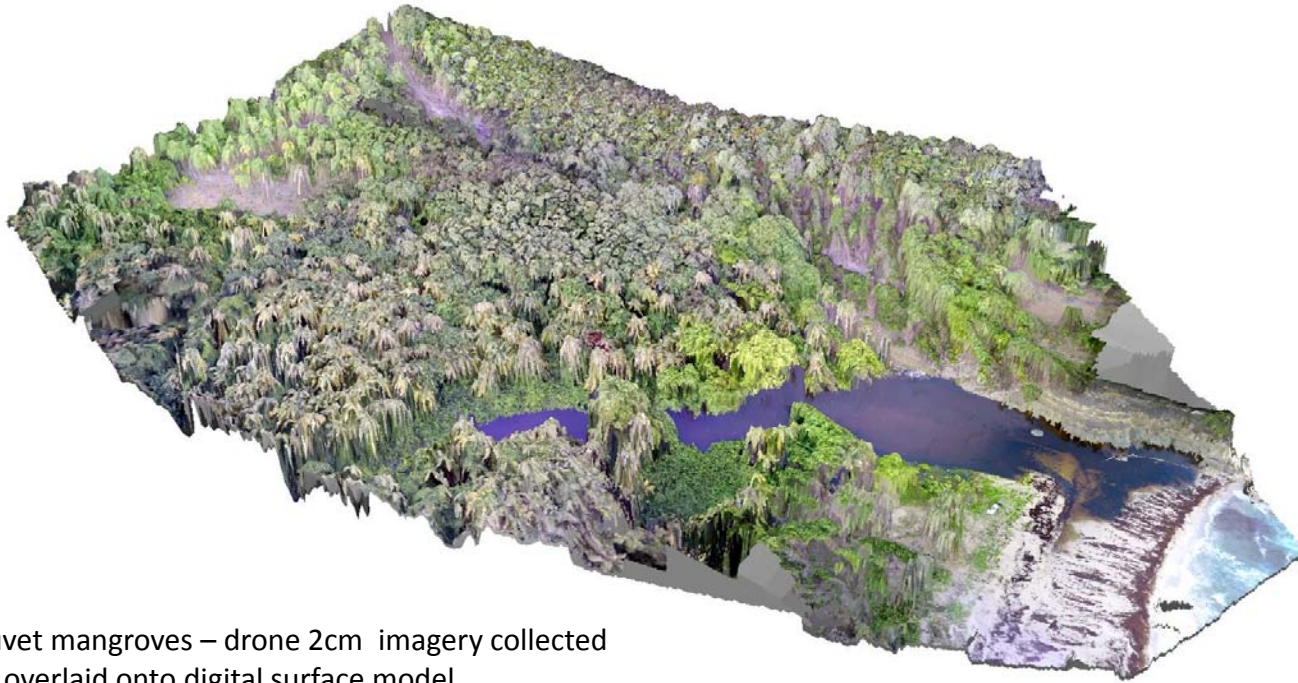
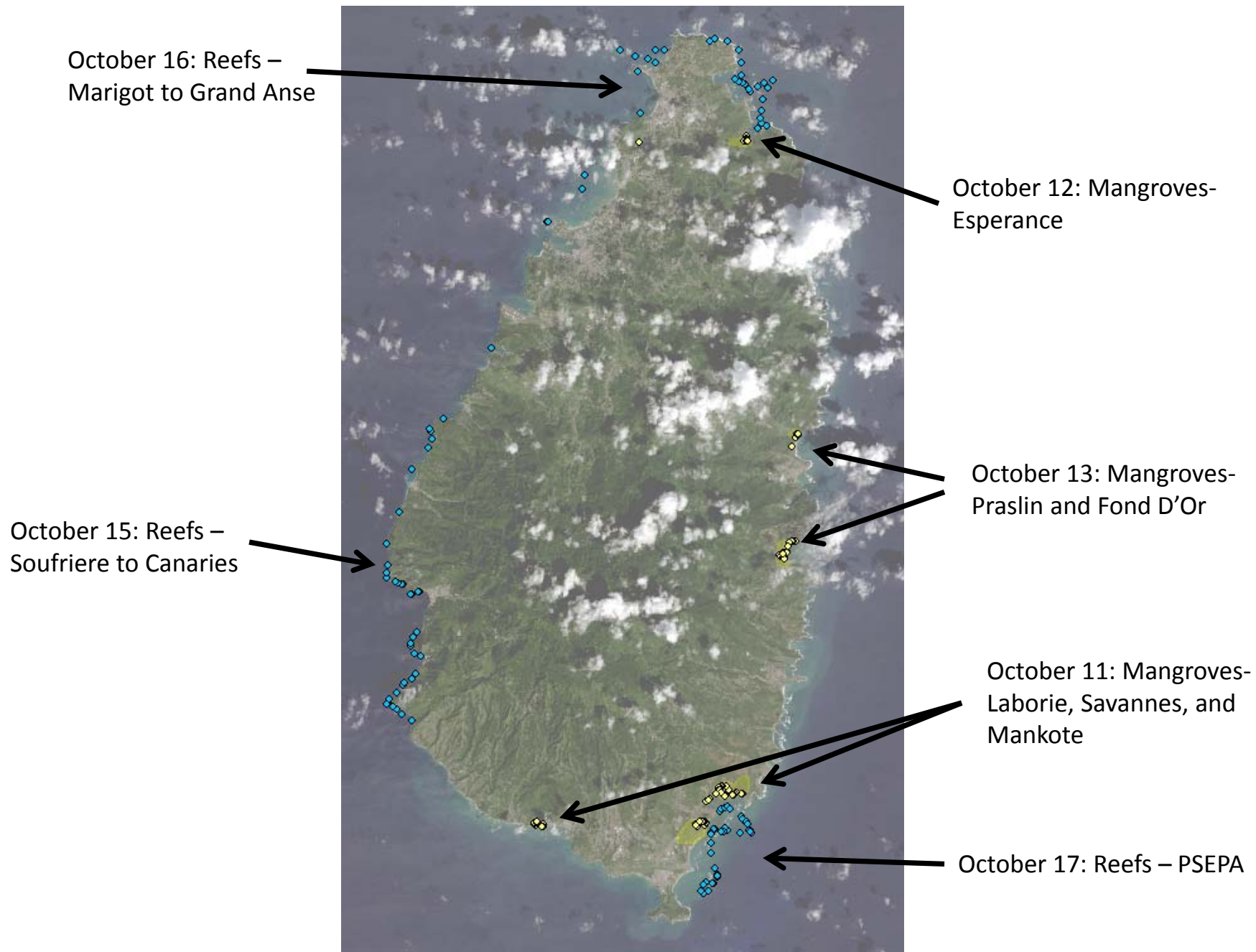


*Biophysical Modeling of Caribbean Mangroves
using UAS Imagery and GIS*



Louvet mangroves – drone 2cm imagery collected
on overlaid onto digital surface model

George Raber – The University of Southern Mississippi
Steve Schill – The Nature Conservancy





Mangrove survey points and drone areas that were flown



Mangrove survey points and drone areas that were flown



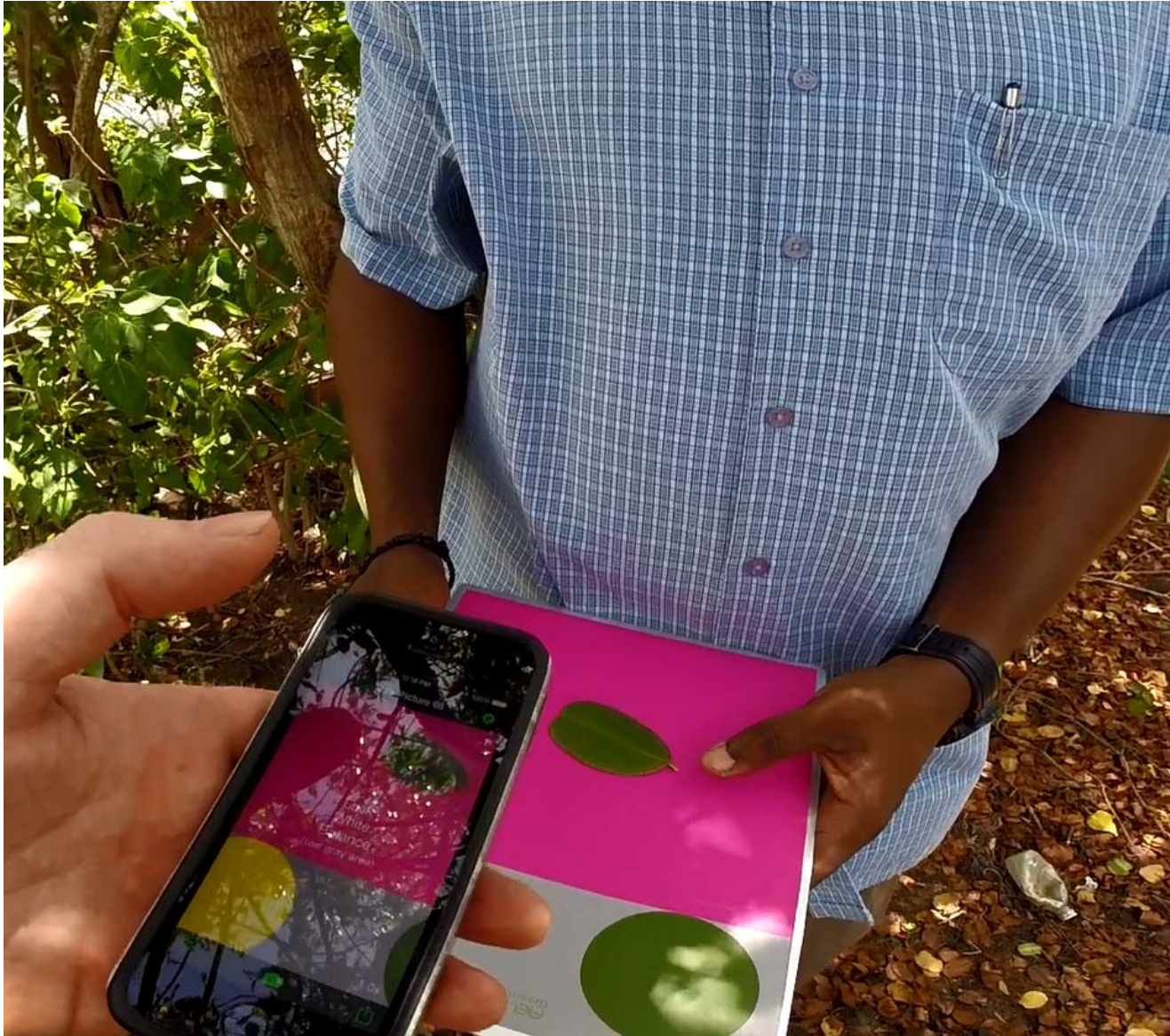
October 12 – Getting ready for lift off the 3DR Solo drone at Esperance. It was equipped with two cameras: 1) visible natural color; and 2) near-infrared



October 12 – Practicing with the drone at Esperance



October 12 – Explaining how the NIR camera works at Esperance



October 12 – Collecting greenness measurements from mangrove leaf samples at Esperance



October 12 – Mangroves at Esperance



October 13 – Surveying mangroves at Fond D’Or. The wind was too strong to fly the drone on that day.



October 13 – Mangroves at Fond D'Or. This is a long-term carbon monitoring site



October 13 – Flying the 3DR Solo drone over the mangroves at Praslin – North side



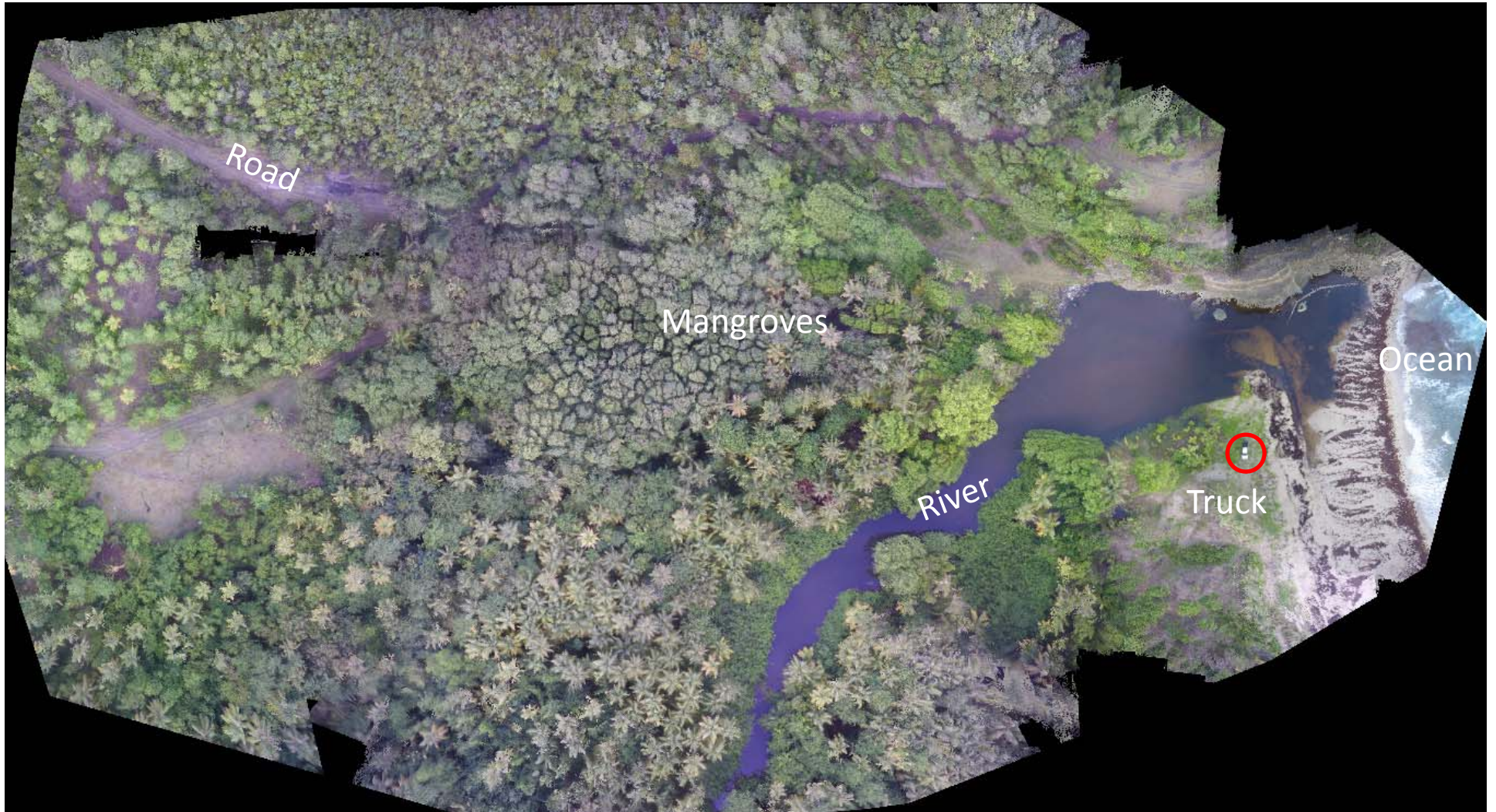
October 13 – Surveying the mangroves at Praslin



October 14 – Preparing flight lines for drone surveys over Savannes



October 14 – Getting ready to launch the drone at Praslin – South side



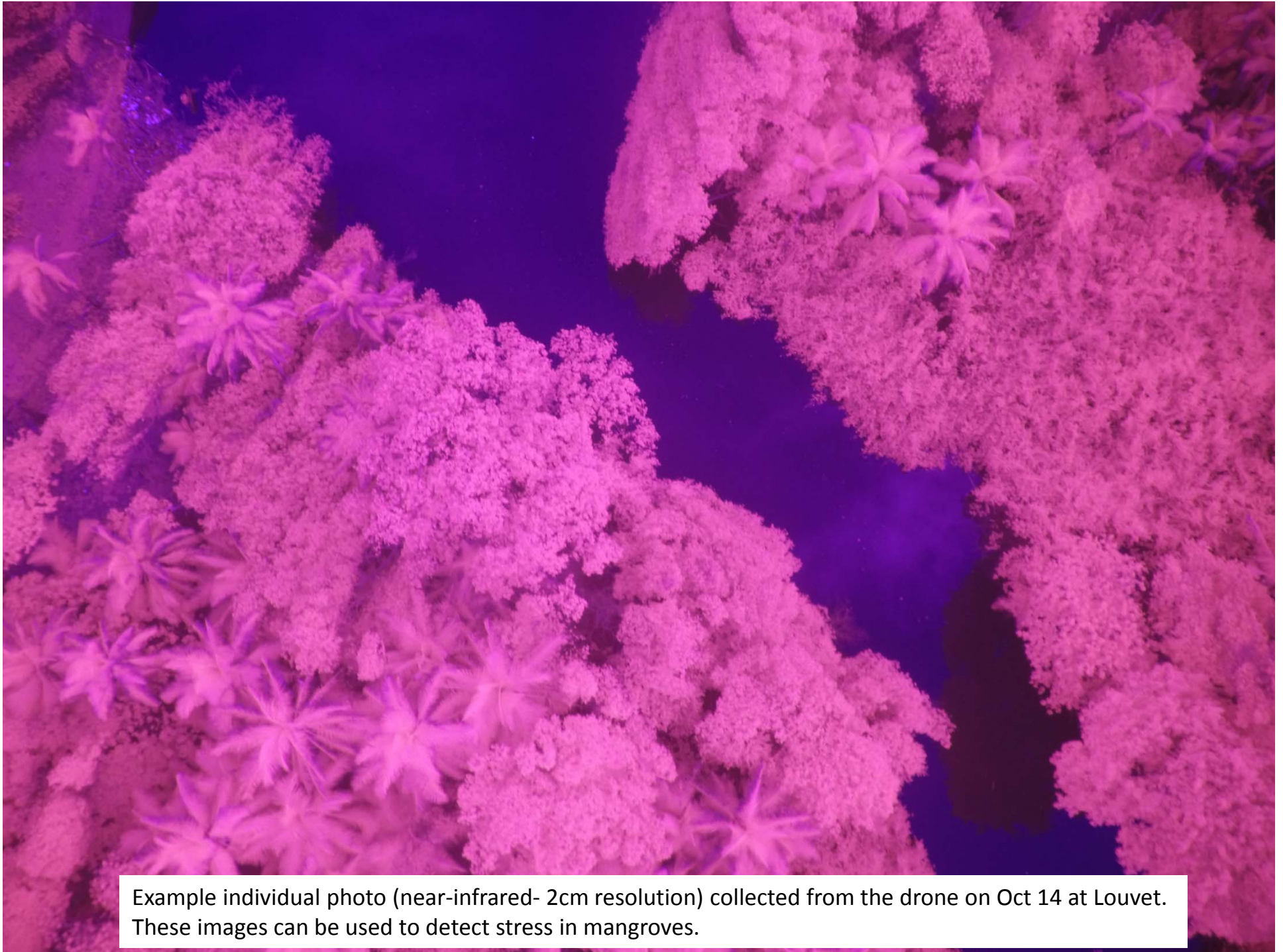
First draft orthoimage mosaic (2cm resolution) collected from the drone on Oct 14 at Louvet.



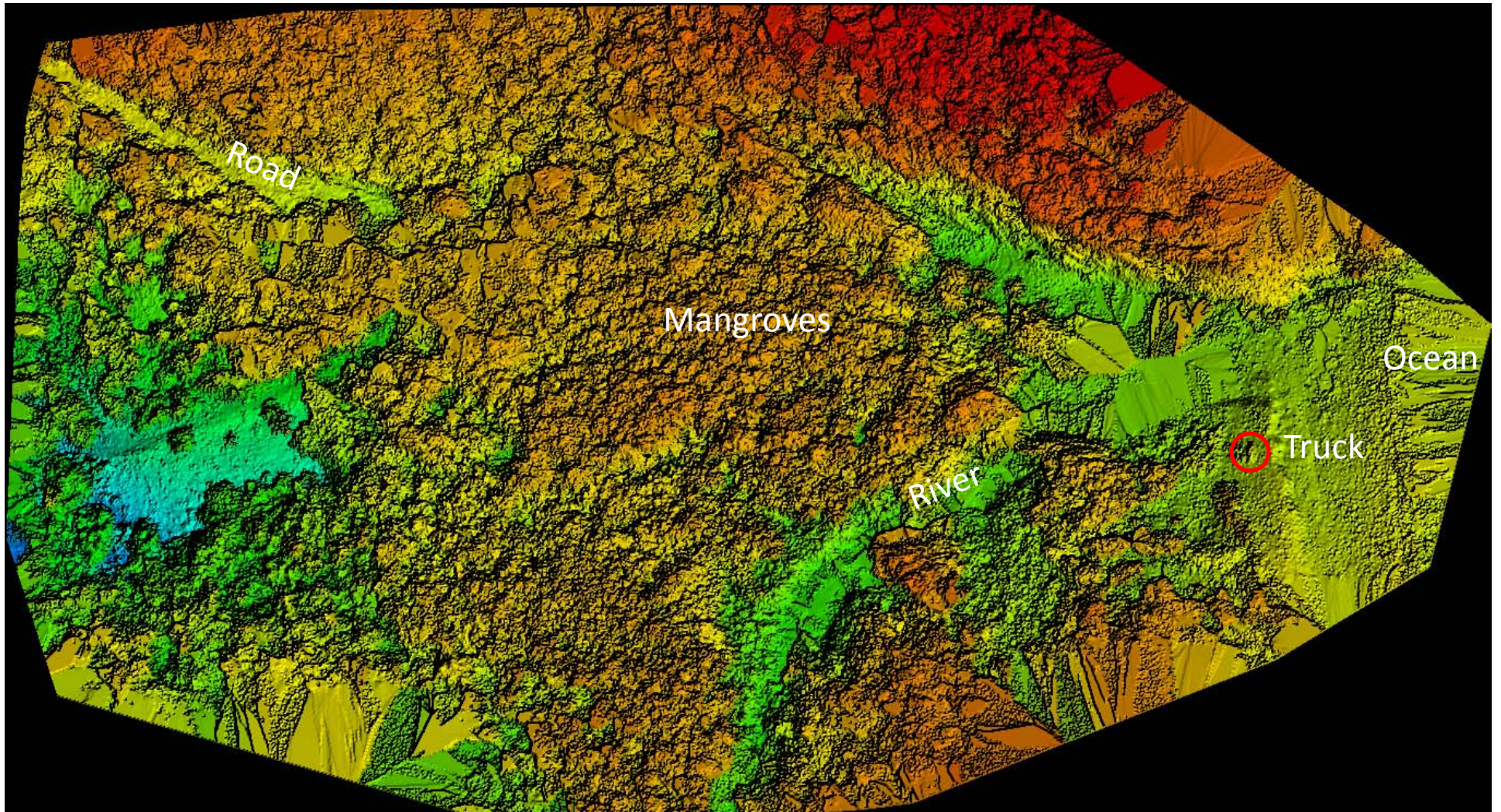
Example individual photo (natural color - 2cm resolution) collected from the drone on Oct 14 at Louvet.



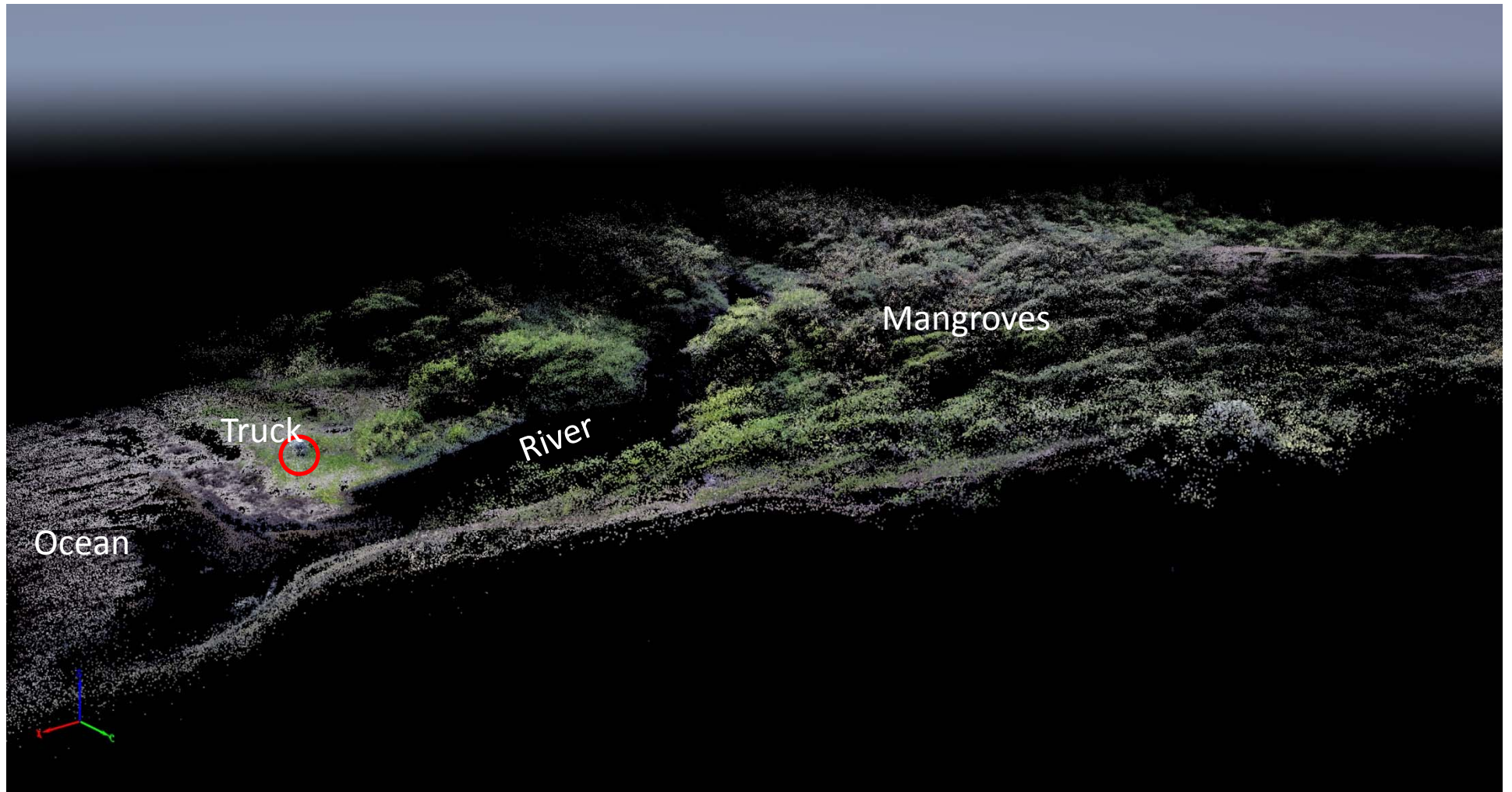
Example individual photo (natural color - 2cm resolution) collected from the drone on Oct 14 at Louvet.



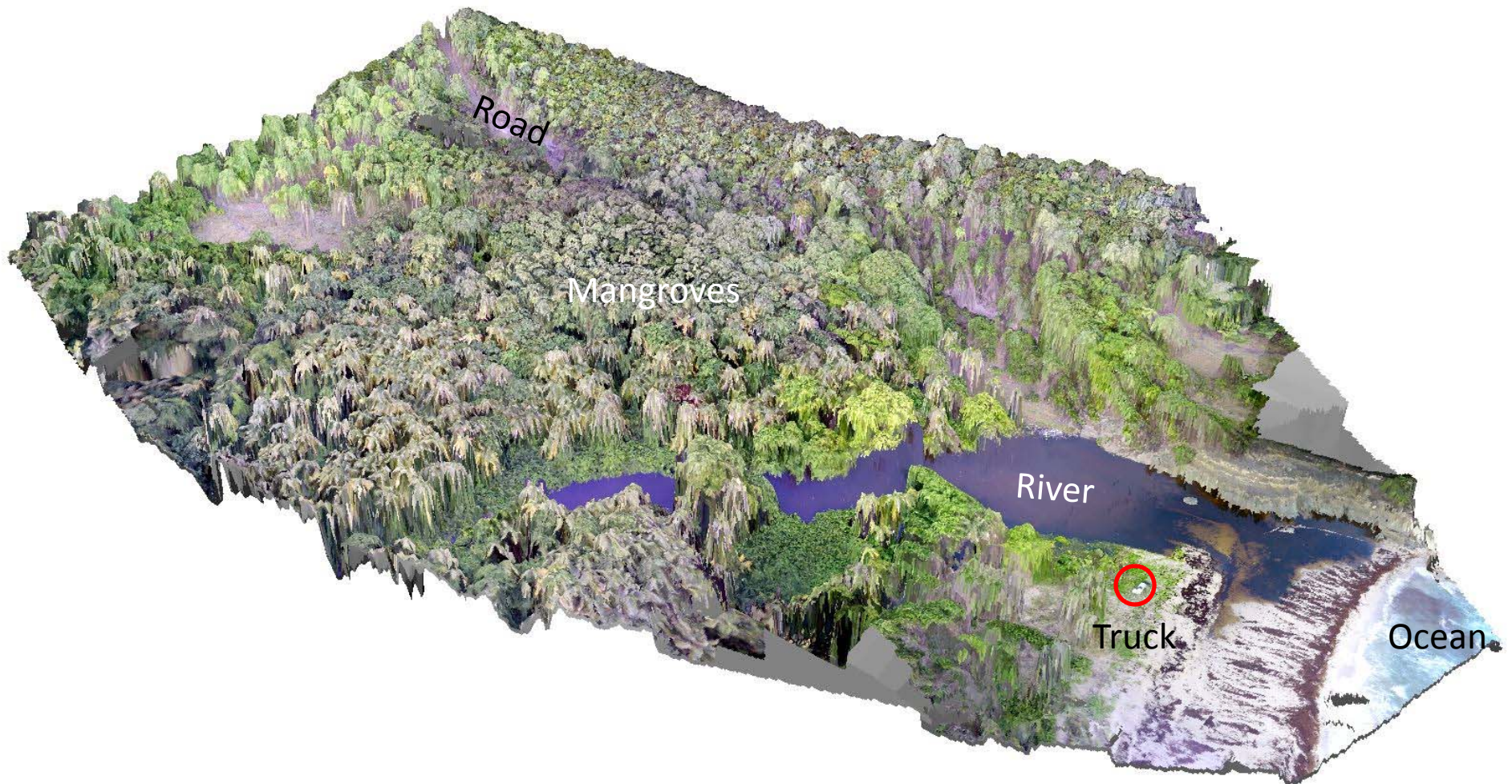
Example individual photo (near-infrared- 2cm resolution) collected from the drone on Oct 14 at Louvet. These images can be used to detect stress in mangroves.



First draft digital surface model (2cm resolution) created from the stereopair images that were collected on Oct 14 at Louvet. This product can be used to estimate canopy height and structure. The darker red areas indicate higher elevation values.



Point cloud of digital surface model (2cm resolution) created from the stereopair images that were collected on Oct 14 at Louvet. This product can be used to estimate canopy height and structure.



Orthoimagery draped over digital surface model (2cm resolution) created from the stereopair images that were collected on Oct 14 at Louvet.



Mangroves

Boardwalk

Orthoimagery (2cm resolution) from drone images that were collected on Oct 15 at Marigot Bay.



Orthoimagery draped over digital surface model (2cm resolution) created from the stereopair images that were collected on Oct 15 at Marigot Bay.