Report from Stakeholder interviews concerning Abalone poaching in Zones E and G

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Introduction and objectives

The stock assessment for abalone is significantly hampered by insufficient information on the levels of poaching in each management zone. To assist with our understanding of resource dynamics, stakeholder interviews were conducted to obtain information on the levels of poaching taking place and trends in magnitude over time. This participatory approach represented a pilot study into the use of interview data to inform modeling of the resource. As such, effort was concentrated on Zones E and G. These are two of the least productive Zones with consequently fewer divers operating.

The investigation was split into two. The first part was to assess and understand the types of information available for potential inclusion in the modeling process. The second part was actual execution of the participatory stock assessment using the information collected. This report details the outcome from Part 1.

Information relevant to a participatory stock assessment

For a successful participatory stock assessment it is important that the requisite information is available for inclusion in the modeling process. Four sources of information could potentially be used to inform a participatory stock assessment.

Poaching intensity: Perceptions concerning the quantities of abalone taken illegally could be used to construct a prior distribution from which illegal catches are sampled during Bayesian model fitting. This is by far the most useful source of information.

Poaching trends: Incorporation of this type of information requires absolute values to be estimated within the bounds stipulated by the trend. This

places a greater emphasis on reliability of the model and the catch and CPUE data.

Spatial Distribution: Information on poaching trends or intensity needs to be spatially defined so that it can be more reliably included in an area disaggregated stock assessment model.

Illegal CPUE: Illegal catch rates may differ from commercial catch rates due to differences in the size of abalone targeted. Using a size structured model this information could be incorporated as an additional likelihood component. This would necessitate a large amount of interview data, so that the distribution (and reliability) of perceived illegal CPUE values could be examined.

Summary of information collected

Interviews were conducted with five divers from Zone E, one diver from Zone G and one SANP representative.

Zone E

- Approximately 90% of commercial yield is from the region between the southern boundary of Cape of Good Hope marine sanctuary and Cape Point (Turf E1). The abalone in this area are deep and at low concentrations. Combined with a rugged coastline and the need for park entry this makes it difficult for poachers to operate from the shore in this area.

- Historically poaching has occurred throughout the zone, contributing to population depletions at Sea Point, Chapmans point and Kommetjie. Small scale poaching still occurs in these regions. However poaching effort is now largely diverted towards Robben island and the False Bay side of the Peninsula (notably Smitswinkel, Bokkies and Buffelsbaai).

- High concentrations of abalone still exist within the Karbonkelberg and Cape of Good Hope sanctuaries. Poaching on the Atlantic side of the peninsula still targets these areas (officially outside of Zone E) at a low level.

- Poaching had been increasing steadily since the advent of commercial fishing, but rose markedly around 1995, the timing corresponding to an improved market value for abalone and the establishment of organized poaching syndicates. Poaching was primarily conducted under the premise of

recreational fishing. This type of activity peaked between 1998 and 2000 but began to decline when restrictions were placed on recreational permits, and then dropped dramatically when the recreational fishery was closed in 2003. The establishment of the peninsula marine national park in 2004 further deterred poachers due to the increased policing effort. Levels within Zone E are therefore thought to be currently low.

- The resource was generally perceived to be in a healthy state with abundant juvenile abalone present.

- The recreational catch record was considered to be highly unreliable and likely to substantially overestimate the productivity of the Zone.

Zone G

- Most of the catch in this zone is currently from Turf G1, with areas further up the West coast either being of low productivity or in a severely depleted state.

- Poaching activity in this zone is concentrated near Melkbosstrand, with low levels at Dassen Island, Langebaan and Jacobsbaai.

- Poaching trends in this zone up until the year 2000 are similar to those in Zone E, but with a probable lag period of around one year. Although a peak in poaching activity occurred at approximately the same time, poaching intensity has not dropped off in recent years but remains relatively high as enforcement is minimal.

- The resource in Turf G1 was thought to be capable of supporting the Zone G divers but sustainability was being threatened by poaching and the encroachment of divers with secondary permits from other zones.

Conclusion

Here we summarise the relevance of the information collected to a participatory stock assessment.

Poaching intensity: Unfortunately no such information was available.

Poaching trends: Information regarding the perceived poaching trends was abundant, and incorporating this into the modeling process constitutes the principal focus of Part 2 of this study [1].

Spatial Distribution: Information on the spatial distribution was also readily available and could prove useful to modeling of the resource at the TURF level.

Illegal CPUE: The interviews conducted suggest that illegal CPUE information is likely to be available. However the small number precludes inclusion into any modeling exercise at this stage.

References

[1] C. T. T. Edwards, M. Hauck, and É. E. Plagányi. Participatory stock assessment of abalone in zones e and g. Working Group Document WG/AB/07/Aug/18, Marine and Coastal Management (South Africa), 2007.

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