



## FOREWORD

Welcome to the newsletter of our specialist group. There has been a hiatus in the production of these newsletters, but we are back in full swing again, and are eagerly awaiting your contributions! In this issue, Yvonne brings us all up to speed with the re-formed membership, and urges us to contribute to the important species assessment process. There is news from the Society for the Conservation of Reef Fish Aggregations, and a request for contributions to the new and exciting Grouper Fish Atlas. We also hear about progress with the humphead wrasse since it's CITES listing, and we are asked to consider a possible review of the status of the Nassau grouper. We are also reminded of the detective work that taxonomists often have to undertake to clarify the classification of fish, there is news about recent changes to fisheries legislation which will benefit grouper populations in South Africa, and an item on grouper and wrasse diversity in India. We could do with a catchier name for the newsletter, so if you have any ideas, let me know.

Sean Fennessy (seanf@ori.org.za)

Editor

## MESSAGE FROM THE CHAIR

It has been a long time since our last newsletter and I must apologize for this; the fault lies squarely on my shoulders, not those of our valiant editor, whose gentle reminders finally bore fruit.

2005 was a year of change for IUCN specialist groups. We came to the end of one of IUCN's 'trienniums', which required the renewal of Specialist Group membership. I decided to wait until the reshuffling had been completed for the GWSG before Newsletter 9 was issued. Specialist Groups are reformed every three to four years, or so, providing opportunities to examine where progress has been made, and where not, and giving members a chance to gracefully retire, if needs be. Importantly, it is a good chance to reaffirm commitments, and, maybe, revise direction or rethink strategy. With our much-enlarged and invigorated Specialist Group membership (see full list of members and contact details on page 7 of this Newsletter), we have much increased our capacity, geographic range (35 countries), expertise, age range, and hopefully, enthusiasm for grouper and wrasse-related work. And we will need these attributes because it has become quite clear that there are some species of groupers and wrasses that really are quite vulnerable to fishing and need considerably more attention focused on their management and conservation. Some species lie at the more extreme end of marine fish vulnerabilities.

Based on GWSG experience gained to date (i.e. since we formed in 1998), progress with humphead wrasse, *Cheilinus undulatus* (see below), and our shiny new membership, I propose that we focus on several, clearly achievable, goals in the next triennium. If members have other areas that need attention, please send along proposals for discussion.

As a means of accelerating action, I suggest three areas. The first is to **increase the rate of IUCN species assessments** (for how we can do this and why this is so important, please see article below). These assessments can be (and indeed have been) very powerful for building a stronger case for protection, and identifying major threats and further work needed. They can also provide a strong underpinning for funding applications. As one output of the information gathered for assessments, I would like this SG to produce a publication on the Global Status of Groupers that also includes a plan for conservation and management action!

The second area of work I propose is to continue **building on the recent CITES Appendix II listing of the humphead wrasse**, to make this listing meaningful. This project is ongoing and forms a core activity of the SG. We have already made progress but there is still much to do. Again, if there are members who specifically would like to join me in working with this species, please let me know.

Finally, and I am very grateful to Phil Heemstra for this, we plan to pull together an **atlas of grouper photos**, including all life history phases, to significantly aid identification of this challenging group. Experience has shown us that there are many identification problems that remain with groupers, so this atlas would be a very valuable product. Phil is leading this effort and will be requesting photos (see below). We will try to rustle up some funding.

In closing, longer standing members may recall that a meeting had been organized for Oman in 2006. This was to be a joint meeting with the Shark Specialist Group (SSG) and was been forged by Sarah Fowler, SSG co-Chair. For logistical reasons this has been postponed, but not cancelled. I will advise you when there is more news. Finally, I wish to thank the GWSG members from the last triennium for their work and support in our early years, and to welcome our many new members. I very much look forward to working with you all towards some real successes for groupers and wrasses over the next few years.

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# NEWS FROM SCRFA

(SOCIETY FOR THE CONSERVATION OF REEF FISH AGGREGATIONS)

One reason for focusing work on spawning aggregations, of course, is that many of our groupers and wrasses have this reproductive habit. SCRFA's work has now been funded for three years and a lot of data and information have been collected, much increasing our understanding of spawning species from a more global (rather than single species or region) perspective. It is overwhelmingly clear that, for some species, especially some of the larger groupers, uncontrolled and commercial exploitation of transient spawning aggregations is almost always detrimental. Large, sparsely scattered, aggregations are events to be protected rather than targeted and this is the message we need to communicate much more effectively and more widely. I think for terrestrial animals, such as certain birds, snakes and turtles, protecting large breeding concentrations would nowadays be considered extremely reasonable, if not obvious.....in the sea, we have not yet reached a similar mindset.

Our public access database (see [www.scrfa.org](http://www.scrfa.org)) now has over 550 aggregation records and Andy Cornish (GWSG member) has done a great job in summarizing this information and identifying many of the trends indicated. For details of aggregation status, species, chronology of aggregation discovery, management type, etc. see his report at <http://www.scrfa.org/server/studying/doc/Database%20Report%2005.pdf>. The message is clear that we have yet a long way to go before sufficient conservation and management attention are paid to this particularly vulnerable life history phase, so SCRFA's somewhat specialized focus is still necessary, for a while at least.

The best summary of what we have been up to over the last 12 months or so, can be found in the two latest SCRFA newsletters, Nos. 7 and 8, again on our website, along with details on educational materials, access to relevant papers, etc. One aspect of the work that I have particularly enjoyed was the production of a short video on aggregations in Fiji. This has been useful educational material and we have found that because spawning aggregations are so easy to understand or explain, they are excellent for helping to develop a more general understanding of how reef fish populations work, and how some species can be especially vulnerable to fishing. The video is available on request...as is a generic Powerpoint presentation on aggregations.



Presenting the DVD we made to one of the villages where it was shot. In this village in Fiji, the local aggregation of one grouper species, *Epinephelus polyphekadion*, had apparently disappeared - the village is so concerned that it now prohibits anybody fishing at the aggregation site during its spawning season. (Photo: Y. Sadovy)



*Epinephelus cyanopodus*. Also an aggregating species according to interviews but fast disappearing. Has independently been reported to aggregate to spawn in New Caledonia by Claude Chauvet (see SCRFA newsletter No. 8). (Photo: Y. Sadovy)

In sum, our work has focused on documenting aggregations and getting the word out that they need attention, particularly in the western Pacific. This is one of few regions where many aggregations are still healthy and where some coastal communities depend very heavily on local fish stocks. Hence, preserving these sites has very obvious social and economic implications, and is quickly understandable. We continue to work in Fiji, and to collaborate with workers or organizations globally seeking to protect aggregating species. We also have managed to get aggregations into two international forums, the IUCN World Conservation Congress and ITMEMS2. Our recent link with a very nice bilingual weblog takes us to an ever wider audience still (<http://www.amp-pr.org/spag/>).

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# CHANGES TO REEF FISHERIES LEGISLATION BENEFIT GROUPERS IN SOUTH AFRICA

Groupers (or rockcods as we call them in South Africa) form a reasonably important part of catches on the east coast of our country, whereas wrasses rarely feature, largely because most of our reefs are located in warm-temperate waters. Some local groupers have been shown to be over-exploited, so it was with some relief that a long-overdue set of regulations pertaining to reef fishes was promulgated in April 2005. The previous set of regulations were arranged by exploitation category (prohibited, restricted, exploitable, bait), based on known or perceived vulnerability to harvesting. The new regulations are considerably different, being based on harvesting sector (commercial, recreational (including subsistence), aquarium fishes, etc). Within each sector there are prohibited and permitted species. Prohibited species, as the name implies, means none may be harvested. Groupers and wrasses included here are brindle bass (*Epinephelus lanceolatus*), potato bass (*E. tukula*) and Natal wrasse (*Anchichoerops natalensis*). All other groupers and wrasses fall into the permitted list, although, as far as the hook and line sectors are concerned, the species of main relevance are *E. andersoni*, *E. marginatus* and *E. albomarginatus* (see table 1).

Coupled with these new restrictions has been a reduction in numbers of commercial fishing permits by about 50%, based on an application process for long-term (8 years) fishing rights, in which successful applicants had to meet a range of criteria such as adequate submission of catch returns, a minimum number of annual outings, a minimum annual catch, and reliance on fishing for at least 75% of annual income.

Groupers and wrasses also receive protection in the large MPA in the northern region of the east coast, and a new MPA in the central region was declared in June 2004. This means that some 187 km of the east coast of South Africa are protected from harvesting of these and other reef species. Additionally, a national sustainable seafood initiative [www.wwf.org.za/sassi/](http://www.wwf.org.za/sassi/) has commenced, in which seafood outlets are informed about species which are potentially vulnerable to over-fishing, and alternative species are identified. These new initiatives and regulations will lead to substantial reductions in fishing effort, and should see recovery of species such as *E. marginatus* in the region.



*Epinephelus andersoni*, the most commonly caught grouper on the East coast of South Africa. Photo: (Denis King)

**Table 1: Current size (TL cm) and daily bag limit regulations applying to specified groupers in South Africa. For recreationals, bag limits are effectively more severe, as they are part of a maximum daily bag limit of 10 fish per person per day of all fish species combined. Also, a maximum of five non-specified groupers may be caught in addition to these three species.**

	<i>E. andersoni</i>		<i>E. marginatus</i>		<i>E. albomarginatus</i>	
	Commercial	Recreational	Commercial	Recreational	Commercial	Recreational
Bag limits	5	5	1	1	-	5
Size limits	50	50	60	60	40	40

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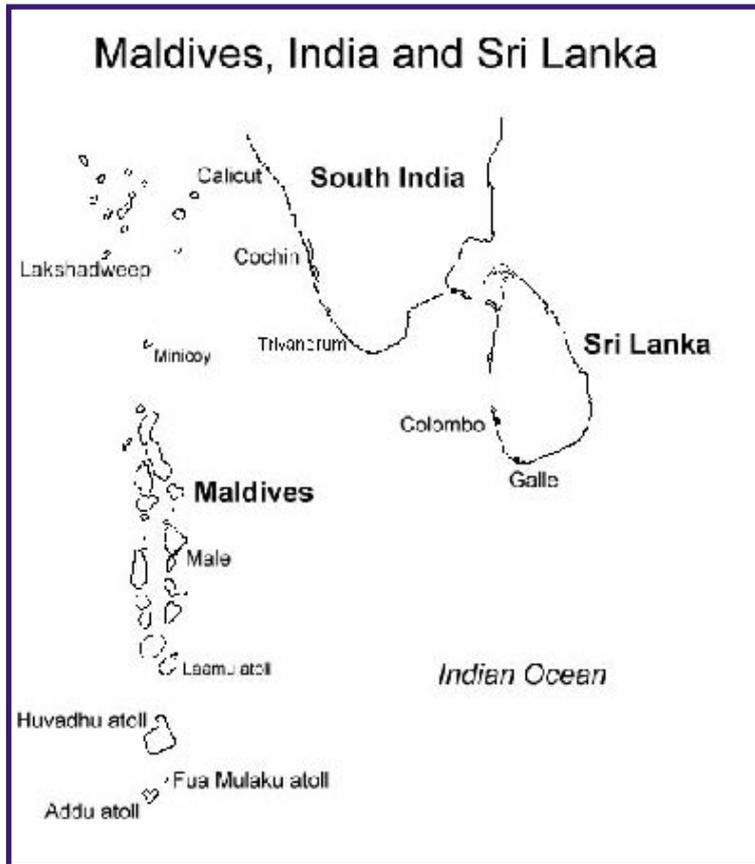
## HUMPHEAD WRASSE CONFISCATED IN BUNAKEN REGION

North Sulawesi Water Police recently confiscated 207 sub-legally sized humphead wrasse (5-30) cm from a 'keramba' or floating net near Nain Island, Bunaken National Park. The fish were concealed beneath another net containing live grouper, also for export. The fisher said the fish had been kept for 2 months, waiting to be sold outside Indonesia. The Bunaken area in North Sulawesi Province, Indonesia, is an important area for spawning of humphead wrasse, and is also one of the areas of highest marine biodiversity in the Indo-Pacific. The fish were released back into area where they were caught. Source: WWF Press release 17/01/06.



Sub-legal sized humphead wrasse being released. (Photo: Angelique Batuna)

# GROUPERS AND WRASSES OF MINICOY ISLAND, LAKSHADWEEP, INDIA



Location of Minicoy Island in the Indian Ocean.

Minicoy Island, locally called Maliku, is an isolated atoll at the southern end of the Lakshadweep Islands located off the west coast of India (73°03'E 8°18'N). A team of scientists from the Center for Applied Science, Millennium Relief & Development Services and the Institute for Environmental Research and Social Education traveled to Minicoy December 4-14, 2005. The purpose of the trip was primarily to train young scientists in underwater research methodologies. However, one observer (RS) was able to make visual observations on fish biodiversity during 10 dives. Three hours four minutes were spent on patch reefs (7 m depth) in the lagoon and 3 hours 9 minutes on the reef flat and slope outside of the atoll (5-34 m).



A view of part of the lagoon and an uninhabited island called Villingili. (Photo: Robert Sluka)

There are four main coral reef areas in India: Gulf of Kutch, Andaman and Nicobar Islands, Gulf of Mannar and Lakshadweep. In addition, coral reefs can be found surrounding offshore islands of central west India. Sluka and Lazarus (2004) reported on the Serranid and Labrid biodiversity of these west coast reefs, including the rocky reefs offshore of southwest India. The total number of Serranid species is similar between India and Maldives (Table 1). Fishes of the family Labridae appear to be more diverse in Maldives, but this is most likely a sampling artifact as many wrasse species are not of commercial value and thus have been undersampled in India. Underwater research is in the beginning stages in India and fish biodiversity in India will undoubtedly increase as more sampling is completed.

Fifteen Serranid and 26 Labrid species were observed during this study (Table 2 and 3). We record three potential new records for Serranidae and two for Labridae. All species observed during this study at Minicoy have also been recorded in Maldives ([www.fishbase.org](http://www.fishbase.org)). The Serranidae were more diverse in outside atoll reef habitats than in lagoonal patch reefs. There were similar numbers of species of wrasse between habitats. There is great potential for increasing our understanding of the distribution and diversity of Indian fishes. Studies are needed on the abundance and biodiversity of reef fishes in all the coral reef regions of India. The Institute for Environmental Research and Social Education would like to facilitate these studies. Please contact Dr. S. Lazarus ([lazarus\\_lasu@yahoo.com](mailto:lazarus_lasu@yahoo.com)) if you are interested in exploring the possibility of conducting reef research in India.



*Aethelaperca rogae* and *Epinephelus polyphekadion* on the reef slope outside the atoll. (Photo: Robert Sluka)

## References

- Murty, V.S. (2002). Marine ornamental fish resources of Lakshadweep. CMFRI Special Publication No 72: 135 pp.
- Sluka, R.D. and S. Lazarus (2004). Grouper and wrasse biodiversity along the west coast of India. IUCN Specialist Group of Groupers and Wrasses Newsheet 8: 6, 10.

**Table 1. Reef associated fish biodiversity based on Fishbase records (www.fishbase.org) accessed on 01/03/2006.**

Fishbase counts	Total reef fish species	Serranidae species	Labridae species
India	831	56	53
Maldives	907	63	71

**Table 2. Serranidae biodiversity among coral reef habitats at Minicoy Island, India. Record for India indicates the source used for establishing occurrence records of fish observed during this study (F= Fishbase www.fishbase.org accessed March 1, 2006; SL 2004 = Sluka and Lazarus (2004) and NR = potential new record for India).**

Species	Record for India	Lagoonal patch reef habitat	Outside atoll reef flat and slope habitat
<i>Aethaloperca rogae</i>	F	X	X
<i>Cephalopholis argus</i>	F	X	X
<i>C. leopardus</i>	F		X
<i>C. miniata</i>	F	X	X
<i>C. urodeta</i>	F		X
<i>Epinephelus fasciatus</i>	F		X
<i>E. fuscoguttatus</i>	F		X
<i>E. polyphkadion</i>	F		X
<i>E. spilotoceps</i>	F		X
<i>Gracila albomarginata</i>	NR		X
<i>Plectropomus areolatus</i>	F	X	X
<i>P. laevis</i>	NR		X
<i>Pseudanthias evansi</i>	NR		X
<i>P. squamipinnis</i>	F		X
<i>Variola louti</i>	F		X

**Table 3. Labridae biodiversity among coral reef habitats at Minicoy Island, India. Record for India indicates the source used for establishing occurrence records of fish observed during this study (F= Fishbase www.fishbase.org accessed March 1, 2006; SL 2004 = Sluka and Lazarus (2004) and NR = potential new record for India).**

Species	Record for India	Lagoonal patch reef habitat	Outside atoll reef flat and slope habitat
<i>Bodianus axiliaris</i>	SL 2004		X
<i>B. diana</i>	SL 2004		X
<i>Cheilinus chlorourus</i>	F	X	
<i>C. fasciatus</i>	F	X	
<i>C. undulatus</i>	F	X	X
<i>Cirrhilabrus exquisitus</i>	F	X	
<i>Coris cuvieri</i>	NR	X	
<i>Epibulus insidiator</i>	F	X	X
<i>Gomphosus caeruleus</i>	F	X	X
<i>Halichoeres cosmetus</i>	NR		X
<i>H. hortulanus</i>	F	X	X
<i>H. marginatus</i>	F	X	X
<i>H. nebulosus</i>	F	X	
<i>H. scapularis</i>	F		X
<i>Hemigymnus melapterus</i>	F		X
<i>Labroides bicolor</i>	Murty 2002	X	
<i>L. dimidiatus</i>	F	X	X
<i>Oxycheilinus bimaculatus</i>	F	X	
<i>O. digramma</i>	F	X	
<i>Pseudocheilinus hexataenia</i>	F		X
<i>Stethojulis albovitatta</i>	F	X	
<i>Thalassoma amblycephalum</i>	F		X
<i>T. hardwicke</i>	F	X	X
<i>T. janseni</i>	F		X
<i>T. lunare</i>	F	X	
<i>T. purpureum</i>	F	X	

# HUMPHEAD WRASSE, *CHEILINUS UNDULATUS*, AFTER THE CITES APPENDIX II LISTING

The humphead (Napoleon) wrasse, *Cheilinus undulatus*, was listed on Appendix II of CITES (Convention on International Trade in Endangered Species of Wild Flora and Fauna - for more information see: <http://www.cites.org/>) in October of 2004. It was listed because it is considered to be actually or potentially threatened by current exploitation levels or disturbances if these persist.

The following is a brief summary of follow-up initiatives to the 2004 listing. Further information and access to relevant documents and reports can be obtained through our IUCN humphead wrasse site ([www.humpheadwrasse.info](http://www.humpheadwrasse.info)), which has recently been updated, and especially through our new CITES page. If you need more specific information, or cannot find what you need, please write to me ([yjsadovy@hku.hk](mailto:yjsadovy@hku.hk)).



Young humphead wrasse for sale at a restaurant in southern China. (Photo: Liu Min)

The humphead wrasse was originally proposed for Appendix II at CoP (Conference of the Parties, of CITES) 12 where it fell just short of the necessary two thirds of the votes of the official delegates. It was adopted by consensus two years later at CoP13. The FAO (United Nations Food and Agriculture Organization) ad hoc Advisory Panel on commercially exploited aquatic species being proposed for Appendices I and II at CoP13, assessed the proposal prior to CoP13 and agreed that it was consistent with Appendix listing criteria. The original proposal and subsequent FAO-led assessment are available on the humphead wrasse website.

Following the Appendix II listing in October 2004, several initiatives were developed to raise awareness about the listing and also to collect additional information on trade and natural densities relevant to the development of Non-Detriment Findings (i.e. a sustainable management plan which is required for export) for the species in Indonesia, the major exporting country for this species. Ultimately, the hope is to develop an acceptable and meaningful management plan and to have it adopted regionally in SE Asia where most of the live trade in this species is conducted. The species is predominantly threatened by the international live reef food fish trade, which was the basis of the Appendix II listing (CITES listings apply to international trade).

- 2005/2006 - a project was initiated by our IUCN-GWSG, working together with the government of Indonesia CITES Scientific and Management Authorities and Fisheries divisions. The project was funded by the CITES Secretariat, with additional funds recently procured from IUCN and OESI (Coral Reef Conservation Program, NOAA, USA). The project involves trade and underwater surveys in Indonesia to assist authorities in developing non-detriment findings for the species as a requirement of the listing for exported animals. GWSG member Pat Colin is spearheading the UVC surveys. TRAFFIC-Southeast Asia (T-SEA) is assisting with the field surveys.



Young humphead wrasse in the floating holding cages. The fish are small (< 1kg) and are being exported illegally because they are of sublegal size. (Photo: Y. Sadovy)

- January 13, 2006 - in Hong Kong, the major importer of the humphead wrasse, a local meeting was jointly held between the Agriculture, Conservation and Fisheries Department of the Hong Kong government and the IUCN-GWSG. The purpose of the workshop was to raise awareness in Hong Kong regarding the Appendix II listing, and on associated draft local legislation on possession of the humphead wrasse in Hong Kong. Hong Kong is the major importer of this species, globally, and an important trans-shipment point to mainland China.
- February 15 and 16, 2006 - a national level workshop in Jakarta, was hosted by LIPI (Indonesian Institute of Sciences) and co-organized with TRAFFIC-SEAsia assisted by the IUCN-GWSG. The workshop was on trade dynamics and population status of Napoleon Wrasse, *Cheilinus undulatus*, in Indonesia and its purpose was to enable a preliminary presentation/analysis of trade and UVC data being collected. A representative from FAO was present to advise on stock assessment that might be necessary for setting an export quota, if applicable. The workshop had key government

officials from management and scientific CITES authorities as well as from capture fisheries divisions. It was extremely productive and forms a promising foundation on which to build non-detriment findings for this species in Indonesia.

- April 19-21 (tentative dates) - an international meeting to be held in Hong Kong and co-organized by WWF-HK, IUCN-GWSG and TRAFFIC to discuss management options for the humphead wrasse for the SE Asian region.

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Local fishers delivering small humphead wrasse to a holding facility (floating cages) in Bali - ready for export shipment. (Photo: Y. Sadovy)

## MEMBERSHIP OF THE IUCN SPECIALIST GROUP FOR GROUPERS AND WRASSES

**This is the full list of members of our Specialist Group – welcome to the new people and, to those who have agreed to stay on, thank you again. Let's have a productive three years!**

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# SPECIES ASSESSMENTS

The Species Assessments that SGs do for the IUCN Red List are the bread and butter of our work; the foundation on which we can develop conservation programmes and spread the word regarding conservation status, patterns and trends in 'our' fishes. One of the most important aspects of the IUCN assessment system (for there are many assessment systems now globally) is that it has very high recognition and is widely respected, and trusted. This is great for our work but also brings with it the responsibility to ensure that assessments are as complete and up-to-date as possible.

In the past, a few of us have struggled to complete as many assessments as possible each year, initially focusing on species that appear to need special attention. At the University here in Hong Kong, Andy Cornish and I have worked with students, especially in the summer, to pull information together, or have somehow found the time to complete important assessments. We have been very grateful to those of you who have done the same or have agreed to evaluate the assessments prior to submission to IUCN; note that acknowledgement of contributions appears on each individual assessment. The ultimate goal is, however, to assess all species and then to use the assessments to identify species and trends that can help to focus on key threats and problem areas, as well as guide conservation action and policy. We cannot, therefore, continue at the current slow pace of 10-20 species assessments per year for our SG. For more information on the Red List, see [www.redlist.org](http://www.redlist.org).

About 50 groupers and wrasses have now been assessed (not all have yet been posted on the IUCN Red List since they are running a little behind schedule), so we have a long way to go to complete the 1,000 or so reports that are needed for our combined fish families. One SG that has been particularly successful in completing assessments is that for Sharks. Workshops are organized periodically and regionally as a focus for gathering data and completing substantial numbers of assessments during intensive meetings. I am going to seek funding to organize something similar to the Shark SG model to see if that can help to push us forward. I would like to see, by the end of the next triennium, the GWSG produce a publication on the Global Status of Groupers (status and conservation). This would involve assessing a 'manageable' 160 or so species.

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## THE WORLD GROUPEL FISH ATLAS: A KEY TO GROUPEL SPECIES RECOGNITION AND CONSERVATION

Colour patterns are a boon and a bane to recognition of grouper species. Most species are immediately recognizable from their colour patterns, but many show similar colour patterns; the distinctive patterns of juvenile groupers may change substantially as the fish grows into a uniformly dark drab adult, and a few species exhibit different colour morphs. In order to successfully identify groupers from their colour patterns, so valuable for management, conservation and biological work, one needs to be aware of the pattern variations within each species. The aim of our World Grouper Fish Atlas project is to publish a catalogue of colour patterns for each grouper species, together with a diagnosis of morphological characters (body shape, fin configurations, shape and relative size of the head and various parts of the head and body; numbers of fin rays and gill-rakers), information on habitat and distribution of the species and maximum size.

We will be grateful to anglers and photographers for copies of their grouper photographs. We prefer photos sent in batches smaller than 1 mb and no more than 3 batches per week. Photos of live fish underwater or fresh fish with the fins erect and left-lateral view are preferred, but we know that groupers are often not very cooperative when it comes to posing for pictures. Photos that need cropping are fine, as we can do the cropping here. Along with the photo, we would like the name of the photographer, the name of the person who caught or supplied the fish, locality, date caught or photographed, size (total length in cm measured from front of upper jaw to rear edge of tail fin) and weight (if known or estimated), as well as depth and habitat where the fish was caught or photographed. Any further observations should be noted, such as: fin ray or gill-raker counts, behaviour, colour changes pre-or post-mortem, sex, state of gonad (immature, mature, female or male).

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# DOES THE NASSAU GROUPEE NEED A STATUS REVIEW UNDER THE ESA?

The Nassau grouper, *Epinephelus striatus*, is still listed as 'Endangered' on the IUCN Red List of Threatened Species, following a review of its status by our Specialist Group. Despite protection in United States' waters, management of its spawning aggregations in Belize and recent seasonal protection of the species in the Bahamas (see below), the Nassau grouper may not be receiving sufficient attention to allow recovery from a much-depleted condition.



Nassau grouper. (Photo: Rachel Graham)

It is currently listed as a 'Species of Concern' in the United States, a listing associated with the Endangered Species Act. A Status Review of the species has not been conducted by the US government and, from what I understand, could be initiated by a petition which would request a listing of the entire species, or a particular population, as threatened or endangered under the ESA, and would designate critical habitat for it. The petitioner must be a U.S. citizen. The petition should provide a background of the biological information on the species of interest, life history, demographics, trends, fisheries data, any genetic information (to help determine whether there are "distinct population segments" of the species), and a description of any threats (past, present, and future).

Should our Specialist Group make a petition to have this species assessed? We have the information but would need a US citizen to make the official petition. My concern is that it only occurs in any reasonable numbers, as far as I can determine, in Belize and in the Bahamas and is only receiving substantial protection in Belize at the moment. Since the Bahamas is one of the few remaining places where this species still occurs in reasonable numbers, the country is likely to be key for the future of viable populations of the species. Nonetheless, landings have declined over the last 7 years or so and, of the few spawning aggregations recently evaluated by divers, few had significant numbers of fish present. The following news, however, is promising:

In the Bahamas, a closed season was introduced in December, effective from mid December 2005 to mid February 2006. However, the future of this protective measure is unclear and a number of problems with implementing the ESA listing remain.

The good news from Casuarina McKinney of BREEF (Bahamas Reef Environment Educational Foundation) is that "this year's Nassau grouper season has gone relatively well. We have been doing a lot on the public relations and education fronts, distributing posters, flyers, postcards, speaking at Rotary clubs, on radio talk shows and in schools. The Ministry of Tourism has taken up the issue and has run a number of full page advertisements for us in the local newspapers. We've written to all restaurants with the request that they do not serve Nassau grouper during the closed season. Some have agreed and have used this period as an opportunity to educate their customers. However, some continue to serve Nassau grouper (at an increased price), and some even advertise "Fresh Nassau Grouper Special". We have had several reports of fresh Nassau grouper for sale at the docks here in New Providence."

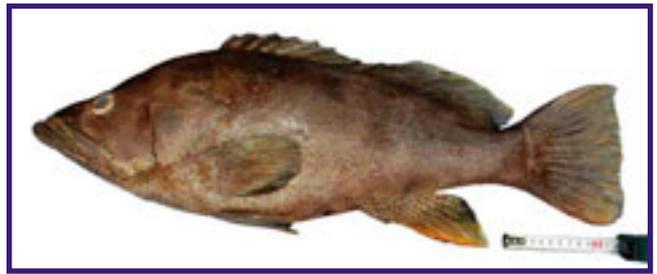
Moreover, "The regulation from the Department of Fisheries is somewhat unclear, prohibiting the purchase and sale of Nassau grouper, so in theory this should apply to restaurants selling it also. Also, while groupers are supposed to be landed whole, this is often not the case, and skinned or filleted Nassau grouper are tough to distinguish, so there is some discussion at the Department of Fisheries about whether the season should be closed for all grouper landings and sale, not just Nassau grouper."

Please let me know if you feel that we should request a Status Review of this species by the US.

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# THE TIMOR MYSTERY GROUPER: RECIPROCAL ILLUMINATION IN THE COMPUTER AGE

This little conundrum began with an e-mail from David Cook and a photograph of a 60 cm total length grouper from a fish market in Timor. Dave asked for help with the identification.



The *Epinephelus waandersii* from a Timor fish market. (Photo: David Cook)

He asked me to confirm that this fish was *Epinephelus waandersii* as illustrated by Allen, Steene, Human and Deloach in their book, Reef Fish Identification: Tropical Pacific, published in 2003. I did not recognize the fish in Dave Cook's photo but it did resemble the fish labelled *Epinephelus waandersii* in the book by Allen et al. This grouper name was not familiar to me, so I tracked it down in the FAO Species Catalogue Vol. 16. Groupers of the World (Heemstra & Randall 1993) and found it listed as a junior synonym of *Epinephelus areolatus*, the Indo-Pacific areolate grouper. To learn more of *Epinephelus waandersii*, a species described from Bali, Indonesia, by Pieter Bleeker, I consulted the book Pictorial Guide to Indonesian Reef Fishes, Part 1 by Rudie Kuitert and Takamasa Tonzuka. And I was surprised to see that they had the same photo (by Rudie Kuitert) of the large (1 m) adult that was used by Allen et al. although the photo was bigger and reversed (with the left side of the fish exposed instead of the right side) and showed that the colour pattern was very similar to David Cook's Timor fish. Their caption with the photo said: "*Epinephelus waandersii* (Bleeker 1858) Bali, a little known species that Bleeker described from a sub-adult, only known from the north coast of Bali." The next step was to get out Bleeker's Atlas of Indonesian fishes to see if he had illustrated this species. The painting of the juvenile *waandersii* in Bleeker's book looked different to the *Epinephelus areolatus* that I have seen, and it also looks different to all of the Indo-Pacific groupers with which I am familiar.



*E. waandersii* from Bleeker's Atlas of Indonesian fishes



Juvenile *E. waandersii* from Indonesia. (Photo: Sally Pollack)

Then another nail in the edifice to resurrect the species *Epinephelus waandersii* as a valid species appeared in a photo taken recently by Sally Pollack when she and her husband were diving in Indonesia. Sally's photo shows a juvenile very similar to Bleeker's painting.

So, Heemstra & Randall (1993) were wrong to consider *Epinephelus waandersii* as the same species known as *Epinephelus areolatus*, and Kuitert is correct that *E. waandersii* is a separate (valid) species. It seems that the species is also found in Japan.



Partially obscured adult *E. waandersii* from Timor. Note the ephemeral dark blotches which are not apparent in dead fish. (Photo: David Cook)

This episode of the Timor mystery grouper is a good example of the kind of interaction (reciprocal illumination) we hope to stimulate with the development of the World Grouper Atlas Project. With fishery biologists, anglers, scuba divers and underwater photographers working with scientists we can all significantly improve our knowledge of groupers

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