Excursion Timetable 1st November 2006

Time	Activity
0700Hrs	Departure from Nairobi
0800Hrs	Stop-over at the View Point
0930Hrs	Arrive KWSTI
1000-1115Hrs	Visit KWSTI ANNEX (KWS)
1115 Hrs	Visit KWSTI Annex
1200Hrs	Tour of Kijabe Flower Farm/Crayfish Hotel
1300-1345Hrs	Lunch
1430 Hrs	Visit Ol-Karia Geothermal Power Plant (Ken Gen)
1730Hrs	Depart Olkaria Geothermal Plant for Nairobi
1900Hrs	Arrival and check into your Hotels

KENYA WILDLIFE SERVICE

TRAINING INSTITUTE NAIVASHA

Location

- **Located in Naivasha - Kenya, 80km north west of Nairobi along the Great Rift Valley & at the shore of the Kenya's Second Ramsar site, Lake Naivasha, 70km from Lake Nakuru**
- **Established in 1985**
- **In 1994, Kenya Wildlife Service (KWS) took over**
- **Situated in a Game Sanctuary with a variety of wildlife & flora to be viewed**

KENYA WILDLIFE SERVICE

VISION STATEMENT

"To be a World leader in wildlife Conservation"

MISSION STATEMENT

"To sustainably conserve and manage Kenya's wildlife and their habitats in collaboration with other stakeholders for posterity"

WHO/WHAT IS KWS ?

- **Semi-autonomous Government Parastatal**
- **Conserve the natural resources of Kenya & its fauna & flora**
- **Ensures use wildlife resources of Kenya for sustainable economic development**
- **Protect people & their property from wildlife damage**
- **Custodian of the Ramsar Convention & other International Conventions & Agreements**

In Kenya, wildlife is conserved in

- ✓**National Parks**
- ✓**National Reserves**
- ✓**Game Sanctuaries**
- ✓**Forest Reserves**
- ✓**Trustlands (Communal lands under Country Councils)**
- ✓**Group Ranches, Private Ranches & Farms**

PROTECTED AREAS

- ✓26 National Parks
- ✓5 Marine Parks
- ✓ 28 National Reserves
- ✓5 Marine Reserves
- ✓2-3 National Wildlife Sanctuary

KWS TRAINING UNITS

- Manyani Field Training School
- KWS Training Institute

OBJECTIVES OF THE INSTITUTE

- **Basic, specialised & refresher courses for KWS staff & its partners**
- **Training in Natural Resources Management in an effort to enhance Conservation, Management & Sustainability of Bio-diversity in Kenya & globally**
- **Conduct research in natural resource management**
- **Hospitality Services**

Aerial Photograph of KWS Training Institute

KWSTI consists of 3 sanctuaries, namely;

- **Main Campus Sanctuary**
- **Game Farm Sanctuary**
- **Annex Sanctuary**

MAIN CAMPUS -----Physical facilities

MAIN CAMPUS -----Fauna/Habitat

MAIN CAMPUS ----- Fauna/Reptiles

MAIN CAMPUS------ Aves/Habitat

MAIN CAMPUS-----Flora

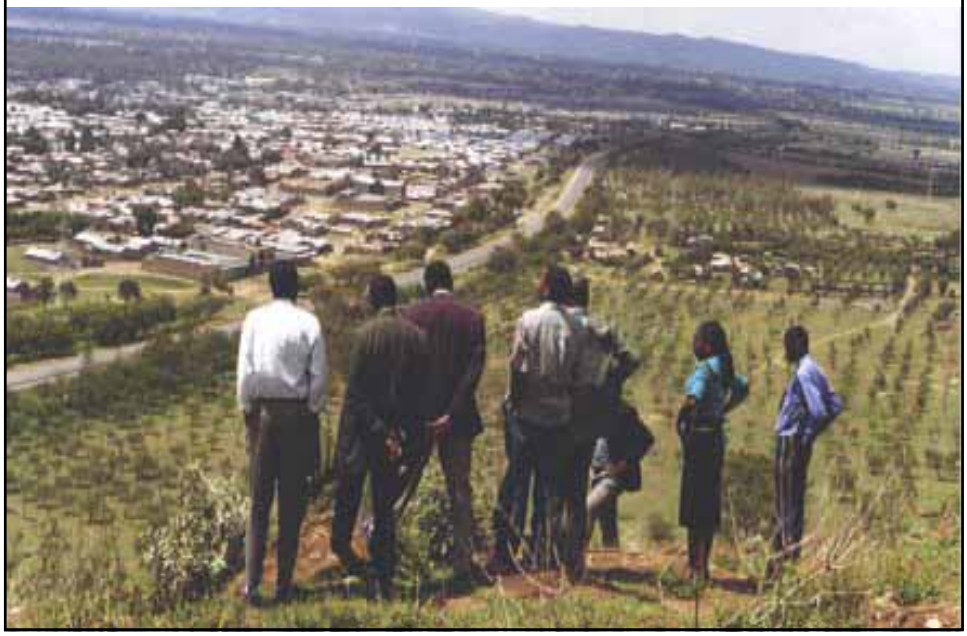
A modern dinning hall with a capacity of 150, backed up by a modern kitchen

Sports facilities - a swimming pool of international standard, two lawn tennis courts, a football field, a volleyball pitch, a basketball pitch

GAME FARM SANCTUARY

- **Comprises 1000 acres**
- **Outpost**
- **Variety of plants & wildlife species**
- **Potential for use**
  - **as a wildlife habitat training field?**
  - **mini-Park?**
  - **campsite/picnicking site???**

View of Naivasha town from Game Farm Sanctuary

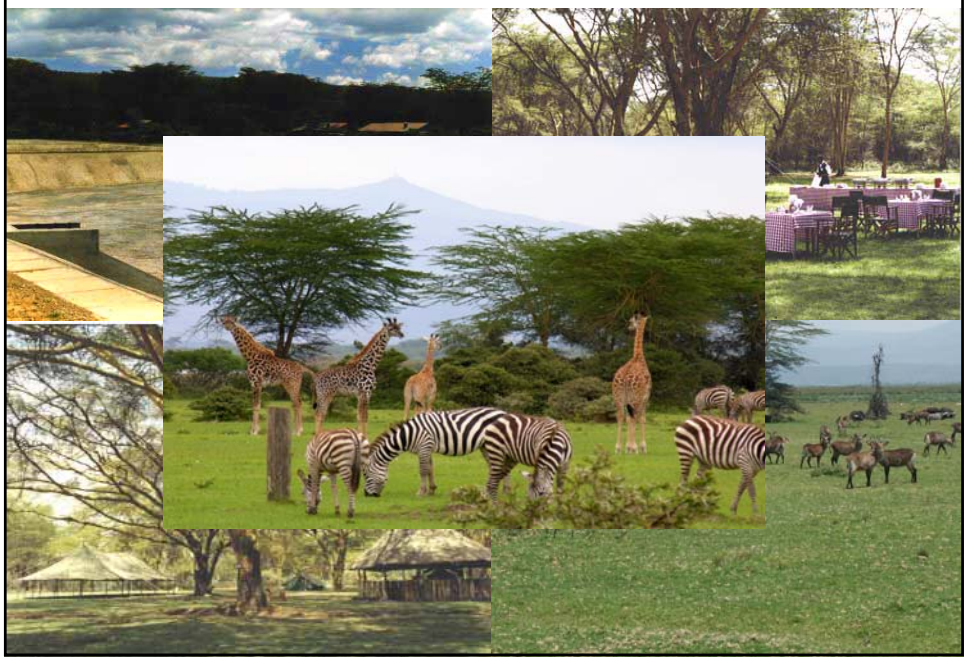


ANNEX SANCTUARY

- About 20 ha -actual size determined by lake level & fronts Lake Naivasha
- Aquaculture ponds, fish processing units, boat building yard, gear technology unit & aquarium tank
- Offices, classrooms, library, two labs
- Hippo Campsite

Classrooms, Offices, Flora & Fauna at Annex Sanctuary

Aquaculture ponds, Hippo Camp in Annex Sanctuary



ACADEMIC PROGRAMMES

Training Programmes Offered

1. **DEGREE COURSES**

   In conjunction with the Faculty of Veterinary Medicine, University of Nairobi

2. **DIPLOMA COURSES**

3. **CERTIFICATE COURSES**

   Intl. Course African Wetland Mgt.

HOST COUNTRIES

UGANDA

KENYA WILDLIFE SERVICE

Ministry of Natural Resource and Tourism

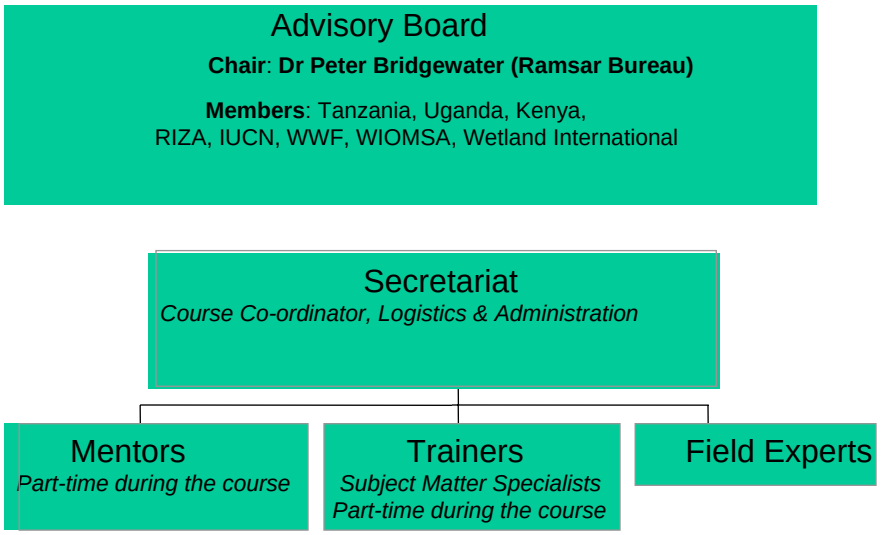
WHAT IS ICAWM?

- **A Ramsar Convention endorsed Programme**
- **Developed mainly on the Ramsar Management Guidelines with extracts from IUCN Guidelines on MPAs**
- **Now in its 6th year (2001-2006)**

Developed & Executed by

- **KWS (TI) in conjunction with Wetland Advisory & Training (RIZA) - Netherlands**
- **Wetland Inspection Division**
  - **Ministry of Water, Lands & Environment--Uganda**
- **Wildlife Division**
  - **Ministry Natural Resources & Tourism-Tanzania**
- **International Wetland organizations -IUCN & Wetlands International**
- **Tertiary Institutions**
  - **University of Nairobi**
  - **Egerton University**
  - **Kenyatta University**

COURSE ORGANIZATION



Course Development

- **Developed with a view of giving the former RIZA-Netherlands course an African perspective through the following:**
  - **Addressing needs for African Wetland Management**
  - **Expose participants to the practical issues that Wetland managers face in Africa**
  - **Use of the Wetland sites as case studies**

COURSE AIM

- **Impart the participants with the knowledge, skills & motivation necessary for effective management of Wetland sites in Africa**
- **Participants are taken through the process of developing Wetland Management Plan for a given Wetland & its catchment**

FIELD WORK

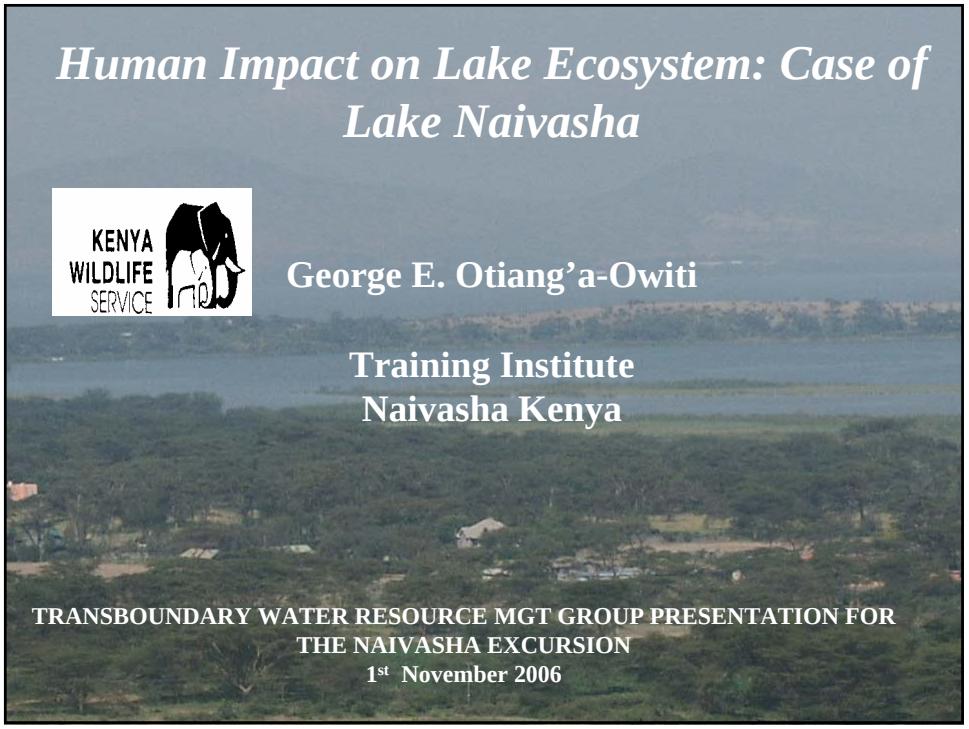
Based on three Wetlands Types:

- **Man-Made Wetlands - Kamburu Dam - Mwea Irrigation Scheme - 2001**
- **Inland Wetlands - Lakes Naivasha & Nakuru - 2001- 2005 Eastern Uganda - (Limoto in Pallisa) in 2002 - 2004**
- **South-western part of Uganda – 2005/2006**
- **Coastal & Marine Wetlands - Malindi & Watamu Marine Parks & Reserve, Mouth of Sabaki River - 2001-2006**

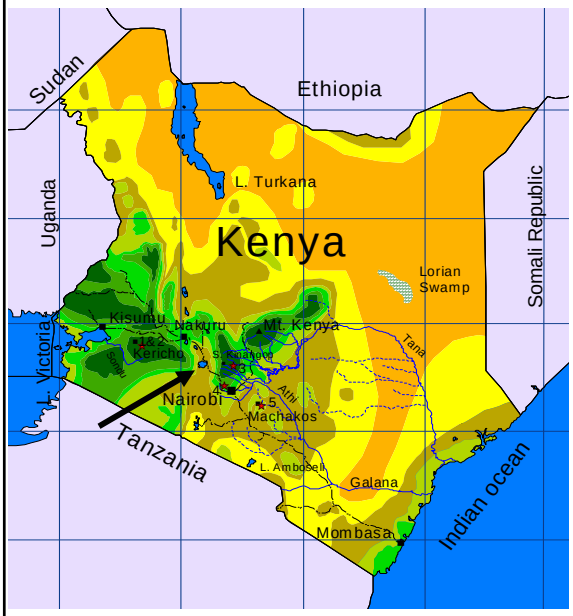
COUNTRIES THAT HAVE PARTICIPATED

- **Eastern Africa -** (***Tanzania, Uganda, Sudan, Ethiopia, Djibouti & Kenya)***
- **Central Africa** - ***(Burundi, Rwanda, Cameroon)***
- **West Africa -** ***(Nigeria,Cote d 'Voire)***
- **Southern Africa** ***(Zambia, Seychelles,South Africa)***
- **Asia** - **Vietnam**

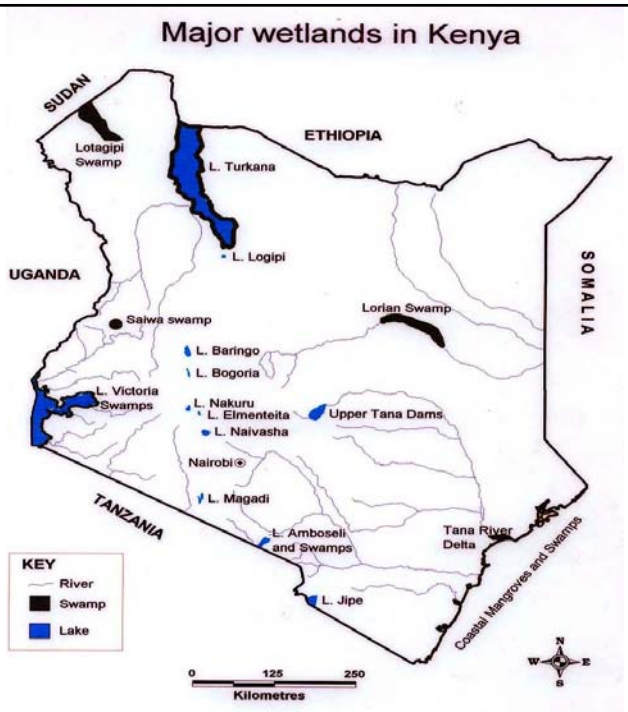
Total 102



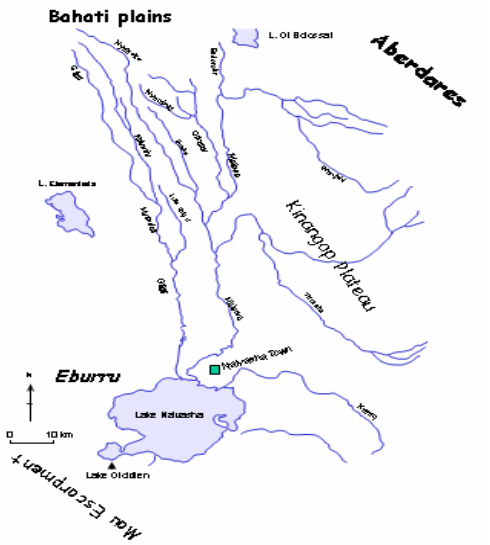
INTRODUCTION



- Lake Naivasha
- Shallow fresh water lake in a water deficient zone
- One of 7 lakes in Eastern Great Rift valley in Kenya
- Main lake + Oloiden + Crater (Sonachi)-alkaline
- Area 102- 150 km²
- Altitude 1890 m.a.s.l
- Water, Fishing, geothermal power, tourism, habitat



CATCHMENT AREAS OF LAKE NAIVASHA



Catchment size – 3,200 km²

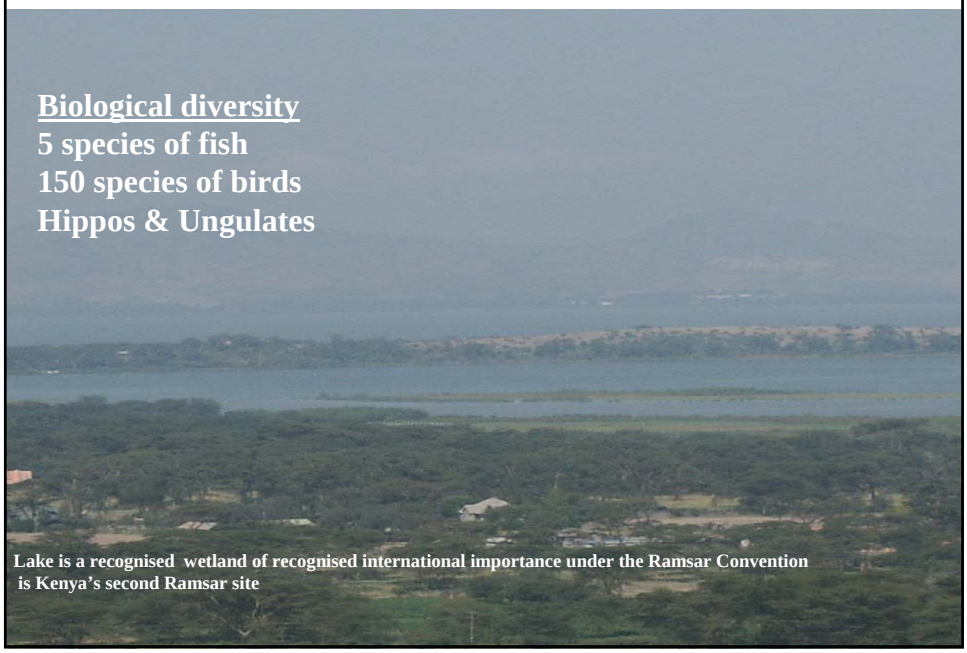
East – Nyandarua Mts (Aberdare ranges & Kinangop Plateau)- West - Mau escarpment

South - Mt Longonot, Njorowa gorge (Hell's Gate), Olkaria volcanic complex)

North – Eburru Hills

Surface inflow -Malewa (90%), Gilgil & Karati (10%)- seasonal

Lake Naivasha- attributes/values



Biological diversity

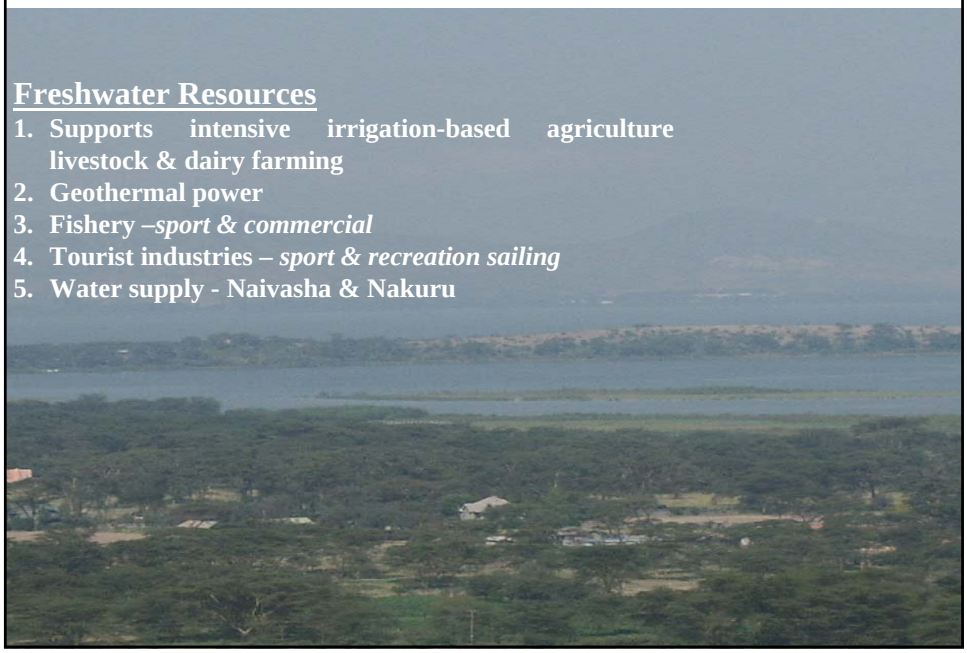
5 species of fish

150 species of birds

Hippos & Ungulates

Lake is a recognised wetland of recognised international importance under the Ramsar Convention is Kenya's second Ramsar site

Lake Naivasha- attributes/values



Freshwater Resources

1. **Supports intensive irrigation-based agriculture livestock & dairy farming**
2. **Geothermal power**
3. **Fishery –*sport & commercial***
4. **Tourist industries – *sport & recreation sailing***
5. **Water supply - Naivasha & Nakuru**

Summary of Impacts of Primary Stakeholders of Lake Naivasha

Stakeholders	Impacts
1. Large flower farmers	Water abstraction
2. Horticultural farmers	Water abstraction
3. Fishermen	Fishing pressure (Overfishing)
4. Municipal council	Waste disposal, Water abstraction
5. Conservation agency and groups	High density of wildlife – Carrying capacity;
6. Pastoralist and Ranchers	Overgrazing – siltation
7. Local communities (Urban)	Water abstraction, Domestic and solid waste
8. Upstream communities	Poor land practices – nutrient overload
9. Geothermal production (KenGen & OrPower)	Water abstraction

Threats to the Lake - Upper Catchment

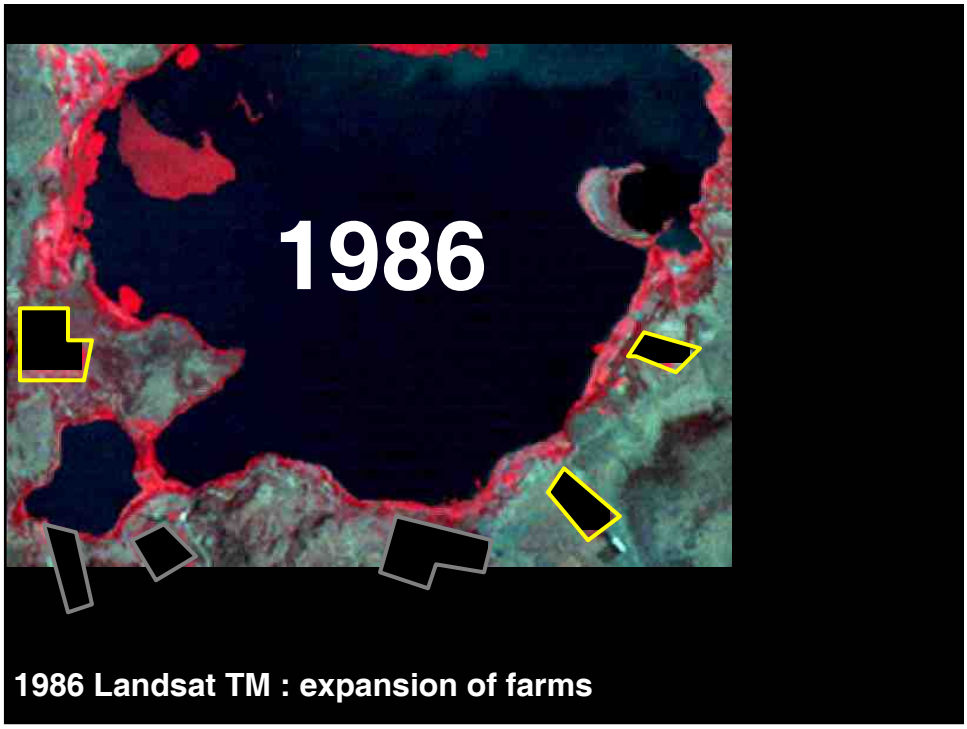
- **Out of basin transfer- damming of river Malewa >>Nakuru**
- **Excessive water abstraction – irrigation & domestic use**
- **High population (60,000)**
- **Catchment deforestation**
- **Poor land use & farming practices**
- **Water pollution- chemical & siltation**
- **Over-grazing**
- **Charcoal burning/wood fuel**

Threats in/around the lake

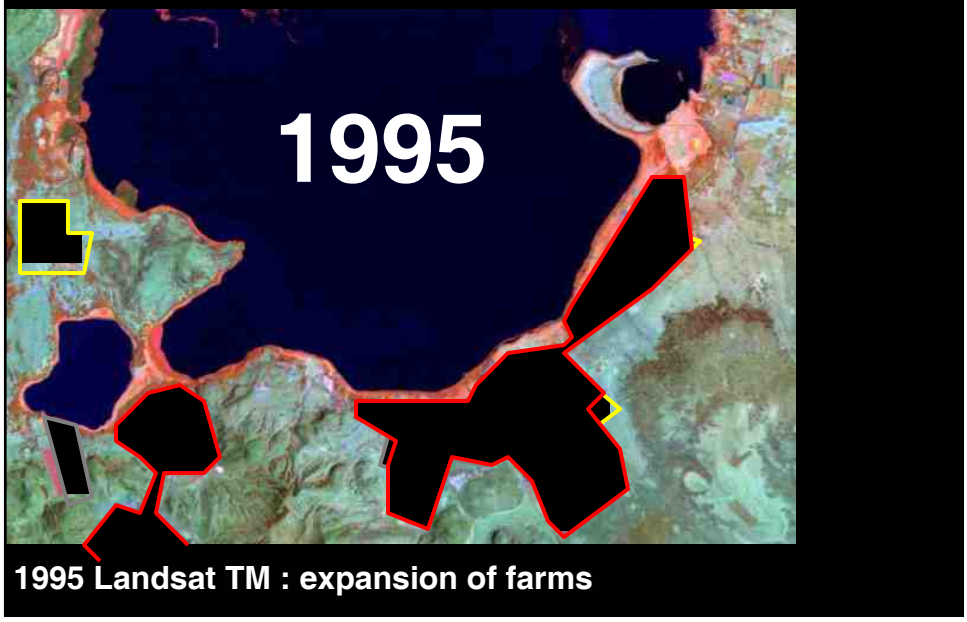
- **Over-fishing/ Poor fishing methods**
- **Water Abstraction (+illegal) – irrigation, geothermal power & domestic use**
- **Agricultural activities**
- **Pollution- sewage, plastics, chemicals**
- **Destruction of wetlands including papyrus & other vegetation around the lake**
- **Siltation-livestock watering**
- **Construction of permanent structures**
- **Overpopulation - 250,000-300,000**
- **Alien species introduction>>loss of biodiversity & change in ecosystem structure**

Other factors/impacts

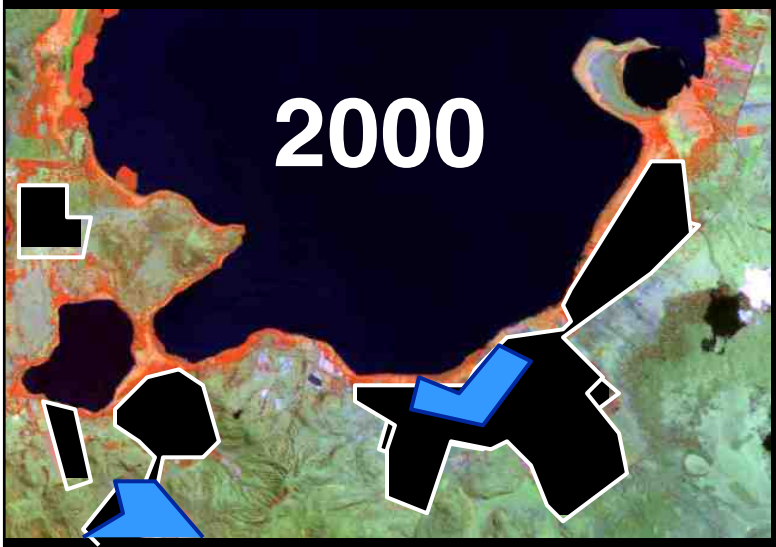
1976 Landsat MSS: expansion of farms



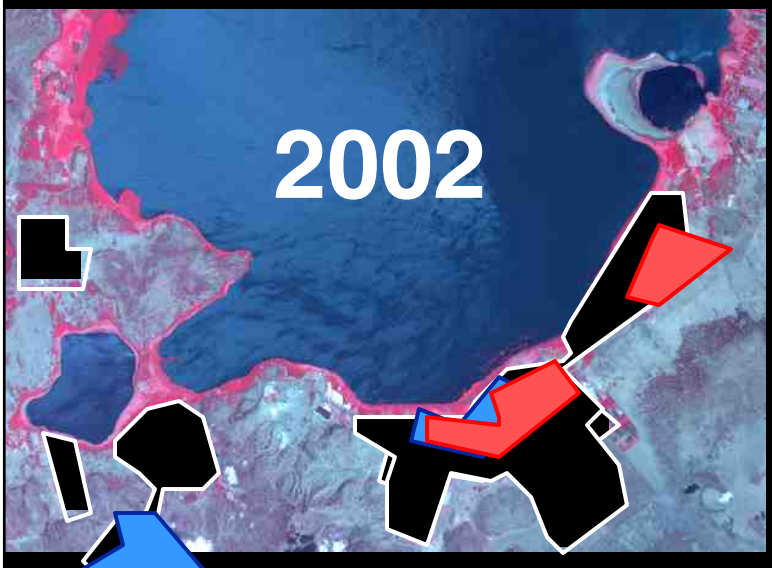
1986 Landsat TM : expansion of farms



1995 Landsat TM : expansion of farms

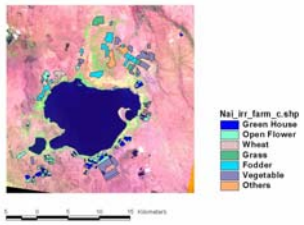


2000 Landsat TM: no visible expansion but new greenhouses

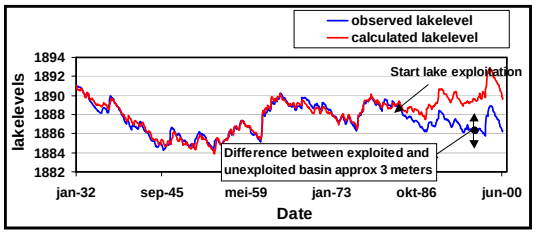


2002 ASTER : more new greenhouses

Simulation of the lake levels from 1932 to 2000 shows: Abstraction is 60 Million Cubic Meter/year



- 4000 ha of irrigated
- land is consuming 60 MCM/year



Use of Bio-indicators to Assess Lake Environmental Quality- 2002 - 2005

- Identified indicators include
  - Catch Per Unit Effort (CPUE)
  - Waterbird species population trend
  - Change in macrophyte cover (*Cyperus papyrus*)
  - Changes in Lake Level
  - Water quality (especially phosphorus & nitrates)

Current Interventions/mitigation

- **Formation of the Lake Naivasha Management Plan through the Lake Naivasha Management Committee (LNMC)**
- **<u>MEMBERS</u>**
  - **LNRA, Ministries, KWS, Local Government, IUCN & local communities leaders**
- **<u>MANAGEMENT PLAN</u> aim is to guide the management of the lake for the future (This matter is now in court)**

Improve on the environmental health

- Monitoring abstraction by users- through a metering system
- Restoration & facilitated recovery of macrophytes
- Development of strategies to prevent further destruction of the remaining papyrus by humans & wildlife
- Restriction & reduction of the number of settlements around the lakeshore
- Conservation education & awareness for the communities - catchment especially along the banks of the Malewa and Gilgil rivers
- Regulate & facilitate sustainable artisanal fisheries activities
- Assessment & monitoring of concentrations of specific chemicals in lake water

A BIG WELCOME TO KWSTI & NAIVASHA & A PRODUCTIVE EXCURSION

Remember animals have the right of way