**Songs & Soundscapes of Comcaac Desert and Sea Habitats**

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Alongside two Comcaac youth participants, and in collaboration with a Comcaac-Prescott College initiative to protect critical habitats – mangrove, ironwood, and mesquite – I accompanied three trips of a parallel N-Gen collaborative grant to explore and conduct habitat sound recordings in coastal and uplands areas in the Comcaac territory of El Sargento, Cerro Pelón and La Pedrera. During these trips, the acoustic ecology team immersed themselves in the atmosphere of each zone and recorded its soundscapes – above and below the surface. To further hone our skills, we accompanied Dr. Laura Monti of Prescott College in her ongoing efforts to record, edit, and archive parts of a vast knowledge-store contained in the ancestral songs and stories recounted by community elders. Many of these songs are inextricably linked with elements of the ecosystems which Comcaac groups have traditionally moved through; as such, we planned to collate songs/sounds along thematic or associative lines, highlighting the cross-pollination between culture/nature in each biome. Our work culminated in a presentation of the resulting sound collages to the town of El Desemboque during their annual ironwood festival. Field work took place in four segments of roughly four days each, interspersed across weekends from late February to late April. On all but one occasion, I rode south with Laura to Desemboque - where we stayed in the adobe house she maintains - and returned to Tucson via Tufesa bus from Hermosillo.

My first trip was hindered slightly by a shipping delay on my equipment, restricting me to the ambient recorder already in my possession. After meeting my young colleagues - Kenia Edlyn Estrella Molina (17) and Dulce Hoeffer Romero (13), our group left in a caravan with the researchers on the parallel grant, heading to La Pedrera. Upon arrival in this rugged ironwood-cardon habitat, the three of us traded off with the recorder and did our best to capture audio from a variety of birds. We soon found that without a long-range mic, our footsteps tended to spook our subjects. Changing tack, each of us sheltered below a chosen tree, opting for an ambient approach that allowed actors to enter/exit the auditory field - with results ranging from the echo of a beehive in a branch above to the squeaking of organ pipe cactus against ironwood boughs. In the midday lull, we experimented with an active role in the soundscape: calling together the broader group for a “sinfonía de piedras” that enrolled the region’s volcanic rocks as instruments. Cactus spines provided another venue for musicality whose notes we captured by clipping miniature mics to the ridges of the plant. Due to a lack of proper tools on this occasion, recording in the ironwood forest turned away from the discrete sounds of animals in favor of the “activations” of plants and stones by the wind or human movement. We also took this opportunity to record Mayra Astorga and Manuel Montoy - the lead researcher on the parallel grant and our guide, respectively - who shared with us an ironwood song and the lively “Plant National Anthem” featuring voices that run the gamut of flora found on Comcaac lands.

Our second trip focused on mesquite habitat in Cerro Pelon: a much more lush zone that follows several washes weaving in and out of one another. At this point I’d acquired a multi-track recorder and a contact mic for picking up internal vibrations through a substrate, as well as the shotgun mic we needed for less accessible sources. Since we had two recorders, the three of us were able to split up and coalesce as needed. Typically, one member went off with either recorder for a dedicated “productive” session, while the others stayed together to build context around the devices or experiment with the various sonorities of our surroundings. This method resulted in a wider scope of capture by lessening the inevitable noise of three bodies’ simultaneous presence, and by affording Kenia and Dulce individual opportunities to seek out their sonic affinities unhindered by any deference to me as an “expert” or organizer. At Cerro Pelon, we had a great deal more success with our surveys - representing such elements as an osprey circling its nest, a family of quail crossing the arroyo, and even a javelina which charged the girls. Upon returning to Desemboque each evening, we reviewed material and recording/editing practices. The girls acclimated to the software with ease after an overview of its basic functions of cutting, pasting, and fading; we practiced by weaving sounds into short pieces with the songs we’d recorded from Manuel and Mayra.

The final field work differed in its comparatively long distance from Desemboque, making it necessary for us to camp on the salt flats near El Sargento rather than heading back to Laura’s home every night. I went ahead to the site with Mayra, Laura, and two other Comcaac collaborators, but the girls and Manuel (who planned to join us the next morning) were held up by a car breakdown and never arrived. Situated along a shallow bay, the mangrove habitat presented a significant challenge in terms of navigation/access, with the buttressed roots barring entry to the forest, and the beaches entirely bare of cover to mask my presence from seabirds. However, it was certainly the most sonically arresting environment - made more so with the introduction of a watertight hydrophone. Since we slept there, I woke to the dawn chorus and trudged out with the shotgun mic toward a nearby channel: the only visible point of ingress past the wall of trees. Wading on, I noticed schools of fish riding in with the tide, which I hurried to head off with the hydrophone. I found myself with mics akimbo, making use of the multiple ports on the recorder to listen with both simultaneously. The product was a “soundscape *au naturel*” with an emphasis on the intermediate nature of the mangrove swamp at the crux of land/sea. This method was one I learned to apply across the board - simultaneous recording of a subject or space using disparate microphone arrays can provoke thought across scales/kinds.

At the end of April both teams reconvened in Desemboque for the Ironwood Festival, timed to coincide with the flowering season of the trees. We arrived two days in advance to have lead time for the editing process of the soundscapes, and to visit with Maria Luisa Astorga: a longstanding friend of Laura’s who carries one of the most extensive repertoires of traditional songs in the village. When we asked after songs relating to the mangroves, Maria shared what she described as a dialogue between a crab and sea turtle - their words contained in bubbles and carried from speaker to speaker. Over the next day, our team (Kenia & Dulce having rejoined us) collaborated to translate what we could of the full songs we’d retrieved (3 corresponding to the 3 habitats visited, plus “The Plant National Anthem”) and fit them into a framework of our sounds. Where there was direct relation, we overlaid key sounds on the songs - for example, a bubbling rush in Maria’s recounting of the interspecies conversation. In this way, we constructed three complete bioregional pieces, all 7-15 minutes in length. Along with Gabriela Suarez (another researcher and photographer on the parallel grant), Laura and I also put together a slideshow of images we captured throughout our travels in these habitats, timed to accompany the soundscapes. We presented that evening to the gathered village as the festival wound down. Folks lounged in the sand and chatted quietly as the transplanted rhythms and calls wafted upward, soon melding with the unique atmosphere of Desemboque at dusk. Most reacted with glee when they recognized the voices of Manuel or Maria, and both were met with a wave of applause.

Overall, the final products turned out well, and the learning experience seems to have been valuable to all. Kenia and Dulce demonstrated competency with the equipment and a marked curiosity with regard to unconventional sound sources. Though shy at the beginning, their reluctance evaporated as soon as they heard the potential for play held in these devices. At once, they were flitting between cacti and testing the notes of each species. While I felt that I’d done a reasonable amount of prep, work was held back somewhat by my meagre Spanish, coupled with the dual culture shocks of my first real international travel and first formal field work. Despite these setbacks, the opportunity afforded by this grant pushed me to conceptualize and complete a project I would have found insurmountable only a year before. Between forays across the border, the gear and confidence accrued even put me in a place to host a group “soundwalk” through downtown Tucson via our Museum of Contemporary Art - a critical first step for someone outside the halls of art or academia.

I hope to work with Laura next year on finding a way to host our archived recordings securely, so that they can be reviewed and downloaded by the Comcaac people as needed. There’s also an extensive backlog of her past song recordings, many of which need editing and categorization. In the long term, I plan to pursue formal training in ethnobiology and acoustic ecology, to fill the gaps in my learning that this experience helped me to recognize. Once I have more under my belt, it would be a dream to return to Desemboque and reprise this work in greater depth.