

A pragmatic view of the trout debate

by WR Bainbridge¹ and Ilan Lax²

This article is written on behalf of the Federation of Southern African Flyfishers (FOSAF), in response to the recent somewhat heated debates in a range of publications on the presence of the two alien trout species in portions of the high altitude river systems of South and southern Africa. The purpose is to provide what it is hoped will be regarded as a pragmatic as well as a reasoned view on some of the issues raised, and to make practical suggestions for the way forward for the conservation management of the national freshwater fisheries. It should be appreciated that both brown and rainbow trout have been present in South African waters for well over a century. They have adapted to the ecological conditions present, occur in self-perpetuating populations, and consequently have become a permanent feature of the high altitude stretches of certain rivers, whether or not one approves of their presence. The reality is that there is no magic wand that would make them disappear.

FOSAF is an NGO whose aims are to promote the interests of fly fishing and conservation of the national fly fishing resources, comprising both indigenous as well as alien fish species. We would emphasize that FOSAF is strongly supportive of the need for conservation measures for the protection of aquatic environments and their dependent biodiversity resources, especially indigenous fish and other native aquatic faunal and plant species. However, it also recognises that, as with most conservation issues, an holistic approach should be taken in the conservation of the freshwater fisheries, and that it is not possible to conserve our indigenous aquatic biota, without a good understanding of the environmental and other threats they face. This includes the presence of the introduced alien species such as trout.

There are numerous instances world-wide, as well as in this country, where there is documented evidence that introductions of alien invasive fish species have had significant negative impacts on the indigenous species of the aquatic ecosystems to which they have been introduced. We also understand that trout have the potential to invade new high altitude waters, and to bring about significant negative impacts on a range of aquatic organisms, although at least in the eastern part of the country, apparently the extent of waters that have historically contained trout have declined in the recent past, due to habitat deterioration and other factors. However, as discussed below, with few exceptions, once introduced, their removal is considered to be neither feasible nor possible. We would also point out that in the development of sound conservation management policies for the national aquatic systems, many social, economic and environmental factors must also be taken into account, not only the interactions between the indigenous and alien biota, which unfortunately seems to have been the focus of the debate thus far.

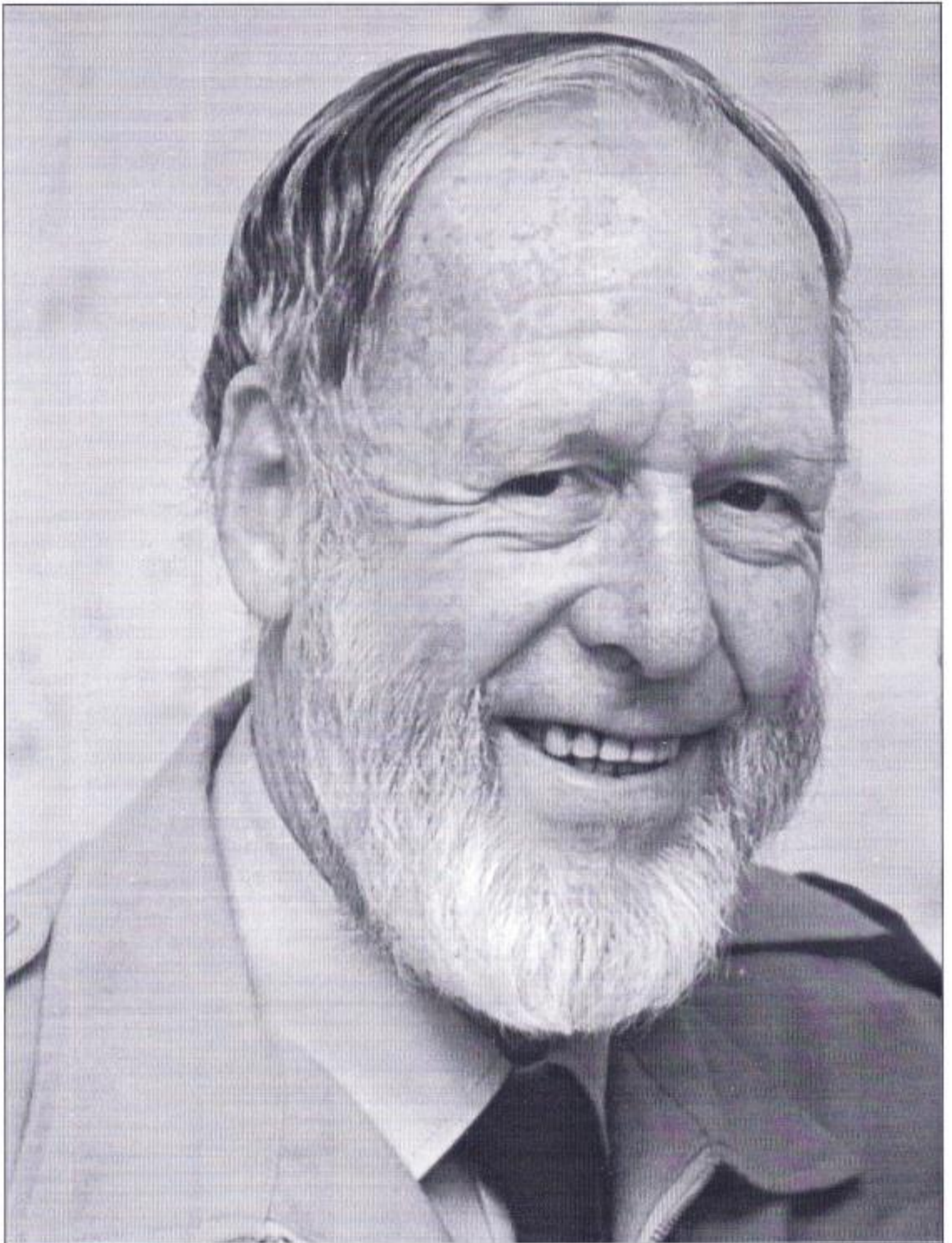
In terrestrial systems it is often possible to control (and in some instances eradicate) introduced alien invasive species - hence, for example, the national Working for Water Project, to control alien invasive plants. It is quite different in open freshwater ecosystems, such as rivers, in which there are few natural barriers to fish movements. In such situations, it is generally accepted that much as it might be desirable, it is in fact not feasible to

eradicate introduced alien aquatic organisms. Apparently, some successful eradication exercises have been undertaken in limited, closed stretches of water, such as in small high altitude lakes, or in streams between natural barriers, through the use of such radical means as sterilisation by use of fish poisons, but these are neither suitable nor appropriate for use in open systems such as an entire river. We are not aware of the existence of effective or acceptable eradication measures which may safely be used in extensive open systems (such as rivers with no barriers to fish movement). None of the present methods selectively target alien or introduced species, and all have the potential to impact negatively on indigenous species.

As the Minister of Environmental Affairs and Tourism recently warned, our rivers, streams and wetlands, as well as our catchment areas, are severely threatened, from a range of poor and non-sustainable land uses and other human activities which transform our natural environments. The factors that impinge on our aquatic systems clearly also impact on the range of dependent aquatic organisms living in them. The Department of Water Affairs and Forestry has compiled a list of the activities and factors which threaten the ecological state of rivers. Of the nine listed principal factors that have the greatest unfavourable effect on the river system, the presence of alien fauna (including fish) is rated as the second lowest (at 8%). The greatest effects (the remaining 92%) are caused by development and other human activities such as poor agriculture, urban sprawl, industrial and other pollution, and the construction of dams and weirs. Thus, while the presence of alien fish such as trout, do indeed pose a threat to the indigenous aquatic biodiversity, they are neither the only nor the principal threat, despite assertions to the contrary.

FOSAF believes that it is necessary to view the presence of the two alien trout species in the broader context, and to take into account the fact that the greatest extent of the freshwater aquatic ecosystems of the country occur on communal and private lands, not in protected areas. These are the so-called developed landscapes, which are largely employed for some form of agricultural production involving crops and livestock which, virtually without exception, are also alien species. In developed landscapes land-use is primarily driven by economic considerations. FOSAF believes that riparian landowners in these landscapes have the right to manage the fisheries on their land to their advantage, but that this must be subject to the principles of responsible stewardship and legal restrictions controlling use, described as the "duty of care" Sects 69 and 73 of the National Environmental Management : Biodiversity Act, No.10 of 2004 ("the Act"). Thus while nature conservation considerations may be taken into account, they will not be the primary management focus.

A positive aspect of the presence of trout, which should not be ignored, is that a resource of major economic value has been created by their introduction. While no comprehensive studies have been published on the overall economic value of trout, their contribution to the economy and to job creation is currently significant (of multi-million Rand proportions), and growing fast. Trout, in southern Africa are used at both subsistence as well as at commercial levels for food production, especially in the case of the latter, for the luxury food market. Trout also provide a widely appreciated sport angling resource. Sport angling, of which fly fishing is an important component, is one of the fastest growing sport and tourist attractions in the country, and as is well known, the tourism industry is of major importance for job creation.



Bill Bainbridge co-author, with Ilan Lax, of this article.

Trout fishing was once considered the exclusive preserve of a small affluent elite. However, in recent years, this traditional pursuit has now transformed significantly and is now more widely inclusive of the demographics of South Africa. Increasingly, in areas where trout are found, rural communities are using the trout as a source of food, for their own recreational angling, as well as a tourism resource which has the potential for significant economic

growth and job creation. FOSAF has sponsored research in this respect.

The trout debate has relevance to a series of very important national initiatives currently underway. According to the Act, the Minister is required to develop a national policy framework for the conservation of biodiversity resources. The freshwater component of this is a joint initiative of three national bodies to develop a policy and planning tool for the conservation of river biodiversity in South Africa. The South African Institute for Aquatic Biodiversity is contributing to this by formulating a long term strategy for freshwater biophysical diversity conservation in the southern African region.

FOSAF, in partnership with other angling organizations, is taking an active role in contributing to these initiatives and has formulated a series of draft strategies and approaches to promote conservation of the aquatic biodiversity resources, based on the cumulative knowledge and experience of its members. Amongst the most significant of these that relate to waters in which trout (and indeed other alien fish species) occur, are summarised in the following:

- A cautious risk-averse approach should be exercised in the management of trout fisheries. In particular, FOSAF supports the viewpoint that no further introductions of trout into rivers where they do not presently occur or where they previously occurred, should be permitted without careful investigation and official sanction, through a strictly enforced permit system. Similar precautions are necessary in respect of the stocking of dams.
- Trout, however, occupy extensive portions of the high altitude stretches of rivers on the sub-continent, in self-perpetuating populations. Since there is apparently no feasible means of removing them, they should be managed to best advantage, subject to accepted best practice management measures, and “duty of care”, as defined by the Act. FOSAF supports the sentiments in following quote from de Moor and Bruton (1988):

“Trout ... are well established in the upper reaches of many SA river systems. An important recreational angling industry has developed around the two trout species, which also provide healthy recreation for a large number of people. Trout farming is also well established in SA and has the highest yield of any one species in the aquaculture industry. Clearly trout have a permanent place in the ecology and economy of SA. We must not, however, lose sight of the fact that they are alien fishes, and that it is our unique and primary responsibility to safeguard the future of our own indigenous fishes.”

- FOSAF proposes that priority be given to the formulation of a zoning system together with a policy framework and management guidelines for the control, conservation and management of aquatic biodiversity resources, in which provision is made for the maintenance of both indigenous as well as alien fish species such as trout, for realisation of a range of potential and actual benefits. The system should make provision for the allocation of a range of sustainable uses such as conservation of sensitive aquatic biota, and sport fisheries based on both indigenous as well as alien fish species, including trout.
- FOSAF encourages the angling community to provide support for these aims.

- FOSAF has defined a set of principles to form the basis for a policy on the conservation

of freshwater fishery resources (published on our web site). It believes that the aquatic environment should be managed on four key principles: sustainable development; sustainable fisheries resources management; Integrated Environmental Management (vide the Environmental Conservation Act No. 107 of 1998) and Integrated Catchment Management (vide the National Water Act No. 36 of 1998).

- Education and awareness programmes are necessary to promote these concepts, and FOSAF will do all it can in this respect, and will support legal protection from unauthorised, non-sustainable, harmful and wasteful use of aquatic biodiversity resources, as in the past.
- Finally, FOSAF supports the rational and pragmatic implementation of the Act and other relevant national and provincial legislation and measures intended to prevent the unauthorized translocation or restocking of aquatic biota.

In summary, it may be seen that while FOSAF is strongly supportive of efforts to conserve indigenous aquatic biodiversity and to maintain the national aquatic ecosystems in good health, it also believes that there is a niche for alien species such as trout - which are present in any event. FOSAF believes alien fish resources should be strictly managed within the framework of responsible stewardship and "duty of care", according to the Act. It supports the need to prevent the further spread of alien aquatic species, or of indigenous species outside their natural range, and supports any initiatives to this end. It is itself actively involved in research and other conservation initiatives. Finally, FOSAF believes that its proposed policies in this regard are environmentally sound, defensible, and economically beneficial.

It will be evident that a number of the issues relating to trout expressed above are largely also applicable to a range of other aquatic biota. Many of the same principles and policy considerations apply regardless of which species one is dealing with. The same applies with regard to the management and control options to be exercised. Consequently the arguments that have been put forward might be applicable to the conservation management of all freshwater biodiversity. This will be important when addressing the processes and issues to be dealt with in relation to the Act.

As indicated above there are a range of consultative processes that are currently on the go and that will continue to take place at both national and provincial levels. FOSAF believes that it is in the interests of all anglers to come together and adopt an approach that will see us working together to achieve environmentally appropriate outcomes in line with the views outlined above.

Many anglers may indicate that they do not wish to become involved in taking these matters forward and that they merely want to go fishing. However, we believe that anglers do not have time on their side, and unless action is taken soon, events may well have overtaken us and that unless sufficient attention is given to ensuring the views of all anglers are articulated to decision makers, the decisions that are taken may not be in our favour.

In order to achieve this, angling organisations will need to work together to understand the

issues and to make a contribution to developing a way forward. For this reason, FOSAF has formulated the approach described above as an initial contribution to policy formulation. It invites other angling bodies and individuals to consider these, and to join us in taking these important issues forward.

FOSAF was involved with a number of other NGO's in similar campaigns around the suite of environmental legislation including the Act promulgated late last year. However, it needs to be emphasised that involvement in these kinds of public consultative processes can be very time-consuming, and extremely frustrating, for the following reasons.

- Considerable time and effort is usually required.
- Official agencies do not communicate adequately or appear to give encouragement to NGOs to participate.
- The agencies are often working to truncated time schedules, leaving little time for response.
- It often appears that the comment that is submitted may be ignored.
- Costs are likely to be incurred, and no provision is made by government to assist NGOs.

It is our experience that unity and solidarity are decisive factors in ensuring that our voices are heard and that our representations are taken seriously when engaging with government departments, official agencies and politicians.

It is in this spirit that FOSAF invites all angling organisations and individuals to join with us in taking these matters forward. It is suggested that an integrated holistic approach is needed for the conservation management of freshwater fisheries. We suggest that amongst the urgent needs are the following:

- To ensure that angler's interests, needs and viewpoints are taken into account (not ignored) in the formulation of the component of the national policy framework related to freshwater biophysical diversity conservation;
- A means of obtaining an integrated holistic approach to management is of crucial importance; and
- Anglers need to determine how to make this happen.

Members of the public and other angling bodies are invited to visit our website, on which copies of our policy documents and other information related to our organisation and activities are available (www.fosaf.co.za).

FOSAF would welcome your input and comments.

Footnotes

¹ *Dr W R Bainbridge is a professional nature conservationist with long involvement in environmental conservation in southern and South Africa, especially in South Africa and Lesotho. Prior to his retirement, he was Head of Planning of the Natal Parks Board. He is also an enthusiastic fly fisherman, and is the current scientific advisor and co-ordinator of the environmental committee of FOSAF.*

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