

# Jack Dangermond Honoured with UN Top Environment Award



An environmental scientist and entrepreneur who revolutionised the use of geospatial technology for conservation has been awarded the 2013 Champions of the Earth Award, the UN's highest environmental accolade. Jack Dangermond – who founded the Environmental Systems Research Institute (Esri) with his wife Laura in 1969 – pioneered the use of GIS, which enables people to collect, visualise, model and manage geographic data in a way that is quickly understood and easily shared, thus enhancing conservation efforts and natural resources management.

For the last three decades, Esri has provided scientists and environmental managers with tools to study and model how the environment is responding to natural and man-made factors. Since its inception, Esri has donated hundreds of millions of dollars in technology

and expertise to over 5,000 institutions worldwide. Today, the company commands over 30 percent of the global GIS software market share and boasts more than one million users across 350,000 organisations worldwide.

Jack Dangermond said they have been privileged to work for nearly 30 years supporting various UN initiatives from environment, conservation and agriculture to humanitarian and statistical missions. In all of this, the use of GIS has changed how people understand our world and create practical solutions. He said that he was very appreciative of this acknowledgement, stating that it illustrates the increasing recognition of the role geoscience is playing in our global evolution.

UN Under-Secretary General and UNEP executive director, Achim Steiner, said leadership and vision will be the hallmarks of a transition to an inclusive Green Economy in developed and developing countries alike. That transition is underway and has been given fresh impetus by the outcomes of last year's Rio+20 Summit. This year's Champions of the Earth are among those who are putting in place the actions, policies and pathways to scale-up and accelerate such transformations. As such, they are lightning rods towards a sustainable 21st century, he added.

## Protecting Snow Leopards in High Mountain Areas

Esri's GIS software creates visual depictions of wildlife habitats and range, giving the user the ability to monitor change and discover important relationships.

In 2007, Esri partnered with the Snow Leopard Conservancy (SLC) to advance community-based stewardship of snow leopards, whose numbers may be as low as 3,500 – though they are found in a dozen countries in South and Central Asia, from Nepal to Russia – an area of more than 1,294,994 square kilometres. Snow leopards inhabit some of the highest, most rugged, snow-swept, least productive territories on earth.

The introduction of remotely triggered cameras and sophisticated tools for extracting genetic material from scats revolutionised SLC's ability to learn about snow leopards and map their habitat. Other wildlife species monitored around the world using GIS software include, the Ethiopian wolves, Philippine tarsiers, gorillas, Asian Elephants and bats.

## Protecting the Marine Environment

GIS is used around the world to acquire and manage oceanic data as well as analyse and map marine habitats, water quality, species distribution and population, species behavior, pollution, fishing grounds, and other factors that impact marine life.

Esri's ArcGIS software suite is a tool that helps visualise and understand areas in danger of biodiversity loss, habitat degradation, and resource depletion. It also aids in monitoring and examining the effectiveness of conservation practices and protected areas to ensure the preservation of the earth's oceans. GIS has helped map and survey the habitats of nurse sharks along the east coast of Australia and gray whales along the rocky coast of British Columbia, Canada.

## Geo-design of Wildlife Corridors in North America

GIS tools can aid the development and design of functional wildlife corridors and contribute to their effectiveness as an increasingly viable conservations planning strategy.

Esri used GIS to develop a new tool for wildlife corridor design within the Sonoran Desert, a biologically diverse region that spans southern Arizona and California in the United States and Baja California and Sonora in Mexico. The Automated Design Module populates modelled corridors with optimal vegetation types and patterns to increase wildlife movement.

Wildlife in this area includes the mountain lion, bobcat, bighorn sheep, mule deer, desert tortoise and the red-tailed hawk, among others. GIS also evaluated the landscape's capability to support various species of native vegetation species, including the saguaro cactus, palo verde, cholla, cottonwood and pricklypear.

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