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29<sup>th</sup> August, 2003

The Honourable Ian MacDonald,  
Minister for Agriculture and Fisheries  
Level 30 Governor Macquarie Tower  
1 Farrer Place  
Sydney, NSW, 2000

Dear Minister,

**Re: Key Threatening Process: Hook and Line Fishing in Areas Important for the Survival of Threatened Fish Species**

The Fisheries Scientific Committee stated they made their recommendation that hook and line fishing threatens the survival of the grey nurse shark and black cod following an extensive review of the available literature.

It is difficult to see how a scientific review can come to this conclusion for the following reasons:

- The paper by Muoneke and Childress referenced by the Fisheries Scientific Committee is a 1994 review of 132 studies of what is called 'hooking mortality' which evaluated the mortality of fish that were hooked, landed, handled and released. All but one were American studies, most pertained to freshwater fish such as salmonids, centrarchids and percids, and of the saltwater species the studies concentrated on were members of the striped bass and drum families. There were no studies mentioned in the review of the grey nurse shark nor the black cod, nor any related species.
- Studies on different species indicated that their survival rates can vary between 0% to as high as 80%. All papers conclude that survival rates vary for particular situations, and that in these particular situations variations in survival rate is species dependent.

- Different studies on the same species such as the Chinook salmon had greatly differing results. This may indicate different procedures used in the various studies.
- Combining all results suggest that 41% of all studies showed a mortality rate of less than 5%, 52% with a mortality less than 10%, 70% at less than 20%.
- Reasons for variations in mortality rates include the length of the fight, the depth at which the fish was caught and the location of the hook wound.
- The longer the fight the greater the chance of stress related mortality after release, but this applies to sport fishing and is not a factor with either the grey nurse shark nor black cod. The implication is that different styles of fishing require differing tackle and class of tackle.
- The greater the depth of the capture is related to an inflated swim bladder, but this is not an issue with the grey nurse as they do not possess a swim bladder, relying instead on a heterocercal tail for upward thrust. Neither is depth a significant factor for the black cod as their habitat is usually shallow reef areas.
- Deep set hooks have a higher mortality than shallow hook sets, and this may be due to damage to vital organs or disease. Disease is only suspected and no causal relationship has been proven, especially with hooks of different compositions and sizes. Damage to vital organs varies according to hook size and type, and how the hook and line are handled. Recent studies have shown that captive fish have a propensity to shed deep set hooks by coughing them up. Lastly, the actual incidence of deep set hooks is much lower than shallow set hooks.
- The concept that shallow set hooks having a detrimental effect on feeding behaviour as suggested by the Fisheries Scientific Committee is simply not supported by the scientific papers. This is especially true when both threatened species mentioned have a diet that includes other fish and rays that possess various spines and barbs.
- Citing fishing magazines from the 1960's and 1970's as anecdotal evidence for overfishing is not a scientific methodology for the listing of the black cod as a Threatened Species. It merely indicates attitudes of 30-40 years ago, and these have changed a lot over time. It is not evidence either for current low numbers nor current fishing practices attributing to any low numbers of the black cod.

The data regarding numbers of grey nurse sharks and sharks carrying hooks is biased, being largely reliant on eco-tourism divers that have an agenda, being sole access to these grey nurse shark aggregation sites. The numbers stated of grey nurse shark of 300-500 is in disagreement with estimates of about 3000 by members of the AUF. The size of the hooks shown in the photos of sharks carrying hooks are of a size not used by recreational anglers, but by commercial set-liners.

The notion of requiring a process to have a detrimental effect on 2 endangered or threatened species is not a valid scientific approach if the desired goal is to identify significant processes that are detrimental to any one species. Such a method would place undue emphasis on a process that may have a significantly less impact on either or both nominated species than a process that has a far greater impact on either one of the threatened species. A case in point is the lack of juveniles noted in the grey nurse shark population. A declining population only occurs when mortality exceeds recruitment, and in the case of the grey nurse shark the priority should be identifying the reason(s) for the lack of recruits in the population and taking appropriate measures. The approach taken by the Fisheries Scientific Committee is seen as developing a methodology that is aimed at acquiring a desired goal or preconceived outcome. It is not seen as being in the best interest of the protection of either the grey nurse shark nor the black cod. Or any of the other threatened or endangered species.

Yours Sincerely

Phillip Ingram  
President,  
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cc Executive Office  
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