

Douglas Stow

Definitions:

I am a Professor of Geography in my 30th year at SDSU. My research and teaching interests primarily pertain to the application of remote sensing and image processing techniques to land use and land cover change analyses. This has included studies in Mediterranean-type, Arctic tundra, and coastal wetland ecosystems, major cities of developing countries and the US border zones.

Tools:

As a remote sensing specialist and geographic information scientist, I utilize and conduct research with and on a wide variety of geo-spatial tools. Airborne and satellite imagery from optical imaging sensors is the primary tool that I utilize. Digital image processing systems for restoring, enhancing and extracting information from remotely sensed imagery are important tools for my research and teaching. In particular, I have worked on refining image processing tools for multi-temporal image registration, object-based image classification and change detection analysis. GIS, GPS, spectral radiometers and spatial analysis software packages are other tools that are used in my research.

Types of research questions:

The research questions that I address are both scientific and technical. Some pertain to the drivers and impacts of land cover and land use change. Others involve landscape influences on processes such as wildfire spread and habitat utilization. More technical research questions pertain to the degree to which automation can provide suitable solutions to image-based mapping and monitoring products.

Mentoring and collaborative work:

I have served as advisor for seven doctoral and over 50 master's degree students, and on the thesis and dissertation committees of over 70 other graduate students. I currently collaborate with eight of my SDSU Geography faculty colleagues, a research staff member, and several other non-Geography SDSU faculty. My recent and current collaborations with faculty outside of SDSU include faculty from U. Ghana, Legon, George Washington U., Harvard U., U. New Mexico, U. of North Carolina – Chapel Hill, and U. California Santa Barbara. Non-university collaborators include researchers at US Forest Service and National Center for Atmospheric Research.

Examples of interdisciplinary approach:

As a geographer, interdisciplinary research is a fundamental aspect of our discipline. I have formal training as a physical geographer, earth scientist, marine scientist and remote sensing technical scientist, which has enabled me to interact with scientists in a number of allied disciplines. I have also interacted with researchers and sampled some of the literature pertaining to human geography, landscape ecology, conservation biology and fire ecology. The primary interdisciplinary approach that I utilize is one that integrates multiple space and time scales of landscape processes and forms. Remote sensing provides an excellent tool for this, particular for deriving and integrating measurements at multiple spatial scales.