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*ASSESSING THE ROLE OF SATELLITE WETLANDS AROUND LAKE OL' BOLOSSAT, KENYA IN CONSERVATION OF THE ENDANGERED GREY CROWNED CRANE*

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**PROJECT FINAL REPORT**



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## EXECUTIVE SUMMARY

Grey Crowned Crane *Balearica regulorum* is endemic in Africa and its population has declined at a rate of 80% in the last 45 years, leading to it being listed as endangered in the IUCN Red Data List of Threatened Species. Since 2015, Cranes Conservation Volunteers have made significant strides in protecting this species around Lake Ol' Bolossat. Through extensive surveys since 2016, it was discovered that these cranes also breed in the upland satellite wetlands surrounding the lake.

This project aimed to assess the role of the upland satellite wetlands around Lake Ol' Bolossat in conserving the Grey Crowned Crane. The objectives were to determine the crane population using these upland wetlands, study their breeding patterns, identify threats to the cranes and their breeding habitats, understand the community's perception of cranes, and evaluate how local communities utilize these wetlands.

The project, spanning a 20 km radius from Lake Ol' Bolossat, identified 36 wetlands, with 25 actively used by Grey Crowned Cranes. During the visits, 105 individual cranes were recorded. Key threats identified included invasive species *Salvinia molesta*, human and livestock disturbances, encroachment, and poaching.

Monitoring efforts covered 40 nests of Grey Crowned Cranes, resulting in 34 chicks successfully fledging. The project engaged 255 local community members through five meetings and visited 15 primary and secondary schools, reaching 2,965 pupils and students, as well as 103 teachers, to raise awareness about crane conservation. Additionally, 500 respondents were interviewed to assess their ability to identify cranes, observe crane breeding, understand breeding outcomes, and recognize threats affecting the cranes in wetland.

The project also evaluated habitat quality, finding that nearly all satellite wetlands are crucial feeding and resting habitats for cranes, essential for their health and survival. Key wetlands were mapped and identified, prioritizing areas for conservation. The project also assessed threats to these wetlands, such as poaching, land use changes, and the impact of invasive species like *Salvinia molesta* on crane populations. The key partners involved in the project were, Kenya Wildlife Service, local administration, learning institution and local community around satellites wetland.

# Project Highlights



500 locals engaged during the questionnaire survey



120 monitoring survey completed by implementing team during the project.



34 chicks fledged from the 25 satellite wetlands monitored



2,965 learners engaged and 103 teachers during awareness sessions



255 locals engaged during five community meetings



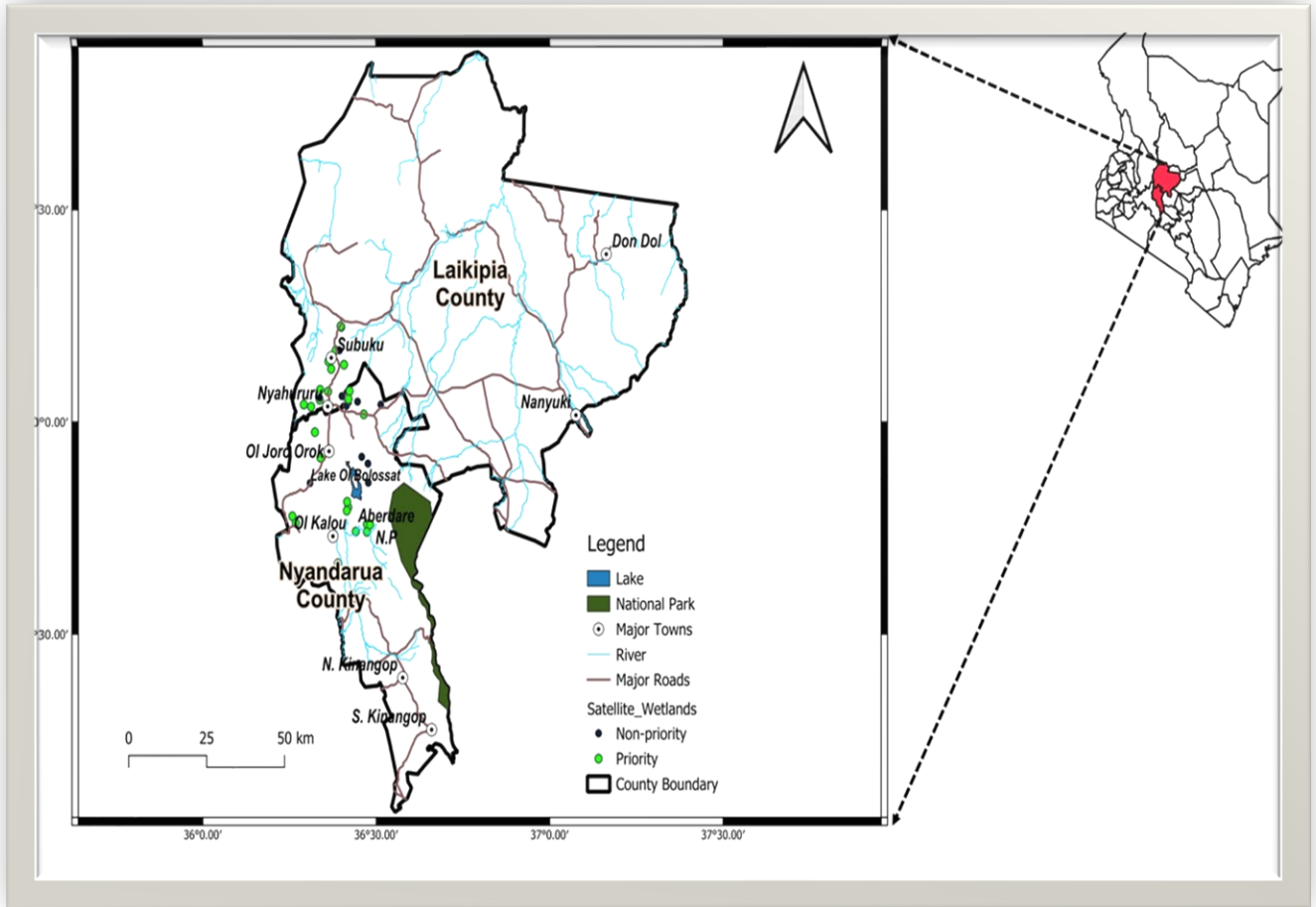
36 satellite wetlands visited; 25 prioritized for monitoring

## Project objectives

### **Objective 1: Satellites wetland around Lake Ol' Bolossat identified, mapped and size of Grey Crowned Crane determine**

The project surveyed 36 upland satellite wetlands within a 20 km radius from the edge of Lake Ol' Bolossat. Out of these, 25 wetlands were prioritized for an intensive survey because we observed

cranes breeding, nesting, feeding, or selecting nests at these sites. The presence of suitable habitat also guided our prioritization, particularly in areas where feeding fields bordered the wetlands. During the site visits, we engaged the local communities and the users of the wetland resources. A total of 105 adult cranes were recorded in these wetlands. Figure 1 shows the location and distribution of the upland wetlands around the lake.



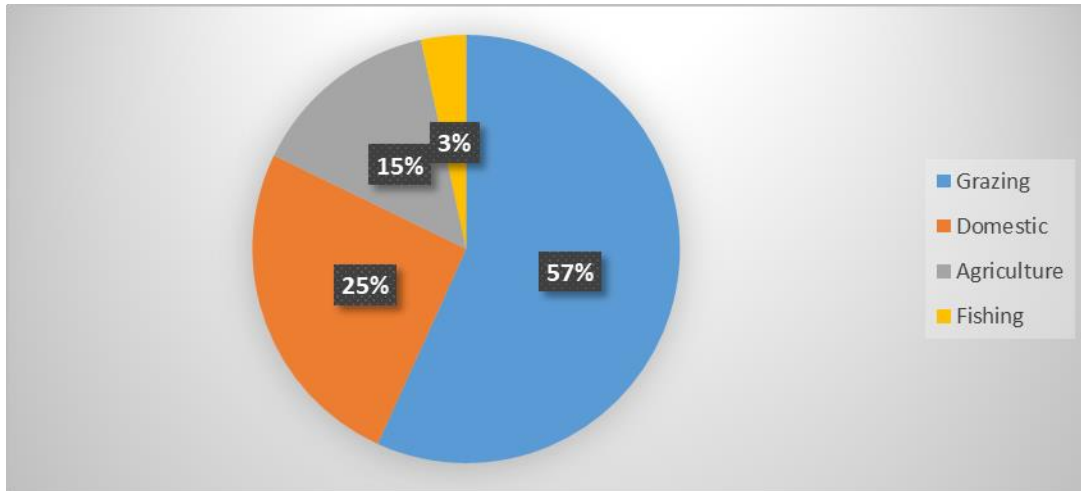
**Figure 1: Map showing the upland satellite wetlands visited during the project period.**

**Objective 2: Community perception towards the cranes and their comprehension on threats cranes are facing in the satellite wetlands.**

The project conducted a questionnaire surveys in the selected twenty-five (25) satellites wetland to determine community’s perception towards cranes. Twenty (20) respondents were interviewed at each wetland (resulting to a total of 500 respondents) on their capacity to identify a crane, if they have ever seen cranes breeding in their area, breeding status/result, and whether they knew of any threat affecting the cranes in the wetland.

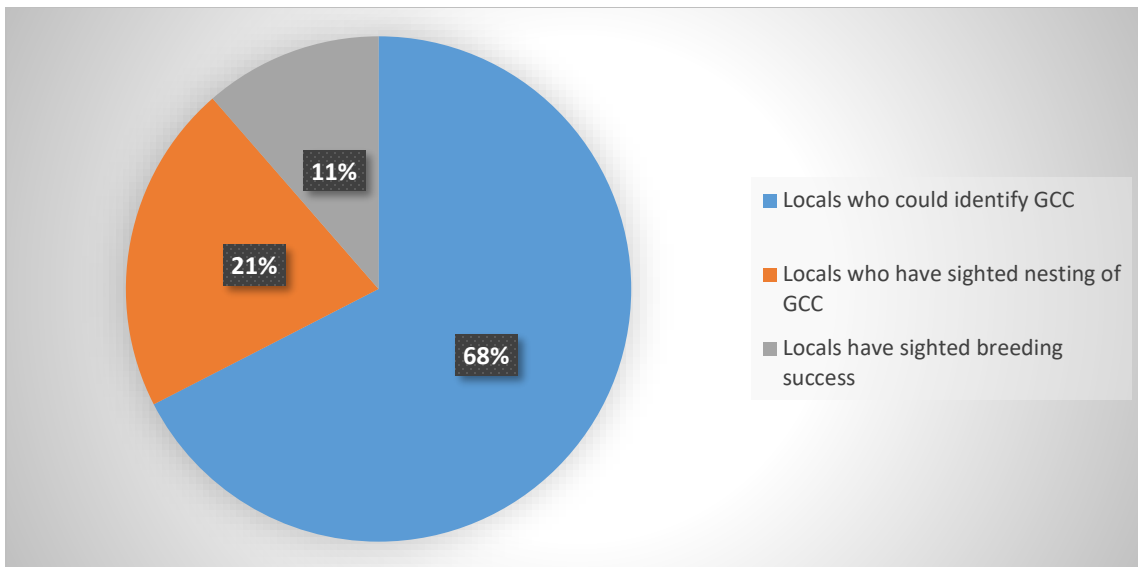
**Summary of the survey**

Four main uses of the wetland were identified, with 57% of respondents citing grazing as the primary use, followed by 25% for domestic use, 15% for agricultural activities, and 3% for fishing.



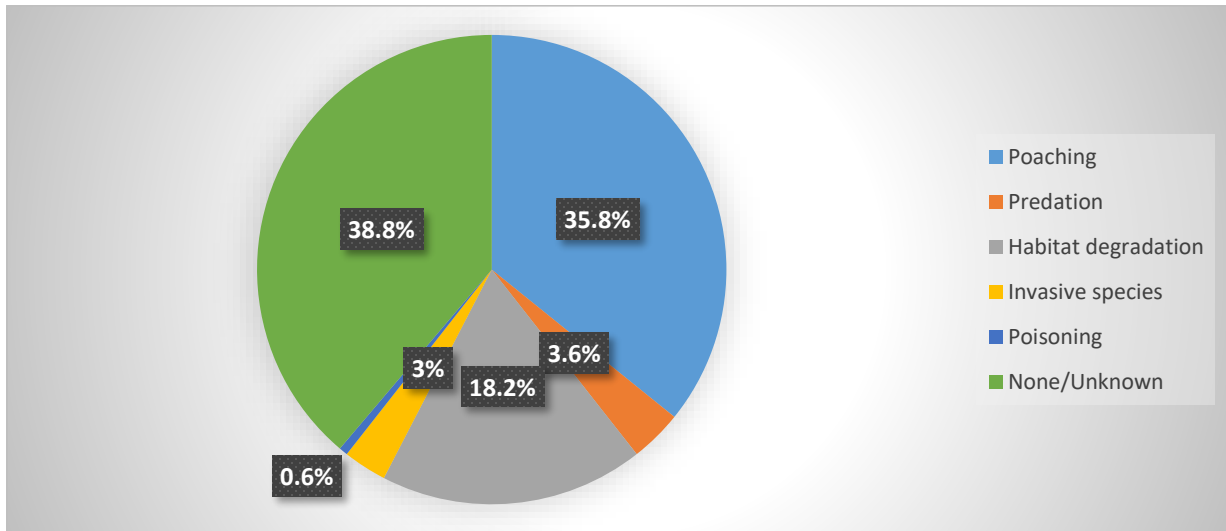
*Figure 2: shows the responses on the use of the satellites wetland by the local community*

Out of 500 respondents, 485 locals could identify the GCC, 152 had sighted nesting, and 82 had observed breeding success.



*Figure 3: Community responses on identification of cranes, nesting and breeding success in the satellite wetlands.*

Out of 500 respondents, 179 identified poaching as a threat, 91 pointed to habitat degradation, 18 mentioned predation, 15 noted invasive species, and 3 indicated poisoning. Meanwhile, 194 respondents were either unaware of the threats or did not identify any.



**Figure 4: Community responses on identifying the threats affecting cranes in satellites wetland**

**Objective 3: Critical habitat especially for breeding established and monitoring of breeding process.**

The project also focused on establishing and monitoring critical breeding habitats. It was found that nearly all satellite wetlands are crucial feeding and resting habitats for cranes, essential for their health and survival. Key wetlands were mapped and prioritized for conservation efforts. During the project, 40 nests were monitored across the selected wetlands, resulting in 34 crane fledglings. Key highlights included:

- Four nests were flooded in Mathakwa Wetland and Robert's Dam.
- Three chicks were poached at Maili-saba Wetland in Sironi.
- Eleven chicks went missing after hatching, with their parents later observed without them, though the cause remains unknown.
- Habitat destruction was noted in 18 wetlands, including activities such as plant harvesting, overgrazing, and burning to promote new growth.
- The invasive species *Salvinia molesta* was recorded in six wetlands.

**Objective 4: Potential threat in the satellite wetlands identified and community around engaged in conservation of cranes.**

## Threats

Threat to the satellites wetlands were observed during the survey and each priority wetland classified according to the nature of threats. The categories included threats affecting the breeding sites, threats leading to loss of eggs and chicks and threats to cranes after fledging.

Threats	Specific threats observed	Name of the Satellites wetland
	Harvesting of macrophytes	Limunga,Gathara and Mathakwa wetland
	Livestock (overgrazing)	Silale wetland,Huhirio and Limunga wetland
	Invasive/introduced species	Smith and Shamanei dam
	Encroachment	Losogwa,Limunga,Gathara,Njunu wetland Jebi dam
	Fishermen, boat riders activities	Smith and Mugamba-ciura dam
Threats leading to loss of eggs and chicks	Livestock (trampling)	Silale,Gathara and Captain wetland
	Predation	Gwa-Chege dam,Sironi dam
	Poaching (eggs and chicks)	Loitanet,Huhirio,Limunga,Mathakwa,Kirii,Njigari Gathara and Njigari wetland
Threats to cranes after fledging	Land use changes (subdivision, fencing, conversions, crops)	Huhirio and Kirii wetland
	Poaching (snaring)	Robert's dam

During the initial survey it was noted that poaching of eggs and chicks is common in most wetlands and that is why working with Kenya Wildlife Service as important because as a law enforcing agency, their presence in educating community on what the law says regarding poaching of wildlife and especially protected species like Grey Crowned crane.

**Threats recorded during the survey**





Invasive species *Salvinia molesta*



Over abstraction of water



Abandoned nest due to livestock disturbance



Human disturbance

**Figure 5: Some of threats that were identified during the project period.**

### **School awareness program**

During the project we managed to visit 15 schools and conducted awareness on conservation of endangered Grey Crowned Crane. The main aim was to achieve the following:

- **Building Awareness:** we educated learners about the importance of cranes in the ecosystem and the threats they face to foster a sense of responsibility and urgency. Understanding the ecological role of cranes and the impact of poaching and egg collection can motivate them to act as stewards of wildlife.
- **Preventing Poaching and Illegal Activities:** we provided information on the negative effects of poaching and egg collection, learners promised to advocate against these practices. We



urged them to influence their peers and family members, helping to reduce local instances of illegal activities.

- **Fostering Conservation Values:** We engaged learners in conservation education and helped instill values of empathy and respect for wildlife. These values can shape their attitudes and behaviors towards animals throughout their lives. Equipped with knowledge and passion, learners can become effective ambassadors for crane conservation. They can participate in community outreach, educational campaigns, and other initiatives to spread awareness and drive positive change.
- **Encouraging Participation in Conservation Programs:** Informed students are more likely to get involved in conservation programs, whether through school projects, volunteering, or supporting conservation organizations. Their involvement can lead to more effective and widespread conservation efforts.

## Creating awareness in schools



**Figure 6: Engaging pupils in different schools near the satellites wetland**

### **(b) One-on-one awareness**

During the one-on-one awareness program, we engaged with 500 community members individually. This included 375 local communities such as herdsmen and farmers, through detailed questionnaires. Through these interactions, we gained valuable insights into how the community interacts with cranes and their perceptions of these birds. We were also able to identify key threats to crane populations and discuss potential conservation strategies to address these issues. This in-depth engagement helped us understand the community's perspective and develop targeted approaches for crane conservation.

## One-on-one awareness with users of the satellite wetlands



### **(c) Community meetings**

Involving and empowering local communities in conservation efforts can lead to more effective and sustainable results, benefitting both the cranes and the people who share their environment. During the project, we held five meetings to engage the local community on crane conservation. These meetings aimed to raise awareness about the status of the Grey Crowned Crane, the



challenges it faces, and the crucial role the community plays in protecting the species from extinction.

Throughout our interactions, we gathered information on how outsiders entice local children to capture young chicks. The participants committed to becoming ambassadors for crane conservation within their communities. Despite expressing concerns about cranes damaging their crops, particularly cowpeas and maize, they noted they could use non-harmful methods to deter the birds. In total, we engaged with 255 people (200 men and 55 women) during these meetings

## Community awareness meeting with locals



## Conclusion

In conclusion, future funding will be crucial to deepen community involvement, empowering them as custodians of the wetlands and addressing the growing concerns surrounding illegal trade. Given that some wetlands are on private land, it is essential to encourage landowners not to drain these vital ecosystems and instead introduce conservation agriculture or other ventures that do not threaten the wetlands. Each wetland faces unique challenges, underscoring the need for ongoing engagement to raise awareness and develop strategies for their wise use.

One significant challenge observed is the presence of invasive species like *Salvinia molesta* in many dams, which hampers the breeding of cranes and other waterfowl by depleting native vegetation used for nesting materials. To combat this, CCV has developed an innovative approach by thermally decomposing the species to produce biochar, which can then be used to enhance crop production on farms. This approach offers a promising solution to balance wetland conservation with agricultural needs.

## Acknowledgements

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