

## Project Update: April 2021

In the framework of the project "Adaptation and suitability selection of mangrove species for restoration and conservation of degraded mangrove forest in Xuan Thuy National Park, Vietnam" in November 2019, Center for Nature Conservation and Development (CCD) with support from mangrove experts and Xuan Thuy National Park (NP) implemented a study on mangrove degradation to select species to restore degraded areas Xuan Thuy NP.

The study implemented by establishing transects and sampling plots in the study areas. At least three transects were established, and three sampling plots (400 m<sup>2</sup> each) were setup in each transect. According to survey results, the key mangrove species communities, including: *Aegiceras corniculata* (L.) Blanco – *Sonneratia caseolaris* (L.) Engl.; *Kandelia obovata* Sheue, H.Y. Liu & J. Yong – *A. corniculata* (L.) Blanco; *S. caseolaris* (L.) Engl.; *A. corniculata* (L.) Blanco – *K. obovata* Sheue, HY Liu & J. Yong – *Avicennia marina* (Forsk.) Vierh – *S. caseolaris* (L.) Engl.; *K. obovata* Sheue, HY Liu & J. Yong – *Rhizophora stylosa* Griff. The results also indicated that approximately 7.5 km of mangroves in Con Lu island were eroded by waves and 78.37 ha *K. obovata* Sheue, HY Liu & J. Yong – *A. corniculata* (L.) Blanco in the same island were degraded by pests and diseases on *K. obovata* trees. According to the study, two species of *S. caseolaris* (L.) Engl. and *R. stylosa* Griff also were recommended as key species to recover the degraded areas.

The mangrove forest in Xuan Thuy NP is the first Ramsar site in Vietnam and serves as key area for migratory birds and important spawning ground for fisheries. The mangrove is also a strategic coastal protection belt for Red River estuary that prevent intrusion of the seawater and protecting the sea dyke. More importantly, the mangrove is providing livelihoods for thousands of people in the buffer zone and it is an important ecotourism site in Nam Dinh province and the Red River Delta. However, due to the impacts of climate change, sea level rise, especially the impacts made by human such as over fishing and exploitation of aquatic resources made huge impact on mangroves. Also the changes in salinity and tidal are also seriously impact the mangrove as many areas were degraded, many tidal areas where shorebird and migratory species are feeding now are converted into shrimp ponds, and intensive mussel farming areas. The conversion causing loss of habitats and feeding grounds of many endangered species such as the critically endangered spoon-billed sandpiper (*Eurynorhynchus pygmeus*), the black-faced spoon-billed (*Platalea minor*), Nordmann's greenshank (*Tringa guttifer*), Chinese egret (*Egretta eulophotes*) and many other threatened birds.

Project team will continue working with mangrove experts and Xuan Thuy NP to conduct pilot mangrove nursery and pilot the restoration planting for degraded area. In addition, CCD will continue its communication activities for local community to raise awareness and provide technical support on mangrove nursery and planting techniques, so that local community could engage and participating in mangrove forest conservation and restoration effort in Xuan Thuy NP.



Figure 1. Project team conducted standard mangrove inventory plots



Figure 2. CCD staff measured the growth parameters of mangrove trees in the plot



**Figure 3. *K. obovata* community in Con Lu islet, Xuan Thuy NP is degraded by pests and diseases**



**Figure 4. *K. obovata* community eroded in Con Lu islet, Xuan Thuy NP**