (Pereira et al., 2020), and contributions by diverse scholars focused on cryosphere functions and services (Wang et al., 2019). Our effort is conducted to produce a formal space for discussion of the political ecology of coldness and “storying multipolar climes” (Yü and Wouters 2023) with the objective of matching the pace of social environmental change through the development of a multi-epistemic dialectical method of cryosphere inquiry that can inform multiple stakeholders.