

## **Project Update: May 2019**

To date, 50% of the proposed objectives have been completed. The first stage of the fieldwork involved the identification of field sites where multi-species bird flocks and the golden-cheeked warbler occur. So far, I have identified and geographically located five sites along a gradient of varying altitude and disturbance which comprises important pine-oak habitats where target species occur.



Pine-oak forest habitat at Coapilla site (forest management area), Chiapas, Mexico



Oak forest habitat at Cerro Huitepec (private land), near San Cristobal de Las Casas municipality, Chiapas, Mexico

Within these sites, I registered 25 flocks (five per site) with presence of the focal species in this study, the golden-cheeked warbler. A total of 16 individuals of the focal species have been found within these flocks. This includes four juveniles, 11 adult males and just one female. Within the 25 flocks, I have also registered 37 bird species, including 17 migrants and 20 residents. The flocks are mainly compound by warblers, woodpeckers, woodcreepers, vireos and flycatchers.



Male of golden cheeked warbler (*Setophaga chrysoparia*) at Coapilla site, San Fernando municipality, Chiapas, Mexico

Current data on flock occurrence includes spatial information on flock distribution within forest areas. Thus, I have identified forest plots where flocks occur and also estimated the mean forest patch (area size) where a flock can move, 2 ha on average. This may allow us to identify areas where forest patches are big enough to maintain populations of migratory and resident species, including not only the golden-cheeked warbler but also other migratory warblers who also join to flocks.



Close canopy oak forest and transition to other land uses at Moxviquil site (private land), San Cristobal de las Casas, Chiapas

The first stage also planned to perform measurements on vegetation structure and species composition in order to determine the quality of forest patches for the occurrence of flocks and the golden-cheeked warbler. At this stage, vegetation measurements have allowed us to identify forest patches where oak species are more predominant (i.e., higher density) and where vegetation strata are more complex. Given that oak tree species are a main foraging substrate for the golden cheeked warbler, I expect to propose restoration activities and provide information to enhance management schemes for the conservation of forest areas where flock presence has been identified. Along with current data on flock distribution, I have developed a map containing forest plots with higher quality or less disturbed vegetation. Nonetheless, estimation of forest patch areas and an accurate delimitation of forest plots where flocks and the golden-cheeked warbler occurs will be also confirmed with data on habitat use by individual species using radio-tracking during the second stage of this project.