

Excerpts from

# young, old, and feathered

Birding and intergenerational care for the Salmon Arm Bay foreshore

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[Fig. 1] Photograph of 1:200 scale model for iterating the form of a 'wetland chapel' bird blind. Constructed by hand of coir door mats, chipboard, and dried seedheads gathered from the project site.

Secwepemcúl'ecw, the unceded territory of the Secwépemc people. A rich ecosystem extends from the railway tracks to beyond Shuswap Lake's ephemeral edge, a ribbon-like interstice that provides a home for approximately 230 species of birds.

A generation of avid birders look on as monuments of their efforts sink into the cattails along the foreshore trail in the town of Salmon Arm, British Columbia. The practice of birding entangles the next generations of avian aficionados, their mentors, and their feathered neighbours in rhythms of learning, care and encounter as they imagine a future for this beloved wetland. This project proposes a three-generation (or 90 year) plan of educational initiatives, trail improvements, and a series of "wetland chapels" - places of interspecies and intergenerational encounter - thatched with the material results of ongoing wetland regeneration processes.

Sociologist Elizabeth Cherry's work with birders uncovered what she calls the naturalist's gaze, a way in which the practice and community of birding develops a unique understanding of landscape and networks of ecological connection (Cherry 2019). Simply put, birders learn from their mentors to listen and observe things that may otherwise be ignored.

This way of seeing the world catalyzes care, the willingness to get dirt on the hands and participate in the wellbeing of a landscape shared with feathered neighbours. Learning and care together make space for points of interspecies encounter: the fruit of what Robin Wall Kimmerer calls biocultural restoration (Kimmerer 2013).

In the 1990's, the Salmon Arm Bay foreshore was recognized as both regionally and nationally significant bird habitat, and was preserved as a conservation area thanks to a dedicated group of

locals who developed the shoreline with boardwalks and a 4km trail. Today, this infrastructure is in decay and declining volunteer numbers coupled with a growing population is putting pressure on the ecosystem. This project uses the naturalist's gaze to contend with the challenges and opportunities of volunteer-ship, invasive species, railway pollution, and the rise and fall of the lake, imagining a future of biocultural restoration in motion.

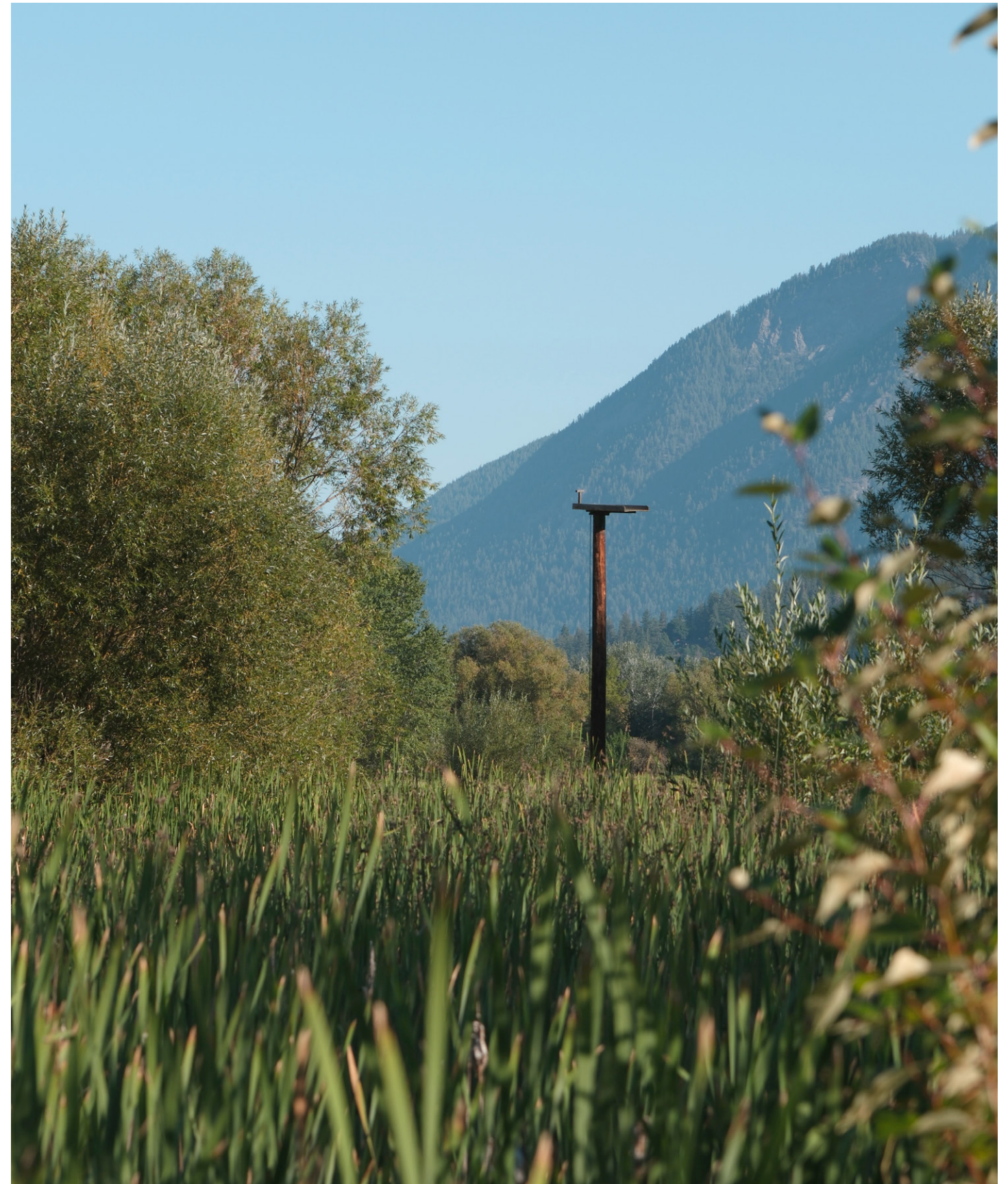
Rooted in personal experiences of learning, care, and encounter of a childhood spent on the foreshore, this project is a return home and a celebration of relationships to people and place. I assert that these relationships are central to landscape care in a changing world.

This project is also a celebration of the stories and landscapes that draw us into care for the world around us, and even into the profession of landscape architecture itself. At each presentation of this body of work, I've had the opportunity to hear others - landscape architects, ecologists, and committed volunteers alike - express their own rich stories of landscapes, creatures, and people that have catalyzed their work. I hope that this project brings to mind places and people you hold dear in your own story.

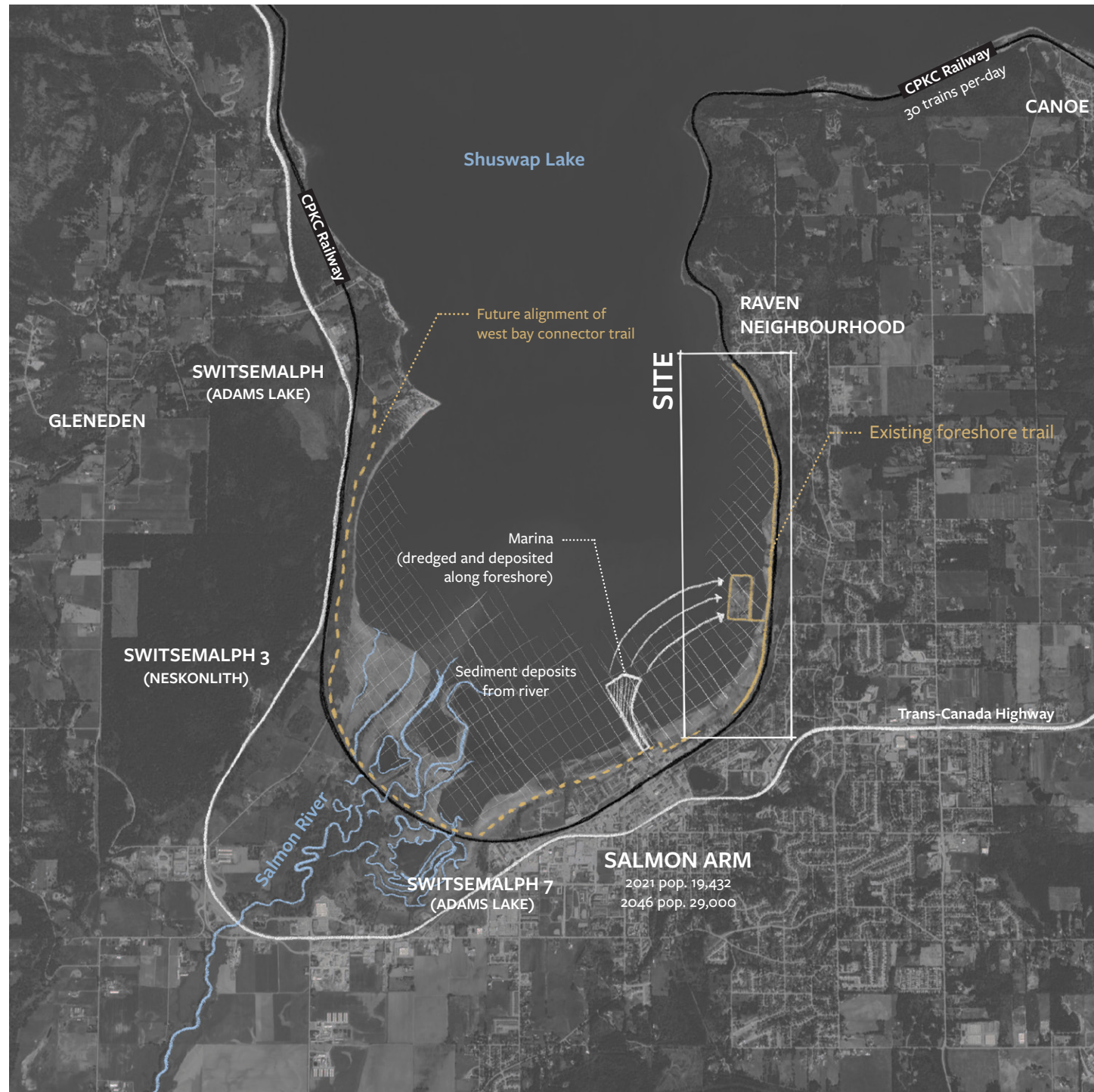
#### Citations:

Cherry, Elizabeth Regan. 2019. *For the Birds: Protecting Wildlife through the Naturalist Gaze*. Nature, Society, and Culture Series. New Brunswick, New Jersey: Rutgers University Press.

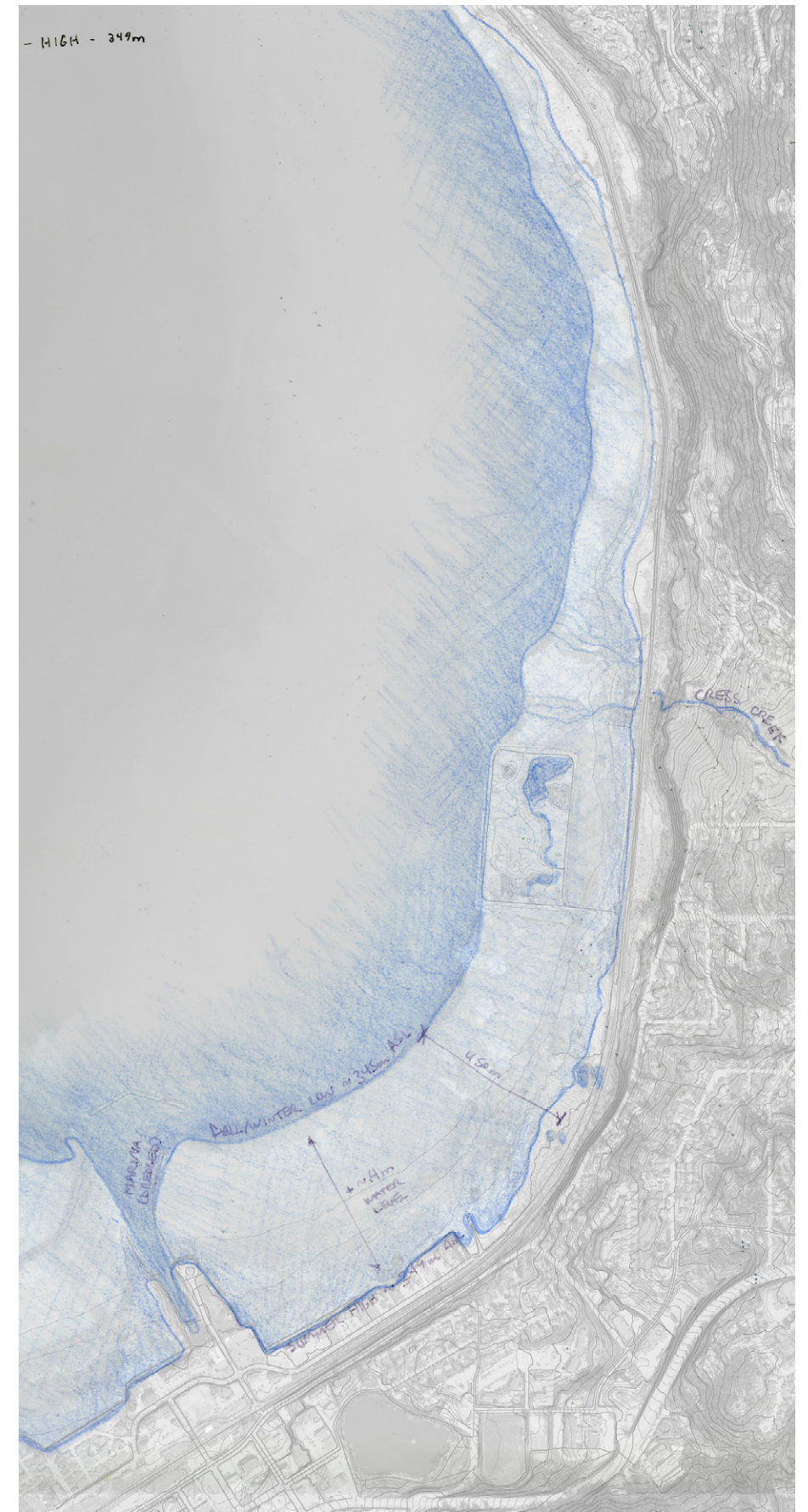
Kimmerer, Robin. 2013. *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants*. Minneapolis: Milkweed Editions.



[Fig. 2] A vacant osprey nest platform stands above the cattails and willows of the foreshore, the cliffs of Kwellkém (Bastion Mountain) visible beyond. Author's photograph, September 2024.

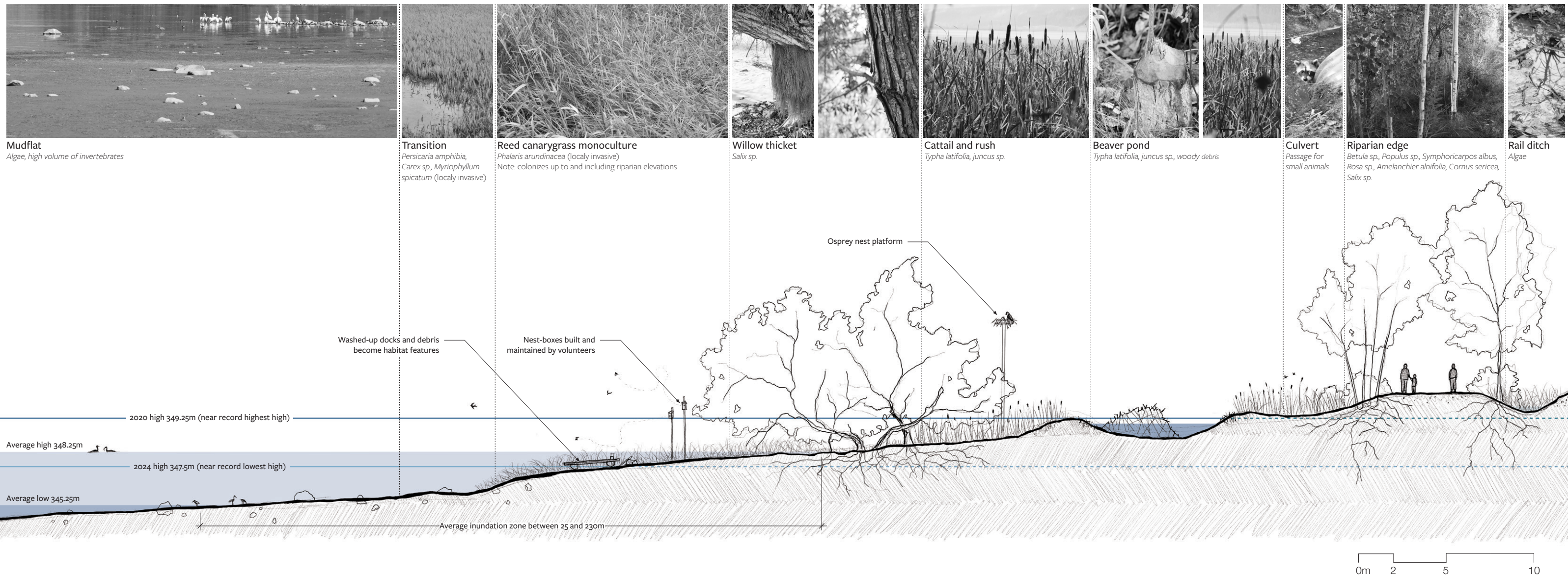


[Fig. 3] Site context plan. Procreate and Adobe Illustrator over aerial imagery.



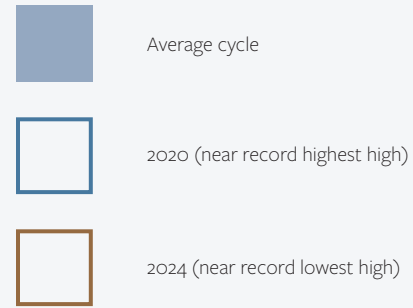
[Fig. 4] Sketch of average annual average inundation, Salmon Arm Bay foreshore. Pencil crayon and ink on trace paper over printed orthophoto. Original size over tabloid sheet.



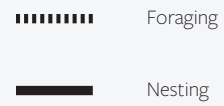


[Fig. 5] Diagrammatic section showing foreshore ecosystem zonation, with attention to impacts of beaver and humans. Hand-drawn in Procreate with post-processing in Adobe Illustrator and InDesign, including author's site photographs.

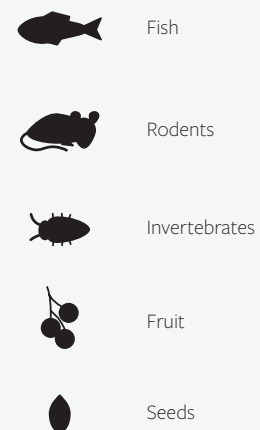
**Shuswap Lake Water Levels**



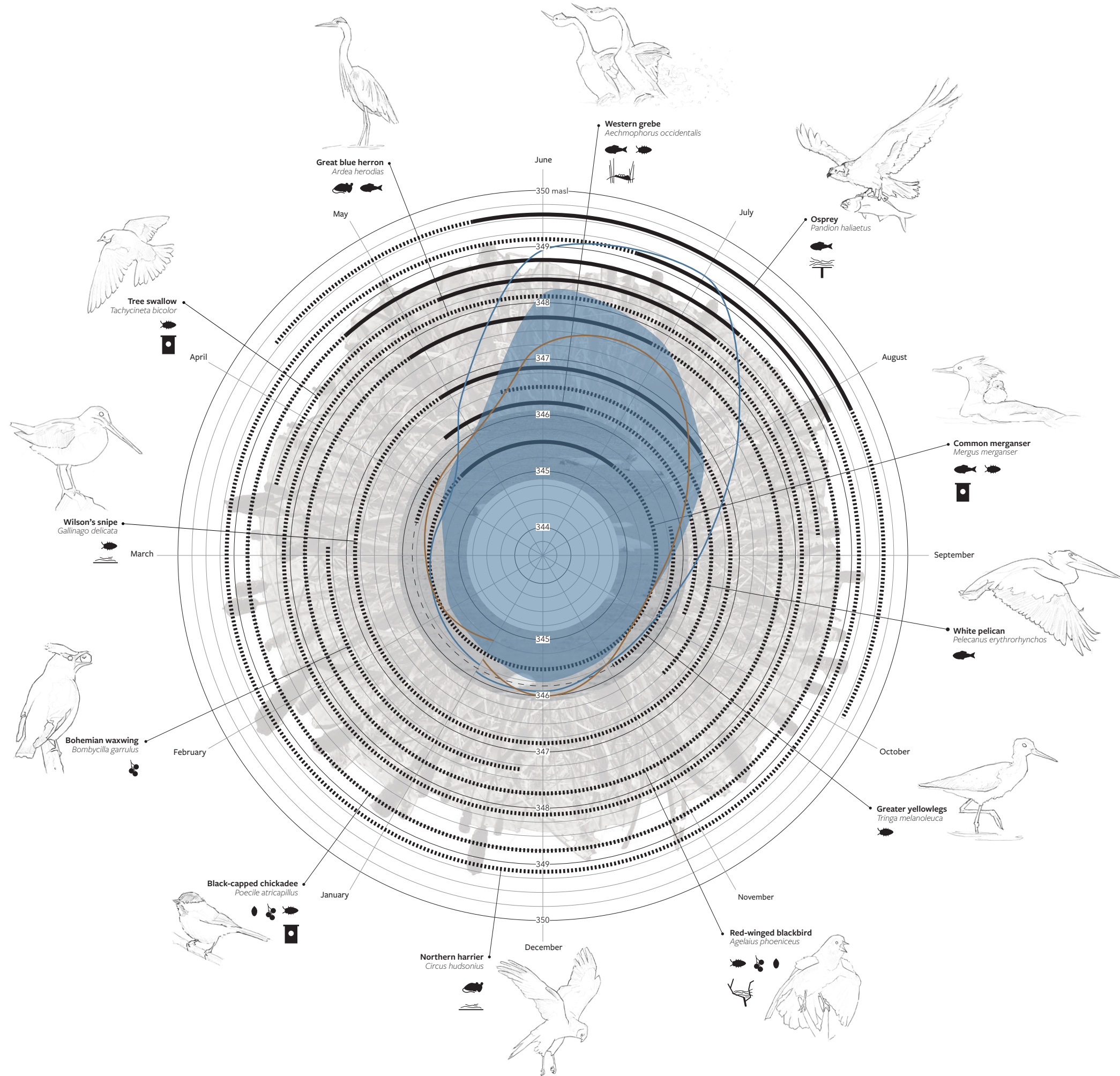
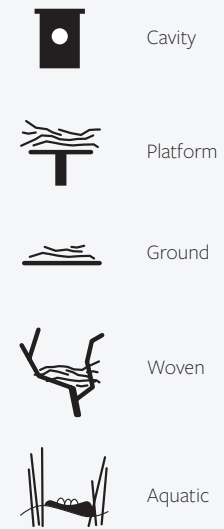
**Bird Behaviour**



**Primary Food Sources**



**Nest types (foreshore nesting only)**



[Fig. 6] Diagrammatic illustration of relationships between the seasonal water level cycles and bird life. Adobe Illustrator and Photoshop with birds hand-drawn in Procreate. Originally drawn for 36x48" sheet.

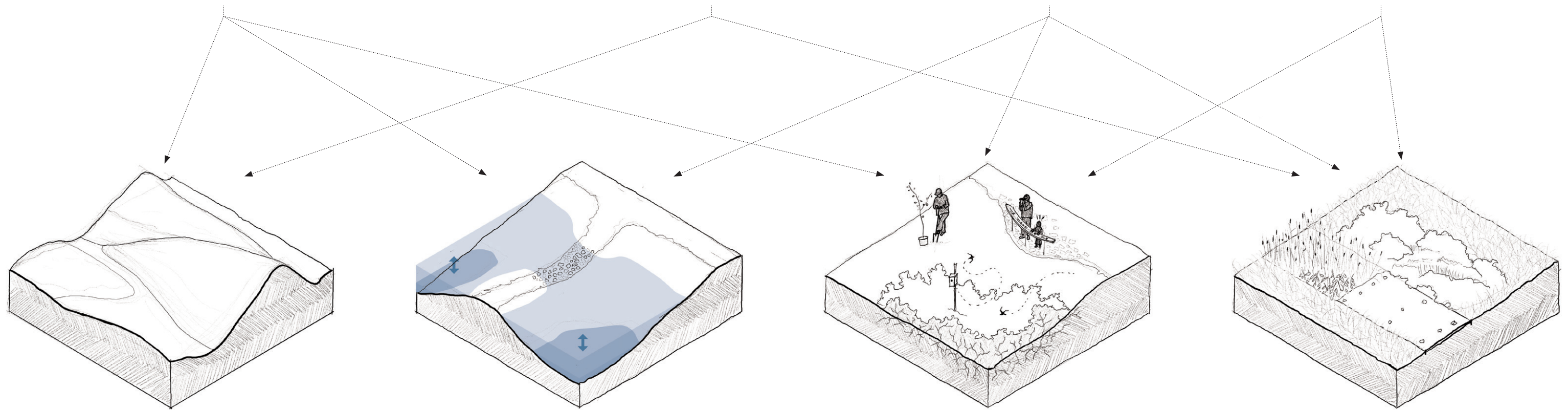


Aging infrastructure

Railway noise and pollution

Human and dog incursions

Reed canarygrass monocultures



**Work with landform**

- Deflects sound
- Improves phytoremediation
- Mediates erosion
- Increases habitat value

**Align with water**

- Links humans to seasonal change
- Preserves nesting habitat
- Integrates climate resilience

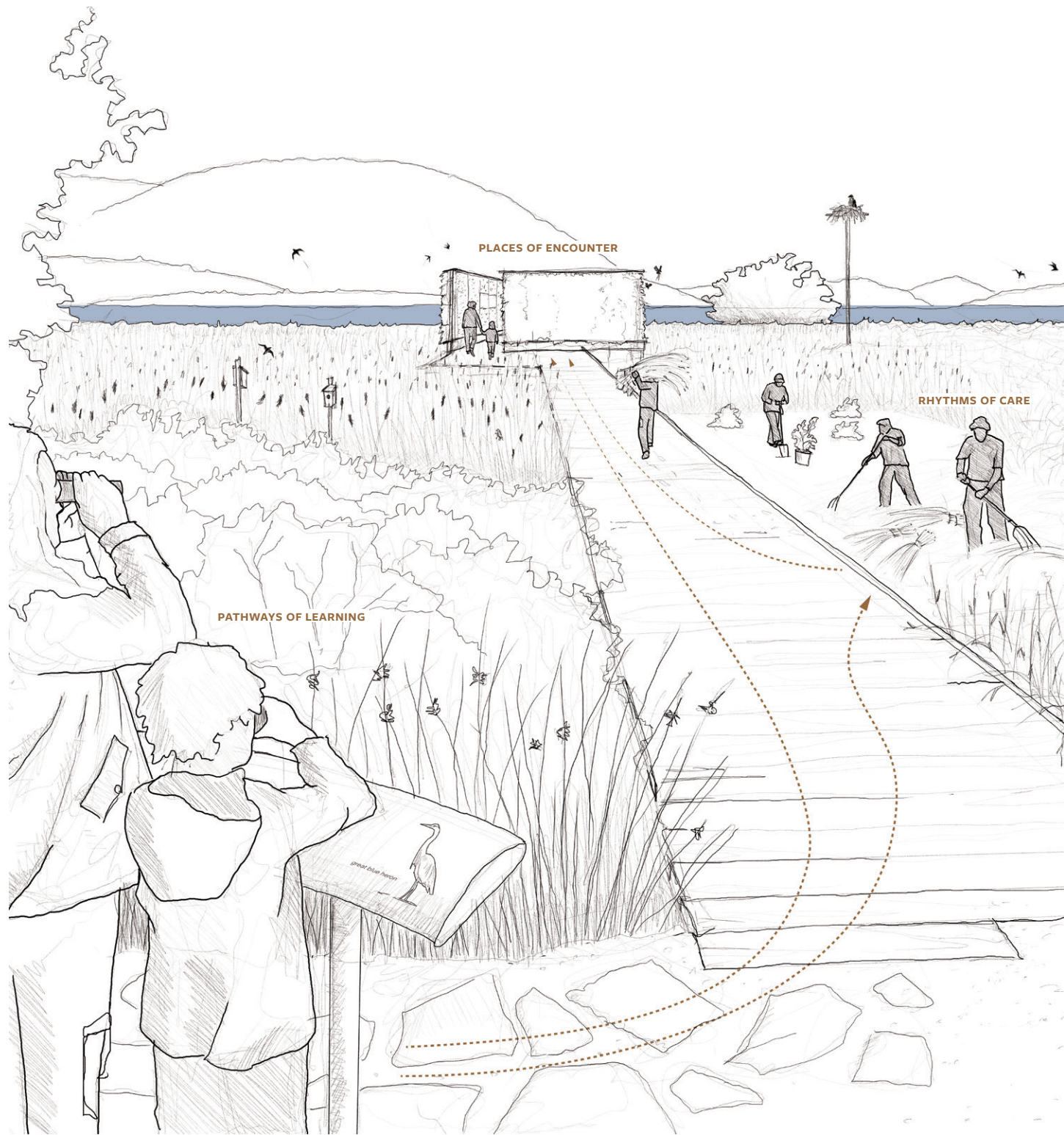
**Educate for involvement**

- Builds a volunteer base
- Encourages care
- Cultivates the 'naturalist gaze'

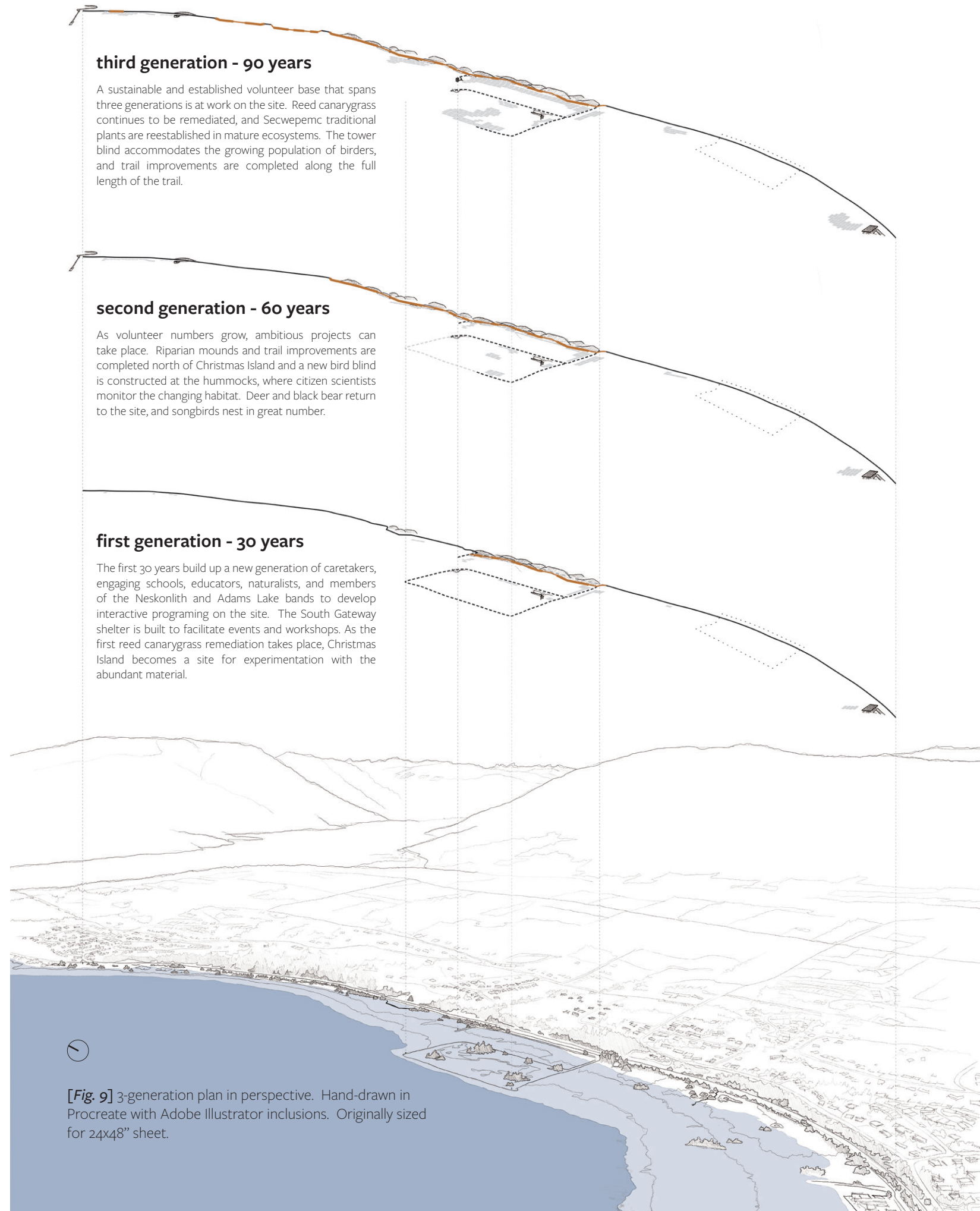
**Restore native plant communities**

- Diversifies habitat types
- Increases habitat value
- Re-establishes Secwepemc culturally significant plants
- Provides natural barriers to human access

[Fig. 7] Relating site challenges with opportunities for intervention. Axonometrics hand-drawn in Procreate and processed in Adobe Illustrator with author's photographs.



[Fig. 8] Experiential Framework Perspective. Hand-drawn in Procreate with Adobe Illustrator inclusions. Originally paired with Fig. 8 on 24x48" sheet



**third generation - 90 years**

A sustainable and established volunteer base that spans three generations is at work on the site. Reed canarygrass continues to be remediated, and Secwepemc traditional plants are reestablished in mature ecosystems. The tower blind accommodates the growing population of birders, and trail improvements are completed along the full length of the trail.

**second generation - 60 years**

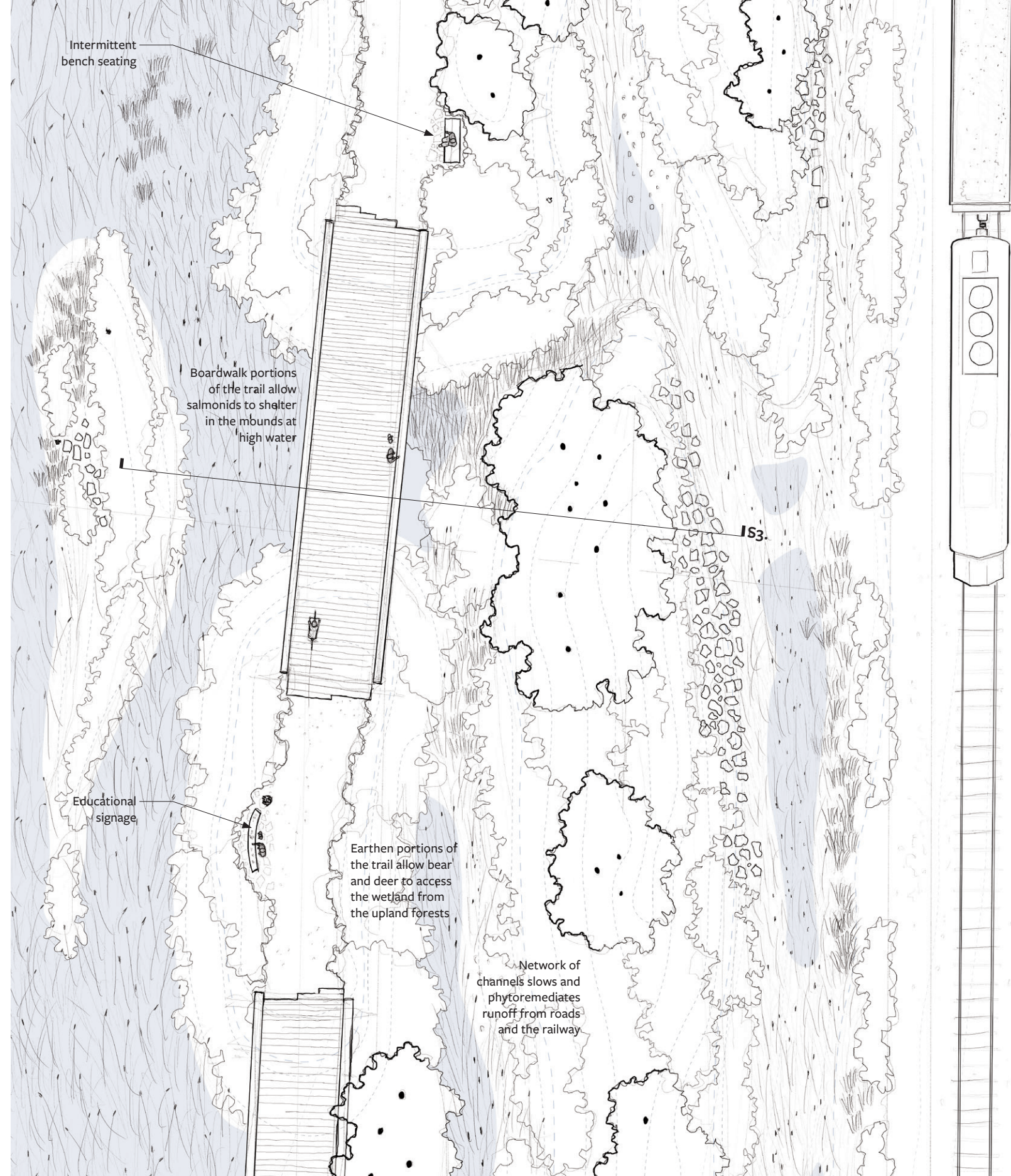
As volunteer numbers grow, ambitious projects can take place. Riparian mounds and trail improvements are completed north of Christmas Island and a new bird blind is constructed at the hummocks, where citizen scientists monitor the changing habitat. Deer and black bear return to the site, and songbirds nest in great number.

**first generation - 30 years**

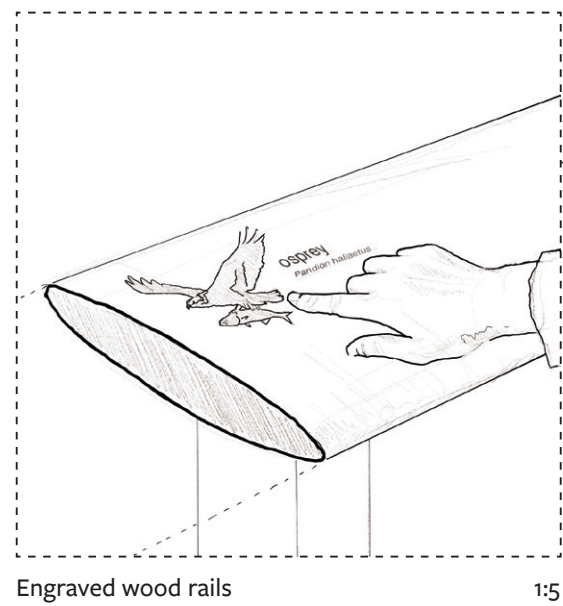
The first 30 years build up a new generation of caretakers, engaging schools, educators, naturalists, and members of the Neskonlith and Adams Lake bands to develop interactive programming on the site. The South Gateway shelter is built to facilitate events and workshops. As the first reed canarygrass remediation takes place, Christmas Island becomes a site for experimentation with the abundant material.



[Fig. 9] 3-generation plan in perspective. Hand-drawn in Procreate with Adobe Illustrator inclusions. Originally sized for 24x48" sheet.



[Fig. 10] North Trail Plan. Landform breaks the earthen trail into earthen and boardwalk segments, allowing young salmon to shelter at high water while providing access to the lakeshore for deer and bear. Hand-drawn in Procreate with Adobe Illustrator inclusions.



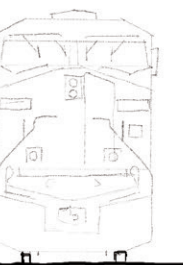
Reed canarygrass remediation plot

Average high 348.25m

Existing trail bed is raised slightly during standard repairs to accommodate an increasing chance of critical water levels

Oversized culvert allows beavers to pass through

Phytoremediation channel



CPKC Railway

0m 2 5 10

[Fig. 11] South trail section. Engraved wood rails disperse a bird-book along the length of the trail. Hand-drawn in procreate with Adobe Illustrator inclusions.

Rocks provide shelter for amphibians and reptiles,  
and perches for shorebirds and waterbirds 1:5

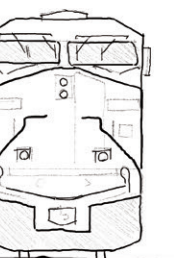


Outer mounds host nest  
boxes for swallows

Average high 348.25m

Average low 345.25m

Wood stake slope stabilization  
prevents erosion planting matures

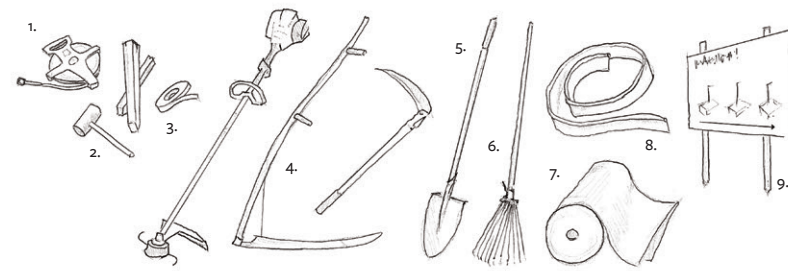


CPKC Railway

0m 2 5 10

[Fig. 12] South trail section. Landform deflects noise from the CPKC railway while providing habitat. Hand-drawn in procreate with Adobe Illustrator inclusions.

1. Measuring tape
2. Wood stakes and mallet
3. Flagging tape
4. Line trimmer, scythe, or sickle
5. Rake
6. Shovels
7. 25 ft. by 75 ft. benthic barrier
8. 200 ft. of 6 inch deep landscape edging
9. Informational signage



### Step 1: locate and flag the site

Follow the working list of priority restoration sites to select the next area. Measure an area the size of your benthic barrier (ensure alignment with any existing barriers or restored wetlands already in place). Hammer in stakes at each corner and tie flagging tape between them.

### Step 2: mow and gather

Wait for a dry, sunny day in late fall, when grass has lost the majority of its moisture. Using a line trimmer, scythe, or sickle, cut all of the reed canarygrass within the flagged area. Gather the grass using a rake, shaking off dirt and loose leaves before bringing to the drying tables at the South Gateway.

Proceed to Part 2 to process this grass.

### Step 3: lay benthic barrier

Roll out the benthic barrier to the edges of the flagged area. Use large stones to weigh down the barrier at intervals. If near a path, locate information signage adjacent to the path where the restoration site can also be seen.

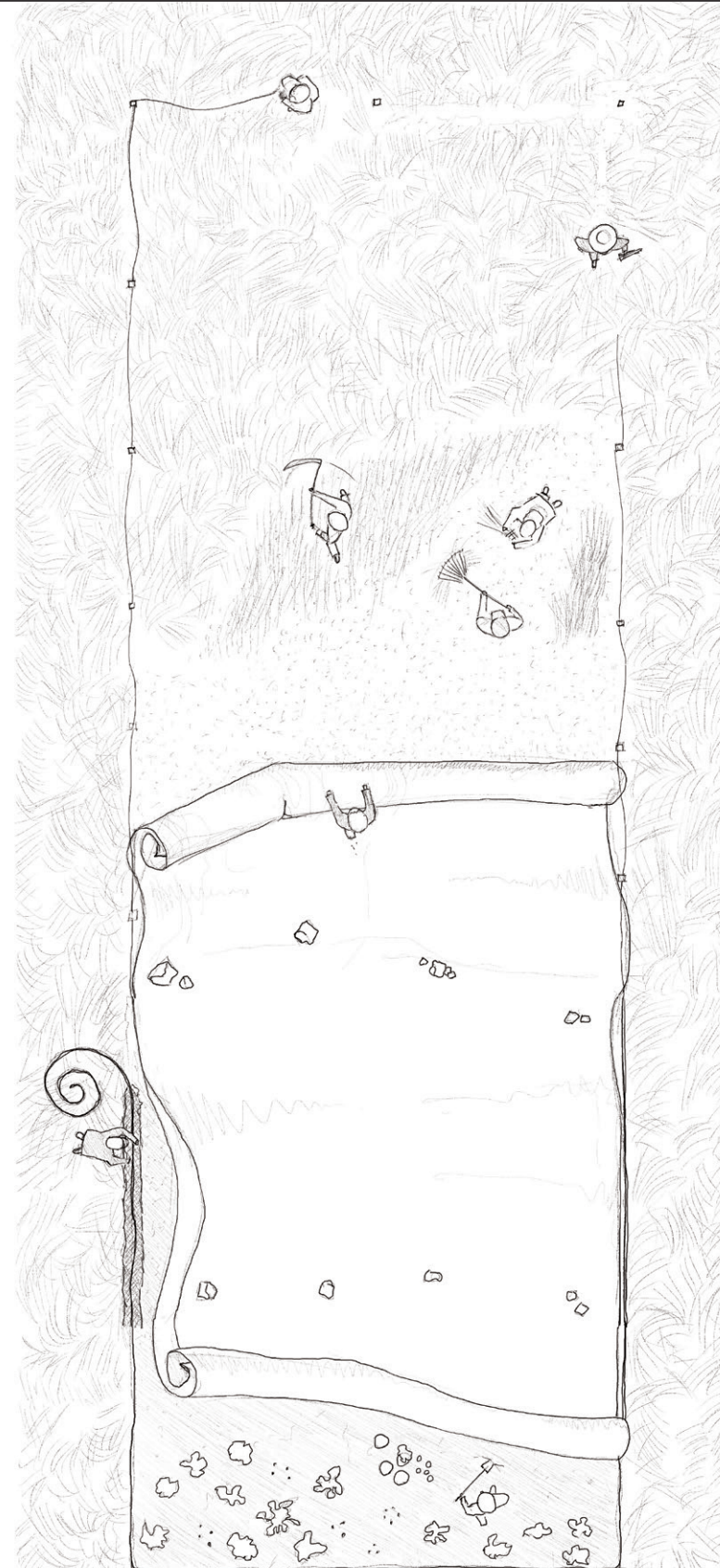
### Step 4: install perimeter containment

Folding back the edges of the benthic barrier approximately 12 inches (30cm), dig a 6 inch (15cm) deep and wide trench around the perimeter. Unfold the barrier into the trench and lay out the landscape edging in the trench so that the barrier wraps underneath the edging. Refill the trench with earth so that the barrier and edging are compacted together.

### Wait one year

### Step 5: remove barrier and plant

Remove barrier re-install containment edging. Look for evidence of reed canary grass regrowth, and remove any green shoots. Replant with native wetland species (select species based on the overall restoration plan zones)

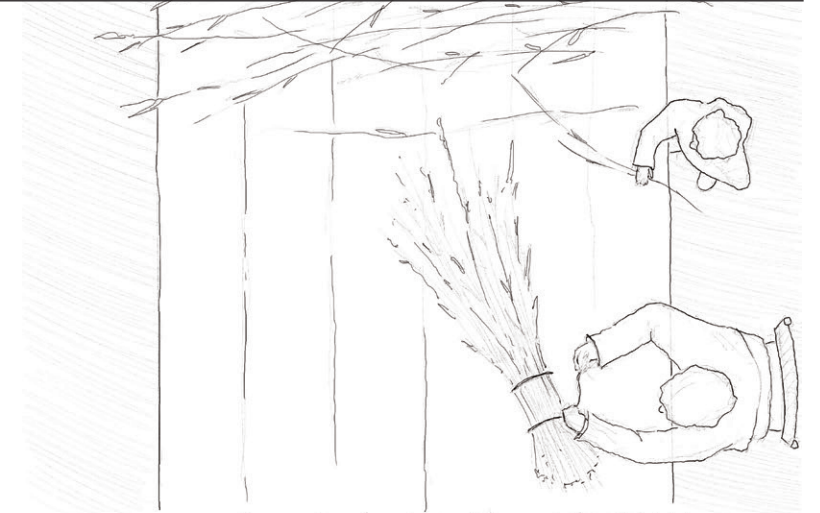


### Step 1: dry the grass

After removing any seed heads, spread harvested grass out on the tables at the South Gateway Shelter to dry for 3 to 5 days, depending on moisture content and weather. When dry, proceed to part 2a, b, or c dependent on use.

### Step 2: bundle

Gather enough dry grass to wrap both hands around. Taking jute twine, tie the bundle tightly at 6 inches and 10 inches from one side. The 6-inch tie should be left with two 10-inch long loose ends.



### Step 1: collect bundles

Using a wagon or a sling, carry the reed canarygrass bundles to the wall you are 'thatching'.

### Step 2: place the bundles

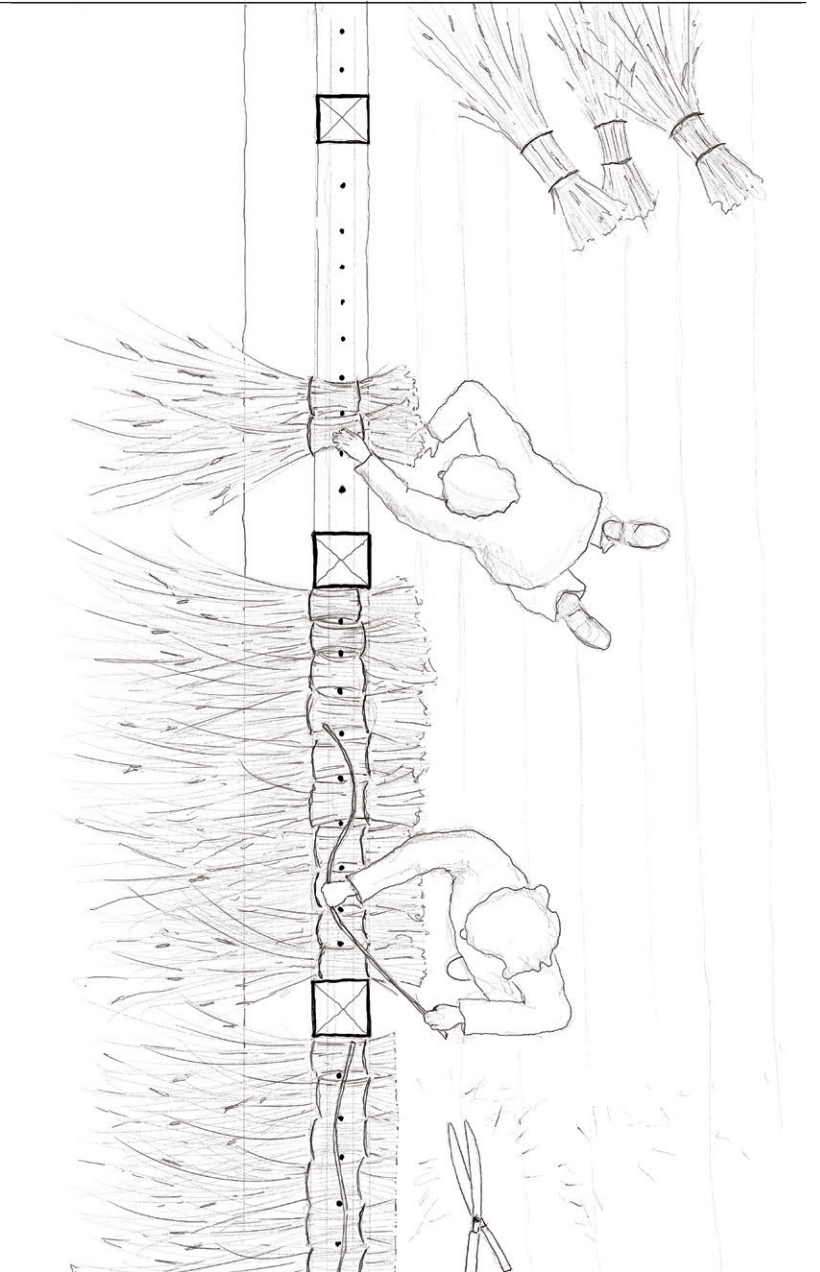
Push the bundle through the gap between two galvanized wires, wedging it so that the wire is in line with the twine tie at the 6" mark. Push the bundle down, either to wood base or on top of the bundle below. Use the extra loose twine to lash it to the wires.

### Step 3: add willow rod

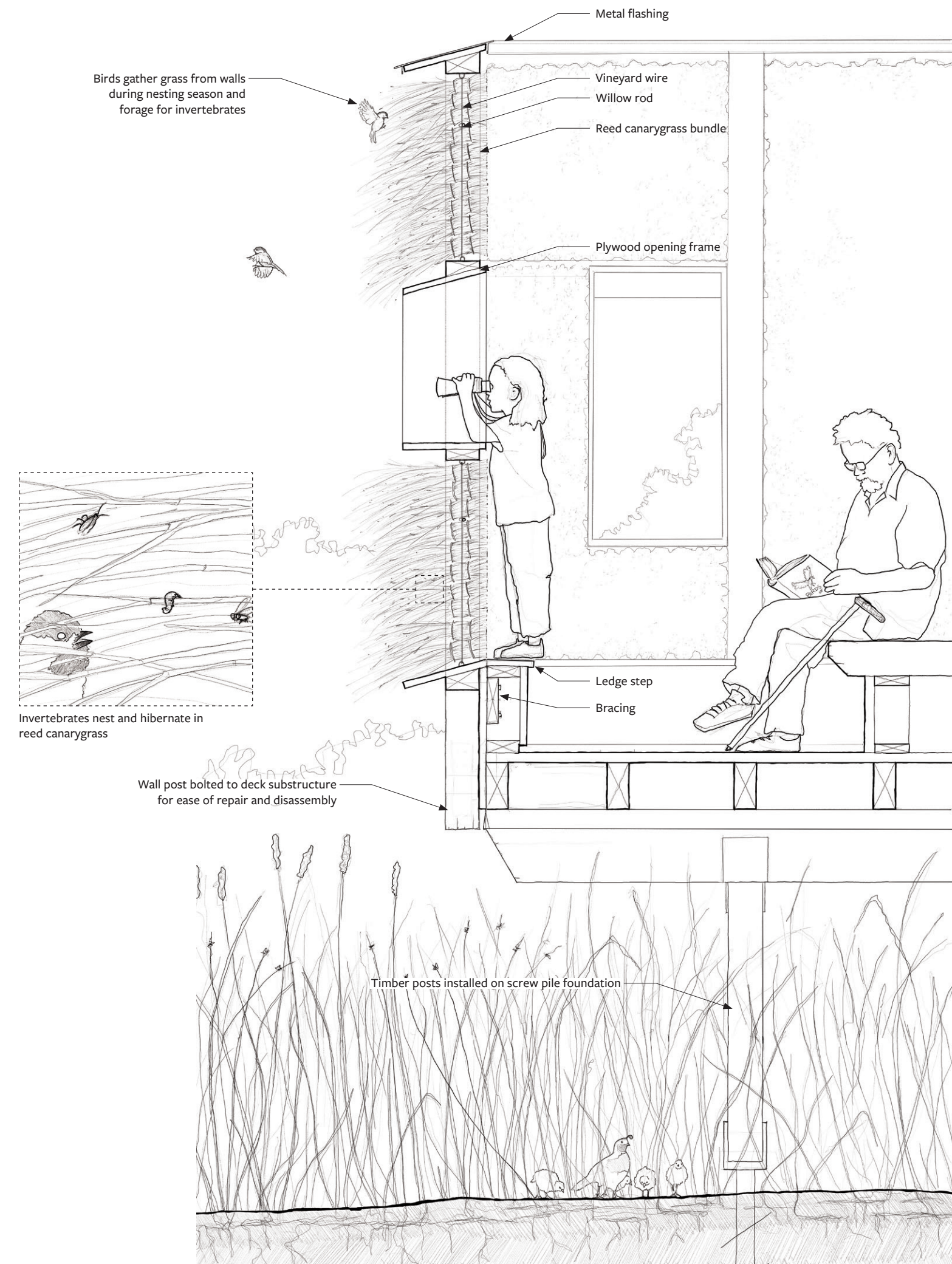
After a section of wall has built up 7 layers of grass bundles, thread a willow or dogwood rod horizontally through the wires, and push it down firmly atop the grass.

### Step 4: fill wall and trim

Repeating steps 2 and 3, fill the remainder of the wall section. When complete, use a hedge shears to trim the interior side of the grass thatch flush with the framing timbers. Repair wall intermittently as grass becomes available.



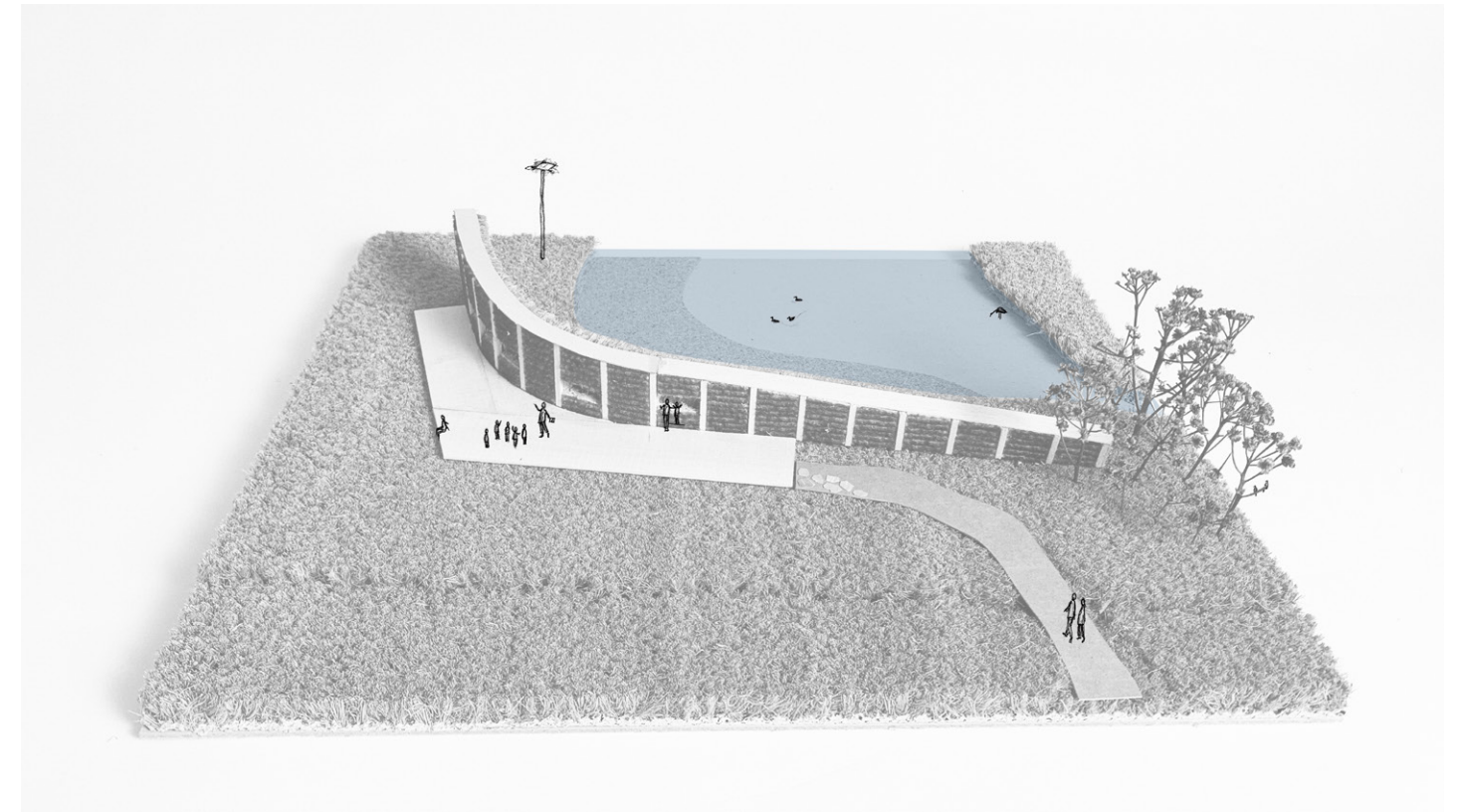
[Fig. 13] A ritual for the remediation and re-use of reed canarygrass. Remediation methods are drawn from the work of Dr. Catherine Tarasoff in Tranquille wildlife management area near Kamloops, BC. Hand-drawn in Procreate and assembled in Adobe InDesign. Originally displayed as continuous vertical drawing.



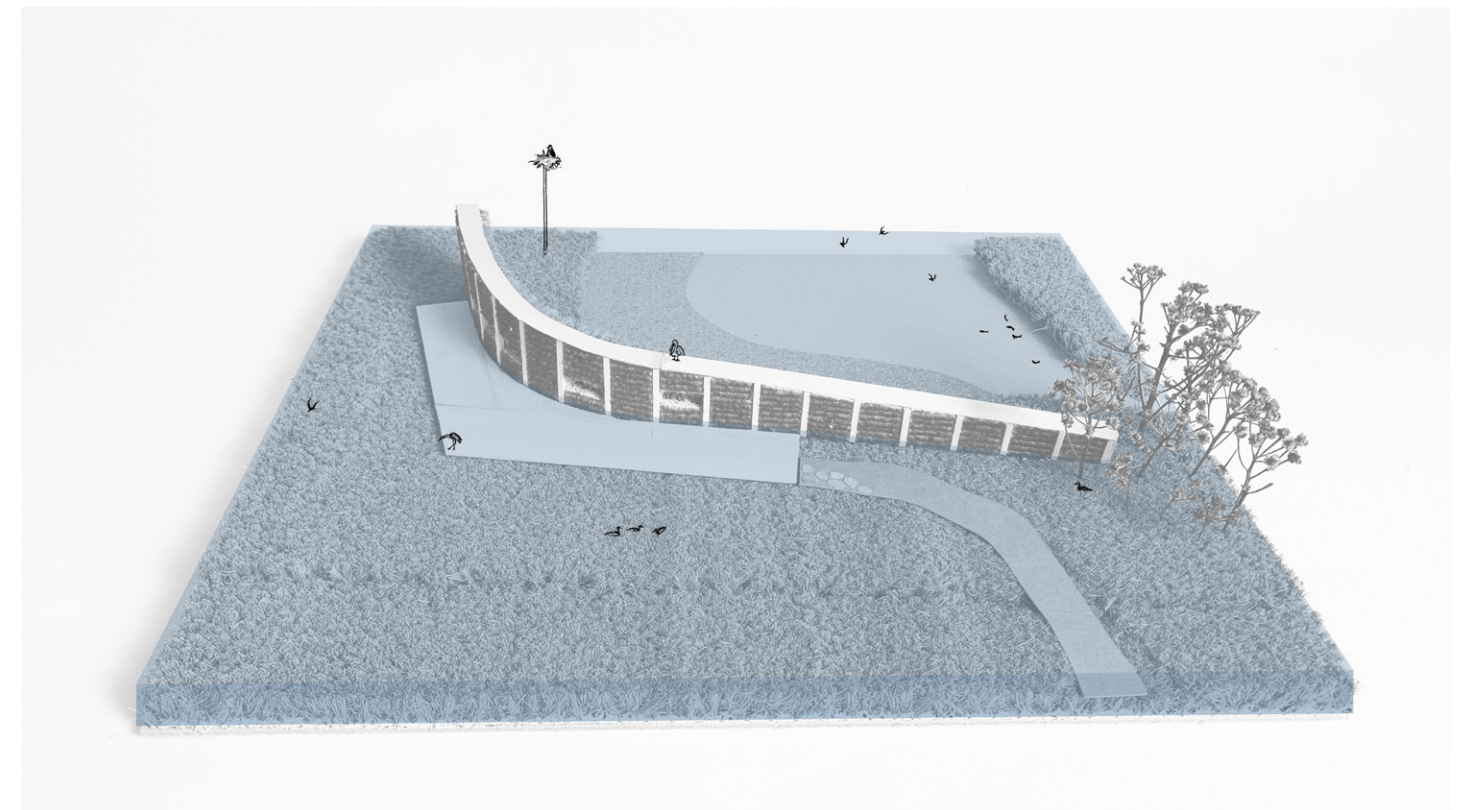
[Fig. 14] "Wetland Chapel" bird blind detail section. Reed canarygrass walls decay and are rebuilt through the process of remediation in the surrounding wetland, extending the benefits of the invasive plant material. Hand-drawn in Procreate.



[Fig. 15] Christmas Island Blind Perspective, one of three proposed “wetland chapels”. Model constructed of cork, chipboard, and basswood with coir and synthetic doormats, photographed, and processed with Procreate hand-drawings and author’s site photographs.



Low Water - Autumn through Spring

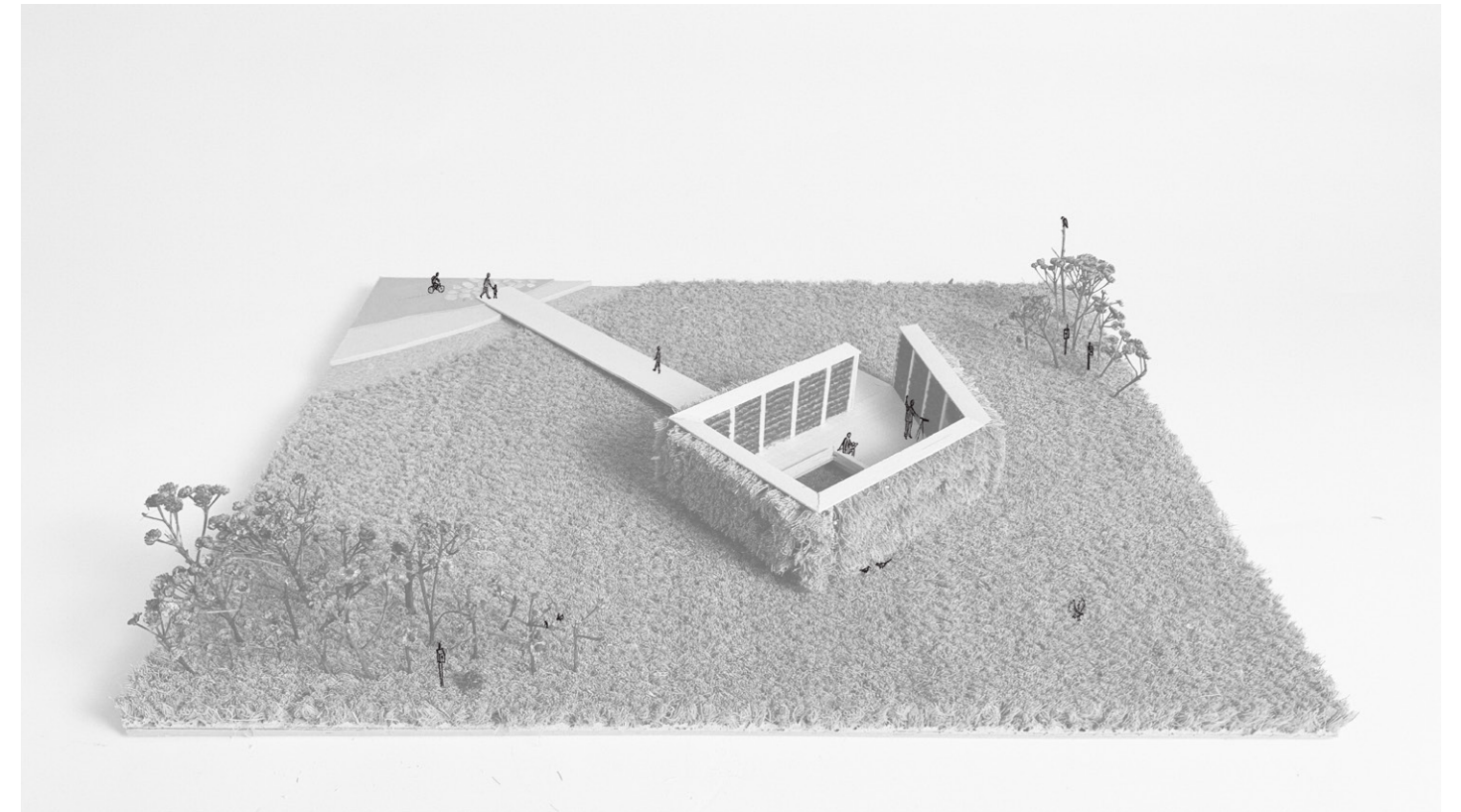


High Water - Early Summer

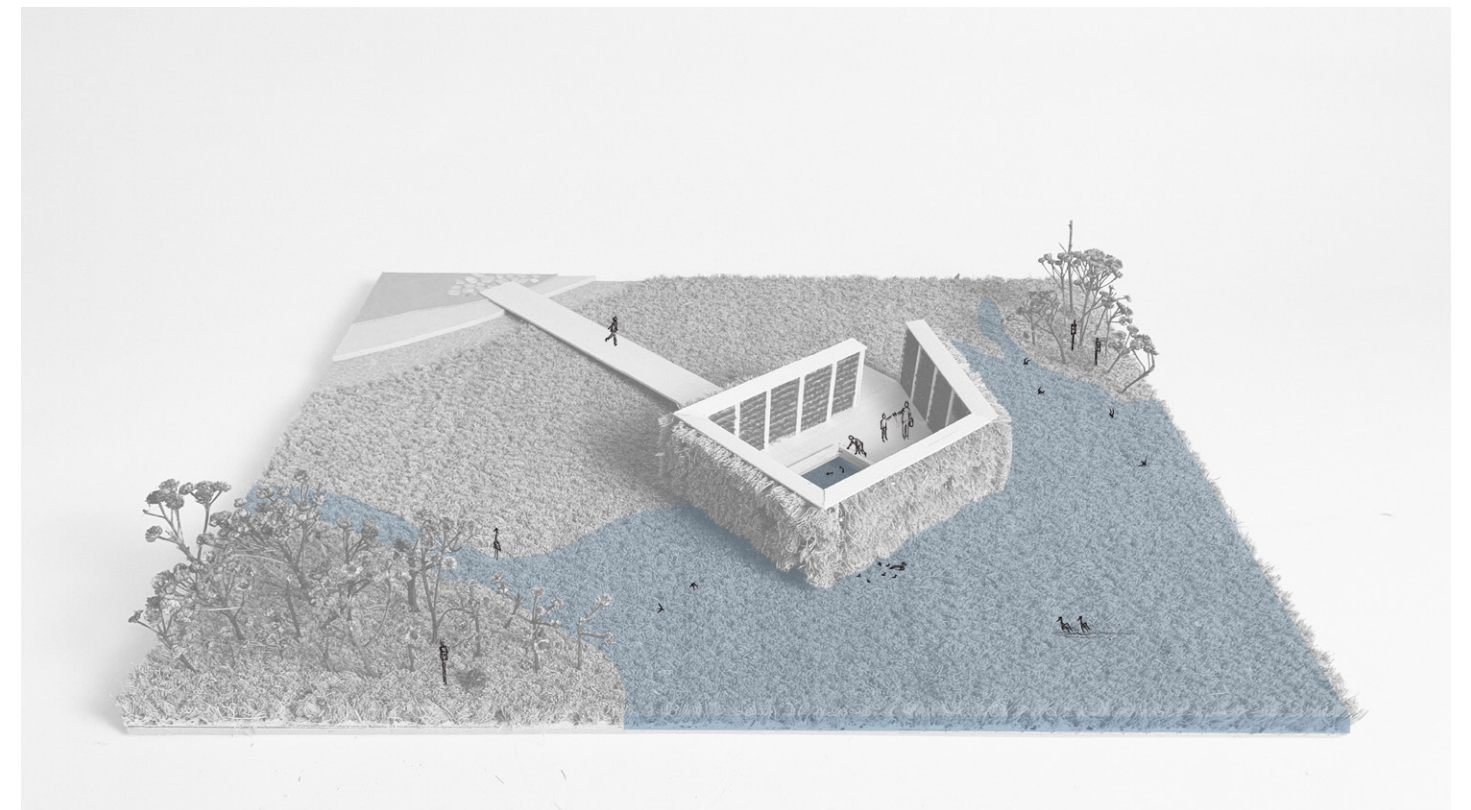
[Fig. 16] Christmas Island blind model digram showing high and low water. This blind is given over to the use of birds at high water. Model (construction noted in fig. 15) photographed and processed in Procreate and Adobe Illustrator.



[Fig. 17] Hummock Blind Perspective, the second of three proposed “wetland chapels”. Model constructed of cork, chipboard, and basswood with coir and synthetic doormats, photographed, and processed with Procreate hand-drawings and author’s site photographs.

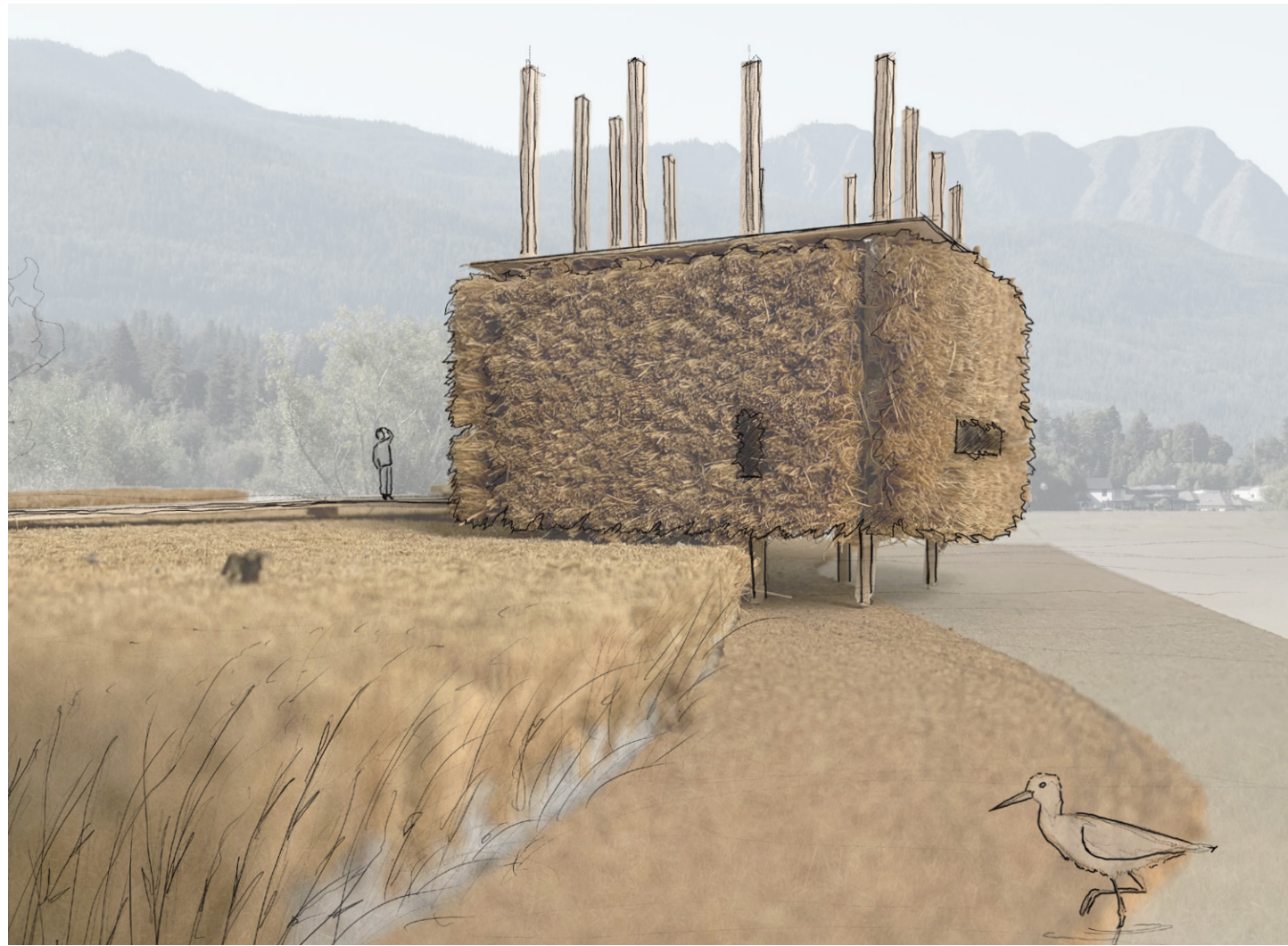


Low Water - Autumn through Spring

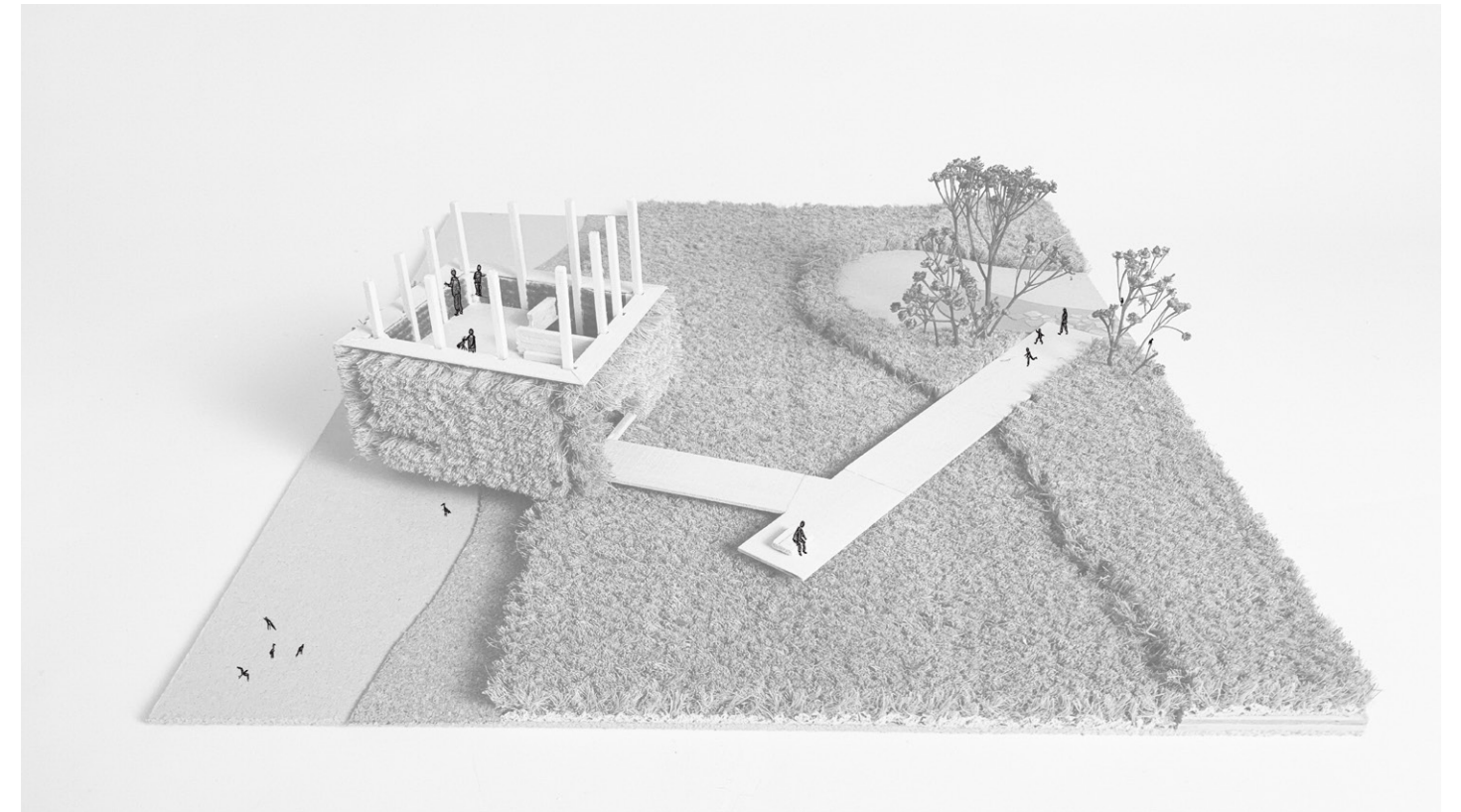


High Water - Early Summer

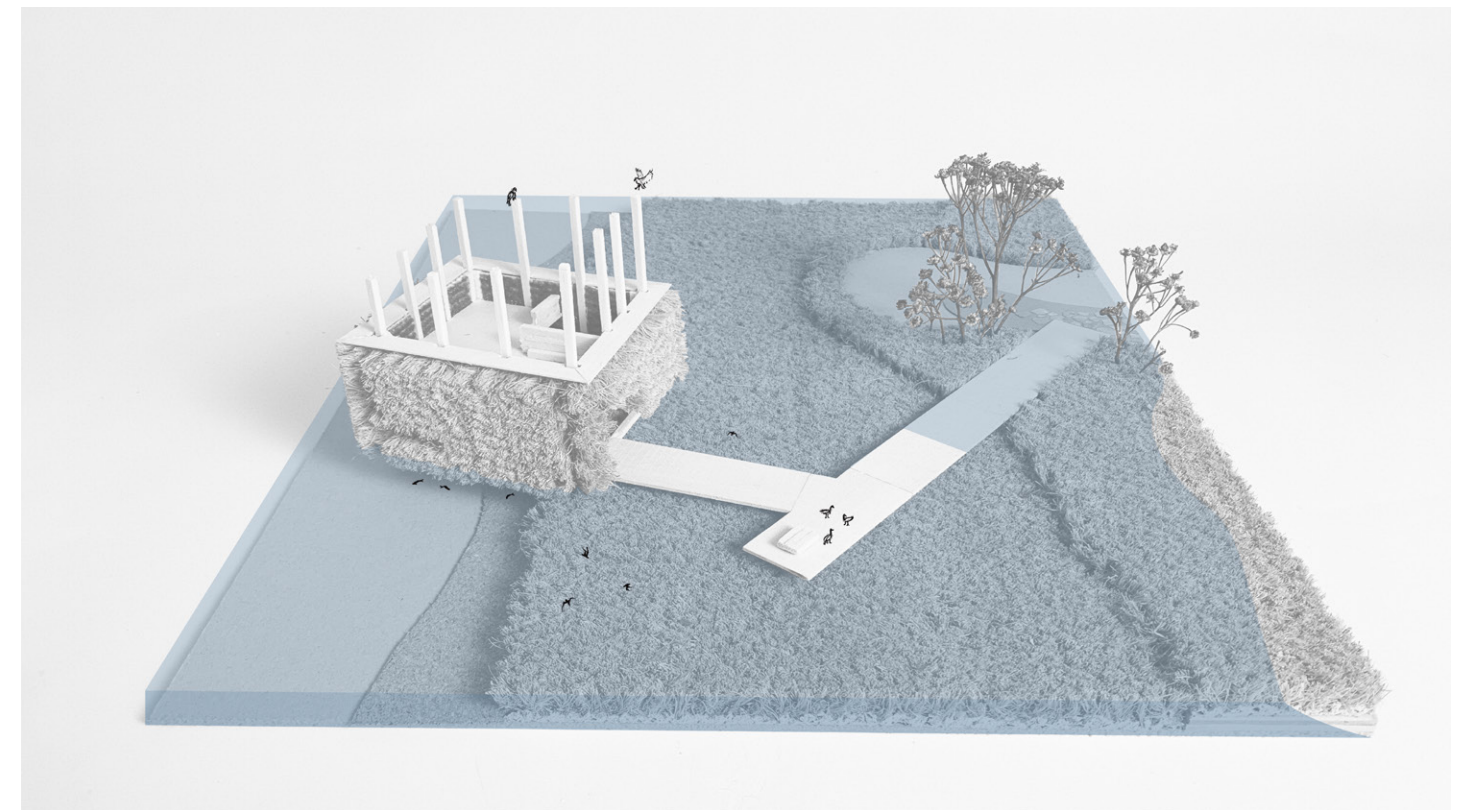
[Fig. 18] Hummock blind model digram showing high and low water. This blind highlights changing water levels at it’s centre. Model (construction noted in fig. 17) photographed and processed in Procreate and Adobe Illustrator.



[Fig. 19] Tower Blind Perspective, the last of three proposed “wetland chapels”. Model constructed of cork, chipboard, and basswood with coir and synthetic doormats, photographed, and processed with Procreate hand-drawings and author’s site photographs.



Low Water - Autumn through Spring



High Water - Early Summer

[Fig. 20] Tower blind model digram showing high and low water. This blind is given over to the use of diving birds such as osprey at high water. Model (construction noted in fig. 19) photographed and processed in Procreate and Adobe Illustrator.