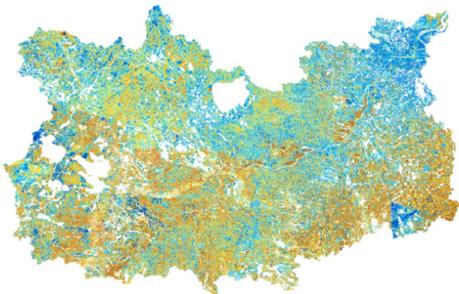


# Architecture Climate Change & Society

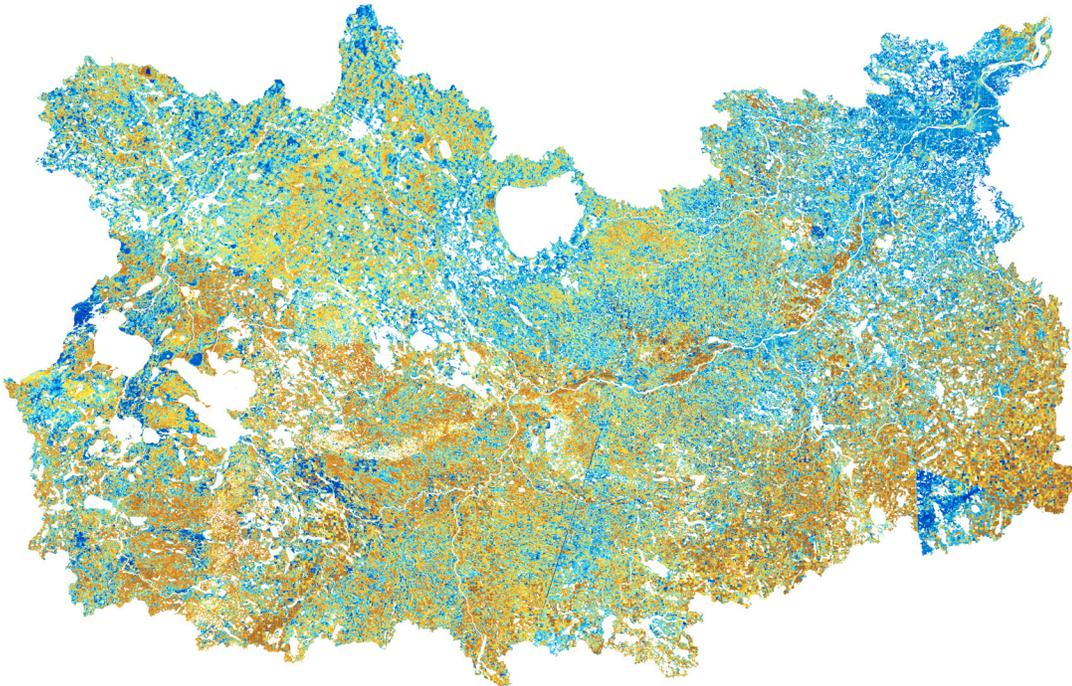
Buell Center  
2020 Course Development Prize



**Gabriel Cuéllar**  
*University of Minnesota*

**“EXIST, FLOURISH, EVOLVE” –  
TERRITORIAL CARE AND THE  
UPPER MISI-ZIIBI**

This studio is concerned with imagining how architecture, as a discipline, practice, and material reality, can help uphold the Rights of Nature. Exploring this emerging paradigm—codified in the phrase, “to exist, flourish, and evolve”—the studio will define concrete expressions of the ethics of care embodied in the recognition of rights for other-than-human entities. Our subject will be the Mississippi Headwaters watershed, whose ecological communities and dynamics will figure as protagonists in our studio. We will study how the ‘Great River’ propelled Minnesota’s productivity and explore what role it, as a potential rights-bearing entity, might play in reshaping ecological and spatial relations. We will seek to account for biogeochemical interactions irreducible to human agency, while identifying approaches to guide architectural intelligence within present environmental predicaments. We will rely on our discipline’s sensibility for mobilizing documents and precedents, identifying spatial relations, forming systems of coherence, and analyzing material characteristics and form. In parallel, we will chart out architectural efforts and effects embedded in situational contingencies that transpire over time, interact with other forces, and thrive as strictly infrastructural. Acknowledging that Rights of Nature are, presently, written aspirations, our goal will be to articulate the architectural dimensions that could support them.



Left: Normalized Difference Moisture Index for the Mississippi Headwaters watershed area calculated from multi-spectral remote sensing data. Wetlands and moist areas are shown in blue and dry areas appear brown and yellow.

## BACKGROUND

*From the mills at their mother city along the river Misi-zibi, settler-pioneers oversaw Minnesota's exposure to the expedient glow of frontier capitalism. Using the strength of waterfalls and the reach of tributaries, they ushered the region's vast forests and grasslands through a process of industrial sublimation. Lumber and wheat commodities came into existence and circulation through a drastic recasting of ecological and social relations. In Minnesota and elsewhere, the imperative of growth enabled the simplification of complex environments to a matter of "natural resources." Yet, two centuries of economic productivity and urbanization have caused such tragic shifts in the behavior of ecosystems that the apparent stability of commodities—and the very conception of "nature" and "culture"—is challenged.*

*The fallout of capitalist territoriality urges architects today to consider new approaches that account for not only human footprints, but the agency of more-than-human entities and phenomena. The concept of the Rights of Nature may offer a useful theoretical and practical framework for this purpose, in contrast to measures that reify market-based relations. The Rights of Nature recognize the entitlement of landscapes, ecosystems, and other-than-human entities to—according to the common legal phrasing—"exist, flourish, and evolve." While this concept is consistent with many indigenous and vernacular practices, US governmental bodies and Midwestern tribes are increasingly recognizing these rights through formal legislation. For example, in January 2019, the White Earth Nation formally adopted The Rights of Manoomin, establishing the rights of wild rice to "exist, flourish, regenerate, and evolve" within their treaty area. Such initiatives register the role of earthly agencies in contemporary legal-spatial thought and implicate territory in the ethics of care. Within this context, how might architecture help reconceive and mediate environmental values and practices?*

## READINGS

Over the first 10 weeks of the semester, we will consider ethical and cultural implications of our work by having conversations on relevant texts from a variety of fields as listed below.

Every Monday, we will gather in the Rapson Hall Courtyard. When we meet, take ten minutes to share your reflections on the reading with a partner and together develop one question that you would like to pose to the class.

William Cronon, "The Wealth of Nature: Lumber" in *Nature's Metropolis: Chicago and the Great West* (New York: W.W. Norton & Company, 1991), pp 148–206.

Keller Easterling, *The Action is the Form: Victor Hugo's TED Talk* (Moscow: Strelka Press, 2012), pp 7–58.

Jason Hribal, "Animals are Part of the Working Class: A Challenge to Labor History," *Labor History*, Vol 44, No 4, 2003.

Timothy Morton, *The Ecological Thought* (Cambridge: Harvard University Press, 2012), pp 1–19.

Patricia Reed, "Orientation in a Big World: On the Necessity of Horizonless Perspectives," *e-flux architecture*, July 2019.

Carol Rose, "Surprising Commons," *Brigham Young University Law Review*, No 6, 2014.

Paolo Tavares, "Nonhuman Rights," in *Forensis: The Architecture of Public Truth* (Berlin: Sternberg Press, 2014), pp 553–572.

Joan C. Tronto, "Caring Architecture," in *Critical Care: Architecture and Urbanism for a Broken Planet*, Angelika Fitz and Elke Krasny with Architekturzentrum Wien, eds. (Cambridge: The MIT Press, 2019), pp 26–32.

Anna Lowenhaupt Tsing, *The Mushroom at the End of the World: On the Possibility of Life in Capitalist Ruins* (Princeton: Princeton University Press, 2017) pp 1–25, 253–256.

Jeanette Wolfley, "Reclaiming a Presence in Ancestral Lands: The Return of Native Peoples to the National Parks," *Natural Resources Journal*, Vol 56, No 1, 2016.

This studio is concerned with imagining and articulating how architecture, as a discipline, practice, and material reality, can help uphold the Rights of Nature. Exploring the emerging paradigm of “exist, flourish, and evolve,” the studio will produce concrete manifestations of the ethics of care embodied in the recognition of nonhuman rights. Our multi-faceted subject will be the Mississippi Headwaters watershed, whose ecological communities and dynamics will figure as protagonists in our studio. We will study how the ‘Great River’ propelled Minnesota’s modern productivity, and explore what role it, as a potential rights-bearing entity, might play in reshaping socio-ecological and spatial relations today. We will seek to account for biogeochemical interactions irreducible to human agency, while identifying modes of thinking that could guide architectural design intelligence within our present environmental predicaments. Acknowledging that Rights of Nature are, for the moment, written aspirations, our goal will be to develop the architectural dimensions that could support them.

The contemporary jurisprudence behind the Rights of Nature contends that beings, entities, and processes—beyond the anthropocentric categories of citizen, human, etc.—have legally protected and inalienable freedoms and entitlements. Animal rights are one well-known example, but how can we theoretically and practically address, for instance, the Rights of Lake Erie, which the City of Toledo formally recognized in 2018? We will rely on our discipline’s sensibility for mobilizing visual documents, learning from precedents, identifying spatial relations, forming systems of coherence, and analyzing material characteristics and physical form. In parallel, we will chart out lesser-practiced architectural efforts and effects, those embedded in situational contingencies that transpire over time, interact with other forces, and thrive as strictly infrastructural.

#### PHASE ONE – TERRITORIAL PORTRAIT

This phase is concerned with collectively building a platform of knowledge that will guide us over the semester. We will familiarize ourselves with the dynamics that characterize in the Mississippi Headwaters watershed and investigate the histories and stakes of the studio’s central concepts. During this phase, we will make fieldwork excursions, read extensively, use GIS mapping, undertake archival research, analyze remote sensing data, and meet with biologists and environmental lawyers from the University of Minnesota. Each team (4 students) will pursue one of the following trajectories:

##### 1 – *Networks of Obligation*

One of the basic principles of the institution of property is that a landowner’s activities should not cause a ‘nuisance’ to their neighbors and the surroundings. This team’s inquiry will depart from this principle to unravel how real property—generally and in our area of interest—subsumes people and land into a broader urban and geopolitical ecology of obligations, prices and sanctions, offsets, and more. Why does property matter for the Rights of Nature?

##### 2 – *Space and the Rights of Nature*

To be put into practice, the Rights of Nature will need to be articulated beyond a legal definition. This team will aim to define the spatial and material considerations of these rights while tracing their historic, ethical, and scientific dimensions, including the origin of the phrase “exist, flourish, and evolve.” How might the Rights of Nature change how we conceive of territories and, more locally, the earthly beings and material aggregations around us?

##### 3 – *Commodity Geographies*

This team’s investigation will aim to understand and document the extensive transformation of biological communities far beyond the metropolis of Minneapolis since the mid-1800s. The team will also study where and how commodity industries continue to operate and identify industrial-ecological conditions that could guide more detailed inquiries in Phase Two. Within the region, where is there environmental volatility and what factors contribute to it?

#### Excursions and Meetings:

The studio will engage with several external entities to develop familiarity with and sensitivity to our area of interest. Following Phase One, we will make a two-day tour of the Mississippi Headwaters region and meet with the following representatives from tribes and state bodies.

**Tracy Goodman**  
Member of White Earth Nation and Director of White Earth Wild Rice

**Richard Fox**  
Member of White Earth Nation and White Earth Conservation Officer

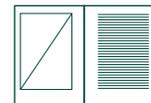
**Katrina Kessler**  
Assistant Commissioner for Water Policy and Agriculture at the Minnesota Pollution Control Agency

Following Phase Two, we will meet virtually with a political science and women’s studies scholar to have a conversation on the ethics of care. Participants will present an aspect of their work for conversation.

**Joan C. Tronto**  
Professor Emerita at the University of Minnesota  
Via teleconference (TBC)

#### Phase Schedule: Week 1 – Week 4

**Goals:** We will produce a book that synthesizes our collective understanding of the context and hones the studio’s ambitions. A graphic template and typeface will be made available.



Prepare the following in collaboration with your team:

- The questions that your group is asking in your inquiry
- Provisional responses to those questions in the form of drawings, imagery, diagrams, and text
- GIS mappings that compile relevant geographic information extracted from your group’s research
- Identification of key sites that would be valuable to visit during our fieldwork sessions
- A 250-word summary of your group’s investigation
- A series of critical, well-defined observations (+/- 75 words each), based on your research topic and collectively written by your team

## PHASE TWO — FRAMING INTERVENTION

In pairs, studio participants will identify specific opportunities, tensions, and actors that converge within or around the Mississippi Headwaters watershed. This will involve carefully assembling a set of concerns—habitat conditions, particular species, patterns of urbanization and environmental metabolism—and analyzing the ways in which they are related. This phase involves a projective attitude, but the goal is to lay the conceptual, material, and ethical groundwork for a design intervention, without yet engaging it directly. To attune ourselves to the multi-scalar, multi-causal, and multi-temporal nature of our study, we will reorient some basic architectural paradigms as follows:

*From Scale to EXTENTS* – How is your set of concerns geographically pervasive? How can you commensurate agencies and structures that are extensive and multi-scalar, from the molecular to the planetary?

*From Site to CONDITIONS* – What spatial types, ecological relations, and institutions format this territory and its subjects en masse? What governs those conditions?

*From Program to LEVERAGES* – How might you identify and instrumentalize different degrees of opportunity? How to take advantage of existing conditions and acknowledge points of resistance?

*From Building to METABOLISM* – What are the material processes active in this territory? What are the aesthetic possibilities in orchestrating interactions? What forms might recycle, retreat, intensify?

## PHASE THREE — INTERVENTION

During the third phase, each pair will determine the means predisposed to intervene in the situations identified and develop a project accordingly. We will meet regularly as a group to encourage the sharing of insights across the studio. Our ambition will be a collective, studio-wide body of interventions made up of the teams' distinct but mutually-informing proposals. Each team will give concrete definition to their project, addressing the overall studio prompts and refining their representational documentary forms. Each team will propose a visionary, yet grounded, intervention for architectural-territorial transformation that advances a position on the Rights of Nature and the following general ambitions:

- Envision precise, yet inevitably incalculable, currents of transformation that depart from present realities, challenges, leverages, and contingencies
- Reinforce, expand, and/or redirect the ecological processes of the conditions in question
- Reconfigure the spaces and biological-political terms in which a diverse set of human and other-than-human actors interact
- Chart out multiple spatial and temporal scales

## ON TECHNIQUES

This studio will foreground geographic methods and an intimacy with context. Accordingly, participants will make firsthand field visits but also observe and design with remote sensing data (multi-spectral satellite imagery for detecting variations in biomass), LiDAR point clouds (3D GIS data for studying terrain, tree canopy, hydrology, and urbanization), and georeferenced historical maps. Participants will develop their work using the format of film, deploying a critical narrative, GIS video, and drawings animated through AfterEffects. As required over the semester, participants are encouraged to consult faculty from across the university, as well as literature from other disciplines.

## Phase Schedule: Week 5 – Week 7

**Goals:** Each team will produce a four to five-minute film with site footage, animated 2D/3D GIS clips, and remote sensing data, articulating a set of environmental concerns in the watershed region.



Prepare the following in collaboration with your partner:

- Produce a well-edited film that responds to the concerns described here. Using a voice over, narrate the film and respond to the questions listed posed here. You are encouraged to explore narrative concepts that reflect the content of your framing
- A 75-word statement: what is the situation you've framed and what are the leverages to intervene in it? Provide also a draft project title
- One 36" h x 24" w territorial drawing (from 1:50,000 to 1:250,000 scale). Carefully choose the features and relationships you visualize.
- Four to six drawings illustrating the identified leverages. Consider multiple scales

## Phase Schedule: Week 8 – Week 15

**Goals:** Each team will develop their film from Phase Two, including a narrative for the intervention and detailed, multi-scalar drawings that unfold over time.



Prepare the following for the studio's concluding symposium:

- Film exported at 1080p for projection with a voice over and captions; all drawings should be represented and animated in the film
- One 36" h x min. 108" w sheet with a series of isometric drawings using a LiDAR point cloud base with superimposed line drawings, multi-scalar callouts, and annotations illustrating your intervention over time
- Additional drawings, diagrams, and imagery at the discretion of each team
- A 750-word text
- Printed drawings
- A physical model (scale to be discussed with each team)

**Tutorials:** The instructor will hold workshops on the referenced techniques over the course of the semester and will be available during student hours for assistance. Participants will have access to ArcGIS Pro and Adobe Creative Suite through the university. Resources for 2D/3D GIS data will also be made available.