

# Social-Ecological Resilience in Changing Landscapes

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## THE FOCUS

### Project Objectives and Elements:

- Build skills in team-based, interdisciplinary research
- Explore questions of Social-Ecological Systems (SES) resilience in changing landscapes
- Help educate a new generation of integrative researchers
- Participants - 24 students and 30 faculty, UI and CATIE
- Student research leads to joint dissertation chapters and co-authored publications

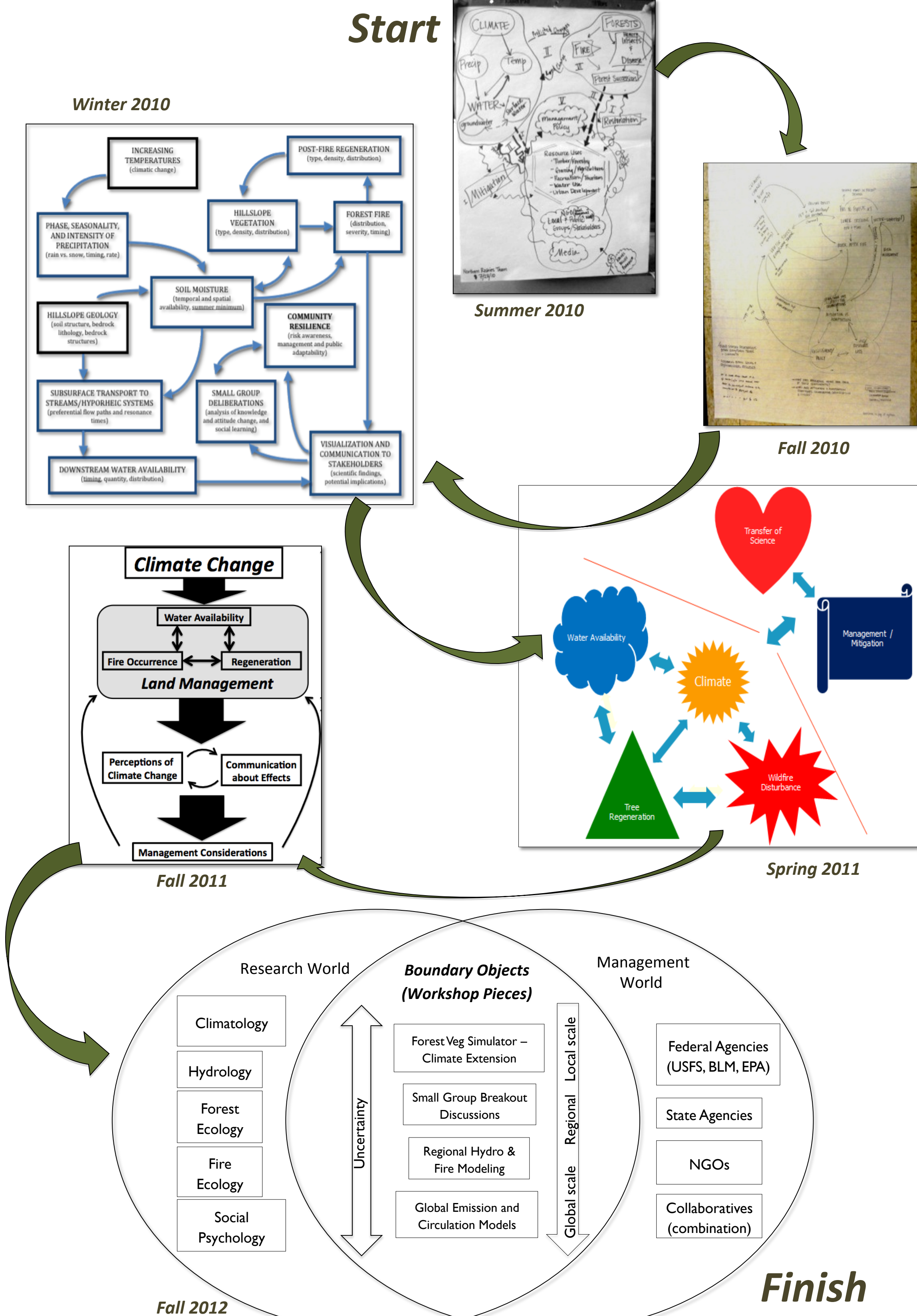


## EVOLUTION IN SES THINKING

### An example of problem definition:

Refinement of the Northern Rockies Team's conceptual model through time...

Start



## THE TEAMS

### Turrialba Team

**Disciplines:** Hydrology, Geomorphology, Ecology, Policy Sciences

**Research Topic:** Matching scales of drinking water provision & management

**Tools for Integration:** Community workshop, field survey, conceptual paper



### San Juan – La Selva Team

**Disciplines:** Sociology, Forest Ecology, Conservation Genetics

**Research Topic:** Evaluating effects of agricultural intensification on SES

**Tools for Integration:** Workshops, fieldwork, grant writing, SES model



### Hojancha Team

**Disciplines:** Economics, Entomology, Ecohydrology, Remote Sensing

**Research Topic:** Economic/ecological assessment of ecosystem services (ES)

**Tools for Integration:** GIS, ES modeling, fieldwork, conceptual paper



### Northern Rockies Team

**Disciplines:** Social Psychology, Forest Ecology, Hydrology

**Research Topic:** Evaluating and advancing climate change communication

**Tools for Integration:** Workshops, social data collection/analysis, outreach



### Sagebrush Team

**Disciplines:** Sociology, Ecohydrology, Wildlife Ecology, Plant Ecology

**Research Topic:** Participatory SES assessment of juniper management

**Tools for Integration:** Applied SES model, workshops, grant writing

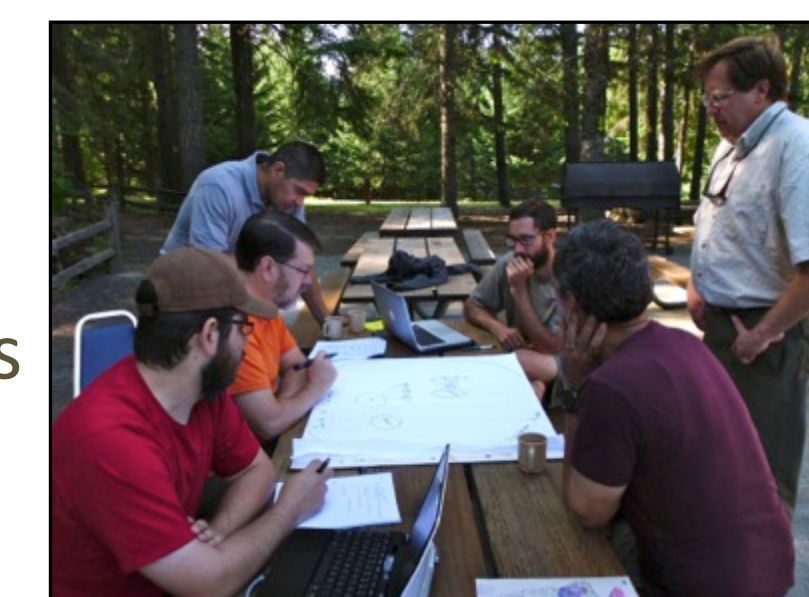


### Palouse Prairie Team

**Disciplines:** Economics, Soil Ecology, Entomology, Plant Ecology

**Research Topic:** Evaluation of ecosystem services from prairie remnants

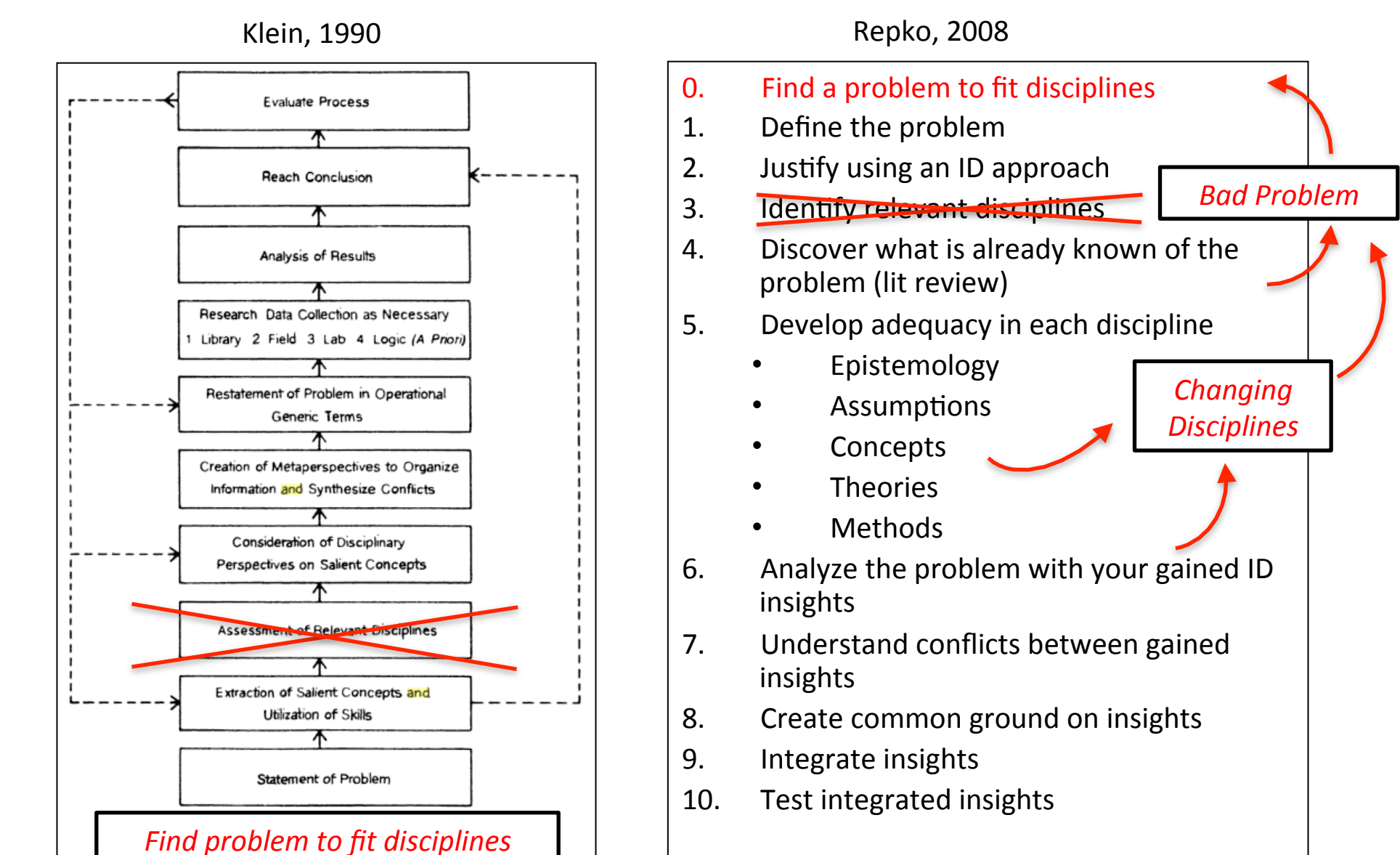
**Tools for Integration:** Economic survey, fieldwork, ecological analysis



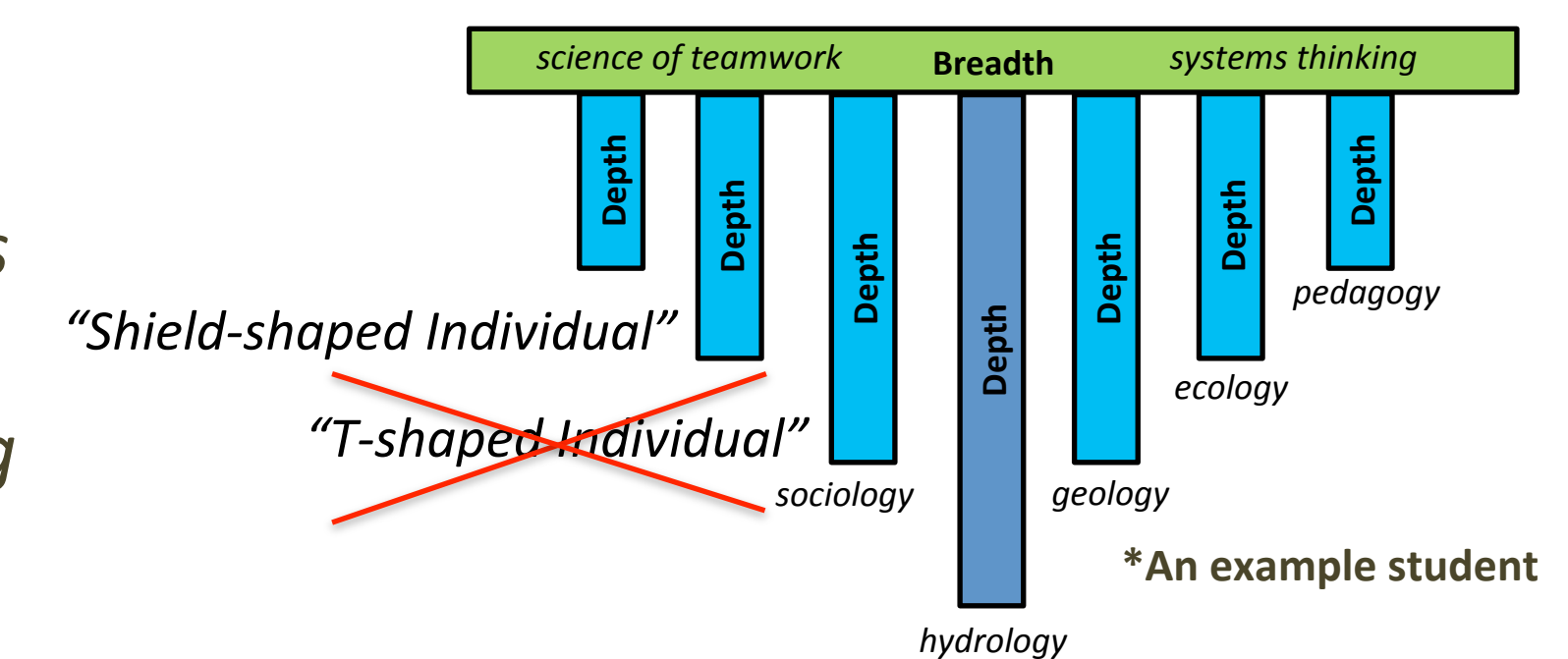
## THE EDUCATION

### Idaho Model for Interdisciplinary Research

...built upon previous frameworks



Our educational model develops interdisciplinary team members that can work with other disciplines rather than a single individual capable of doing research in multiple disciplines.



## Pedagogical Framework

Learning Objective	Learning Experience	Learning Assessment
<b>Well-grounded knowledge</b> (breadth and depth)	Courses, seminars, literature review, <i>individual proposals followed by team proposals</i>	Disciplinary and interdisciplinary (IGERT) graduation requirements
<b>Skills in interdisciplinary teamwork</b>	Team research projects, toolbox exercise, summer immersion, fieldwork	Team-based dissertation chapter required
<b>Skills in interdisciplinary communication</b>	Team meetings, proposals, presentations, elevator-speeches, and manuscripts	Team-based dissertation chapter required, professional and academic presentations
<b>Ability to solve problem-based questions</b>	Research design, team publications, <i>problem-finding workshops/coursework</i>	Public feedback, team-based dissertation chapter
<b>Effectiveness in community outreach</b>	Outreach workshops, public presentations, non-journal publications (grey lit.)	Public feedback, presentation feedback (academic)
<b>Strong philosophical understanding</b> (epistemic and <i>ontologic</i> )	Toolbox exercise, <i>introductory philosophical coursework</i>	Preliminary exam (interdisciplinary component)

### Core Courses

- Summer Immersion
- Interdisciplinary Research Methods
- Resilience in Changing Landscapes
- Statistical Approaches to Interdisciplinary Data Analysis
- Professional Development and Ethics

## Challenges and Successes

- Difficulty locating the “best” team problem
- Lack of accompanying institutional degree
- Initial team misalignment at a fundamental level, due to mixed philosophical background
- And the SUCCESSES:** With time all these hurdles, and many more, can be overcome!



## ACKNOWLEDGEMENTS

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