Managing for RADical Ecosystem Change

Applying the Resist-Accept-Direct (RAD) Framework

What happens when the future does not reflect the past?

Intensifying global change is propelling ecosystems towards irreversible transformations.

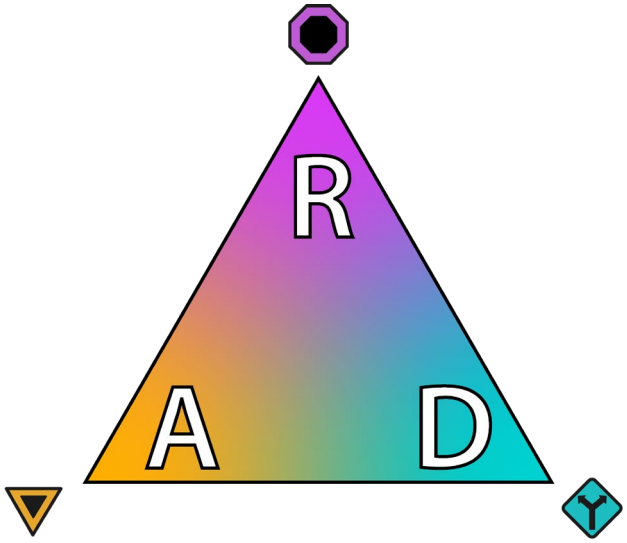
When ecosystem restoration, rehabilitation, or other ongoing practices are increasingly untenable, the **Resist-Accept-Direct (RAD)** framework can help start constructive conversations about what comes next.

The Framework

Focus on maintaining current or historical ecosystem structure and function — **Resist**

Allow the ecosystem structure and function to emerge from ongoing transformations — **Accept**

Intentionally steer the transformation towards a particular ecosystem structure and function — **Direct**



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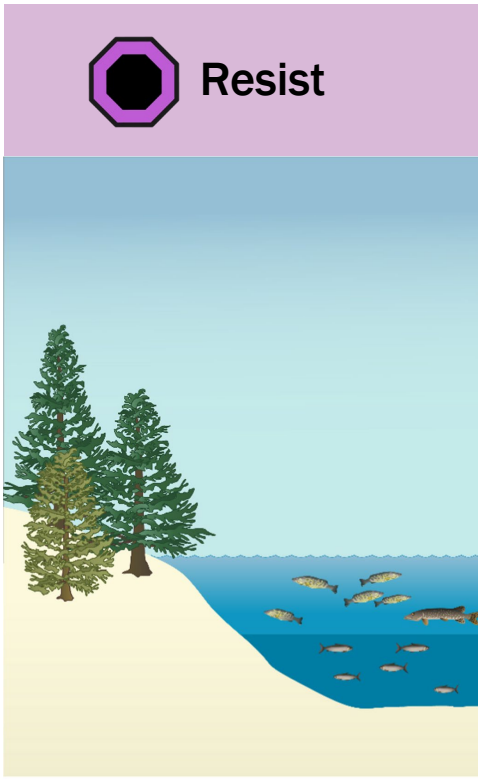
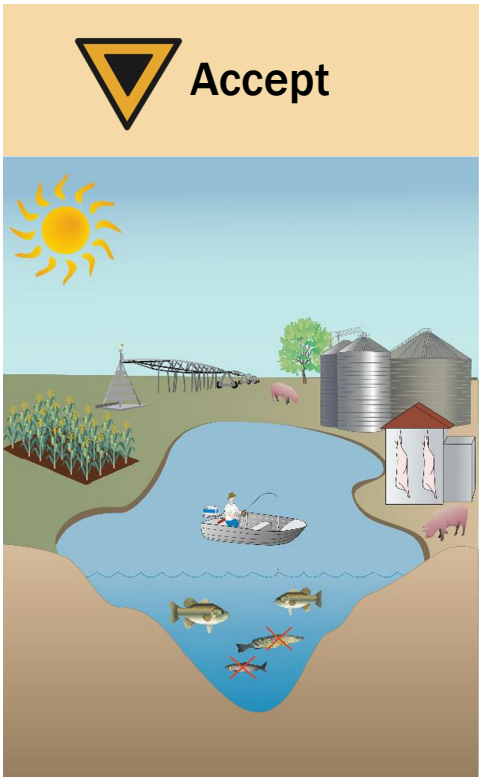
RAD Case Study

Midwest Glacial Lakes

Environmental conditions in the Midwest Glacial Lakes and associated Great Lakes basin are likely to shift considerably because of warming temperatures, introduced species, and changes in nutrient runoff. These changes can negatively affect forage fish communities that support top lake predators. Managers can ***resist*** climate-induced loss of cisco in these deep, clear lakes as long as their water quality remains high. To this end, managers are pursuing conservation easements and other land protection mechanisms to protect the watersheds of these lakes from development. Managers may also choose to ***accept*** the decline of cisco, given the higher cost of conservation efforts. In turn, this acceptance acknowledges that warmwater species, such as largemouth bass and smallmouth bass, are increasing, two species that have the potential to support a popular sportfishing industry that has historically been focused on other species.





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