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department of
economic, small business development,
tourism and environmental affairs
FREE STATE PROVINCE

Reference: Vanderkloof Dam Kraal fishery
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Dear Warwick

Catch, keep and sell of largemouth yellowfish *Labeobarbus kimberleyensis*

The Free State Department of Economic, Small Business Development, Tourism and Environmental Affairs do not support the catch and keep, killing and selling of largemouth yellowfish *Labeobarbus kimberleyensis*.

The largemouth yellowfish is an iconic riverine species and the largest cyprinid in South Africa. In terms of Provincial Emblems, this species is the Provincial Fish of the Free State Province. Since the promulgation of the Free State Nature Conservation Ordinance and Regulations during 1969 and 1983 respectively, which was amended during 1995, bag and size limits as well as measures prohibiting the catch and keep and killing of largemouth yellowfish have been enforced in the Free State Province (see NCO, 1969; NCR, 1983).

This species is listed on the IUCN Red list under the category “Near Threatened” (IUCN, 2014) and has also been listed as a protected species in South Africa under the category “Protected species” (NEM:BA, 2004). Concerns regarding the poor catches of this species in parts of the Vaal River System were already raised during 1956 (Mulder, 1969) and during the 1960’s (Mulder, 1971; Mulder, 1973).

This species prefers lotic systems with clear water with a gravel or sand bottom (Mulder, 1973; Skelton, 1993; Kotze, 2002; De Villiers, 2007). Tomasson and Allanson (1983) noted that the species spawns after the first spring floods, but that low water temperatures have a negative impact on spawning, the rate of growth and survival of juveniles. Females can carry up to 60 000 eggs which hatch after two to three days and juveniles grow very slowly only reaching 100 mm FL after two years and 300 mm after five years (Skelton, 1993). Kotze (2002) noted spawning to take place from mid to late summer in lotic systems and that eggs hatch within two to three days.

Males are sexual mature at six years (350 mm) and females only at eight years (460 mm) (Mulder, 1973; Skelton, 1993; Kotze, 2002). Benade (1993) estimated the size at sexual maturity at 430 mm and 500 mm for males and females respectively and attributed the low numbers of this species in the Orange-Senqu River System to the highly regulated nature of

the system as well as activities within the system's catchment causing a decline in water quality.

According to Ellender (2008), sexual maturity in males is reached at 337 mm at an estimated age of four years, and 390 mm in females at an age of six years. Mulder (1971) found that males reached sexual maturity at six years and females at eight years while De Villiers (2007) noted that females of this species are sexually mature at 450 mm at an approximate age of eight years.

Due to the slow growth rate and reaching sexual maturity at a late stage and longer life span than most other cyprinids, various authors (Mulder, 1971; 1973; De Villiers, 2007; Ellender, 2008; Ellender *et al.*, 2012) motivated for the continuous conservation and protection of this species and highlighted this species' vulnerability.

The largemouth yellowfish has been the focus of numerous research projects and most of the biology and ecology of the species is known. In terms of legalising the kraal fisheries, the most important information to be collected must be on catch rates and catch composition. Since the implementation of the first inland commercial fishery in the former Orange Free State at Kalkfontein Dam during 1979, fisheries had to report on daily as well as monthly records of catches. It is suggested that this be the focus of data collection during the experimental phase of the kraal fisheries. Copies of these record forms are attached as Appendix 1 and 2. Obviously this can be adapted to capture the catch data of the kraal fisheries.

It is therefore the opinion of the Department that the catch and keep, and killing of largemouth yellowfish, which biology and ecology are characterised by a slow growth rate, low fecundity, late maturity, longer life span and special habitat requirements for spawning to take place, should not be allowed. It is further recommended that all largemouth yellowfish that is caught in the fish kraals be returned to the main stem of the Orange River below Vanderkloof Dam and that the fishermen be informed about the need for the continuous protection and conservation of this iconic fish species.

Yours sincerely,



L.M. Barkhuizen **Ph D Pri. Sci. Nat.**

PS: For list of references quoted, please see next page.

"JWALE KE NAKO YA KOTULO" JWALE KE NAKO YA KOTULO" JWALE KE NAKO YA KOTULO"

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Appendixes

Appendix 1: Record form for daily catches.

Please complete in duplicate / Voltooi asseblief in tweevoud

| | |
|------------------------|---|
| Date: <i>Datum:</i> | Permit holder: <i>Permit houer:</i> |
| Permit no. | Equipment used: <i>Toerusting gebruik:</i> |

| Fish species / Vissoort | Number / Getal | Mass / Massa (in kg) |
|---|-----------------------|-----------------------------|
| Carp <i>Karp</i> | | |
| Orange River Mudfish <i>Onderbek</i> | | |
| Mud mullet <i>Moggel</i> | | |
| Sharptooth Catfish <i>Skerptandbaber</i> | | |
| Grass carp <i>Graskarp</i> | | |
| Yellowfish ★ <i>Geelvis</i> | | |
| Other (specify): <i>Ander (spesifiseer):</i> | | |
| | | |
| TOTAL <i>TOTAAL</i> | | |

★ **All live yellowfish should be returned to the water immediately and may not be kept.**
Alle lewende geelvisse moet onmiddellik in die water teruggeplaas word en mag nie gehou word nie

| | |
|--|--|
| For official use / <i>Vir amptelike gebruik</i> Date stamp / <i>Datum stempel</i> | Signature of permit holder: <i>Handtekening van permithouer:</i> |
| | Signature of controlling official: <i>Handtekening van kontrolerende beampte:</i> |
| Remarks / <i>Opmerkings:</i> | |

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Appendix 2: Record form for monthly catches.

| | | | |
|--|--------------|---|-----------------------------|
| Month: <i>Maand:</i> | | Permit number: <i>Permit nommer:</i> | |
| Name of permit holder <i>Naam van permithouer</i> | | | |
| Contact numbers <i>Kontak nommer</i> | | (home) <i>(tuis)</i> | (cell) <i>(selfoon)</i> |
| Address <i>Adres</i> | | | |
| | Code / Kode: | | |
| Fish species / Vissoort | | Number / Getal | Mass / Massa (in kg) |
| Carp / <i>Karp</i> | | | |
| Orange River Mudfish / <i>Onderbek</i> | | | |
| Mud mullet / <i>Moggel</i> | | | |
| Sharptooth Catfish / <i>Skerptandbaber</i> | | | |
| Grass carp / <i>Graskarp</i> | | | |
| Yellowfish / <i>Geelvis</i> | | | |
| Other (specify): <i>Ander (spesifiseer):</i> | | | |
| | | | |
| TOTAL / <i>TOTAAL</i> | | | |

| | | | |
|--|--|--|--|
| Amount payable: <i>Bedrag betaalbaar:</i> | | Receipt number: <i>Kwitansie nommer:</i> | |
| For official use / <i>Vir amptelike gebruik</i> Date stamp / <i>Datum stempel</i> | | Signature of permit holder: <i>Handtekening van permithouer:</i> | |
| | | Signature of controlling official: <i>Handtekening van kontrolerende beampte:</i> | |
| Remarks / <i>Opmerkings:</i> | | | |

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