forestry, fisheries and the environment

Department:
Forestry, Fisheries and the Environment
REPUBLIC OF SOUTH AFRICA

SALDANHA BAY SEA BASED AQUACULTURE DEVELOPMENT ZONE SPECIALIST ENVIRONMENTAL MONITORING

QUARTERLY MONITORING REPORT 1

November 2021

ANCHOR
research & monitoring

Anchor Research and Monitoring Report No. 1974/5

1 INTRODUCTION

The Marine Living Resources Fund (MLRF), a Schedule 3A Public Entity established in terms of the Public Finance Management Act, 1999 (Act No 1 Of 1999), under the auspices of Department of Forestry, Fisheries and the Environment (DFFE), has appointed Anchor Research & Monitoring (Pty) Ltd, part of the Anchor Environmental group of companies, to undertake specialist monitoring according to the environmental Sampling Plan for the sea based Aquaculture Development Zone (ADZ) located within Saldanha Bay in the Western Cape, in compliance with the stipulations in the Environmental Authorisation (EA) and the Environmental Management Plan (EMP) for the ADZ, for a period of two years.

This Quarterly Environmental Monitoring Report details activities completed during the first quarter (September, October, November 2021), and the plans for the next quarter. This report is to be shared with the Aquaculture Management Committee (AMC) and the Consultative Forum (CF) to inform all stakeholders regarding the progress of ongoing monitoring within the ADZ as it relates to the Environmental Authorisation and Environmental Monitoring Programme for the ADZ.

2 PROGRESS TO DATE

2.1 Inception

The inception Phase 1 of the ADZ Specialist monitoring has been completed with the Inception meeting held between the DFFE and Anchor Research and Monitoring on the 1 September 2021.

2.2 Retrieval, maintenance and redeployment of oxygen probes and nitrate sensor

- All four DO instruments were also successfully recovered, serviced and redeployed on 2-3 September 2021, 19-20 October 2021 and 25-26 November 2021.
- The nitrate sensor was redeployed in the October 2021 service interval. It was successfully recovered, serviced and redeployed on 25 November 2021.

2.3 Raw data collection for dispersion model

Sixteen water samples were collected during the servicing of instruments in the surface and bottom waters for determination of total nitrogen concentrations. Samples were collected at three of the PRDW model monitoring sites to validate the far field results of the model. To assess near field impacts, four sites were sampled 100 m from the edge of the finfish area, and one site was sampled beneath the finfish cages.

- The October 2021 sampling constituted the first spring sampling trip, and the commencement of the seasonal (spring, summer, autumn and winter) collection of raw data for the dispersal

model validation. Samples were submitted to BemLab (SANAS T0654) for analysis of Ammonia (NH_3) as N, Nitrate (NO_3) as N, Nitrite (NO_2) as N and total nitrogen.

- The November 2021 service trip also fell within the window for spring sampling, and additional samples for raw data for validation of the dispersion model were collected. Samples were submitted to Element Materials Technology South Africa (Pty) Ltd (SANAS T0729) for analysis of the same nutrients.

2.4 Big Bay hard substrate survey

Preliminary surveys of rocky reef in the Big Bay precinct were undertaken on 26 November 2021. Further surveys will be undertaken in Q2, with a draft report due in Q3.

2.5 Peer review of annual benthic chemical and macrofauna benthic survey reports

Dr Trevor Probyn was appointed as the suitable, independent aquaculture expert/marine scientists to review the annual benthic chemical survey report (Gihwala *et al.* 2021) and benthic survey report (Dawson *et al*. 2021). Dr Probyn has completed these independent peer review reports, and these will be submitted directly to the Fisheries Management Branch of the DFFE by Anchor. These reports will be shared with the AMC and the CF.

3 PLANS FOR THE NEXT QUARTER (Q2)

The following activities are planned for the next quarter:

- Instrument service 4 is scheduled for the week of 10-15 January 2022.
- Instrument service 5 is scheduled for the week of 14-18 February 2022.
- The summer raw data collection for dispersion modelling validation will be undertaken during one of these service intervals.
- Samples collected during the 26 November 2021 impact site reef survey will be identified in the next quarter.
- A MSc student will be identified in the next quarter assess the impact of shellfish farming on the biogeochemistry of the Saldanha Bay.
- A workshop will be held with industry to develop protocols for reporting by industry regarding stocking densities, mortalities, graded and ungraded production, biofouling discards.
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