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UCSB team saves historic aerial photos critical to coastal research

Recent work by UC Santa Barbara geographers relied on decades of aerial photographs to record historic sand dune disappearance along the California coast. Turns out, many of the photos supporting the research work were disappearing as well.

Headed up by professor Ian Walker's SANDLab, much of the dune research relied on UCSB Library's Special Research Collections (SRC) archive of irreplaceable aerial photographs dating back 100 years. Many of these images, however, were threatened by an odorous chemical deterioration process called vinegar syndrome that renders the film brittle and unusable. To preserve the imagery for researchers, library staff faced a race against time.

The SRC kept the at-risk film in specialized refrigerators. Such storage is costly, however, and limited in space, leaving critical environmental data in jeopardy. Walker's lab required high-quality scans for its research, but outsourcing was cost-prohibitive, and the library's existing digitization labs lacked the ventilation and specialized equipment needed for safe digitization.

The library collaborated with campus partners to create a custom, in-house digitization lab. Staff from the SRC, the Digital Library Development Department and Library Building Operations partnered with UCSB Physics Machine Shop and campus Environmental Health & Safety. Teams retrofitted a workspace with specialized

ventilation and created a camera-based system that digitizes materials up to 20 times faster than previous equipment. They also designed efficient workflows for trained student assistants to digitize the at-risk film at a fraction of the projected outsourcing cost. The results transformed the dune research.

While the library's digitization efforts in this area were not initiated specifically for SANDLab, the dune project is a compelling example of the kinds of research and scholarship facilitated and strengthened via access to these historical images.

"Air photos are critical for identifying trends and patterns of [dune] vegetation decline," Walker said. "The high-resolution scans give us the exact blueprint we need to restore native dunes and improve public health outcomes."

The library is now working to digitize the remaining at-risk film. Its archive of aerial photography is the largest known collection in an academic library, holding more than 2.5 million images.

Examples from the collection can be viewed here. Key collections are described in the library's Significant Aerial Photography Holdings.

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About UC Santa Barbara

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