Coelacanths, *Latimeria chalumnae*, were discovered by Trimix divers in a submarine canyon in the Greater St Lucia Wetland Park in northern KwaZulu-Natal, in 2000. This led to the development of the African Coelacanth Ecosystem Program, which has conducted three submersible-based research expeditions in the Park. The marine ecology component of this program included habitat and classification, biodiversity surveys, fish counts and coelacanth surveys. Distinct deep subtidal habitats were documented supporting a diverse invertebrate and fish fauna. Biological communities exhibit a depth zonation pattern and the canyon margins support a particularly diverse and abundant fish fauna. A total of 3363 fish were recorded representing 58 species in 27 transects (10 x 100m), conducted in two canyons. Fish densities declined significantly with depth. In five years a total of 62 coelacanth sightings took place at 17 locations within or adjacent to four of the 12 larger canyons that have been surveyed. The known coelacanth distribution ranges from Chaka canyon, the southernmost canyon, over 53 km to Wright canyon, approximately 4 km north of Jesser Point. A total of 24 individual coelacanths have been catalogued with several individuals resident over five years.