

# 成果報告書

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Project Name: Waterfowls habitat mapping based on UAV

**Objective:** First, my research is Impact of climate change on distribution of waterfowls in Hokkaido. This research will use Maximum entropy model (MAXENT) model to predict the winter habitat of waterfowls in Hokkaido in the future 80 years under the IPCC scenario (A2 and B2). For this propose, this research need several environment Variables in Waterfowls current habitat including Vegetation coverage, altitude, land cover etc... UAV will be a great carrier to collect these data. Because UAV can get High resolution Images of target area and exclude a lot of problems about satellite images such as resolution, time period etc... Second, nowadays UAV has already been one kind of popular carrier for habitat monitoring. But most of this kind of monitoring activities are still in their infancy. Through this survey we can get more information and experience about UAV habitat monitoring. And we use this opportunity to test UAV to Server data link system.

## Events:

Date: 2016年1月14日 ~ 2016年1月18日

Field-work site: Abashiri-shi Hokkaido Japan

## Results:

We use Phantom 3 Advanced as our research UAV. We witnessed ハクチョウ many times around Abashiri lake. We flight around the area around the place where we observed these birds. We took photos by this UAV every 3 seconds and got 300 photos.

After that we used Pix4dmapper software to process these photos. The results include the 3D model, DSM and Mosaic of research site.

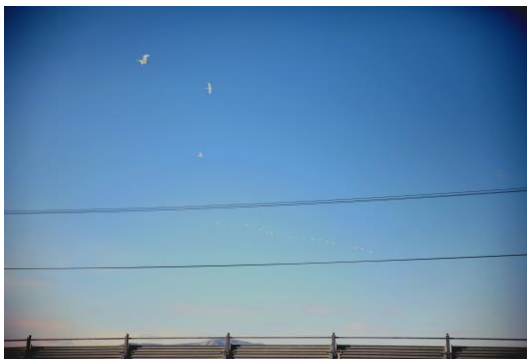


Fig.1 Birds around Abashiri Lake



Fig.2 Flight Route of our 1<sup>st</sup> flight

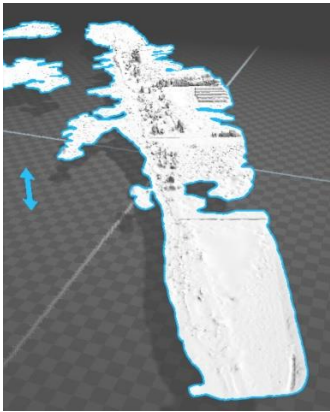


Fig.3 3D map of research area

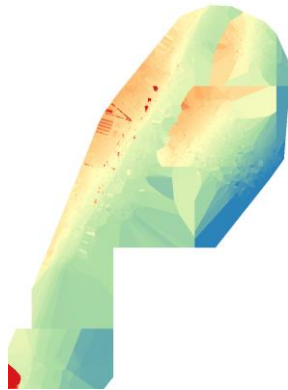


Fig.4 DSM of research area



Fig.5 Mosaic of research area

Our 2<sup>nd</sup> survey area is around Notori Lake. Around this lake we also observed ハクチョウ. So we flight the UAV around the lake. We process the data and get the results.



Fig.6 2<sup>nd</sup> flight route around Notori lake

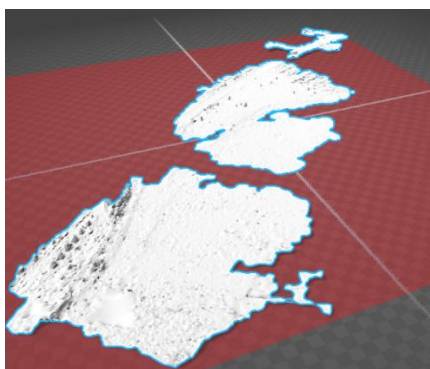


Fig.7 3D map of Notori lake area



Fig.8 Mosaic image of Notori lake

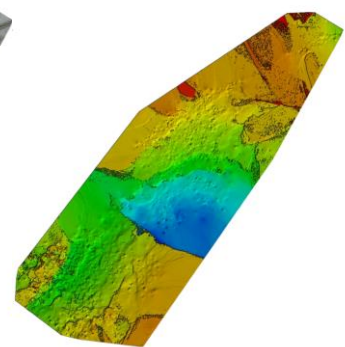


Fig.9 DSM of Notori lake