

Block 1

What is the most common term you use to define your work in rivers?

- ☐ Restoration
- ☐ Rehabilitation
- ☐ Enhancement
- ☐ Mitigation
- ☐ Engineering
- ☐ other

Which of the following concepts do you regularly apply in river restoration funding, design, and/or permitting?

- ☐ Resiliency
- ☐ Robustness
- ☐ Uncertainty
- ☐ others

In the planning stages, to what extent is the projected impact of climate change considered in river restoration projects?

- ☐ primary driver in planning
- ☐ moderate factor in planning
- ☐ not a factor in planning

In the final design, to what extent is the projected impact of climate change considered in river restoration projects?

- ☐ primary driver in design
- ☐ moderate factor in design
- ☐ not at all a factor in design

Which of the following best describes your consideration of climate change in most of the projects you manage? (select one)

- ☐ I directly consider climate change in design
- ☐ I would like to consider climate change but do not have the appropriate tools to do this well
- ☐ I would like to consider climate change but my projects rarely have adequate budget to consider climate change
- ☐ I am forbidden from considering climate change in my designs
- ☐ Someone else at my institution considers climate change

What is the single most important challenge to your ability to design river projects that are resilient to climate change?

- ☐ Lack of tools for designing to uncertain hydrology
- ☐ Regulatory/permitting/easement constraints
- ☐ Lack of adequate broader planning and prioritization for climate change
- ☐ Other

How do you think climate change will most significantly affect your river restoration projects and practice? (check all that apply)

- ☐ Changing magnitude/frequency of flood events and droughts

- ☐ Sea level rise and storm surges
- ☐ Accelerated erosion and/or deposition
- ☐ Redistribution of target species
- ☐ Others
-

What is the frequency in which the following activities are included in your river restoration designs?

	Very common (>75%)	Common (50-75%)	Uncommon (25-50%)	Rare (<25%)	Not included
Restored longitudinal connectivity (e.g. dam removal, culvert removal/replacement)	☐	☐	☐	☐	☐
Reconnected floodplain (e.g. levee setback)	☐	☐	☐	☐	☐
Re-introduction of large wood	☐	☐	☐	☐	☐
Streambank stabilization	☐	☐	☐	☐	☐
Natural channel design	☐	☐	☐	☐	☐
Rebalancing of sediment transport and supply (e.g. gravel augmentation)	☐	☐	☐	☐	☐
Other activities emphasizing habitat quality	☐	☐	☐	☐	☐
Beaver habitat/colonization	☐	☐	☐	☐	☐
Control of invasive species (plants and aquatic)	☐	☐	☐	☐	☐
Other	☐	☐	☐	☐	☐

Please indicate the likeliness of restoration practices to fail under hydrologic and/or ecologic changes from climate change. For the purpose of this survey, please indicate the likeliness of failure (e.g. patterns) for a given area

	Very likely to fail	Somewhat likely to fail	Not likely to fail
Restored longitudinal connectivity (e.g. dam removal, culvert removal/replacement)	☐	☐	☐
Reconnected floodplain (e.g. levee setback)	☐	☐	☐
Re-introduction of large wood	☐	☐	☐
Streambank stabilization	☐	☐	☐
Natural channel design (aka Rosgen design templates)	☐	☐	☐
Rebalancing of sediment transport and supply (e.g. gravel augmentation)	☐	☐	☐
Other activities emphasizing habitat quality	☐	☐	☐
Beaver habitat/colonization	☐	☐	☐
Control of invasive species (plants and aquatic)	☐	☐	☐

Please rate the following river restoration practices in terms of their ability to increase the resiliency of river systems to climate change. In answering, please consider both natural (e.g. flood, droughts) or anthropogenic (e.g. dams, earth moving) disturbances.

Restored longitudinal connectivity (e.g. dam removal, culvert removal/replacement)	Reconnected floodplain (e.g. levee setback)	Re-introduction of large wood	Streambank stabilization	Natural channel design (aka Rosgen design templates)	Re-introduction of native species

Please rate your agreement with the following statement: Design standards based on percent exceedences (e.g. 100-year design flood) are still valid in the face of climate change.

- ☐ Agree
- ☐ Disagree, but I continue to use them because they are required by regulatory agencies
- ☐ Disagree, but I continue to use them because I have no better alternative

How much do each of the following concepts typically drive the vision of your restoration design? Please drag the number and/or text for each

- Reference/historical condition
- Suitability (e.g. depth, velocity, grain size, etc.) for fish or other biota
- Permitting/Regulations (e.g. programmatic requirements)
- Other

What references have been most influential in your thinking and/or application designing river restoration projects to be resilient to climate change?

What do you see as the greatest challenge in the successful implementation of river and or ecological enhancement projects?

Are you optimistic about the future of rivers?

- ☐ Yes
- ☐ No
- ☐ It depends on...

What comments or concerns do you believe are missing from the discussion on river restoration under climate change?

Do you have any comments or concerns about this survey?

Demographics

What is your current age range?

- ☐ Under 18
- ☐ 18 - 24
- ☐ 25 - 34
- ☐ 35 - 44
- ☐ 45 - 54
- ☐ 55 - 64
- ☐ 65 - 74
- ☐ 75 - 84
- ☐ 85 or older

How do you identify your gender?

- ☐ Male
- ☐ Female
- ☐ Other
- ☐ Prefer not to say

Current education level?

- ☐ Less than high school
- ☐ High school graduate
- ☐ Some college
- ☐ 2 year degree
- ☐ 4 year degree
- ☐ Professional degree
- ☐ Doctorate

Which label below best describes your duties your current position?

- ☐ planner
- ☐ regulator
- ☐ practitioner
- ☐ educator
- ☐ student
- ☐ other

Which label below best describes your employer?

- ☐ Federal water management and/or regulator (e.g. USACE, USBR)
- ☐ Federal environmental resource management (e.g. NOAA, USFW, USFS, USGS, USEPA, BLM)
- ☐ State water and/or land management
- ☐ State environmental resource management
- ☐ NGO
- ☐ consulting firm
- ☐ watershed council or other community-based group
- ☐ restoration funding agency
- ☐ university
- ☐ other

Which disciplines best describes your work?

- ☐ engineering
- ☐ geology geomorphology
- ☐ engineering geomorphology
- ☐ ecology
- ☐ water quality
- ☐ other

How many years have you been working in the practice of river engineering/restoration?

- ☐ < 1 year
- ☐ 1-2 years
- ☐ 2-10 years

☐ 10+ years

What nation are you from?

☐ USA

☐ Other

If located in the USA, what region are you located in?

☐ Northeast

☐ Mid-atlantic

☐ Southeast

☐ Midwest

☐ Southwest

☐ Intermountain West

☐ Pacific Northwest

☐ Mediterranean West