

TRAINING WATER BIRD COUNTERS TO MONITOR WETLANDS IN KENYA: PROGRESS AND PROSPECTS

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ABSTRACT

Waterbird counts are useful for monitoring the ecological character of wetlands. However, regular, sustained counts at a national level are hard to achieve. Since 1990, the Kenya Wetlands Working Group has been combining waterbird counts at important wetland sites with training for volunteer counters. The aim is to develop and equip a team of Kenyan counters who can continue to collect data on waterbird numbers in a consistent manner. Volunteers contribute their time and energy, while the organizers provide food, accommodation, transport and materials. More than 200 volunteers had participated in the counts by the end of July 1993, including students, professional biologists and wildlife managers, and amateur birdwatchers. Of these, a core group of 40-50 people have shown sustained interest. The training and count sessions have been successful in developing a competent waterbird count team and providing consistent census data; they have also proved a very effective way to create awareness of wetland values and conservation problems. The challenge now is to find the means to sustain the waterbird counts on an annual basis.

INTRODUCTION

Waterbird counts can be very useful as part of an overall strategy for monitoring wetlands. To be effective they need to be regular, sustained over a reasonably long period so that the normal pattern of fluctuations in number can be assessed, and conducted in a strictly consistent manner.

Regular, consistent counts can yield at least three important types of information. First, they provide a baseline against which any changes in waterbird numbers can be assessed. Since water birds are sensitive biological indicators, this can provide an "early warning" of any deterioration or change in the ecological character of a wetland system. To interpret the changes continuous, data are required. It is also important to know as much as possible about the biology (especially feeding ecology and habitat preferences) of the species involved.

Second, counts can show the relative importance of different wetland areas in terms of waterbird numbers and species richness. Accurate and reliable data of this type are important for decision making in conservation. They are also often required to support any recommendation for the addition of a site to the Ramsar list of wetlands of international importance. Several of the Ramsar criteria are based on waterbird numbers.

Third, when conducted as part of Africa-wide surveys (the IWRB African Waterfowl Census), waterbird counts contribute to our understanding of the status of migratory species. Conservation of such species is an issue of international concern, but in most cases we know remarkably little about their wintering populations and distribution.

While regular, sustained waterbird counts at key wetland sites are highly desirable, at a national level they can be very

difficult to achieve. In Kenya, as in many other African countries, many factors make it hard to organize a waterbird monitoring scheme. The most critical factor is the lack of trained personnel, funds and equipment. This paper describes the efforts of the Kenya Wetlands Working Group to tackle these problems, and reports on progress so far and challenges still to be faced.

WATERBIRD COUNTING IN KENYA

Counting of water birds in Kenya has a long history. As early as 1974, a Wildfowl and Wetlands Working Group was founded by C. E. Norris and G. Cunningham-van Someren, with the aim of collecting data on waterbird distribution and numbers. The group was active for a short time and then subsided. Between 1976 and 1989 surveys of Palaearctic ducks and waders were carried out by D. Pearson, B. Meadows, T. Stevenson, P. B. Taylor, and others. Some of these findings have been published (e.g., Pearson and Stevenson 1980; Meadows 1984; Pearson and Meadows 1992; Pearson *et al.* 1992), and some of the data submitted to IWRB for addition to their waterbird census database.

The earlier surveys, carried out by a few dedicated individuals, have contributed enormously to our understanding of the distribution of water birds in Kenya. However, from the monitoring point of view, they were not ideal. In only a few cases were particular wetlands surveyed consistently at the same time of the year. The emphasis was almost entirely on Palaearctic migrants, ignoring Afrotropical birds that may in many cases be better indicators of local conditions. Furthermore, the work was not sustainable. It was not formalized under any program; no coordination took place and no indigenous Kenyans at all were involved. When the

counters left the country, the waterfowl surveys they were doing ceased.

In June 1990 the Kenya Wetlands Working Group (KWWG) was formed, its primary aim being to promote the "wise use" of Kenya's wetlands as stipulated under the Ramsar Convention. One of the group's first exercises was to initiate waterbird counts at several key wetland sites, as part of the African Waterfowl Census. It became immediately clear that a strategy was required to make the counts successful and sustainable. In brief, what was required were planning and coordination; training; and the provision of equipment and opportunities to count.

KWWG'S WATERBIRD COUNT PROJECT

Counting waterfowl is an exacting occupation. Species identification, particularly of migrants, is difficult, as is accurate estimation of numbers. Experience is required, and those who lack experience must be carefully trained. When the KWWG program began there was only a tiny number of experienced birdwatchers or ornithologists in Kenya who were able and willing to participate in the counts. Very few of these were Kenyans. For continuity, a major aim had to be to train a team of Kenyans to a high level of expertise. This trained team, and others that they would train in turn, could then ensure that the counts would continue not just for one or two years, but for as long as wetland monitoring needs to be performed.

An important aspect of this training program was the participation of the Kenya Wildlife Service (KWS). The KWS is the body designated to implement the terms of the Ramsar Convention in Kenya. Lake Nakuru, Kenya's first Ramsar site, is also a National Park managed by KWS. Since KWS lacked sufficient trained personnel to undertake monitoring efforts, a special focus of the project was to train KWS staff, so that a team of professional wildlife managers with skills in waterfowl counting could be developed within the organization itself.

Most Kenyans do not have the resources to go out and count water birds independently. Basic equipment, such as field guides and binoculars, is also in short supply. So a major aim of the project was to provide the opportunity for enthusiastic volunteers to take part in the censuses, and to supply the equipment needed to make their participation meaningful.

The project started in 1990 with training sessions at Lakes Magadi and Nakuru (Figure 1). In January 1991, larger training sessions, combined with counts, were organized at Naivasha and Nakuru. Support for these initial efforts came from the East African Wildlife Society (EAWS) and the East Africa Natural History Society (EANHS). Later in 1991 an application for training support was made to the Ramsar Bureau's Wetland Conservation Fund. This was successful, and these funds have been used to maintain the project for the last eighteen months.

STRATEGY AND ORGANIZATION

The specific aim of the project is to lay a foundation for regular, sustained monitoring of waterbird populations at important wetland sites in Kenya, through training of Kenyans in appropriate techniques. Because the need to collect data on waterbird numbers is urgent, training takes place simultaneously with census work.

A number of wetland sites are covered in the counts, including most of the main lakes in the southern Rift Valley. Some sites are counted by a small team of experienced counters and involve no training component. Eleven combined training sessions and counts have been undertaken since the Ramsar-funded project began (Table 1). Group sizes for these sessions have been around 70 counters at Lake Nakuru, 40 counters at Lake Naivasha, and 20 to 30 counters at the other sites.

The main emphasis has been on Naivasha and Nakuru. These two very important wetlands (an existing and a potential Ramsar site) contrast in the species of water birds present and the challenges involved in counting them. Nakuru is counted from the shore, on foot. Very large numbers of birds, especially flamingos, are often present, and a main focus of the training is to improve the consistency and accuracy of counters' estimation techniques. Naivasha is counted from the water, in boats. Training here emphasizes identification (over 70 waterbird species are regularly recorded) as well as the ability to count and record continuously, while the boat is moving.

All training sessions have a common organizational framework. Participants are volunteers who are asked to donate their time and energy. In return the organizers make available basic food, accommodation and transport. These costs are met from the project funds. As far as possible, equipment is also provided for those lacking their own binoculars or field guides. Those living or working around Naivasha and Nakuru are particularly encouraged to take part, but the majority of volunteers are based in Nairobi. Naivasha and Nakuru are convenient sites in this respect, since they are relatively accessible from the capital city. Training and counting at other important wetlands, for example, Lake Turkana, would be very difficult to organize.

Training is provided in several ways. Direct training involves sessions at the lake shore practicing the identification and counting of birds as a group, under the supervision of the project executives and other experienced counters. This involves, for example, basic techniques such as how to use binoculars; the field markings of particular groups and species; estimation techniques (and attempts to standardize estimates across the whole group); instruction in the use of recording forms; and the count protocol and rules. Newcomers are also given an explanation of why the counts are undertaken, and their importance for wetland conservation. All counters are expected to attend these sessions. A slide show, sometimes supplemented by videos, is generally

organized on the evening before the main count to focus attention on the field characteristics of particular species; this is primarily aimed at the less experienced counters. On the day of the count the group splits into teams, each of which is assigned a particular stretch of the wetland to cover. Each team includes at least one experienced counter, who is expected to provide as much training as possible during the count itself, and to ensure that team members are properly applying the skills they have been taught.

To maintain interest among the volunteers, reports of each count are sent out to everyone who took part. These reports also go to KWS and other decision-makers. The last three reports have been formalized as part of the research report series of the Department of Ornithology, National Museums of Kenya (Bennun 1992a, 1992b, 1993). IWRB also plays its part by distributing a summary account of the year's work across Africa to all the counters (Perrenou 1991, 1992).

This organizational approach has been successful. In part, this is because the project must cover only a small proportion of the "real" costs of each training session. Experienced counters, although few, have proved willing to attend and make their expertise available for training. The organizers donate their time. Participants with vehicles have generally provided them to transport other volunteers, often donating fuel as well. A number of boat owners at Naivasha, after some initial reluctance, are now prepared to donate the use of their boats for the counts. Kenya Wildlife Service, a partner in the project, has provided the use of their hostels and vehicles at Lake Nakuru without charge. The overall cost to the project of each training session is in the region of \$400; about one-third the sum required to sponsor a single Kenyan delegate to this conference!

PARTICIPATION

To date, more than 200 volunteers have participated in the training sessions (this includes those involved in 1991 before the Ramsar project officially began). Of these, around 27 were staff of the National Museums or Kenya Wildlife Service; some 54 were students (mainly studying for degrees or diplomas); 60 were amateur Kenyan birdwatchers or conservationists; and 63 were expatriates or short-term visitors (Figure 2). This last group, while not a primary target of the training program, is extremely important to the success of the sessions, since they include the majority of the experienced counters and the majority of the volunteers able to assist with transport.

The 141 Kenyans who have so far participated in the counts, form a much larger group than originally anticipated. However, the number is a little misleading. There is in fact a core group of about 40 to 50 volunteers who have attended consistently and shown sustained interest. So far the counts have been open to all, subject to the constraints of space (novices have had to drop out on some occasions). The original address list has been considerably expanded, and

many additional volunteers learn of the exercise by word of mouth. The counts have also been advertised in publications of the EANHS and once (to the organizers' surprise) in a national newspaper. The counts generate considerable interest, particularly among students; usually this is because of a genuine conservation commitment, but a few novice volunteers seem to see the exercise simply as a "free" weekend outing. This has not been a serious problem so far.

Those volunteers who have been attending consistently have now gained considerable experience. Beginning in July 1993, participation was restricted largely to this core group, but room was left for a few volunteers who appear to have a genuine interest in and commitment to the exercise.

The training sessions have certainly had a marked effect on the volunteers' technical skills. Perhaps equally important, however, they have proved to be a tremendously effective method of conservation education. Many volunteers originally knew very little about wetland conservation issues; the counts have made them aware of the importance and fragility of wetlands, and they in turn have spread the message to others.

CENSUS DATA

By making the training sessions an integral part of the counts, we obtain data on waterbird numbers simultaneously. The accuracy of these data are unknown, and it is likely that considerable biases exist in counting some species. However, because the methodology is consistent, the data are sufficient to allow comparison between years, and clearly show up trends. This, of course, is what a monitoring program aims at. Fig. 3 shows some examples of trends in a few species at Nakuru.

At times enormous numbers of flamingos flock at Lakes Elmenteita, Nakuru, and Bogoria. These represent a real challenge to counter, and much time is spent trying to obtain consistent total estimates. Counting from high ground, with a telescope, has been attempted as an alternative, but the results are not very consistent with the ground counts. In July 1993, the high ground telescope count gave around 750,000 flamingos on Lake Nakuru, while the low ground count revealed more than 1.4 million. In view of this inconsistency, more work is required to calibrate these method, especially since the telescope counts is likely to become a routine monitoring method. In the case of flamingos, it is important to know the actual numbers that are present: ground counts and telescope counts may in future be combined with an occasional accurate aerial survey.

SUSTAINABILITY

The training project has nearly fulfilled its aim of producing a trained team of counters. However, keeping the counts going will take resources, as well as continued commitment by the organizers and volunteers. The Ramsar funding is

nearly at an end, and other local or international donors will have to be persuaded to support the counts on a long-term basis. To convince them to do so, it will be necessary to demonstrate that the information collected is indeed valuable. This type of monitoring is long-term in nature, but already the results have some demonstrable value. As the institution responsible for overseeing the implementation of the Ramsar Convention in Kenya, the Kenya Wildlife Service has a responsibility to monitor Lake Nakuru, and these counts assist them in tracking the wetland's health. They also proved helpful during a recent research planning workshop to decide research and monitoring priorities for the lake and its catchment. Data for Lake Naivasha have been used to support an application by local residents for Ramsar listing. More generally, the counts have provided hard data to demonstrate the critical conservation problems faced by such waterbird species as the Great Crested Grebe and African Darter.

ACKNOWLEDGMENTS

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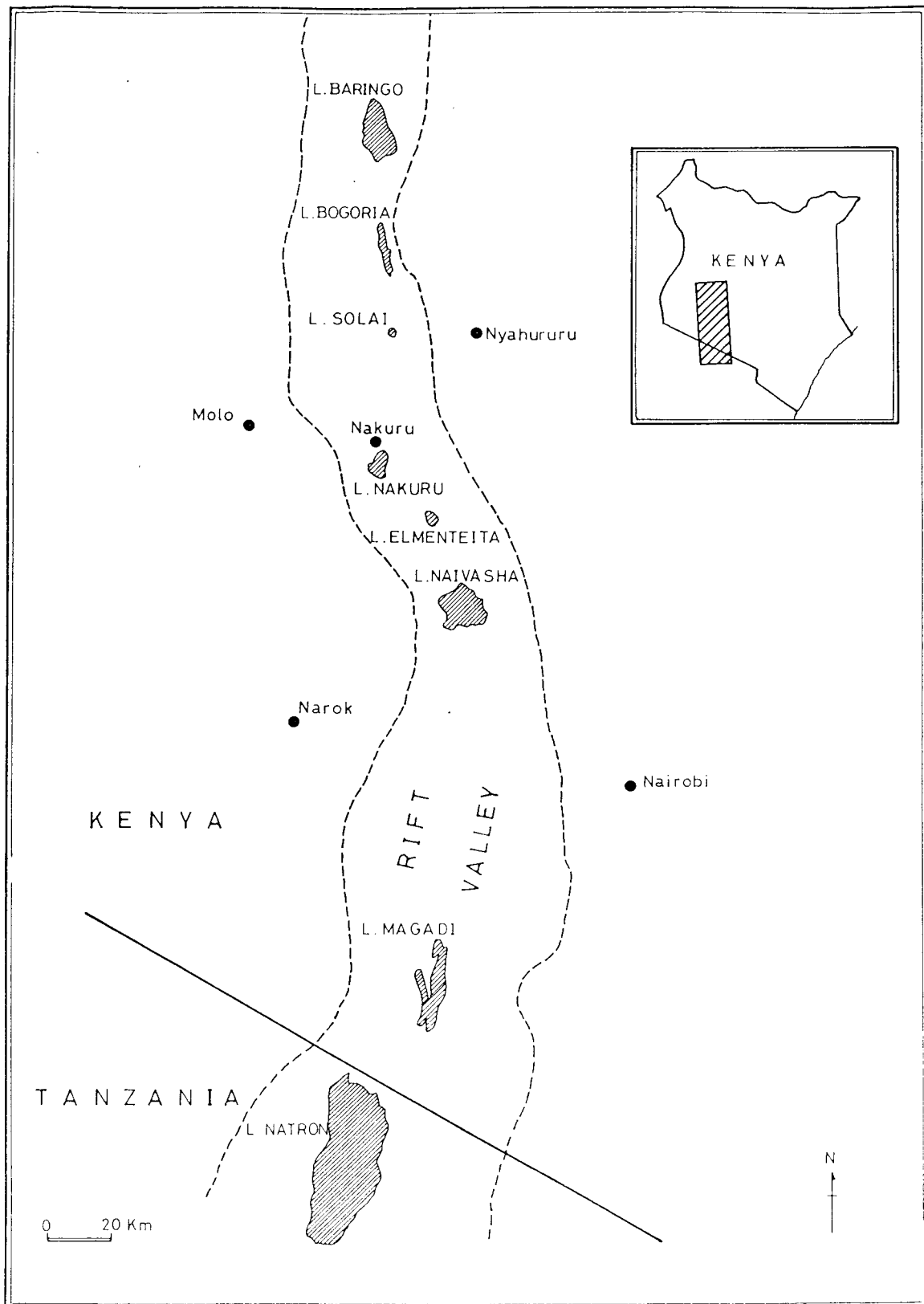


Figure 1. The Gregory Rift Valley in southern Kenya and extreme northern Tanzania, showing the location of major wetland sites.

Table 1. Combined training sessions and counts since January 1992.

Date	Number of Counters	Site
11-12 January 1992	71	Lake Nakuru
13 January 1992	21	Lake Elementeita
17-19 January 1992	55	Lakes Naivasha, Oloidien, and Sonachi
25-26 January 1992	16	Lake Bogoria
4-5 July 1992	62	Lake Nakuru
9-10 January 1993	36	Lakes Naivasha, Oloidien, and Sonachi
16-17 January 1993	79	Lake Nakuru
18 January 1993	25	Lake Elementeita
23-24 January 1993	16	Lake Bogoria
30 January 1993	12	Dandora Sewage Treatment Works
4-5 July 1993	69	Lake Nakuru

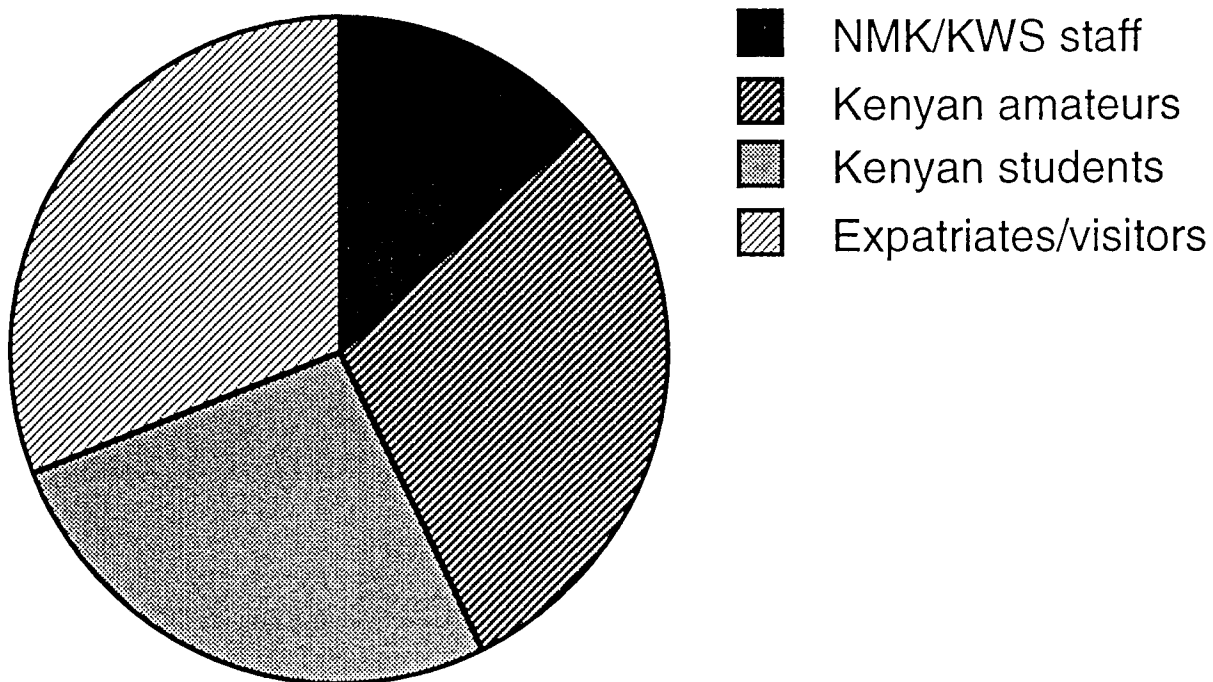


Figure 2. The proportion of waterbird count volunteers (total = 204 persons) in various categories, January 1991 to January 1993.

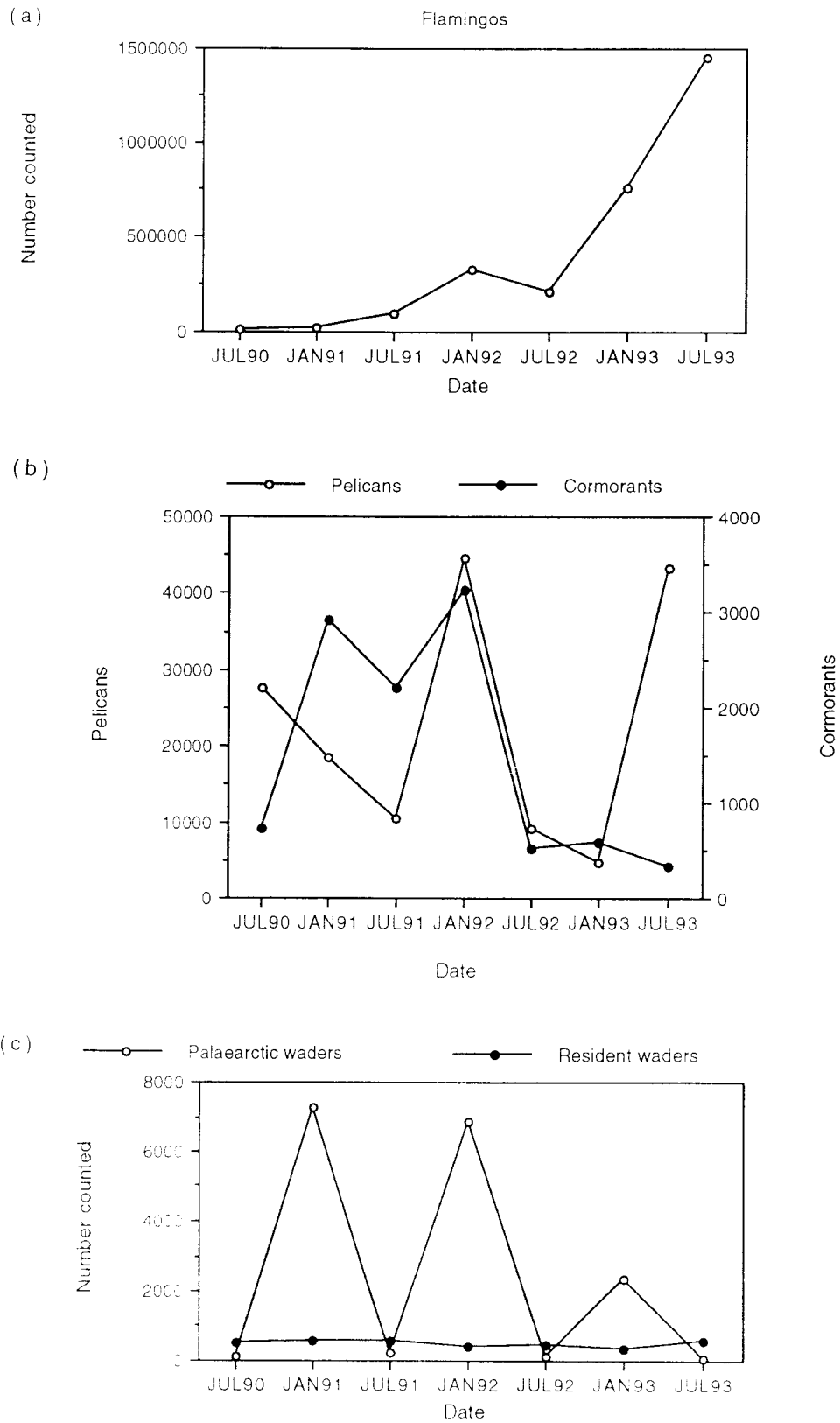


Figure 3. Trends in total numbers counted for some groups of waterbirds at Lake Nakuru, July 1990 to July 1993. (a) Flamingos; (b) Pelicans and cormorants; (c) Palaeartic and Afrotropical waders (plovers and sandpipers).