

## Science and Social TV: Collaborative Observatories for Field Biology

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To entertain and engage the next generation of viewers and to facilitate awareness of remote plants, animals, and climate conditions in the global environment, we are exploring new interfaces for the living room television that can engage viewers with remote natural environments in new ways. Widespread experiences with alternative media such as social networks and multiplayer games have promoted consumer interest in the use of television as a platform for interactive social experiences and a platform for socially engaging rather than passive and solitary activity.

Our hypothesis is that emerging advances in high definition television and digital networking can be combined to provide consumers with vivid and engaging live interactions with remote natural environments. To this end, we are designing, prototyping, and evaluating new interfaces that can transform the home television into a natural "observatory", where people from all over the world can use their TV remote controls to observe images and sound and to manipulate distant tele-robotic cameras and observe on definition televisions.

As a working case study, we have developed CONE-Welder, a Networked Tele-Robotic Observatory Game. It is currently accessible on the Internet and we are working to develop special interfaces for TV. "Players" operate a robotic webcam to help Smithsonian Institute researchers document the presence of subtropical birds that may be affected by global warming. Players collaborate to share live control of a tele-robotic camera to take photos of wild birds and other animals at the Welder Wildlife Refuge in remote Texas, earning points through successful photography of birds. Our aim is to engage thousands of citizens from around the world, including users at home, to systematically photograph and collect data on the daily and seasonal occurrence of subtropical birds.

CONE-Welder introduces a natural environment with extreme bird diversity, professional feeding stations, all Flash interface with fast response, lights for playing at night, new graphical displays, multi-dimensional scoring, real time chat, and zone-based image classification.

Transitioning previous versions of the CONE interface to the television environment has presented several challenges concerning the movement of social gameplay experiences from the web to the television platform. Our experiences with the CONE-Welder platform provide a broader view into how social collaboration experiences developed for the web can be translated successfully into an HDTV setting, and more generally, how high-definition television can be repurposed as an interactive "window on the world" bringing a new immersive element to the television-viewing experience.

To play CONE-Welder, visit: <http://cone.berkeley.edu/>

Information, updates and examples are available at: <http://www.elanus.net/sutro>