Addressing Gaps in Workforce Climate Literacy

Climate Adaptation Baseline Forest Service Self-Assessment

The following assessment questions are largely based on the American Society of Adaptation Professionals Knowledge and Competencies framework and the USDA Forest Service Gaps Analysis in Educational Resources.

This assessment focuses on testing for an understanding of climate adaptation knowledge and competencies, integrating justice, equity, diversity, and inclusion, transformative change, systems thinking, building psychological strength, and change management.

It is a self-assessment, used by Forest Service staff to gauge participants' understanding of knowledge and competencies related to climate literacy. Users will answer the following questions, reflect on their knowledge and competencies in each section, and provide a self-evaluation based on the criteria provided.

Climate Adaptation Baseline Knowledge Assessment for Forest Service Staff

Instructions: Please answer the following questions to the best of your ability. This knowledge assessment is designed to gauge your understanding of climate change adaptation in the context of Forest Service work. That said, please refrain from using outside glossaries, websites, or information. It is okay if you do not know the answer– if you do not, please use that information to help inform your proficiency level.

Section 1: Introduction to Climate Adaptation Knowledge

1. Climate Variability and Change

Please indicate which items below are examples of "climate change" and which are examples of "climate variability."

- Changes in rainfall between seasons _____
- Cyclical El Nino and La Nina events _____
- Long-term (over decades) change in average weather conditions, for example, a change in the frequency of severe storms _____

2. Adaptation vs Mitigation

Please label the following as examples of "climate change adaptation" or "greenhouse gas mitigation"

- Infrastructure changes such as storm walls or rain gardens _____
- Migration of climate refugees _____
- Renewable energy resources such as solar or wind power _____
- Carbon storage in forests _____

Please look at the related knowledge (Climate Variability and Change; Climate Change Adaptation and Climate Resilience; Climate Change Mitigation) in the document linked here and rank your proficiency level based on how you answered the questions above and your genuine relationship with the topic.

- ☐ **Level 1: Emerging:** I know the concepts, principles, and terminology. However, I require structured support and guidance to apply these to my work. I seek support in building proficiency.
- ☐ **Level 2: Proficient:** I understand the core concepts and how to apply them to my work. However, I rely on an advisor or supervisor for sensitive or challenging work. I strive to develop and cultivate my abilities related to this topic.
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- ☐ **Level 4: Advanced:** I possess extensive knowledge and experience, both broad and deep, related to this topic. I often interpret, communicate, and renew strategies related to the core concepts. My work has a broad impact both in my career and on the field as a whole. I am an authoritative source and mentor.

Section 2: Climate-Related Hazards and Impacts, Vulnerability, and Risk

3. Climate Impacts and Risk

In 2-3 sentences, briefly explain how human and natural ecosystems are subject to climate impacts in a place relevant to your work and geography.

4. Components of Vulnerability

Please label each component of vulnerability with the proper name (Sensitivity, Exposure, or Adaptive Capacity):

- The sum of the climate and climate-related changes that may affect a resource or place

  _____
- The ability of systems, institutions, humans, and other organisms to adjust to potential impacts, to take advantage of opportunities, or to respond to consequences

  _____
- A measure of how responsive a system or species is likely to be to climate change exposure

  _____

Please look at the related knowledge (Climate-Related Hazards and Impacts; Vulnerability; Risk) in the document linked here and rank your proficiency level based on how you answered the questions above and your genuine relationship with the topic.

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Section 3: Climate Adaptation Competencies

5. Using Best Available Information

Which of the following options best describes how you could access or apply climate data and information to pursue climate adaptation for your geography or community, considering both Western science and Indigenous best available information? (More than one question can be correct)

☐ Utilize Indigenous Knowledge alongside scientific data to understand local climate patterns and vulnerabilities.

☐ Rely primarily on data from Western scientific sources, as they have undergone rigorous testing and validation, providing the most accurate information for climate adaptation planning.

☐ Engage with international organizations and research institutions to access cutting-edge climate models and analysis techniques.

☐ Prioritize quantitative data from meteorological agencies over community perspectives, as it offers objective and standardized information crucial for effective climate adaptation planning.

☐ Implement a combination of community science initiatives and remote sensing technologies to monitor changes in the environment and climate conditions.

6. Communicating climate adaptation concepts and needed actions

Please check the boxes that identify useful strategies for engaging a public audience on climate change.

☐ Knowing your audience

☐ Clearly communicating the level of agreement vs. uncertainty on climate change impacts and effects

☐ Embracing the power of story and making climate change relevant to your audience

☐ Using data to try to change deep-seated viewpoints based on values and emotions

☐ Focusing solely on Western knowledge

7. Climate adaptation workbook

Please place the following steps for a common climate adaptation decision-making framework into sequence:

A. Assess climate impacts and vulnerabilities

B. Define project location, goals, and objectives

C. Evaluate objectives considering climate impacts

D. Identify adaptation approaches and tactics for implementation

E. Monitor the effectiveness of implemented actions.

Label Step 1:

Label Step 2:

Label Step 3:

Label Step 4:

Label Step 5:

8. Carbon Tools and Data

Which of the following options best describes how you could summarize existing carbon tools and data to understand carbon dynamics in your national forest or administrative unit? (More than one response option can be correct)

- [ ] Consider carbon storage and rates of change for the present and recent past.
- [ ] Consider how disturbance has affected carbon storage in the past and how that may change over time.
- [ ] Incorporate climate change when projecting how carbon stocks may change in the future.
- [ ] Rely solely on a regional assessment of carbon storage and change.
- [ ] Ignore carbon stored in harvested wood products because it is no longer part of the forest ecosystem.

Please look at the related competencies (Using the best available information; Communicating climate adaptation concepts and needed actions; Implementing cross-cutting strategies) in the document linked here and rank your proficiency level based on how you answered the questions above and your genuine relationship with the topic.

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Section 4: Integrating Justice, Diversity, Equity, and Inclusion

9. Identifying Frontline Communities

Select the communities that are most disproportionately impacted/on the “frontlines” of climate change. (Check all that apply)

- [ ] Affluent suburban neighborhoods
- [ ] Rural agricultural communities
- [ ] Urban areas with high-income residents
- [ ] Low-income communities and communities of color

10. Strategizing and implementing climate justice

Picture a community nestled in a flood-prone area, predominantly comprising low-income families and people of color. Recently, they've been hit hard by a climate disaster, facing flooding and erosion that threaten their homes, livelihoods, and cultural heritage.

As a facilitator and liaison for this community, name two tools or frameworks you could use in your work with this community to address their climate risks and vulnerabilities, considering environmental justice.

11. Achieving Climate Justice and Equity

Which of the following best describes how addressing climate change contributes to achieving justice and equity?

- [ ] By addressing the impacts of environmental degradation, vulnerable communities that are often disproportionately affected by climate change can experience greater social and economic equality.
- [ ] Climate action fosters a fair distribution of resources, ensuring marginalized populations have access to clean air, water, and sustainable livelihoods, thereby promoting justice and equity.
- [ ] Through international cooperation and climate policies, addressing climate change acknowledges historical injustices and aims to empower disadvantaged groups with resilience-

building measures, promoting fairness and equity.

☐ All of the above.

Please look at the related Knowledge and Competencies (Integrating Justice, Diversity, Equity, and Inclusion; Promoting inclusive planning and action) in the document linked here and rank your proficiency level based on how you answered the questions above and your genuine relationship with the topic.

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Section 5: Transformative change, systems thinking, and building psychological strength

12. Orienting Efforts to Achieve Transformative Change

Please check the boxes to identify components of transformative change as it relates to climate adaptation. Some are correct, and some are incorrect:

☐ Shifts in policies and regulations

☐ Adoption of new technologies to sequester carbon

☐ Community engagement and empowerment

☐ Using quantitative data rather than qualitative data or traditional knowledge to inform decisions

☐ Measures to foster long-term resilience

☐ A focus on restoration of ecosystems to pre-European settlement conditions

- [ ] Innovation in climate-related industries
- [ ] Remaining focused on only your resource of interest
- [ ] Separating social considerations from ecological considerations

13. Encouraging Creativity

In 2-3 sentences, briefly describe one way you could encourage creativity in a national forest's response to climate change.

14. Addressing Climate Anxiety

How might addressing climate anxiety among team members enhance the effectiveness of climate change adaptation efforts within an organization, particularly concerning mental health and resilience?

- [ ] By promoting open discussions and fostering empathy among team members, potentially leading to innovative adaptation strategies.
- [ ] By encouraging individual team members to seek external support resources independently, potentially reducing the burden on organizational support systems.
- [ ] By implementing strict performance targets to mitigate climate anxiety, potentially boosting productivity and focus within the team.
- [ ] By assigning designated team members to handle climate anxiety-related issues, potentially streamlining adaptation efforts and reducing distractions for other team members.

15. Community Engagement

In 2-4 sentences, please describe how you might facilitate collaboration and community ownership on a new climate adaptation project.

Please look at the related Knowledge and Competencies (Systems Thinking; Orienting efforts to achieve transformative change; Orienting efforts to achieve transformative change; Building psychological strength...) in the document linked here and rank your proficiency level based on how you answered the questions above and your genuine relationship with the topic.

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Section 6: Change Management

16. Forestry: Multiple choice:

You are working in a forest that has been experiencing repeated wildfires, with many acres burned at high severity. Though you want to maintain forests on the landscape, some areas are experiencing a conversion from forested to non-forested ecosystems. What are actions you could take in this forest that align with your goals and with climate adaptation principles? Check the boxes that apply:

- ☐ Encourage the spread of non-native invasive species that alter fuel regimes.
- ☐ Replant following fire with species that are more tolerant of frequent wildfires.
- ☐ Use thinning and prescribed burning to reduce the risk of high-severity burns in forested areas

☐ Intentionally allow some areas to transition to non-forested ecosystems, while prioritizing other areas for treatment.

☐ Continue suppressing all wildfires across the landscape to maintain the current condition

17. Carbon: True/false

The following actions foster carbon stewardship in forest management [T/F]

[ ] Work with scientists and experts to understand how tree age, stocking density, forest management practices, and species composition influence carbon storage and uptake.

[ ] Manage for younger trees if ecosystem carbon storage is a primary, near-term goal and older trees if carbon uptake is a primary goal.

[ ] Implement management that may result in short-term carbon loss, but will lead to greater carbon stability.

[ ] Empower local communities to help develop proposed actions in forest management to consider local concerns of carbon management.

[ ] Manage for maximum carbon density even if this puts the forest at high risk for severe wildfire.

Please look at the related Knowledge and Competencies (Change Management; Decision Making; Planning for and managing adaptation action) in the document linked here and rank your proficiency level based on how you answered the questions above and your genuine relationship with the topic.

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Post-test survey:

Training Needs:

- Identify one specific training need for forest service workers to enhance climate adaptation capabilities.

Professional Development:

- Why is continuous professional development crucial for addressing climate change challenges in forest service work?

This resource was developed with support from, and in collaboration with, the USDA Forest Service Office of Sustainability and Climate. USDA is an equal opportunity provider, employer, and lender.