

Project Update: May 2016

Sampling lion tracks

An important part of our project is to sample lion tracks in both Hluhluwe-iMfolozi Park and Tembe Elephant Park, South Africa. Tracks are sampled after a direct observation or in front of a camera trap. For each sample, the maximum amount of information about age, sex, individual identity and body condition is recorded. We developed a sampling protocol to create digital 3D models, or virtual plaster casts, using close range digital photogrammetry. Photogrammetry is the 'science of measuring in photographs' and it basically uses the same principles as human and artificial vision. Photogrammetric software can reconstruct any visible object from at least two photographs; but we showed that a minimum of 14 to 16 photographs, taken from different distances and angles by avoiding blind spots, enables accurate and reliable 3D reconstruction of a track. This technique is field-friendly as it only requires a digital camera and a ruler, and the sampling takes less than one minute per track. For more information: Marchal et al. (2016). Virtual plaster cast: digital 3D modelling of lion paws and tracks using close-range photogrammetry. *Journal of Zoology* doi:10.1111/jzo.12342 (<http://onlinelibrary.wiley.com/doi/10.1111/jzo.12342/abstract>).



Figure 1 - Sampling lion tracks in front of a camera trap

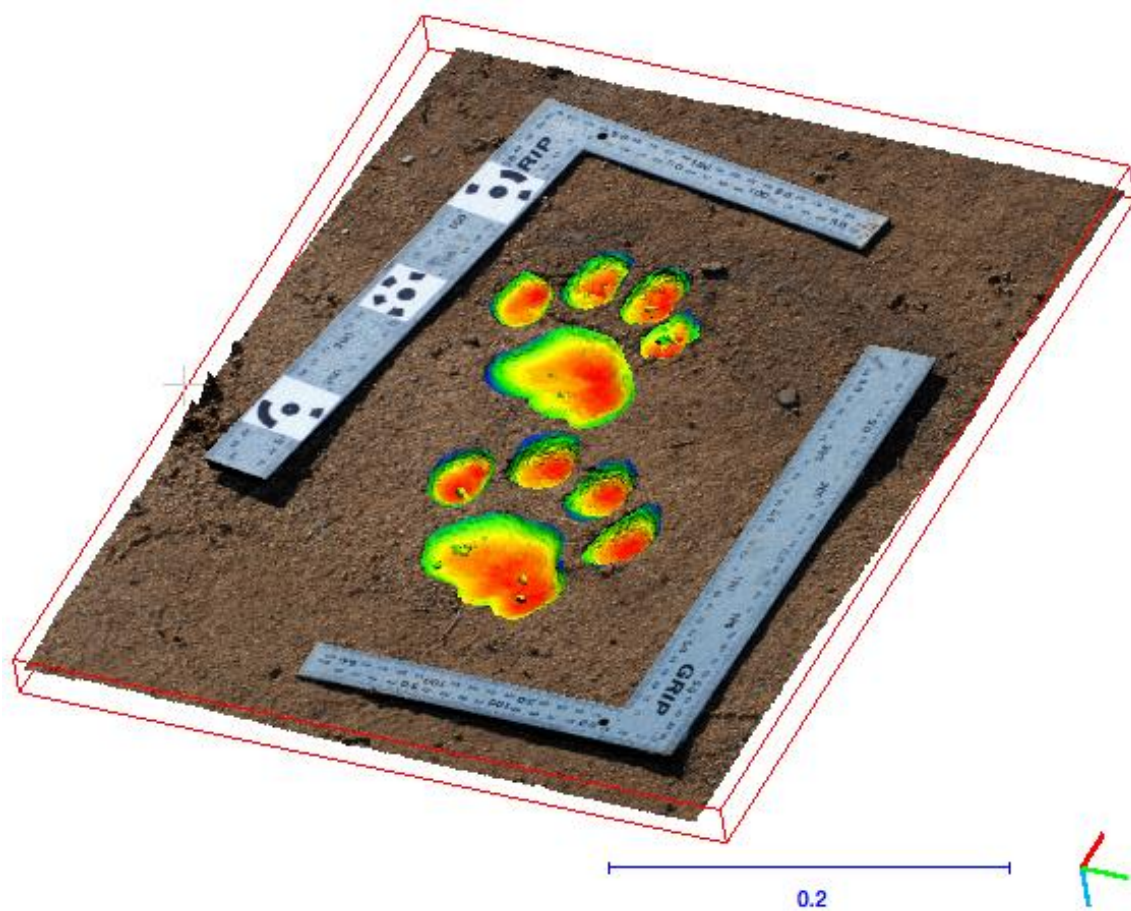


Figure 2 - Virtual plaster casts of two lion tracks