Eastern Zone Victoria

Urchin Cull Diver at work – Petrel Point

2019 Centrostephanus Forum - Hobart
## Urchin Mitigation Projects in Eastern Victoria.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>PROGRAM</th>
<th>DESCRIPTION</th>
<th>FUNDING</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>EZAIA / VFA Island Point Project</td>
<td>“Removing sea urchins (Centrostephanus rodgersii) to recover abalone (Haliotis rubra) habitat.”</td>
<td>$140k EZAIA/VFA</td>
</tr>
<tr>
<td>2011-2019</td>
<td>EZAIA / VSUDA Urchin biomass reduction</td>
<td>Staged roll out of urchin culling and support for urchin harvesting including, more recently subsidies.</td>
<td>$50k annually EZAIA</td>
</tr>
<tr>
<td>2015-2018</td>
<td>FRDC 2014-224</td>
<td>“Rebuilding abalone populations to limit impacts of the spread of urchins, abalone viral ganglioneuritis and theft”</td>
<td>$150k over 3 years. FRDC</td>
</tr>
<tr>
<td>2018 -2020</td>
<td>DEWLP/VFA/EZAIA Gunshot</td>
<td>“Biodiversity Response Planning – Marine Targeted Actions; Restoring Marine Habitat and Biodiversity in Eastern Victoria.”</td>
<td>$162k over 2 years. DEWLP.</td>
</tr>
<tr>
<td>2018-2019</td>
<td>FRDC 2017-049</td>
<td>“Monitoring abalone juvenile abundance following removal of Centrostephanus and translocation.”</td>
<td>$50k FRDC</td>
</tr>
</tbody>
</table>
Figure 4: Black urchin density in each Eastern Zone Reef Code during the 2019 Fishery Independent Surveys
Figure 5: Temporal trend in the abundance of black urchins (±SE) within the Eastern Zone.
Figure 6: Landings of black urchins from the Eastern Zone. Note: landings for 2019 are up until the 19th May 2019.
Figure 7: Spatial distribution of black urchin catch. Note: landings are presented as a percentage because this analysis represents only the proportion of landings for which spatial information could be attributed to catch from the urchin fishing application.
Figure 9: Spatial distribution of urchin culling depicting the estimated numbers of urchins culled from 2011 – 2019. Note: These analyses were undertaken using the high, medium and low cull rate categories reported by divers and the associated cull rate per minute.
CONTROL 2: CULLING – Effort over time (4 reefs)

ISLAND POINT - Project Area 11.54ha

SANDPATCHLEE - Project Area 14.3ha

BENEDORE - Project Area 6.1ha

PETREL POINT W - Project Area 2.71ha

2019 Centostephanus Forum - Hobart
OUTCOMES – Effect on Urchin Abundance

Figure 11: Zone wide temporal tends in urchin abundance on culled (black) and unculled (magenta) reefs.
Fig 5c Length frequency of juvenile abalone on collector plates at four separate sites.
• Commenced April 2019,
• State Government (DEWLP) funded.
• EZAIA / VFA partnership.
• Succorfish data: The estimated culled area is 302,740 m²
• Year 1: 9 days, 180 dive hours, 324,000 urchins removed.
• Year 2: Similar effort scheduled.
• PreCull & PostCull surveys – report due July 2020.
• Public engagement includes, local school presentations, social media releases and communications video.
## RESEARCH PRIORITIES

<table>
<thead>
<tr>
<th>Priority</th>
<th>Description</th>
<th>Actions / Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>SPATIAL DATA</strong>&lt;br&gt;How to maximise effectiveness and cost efficiencies of urchin mitigation efforts through improved data collection and scientific advice to industry?</td>
<td>• Introduction of mandatory use of VMS for Abalone &amp; Urchin industries from 1/4/2020.  &lt;br&gt;• Partnerships &amp; Targeted Research – Gunshot</td>
</tr>
<tr>
<td>2</td>
<td><strong>MAPPING OF BARRENS</strong>&lt;br&gt;What is the extent of the problem faced by EZAIA?</td>
<td>• Mapping of the extent of the urchin barrens is the only reliable way to quantify the spatial resolution and scale of the problem.</td>
</tr>
<tr>
<td>3</td>
<td><strong>DEEP WATER BARRENS (BEYOND DIVE DEPTH)</strong>&lt;br&gt;Methods for reducing urchins on barrens habitat particularly in depth &gt; 15m.</td>
<td>• IMAS research.</td>
</tr>
<tr>
<td>4</td>
<td><strong>ECONOMIC VIABILITY &amp; RETURNS</strong>&lt;br&gt;What are the minimum requirements for ongoing culling to maintain healthy habitat?&lt;br&gt;How long does it take for abalone densities to recover following reef restoration?</td>
<td>• Gunshot Project.</td>
</tr>
</tbody>
</table>
This presentation relies heavily on a report produced by the Victorian Fisheries Authority titled:


Also information was drawn from the “Diver Database” collated by EZAIA from 9 years of diver culling records.

I am grateful to both EZAIA and VFA for providing the information.