

PROPOSED MINIMUM SPECIFICATIONS FOR THE APPLICATION OF STERILE GRASS CARP AS BIO-CONTROL AGENT FOR THE MANAGEMENT OF NUISANCE AQUATIC VEGETATION IN DAMS OF THE DEPARTMENT OF WATER AFFAIRS.



2009

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1. **BACKGROUND:**

Aquatic vegetation is an important component of most freshwater systems, providing habitat, refuge, and food for a wide variety of organisms including fish, invertebrates, and waterfowl. However, when aquatic vegetation proliferates to reach problematic proportions it needs to be managed to protect the resource against negative effects on the aquatic ecosystem as well as the function and operation of the water source. When not managed properly, aquatic vegetation can interfere with the normal operation of a water source which could have a detrimental effect on optimal water supply and water loss control with the concomitant economic effects.

Nuisance aquatic vegetation is managed by the implementation of so-called Integrated Aquatic Vegetation Management Programmes (IAVMPs) on the affected water system. Many aquatic vegetation control methodologies are available. These varies in effectivity and cost effectiveness. The first large scale IAVMP implimented on submerged aquatic vegetation by the Department of Water Affairs (DWA) was on the Usutu-Vaal Water Transfer Scheme in 2001. This IAVMP is currently managing the nuisance aquatic vegetation in this inter-basin water transfer system successfully and cost-effectively.

An IAVMP is defined as the coordinated synergism of ecological, herbicidal, biological, mechanical and physical control strategies into a structured management programme for the optimal control of nuisance aquatic vegetation, whilst minimizing potential adverse impacts to water use activities, infrastructure and the receiving environment. In addition to an herbicidal component, Sterile Grass Carp was accommodated as a biological control component in the IAVMP implemented on the Usutu-Vaal Phase II Water Transfer Scheme. Sterile Grass Carp is popular as Bio-control Agent as it is a relative inexpensive and long term control mechanism for the management of aquatic vegetation.

Due to possible negative impacts on non-target biota, Sterile Grass Carp needs to be carefully managed when used for nuisance aquatic vegetation control in watercourses. In the South African context the application of a Bio-control Agent as part of an IAVMP or as single remedy for is subjected to environmental legislation. Furthermore all IAVMP's will soon be subjected to Water Use License Applications as regulated by the National Water Act (*Act 36 of 1998*) –section 21 (c) and (i). To ensure compliance to these legislation it is necessary to establish a set of minimum specifications for the use of Sterile Grass Carp in departmental dams and other infrastructure.

2. OBJECTIVE OF THIS DOCUMENT:

The objective of this set of minimum specifications for the use of Sterile Grass Carp as Bio-control Agent for the control of submerged nuisance aquatic vegetation in dams of the Department of Water Affairs (DWA), is to ensure departmental compliance with the relevant legislation and to ensure for best management practices to be followed for maximum effectivity on the target nuisance plant species without compromising the receiving environment.

3. BIO-CONTROL AGENT IDENTIFICATION:

The Bio-control Agent to be stocked for the control of submerged aquatic vegetation will be Sterile Chinese Grass Carp - also classified as the triploid version of *Ctenopharyngodon idella*, Val.

4. NAME AND CLASSIFICATION OF BIO-CONTROL AGENT:

Kingdom:	Animalia
Phylum:	Chordata
Class:	Actinopterygii
Order:	Cyprinoformes
Family:	Cyprinidae
Genus and Species:	<i>Ctenopharyngodon idella</i> (Valenciennes 1844)
Original Scientific Name:	<i>Leuciscus idella</i> – no longer valid
Common English Name:	Grass carp. Other English Names: white amur, silver orfe.
Common Afrikaans name:	Graskarp

5. BROAD DESCRIPTION OF THE BIO-CONTROL AGENT:

The grass carp (Plate 1) is one of the largest members of the family Cyprinidae, and is the only member of the genus *Ctenopharyngodon*. No subspecies are known. This species is characterized by: a wide, scale-less head; sub-terminal or terminal mouth with simple lips; no barbels; slightly protracted upper jaw and, very short snout, its length is less than, or equal to, its eye diameter and its postorbital length is more than half its head length.

The body is slender and fairly compressed with a rounded belly and a complete, slightly decurved lateral line, extending along the middle of the depth of the tail. Dorsal fin origin is above, or just in front of, the pelvic fin origin and the number of fin rays for the dorsal, anal and caudal fins are 7, 8 and 18, respectively. The dorsal and anal fins do not have spines. The moderate to large cycloid scales (35-45 lateral count) are dark-edged with a black spot at the base. Gill rakers (about 12) are unfused, short, lanceolate and widely set. Pharyngeal teeth are biserial and 2.5-4.2, 2.4-4.2, 2.4-5.2 or 1.4-5.2. Diploid chromosome number is $n=48$ and biochemical analysis of five tissues revealed an estimated 49 loci. Triploid chromosome number is $n=72$.

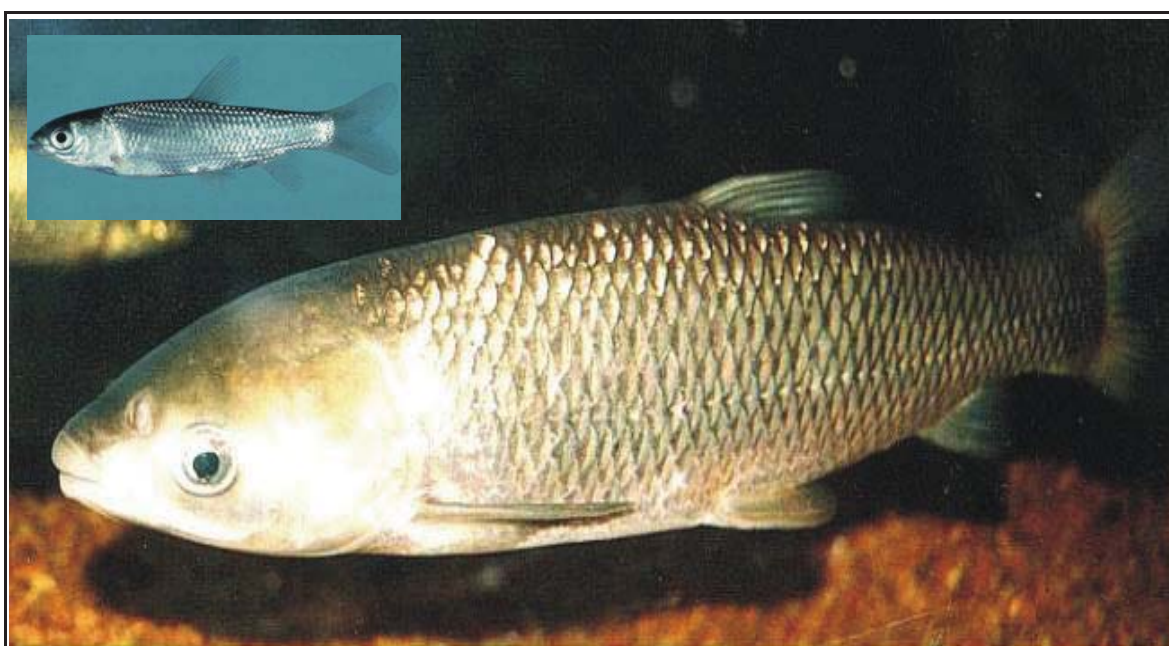


PLATE 1: Adult and juvenile grass carp (*Ctenopharyngodon idella*, Val.)

The colour of adult grass carp is dark grey on the dorsal surface with lighter sides (white to yellow) that have a slightly golden shine. Fins are clear to grey-brown. This species generally attain weights of 30-50 kg and can reach lengths greater than 1 meter. Even larger specimens have been described in the literature.

Triploid hybrids have fewer scales in the lateral line, relatively longer guts and fewer deformities than diploids. Morphological characteristics of artificially bred grass carp X bighead carp hybrids have proven to be 100% accurate in distinguishing them from pure grass carp.

6. SOUTH AFRICAN NATIONAL GRASS CARP POLICY:

A *National Grass Carp Policy* was produced by delegates of provincial environmental authorities of all nine provinces as the product of a workshop held in March 2004 in Bonnievale in the Western Cape. This policy is now recognised as the standard by which Sterile Grass Carp will be produced, distributed and used in South Africa. This document is used as policy by all regulating authorities, permitting bodies, government departments, producers, conservationists and other interest groups in South Africa, and will be referred to as the *South African National Grass Carp Policy of 2004* (SANGCP, 2004).

On this workshop the following policy statement was accepted by the delegates:

“The exotic Grass Carp (Ctenopharyngodon idella), although often effective in controlling aquatic weeds, is considered to pose a significant potential threat to certain natural aquatic habitats in South Africa. The stocking of this species should therefore be strictly controlled by a permit system. Furthermore only sterile (triploid), species pure, disease free, tagged fish from accredited producers should be stocked into non-sensitive waters in responsible manner”.

Guidelines for the regulation of Sterile Grass Carp based on the SANGCP (2004) is included in Appendix A of this document.

7. LEGISLATIVE FRAMEWORK:

7.1 The need to regulate grass carp production:

Grass carp, also known as white amur, (*Ctenopharyngodon idella*), is a large herbivorous fish native to eastern Asia which has been introduced to more than 50 countries for aquatic weed control and aquaculture. This fish, an alien and potentially invasive species, that was erroneously imported into South Africa during the seventies and retrospectively banned in all provinces except Natal in 1989. Due to its ability to indiscriminately consume vast quantities of aquatic vegetation, grass carp has the potential to significantly alter the food web and trophic structure of aquatic ecosystems. If fertile fish would be able to reproduce successfully or if sterile fish are overstocked, they can destroy an aquatic ecosystem. Potential negative impacts of overstocking or the uncontrolled reproduction or fertile grass carp populations are related to the following:

- Destruction of the natural biofilter;
- Benthic erosion and destabilizing of the sediment due to removal of roots;
- Turbid water due to benthic disturbance;
- Destruction of micro habitats of other aquatic organisms;
- Potential to increase algal blooms and effect water quality;
- Erosion and destabilization of shoreline banks; and
- Serve as a vector for the fish pathogen *Bothriocephalus*.

Since 1991, for these obvious reasons, only triploid (sterile) grass carp was allowed to be released in South African waters under strict control by environmental authorities. Due to historical practices in unauthorised production and releases of the species, requirements for the production and release of this species are continuously reviewed.

Although the production and distribution of fertile grass carp (diploid) is banned in South Africa, the use of Sterile Grass Carp (triploid) for the controlled management of aquatic weeds in local dams is allowed and strictly regulated by environmental legislation. The legislation discussed in this document focus on the handling and stocking of the Bio-control Agent with the aim to minimize its impact on non-target species and systems. A whole set of additional legislation is applicable on the production facilities of the Bio-control Agent (aquaculture production), which is not discussed in this document. The control of production facilities is the responsibility of the provincial regulatory authority which issue a *Certificate of Accreditation* for each approved production facility.

7.2 National Environmental Management Act (Act 107 of 1998) (NEMA):

The application of a Bio-control Agent as part of an Integrated Aquatic Vegetation Management Programme (IAVMP) or as single remedy will require an environmental impact assessment process (Basic Environmental Assessment) to be followed - as prescribed by the NEMA - Government Notice of Regulation 386 (Activity 22).

In terms of *sections 24* and *24 D* of NEMA, the production and distribution of triploid grass carp are listed activities that are subject to environmental authorization through the EIA process. These activities include:

- The concentration of animals for the purpose of commercial production.
- The release of genetically modified organisms into the environment.

- The release of any organism outside its natural area of distribution that is to be used for biological pest control.

7.3 National Environmental Management: Biodiversity Act (Act 10 of 2004) (NEMBA):

Furthermore, all of the above (par 5.2) are also restricted activities that are regulated by *sections 64 and 65* of the NEMBA. Two of the above listed activities have impacts on the receiving waters. Environmental authorization of a Bio-control Agent production facility therefore not only involves the producing province, but also requires specialist input from the receiving provinces.

7.4 National Water Act (Act 36 of 1998) (NWA):

The Department of Water Affairs (DWA) in terms of the National Water Act (*Act 36 of 1998*) is mandated to regulate development and activities affecting water courses through among others the protection of water resources and the authorisation of water uses relating to impeding or diverting the flow of watercourses and the alteration of the bed, banks, course or characteristics of a water course, respectively referred to as *section 21(c) and (i)* water uses and influencing flow regime and resource quality respectively.

The implication of section 21 (i) on the activity of aquatic vegetation control is therefore:

- Water use authorisation needs to be obtained from DWA according to the requirements for section 21 (c) and (i) water uses when any proposed activity will take place within the outer boundary of the 1:100 year floodline or the riparian habitat of the water course, whichever is the greatest.
- Any physical infrastructure development will require a section 21 (c) and (i) water use authorisation and any activity altering the characteristics of the water course will require a section 21 (c) water use authorisation. The “altering of the *characteristics* of a watercourse” pertain to the impact on the resource quality of a water resource as defined in the NWA, meaning water quality, flow regime, biota and riparian instream habitat. Thus any introduction of a Bio-control Agent, herbicidal treatment or any combination thereof will require a water use authorisation.
- In short, an Integrated Aquatic Vegetation Management Programme (IAVMP) needs to be authorised by the DWA.

- Although DWA (also Working for Water) cannot apply for a water use authorisation from its own department, the department must comply to the requirements of a water use authorisation as expected of the public and submit the necessary environmental best management plans and monitoring programmes for approval as will be requested by a applicant to comply to water use authorisation (personal communication: Du Plessis, V, 2009).

DWA is in the process of developing an operational policy for developments and activities effecting watercourses for the private and public sectors. As soon as this documentation is available it must be accommodated in the IAVMP's.

7.5 Permit system:

Notwithstanding the conditions stipulated in NEMA, NEMBA and NWA, a Sterile Grass Carp production facility (hatchery) and the release of this species is managed with *permitting, regular inspections and annual compliance monitoring* (in terms of the act) by the provincial Directorate of Nature Conservation of the producer and receiving provinces.

The permit system's primary aim is to regulate movement of this species within and between the provinces. Two sets of permits are applicable for firstly the procurement and secondly the placing or releasing of the Bio-control Agent:

7.5.1 Export permit:

This permit (see Appendix B for example of application form) needs to be acquired from the provincial Directorate of Nature Conservation of the province in which the Bio-control Agent is produced - in other words the province in which the producing facility is located.

7.5.2 Import and place and release permit(s):

These two permits (see appendices C and D for examples of application forms) need to be acquired from the provincial Directorate of Nature Conservation of the province in which the Bio-control Agent will be placed and released - in other words the province in which the target water body is located. The applicable permits are:

- Permit to Import Live Fish.
- Permit to Place and Release Fish into Waters.

8. CONDITIONS:

8.1 Conditions for the stocking of Sterile Grass Carp in South African watercourses:

Sterile Grass Carp must only be considered as an option for aquatic weed control in dams under the following conditions:

- The Bio-control Agent will only be allowed as part of an IAVMP developed by an approved professional environmental scientist.
- The IAVMP must be authorized by the DWA according to the requirements of the NWA, section 21 (c) and (i).
- The Bio-control Agent will contribute positively to the IAVMP for the specific water body.
- A positive RoD on the target reservoir as outcome of the basic EIA process, with the appropriate Environmental Management Plan (EMP) which will include a monitoring component for at least 3 (three) years after the stocking of target water body, will be required from the Department of Environment.
- All permits (export and import and release permits) are granted by provincial regulatory authorities (see attachment for examples).
- The Bio-control Agent will not be able to escape from the target impoundment.
- The Bio-control Agent complies with all specifications listed in paragraph 8 of this document.

8.2 Watercourses and other water bodies where Sterile Grass Carp is not allowed:

Sterile Grass Carp is NOT ALLOWED for the control of aquatic vegetation (or any other purpose) in water courses and other water bodies such as:

- A river or a spring;
- A natural channel in which water flows regularly or intermittently;
- A wetland; or
- An estuary.

8.3 **Structures where the Bio-control Agent is allowed without an EIA approval:**

Where the control of submerged aquatic weeds in unnatural water conveyance and storage structures is necessary, the EIA procedure is not applicable. For the purpose of DWA a *Sterile Grass Carp Management Plan* MUST accompany every stocking of Sterile Grass carp in all structures.

- Civil water conveyance structures with appropriate measures in place to prevent escape;
- Balancing dams with no outflow to natural watercourses;
- Balancing dams with an outflow to natural water systems but appropriate measures in place to prevent escape of the Bio-control Agent;
- Pump station fore bays with no outflow to natural watercourses;
- Pump station fore bays with an outflow to natural watercourses but appropriate measures in place to prevent escape of the Bio-control Agent;
- Water storage dams or reservoirs with no outflow to natural watercourses; and
- Irrigation dams, golf course dams, mine dams.

IMPORTANT NOTE: For all stockings of the Bio-control Agent the permit procedure (see par. 6.5) is the minimum requirement, whether an EIA / RoD is required or not.

9. **SPECIFIC SPECIFICATIONS:**

9.1 **Bio-control Agent species to be used:**

Ctenopharyngodon idella, Val (Triploid version - certified)

9.2 **Accreditation of production facility (hatchery):**

Recognised producers of the Bio-control Agent were identified and independently audited and accredited by provincial regulatory authorities. This accreditation is based on the implementation of an approved Environmental Management Plan (EMP). For the purpose of DWA all Sterile Grass Carp must be procured from accredited dealers which are in possession of a *Certificate of Accreditation* from the provincial regulating authority which is not older than twelve (12) months.

9.3 Certificate of Bio-control Agent batch sterility:

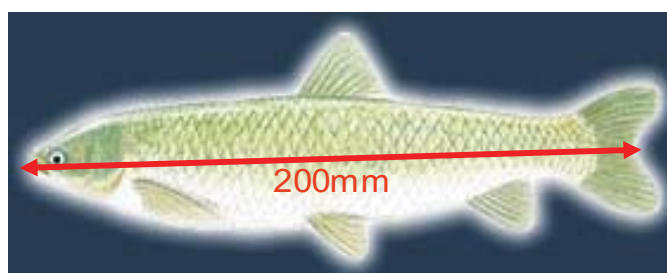
All batches of the Bio-control Agent delivered to reservoirs of the Department of Water Affairs must be accompanied with a *Certificate of Grass Carp Sterility* (see appendices for example), issued by the provincial regulatory authorities to the production facility. The *Certificate of Grass Carp Sterility* must not be older than twelve (12) months prior to stocking (see Appendix F for example of certificate).

9.4 Unique marking of all individuals of Bio-control Agent:

Each and every individual of the Bio-control Agent must be verified by internal tagging with Coded Wire Tags (CWT). These tags consist of microscopically etched and unique codes on small sections of stainless steel wire that are implanted into the fish (most often next to the dorsal fin or into the nose bone). Each producer has a unique producer code which remains standard to all tags that are supplied to the producer. In this manner fish can be distinguished between producers.

9.5 Minimum size of Bio-control Agent:

The *fork length size* of each individual Bio-control Agent will be no less than 200mm to (1) ensure survival and the stocking of the (2) lowest possible number of the Bio-control Agent to combat the vegetation problem.



9.6 Health of Bio-control Agent:

The Bio-control Agent will be healthy without any visual (macroscopic) defect and certified by the *Chief State Veterinarian* from the provincial Department of Agriculture that the batch of Bio-control Agent is free of the pathogen *Bothriocephalus*.

Each batch of the Bio-control Agent will therefore be accompanied by a valid *Veterinary Health Certificate* (see Appendix H for example), from the *Chief State Veterinarian* from the local provincial Department of Agriculture which is not older than twelve (12) months to certify that the Bio-control Agent is free of the pathogen *Bothriocephalus*.

9.7 Operational Environmental Management Plan (OEMP):

An approved Operational Environmental Management Plan (OEMP) for the production facilities which is not older than twelve (12) months ((see Appendix E for example)). This OEMP must be approved by the relevant provincial regulatory authority.

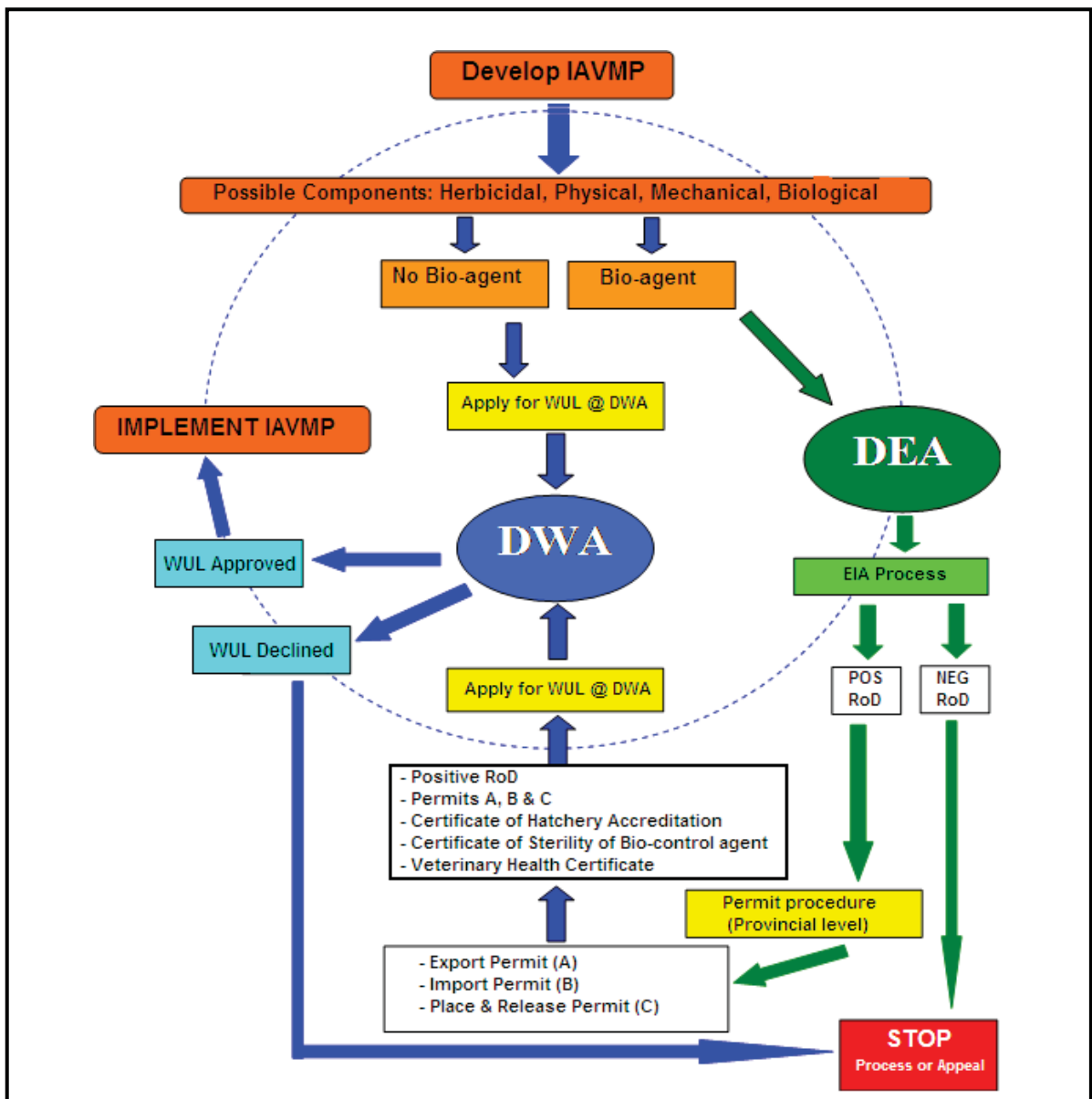


Figure 1: Diagrammatic presentation of authorization procedure for the implementation of an IAVMP in DWA dams with or without a Bio-control Agent as a component of the IAVMP.

**APPENDIX A: GUIDELINES FOR THE REGULATION OF GRASS CARP BASED
ON THE NATIONAL GRASS CARP POLICY OF MARCH 2004.**

GUIDELINES FOR THE REGULATION OF GRASS CARP BASED ON THE NATIONAL GRASS CARP POLICY OF MARCH 2004.

Bonnievale, 2004

The exotic Grass Carp (*Ctenopharyngodon idella*), although often effective in controlling aquatic weeds, is considered to pose a significant potential threat to certain natural aquatic habitats in South Africa. The stocking of this species should therefore be strictly controlled by a permit system. Furthermore only sterile (triploid), species pure, disease free, tagged fish from accredited producers should be stocked into non-sensitive waters in responsible manner.

This document is based on the National Grass Carp Policy and the purpose thereof is to serve as guideline for farmers, landowners, conservationists, authorities, permitting offices etc. when faced with the proposed use or presence of Grass Carp. Grass Carp are voracious feeders of aquatic vegetation, able to alter aquatic vegetation profiles dramatically. They are able to consume their own bodyweight in vegetation in a day and can degrade aquatic environments if used irresponsibly.

It was once believed that Grass Carp would not breed in South Africa. Nevertheless spawning has been confirmed and the potential for feral spawning in other rivers exists. ***Therefore only certified sterile (triploid) Grass Carp are permitted.***

Following is a list of aspects that need to be taken into account when faced with situations that pertain to the use of Grass Carp. These would include decisions for use, permitting, conservation and planning decisions, the sourcing of Grass Carp etc.

1. Ensuring species purity in the use of Grass Carp

It is advisable that Grass Carp are independently identified as being of the correct species. Hybrids and other species are often confused and unscrupulously distributed. Grass Carp should only be sourced (and permitted) from accredited producers.

2. Local production of Grass Carp

As the technology for the production of sterile (triploid) Grass Carp is available in South Africa, the importation of these fish from other countries is no longer allowed. South Africa have accredited producers of Sterile (triploid) Grass Carp.

3. Testing and Certification of Sterility or Triploidy

Only Sterile (triploid) Grass Carp is permitted in South Africa. This sterility is tested by means of a Coulter Counter. Each Grass Carp must be individually tested for sterility and this status must be verified by the provincial authority. Once this verification has been completed the fish will be certified sterile.

4. Tagging of Grass Carp

Grass Carp in South Africa must be tagged by means of a suitable tagging system. Currently all accredited Grass Carp producers in South Africa use Coded Wire Tags (CWT), which are implanted into the fish. Each producer has a unique producer code.

5. Disease

Grass Carp in South Africa must be sourced from an accredited facility where the disease status is regularly checked and reported to the provincial authority.

6. Permits, Regulations and other Legislation.

The stocking of Grass Carp in South Africa must be done with the correct permits. Following is a summary of the permitting system within and between provinces:

Format of the permit application.

An application for use of Grass Carp must be presented in a standard format as per the document in Appendix 3 of the National Grass Carp Policy (2004).

Permit procedure for stocking within the same province.

- A standard permit application must be made to the provincial authority.
- The permit holder (or producer on his behalf) must inform the regulatory authority within 7 days that stocking has been completed.

Permit procedure for stocking outside of the production province.

- A standard permit application must be made to the provincial authority in the province to where the fish will be shipped.
- The producer must apply for a permit from the authority where the fish reside. The application must include the stocking permit of the receiving province.
- The permit holder (or producer on his behalf) must inform both the applicable authorities within 7 days that stocking has been completed.

7. Permit Turnaround Time.

The issue of a permit (or feedback) must be done in 3 weeks from date of application.

8. Permit Conditions.

The following standard permit conditions apply:

- Fish must be stocked within 6 months of a permit being issued.
- Fish must be tagged and tag details provided to permitting authorities.
- Fish must be certified sterile by means of acceptable methods.
- Fish must be supplied from an accredited producer.
- Grass Carp may only be sold to an end user by an accredited producer.
- Fish may only be stocked into the system for which the permit is issued.
- Inlets and outlets must be screened to prevent the escape of the Grass Carp.
- No fish may be moved from the system into which they are stocked into another system (even on the same property) without the necessary permits.
- Authorities retain the right to inspect the stocked system and may scan the fish for tags or request that a blood sample be drawn for sterility testing.

9. Accreditation of all Potential Producers.

Grass Carp producers that meet the control standards in the supply of Grass Carp stated in the National Grass Carp Policy for South Africa (2004) are accredited.

10. Responsible Application and Use of Grass Carp

Grass Carp can control the occurrence of aquatic vegetation, but such control should also be a function of addressing the primary causes (often eutrophication). Appropriate stocking rates must be used as complete removal of aquatic vegetation can cause ecological problems.

APPENDIX B: EXAMPLE OF A PERMIT TO EXPORT LIVE FISH



Gauteng Directorate of Nature Conservation Permits Office

Glencairn Building, Corner Eloff and Market Street, Johannesburg
Postal Address: P.O. Box 8769, Johannesburg, 2000
Tel (011) 355-1207 & Fax (011) 355-1239

APPLICATION FOR A PERMIT TO EXPORT LIVE FISH (CPE4)(a))

Please note:

- Application forms must be completed in legible block letters.
- It is the applicant's responsibility to confirm receipt of an application form.
- **Fifteen working days** are required to process a permit application.
- Where the space provided is not adequate the information should be attached as an addendum.
- Any additional information, which the applicant deems necessary, should be attached to this application.
- **Permits will not be faxed, as faxed copies are invalid.**
- The Department cannot be held responsible for the loss of a permit in the post if requested to be posted.

APPLICANT'S DETAILS (Owner must apply)			
Surname			
Additional Names & Title			
Residential Status (Tick appropriate option)		SA citizen	
		Permanent Resident	
		Foreigner	
ID Number (Passport number in the case of non-South Africans)			
Telephone (work)		Telephone (home)	
Cell Phone		Fax	
E-mail			
Physical Address			Postal Address

PERMIT HOLDER'S DETAILS (i.e. person who will be exporting live fish on behalf of the owner if not the owner)			
Surname			
Additional Names & Title			
Residential Status (Tick appropriate option)		SA citizen	
		Permanent Resident	
		Foreigner	
ID Number (Passport number in the case of non-South Africans)			
Telephone (work)		Telephone (home)	
Cell Phone		Fax	
E-mail			
Physical Address			Postal Address

DETAILS OF FISH TO BE EXPORTED		
Quantity	Common Name	Scientific Name

ADDITIONAL INFORMATION			
Supplier's Name			
Supplier's Telephone No.			
Supplier's Physical Address		Supplier's Postal Address	
Please indicate (by ticking the appropriate option) whether these fish are:		<input type="checkbox"/> Wild Caught <input type="checkbox"/> Captive Bred	
Destination			
Port of import			

PERMIT COLLECTION	
Please indicate (by ticking the appropriate option) whether you will:	<input type="checkbox"/> Collect your permit
	<input type="checkbox"/> Receive it by post
Address to which permit should be posted (If it is to be posted)	

DECLARATION	
I declare that all the information provided is complete and correct to the best of my knowledge. I understand that any false information supplied could lead to my application being disqualified.	
Signature:	Date:

Application processing fees: (Not refundable): **R 50.00 per application**

Banking details

Bank: **Absa Bank** Branch Name: **Public Sector-Gauteng West**
 Bank Account: **DACEL Cost Recovery-Trading**
 Bank Account number: **4064930912**
 Bank Code: **637-956** Permit Code: **CPE4a**

No cash or cheques will be accepted at the Department's Service Centres

Please contact, tel: (011) 355 1207 for further details.

APPENDIX C: EXAMPLE OF A PERMIT TO IMPORT LIVE FISH



**Gauteng Directorate of Nature Conservation
Permits Office**

Glencairn Building, Corner Eloff and Market Street, Johannesburg
Postal Address: P.O. Box 8769, Johannesburg, 2000
Tel (011) 355-1207 & Fax (011) 355-1239

APPLICATION FOR A PERMIT TO IMPORT LIVE FISH (CPE4)

Please note:

- Application forms must be completed in legible block letters.
- It is the applicant's responsibility to confirm receipt of an application form.
- **Fifteen working days** are required to process a permit application.
- Where the space provided is not adequate the information should be attached as an addendum.
- Any additional information, which the applicant deems necessary, should be attached to this application.
- **Permits will not be faxed, as faxed copies are invalid.**
- ****For import of Grass Carp, a certificate of triploidy must be submitted with completed application form****

APPLICANT'S DETAILS (Owner must apply)			
Surname			
Additional Names & Title			
Residential Status (Tick appropriate option)		SA citizen	
		Permanent Resident	
		Foreigner	
ID Number (Passport number in the case of non-South Africans)			
Telephone (work)		Telephone (home)	
Cell Phone		Fax	
E-mail			
Physical Address			Postal Address

PERMIT HOLDER'S DETAILS (i.e. person who will be importing live fish on behalf of the owner if not the owner)			
Surname			
Additional Names & Title			
Residential Status (Tick appropriate option)		SA citizen	
		Permanent Resident	
		Foreigner	
ID Number (Passport number in the case of non-South Africans)			
Telephone (work)		Telephone (home)	
Cell Phone		Fax	
E-mail			
Physical Address			Postal Address

DETAILS OF FISH TO BE IMPORTED		
Quantity	Common Name	Scientific Name

ADDITIONAL INFORMATION			
Supplier's Name			
Supplier's Telephone No.			
Supplier's Physical Address		Supplier's Postal Address	
Please indicate (by ticking the appropriate option) whether these fish are:		Wild Caught	
		Captive Bred	
Destination			
Port of import			

PERMIT COLLECTION	
Please indicate (by ticking the appropriate option) whether you will:	Collect your permit
	Receive it by post
Address to which permit should be posted (If it is to be posted)	

DECLARATION	
I declare that all the information provided is complete and correct to the best of my knowledge. I understand that any false information supplied could lead to my application being disqualified.	
Signature:	Date:

Application processing fees: **(Not refundable): R 50.00 per application**

Banking details

Bank: **Absa Bank** Branch Name: **Public Sector-Gauteng West**
 Bank Account: **DACEL Cost Recovery-Trading**
 Bank Account number: **4064930912**
 Bank Code: **637-956** Permit Code: **CPE4**

No cash or cheques will be accepted at the Department's Service Centres

Please contact, tel: (011) 355 1207 for further details.

APPENDIX D: EXAMPLE OF A PERMIT TO PLACE AND RELEASE FISH INTO WATERS



Gauteng Directorate of Nature Conservation Permits Office

Glencairn Building, Corner Eloff and Market Street, Johannesburg
Postal Address: P.O. Box 8769, Johannesburg, 2000
Tel (011) 355-1207 & Fax (011) 355-1239

APPLICATION FOR A PERMIT TO PLACE OR RELEASE FISH INTO WATERS (CPE3)

Please note:

- Application forms must be completed in legible block letters.
- It is the applicant's responsibility to confirm receipt of an application form.
- **Fifteen working days** are required to process a permit application.
- Where the space provided is not adequate the information should be attached as an addendum.
- Any additional information, which the applicant deems necessary, should be attached to this application.
- **Permits will not be faxed, as faxed copies are invalid.**

APPLICANT'S DETAILS (Landowner must apply)					
Surname					
Additional Names & Title					
Residential Status (Tick appropriate option)		SA citizen			
		Permanent Resident			
		Foreigner			
ID Number (Passport number in the case of non-South Africans)					
Telephone (work)		Telephone (home)			
Cell Phone		Fax			
E-mail					
Physical Address		Postal Address			

PERMIT HOLDER'S DETAILS (i.e. person who will be releasing fish on behalf of the landowner if not the landowner)					
Surname					
Additional Names & Title					
Residential Status (Tick appropriate option)		SA citizen			
		Permanent Resident			
		Foreigner			
ID Number (passport number in the case of non-South Africans)					
Telephone (work)		Telephone (home)			
Cell Phone		Fax			
E-mail					
Physical Address		Postal Address			

FISH TO BE RELEASED		
Quantity	Common Name	Scientific Name

ADDITIONAL INFORMATION			
Supplier's Name			
Supplier's Telephone No.			
Supplier's Physical Address		Supplier's Postal Address	
Please indicate (by ticking the appropriate option) whether fish are:		<input type="checkbox"/> Wild caught <input type="checkbox"/> Captive bred	
Waters and place of release			
In addition please provide the following information to facilitate processing your application: <ul style="list-style-type: none"> • The type (is it artificial, natural or closed system?) and size of stocking facility. • Description of the measures to be taken to prevent the fish escaping e.g. during floods (if relevant). • Source or supply of water for the stocking facility. • The fish species present in the stocking facility. • A certificate of triploidy (if necessary). • The reason for releasing the fish. 			

PERMIT COLLECTION	
Please indicate (by ticking the appropriate box) whether you will:	<input type="checkbox"/> Collect your permit
	<input type="checkbox"/> Receive it by post
Address to which permit should be posted (If it is to be posted)	

DECLARATION	
I declare that all the information provided is complete and correct to the best of my knowledge. I understand that any false information supplied could lead to my application being disqualified.	
Signature:	Date:

Application processing fees: (Not refundable): **R50.00 per application**

Banking details:

Bank: **Absa Bank West**

Branch Name: **Public Sector-Gauteng**

Bank Account: **DACEL Cost Recovery-Trading**

Bank Account number: **4064930912**

Bank Code: **637-956**

Permit Code: **CPE3**

No cash or cheques will be accepted at the Department's Service Centre

Please contact, tel: (011) 355 1207 for further details.

**APPENDIX E: EXAMPLE OF A LETTER TO CONFIRM APPROVAL OF
OPERATIONAL PHASE ENVIRONMENTAL MANAGEMENT PLAN
(OPEMP).**

EXAMPLE - VOORBEELD

Verwysing
Reference
Isalathiso

E12/2/1-AB15-ERF 846-849, BONNIEVALE



Navrae
Enquiries
Imibuzo

CLAYTON HENDRICKS

Date 02/06/2008

*Departement van Omgewingsake en Ontwikkelingsbeplanning
Department of Environmental Affairs and Development Planning
ISebe leMicimbi yeNdalo esiNgqongileyo noCwangciso
loPhuhliso*

The Board of Directors
De Rust Boere (Pty) Ltd
P O Box 15
BONNIEVALE
6730

Attention: Mr F Claassen

Tel: (023) 616 2444
Fax: (023) 616 2675

Dear Sir

OPERATIONAL PHASE ENVIRONMENTAL MANAGEMENT PLAN: EX POST FACTO APPROVAL FOR THE CONCENTRATION OF GRASS CARP FOR THE PURPOSE OF COMMERCIAL PRODUCTION ON ERF NO. 846 TO ERF NO. 849, BONNIEVALE

1. The Operational Environmental Management Plan dated 25 February 2008, as received by the Department on 27 February 2008, refers.
2. This letter serves to inform you that the aforementioned document has been accepted by the Directorate: Integrated Environmental Management (Region A).
3. We would like to express our appreciation for your compliance with Condition 5 of the Record of Decision ("RoD"), issued on 23 January 2006.
4. We look forward to receiving your co-operation in ensuring compliance with all the other conditions of the above mentioned RoD.
5. This Department reserves the right to revise its initial comments and request further information from you based on any new or revised information received.

Yours faithfully

FOR DIRECTOR: INTEGRATED ENVIRONMENTAL MANAGEMENT (REGION A)

Copy to: (1) Mr J van Zyl (Breede River Winelands Municipality)
(2) Mr E Hinrichsen (AquaEco CC)

Fax: (023) 614 8000
Fax: (021) 856 5277

Ublitas Building, 1 Dorp Street
Private Bag X9086 Cape Town 8000

Tel No: 021-483 2803/5113
Fax No: 021-483 3633
Email: cfhendri@pgwc.gov.za

APPENDIX F: EXAMPLE OF A CERTIFICATE OF ACCREDITATION OF STERILE GRASS CARP PRODUCTION FACILITY (HATCHERY).

APPENDIX G: EXAMPLE OF A CERTIFICATE OF GRASS CARP STERILITY

EXAMPLE - VOORBEELD



**CERTIFICATE OF GRASS CARP
BATCH STERILITY**

This is to Certify that the results of Grass Carp Batch No:

.....2006/1 Dam 9 (700 fish)
.....

produced at De Rust Fish Farm on (date):

15/10/2006
.....

and tested for sterility on (date):

02/09/2008
.....

have been viewed by the Cape Nature Conservation Board. With due consideration of the fish marked for exclusion from the batch the individuals of the group all meet the criteria for sterility.

Name:

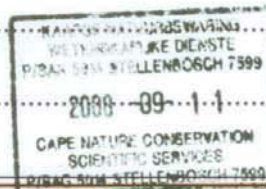
N.D. Imhoffson
.....

Signature:

[Handwritten Signature]
.....

Date:

11/9/2008
.....



**APPENDIX H: EXAMPLE OF A VETERINARY HEALTH CERTIFICATE FOR
STERILE GRASS CARP**

EXAMPLE - VOORBEELD



DEPARTMENT
of AGRICULTURE
Provincial Government of the Western Cape



PROGRAMME/SUB-PROGRAMME/SECTION:
VETERINARY SERVICES – ANIMAL HEALTH

REFERENCE:

llewellynh@elsenburg.com
tel: 028 5141670 fax: 028 5142679
P.O. BOX 167, SWELLENDAM, 6740

ENQUIRIES: Dr. L.J. HON

**VETERINARY HEALTH CERTIFICATE FOR FISH IN REGARDS TO THE
INTERNAL MOVEMENT OF GRASCARP IN THE REPUBLIC OF SOUTH AFRICA**

RESPONSIBLE VETERINARY ADMINISTRATION: National Department of
Agriculture

ISSUING VETERINARY AUTHORITY: Directorate Veterinary Services,
Western Cape Province

CERTIFICATE NUMBER: WKSU/FAC01/2009

TO WHOM IT MAY CONCERN,

The internationally accepted list of OIE diseases in Grass Carp is monitored prior to the import of fish into South Africa. This was also the case when the De Rust Grass Carp farm imported their Grass Carp. It is therefore unnecessary to test the fish for OIE listed diseases in Grass Carp prior to any fish being made available on the local market. The exception to the above is the Asian Tape Worm (*Bothriocephalus spp.*) which is already commonly found in Grass Carp in South Africa. As a precautionary measure all Grass Carp prior to any fish being made available on the local market from the De Rust Grass Carp Farm is treated against Asian Tapeworm using Praziquantel under the correct dosage and recommendations. The Grass Carp before dispatch is subjected to a treatment of Malagnite to control other parasites such as Anchor worm.

All the Grass Carp in a batch to be dispatched receive a microchip. These microchip numbers are sent to Nature Conservation. The Cape Nature Conservation do testing on these batches to ensure sterility of the carp leaving the premises. The last letter of certification received from Cape Nature Conservation in this regard is valid until 31st March 2010. Traceability is also ensured due to the microchip numbers.

The farm was visited on the 26th March 2009 and the fish visually examined. On the day of my visit and to the best of my ability I do declare that the fish appear to be in a condition of good health. This certificate is valid until 31st March 2010.

Greetings.

L.J. HON
CHIEF STATEVETERINARIAN
Date: 2009/03/31



P O Box / Posbus 167, Swellendam, 6740
Tel: (028) 5141670 • Faks/Fax: (028) 5142679 • Webwerf/Website: www.elsenburg.com
LANDBOU-ONTWIKKELINGSENTRA / AGRICULTURAL DEVELOPMENT CENTRES:
ELSENBURG • GEORGE • MOORREESBURG • OUDTSHOORN • VREDENDAL