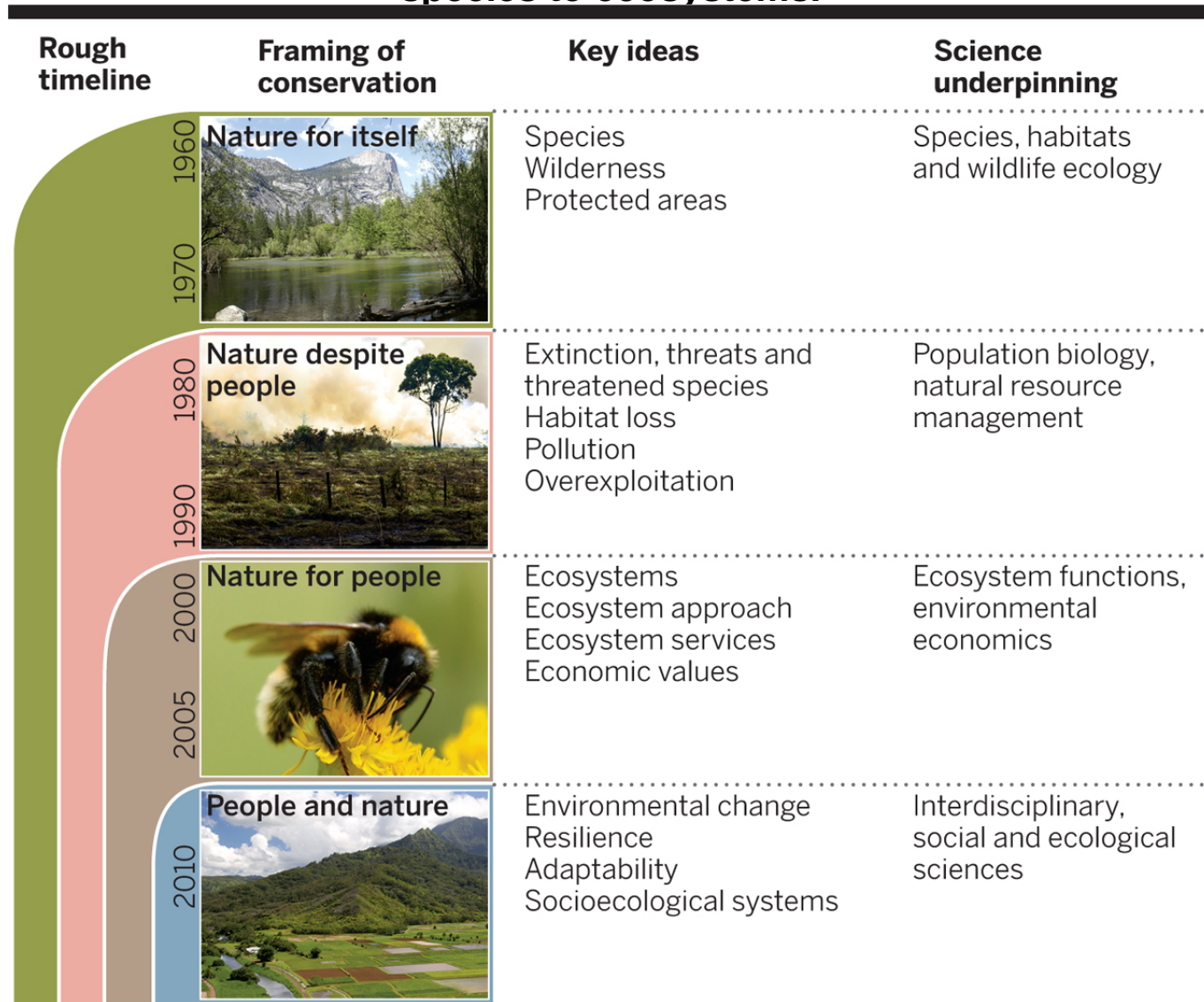


Changing views of nature and conservation. Over the past 50 years, the prevailing view of conservation has changed several times, resulting, for example, in a shift in emphasis from species to ecosystems.



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Whose conservation?

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By the late 1990s...[a] realization developed that nature provides crucial goods and services that are irreplaceable yet had been consistently ignored. As the costs of environmental mismanagement started to accumulate, the potential benefits to be gained from taking more seriously these services from nature became clearer. **Conservation thinking moved away from species and toward ecosystems as a focus for integrated management, with the goal of providing sustainable benefits for people in the form of ecosystem goods and services—“nature for people.”**

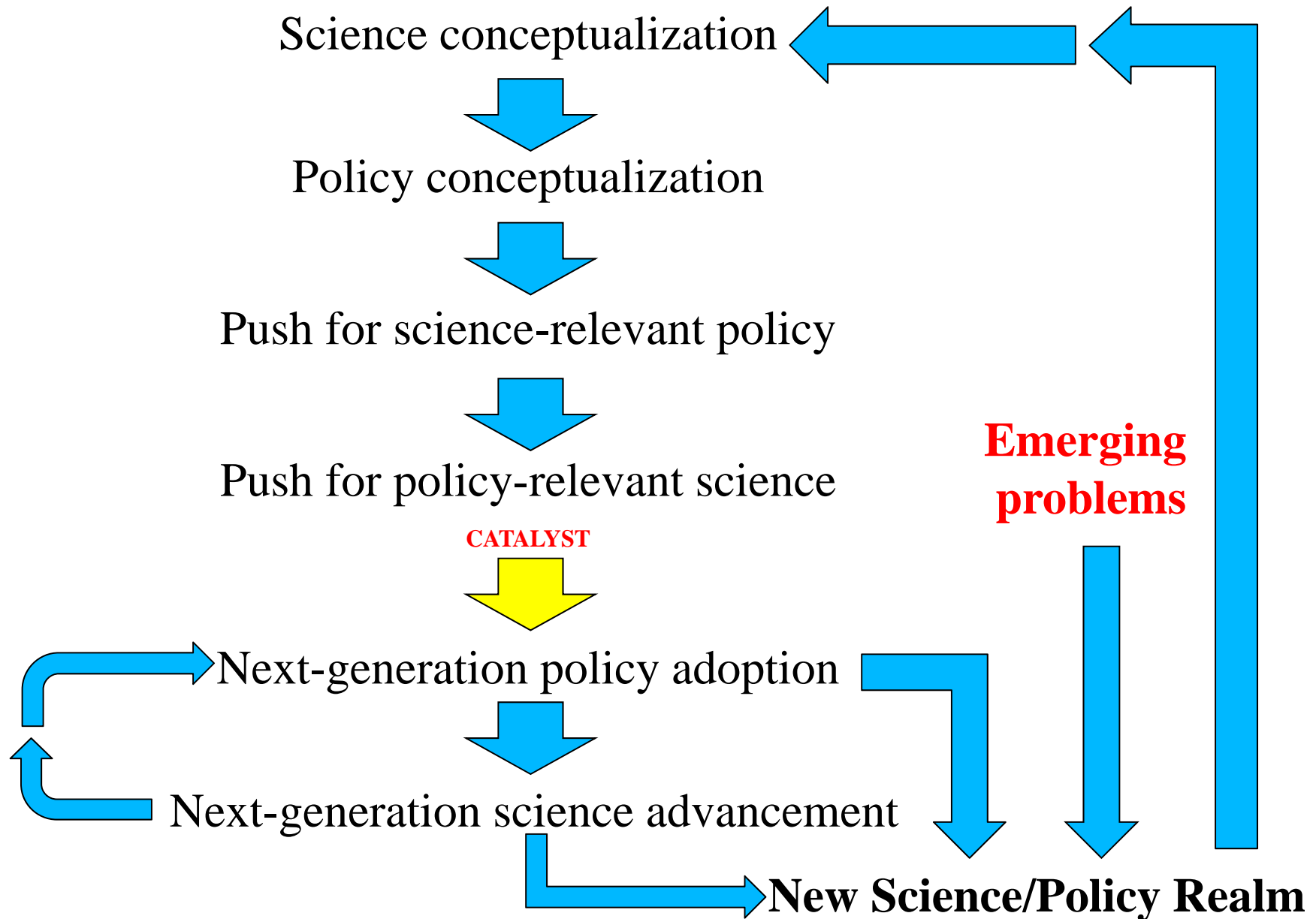
The focus on nature's benefits and ecosystem services has been very influential. However, in recent years the emphasis has moved from a potentially overly utilitarian perspective—managing nature to maximize the overall value of the human condition—to a more nuanced one that recognizes the two-way, dynamic relationships between people and nature. This “people and nature” thinking emphasizes the importance of cultural structures and institutions for developing sustainable and resilient interactions between human societies and the natural environment. It operates at a range of scales from global to local and has intellectual origins in resource economics, social science, and theoretical ecology.

The Law Timeline

Rough timeline	Framing of conservation	Key ideas	Science underpinning
1960 1970	Nature for itself 	Species Wilderness Protected areas	Species, habitats and wildlife ecology
1980 1990	Nature despite people 	Extinction, threats and threatened species Habitat loss Pollution Overexploitation	Population biology, natural resource management
2000 2005	Nature for people 	Ecosystems Ecosystem approach Ecosystem services Economic values	Ecosystem functions, environmental economics
2010	People and nature 	Environmental change Resilience Adaptability Socioecological systems	Interdisciplinary, social and ecological sciences

- Federal Land Management Statutes
- Wilderness Act
- Clean Air Act/Clean Water Act/RCRA
- Endangered Species Act
- National Forest Management Act
- CERCLA/Superfund
- CERCLA Amendments
- Clean Air Act Amendments
- 2008 Farm Bill
- 2008 EPA/Corps Mitigation Rule
- 2012 Forest Service Planning Rule
- CEQ Principles & Requirements

The Push and Pull Between Science and Law



Searching for Authority in Old Laws

- No substantive Congressional action on the environment since 1990
 - 2008 Farm Bill is rare exception for ecosystem services
 - Minor amendments for Wildlife Refuge Act, Fisheries Act, Endangered Species Act
- We have been relying on agencies to make policy advances using creative interpretations of old laws
- Courts afford agencies tremendous deference in interpreting open-ended statutory provisions
- Several ways agencies can use that discretion to integrate the ecosystem services framework into existing authorities through creative interpretations:
 - **Direct protection authority** (e.g., EPA/Corps 2008 rule)
 - **Performance metric authority** (e.g. TMDLs)
 - **Planned benefits** (e.g., Forest Service Planning Rule)
 - **Incidental benefits** (e.g., ESA Conservation)

ESS in Application

- **Government Financed Payments for Ecosystem Services (PES)**
 - Farm Bill (2008)
 - Northern Everglades (2008 – ongoing)
- **Regulatory Programs**
 - Corps Wetland Mitigation Rule (2008)
- **Public Lands Programs**
 - Forest Service Planning Rule (2012)
- **Impact Assessment**
 - CEQ Water Resources Principles and Requirements (2013)
- **Judicial Common Law**
 - Public Nuisance (Palazzolo) (2001)
 - Public Trust (Avenal) (2004)
- **Other Judicial Doctrines**
 - Takings (Harvey Cedars) (2013)
 - Exactions (Koontz) (2012)
 - Interstate water allocation (Florida v Georgia petition, granted 2014)
- **Private Law**
 - Enforceable contracts
 - Private nuisance