



## **Record of workshop on the definition of maps for trout – as species regulated by area in the Alien & Invasive Species regulations of NEMBA**

KwaZulu-Natal National Botanical Garden, Mayor's Walk, Pietermaritzburg  
09h00 – 16h00, 22 January 2009

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### **1. Introduction: participant introductions, workshop purpose & agenda**

Marlene Laros facilitator for the workshop welcomed all to the workshop. She explained that the specific purpose of the workshop was to discuss the mapping methodology for defining maps for trout as species proposed for regulation by area in the draft Alien and Invasive Species Regulation of NEMBA.

All participants were introduced and a set of workshop ground rules was agreed. The participant list and apologies are provided in Annexure A.

After discussion of the agenda, a suggestion was supported to hear both presentations to be made by Ernst Swartz and then to allow for the stakeholder organisations to provide their presentations. This would allow for convergence of the approaches to be drawn through as some of the comments from stakeholders may already be addressed in Ernst's approach and methodology.

### **2. Update on the drafting process for the AIS Regulations**

#### **a) Presentation: Ingrid Nänni, Project Manager, SANBI**

Ingrid Nänni provided the following presentation to update participants on the draft process for the AIS Regulations:

- Alien & Invasive Species Regulations
  - Invasive species – one of main environmental challenges
  - Control costs RSA millions (ca. R 1 billion for plants alone)
  - Invasives are having an increasing impact on all levels of society – recognized as a major factor affecting livelihoods in Africa
  - Often the poor that suffer the most from invasions
  - Need to limit the risk associated with invasives
- Definition from the NEM:BA Act 10 of 2004  
**“invasive species”** means any species whose establishment and spread outside of its natural distribution range-  
(a) threaten ecosystems, habitats or other species or have demonstrable potential to threaten ecosystems, habitats or other species; and,  
(b) may result in economic or environmental harm or harm to human health.
- Process to develop AIS Regulations
  - 2004 - NEMBA
  - 2005 - 1st Task Team
  - 2007 - Revision of draft regulations by DEAT
  - 2007 - Publication of draft regulations
  - 2008 (2 April) - Stakeholder meeting
  - SANBI requested to lead process to resolve outstanding issues
- Roles & Responsibilities: Task team

- Make recommendations for dealing with issues raised during stakeholder consultation (in progress)
- Facilitate interaction with key stakeholders (this workshop)
- Review revised regulations (busy with this as we meet)
- Roles & Responsibilities: SANBI (Target date: 30 January 2009)
  - Revise categories + criteria for listing (✓)
  - Co-ordinate listing process (in progress – this workshop)
  - Jointly manage development of risk assessment
  - Review regulations (scientific content)
  - Chair the task team – Prof John Donaldson
  - We have been put under very tight deadlines
  - SANBI's assignment was to give input from a scientific perspective – regulations and lists must be scientifically robust
  - DEAT will deal with the administrative and political process  
e.g. Scientific justification for listing certain species of mammals - evidence for genetic invasion  
Therefore SANBI recommends that they be listed, DEAT will take an administrative decision on whether this can be dealt with better under another regulation e.g. Threatened or Protected species (TOPS)
- Roles & Responsibilities: DEAT (Revised Target date: 30 January 2009)
  - Overall responsibility
  - Co-ordinate legal write up
  - Review institutional arrangements
  - Ensure consistency with other Acts / regulations
  - Deal with provincial concerns (WW1 met on 12 Dec 08)
  - Review definitions
  - Review permitting arrangements
  - Costs of implementing regulations
- DEAT
  - Dealing with the administrative and political components of the regulations
  - Delegations of authority (permitting, policing); Department of Agriculture, DWAF, Provinces
  - Going through the text with the state law advisers to ensure that it meets legal requirements
- Timelines for the Regulations  
Have been presented to MINMEC and Working Group 1
  - comments currently being addressed
  - SANBI's input expected by 30 Jan 09
  - 17 Feb 09 MINTEC
  - Publish for public comment before the end of Feb 09
  - Public have one month to comment
  - DEAT will co-ordinate stakeholder communication with people who sent in comments
  - The regulations will make allowance for time to complete the demarcation and mapping for species controlled by area

Ingrid noted that the workshop was effectively a technical workshop informing the most robust method of determining the maps for trout. SANBI was partnering with the South African Institute for Aquatic Biodiversity (SAIAB) for scientific expertise in regard to freshwater fish. The SIAIB team would be led by Dr Ernst Swartz.

- Issues specific to trout
  - Certain stakeholders from the trout industry suggested that trout could be managed by defining specific zones for trout
  - Provision is made in the regulations for “demarcation” permits to deal with species such as trout
  - Whether we distinguish between trout in free water systems and those in closed systems e.g. hatcheries.
- Meaning of the maps in the context of the regulations: (different proposed meanings)
  - Zones where trout will be allowed – no regulations, no permits (naturalized/quasi indigenous)
    - problems with norms and standards for restocking – best practice (DEAT will not allow this)
    - Not a popular option - Provinces (WW1) are not comfortable with this
  - Zone in order to identify places where trout will be allowed, with a permit – all activities will be permitted but will be allowed within those zones

- Any trout outside the demarcated zone will be deemed to be invasive and will be regulated as such with associated regulations governing control
- Concerns relating to the trout industry
  - Trout farming is an important industry
  - Regulations could have impacts on economic activities, and
  - Inappropriate regulation could jeopardize the industry.
- Concerns relating to invasiveness
  - How do we balance the risk of invasiveness associated with certain species and activities (incl. trout) against socio-economic benefits?
- Purpose of today's meeting
  - Discuss and develop maps for the current distribution of trout in SA
    - trying to reduce (or eliminate) regulation of trout in those areas where this would have minimal consequences for biodiversity
  - determine how the mapping of demarcated zones for trout could be used as part of the regulations
  - identify areas that are of conservation concern - linked to National Freshwater Ecosystem Priority Areas assessment (NFEPA).
- Expected outcomes
  - communication of the mapping process resulting
  - an improved understanding of the scientific basis for delineation of zones
  - specific recommendations regarding trout species, and
  - identification of problem areas that may require further consultation.

## b) Questions and discussion

The following issues were raised in relation to the presentation:

- While the focus of the workshop was on the technical components of defining the maps, it was not ideal to have no clarity on how the industry would be regulated;
- there were key elements of the legal and administrative system that were not transparent for stakeholders;
- however, in the interest of progress, stakeholders were prepared to discuss the methodology for mapping in good faith that DEAT would elucidate and discuss these legal and administrative elements with stakeholders in due course.

## 3. Approach to defining the maps for trout & other fresh water fish species managed by area in terms of the AIS Regulations

Dr Ernst Swartz (South African Institute for Aquatic Biodiversity) explained that his presentation would also present proposed categories for grouping of freshwater fish in terms of regulations He made the following presentation:

- SAIAB's contribution
  - Initial development of NEMBA fish species list; and
  - Zone the category "controlled by area" species, using:
    - Basic species distribution data (National Fish Collection and southern African fish atlas)
    - IUCN listing and maps ([www.redlist.org](http://www.redlist.org))
    - Conservation planning
    - Information and mapping specialists.
- This meeting:
  - Data layers
  - Existing layers/digitizing
  - Principles for mapping trout
  - Existing trout activities
- Category "controlled by area" species
  - Alien invasive species that will be regulated by area
  - Maps required to show where alien species will be permitted

Ernst briefly drew the workshop's attention to the categorisation of freshwater fish species (provided as Annexure B).

- Basic objectives of the meeting?

- o data available to assist with zoning
- o Principles and methods for mapping
- o Species groups (testing general mapping principles)

Ernst explained that he had developed groupings of species for which similar mapping principles and criteria could be applied.

- Proposed Species Groupings:

- “South African aliens”

- Limited use - labeos
- Mainly used for angling - yellowfishes
- Important for aquaculture and angling - *Clarias gariepinus*
- Mainly used for aquaculture - *Oreochromis mossambicus*

- “African aliens”

- Mainly aquaculture - threatens genetic integrity - *Oreochromis niloticus* and hybrids

- “Overseas aliens”

- Bio-control - *Ctenopharyngodon idella* (diploid and triploid)
- Wide distribution and use - *Micropterus salmoides*
- Fragmented distribution and localised use - carp (excluding koi?), trout and other bass species

The broad categories were then presented in the following detail:

**“South African aliens” - large cyprinids**

Limited use - labeos

- *Labeo capensis* and *L. umbratus*
- Zones needed for existing IBT's?
- Great Fish and Sunday's mainstem?

Mainly for angling - yellowfishes

- *Labeobarbus aeneus*, *L. natalensis* and *L. polylepis*
- Zones needed to restrict impact and allow angling
- Only mainstem areas in alien range

**“South African aliens” - catfish and tilapia**

Important for aquaculture and angling - *Clarias gariepinus*

- Zones needed to allow angling and aquaculture and restrict impact
- Restricted areas outside natural range in mainstem areas?

Mainly for aquaculture - *Oreochromis mossambicus*

- Zones needed to allow aquaculture and prevent hybridization and invasion
- Restricted areas outside natural range in mainstem areas?

**“African aliens” - tilapia**

Mainly for aquaculture - *Oreochromis niloticus* and various hybrids

- Zones needed to allow aquaculture and protect genetic integrity of indigenous species
- Restricted areas outside *Oreochromis* range, excluded from *Oreochromis* range? Mainstem Limpopo?

**“South African aliens” - move to category 1b?**

Species not fitting into category 2?

- *Labeobarbus capensis* not utilised in alien zone (highly sensitive areas - requires eradication)
- *Tilapia rendalli* - similar to *T. sparrmanni* or critical for aquaculture? Only alien zone in KZN?

**“Overseas aliens” - grass carp**

Bio-control - *Ctenopharyngodon idella*

- Zones required for breeding (diploid) and distribution for weed control (triploid)
- One or two facilities zoned for breeding
- All triploid fish should be traceable and facilities should be regulated?

**“Overseas aliens” - largemouth bass**

Wide distribution and use - *Micropterus salmoides* (and *Cyprinus carpio*)?

- Zones needed to restrict impact and allow angling
- Countrywide - mainstem and/agricultural areas

**“Overseas aliens” - bass, trout and carp**

Fragmented distribution and localised use

- Zones needed to restrict impact and allow angling

- *Cyprinus carpio* - premier carp reservoirs in mainstem areas where they are used (or treat more like largemouth bass?)
- *Micropterus dolomieu* and *M. punctulatus* - premier bass dams where they occur and are used
- *Oncorhynchus mykiss* and *Salmo trutta* - only premier trout streams and associated dams where they are used.

#### Issues raised in discussion:

- It was very difficult for the stakeholders to understand the detailed grouping for freshwater fish without being reminded of the proposed categories proposed in the regulations.

*Response:* The proposed categories as set out in the draft regulations were presented briefly as context to the discussion. The proposed categories are included as Annexure C.

- It was emphasized that it was essential to know where brown and rainbow trout were and where they were being used with a relevant concomitant value;
- Trout is multifaceted in terms of its use – in facilities in high production aquaculture or in-stream with recreational and tourism value. In some cases there were heavy “put and take” systems that maintained the population levels, which also resulted in impacts to ecosystems.
- It is important to ensure that the activities listed in the regulations were the same as those in the Act.
- The workshop needed to stay focused on the mapping, seeing that the species was seen as one controlled by area. Further, there were other NEMA regulations that regulated environmental impact management.
- Concern was raised that the regulations and maps would hinder further development for example in aquaculture.
- While zones may indicate areas where trout would be permitted, applications for permits outside of these zones, together with the appropriate risk assessment would need to be considered. Over time, these permits would be included in the updated zones.
- The process of definition of threatened species and its relationship to the presence of trout needs to be understood in the context of biodiversity significance that could aim to exclude trout.
- Trout are generally limited by environmental conditions and the biodiversity hotspots should be identified and zoned-out for trout.
- Excluding trout from areas of high biodiversity is one dimension of the intention of the Act and the regulations. The spread of an alien species should not be allowed just because an area is not a biodiversity hotspot; there should be a robust economic argument and risk assessment before allowing the “controlled spread” of an invasive alien.
- Intensive trout farming under controlled conditions outside of range still creates the risk and impact to ecosystems.
- It sounds as if there are two key perspectives being presented: trout must be zoned in – where they are likely to be permitted, but the zones will not be immutable, will be updated and permits could be considered outside of the zones with adequate motivation.
- A question was raised as to whether the best solution was being sought for biodiversity and whether unnecessary restraints were being put on industry.
- Concerns regarding overstocking should be dealt with in permit conditions.
- All fish for large-scale stocking of rivers and impoundments and for aquaculture come from a few sources. If you permit the hatcheries and only allow them to sell to permit holders as part of their permit condition to operate, you already have a wide reach into managing “formal spread” of trout, however, the informal spread to farm dams on the small scale is relatively uncontrolled and poses a greater risk.

#### 4. Methodology for defining trout maps for the NEMBA AIS Regulations

Ernst Swartz explained that the mapping principles and criteria that he would present was specifically to stimulate discussion and comment that would improve its scientific robustness. Ernst noted that it was very important to know where and for what purposes trout were being used as well as where they had spread but may have low value. He made the following presentation in terms of the proposed methodology to define trout zones.

- Trout zones - principles
  - Fragmented distribution and localised use: premier trout streams, associated dams and facilities where they are used (allow the trout industry to continue approved activities)
  - Excluded from important biodiversity areas (prevent further invasion)
  - In some cases exclude existing trout populations from highly sensitive conservation areas - eradication required
  - Some areas of low biodiversity value AND that does not provide access to conservation areas could be zoned for future aquaculture

- Trout zones - criteria
  - Where do trout occur – optimal/marginal/no potential for invasion?
  - Legal trout areas
  - Are they utilized/have an existing value? Socio-economic value
  - What activities are they used for?
  - What impacts do the activities have on indigenous biodiversity?
  - Do the trout occur in protected areas and biodiversity priority areas?
  - Are there rivers and indigenous species that require protection from trout? Rehabilitation by removing trout required to conserve indigenous biodiversity
  - Invasive potential (corridors for migration)
  - Barriers to migration
  - Expansion/tourism planning
  - Aquaculture current and future expansion

Ernst then showed how these criteria could be applied in a theoretical example of a catchment.

## Discussion

The following issues were raised in the discussion that followed the presentation:

- Concern that physical barriers can be effective for isolated introductions within the environmental range of trout is unrealistic. They would need to be substantial and involve high costs; they would result in significant impacts to the freshwater systems. There should be a catchment approach.
- Tourism as a major stakeholder has not been consulted nationally or provincially in terms of their development plans. Trout angling is a significant tourism generator.
- What process will be followed in compiling the maps?
- Response: Ernst plans to draw up draft maps on the basis of information that can be sourced in the sector and will interact with as many stakeholders as possible, however he stressed that he had not been briefed nor provided with budget to conduct a full-scale participation process. It would be essential for the provincial authorities to assist in accessing relevant information and stakeholders. Many of the provinces had made some advances in mapping current trout activities. There were indications that Ezemvelo KZN Wildlife, Mpumalanga and the Western Cape were far advanced in conservation planning as well as managing permits for trout. The E. Cape has also developed a biodiversity conservation plan.
- FOSAF are working closely with KZN to develop a zone and are using trout activities as a cost layer in the conservation planning for freshwater ecosystems.
- What procedures would be followed if eradication programmes were to be implemented outside of the trout zone?
- Response: There would be a requirement for an assessment of impacts and NEMBA sections 99 and 100 provide for landowner consultation.
- It is important for the maps to be available and easy to read, e.g. for farmers. The authorities must be able to assist landowners in locating their properties in relation to the zones.
- A request was made for all participants to raise their hands if they feel that DEAT has allowed sufficient time and resources to engage stakeholders in the mapping process.
- No hands were raised as a clear indication that the participants felt that inadequate time and resources are being applied to engaging stakeholders in the process of mapping.
- The mapping process will need to involve more effort than just consulting three provinces.
- Departments of agriculture national and provincial as well as the Department of Trade and Industry are promoting aquaculture. Will it be the case of the left hand not knowing what the right hand is doing in terms of promoting and regulating the sector. Development and regulation of the industry needs to be strategic and properly planned.
- In relation to the criteria presented by Ernst there were no specific social and economic potential for trout – these elements should be added to the criteria.

Marlene asked that a focused discussion be held on the criteria once the key trout stakeholders' presentations had been made as this may provide additional input to the criteria to be used for mapping.

## 5. Understanding key stakeholder interests in regulating trout

It was agreed that all the presentation by stakeholder groups would be heard and questions and discussion would related to the set of presentations.

### a) Presentations

**Dr Bill Bainbridge and Dr Jake Alletson, FOSAF**

**Summary of FOSAF's proposals regarding AIS Regulations & Lists of NEMBA with regard to trout**

Bill Bainbridge introduced the FOSAF presentation by explaining that he thought that there was much alignment between FOSAF's position and that being proposed by Ernst Swartz. He explained that the trout activities had huge economic value to tourism where infrastructure and service industry has been established specifically because of trout. He also noted that there were examples of community-based projects where communally-owned land was being developed to take advantage of trout tourism as an economic generator. He provided the following presentation:

- FOSAF's Proposals Key elements:
  - Principled & sound environmental management approach;
  - Balanced, ethical & accountable;
  - Simple, practical, cost-effective & easy to implement procedures.
  - A regulatory framework to achieve the aims of the NEMBA while seeking to balance the interests of the stakeholders and the industry.
  - No need to get bogged down in semantics: e.g. "zoning in" versus "zoning out", etc.
  - Accountability ensured through transparency of criteria, records and audits of activities.
  - Draft provisional exercise for KZN indicates that the proposed approach is feasible and workable but requires regional variation to address specific local conditions.
  - Provision for recognizing existing rights & addressing any possible loss of rights is essential.
  - Objective should be a "low maintenance" compliance regime that is cost-effective, facilitative, enabling and self-regulating rather than over prescriptive and complicated.
  - Public and stakeholders must be able to understand the legal framework and take ownership otherwise compliance will be difficult to enforce and self-defeating.

Dr Jake Alletson presented the approach that had been undertaken by Ezemvelo KZN Wildlife in partnership with FOSAF. He briefly described the conservation planning methodology that had been used to identify the "critical aquatic areas.

- He explained that the planning domain had been divided up into planning units which were effectively sub-catchments (or basins).
- Once all the biodiversity features had been associated with the planning units (e.g. there were 69 categories of river), the GIS planning software made the most efficient selection to meet the aquatic biodiversity targets for the province.
- It is important to note that criteria for biodiversity corridors and connectivity were also used in order to ensure a rational approach to the configuration of the selection.
- A further cost surface had been introduced to try and ensure the least conflict with important trout areas. In other words, a new selection would be made using the GIS software to select areas where there was no conflict between biodiversity and trout activities. There were obviously areas where conflict could not be avoided and further negotiation and more detailed planning would be required to resolve these. NOTE: The map of the cost service and its integration was presented after lunch.
- Specific concern was raised about the definition of high biodiversity value, e.g. using the presence of wattled cranes as an indicator species - the presence of trout would not impact this species.
- A detailed study is being undertaken in the Underberg area to understand the location and nature of the activities. This will help in verifying the cost layer.
- Overall the process showed great promise in deriving a trout zone in terms of the NEM:BA Regulations.

#### **Martin Fick: Mapping / Zoning - Key concerns as tabled by the Trout Action Group TAG and the Eastern Cape Fly Fishers**

- Premise
  - The "Invasive potential" of Trout in South Africa is spent. The damage was done between 50 to 120 years ago and that current populations are not invading any further; they are in essence in equilibrium, albeit a delicate one where temperature and drought as well as water quality generally leave them on the losing side of the balance from time to time, after which they generally require restocking.
- Concerns re Trout Mapping: Summary
  - Zoning should delineate sensitive "Hotspot" areas where Trout may not be introduced;
  - Each Province's Conservation Authorities should maintain a detailed Database (Points on the map) that has reference to all Trout waters in the province;
  - Each Trout production facility and Hatchery must be registered with Nature Conservation, and permits issued to Hatcheries to stock only the waters that appear on the database;
  - Permits should be issued for the movement of all Trout, even in Trout areas, to ensure that no Trout can be introduced into highly sensitive areas, and that these permits should be issued:
    - Freely to restock water that is currently on the database;
    - With discretion of Nature Conservation, who may require an EIA to any new Trout waters.
- Nodes on the map (the following was illustrated using a theoretical map of a catchment)

- Assuming that the database gives one a series of dots on the map, and that these dots are highly concentrated in a loose area or zone;
- If one then draws a line to delineate this concentration, then two very serious concerns surface:
  - The dots that lie outside of the line are then isolated, and the maintenance, and policing of those isolated populations is near to impossible;
  - The areas of biodiversity value that lie within the zone are then at risk because if a relaxed control system is adopted for that “zone” would put those sensitive areas at risk.
- Zone or Database?
  - Creating a zone creates insoluble problems
  - Using a Database that relates to points on the map does not.
  - It is our proposal that the mapping of the data be done on the basis of the database, and avoid creating a “zone” that will then be written into the regulations.
- In summary he explained that trout locations should be points in the database and that zoning should refer to areas of high biodiversity. He explained that the situation in the E Cape was different because the streams that provided appropriate habitat were snow-fed and where trout were stocked in impoundments – downstream stretches of these rivers were often dry –hence the risk posed for “natural spread” was limited.
- Restocking and movement should be allowed with a permit which should be needed regardless of whether zones are defined (or inside and outside of the zones).
- There should be no restriction of movement of trout from permitted hatcheries to permitted facilities/farms.

### **Etienne Hinrichson: Position Paper of the SA Trout Farming Sector on the National Environmental Management: Biodiversity Act and Associated Regulations**

Etienne Hinrichson complimented KZN on their approach but explained that there was significant concern from the industry if the zones were to be immutable and that one could not apply, with the relevant risk assessment, for permits outside of the zone. This would restrict the growth of the industry. He delivered the following presentation:

- Introduction
  - Aquaculture in SA is a Government priority.
  - Aquaculture can not develop without certain exotic species – trout, oysters and others.
  - Aquaculture must be recognised as a beneficial agricultural activity – with real social and economic benefits.
  - Objectives of NEMA and NEMBA must / can be attained.

*The position paper is for use in providing a position on and guidance to an equitable, viable and environmentally sustainable aquaculture and trout farming sector in South Africa*
- Scope of Aquaculture
  - Quote FAO reports – aquaculture outgrowing capture fisheries and terrestrial animal production.
  - SA industry dominated by abalone and trout.
  - Global industry is becoming environmentally conscious.
  - Proven that regulation, sustainability and responsibility must be a joint decision.
  - The need for aquaculture in SA.
- Position of government
  - NEPAD, SADC, UN
    - Micro-Economic Reform Strategy (MERS),
    - Accelerated Shared Growth Initiative (ASGISA).
  - DTI: Overview of agro-processing singles out trout farming
  - NEMA: Secure ecologically sustainable development and the use of natural resources while promoting justifiable economic and social development.
  - DEAT Policy:
    - *To create an enabling environment that will increase the contribution of aquaculture to economic growth within the Accelerated and Shared Growth Initiative for SA (ASGISA) framework.*
    - *To increase the resource base of aquaculture from the few species being farmed currently to a more diverse suite of species.*
  - DWAF
  - NDA
  - DST

- Trout history
  - Domesticated fish
  - Farmed in 64 countries (2002)
- SA Production
  - By number and volume the most commercially grown aquaculture species in SA.
  - Geographically limited but farmed in various production systems for various markets.
  - 2003: 1750 tons generating direct income of > R 45 million.
  - Current more than R 60 million just in sales into the recreational market.
  - 50 – 60 farms and many small scale operators
  - Direct employment of 300 – multiplied many times in upstream and downstream activities.
  - Over 900 water bodies are stocked.
  - Cumulative values are in the billions.
- Defining SA trout farming activities
  - Brood stock and ova production
  - Fingerling production for on growing
  - Table fish production
  - Supply of fish for recreation
- Impacts of trout in SA
  - Limited understanding and knowledge.
  - Clouded by impacts of other alien species and activities – forestry, agriculture, mining, settlement etc.
  - Impacts in most systems have now run their course
  - Impacts outside their natural range (if stocked) is seasonally and otherwise limited
- Imperative considerations
  - Trout farming SA supports biodiversity conservation.
  - Impact and invasiveness of trout is recognised.
  - Impacts of trout farming (today) is marginal and manageable.
  - Trout should be kept out of certain areas – principal of zoning out.
  - Self regulation (self-responsibility) is imperative.
  - One of oldest domesticated aquaculture species in Western World and cornerstone of SA aquaculture.
  - Trout farming is sufficiently regulated – trout stocking can be regulated through a uniform system.
  - Legal frameworks support the development of this sector.
  - We are setting principals for all aquaculture.
- The position
  - To be classed as “species controlled by area” so that it can be kept out of sensitive catchments
  - Manageable (capacity) system
  - Registration of trout farms
  - Unrestricted use outside of identified areas – as an agricultural resource.
  - *The position of the trout farming sector is that the farming and use of trout be classed as “controlled by area” in terms of the current draft of the Alien and Invasive Species Regulations (as provided by SANBI: September 2008), but that this be interpreted as the unrestricted use of trout outside of identified areas or zones in which trout may pose a biodiversity conservation threat.*
- Interim measures
  - 2 year transitional period
  - Register of farms (NB)
  - Trout will be registered for agricultural use
  - Areas of historical stocking be allowed unless of particular sensitivity
  - Trout farmers contribute to setting out zones with provincial authorities and experts and farmers / users
  - Provincial authorities (under national direction) align measures of control
  - Nationally accepted BMP’s.
- Way forward
  - Reach consensus
  - Allow more time – rushed process will lead to much confusion.

- Allow for trout use in areas where biodiversity impacts are negligible, even if outside of the current distribution.
- Expand the discussion – cost and time
- Establish a working team
- *Are we trying to achieve a workable solution in the interest of biodiversity conservation or are we trying to force a fit to the legal framework.*

## b) Discussion

The discussion relating to the presentation straddled the lunch break. Jake Alletson presented one further slide showing the integration of the trout cost layer into the conservation planning process in KZN.

The following general comments were raised in relation to the presentations:

- It is important to understand the dynamics of trout farming, e.g., if a hatchery gets a call on the weekend to stock a dam because a wealthy fisherman staying in a lodge, then industry should be able to respond.
- Where trout cannot be a threat in terms of invasion, these areas could be included in the zone, e.g., there are instances in Johannesburg where farmers would like to seasonally stock and even farm trout in controlled conditions.
- Risk of invasion and potential impact of the activities needs to be key criteria in defining the map.
- The mapping exercise is being seen by many people as a restrictive exercise rather than an enabling exercise; if you can show minimal biodiversity threat then your chances of getting a permit should be good, inside or outside the zone.
- The criteria are all important and the administrative system is paramount, it must be able to work in districts and provinces where there is low capacity and where the situation is unlikely to improve.
- Concern that different departments of government are not integrating their strategies, e.g. DEAT and DTI. Government is putting a lot of finance into developing aquaculture; and the expectations of communities have been raised. Trout by number and volume is the single and most significant aquaculture species in South Africa.
- Concern that alignment is needed between the provinces – otherwise the mapping exercise will not change the situation on the ground for industry.
- Concern that the Free State Province was not represented as industry has a particular problem in moving trout around the province.
- Concern that this process has been rushed; VERY SERIOUS request to SANBI to take to DEAT – elections should not dictate the process
- There are areas where trout have been introduced but have low use and low value.
- There is general alignment between the provincial FOSAF interests, except for the E. Cape who are proposing a zone-out or point database system; however, when one looks at the administrative impact of requiring a permit, the approach won't matter. What will matter is that there is a uniform approach to all the taxa regulated by area.
- It was noted that the trout area excluded the World Heritage Site of the Drakensberg. A question was raised as to how eradication of trout would be undertaken, should this be a decision of the WHS management authority.  
Response: The management authority would be required to consult with interested and affected parties and possibly undertake an EIA of using pesticide in the relevant freshwater systems.
- Concern was raised as to how realistic it would be to control the spread of trout back into the WHS – what boundary would be effective?
- A reminder was given that it was government that had stocked rivers previously

Marlene Laros explained that there were key issues emerging that would need further discussion during the afternoon; these included:

- the criteria to be applied in mapping for trout zones,
- the legal and administrative system that would be implemented; and
- comments on the AIS regulations drafting and map development process that also needed to be captured.

She requested that participants attempt to focus their comments on these areas during the remaining discussion time: The following comments were raised:

- From a tourism perspective – a lot of effort has gone into developing tourism routes – strategies have already been approved and there are already enterprises in existence. These plans and existing facilities need to be taken into account. The sector needs to be consulted.
- It is not possible to predict where investors or farmers may want to expand trout activities, is it not more practical given the time constraints to start with where trout should not be permitted?;
- The conservation authorities need to present clearly on what basis freshwater systems are prioritised from a biodiversity perspective.

- Why is the general legal principle of deeming compliance not being applied; unless there is clear evidence of non-compliance individuals should be deemed compliant at least as in interim or phase in mechanism?
- Over time issues of “best management practice” can be addressed – e.g. water effluent from hatcheries, stocking limits and carrying capacity; but start on the assumption that every body is legal.
- Should individual rights be impacted, this could involve the need for compensation by government.
- Where individuals have operated illegally government can take action; however by failing to do so timeously (3 years in civil law) government has effectively “condoned” the activity.
- What about the provision for exemption. Has DEAT considered applying this to trout?
- Individual parties can also be held liable for rehabilitation, where they have caused damage.
- The lack of a national aquatic biodiversity policy is a problem; however the National Biodiversity Strategy and Action Plan were noted.
- The previous iteration of the AIS regulations were draconian; if you have previously used trout you will have one year to undertake a risk assessment. The current proposals are more reasonable especially if there is a phase-in period being considered and the sector should embrace the opportunity to define the zone.
- Concerns that retroactively investment will be undermined by new regulations; however government representatives at the meeting made assurances that if these were existing legal operations, there should be no fear of unreasonable action by government.
- Concerns that the zoning may be inaccurate and result in an inequitable situation – e.g. one farm being zoned in but the neighbours being zoned out.
- It was essential fly fishing stakeholders to be informed as far as possible and one option was through the website [www.flytalk.co.za](http://www.flytalk.co.za)
- Concern that within the timeframe provided the involvement of these stakeholders was not possible and that Ernst Swartz did not have the brief nor budget to undertake a detailed stakeholder engagement process.
- If individuals have been in business for years and then government says they can no longer operate such business, this is grounds for long and expensive court cases. Cognizance must be taken of existing enterprises.
- What if fish introduced by government moving on to private property? Who carries the liability in that case?
- What about the case of a dam within a recently declared protected area that has been legally stocked for years and which supports a local enterprise – will it now be zoned out because it is in a protected area?  
*Response:* If trout fishing is one of the recognized activities for the management plan for that area, then they would be permitted.
- Concern about the continual introduction of alien fish into protected areas.
- Issues relating to using the provision 66 which provided the discretion to grant exemptions:
  - FOSAF originally suggested that section 66 be used to exempt certain species for certain areas
  - The legal advisor of the drafting process suggested that this would never be applied for trout.
- Applying the same principle to sheep, would we only zone the karoo and restrict land-base agriculture?  
*Response:* Sheep are not invasive, even though they result in significant impact.

The following inputs were provided in relation to the criteria that should be considered in the mapping process:

- Social and economic impact, current value and potential value
- Risk of invasion (including areas outside of natural range where they could be grown under controlled conditions)
- Existence and feasibility of barriers as real barriers to movement of trout
- Environmental conditions; where these are optimal and where they are marginal
- Priority for rehabilitation
- Biodiversity priority
- The question was raised as to whether fingerlings can be transported through a “no-go” zone and across provinces?  
*Response:* It is the intention that as long as the hatchery and the buyer have permits, that this movement will be possible. Obviously the authorities would like to encourage ethical behaviour and reduce the requirement for regulation.
- All trout farming in SA is marginal - that is why the industry has not grown; but because we are so far away from Europe, a small farm can still make a living.
- The question was raised regarding the proposed scale of mapping.  
*Response:* Mapping would be undertaken at sub-quaternary scale. It does not matter that E Cape is using a point database – these will be converted to polygons (equivalent of land areas or river basins) in the database.
- How will maps be updated to include newly permitted areas?  
*Response:* SANBI is likely to be given such responsibility; however the timeframes for the updating process is yet to be defined. It would be desirable to see maps updated annually – but that may not be feasible.
- If a new area was identified outside of the zone – would one require a risk assessment or an EIA.

*Response:* It depends on what activities are being applied for; activity related to the AIS regs or a land use change or impact related to the EIA regulations. That is what section 66 is all about – you have already done an EIA and there is no risk so you can apply for an exemption

- When areas are decommissioned for trout activities they need to be expunged from the zone.
- How will the mapping be undertaken?

*Response:* The next step will be to engage provincial agencies and organised groupings to access data. This will be used together with the sub quaternary layer from the CSIR. A GIS-based analysis will be run to produce draft maps which will be made available for comment.

In relation to issues of the stakeholder engagement process, the following issues were raised:

- Concern that DEAT is not really engaged in the process and have not listened to past comments on legal and administrative system concerns raised by the sector.
- It is essential that DEAT commits at time of publishing the draft regulations for comment, to a process of involving stakeholders in the mapping process. Participants at the meeting have suggested that at the time of advertising a clear road map is set out.
- The provinces will also need to make an effort to inform stakeholders of the process.
- Newspapers and industry magazines were also suggested as ways to reach stakeholders.

In relation to administrative systems issues, the following issues were raised:

- Concerns regarding the budget for both this process and implementation of the regulations and updating of the maps over time (which is provided for by the Act). This would need to be catered for prior to sign off by cabinet.
- There is a dire need for integration of permit requirements impacting aquaculture industry.
- When there is a change of ownership, the new owner must apply as permits are given to individuals, not properties.
- The regulations may enable 3-4 year renewal requirement (instead of annual) within the zones.
- Government and industry need to work together on norms and standards in order to reduce administrative requirements for example, there needs to be different approaches to instream and off stream activities.
- The national regulations must be good enough, strong enough, that you don't need stronger regulations at the provincial level. Regulations and norms and standards must be such that it is acceptable to provinces.
- As participants have not seen the new draft regulations, it was difficult to provide detailed comment on the administrative system being contemplated by government at this stage.

## **6. Workshop summary, way forward and closure**

Marlene Laros provided a brief summary of the day's proceedings. She highlighted the following issues that had been raised by stakeholders. There were significant concerns about:

- the process that DEAT had co-ordinated in that not all key stakeholders had been engaged, there appeared to be insufficient resources and time allocated to engaging stakeholder in the mapping process for trout;
- the capacity and funding available for mapping in the short timeframe;
- the capacity and funding for implementation of the system;
- the need for consistency across all provinces;
- the need for the regulations, the maps and their updating processes to be robust enough to form an effective basis of regulation that does not hinder the development of the aquaculture and tourism industries;
- the need for clarification of the methodology and criteria to be applied in mapping the trout zone and how biodiversity as an informant will be included in the mapping.

In terms of the mapping process, Ernst Swartz had a deadline for June/July 2009 for the production of draft maps. These would be made available for comment to stakeholders. In the meantime, it was likely that the draft regulations would be available for comment by the end of February 2009.

In closing the workshop Marlene thanked all for their constructive participation even through it was clear that stakeholders were not satisfied with opportunities provided for their engagement in the AIS Regulations and map drafting process. She thanked all for their input to the discussions on the methodology for defining maps for trout species.

The workshop closed at 16h00.

## Annexure A: List of Workshop Participants

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Apologies			
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	Bonani	Madikizela	DEAT

## Annexure B: Freshwater fish listing in draft regulations

<b>Freshwater fish</b>			
<b>Category</b>	<b>Scientific name</b>	<b>Vernacular</b>	<b>Notes</b>
1b	<i>Hypophthalmichthys molitrix</i>	silver carp	Control programme required
1b	<i>Lepomis macrochirus</i>	bluegill sunfish	Control programme required
1b	<i>Sandelia capensis</i>	Cape kurper	Control programme required
1b	<i>Tilapia sparrmanii</i>	banded tilapia	Control programme required
2	<i>Clarias gariepinus</i>	sharptooth catfish	Zoned for invaded areas in wild
1b	<i>Ctenopharyngodon idella</i>	grass carp	Species in wild as category 1b - control required.
2	<i>Ctenopharyngodon idella</i>	grass carp (triploid)	Zone for permitted farm dams
2	<i>Cyprinus carpio</i>	carp	Zone for known distribution in wild
2	<i>Labeo capensis</i>	Orange river mudfish	Zoned for known natural and introduced distribution
2	<i>Labeo umbratus</i>	moggel	Zoned for known natural and introduced distribution
2	<i>Labeobarbus aeneus</i>	Orange-Vaal smallmouth yellowfish	Zoned for known natural and introduced distribution
2	<i>Labeobarbus capensis</i>	Clanwilliam yellowfish	Zoned for known natural and introduced distribution
2	<i>Labeobarbus natalensis</i>	KwaZulu-Natal yellowfish	Zoned for known natural and introduced distribution
2	<i>Labeobarbus polylepis</i>	Lowveld largescale yellowfish	Zoned for known natural and introduced distribution
2	<i>Micropterus salmoides</i>	largemouth bass	Zoned for acceptable known introduced distribution by provincial authorities
2	<i>Micropterus dolomieu</i>	smallmouth bass	Zoned for acceptable known introduced distribution by provincial authorities
2	<i>Micropterus punctulatus</i>	spotted bass	Zoned for acceptable known introduced distribution by provincial authorities
2, 3	<i>Oncorhynchus mykiss</i>	rainbow trout	Zoned for acceptable known introduced distribution in freshwater by provincial authorities, and by activity for marine aquaculture
2	<i>Salmo trutta</i>	brown trout	Zoned for acceptable known introduced distribution by provincial authorities
2	<i>Oreochromis mossambicus</i>	Mozambique tilapia	Zoned in for acceptable known introduced distribution by provincial authorities
2	<i>Oreochromis niloticus</i>	Nile tilapia and hybrids	Zoned for acceptable known introduced distribution by provincial authorities
2	<i>Tilapia rendalli</i>	redbreast tilapia	Zoned for acceptable known introduced distribution by provincial authorities

## **Annexure C: Proposed categories for listing of AIS – extract from draft Regulations**

### **Categories of alien and listed invasive species**

21. Alien and listed invasive species consist of the following species or categories of species:
- (a) exempted species being:
    - (i) alien species listed in List 1 of the Notice; and
    - (ii) newly introduced species imported into the Republic after these regulations came into force without any attendant conditions; and
  - (b) prohibited alien species being species listed in List 2 of the Notice; and
  - (c) invasive species requiring compulsory control being species listed in List 3 of the Notice
  - (d) invasive species listed in List 3 of the Notice as invasive species controlled by an invasive species management programme;
  - (e) invasive species listed in List 3 of the Notice as invasive species controlled by area; and
  - (f) invasive species listed in List 3 of the Notice as invasive species controlled by activity.

### **Invasive species requiring compulsory control**

26. (1) No person may, without a permit, undertake any of the following restricted activities involving a specimen of a species listed in List XX as a species that requires compulsory control:
- (a) importing a specimen into the Republic, including introducing it from the sea;
  - (b) possessing or exercising physical control over a specimen;
  - (c) growing a specimen, or allowing it to grow, breed or multiply;
  - (d) breeding or in any other way propagating a specimen or causing it to multiply;
  - (e) conveying, moving or otherwise translocating a specimen;
  - (f) selling or otherwise trading in, giving, donating or disposing of a specimen;
  - (g) buying, receiving, accepting as a gift, or in any way acquiring a specimen; or
  - (i) conducting any other activity prescribed in regulation 21 or 23 involving a specimen.
- (3) A person who has a specimen of an invasive species requiring compulsory control under his or her control must notify a competent authority in writing of this occurrence, in accordance with Addendum 4.

### **Invasive species controlled by invasive species management programme**

27. (1) No person may undertake the following restricted activity involving a specimen of a species listed as an invasive species controlled by invasive species management programme:
- (a) importing a specimen into the Republic, including introducing it from the sea;
  - (b) breeding or in any other way propagating a specimen or causing it to multiply;
  - (c) conveying, moving or otherwise translocating a specimen;

- (d) allowing the movement or spread of a specimen from an area under their control;
  - (e) selling or otherwise trading in, giving, donating or disposing of a specimen;
  - (f) buying, receiving, accepting as a gift, or in any way acquiring a specimen;
  - (g) conducting any other activity prescribed in regulation 21 or 23 involving a specimen.
- (2) Where an invasive species management programme requiring the control of the species has been adopted in terms of regulation 8:
- (a) no person may, without a permit, possess or have in their possession or under their control a specimen of an invasive species controlled by invasive species management programme where the control programme makes specific provision for control of that listed invasive species in that area, or where a directive has been issued;
- (3) Notwithstanding the provisions of subregulations (1) and (2) a person may with a permit undertake a restricted activity listed in subregulations (1) or (2) if:
- (a) the restricted activity is expressly authorised in terms of the invasive species management programme; or
  - (b) the restricted activity has as its objective the eradication of the specimen of the species involved.

### **Invasive species controlled by area**

28. (1) No person may, without a demarcation permit, undertake any of the following restricted activities involving a specimen of species listed in as a species controlled by area:
- (a) importing a specimen into the Republic, including introducing it from the sea;
  - (b) possessing or exercising physical control over a specimen;
  - (c) growing a specimen, or allowing it to grow or multiply;
  - (d) breeding or in any other way propagating a specimen or causing it to multiply;
  - (e) conveying, moving or otherwise translocating a specimen;
  - (f) selling or otherwise trading in, giving, donating or disposing of a specimen;
  - (g) buying, receiving, accepting as a gift, or in any way acquiring a specimen;
  - (h) allowing a specimen to grow, breed or multiply; or
  - (i) conducting any other activity prescribed in regulation 21 or 23 involving a specimen.
- (2) A permit issued in terms of subregulation (1):
- (b) must stipulate the area in which the restricted activity may be carried out; and
  - (c) may relate to a single specimen or to multiple specimens of the same species .
- (3) Notwithstanding the provisions of subregulation (1), a person may, without a permit, carry out a restricted activity referred to in subregulation (1) in the following areas:

- (a) that part of the Republic indicated in the map [annexure] as the distribution range of the species; or
  - (b) an area demarcated for that purpose in terms of regulation 29.
- (4) Notwithstanding the provisions of subregulations (1) and (3) no person may undertake a restricted activity involving an invasive plant species managed by area within the riparian zone.

### **Demarcation of areas**

29. (1) Any person or organ of state may apply to an issuing authority to demarcate an area as an area in which it is possible to undertake a restricted activity involving a species controlled by area without a permit.
- (2) An application in terms of subregulation (1) must:
    - (a) be in writing;
    - (b) record the name of the applicant;
    - (c) state the area where the restricted activity is to be carried out;
    - (d) set out the measures that will be adopted to manage restricted activities involving the species undertaken within that demarcated area by persons other than the applicant.
  - (3) An issuing authority receiving an application in terms of subregulation (1) must subject the application to risk assessment.

### **THE PROCEDURE MUST BE SPELT OUT**

- (4) A demarcation in terms of sub-regulation (1) may relate to a single specimen or to multiple specimens of the same species .

### **Invasive species controlled by activity**

30. (1) No person may, without a permit, undertake the following restricted activities involving a specimen of a species listed as a species controlled by activity:
- (a) importing a specimen into the Republic, including introducing it from the sea;
  - (b) possessing or exercising physical control over a specimen;
  - (c) growing a specimen, or allowing it to multiply;
  - (d) breeding or in any other way propagating a specimen or causing it to multiply;
  - (e) conveying, moving or otherwise translocating a specimen;
  - (f) selling or otherwise trading in, giving, donating or disposing of a specimen;
  - (g) buying, receiving, accepting as a gift, or in any way acquiring a specimen;
  - (i) conducting any other activity prescribed in regulation 21 or 23 involving a specimen; or
- (2) A permit in terms of subregulation (1) may only be issued for a purpose identified in Column 4 of the list as the purpose for which a permit relating to that species may be issued.

(3) A permit to sell or otherwise trade in a specimen of a species controlled by activity may only be issued to a body certified in terms of regulation 6.

(4) No person may, without a permit, possess, exercise physical control over or allow a specimen of a species controlled by activity to grow if a competent authority has directed otherwise.

(5) Notwithstanding the provisions of subregulation (1), a person may, without a permit, possess, exercise physical control over or allow an already established Category 3 listed invasive alien plant species to grow, unless -

- (a) Otherwise directed by the Department; or
- (b) the restricted activity takes place within a riparian zone.