Project Update: November 2022

Our aims:
During this project, we plan to collect wetland biodiversity, identify their status and conduct workshop for local communities in order to create awareness in southwestern Ethiopia. Biodiversity monitoring and identifying their current status is crucial for conservation planning and sustainable use. As a result, biodiversity was assessed in two wetlands which are biodiversity hotspot, identified their status and workshop was also conducted for local communities to create awareness on the importance of wetland biodiversity. The collected data was used to develop conservation strategy based on the status of the species according to IUCN.

Project realisation during October 2021 – November 2022:
Our project was supported by the Rufford Small Grants Programme in the end of October 2021. In-depth biodiversity assessment was conducted in both Bulbul and Haro wetlands. Biodiversity data was collected from the two wetlands including bird data, mammal data, aquatic invertebrates, fish, insects and vegetation during both wet and dry season. The wet season data was collected in November 20221 and dry season data was collected in April 2022. In total 12 researchers and field assistants were participated in this project. Six researchers conducted field assessment and identification includes: Dr. Selamawit Negassa (aquatic macroinvertebrates, birds and human disturbance assesment), Dr. Chemeda Abedeta (adult insects identification and collection): Dr. Tibebu Alemu (plant identification), Dr. Seid Tiku (fish identification), Dr. Tariku Mekonnen (mammals survey and identification) Ahmed Mohammed (mammal survey) and six field and laboratory assistants: Abdo A/Jebel (bird survey), Seyoum Derib (fish sampling), Robera Negassa (vegetation sampling), Biftu Endale (adult insect collection), Elias Haile(aquatic macronivertebrates sampling), Dinkina Mijena (adult insect collection) were participated. Four local communities were also participated in collection of mammal data in the selected wetlands and the buffer zones. The herp data was not collected due to lack of expert and equipment. The expert at Jimma University moved to another place.

Fig.1. Bulbul wetland on the top and Haro wetland on the bottom

Birds:

A total of 32 species of birds and 1685 individual were recorded from the two wetlands. Among them four of them are vulnerable species (Black-crowned crane, Wattled Crane, Socotra Cormorant, Blue winged goose) and the rest are least concern according to IUCN category. Yellow billed duck is the most abundant with the relative abundance of 45% followed by White faced duck and Black Crowned Crane with the relative abundance of 44.5% and 4.7% respectively. About 80 individuals of Black crowned crane, eight Wattled Crane, one Socotra Cormorant and three Blue winged geese were recorded at the studied wetlands. This species is listed as vulnerable species according to IUCN list at the same time their population is decreasing. This makes the wetland conservation priority.

Fig.2. Wattled crane on the top and Black crowned crane at the bottom**.**

Fish

A total of three species (African catfish, Tilapia and Labeobarbus acutirostris (endemic to Ethiopia) and 172 individuals of fishes were recorded at Bulbul and Haro wetlands. African catfish which categorized as least concern is the most abundant species with the relative abundance of 75% followed by Tilapia 16%. Only two individuals of Labeobarbus acutirostris which is endemic to Ethiopia and also vulnerable species were recorded. Among 172 individual fishes 147 individuals were recorded in Bulbul wetland during wet season. Whereas no fishes were recorded in Bulbul wetland during the dry season as the wetland was dried. Although the local peoples are fishing in this wetland, they are more practicing cultivation and grazing around this wetland. High abundance of fish in the Bulbul wetland indicated that this wetland is habitat for economically important fishes. Three species (African catfish, Tilapia and Labeobarbus acutirostris were also recorded at Haro wetland during the dry season.

Fig. 3. Fish species collected at the studied wetlands.

Mammals

A total of three species of mammals and 26 individuals were recorded in the Bulbul and Haro wetlands. Among them 10 individuals of Hippopotamus which is listed as Endangered species according to IUCN were recorded at Haro wetland. 6 Guereza and 10 Spotted Hyenas which is least concern were also recorded.

Fig.4. Hippopotamus species at Haro wetland

Terrestrial insects

Four families of dragon fly namely: Gomphidae, Lestidae, Coenagrionidae and Aeshnidae were identified. Among them, Gomphidae family is family for endangered species of Notogomphus cottarellii. Four families of butterfly namely Nymphalidae, Lycaenidae, Papilionidae and Pieridae were identified in both wetlands.

Fig. 5. Dragon flies and Butterflies collected from the studied wetlands.

Aquatic macroinvertebrates

A total of 14 families of macro invertebrates with individual of 824 were identified. Among them, Notonoctidae families were the most abundant followed by Gerridae and Coenagrionidae families with the relative abundance of 44, 17 and 9 respectively. Identification of macro-invertebrates at species level was not possible due to lack of

key for Ethiopian macro-invertebrates and autonomous taxonomist in this area.

Fig. 6. During aquatic macro-invertebrate identification (left) and sample odonate families (right)

Vegetation

Ten plant families were identified in the studied wetlands namely: Sacciolepis Africana, Persicaria senegalensis, Cyperus assimilis, Neohyptis paniculata, Thelypteris confluens, Ludwigia stolonifera, Nymphaea nouchali, Nymphaea lotus, Myriophyllum spicatum, Persicaria senegalensis. In Haro wetland, Sacciolepis Africana is dominant family whereas, Ludwigia stolonifera is dominant in Bulbul wetland.

Fig. 7. Water lily at Bulbul wetland

Fig. 8. Ludwigia stolonifera family (right) and Cyperus assimilis family(left) at Haro wetland

Human disturbance

Human disturbance in and around the wetlands was assessed by looking hydrological modifications, habitat alteration and land-use practices. Hydrological modifications included ditching or draining, filling and abstracting of water in the wetland. Habitat alteration included grazing, tree plantation and vegetation removal. Land use practices in the wetlands included farming, waste dumping, bathing and swimming. Among the above listed human disturbances, Eucalyptus plantation, ditching, water abstraction, waste dumping, washing clothes, bathing, swimming, grazing, and vegetation removal are the major. These human disturbances are degrading the wetland and their biodiversity is under high pressure. Thus, immediate measurement should be taken as these wetlands are habitat for numerous species including species of global concern.

Fig. 9. Grazing at Haro wetland

Awareness creation

Awareness for local community was created by conducting workshop for 50 peoples. Accordingly, the training including, religious leaders, kebele administration, youth association, bonafide, women representative were participated in the workshop and awareness creation on the value, threat and conservation of the wetland.

Fig. 10. Picture taken during workshop on value, threats and conservation of wetlands on spot at the studied wetland

Conservation planning

Conservation plan was prepared by considering the importance of wetland for endemic and endangered species. Accordingly, the following conservation plan was prepared for future conservation:

- Conserving both Haro and Bulbul wetlands as they are habitat for numerous bird species including birds of global concern such as Black-crowned crane (Bulbul wetland) and Wattled crane and endangered mammals such as Hippo.
- Reducing cultivation at the edge of wetland by consultation with local community and government bodies
- Stopping and filling drainage and ditching in the Haro wetland
- Removing Eucalyptus plantation at the edge of Haro wetland
- Develop ecotourism for Haro wetland as it is site for religious activity such as Irrecha and habitat for mammals such as Hippo and birds.
- Establish community-based wetland conservation for both Bulbul and Haro wetlands
- Introduce eco-friendly alternative livelihood activity such as small-scale fishery and agroforestry
- Continuous awareness creation through workshop and training for local communities and relevant stakeholders

Team members during terrestrial and aquatic insect collection form Haro wetland