



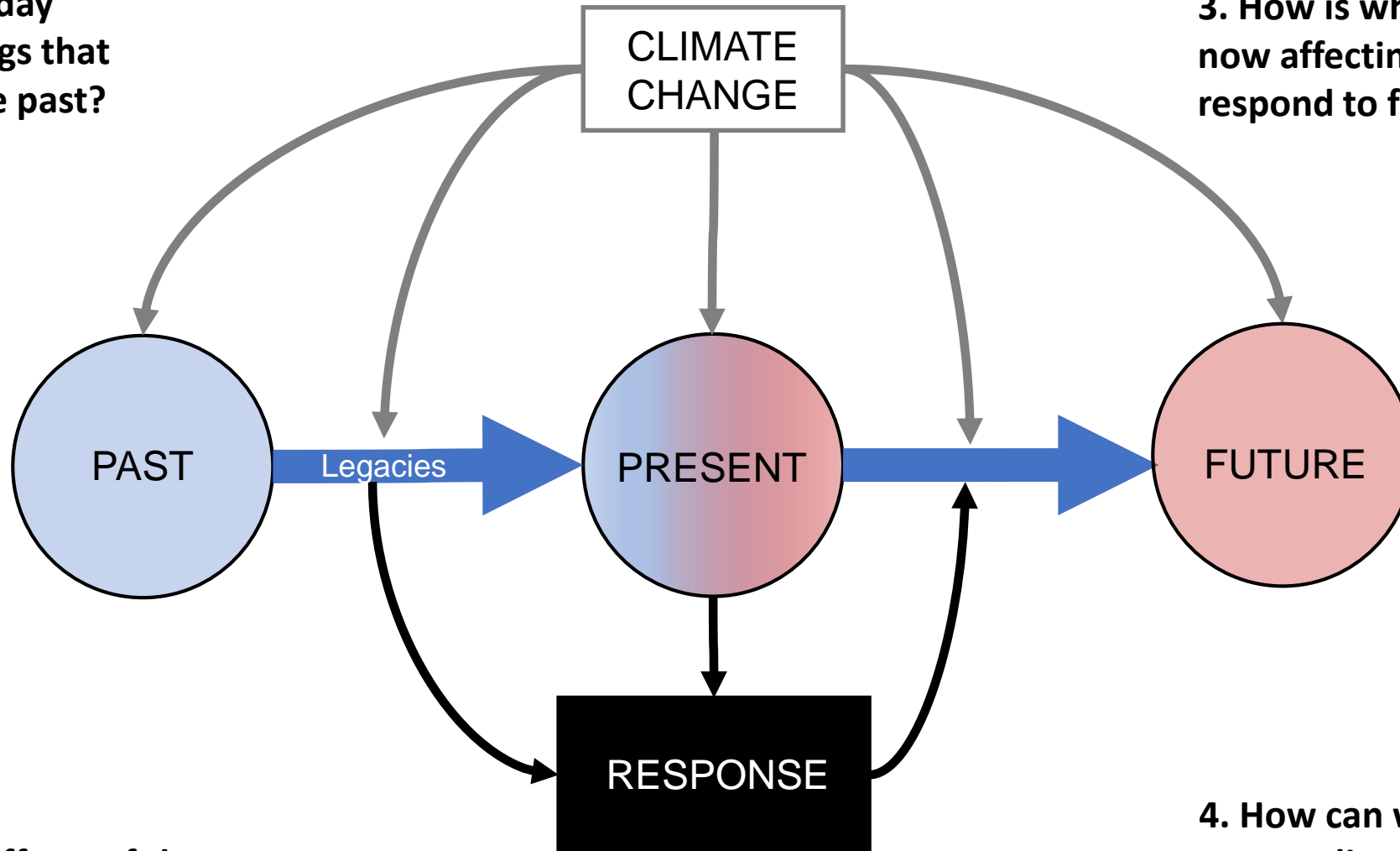




Overarching Questions

- How do the thermal, material, and information legacies of our past control the response of contemporary boreal systems to climate change?
- What new legacies are emerging now and how will they affect the state, climate response, and disturbance response of future ecosystems and landscapes?
- What are the local, regional, and global impacts of these responses now and in the future?
- How can knowledge co-production draw on legacies to create new pathways for adaptation to an increasingly uncertain future?

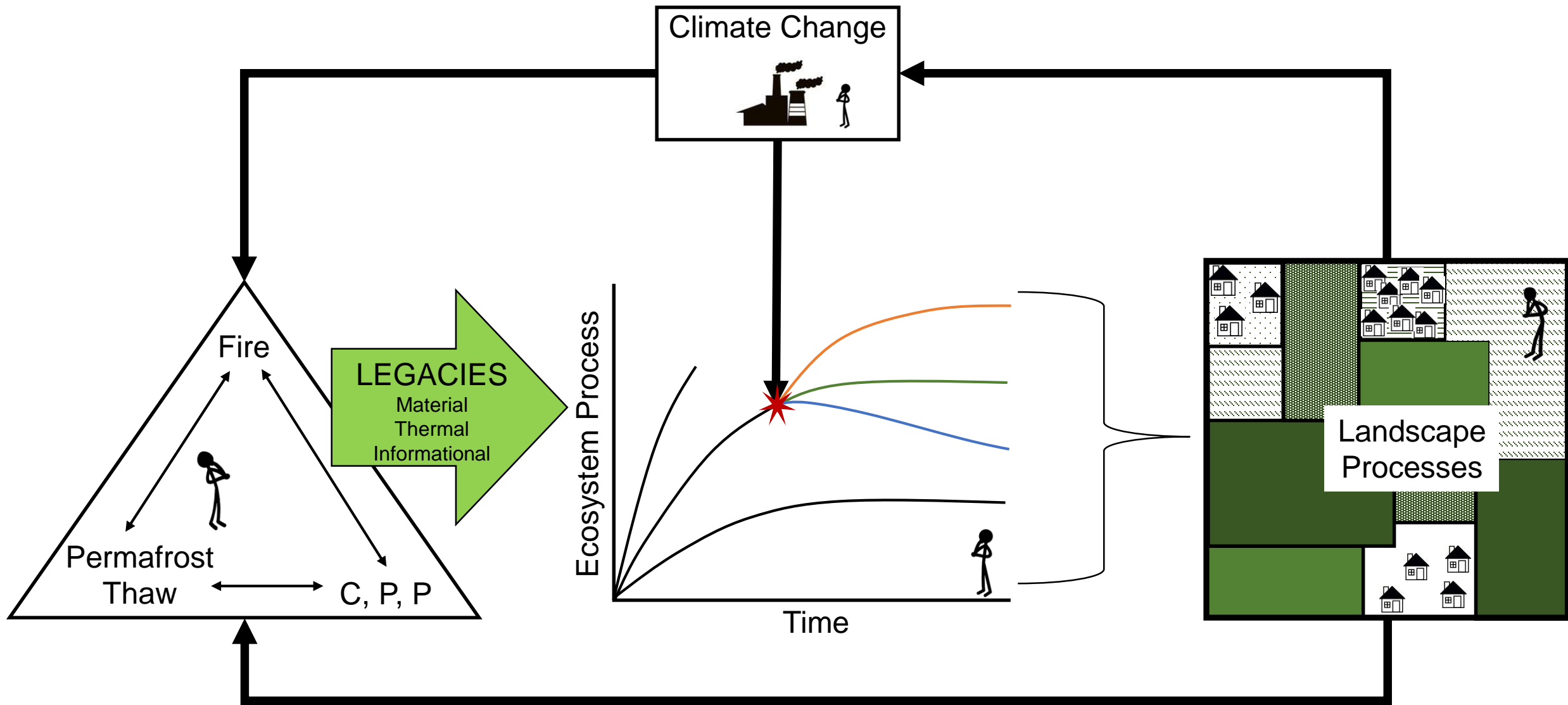
1. How is our environment today affected by things that happened in the past?



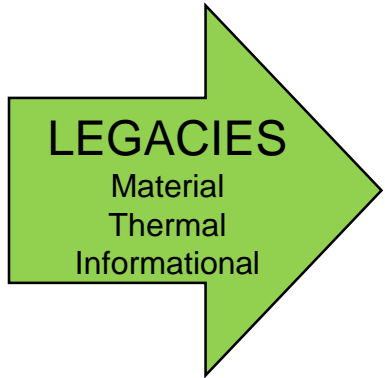
3. How is what we are doing now affecting our ability to respond to future changes?

2. Do lingering effects of the past make it easier or harder to deal with change?

4. How can we learn from the past to direct our future based on the values of our partners in the boreal forest?



1. How do the thermal, material, and information legacies of our past control the response of contemporary boreal systems to climate change?



- Key legacies maintain ecosystem state and promote resilience to historic disturbance regimes:

Permafrost

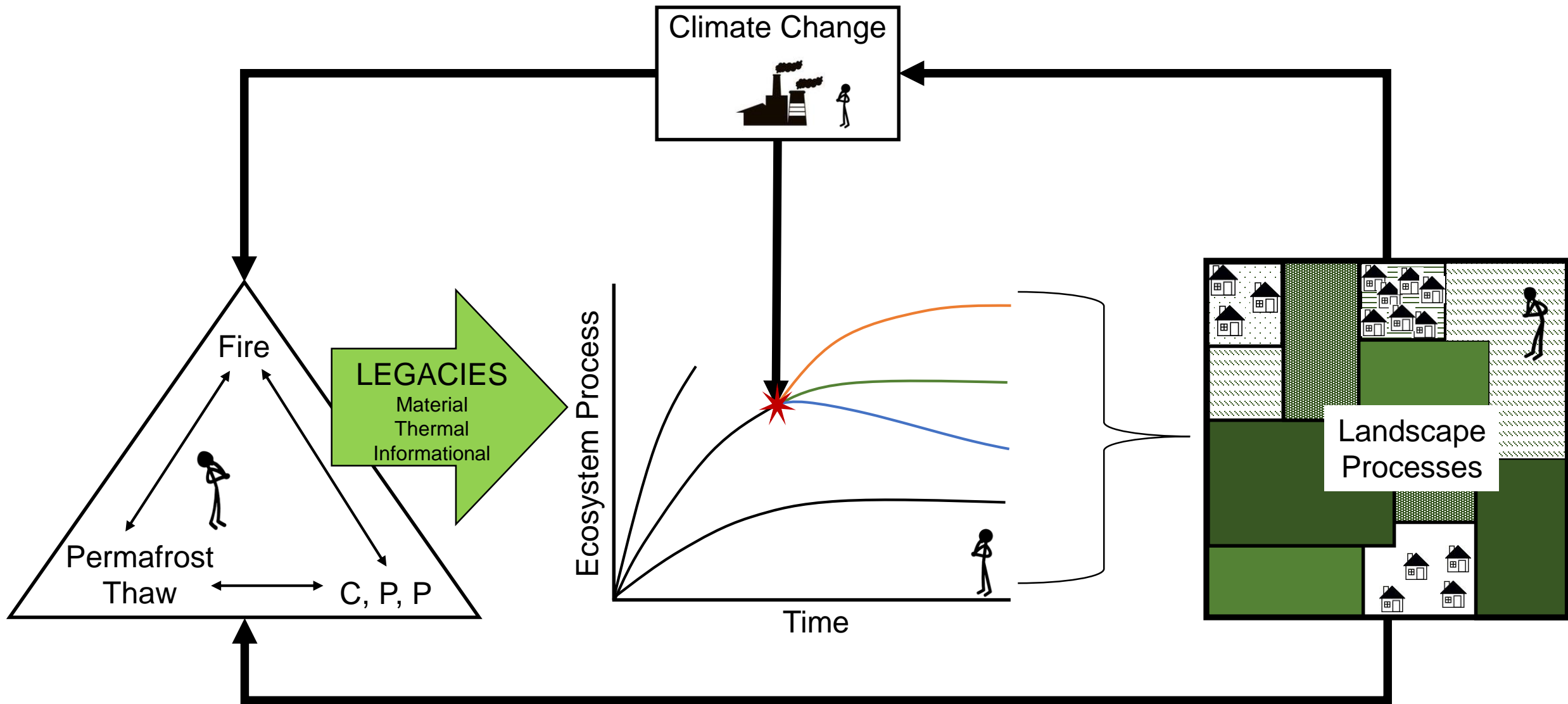
Soil organic layer

Life history traits

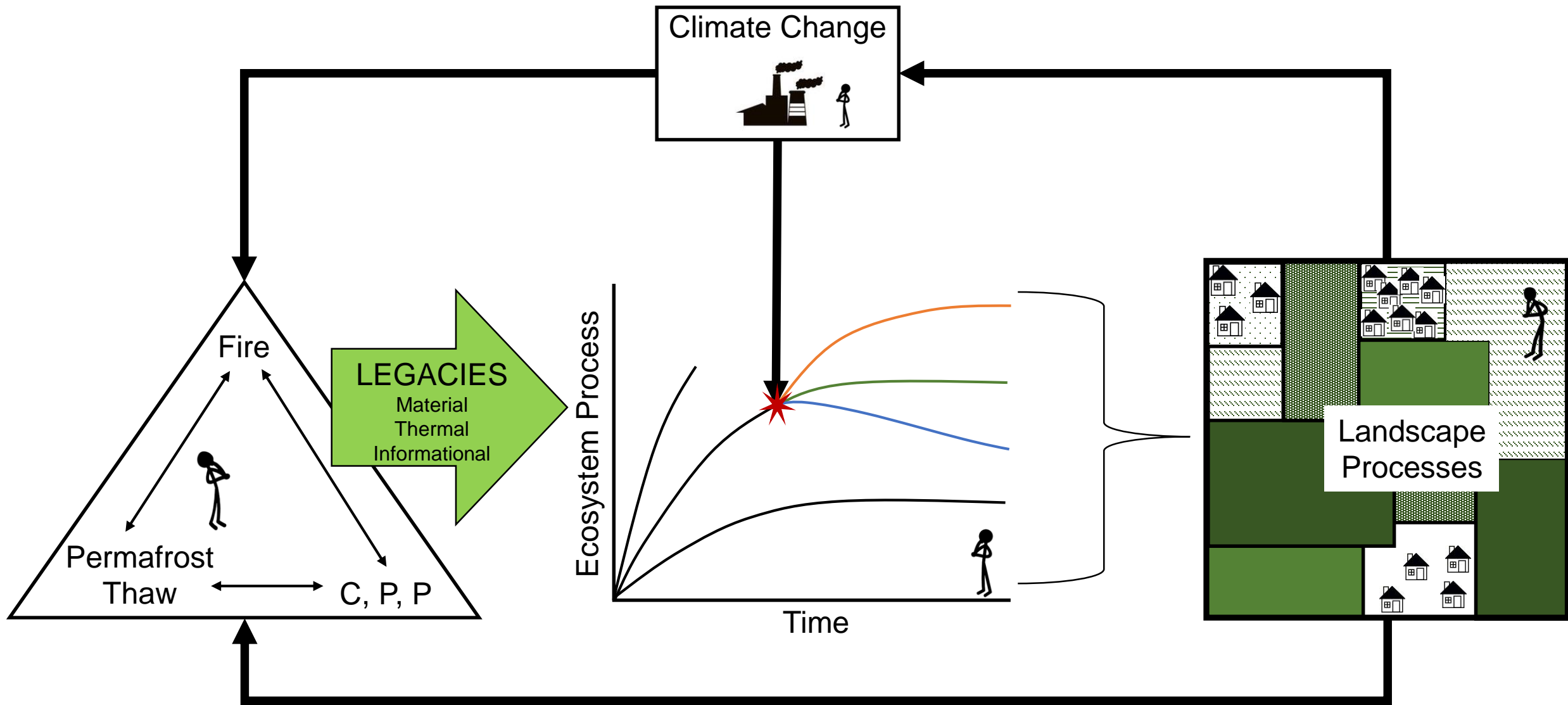
Trophic coupling

Social-ecological systems (SES)

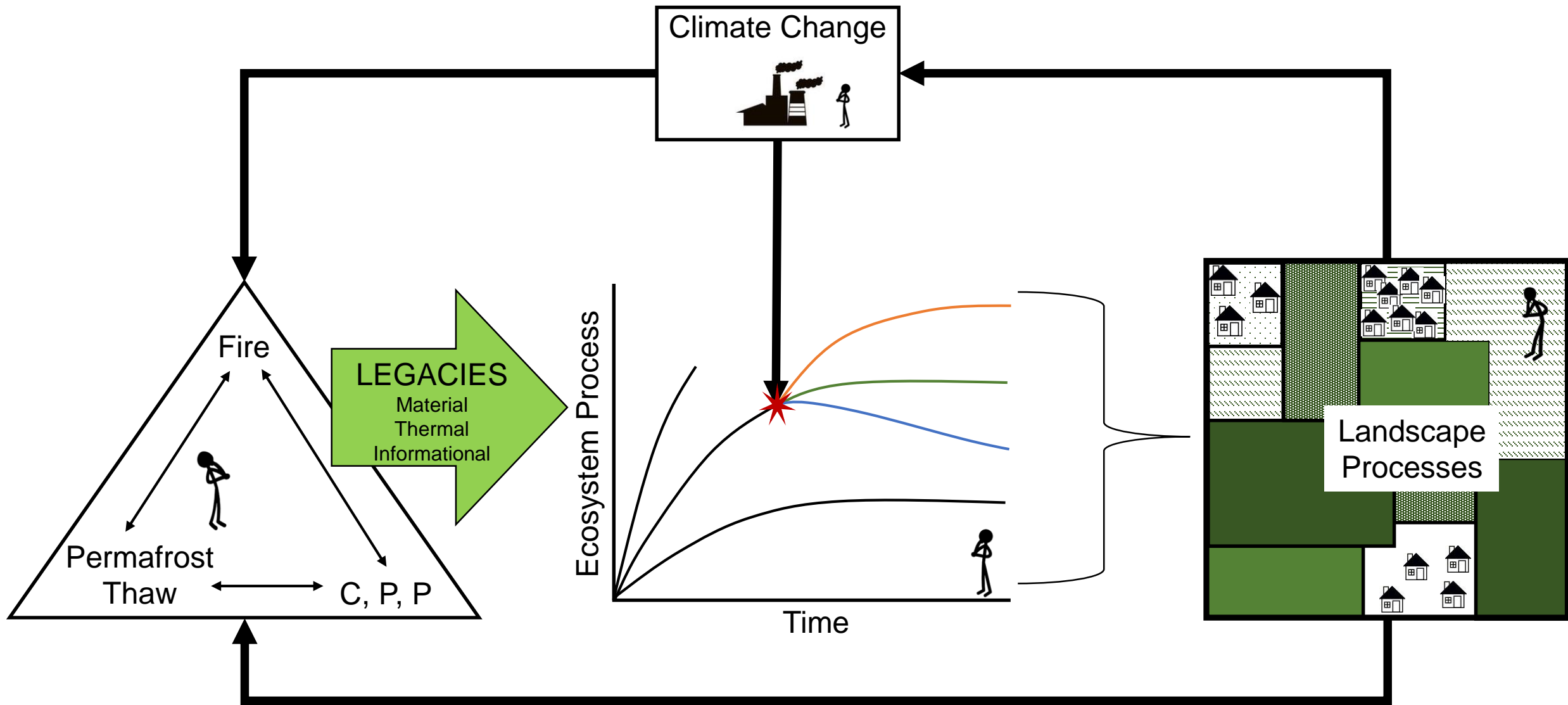
- Climate and disturbance outside of the historic range of variability removes legacies or causes thermal, phenological, trophic and SES mis-matches.
- In many cases, this drives change at multiple ecological scales.
- But legacies could also drive “adaptive” responses, especially in SES.
- We are interested in both.



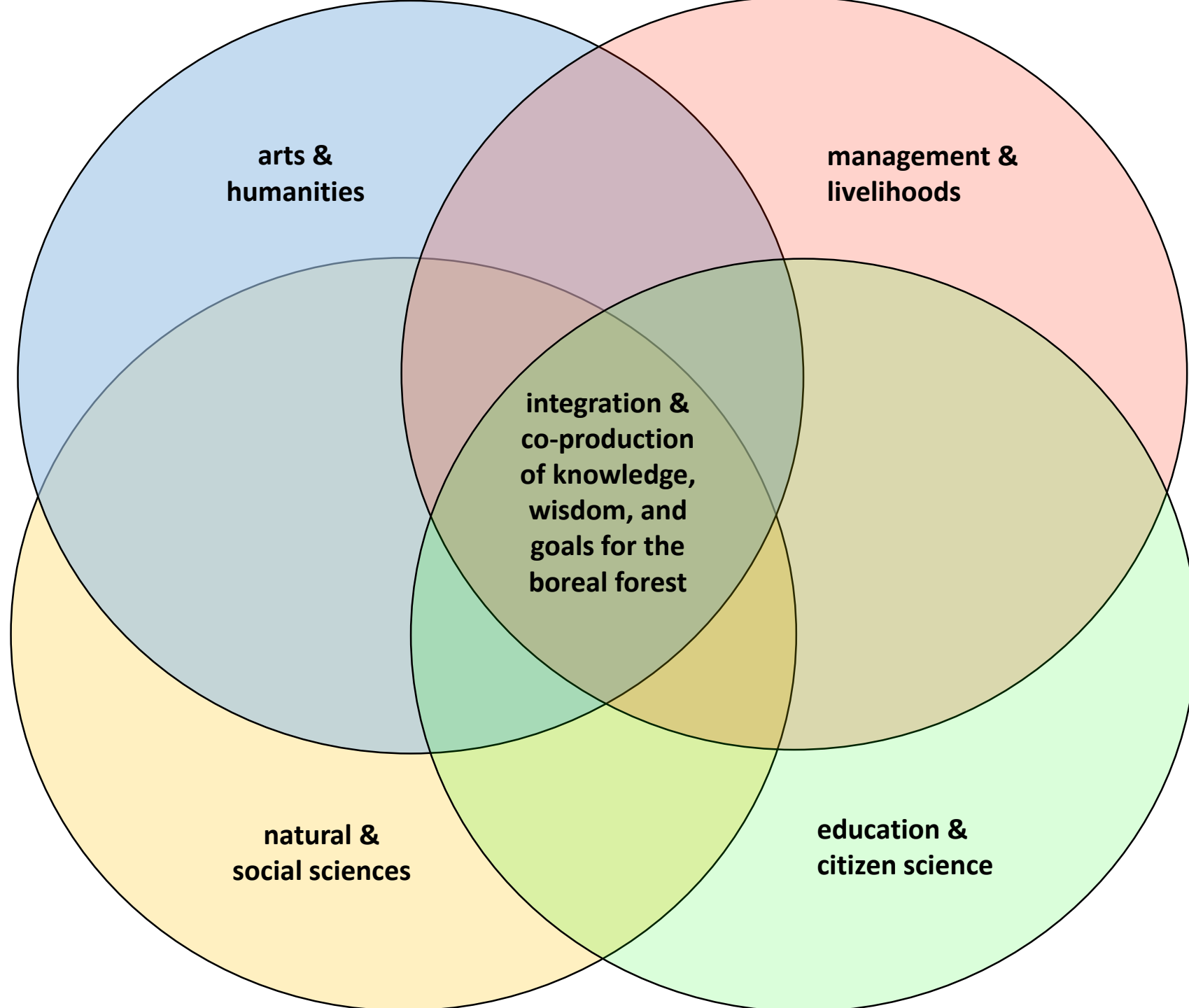
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3. What are the local, regional, and global impacts of these responses now and in the future?



4. How can knowledge co-production draw on legacies to create new pathways for adaptation to an increasingly uncertain future?



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Arts and Humanities: Explore ideas of legacies, interrogate human experience of changing landscapes, reflect on values, and communicate change to a broader audience.

Education: Explore the impact of cultural legacies on learning—Winterberry!

Management and livelihoods:

- Alaska Native Advisory Council to guide research toward local priorities; learn what is important to peoples' livelihoods, health and well being.
- Learn from Indigenous fire management and knowledge about patterns of change
- Work with Alaska Native communities, TCC, GYT, fire managers, ecologists, economist and social scientists to design sustainable fuel breaks for rural and urban areas.

