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Small Grants Application

Public Lands and Climate Change: An Evaluation of the North Cascadia Adaptation Partnership

1. Background

Climate change is a phenomenon disrupting natural processes and challenging those who are impacted to adapt quickly and efficiently. In the case of public lands, many agencies have created formal guidance to assist land managers with adjusting, namely in the form of climate change adaptation plans. This research focuses specifically on the North Cascadia Adaptation Partnership (NCAP), a National Park Service and U.S Forest Service collaboration which offers climate change adaptation strategies for public land agencies in Northern Washington state. It consists of four federal land units: North Cascades National Park, Mt. Baker-Snoqualmie National Forest, Okanogan-Wenatchee National Forest and Mt. Rainier National Park. Through a program evaluation framework, this study will assess how public land managers are incorporating the recommended adaptation strategies.

2. Purpose

The results of this study will identify strengths and weaknesses in the NCAP and evaluate how it is being applied by different agencies. The researchers who helped create this partnership are currently considering revisions as well, so this research will help inform changes to improve the climate change adaptation strategies and tactics. It also will allow employees working for the National Parks and National Forests to reflect on their agency's efforts to adapt to climate change and identify barriers in the process. This will build on existing literature related to climate change adaptation on public lands.

3. Methods

I will be using a mixed methods approach for this research and a triangulation technique (see Figure 1). I will first send out an online survey through Qualtrics to employees at all four of the agencies involved with NCAP. After I collect the data from the survey, I will use it to inform interviews with resource specialists and managers involved with climate change adaptation planning. I would like to interview 2-3 people from each unit in NCAP. I will code the interviews to identify patterns and divergences between the participant's responses. The last piece required to complete the triangle will be fulfilled through document analysis such as budget reports and project logs that will reveal actual implementation of climate change strategies.

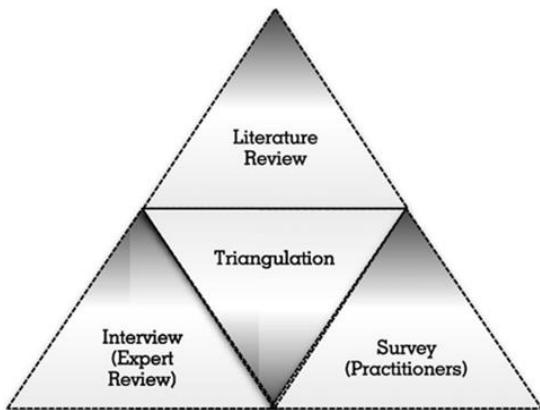


Figure 1: A diagram demonstrating the triangulation method of data collection

4. Research Design

The framework for my research is shown below in Figure 2. The main components of the climate change adaptation process I am evaluating is the strategy selection process and barriers that impede implementation. I will be asking survey and interview questions related to institutional capacity, agency culture, affordability and capacity to sustain over time. I will also be examining possible barriers to the implementation process, such as conflicting mandates, insufficient resources and level of collaboration. Lastly, I will look at which strategies are ultimately adopted and any resources gained during the implementation process.

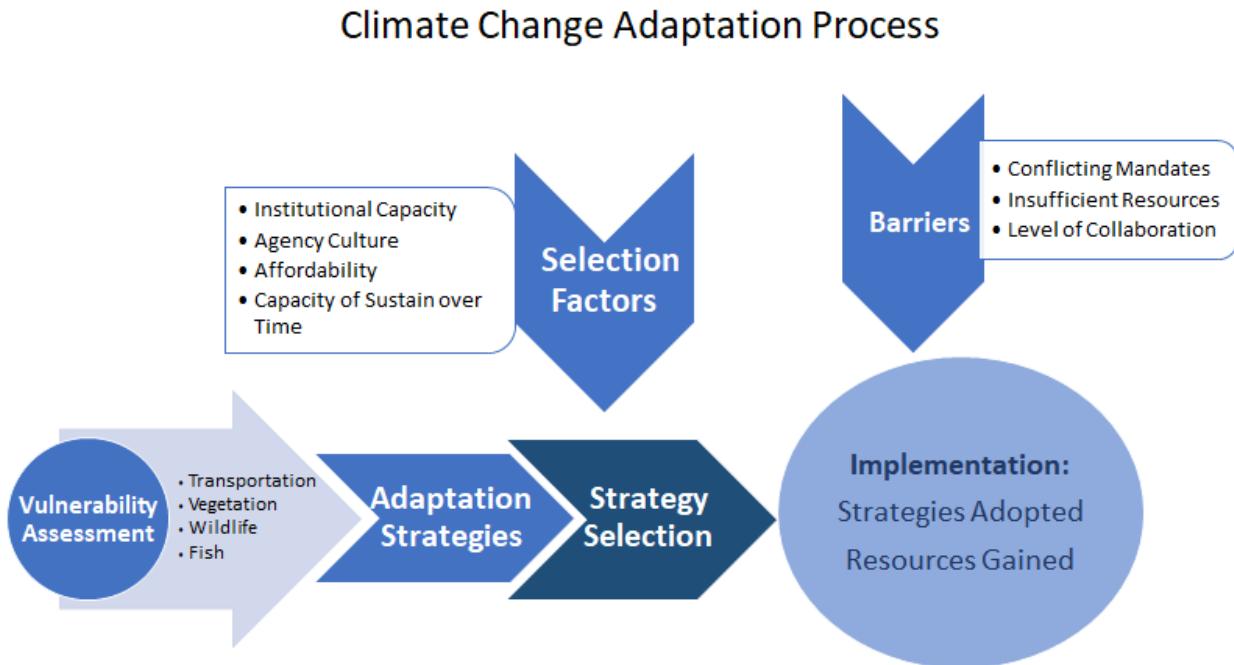


Figure 2: Research framework for the climate change adaptation process

5. Anticipated Results

I anticipate that agencies will be at very different stages in the climate change adaptation process. I have already been talking to climate change coordinators and resource specialists from the Forest Service and Park Service and have noticed a difference in usage between agencies, partially due to differing mandates. Because the Park Service is focused more on recreation and the Forest Service on conservation, I predict that their selection of strategies will differ. Additionally, although all of these units are in the North Cascadia ecosystem, there is still a great deal of variation in climate and conditions that would make some strategies and tactics more suitable than others. For example, the Okanogan-Wenatchee National Forest deals with wildfire frequently in the warm, dry summer months. On the other side of the mountains, the Mt. Baker-Snoqualmie must manage flooding and high runoff events due to wet, rainy springs. I also suspect that barriers due to budgets and staffing will have impeded the climate change adaptation process.

6. Schedule for Completion

This spring, I have been working on the creation of my survey and talking to employees from the Forest Service and Park Service about NCAP. I plan to send out the survey in late spring and collect relevant documents throughout the summer. In the fall, I will compile my survey results and conduct interviews. During the winter and spring, I will code the interviews, analyze the survey data, and start drafting my thesis. I plan to defend my thesis in the spring (see Table 1)

Table 1: Timeline for thesis accomplishments by academic quarters

Quarter	Accomplishments
Spring 2020	Create surveys, talk to informants from each unit about NCAP, test interview and survey questions
Summer 2020	Send out surveys, collect and analyze relevant documents such as budgets, management plans, project logs
Fall 2020	Gather survey results, conduct interviews with management and resource specialists
Winter 2021	Analyze results from surveys, code interviews, identify conclusions
Spring 2021	Complete final draft of thesis, present oral defense

7. A complete budget for thesis project, including:
 - a. Detailed budget of travel, supplies, equipment, etc., and total required and total requested funding

I am requesting \$500 to cover my travel expenses to visit the four units in the North Cascadia Adaptation Partnership. I plan to travel throughout the fall to conduct interviews with land managers and resource specialists involved with climate change adaptation. Although the estimated costs for visiting all of the National Park and National Forest headquarters is approximated around \$200, I am requesting additional money to cover other trips and costs associated with an overnight stay. It is possible that some of the resource specialists or land managers will not be available on the same day, so I might have to make multiple trips. The additional funds would also cover hotel costs since some trips like Bellingham to Wenatchee are nearly 7 hours round trip. See Table 2 for more details about distances and estimated costs.

Table 2: Distance and estimated costs to conduct interviews with employees involved with NCAP

Destination	Round Trip Distance from Bellingham	Multiplied by WWU Student Reimbursement Rate (\$0.25 per mile)
Sedro-Woolley, WA North Cascades Headquarters	50 miles	\$12.50
Everett, WA Mt. Baker- Snoqualmie Headquarters	120 miles	\$30
Wenatchee, WA Okanogan- Wenatchee Headquarters	356 miles	\$89
Ashford, WA Mt. Rainier Headquarters	320 miles	\$80

Total	846 miles	\$211.50
Additional Costs for lodging (\$94 per night)¹	3 nights	\$282
Total costs		\$493.50

1. Washington per diem rates for lodging retrieved from:

<https://www.federalpay.org/perdiem/2019/washington>

- b. Funded items - items and amounts already funded by other sources; specify sources
- c. Pending requests - specify source. Items and amounts requested or soon to be requested from other sources, including any that duplicate funds requested in this proposal

I do not currently have any other funded items or pending requests.

- d. What is your plan for other funding, or modifying the project will be if your request is not approved in the requested amount

If my request is not approved, I will conduct my interviews over the phone or via a video conferencing tool such as Zoom. I think in person interviews would be preferable but also acknowledge the importance of flexibility during these times.

- e. If the total project amount requested is greater than your small grant request, you should clearly indicate the specific items you are requesting to purchase using the Huxley Small Grant (If Awarded)