BIRDING THE FUTURE

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Abstract

Birding the Future is a multi-layered interdisciplinary project that explores issues of species loss and biodiversity while specifically focusing on the warning abilities of birds as indicators of environmental health. It is an outdoor installation and image walk incorporating multi-channel sound, stereoscopic images, text, Morse code messages, calls of endangered and extinct bird species and a rendering of projected extinction rate. *Birding the Future* is a global project designed as a series of local, site-specific works.

Keywords: Art, interdisciplinary, technology, installation, stereoscope, sound, multi-channel, birds, extinction, endangered, birds, warning, Morse code, indigenous knowledge, traditional ecological knowledge, photography

Research indicates we are living through the "Sixth Extinction" [1]. Loss of species and biodiversity is occurring at an alarming speed. The current rate of extinction is estimated to be between 1000 and 10,000 times higher than the background rate, or pre-human rate of extinctions, as calculated from the fossil record [2]. Birds are seen by many to be barometers of changing habitats and environmental health; it has been estimated that almost a third of all bird species will have disappeared by the end of this century [3]. In Australia alone, 27 bird species have become extinct since European settlement, with an additional 75 currently listed as endangered or threatened [4]. Declining bird populations in practically all habitats signals profound changes over our entire planet.

At times representing particular gods or ascribed supernatural powers, across cultures and continents birds have served as important symbols in art, song and ceremony. In Australia, more than 400 stories that include 116 species of birds have been recorded in Aboriginal communities [5]. Historically, birds have also been seen as "message bearers" able to communicate the future, announce changes in weather and warn of coming disaster. In certain indigenous communities of South America, birds have been said to "save people from total destruction," and so one must be able to recognize, observe and interpret changes or variation in bird song and behavior in order to respond properly [6]. In Kenya, which has one of the highest diversities of birds in the world (1026 species), birds are seen as especially helpful messengers in avoiding food shortages by indicating the onset of rain [7, 8]. For example, Maasai communities consider the presence of Cattle Egrets (*Bubuluc ibis*) to be a sign of impending drought and the need to move herds [9]. Such indigenous and local knowledge has been vastly under-recognized, but can aid in the process of disaster prevention in effective, participatory and sustainable ways.

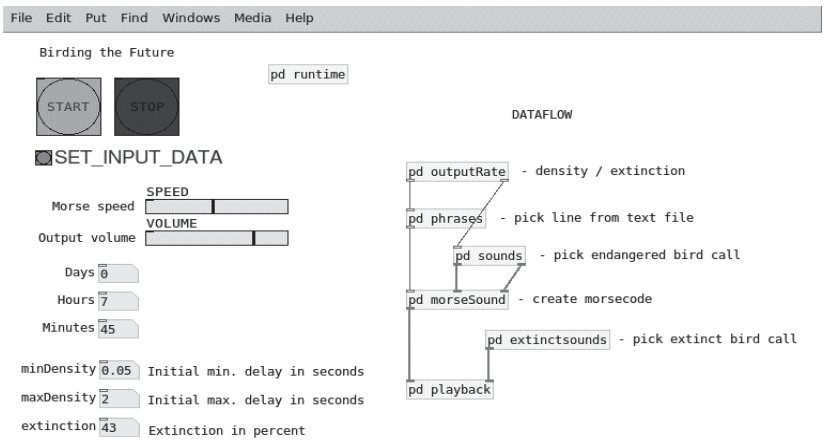
What might happen in the future as the messages of birds are increasingly being silenced? What does it mean that we are only able to see and hear extinct species through a technological device? How can knowledge gained via technology be combined with traditional ecological knowledge in order to increase awareness of our role in the natural environment? *Birding the Future* is an interdisciplinary project that explores these issues and current extinction rates while specifically focusing on the warning abilities of birds. An outdoor sound installation is paired with a stereoscopic image walk as participants are guided through a walk of extinction. Most of the benefits as well as destruction of biodiversity occur at a local level. By focusing on local ecosystems in a number of regions across the world, the project combines notions of site-specific and site-adaptable to highlight regional specificities while simultaneously mapping global commonalities.

Birding the Future incorporates several layers of information and methods of communication structured on different time scales. Auditory and visual components are tightly integrated both in concept and content, linking layers and influencing each other in the perception of the work as a whole as well as extending and integrating the work into the surrounding environment.

The sound material includes calls of endangered birds particular to the specific region, extracted to create Morse code messages that warn of disruption and urgency. Morse code is a simple means of communication that itself is falling out of use, and is today primarily a way of signaling emergency when other technologies fail. The strict rhythmic patterns of the Morse code signal imposes a mechanized quality on the bird calls, underlining technological reproduction as the only means to hear certain species. Unmodified calls of extinct birds act as a memory of the past and point to a future of less biodiversity. The bird calls are manipulated via a Pure Data (Pd) control algorithm and played back on a number of small, custom-made loudspeaker enclosures (Fig. 1) [10]. Projected rate of extinction for the end of the century is scaled down to the duration of the exhibition period by decreasing the density and diversity of bird calls. As different regions around the world can expect different rates of extinction based on factors such as climate, geography, habitat patterns and human activity, the extinction rate implemented into *Birding the Future* is based on projections for the specific region in which it is presented [11].

Directionality and the level of the sound output are balanced with the local soundscape. Using material that is recognizable as bird calls generates a sonic overlap with birds from the area, who become participants in expanding perceived boundaries of the installation. This is further emphasized by utilizing a type of stereoscope that resembles binoculars; this references the practice of birding and invites people to engage with their surrounding environment. Similar

Fig. 1. Screenshot of Pure Data (Pd) control interface. (© Frank Ekeberg.)



 doi:10.1162/LEON_a_00821

Fig. 2. ***Birding the Future: Australia Goes Purple*** **(2013). (© Krista Caballero.)**

to the function of technology in the soundscape, the stereoscope becomes the visual tool to see what is now extinct.

Stereoscopy (or 3D imaging) has the ability to play with perception, as it is a technique for combining a pair of 2D images in the brain to enhance the illusion of depth. Since its invention by Sir Charles Wheatstone in 1838, this optical device has served as an important tool for the study of human vision [12]. Popular from the mid-19th century through the early 20th century, the stereoscope has been chosen as the viewing instrument for its potential to heighten perceptual awareness and provide a historical link to human impact on the environment. The viewer's gaze wanders back and forth between foreground and background, and by doing so continuously challenges perspective and shifts one's point of view within the frame [13]. In this way the stereoview plays with the act of looking and the viewer is challenged to consider how the filters through which one looks then translate into ways knowledge is constructed.

Balance-Unbalance

We presented the first iteration of the installation at the 2013 Balance-Unbalance International Conference. The installation site was a three-level outdoor stairwell at the CQ University Noosa campus building. By manipulating the directionality of the sound and with help from the local birds we successfully extended the auditory and visual perimeter so that participants were drawn towards the surrounding environment. The projected extinction rate for the Queensland region was reduced down to the daily opening hours of the exhibition, a scale where the consequences of extinction could be experienced and comprehended. The sound material included calls of 12 extinct and 16 endangered species particular to Queensland, such as the Eastern Bristlebird, Cook's Petrel, Hutton's Shearwater and Grey-headed Albatross.

A series of 12 stereoscopic cards offer a loose narration through the soundscape described above (Fig. 2). On the back of the cards textual analysis including poetry, data and other relevant habitat and behavioral information is included. The images on the front layer original content with found photographs. Using a variety of techniques these composites explore the current status of birds both globally and locally. Images from sources such as Google Earth, Ebay, NPR, the Australian Bureau of Meteorology, and Museum Victoria were utilized. For the Queensland Series we created a sculptural Paradise Parrot (*Psephotus pulcherrimus*) to serve as a type of anchor in the final photographs. This extinct bird formally occurred in Queensland, and was last observed in 1928 [14]. In describing an encounter with this beautiful parrot, Cyril Henry Harvey Jerrard wrote "*...The vivifying sound was the well-known 'quivive' note of the male Paradise Parrot. He was in a tree close to me, but I could not see him till, after a few minutes of breathless waiting on my part, he dropped to the fence just behind the nest and, after another challenging note or two, alighted in all his glory on the nest mound itself. It was one of the supreme moments of my life...*" [15].

References and Notes

* This article is based on a paper presented at the 3rd Balance-Unbalance International Conference, 31 May-2 June 2013, Noosa, Queensland, Australia.

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