

## Research Strategies Reflective Essay

My research for this project really started inadvertently weeks before it was assigned. A paper we read in the first week of FISH464 mentioned that walrus occasionally preyed on seals instead of their usual diet of seafloor invertebrates, but provided little detail about the phenomenon. I asked the professor about the claim, and she briefly described the so-called “rogue walrus” that hunted and ate mammals. I was immediately intrigued by this unusual behavior, and I started looking for more information, although at this point it was curiosity, rather than final paper consideration, driving my research. First I found the paper cited as the source for the carnivorous walrus information, “Carnivorous Walrus and Some Arctic Zoonoses”, written in 1960 by Francis Fay. While the first paper I had read only mentioned the phenomenon, this earlier paper contained fascinating information, combining observation, dietary analysis, and tracking of parasitic infection outbreaks to describe these rogue walrus in enough detail to satisfy my curiosity.

Weeks later, when we were given the details of the final paper assignment, I remembered my earlier reading and realized rogue walrus might be a good topic, but as I started further research, I almost immediately discovered a problem: beyond the original paper I had found, there was very little available information. I used a Web of Science Cited Reference Search to find later papers that cited the 1960 one, hoping to discover subsequent research based on the premise described by Fay, but looking through these papers I discovered that the majority of them made only cursory mention of the rogue behavior while focusing on other aspects of Arctic biology, much like the first paper I read that sparked my original interest. A search for the terms “rogue walrus” or “carnivorous walrus” turned up the same kind of papers. As the assignment required at minimum 10 pages of writing and 15 cited sources, it was clear that my topic was too

narrow. Because this assignment was larger than any previous research paper I had written, refining a topic to fit the required length was my first challenge. At the suggestion of my TA, I broadened my intended topic to include the normal feeding behavior of walruses, then subsequently chose to add a focus on the effects of climate change on the ecosystem upon discovering that many current Arctic research papers consider aspects of climate change. With my new topic in mind, a combination of Google Scholar, Web of Science, and UW Libraries searches provided me with plenty of potential sources, which I narrowed to the 19 ultimately cited in my paper. Each search method turned up slightly different results for the same search term, giving me access to a wider variety of sources than I would find with any one of them alone. As much of the recent research I found concerning walrus behavior and climate change effects focused on one region of the Arctic, I narrowed my topic to that region and the walrus subspecies living there. This final iteration of my topic was a better fit for the scope of the assignment and the available research, and would still allow me to discuss rogue walruses. As my research progressed my first several sources let me form a preliminary outline; I began searching for specifics to fill in gaps in my existing information. I similarly tracked down papers cited my existing sources to get an expanded explanation of relevant concepts that were mentioned, as I did to find the first rogue walrus paper, thus helping me locate the sources that would be most specifically applicable to my topic. In narrowing sources to find the most relevant and specific research, I discovered that older sources may not be outdated; while current research is critical for understanding climate change, due to both changing climate conditions and evolving methodology, decades-old research on walruses, particularly rogue walruses, is still viable, and many of these sources are frequently cited by contemporary researchers. To further evaluate the quality of a source, I considered the publication. *Nature* and *Science* are considered

the pinnacle publications in biology, as well as *Polar Biology* for Arctic research. According to Dr. Jon Herron, methods of data presentation is another indication of the quality of research, a helpful strategy in rapidly evaluating a source's credibility.

I needed to organize the massive amount of information contained in the sources I had selected. After reading and making notes on each of the papers, I was able to construct a detailed and cohesive outline for my paper. In previous, smaller-scale research assignments, it was relatively easy to keep straight the information's source for citation; with only a few sources, each is usually fairly distinct. With this paper, the large number of sources meant that I had multiple sources to address each aspect, each of which presented different and nuanced angles to provide a better and fuller understanding of the topics. This made it more difficult to keep track of a fact's source, a new challenge associated with the larger scale of this assignment that I did not anticipate. After a few other attempts, I settled on a strategy that worked: I wrote the most pertinent information from each paper, with its in-text citation, on a large sticky note, which I stuck to the wall in front of my desk to be easily visible while working. With this setup in place, citing a statement was as simple as finding reference and adding its citation. Although it took significant time and multiple attempts to settle on a strategy that worked for me, I developed a process that will serve me well in tackling future large research projects. I initially thought that this project would be much like previous smaller research projects, but would simply take longer. I quickly discovered that, in such a large project, new issues emerge, especially in refining a topic to match the scope of the assignment, and in managing the volume of information.