The Maasai Mara ecosystem is experiencing unprecedented changes associated with climate change. The Maasai people who call the Maasai Mara their home have in the past been able to predict and respond to changes in weather conditions as the seasons and rainfall patterns in the Mara were well understood. It shaped the grazing patterns of livestock and interaction with wildlife in the Mara. However, changes in climatic patterns have thrown everything out of kilter and Maasai in the Mara have had to adjust their lifestyles accordingly.

The Maasai Mara is famous for its annual wildebeest migration when millions of wildebeest follow the rains and green grass from the Serengeti in Tanzania to the Maasai Mara in Kenya and back. In the past the wildebeest migration pattern was consistent but in the last few years this pattern has shifted due to irregular rainfall. This means that the wildebeest now give birth in the Maasai Mara and by doing so are spreading Malignant Catarrhal Fever which is fatal to the Maasai livestock.

Mapping with satellite imagery
In an effort to avoid disease and secure grass for their livestock many Maasai have started building permanent homes and have resorted to fencing their piece of land. Fences interfere with migration routes for wildlife as corridors are blocked and more people are encroaching into wildlife areas. With these changes comes an increase in conflict between humans and predators, such as cheetahs (Acinonyx jubatus) as natural prey is reduced, livestock and predators are forced to share the same area and there is more competition for water as the rains are becoming more unpredictable. To determine the impact that these changes have on cheetah movement and ecology, the Mara Cheetah Project set up by the Kenya Wildlife Trust uses high resolution satellite imagery provided by CNES (SPOT and Pléiades data/ISIS Programme), to map manyattas (Maasai settlements), fences and habitat changes. The findings from this research will help drive cheetah conservation efforts in the Mara, an area of global importance for cheetahs.

Michael Kaelo and Femke Broekhuis, Mara Cheetah Project, Kenya Wildlife Trust

Guides play a key role in fauna monitoring. The most important element for wildebeest migration (top) is the cycle of seasons, now disturbed by climate change. January, which Maasai people refer to as Olodalu (hot month), was characterised by intense heat. February was expected to come with short rains that gradually increased towards March and April. In June Mara was covered by red oat grass which is both nutritious and provides good camouflage for wildebeest calves. July, August and September were dry months when the Maasai people would migrate to look for green pasture elsewhere.