**Title:***Redlining and Environmental Justice*

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**Abstract:***Environment and Society is a course focused on recognizing and analyzing human impacts on the environment. In this module, we explore the inequity that exists in environmental health and nature because of changes we have made in our environment. The module’s main activity focuses on redlining and environmental health, which is meant to emphasize the differences in access to nature based upon where you live. Typically, people who have access to nature are generally healthier and have reduced incidences of respiratory illnesses (e.g., asthma), decreased blood pressure, and decreased chance of depression. Unfortunately, highly urbanized areas have higher impervious surfaces and less greenspace leading to higher temperatures and reduced opportunity for outdoor health benefits often affecting minority and low-income communities. We utilized a map with information on redlined zones in various U.S. cities. Redlined zones, historically, were areas that were outlined ranging from letters A being “better” to D being “worse” and were generally associated with specific socio-economic groups. The map also shows percentage of tree cover, race, poverty level, and land surface temperature within the zones. Using this map, each student group will analyze their assigned city to see how these factors influence a person’s access to nature (i.e., green spaces such as green belts, parks, etc.) and to determine emerging patterns related to the number of greenspaces, tree cover, minority population, median house value, and impervious surface. Students will witness the historical practice of redlining and its lingering effects through mapping, predictions, reading, and discussion.*

**Learning objectives:**

1. *Summarize environmental justice and its existence today.*
2. *Identify relationships between greenspaces (and components) and socio-economic classes.*
3. *Define redlining and discuss its impacts on communities of color.*

**Timeframe:***This activity is the first of a series of three modules ((1) redlining and local greenspace, (2) impacts of redlining on biodiversity, and (3) access to greenspaces such as National Parks) with this module taking two class meetings (1 hour 15 minutes each). The initial preparation for an online modality was 4 hours. When preparing for an in-person modality, modifications were made and an additional hour was needed to prepare materials. Prior to the module, a 30-minute preparation time will be required to review and modify lecture slides to your needs, review content, and edit collaborative documents to ensure they are clean copy for the next use. See example timeline below of what activities are done and when:*

*Week of Module:*

* *On their own - student prep through an activity (30 minutes, provided end of week prior); summative assessment due by end of following week.*
* *1st class meeting - KW of KWL chart; student prep through mini-lecture on urbanization and inequality and video on environmental justice; group annotation reading (formative assessment due during class)*
* *2nd class meeting - introductory video on redlining and module activity (formative assessment due during/at end of class), L of KWL chart (summative assessment due at the end of the class)*

**List of materials:**

* *Pre-Class Activity “Trees & Health”: Trees & Health.docx*
* *1st Class Session Materials*

*KWL Chart: Redlining KWL.docx*

*Mini-Lecture Slides & Video: Urbanization & Inequality.pptx*

*Group Annotation Reading: How racism and classism affect natural ecosystems by Jake Robinson.docx*

* *2nd Class Session Materials*

*Activity Introduction Slides & Video: Urbanization & Inequality 2.pptx*

*Group Activity Collaborative Slides & Instructions: Redlining & Environmental Health Collaborative Slides.pptx*

**Procedure and general instructions (for instructor). REQUIRED.**

* ***On their own***
	+ *Assign students “Trees and Health” activity (Trees & Health.docx*) *that they will complete on their own (outside of class time). Activity will take approximately 30 minutes and needs to be provided at the end of the week prior to module.*
	+ *Activity can be due at the end of the following week (end of module week).*
* ***1st class meeting (based on 1 hour 15 minutes class length)***
	+ *Pose the following questions to the students, “What is redlining?” Have students download and complete the KW of KWL chart (Redlining KWL.docx) of what they Know and Want to learn about redlining. Students will complete this chart individually. This should take students approximately 5-10 minutes.*
	+ *Present mini-lecture on urbanization and inequality and video on environmental justice (Urbanization & Inequality.pptx). This lecture should take approximately 20 minutes.*
	+ *Assign group annotation reading (How racism and classism affect natural ecosystems by Jake Robinson.docx) in groups of 4-5 depending on class size and number of sections you are assigning to each student. Have student groups download or make their own copy to annotate. This should take approximately 20-30 minutes.*
	+ *Use the last 15-25 minutes of class to discuss the reading and begin connections to redlining. Prompt students with questions about the main theme of the reading, strong or weak arguments presented by writer, and interesting points mentioned that were unknown prior to reading.*
	+ *Ask students to submit their group annotated reading as a low-stakes assignment.*
* ***2nd class meeting******(based on 1 hour 15 minutes class length)***
	+ *Begin by playing an introductory video on redlining and revisiting redlining and its environmental health effects with the slides provided (Urbanization & Inequality 2.pptx). This should take approximately 5 minutes.*
	+ *Provide groups of 4-5 students depending on class size with instructions on the activity for the day (Redlining & Environmental Health Collaborative Slides.pptx) and have them begin by making predictions on what patterns they expect to see in their assigned city. Have students define what a greenspace will be in the context of their work. This should take approximately 20 minutes.*
	+ *Have students complete the module activity in the class version of the google slides or download their copy (your preference) and submit their group’s slide with data. This should take approximately 35 minutes.*
	+ *Ask student groups to share out their findings for their city and discuss patterns that emerge based on the redlined zones they investigated. This should take approximately 10 minutes.*
	+ *Wrap up the class with having students complete the L (what they Learned about redlining) column of KWL chart and submit it at the end of the class meeting. This should take approximately 5 minutes.*

*Below is a basic description of the module activities, assessment, and resources needed for the module:*

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| *Objective(s)* | *Resources/ Activities Description* | *Assessment Description* |
| *LO2* | *Pre-class assigned activity (Trees & Health)* | *Worksheet with questions (individual, summative)* |
| *LO1* | *In-class video and mini-lecture “Urbanization and Inequality”, group reading* | *Begin* ***KW****L chart for engagement (individual, formative), check-in polling in mini-lecture (formative), group annotation reading (group, formative)* |
| *LO 2 & 3* | *In-class video and activity* | *Group activity (formative), reflection/completion of KW****L*** *chart (individual, summative)* |

**Procedure and general instructions (for students).**

* ***On your own***
	+ *Download and complete the “Trees and Health” activity outside of class time (Trees & Health.docx*). *Activity will take approximately 30 minutes and will be due at the end of the module week.*
* ***1st class meeting (based on 1 hour 15 minutes class length)***
	+ *Download and complete the KW of KWL chart (Redlining KWL.docx) of what I Know and Want to learn about redlining. Complete chart individually and save for the next class meeting. This should take approximately 5-10 minutes.*
		- * + *Listen and participate in the mini-lecture on urbanization and inequality and video on environmental justice. This lecture should take approximately 20 minutes.*
	+ *Download or make a copy of the group reading (How racism and classism affect natural ecosystems by Jake Robinson.docx). In your group of 4-5 students, share the copied/downloaded file and read and annotate your assigned/chosen section of the article. Summarize what your section is about and 3 key points. Share what your section was about with your group. This should take approximately 20-30 minutes.*
	+ *Participate in the class discussion about the reading and contribute your key findings for your section. Begin making connections from the reading to redlining. This will take about 15-25 minutes.*
	+ *Submit your group’s annotated reading to your instructor.*
* ***2nd class meeting******(based on 1 hour 15 minutes class length)***
	+ *Listen and watch the introductory video on redlining and your instructor’s quick introduction to revisit redlining and its environmental health effects. This should take approximately 5 minutes.*
	+ *Review the activity instructions and slide assigned to your group (Redlining & Environmental Health Collaborative Slides.pptx). In your group of 4-5 students, begin making predictions on what patterns you expect to see in your assigned city. As a group, define what a greenspace will be in the context of your city. This should take approximately 20 minutes.*
	+ *Complete the group activity in the class version of the google slides or download your own copy (based on your instructor’s instructions) by filling out your city’s assigned chart with the data required. Submit your data/slide by the end of class following your instructor’s guidance. This should take approximately 35 minutes.*
	+ *Share out your group’s findings for your city and discuss patterns that emerged based on the redlined zones you and your group investigated. This should take approximately 10 minutes.*
	+ *At the end of the class, complete the L (what they Learned about redlining) column of your KWL chart and submit it at the end of the class meeting. This should take approximately 5 minutes.*