AVM PROGRAMME

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MEETING: PRIORITY RIVERS FOR ALIEN FISH ERADICATION WORKSHOP
DATE: 30 MAY 2013, CapeNature Head Office

AGENDA

09h00 Welcome, introductions, apologies
Ben van Staden AVM Programme Manager

09h10 Purpose of workshop

Riaan van der Walt Project Leader Alien fish

09h30 Impacts of alien fish in the Cape Floristic Region and the need for integrated management
Olaf Weyl Principal scientist SAIAB

10H00 The Rondegat and Thee River alien fish eradication projects – outcomes and lessons learnt
Riaan van der Walt

10h30 TEA

11H00 Draft list of 13 rivers prioritized for alien fish eradication – where are they, why chosen? Presentation of each river followed by questions and comments from participants
Dean Impson, Riaan van der Walt, Martine Jordaan

12H30 Way forward and closure

13h00 LUNCH

ITEM	PROCEEDINGS
1	**Welcome, introductions, apologies**
	The meeting started at 9h30. The Chairperson Mr Ben van Staden welcomed all present. The people present were: B van Staden, D Impson, R vd Walt, M Jordaan and M vd Bank (minutes)(all CapeNature); O Weyl (SAIAB); D Sharp, A. Moerat (DEA Environmental Programmes); T Bushula,X Bhele, R Johaar F Daniel (all DWA); G Prince (Cape Piscatorial Society); L Flemming (Federation of South African Flyfishers); M Hafen (SA Bass); J Goodwin (WP Bank Angling); J Shelton (PhD student, UCT); B Paxton (consultant); J Day (ex head of Freshwater Research Unit, UCT), Stuart Barrow (US). Apologies: Louise Stafford Urs Schwarz Darryl Lampert
2	**Purpose of workshop – short presentation by Mr D. Impson, CapeNature**
	Dean Impson explained the objectives of the workshop: These were to agree on a sensible list of rivers for rehabilitation over the next 10-15 years. Concentration on rivers with critically endangered (CE) and endangered (E) fish which are not priority areas for angling. Rehabilitation will be done to expand the habitat range and densities of threatened indigenous fish species with an aim towards down-listing the conservation status of endangered species. *Comments from stakeholders:* Need for broader and timeous distribution of 13 rivers list to ensure that everyone is included. Efficient monitoring is needed to ensure that re-introduction of alien fish species do not occur.
3	**Impacts of alien fish in the Cape Floristic Region and the need for integrated management - presentation by Dr O. Weyl, SAIAB**
	The indigenous fish of the Western Cape are diverse, highly endemic and of conservation concern. Indigenous fish in cold, nutrient poor headwaters are primarily threatened by predation by and competition with alien invasive fish. These alien fish broadly include carp, brown trout, rainbow trout, three bass species and bluegill sunfish. These alien fishes also have positive impacts which include: recreational angling, subsistence use and freshwater aquaculture. With these positive impacts also come negative impacts such as predation, spread of parasites and disease, fragmentation of indigenous fish populations, habitat alteration and hybridization. It will be impractical to remove alien fish from large reservoirs and river systems as well as species of aquaculture importance. Therefore the focus is on removing alien fish from smaller rivers of biodiversity importance. The limited capacity of conservation agencies call for an integrated management approach which will allow economic gains of alien species in low biodiversity areas and their eradication in biodiversity priority areas.
4	**The Rondegat and Thee River alien fish eradication projects – outcomes and lessons learnt – presentation by Mr R vd Walt, CapeNature**
	Riaan gave some background on the CapeNature's recently established Invasive Alien Fauna Unit (IAF) and its strategy for the next 5 years. He further explains the Rondegat and Thee River projects in terms of: Location, Endemic fish species, Aims of the projects, Comparison of methods of eradication used and Lessons learned.

	Comments from stakeholders: There should be a greater focus on awareness especially at the school level. CapeNature should find ways of using the internet pet trade as means of creating awareness and as a mode of educating the public, as the pet trade is a source of potential new invasions to our inland waters.
5	**Draft list of 13 rivers prioritized for alien fish eradication – where are they, why chosen? – Presentation by Mr R vd Walt and Dr M Jordaan, CapeNature. Presentation of each river was followed by discussion on the merits of each river for rehabilitation.**
5.1	<u>Biedouw River</u> The Biedouw is invaded by spotted bass. The priority fish species for conservation is the E Clanwilliam sandfish, which occurs in small numbers in is the Biedouw River with good number of the E sawfin . The lower river is dry during summer but sandfish are found in large pools in the perennial upper river above bass invasion. The aim is to construct a barrier just above the road bridge thereby securing about 2 km of prime indigenous fish habitat. *Comments from stakeholders:* Ideal river for eradicating alien fish to assist E species. Proposal is in support of the Clanwilliam sandfish Biodiversity Management Plan – Species (BMP-S) CapeNature should concentrate on the rehabilitation of riffle habitat as this is where sandfish would spawn. During summer, the river is very low and pools can be treated with rotenone at a low cost. Farm dams must be treated as well if these occur above the proposed barrier. Possibly look at two weirs to create larger artificial pools in the river to sustain sandfish survival from one year to the next.
5.2	The river not a priority for angling
	<u>Jan Dissels River</u> Threatened by banded tilapia, bluegill sunfish and smallmouth bass, which have invaded essentially near pristine habitat of more than 10km. Eradication of alien fishes would provide excellent habitat for E fiery redfin and E sawfin, and for other indigenous fish species. Any alien fish control programme would have to cater for the conservation needs of the unique spotted form of the Clanwilliam rock catfish . The landowner at the upper Jan Dissels is very conservation orientated and keen and will fund and build a barrier weir himself. *Comments from stakeholders:* A phased approach, using temporary barriers, was suggested due to the genetic variability of Clanwilliam rock catfish upstream to downstream.
5.3	Access to the river will be difficult, as there are no tracks or roads for several km where bass occur and the thick riparian growth and multi-channel river form would make manual eradication cumbersome. Landowner is enthusiastic and would be able to assist tremendously. The river is not a priority for angling.
	<u>Hex River</u>
5.4	River is threatened by small mouth bass, which penetrate far up an otherwise pristine river. Bass eradication would provide excellent habitat for E fiery redfin and several other indigenous fish species. Another indigenous species of concern is the E spotted rock catfish, which would

benefit from bass removal, although it co-exists with bass in good numbers. Rehabilitation would require funding for a barrier.

Comments from stakeholders:
Introduction risk is highest at rivers that are out of CapeNature's control – hence there is benefit focusing on rivers in CapeNature reserves. The upper reaches of the river are in the Cederberg Wilderness. The barrier for this particular river is best paced where CapeNature can control it. Best way forward would be to enter into stewardship agreement with riparian landowners.

5.5 The river has no angling value for bass.

Breekkrans

The Breekrans is threatened by small mouth bass, which extend far up the river, restricting the indigenous fishes to about 200m of river. The primary priority fish for conservation is the CE Doring fiery redfin (separate lineage to the Clamwilliam fiery redfin), but the river includes E sawfin and is one of the few tributaries in the Olifants-Doring system to have chubbyhead barbs.

Comments from Stakeholders:
Most of the areas are on stewardship sites or belong to the Cape Mountain club which would make managing a weir somewhat easier. The river is very remote and terrain very rugged. The area burnt during the most recent summer which has made the river far more accessible which would facilitate fish eradication efforts.
The river has no angling value and is seen as a top priority for rehabilitation

5.6 Twee River

Priority fish species for conservation are the CE Twee River redfin and Twee River galaxias. The river contains a number of alien fish which include largemouth bass, blue gill sunfish, Cape Kurper and Clanwilliam yellowfish. The Clanwilliam yellowfish was introduced into the Twee above waterfall barriers by Nature Conservation in the 1980s and has an impact on indigenous redfins. The EIA for building of a weir on the Suurvlei tributary has already been completed and construction of the weir is planned for 2014-2015.

5.7

Comments from stakeholders:
Clanwilliam yellowfish breed well in this river and are probably sustaining the yellowfish population in the Groot River (located downstream) because already spawning of yellowfish is low in the Groot River because of bass and bluegill invasion. There is thus value in keeping some of the lower Twee River for yellowfish.
Concern about the amount of water abstraction and off-stream dams, which have caused substantial habitat deterioration in the last 20 years.
Eradication of bass from Tandfontein dams should be a priority to prevent bass from entering the system.
Clanwilliam yellowfish impact is not that great on Twee River redfin and their invasion range is not expanding.

5.8 Middeldeur

Priority fish species for conservation are the CE Twee River redfin and Twee River galaxias, which occur in this tributary of the Twee River.

Comments from stakeholders:
Large amount of indigenous aquatic macrophytes in river which would make manual alien fish eradication impossible.
Waterfalls downstream allow for a phased approach

Krom Antonies

5.9 This tributary of the Verlorenvlei river contains a number of alien fishes including largemouth bass, bluegill sunfish and banded tilapia. It is home to the largest population of the E Verlorenvlei redfin, Funding will be required to construct a weir barrier lower down the river. The area is a proposed mining site although this has not been approved yet. The landowners in the area are very aware of environmental threats to the Verlorenvlei redfin.

Comments from stakeholders:
Big issue is groundwater abstraction which leaves small pools during summer. The fish in these

small pools are very vulnerable to high temperatures and limited space.
Building a weir barrier on sandveld is not feasible. A Barrier on the sandstone upper river would create a sanctuary for the native species.
The river has no angling value

5.10

Krom River

Threats include smallmouth bass and rainbow trout. Priority fish for conservation is the newly discovered and already CE giant redfin (only found to date in the Krom and upper Riviersonderend). Nearly all of this river is within the Limietberg Nature Reserve.

Comments from stakeholders:
Some members of the Cape Piscitorial Society (CPS) fish the river for trout, so the trout are regarded as having angling value

5.11

There is resistance to the removal of trout from the river from the Cape Piscatorial Society (CPS).
The Krom flows into the Molenaars River, a trout river demarcated for used by the CPS.
Rotenoning of the Krom has too many risks and would be opposed by the CPS. The meeting saw this river as providing an ideal opportunity for the CPS and CapeNature to work together to benefit a CE fish species.

5.12

More surveys of the area should be done this summer to ascertain the exact distribution of the giant redfin and how trout removal could benefit the redfin.
Long term co-occurrence of giant redfin and rainbow trout has possibly been facilitated by the seasonal downstream biomass shift of rainbow trout.
The Tierkloof River (further down the du Toitskloof Pass) should also be surveyed as this area may also have giant redfins.

Upper Riviersonderend

Priority fish for conservation is the giant redfin. Funding is required for building a weir barrier a short distance upstream of Theewaterskloof Dam. The area falls within Hottentots Holland Nature Reserve which will simplify the management of the weir. A full survey of the area is needed to determine the extent of distribution of the giant redfin.

5.13

Comments from stakeholders:
Not a priority for angling
Need proper survey of river to determine distribution of redfin and alien fishes.

Kars River

Threatened by spotted bass and bluegill sunfish. Priority species for conservation is the CE Heuningness redfin (likely a new species).

Comments from stakeholders:
There is very little bedrock in the Kars River which will make it difficult to build a small weir. Possibly work with Working for Wetlands who is active in this area. River has no angling value.

Poort River

Priority species for conservation is the CE Heuningness redfin, which is now restricted to uppermost reaches because of bass invasion. Possibility to create a larger sanctuary for redfins in the upper reaches on the invaded area if a barrier can be built lower down and bass eradicated above it.

Comments from stakeholders
River bed sandy so weir will not be cheap, possibility of collaboration with Working for Wetlands
River has no angling value.

Tradouw River

Priority fish for conservation is the CE Barrydale redfin, a likely new species. Threatened by largemouth bass, bluegill sunfish and banded tilapia. Eradication of alien fish may be problematic because alien fish are located in pockets amongst indigenous redfin populations. Rotenone treatment is therefore too risky and rather a phased mechanical approach should be considered. Access to the gorge area will be difficult. The area is close to settlements (and many offstream farm dams full of alien fish) and hence the risk of re-introduction is too high. Any intervention must be part of the BMPS-S that CapeNature is developing with key stakeholders.

Comments from stakeholders:
The best way to remove alien fishes would be to work with landowners at the upper Tradouw and work your way downstream perhaps using temporary weirs and physical removal of alien fishes.
The river has no angling value

Huis River

Priority fish for conservation is the CE Barrydale redfin. Threatened by largemouth bass, bluegill sunfish and banded tilapia. Eradication of alien fish may be problematic because alien fish are located in pockets amongst indigenous redfin populations. Rotenone treatment is therefore too risky and rather a phased mechanical approach should be considered. A long term management programme, as part of the BMP-S is suggested to try and remove the alien fishes. Massive water use issues with very high levels of water abstraction during the dry season and increasing levels of pollution.

Comments from stakeholders:
The best would be to work with landowners and the municipality as part of the BMP-S so as to improve dry season flows and water quality
The river has no angling value

6 General discussion

- CapeNature should invest in a long term monitoring programme for key fish species and rivers to alleviate dependence on post graduate student research. Concentration should be on training of field rangers and reserve staff.
- Clarify river management VS river rehabilitation VS Translocation. CapeNature must not introduce indigenous fish species into areas where they never historically occurred as part of these projects.
- Overall management plan is needed from CapeNature's side on alien fish control that will address how each priority river should be managed to allow for effective rehabilitation.
- Water affairs to play a major role with river rehabilitation to address water abstraction issues and the restoration of summer flows. "Regulation staff" should be invited to future meetings. Invitations should be made to senior staff (e.g. Ms Debbie Henne)
- The role of each department needs to be clarified so that all stakeholders understandhow they are involved in freshwater fish and river management. Possibly put together an organogram. Historically there has been a close working relationship between Water Affairs and CapeNature and more recently Environmental Affairs through the Working for Water Programme. The legal mandates of each on these institutions need to be confirmed together with that of all other stakeholders.
- Buy-in from senior management is essential. Water Affairs official present will report back on the proceedings of the present workshop.
- A species approach should be taken instead of a river approach. The workshop agreed that the top species for conservation priority are:
  Clanwilliam Sandfish - E
  Giant redfin - CE
  Heuningness redfin - CE
  Doring fiery redfin - CE
  Rivers that would benefit the above species should be prioritized.
- Project areas should be ranked in order of feasibility and difficulty so that projects which will most likely lead to the highest success be tackled first. Funders preferred to back successful projects.
- There needs to be a phased approach to the 14 rivers with the rivers containing the above 4

	species part of a first phase. • Facts and data are critical to secure funding and therefore monitoring and data collection should start soonest. • Upper Driehoeks River should be added to the 13 rivers list as this also has the CE Doring fiery redfin, which will bring the list to 14. There was agreement on this proposal. • A selection matrix should be developed to ensure a standardised and approved scientific method of decision making when it comes to river selection for rehabilitation projects. • A communication strategy should be presented at the next workshop. **The meeting agrees on a species list approach and the list of rivers for rehabilitation stands at 14. This list will be refined at a further meeting later this year.**
7	**Closure** Ben van Staden thanks everyone for their attendance. Workshop ends at 13:10

Minutes Approved: _____ BEN VAN STADEN
(Chairperson)

Date _____