

Approach of the Ministry of Wildlife, Conservation and Tourism to wetlands in Namibia

H.J. SCHRADER

Ministry of Wildlife, Conservation and Tourism, Private Bag 13306, Windhoek, Namibia

Received May 1990; accepted August 1990

ABSTRACT

Scientific investigations of wetlands in Namibia have been neglected in the past. The Ministry of Wildlife, Conservation and Tourism endorses the IUCN'S World Conservation Strategy which calls for a classification of wetlands, a land-use plan for wetlands based on sustainable development as well as proper communication between government departments, developers, and the people of the country.

INTRODUCTION

Until recently, wetland habitats have largely been neglected in Namibia, possibly as a result of the region being classified as semi-arid and arid. Wetlands cover approximately 5% (41 166 km²) of the total surface of the country (A.J. Williams pers. comm.). Only 15.6% of this area is protected in parks. The rest of the wetlands are found mainly on communal land in the northern parts of the country and to a lesser extent, on privately owned land. Under community ownership, no single individual is responsible for the long term conservation of resources. It is, therefore, of no benefit for an individual to limit his use of wetland resources to sustainable levels, unless every member of the community follows suit. It is, however, very important to realise that the influences of wetlands extend well beyond the boundaries of a specific country and their conservation is of benefit to man throughout the region. If these wetlands are of little or no value to their owners, if they are not used rationally and sustainably and if little incentive for the local authority to carry out conservation practices, it creates a major problem for wetland conservation.

DISCUSSION

River-associated wetlands are at this stage the most threatened type of wetland in the country and are found mainly on communal and privately owned land. These areas are normally highly productive and can contribute significantly to agricultural production. Overgrazing and the practice of burning grazing land to improve forage quality is of concern in communal areas. For instance during 1987, on the Namibian side of the Kavango River, a human population of 81 360 people were resident in a 5 km strip running alongside the river. About 51 913 cows, 15 000 goats and 2 931 sheep grazed on the floodplains (J. Piek pers. comm.). Because of the unstable political situation in southern Angola, few people lived on the Angolan side of the river, which means that with political stability the pressure on the natural resources of the system may double when utilised on both riverbanks. It is, important therefore, that certain areas of the Kavango be set aside for conservation purposes which, at this stage, is easier said than done.

Physical hydrology is governed largely by climate, geology and topography, which in turn are the major elements controlling vegetation, geomorphological and soil forming processes, as well as land uses, of both the wetland and its catchment. Areas like the flood plains in East Caprivi are very sensitive to hydrological changes. It is therefore of the utmost importance that agricultural development be co-ordinated. The construction and gravel filling of roads can either block or change waterflow and can affect vast areas of this particular system.

The construction of dam walls in seasonal rivers without prior ecological investigations is of major concern to people responsible for environmental health. The prevention of seasonal riverflow in the Auob, Nossob and Olifants Rivers in the Kalahari as well as west flowing rivers in central and northern Namibia can result in the die off of indigenous trees and vegetation as well as serious problems with neighbouring countries. In the western part of the country, these seasonal rivers play a vital role in the survival of many animal species. Likewise, water withdrawal from perennial rivers for agricultural purposes and water supply to towns and cities can change the amount of water entering and leaving the system, the flow within the system, water levels, water velocity and the overall water regime. The benefit gained from such projects should be carefully weighed against the potential destruction of a natural resource.

The effect of the hydro-electric power station at Ruacana on the Cunene River had a remarkable effect on the wetland ecology downstream, especially during years of low rainfall. Daily water fluctuations were observed during 1986 down to the river mouth. This had a detrimental affect on the breeding biology of the fish population (van Zyl 1988).

Endorheic wetlands such as the Etosha Pan (Etosha National Park) Tsondabvlei, Sossusvlei and Koichabpan (all in the Namib Desert) are well protected at this stage because they are either in a national park, or in a restricted diamond area. It must, however, be kept in mind that any construction of dams in their catchment areas will diminish waterflow and could seriously affect these wetlands. When these systems receive water during above average rainy seasons they become spectacular tourist attractions. Even during the dry season of the year a substantial number of tourists visit these areas. As tourism plays an important role in the economy of this country, reason for the conservation of these areas is obvious.

Marine wetlands such as Sandwich Harbour and the Cunene River mouth are well protected and managed by the Directorate of Wildlife and Conservation. This Directorate is, however, concerned about the effect of water withdrawal and the construction of state dams on the hydrology of wetlands in the lower Orange River and its mouth.

Inland fisheries are an important renewable resource in Africa and are well developed in some wetlands (Welcomme 1979). The annual yield for the Kavango River is about 344 tonnes (Van der Waal 1980). The now dry Lake Liambezi in East Caprivi, supported an important catfish and cichlid fishery involving about 700 fishermen and yielded 1 000 tonnes per annum (Van der Waal 1980). It is estimated that the total

wetland fishery yield in South Africa and Namibia is approximately 3 000 tonnes per annum. The estimated potential yield of the Okavango Delta could be as high as 10 000 tonnes per annum (Bruton & Jackson 1983). Many wetland fisheries are operated on a subsistence basis and are intricately interwoven into the local economy and social structure of the community. Over-exploitation of the fish population by means of a commercial harvesting and marketing programme or destruction of a wetland can have immense sociological implications, as traditional fisheries provide widespread socio-economic benefits.

It was recognised in the IUCN's World Conservation Strategy (1980) that the conservation of wetlands, as one of the essential 'life support systems' of this planet, is necessary for human survival. The Ministry of Wildlife, Conservation and Tourism of Namibia endorses this point of view. Conservation encompasses all aspects of the maintenance of those ecological processes which are essential for the continued functioning of wetlands. Thus the conservation of wetlands includes:

1. Strict nature conservation activities, which endeavour to maintain representative areas of wetland ecosystems in a condition as unaffected by man's activities as possible.
2. The utilisation of wetlands to an extent where a sustainable yield of natural products can be obtained without any major alteration to the system.
3. The creation or re-establishment and/or artificial manipulation of areas to meet the manager's requirements while functioning as a wetland (Taylor & Cunningham 1983).

The reasons for conservation of wetlands can be divided into the following three categories listed in the World Conservation Strategy (IUCN 1980; Taylor & Cunningham 1983):

1. Maintenance of genetic diversity

This is necessary to prevent species extinction, including the proven and potential economically valuable plants and animals.

2. Maintenance of life support systems

Here it is necessary to maintain functioning of wetlands so that they do not lose their capacity to act as sponges, buffer floods, improve water quality by filtering out nutrients and sediments and to recharge aquifers. Wetlands are areas of very high primary productivity which forms the basis of food chains, many of which expand well beyond the boundaries of the wetland.

3. Maintenance for sustained utilisation

Apart from the value of wetlands as life-support systems with beneficial downstream effects of watercourses, improving water quality by acting as nutrient and sediment traps, wetlands have potential for both consumptive and non-consumptive utilisation. Due to their high productivity, careful management of wetlands can provide large quantities of plant (fibre, building materials) and animal (particularly fish and waterfowl) resources (consumptive uses). They also have high aesthetic value with potential for recreation activities (non-consumptive uses).

It is clear that from a conservation point of view a large

responsibility rests on the shoulders of the Ministry of Wildlife, Conservation and Tourism. Conservation of natural resources, and development based on the principle of sustainability are, however, also the responsibility of all government departments, private industry and each and every inhabitant of this country. The Ministry would, therefore, like to invite all State Departments and other institutions concerned with wetland conservation, to join forces in this regard.

PROPOSED STRATEGY

1. No management programme can be effective if the size of the resource and factors affecting it are unknown. There is an urgent need for the classification of wetlands. Adams and Zoltai (1969) state that the objective of a water and wetland classification is to recognise and group ecologically significant open waters and wetlands into classes that are meaningful to a number of resource managers.
2. No law enforcement and conservation actions will succeed without public awareness campaigns. The negative effects of overgrazing, unregulated veld fires, cultivation, pollution and wastewater on wetlands are some of the aspects that should receive immediate attention.
3. A national wetlands strategy for the conservation and sustained utilization of wetland areas and resources needs to be prepared and endorsed by the Government.
4. Namibia is a dry country with limited water resources. State and private dams and water schemes are therefore common in the country. Careful planning and regular communication between biologists and engineers is of the utmost importance to conserve and manage wetlands correctly.
5. Ecological sensitive areas must be identified and research projects need to be co-ordinated by an appropriate body to be effective and to prevent duplication of work.

REFERENCES

- ADAMS, G.C. & S.C. ZOLTAI. 1969. Proposed open water and wetland classification. In: Lacate, D.S. (Ed.). Guidelines for Bio-Physical land classification. *Can. Dep. Fish and FN. Publ.* 1264: 23-41.
- BRUTON, M.N. & P.B.N. JACKSON. 1983. Fish and fisheries of wetlands. *J. Limnol. Soc. sth. Afr.* 9: 123-133. IUCN (1980). IUCN, Gland: World Conservation Strategy.
- TAYLOR, R.H. & A.B. CUNNINGHAM. 1983. The conservation of wetlands. *J. Limnol. Soc. sth. Afr.* 9: 141-145.
- VAN DER WAAL, B.C.W. 1980. Aspects of the fisheries of Lake Liambezi, Caprivi. *J. Limnol. Soc. sth. Afr.* 6: 19-38.
- VAN ZYL, B.J. 1988. 'n Vergelykende studie van die groeivermoëns van vier Tilapia spesies in natuurlike en intensiewe produksie-eenhede. M.Sc. Thesis, University of the Orange Free State.
- WELCOMME, R.L. 1979. Fisheries ecology of floodplain rivers. London: Longman.