TERRITORIAL USER RIGHTS FISHERY (TURF) RESTORATION OF A WILD Haliotis midae POPULATION TO SUSTAINABLE HARVEST USING CULTURED SEED

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Presenter: R Yearsley (at extreme short notice, with some reluctance and some confusion)
Policy on Marine Ranching and Stock Enhancement 2010 opens the way

- Ranching guidelines established a TURF based approach to restoring wild stocks in Areas depleted by poaching
Case Study of Abalone Ranching Pilot Project at Port Elizabeth, South Africa

Legend
- Concession_Zone
- Main Roads
- Cape Recife
- Noordhoek
- Willows
- Skoenies

- Ranching Concession EC1 allocated
- 18km coast
- Biomass depleted by poaching
- Seeding initiated 2014
- Produce 180 tons of abalone a year
- Large capacity for producing juvenile abalone
- Pioneer of commercial ranching

Reg. No: 97/21825/07
The Reseeding Begins….

- ~3.7 Million Abalone seeded 2014-2018
- ~6km² (plots = 314 - 2826 m²)
- Avg release size 40-50mm SL (largest =100mm SL)
- Avg weight 24g (largest =140g)
- ~15 abs m⁻²
Resource protection - Private abalone Anti-poaching unit
Research Support by Rhodes University

- Surveyed wild population pre-seeding stock status
- Monitored survival and growth of seeded abalone
- Annual abalone population stock assessment survey
Harvestable Biomass Rebuilt
Reduced Illegal Fishing Effort

![Graph showing reduced illegal fishing effort over years]

- Active Poachers
- Year

$r^2 = 0.985, p = 0.02$
Increase in Abalone Density

Ranching Started

[Graph showing abundance over years with a peak around 1993, a decline around 2001, and a recovery after 2009 marked by "Ranching Started".]
Milestone! First Legal TAC harvest in 2021

- 33 tons 2021
- 53 tons 2022
The divers have maintained fishing efforts of approximately 21 kg hr$^{-1}$.

Post-harvest stock assessment shows the average abalone size is being maintained and that density is increasing.
Conclusion

• The abalone resource in EC1 has shown an increase in abundance and size and is now being sustainably harvested.

• The success of the project stands on two pillars:

  1. Guaranteed recruitment of seeded abalone into the harvestable biomass. (This was critical to the investment decision as there were too many uncertainties around the status of the wild stock and how long it would take to rebuild it without hatchery seed)

  2. Protection of the resource which has reduced illegal fishing pressure allowing both wild recruits and seeded abalone to grow to harvestable size.

• There is also evidence of good natural recruitment of early juveniles which are growing through into the harvestable size range. Thus the intensity of seeding could be reduced.
THANK YOU