

End Of Summer Report
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This summer, for my FURSCA research project I created an interactive multimedia map of the life and works of Holling Clancy Holling. Holling was an author and artist throughout the middle of the twentieth century whose work blends scientific information, artistic expression, and narrative storytelling to create engaging, educational stories about the intersections of culture and the environment. Holling's curiosity and love of nature have had a profound impact on my interest in environmental studies. I read his books as a small child, studied him in middle school geography, and continue to research him now in college. I keep returning to Holling because his perspective is so unique and I believe that analyzing this perspective and mapping it in an interesting and meaningful way will provide new insights into how to solve present-day environmental problems. In honor of Holling's multidimensional approach to storytelling, I generated an interactive map experience that explores Holling's biography, his books, and my own personal connection to his work. With this project, I hoped to examine Holling through an environmental studies lens, specifically focusing on how Holling represents the connection between people and the environment. Holling was deeply interested in the interconnected bioregions that humans and ecosystems exist within, both in his books and throughout his personal life. The major goal of environmental studies work is to understand the ways humans are connected to the environment in order to generate informed solutions to environmental problems. I believe there are important ways of understanding the environment that can be brought into twenty-first environmental studies conversations by studying Holling's perspective on the environment and analyzing his work.

A crucial part of the process of bringing Holling's work into the present involves integrating current technologies. Holling was a masterful artist who created and included hand-drawn illustrations, sketches, and maps within all of his books. These illustrations help

drive the story and provide the reader with additional information about the real-world regions that are depicted in his books. I wanted to tell the story of Holling's own life in a similarly multimedia way, by using present-day technologies to provide an interactive experience that allows the reader to explore Holling's life and his books through a variety of lenses that all tie back to the foundations of environmental studies. I did this using ArcGIS Online and ArcGIS StoryMaps. These tools allowed me to tell layered, linear narratives about Holling and geographically place the important events in both his books and biography.

There were three stages of work within my research this summer: background research, map outlining, and content creation, however much of the research and the map formatting process happened spontaneously as I was generating specific content. I began with background research into Holling's life and his books. This involved exploring copies of primary and unpublished secondary sources housed originally in Holling's archive at UCLA. In addition to this background research, I re-read three of Holling's picture books that were published as part of his series for Houghton Mifflin (*Paddle-To-The-Sea*, *Tree in the Trail*, and *Minn of the Mississippi*) and generated informal writing analyzing both the books themselves and my connection to the works.

Once I had foundational information on Holling's biography and an understanding of the formal components of his books, I began mapping. I started with a single interactive map on ArcGIS online which I call the Home Map. Within this map, I created three different feature layers: the important locations in Holling's biography, The starting location of each book in the Houghton Mifflin Series, and locations that are important to me in relation to Holling. To create these layers I made a spreadsheet with all the pertinent information of the locations and pulled latitude and longitude coordinates from Google Maps to georeference the tables. I then exported these tables as .CSV files and imported them into ArcGIS Online where I could edit the data, format the map pop-ups, and add media (specifically images).

Once I created the home map, I realized I needed to add introductory information to the map to give the viewer context about who Holling is and why he is important. To do this, I created an ArcGIS StoryMap to provide more linear information about Holling. I also generated three more interactive maps about each of the books I explored in depth. These book maps take the viewer through the narrative specifics of the story as well as the interesting literary tools Holling uses within each book. Presently I have a significant portion of the StoryMap completed, but some of the content within it, as well as some content on the home map, must be edited and flushed out fully. I especially hope to add more writing to the personal connection layer in the future.

This project has given me concrete technical skills that are critical as I continue to pursue proficiency in GIS mapping technologies and the GIS Minor. In the last week of FURSCA I had the unexpected opportunity to visit the ESRI User Conference where I gained additional GIS skills, made professional connections, and saw in detail the potential for ArcGIS Online and StoryMaps within the context of this project. While at the ESRI conference, I was able to discuss this project with GIS professionals, problem-solve some technical specifics, and explore the future possibilities for this project and its interactive StoryMap. In addition to this, I have gained invaluable skills on how to navigate archival research, conduct literary analysis, and creatively communicate my findings. I plan to continue this project into next year as I work on this map and associated written work tackling Holling's perspective on environmental justice for my Honors thesis. I will also be presenting my project at the Elkin Isaac Student Research Symposium this coming spring. I am so thankful to have the experience of summer research here at Albion College and I am especially grateful to Albion College FURSCA, Dr. Nels Christensen, and all of the donors who make FURSCA possible. I specifically want to thank the Harriet E. Elgin, '36 Endowed Fellowship for providing me the opportunity to explore this amazing author and study a subject I love.