

ESIA Update

NMP - Sandpiper Marine Phosphate
Project



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The team @ ECC



Project Recap?

- **2011 Mining licence issued to NMP for Phosphate Mining**
- 2012 Detailed feasibility study (DFS) completed - Marine ML 170 EIA and ECC application submitted
- 2012 ML 170 additional stakeholder consultation completed
- 2013 EIA verification studies commenced
- 2013 18-month moratorium announced by MFMR
- 2014 EIA verification studies completed
- 2015 18-month moratorium concluded
- **2016 environmental clearance certificate awarded to NMP for ML 170 Marine Phosphate Mining**
- 2016 appeal & legal action initiated
- 2018 public consultation recommenced by order MEFT
- 2020 supplementary environmental studies completed
- **2021 legal action completed, and high court judgement issued to:**
 - ✓ **Confirm ML validity**
 - ✓ **Instructed the proponent to reapply for ECC in the prescribed format. This is the current application.**



Project Recap?



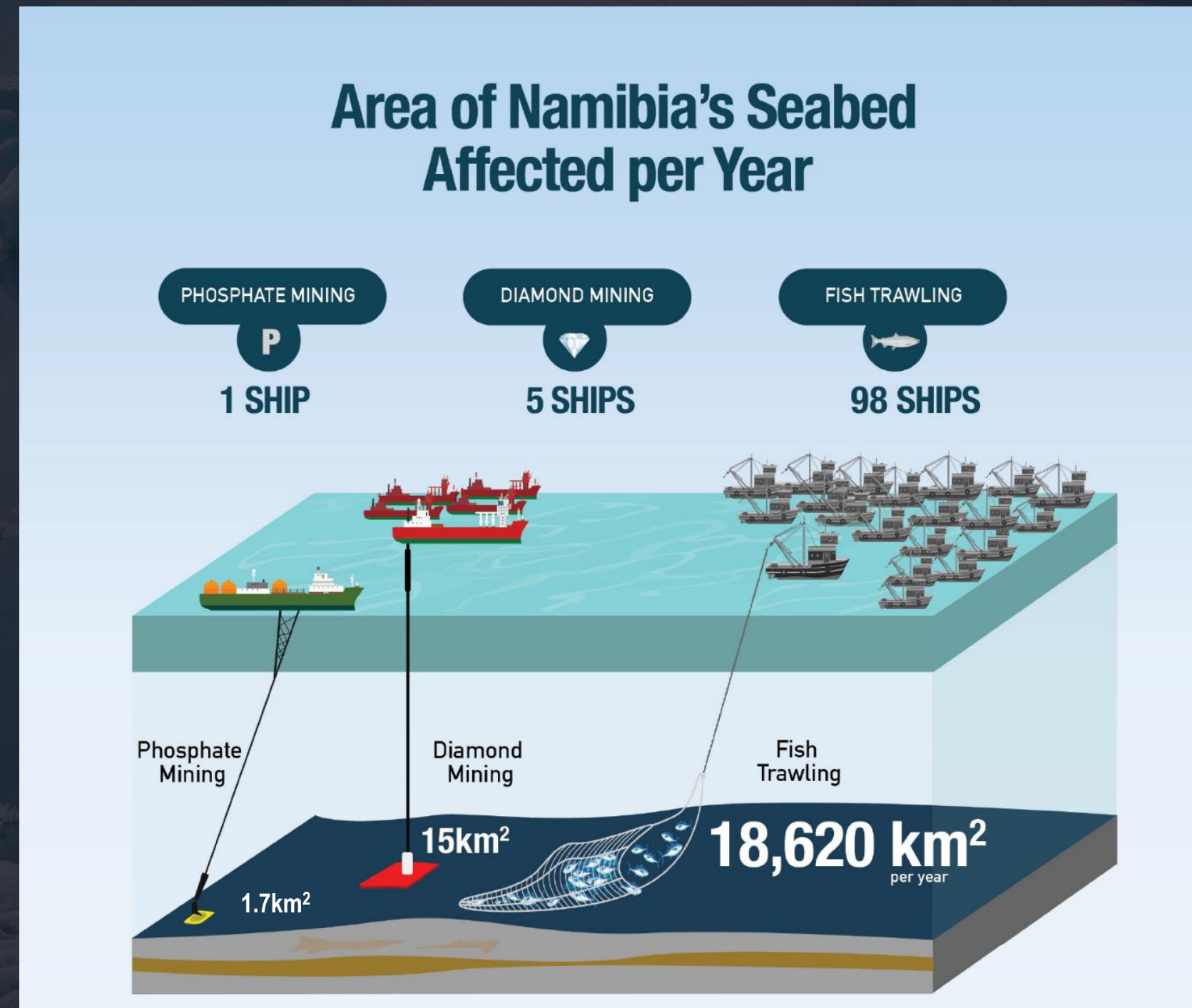
July 2025



MARINE ECOSYSTEMS

TERRESTRIAL ECOSYSTEMS

Why Significance Matters?



Project Benefits?



Environmental Benefits

Improved rangeland and farming practices



Social Benefits

Long mine life with job creation and industrial opportunities



Economic Benefits

Local value addition
Major capital investments



What are the real Impacts?

Most extensive ESIA completed in Namibia

28 Specialist studies

Extensive public engagement

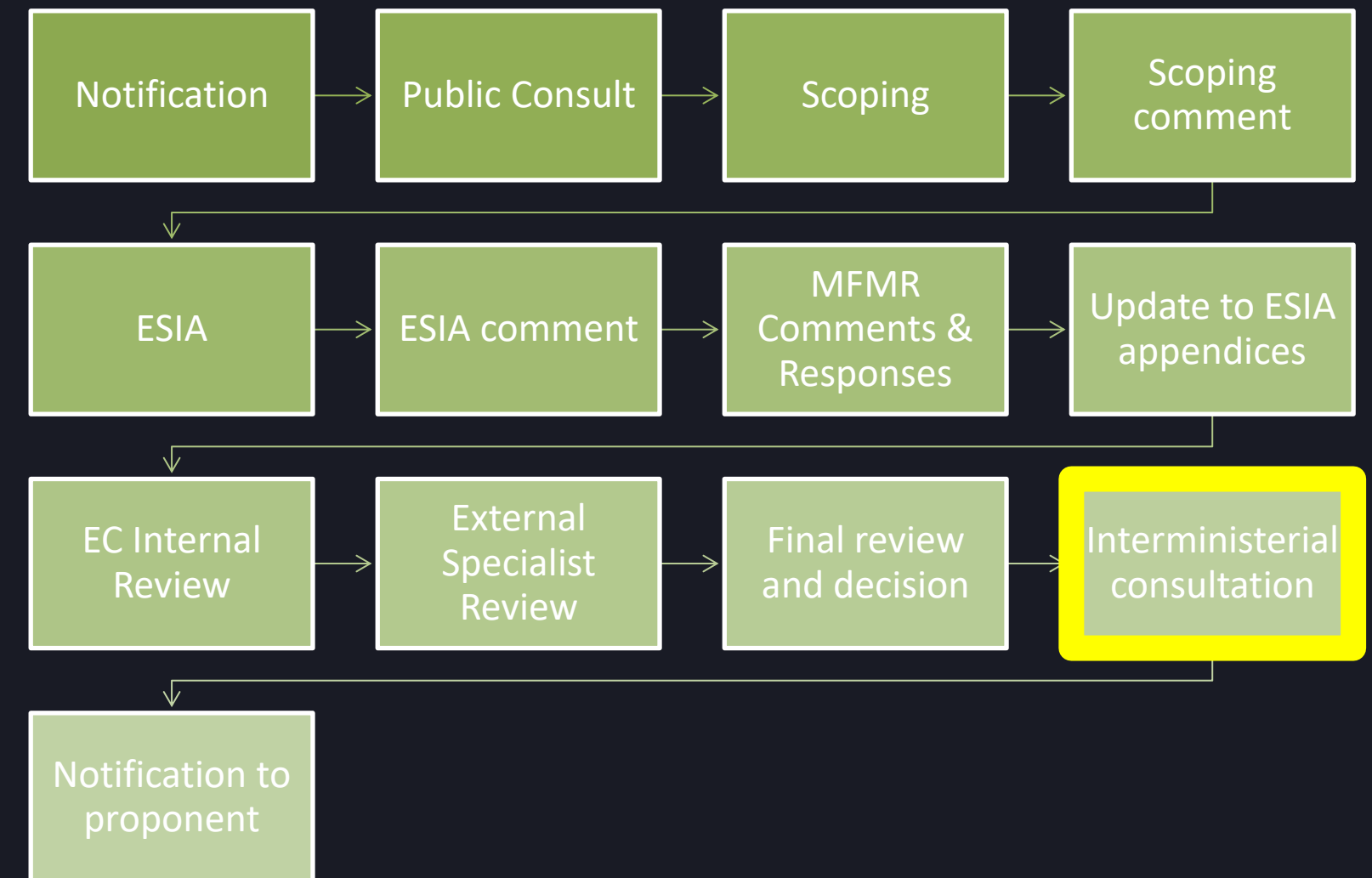
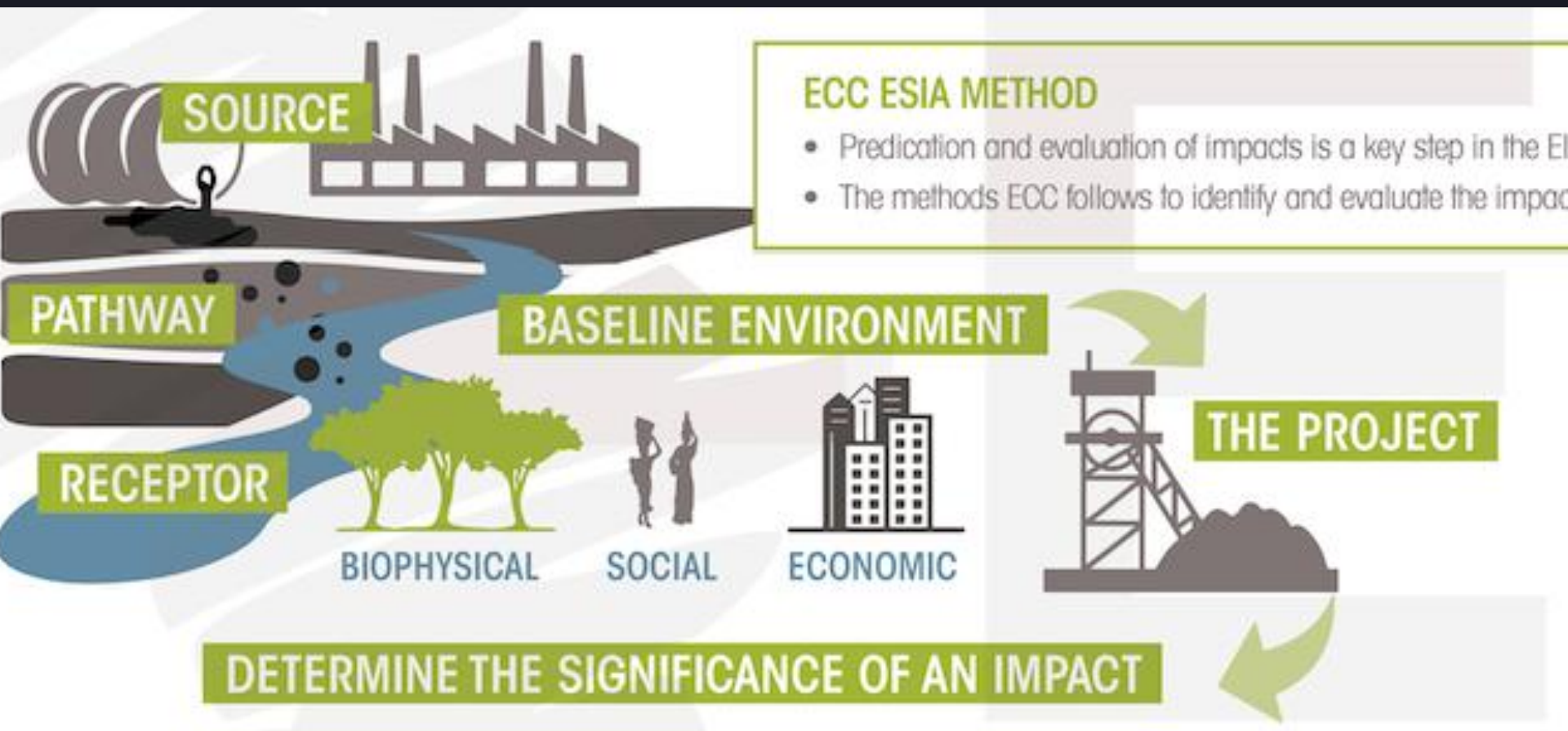
There will be impacts

There will be an impact, in that upper 1 - < 2.5 m of sediment will be removed from the seabed

Processing onshore

The removed material will be screened but will not be chemically treated;

The ore component will be taken on shore



What was the ESIA Process?

Key Points in the ESIA process





ECC Process: Consultants

NMP's approach:

Find and use best expertise available:

- Published specialists with demonstrated expertise and experience in the BCLME and Namibian fisheries
- Accredited agencies and laboratories for data analysis – CSIR
- Independent Peer review of specialist assessments
- Independent Observers
- International Experience



Specialists and Consultants	Company/ Organisations	Specialist Studies
Fisheries seabirds and mammals		
D Japp	Capfish	Fisheries
James Gaylard	Capfish	Biomass and Stock Estimates Hake and Monkfish
Dr Hilka Ndjaula	Unam	Reproductive Dynamics, recruitment and stock dynamics
Prof Mark Gibbons	UWC	Jellyfish
Dr Dave Japp	Capfish	Seabirds and Mammals
Dr Dave Japp	Capfish, MFMR	Marine Biodiversity Study
Dr Kevern Cochran	Capfish	Ecosystem assessment
Dr Dave japp	Capfish	Noise
Water column and Sediments		
Dr Robin Carter	Lwandle	Current Velocity and water mass characteristics
		Dissolved Oxygen
		Surfical Sediments
		Particulate Organic Matter concentratons
		Inorganic Nutrient Levels
		Oxidative State
		Heavy Metal concentrations
		Hydrogen Sulphide
		Sediment Toxicity Study (pre-dredging)
Benthos		
Dr Nina Steffani	Steffani Environmental	Macrobenthos
		Plankton
Dr Bronwyn Kirby	UWC	Thiobacteria Study
Sebastian Brown	CSIR	Analytical methods
Dr Simon Foster	Pgysilia , UK	Meiofauna
Dr Tim McClurg	KZN Coastal Impact	Epifauna
Plume Dispersion Modelling		
Roy Van Ballengooyen	CSIR	Plume Dispertion Modelling
HR Wallingord (UK)	HR Wallingford	Plume Dispersion Modelling Detailed
Geology and Physiography		
Dr John Compton	UCT	Depositional History of Phosphate Deposits
Gordon Rigg	Marine Data Consultants	Seabed Physiography and habitat

ESIA Findings – Impacts – water and benthic macrofauna

SIGNIFICANCE DESCRIPTION	
■	Low - Major Beneficial (All Scores) Impacts are considered to be beneficial to the environment and society.
■	Low (negative) 0 - 25 Impacts are considered to be local factors that are unlikely to be critical to decision-making.
■	Minor (negative) 25 - 50 Impacts are considered to be important factors but are unlikely to be key decision-making factors. The impact will be experienced, but the impact magnitude is sufficiently small (with and without mitigation) and well within accepted standards, and/or the receptor is of low sensitivity/value. Impacts are considered to be short-term, reversible and/or localized in extent.
■	Moderate (negative) 50 - 75 Impacts are considered within acceptable limits and standards. Impacts are long-term, but reversible and/or have regional significance. These are generally (but not exclusively) associated with sites and features of national importance and resources/features that are unique and which, if lost, cannot be replaced or relocated.
■	Major (negative) 75 - 100 Impacts are considered to be key factors in the decision-making process that may have an impact of major significance, or large magnitude impacts occur to highly valued/sensitive resource/receptors. Impacts are expected to be permanent and non-reversible on a national scale and/or have international significance or result in a legislative non-compliance.

Water column and sediments		Benthic macrofauna	
Vessel operations – pollution from waste	N1	Seabed dredging – removal of upper 1- <2.5m sediment	N6
Vessel operations – alien marine species	N4	Seabed dredging – exploration impacts	N1
Overspill discharge – sediment plume	N1	Seabed dredging – changes to local near bottom hydrographical conditions	N4
Overspill discharge – H ₂ S fluxes	N2	Seabed dredging – removal of large sulphur oxidising bacteria mats	N1
Overspill discharge – hypoxic/anoxic conditions bottom water impacting upper water column	N1	Seabed dredging – anaerobic bacterium <i>Clostridium botulinum</i> Type E proliferation	N1
Overspill discharge – nutrients added at surface	N1	Seabed dredging – draghead sediment plume	N2
Overspill discharge – trace/metal toxicity at surface	N1	Seabed dredging – re-deposition of fines from overflow plume	N2
Seabed dredging - trace/metal toxicity at seabed	N1	Seabed dredging – mobilisation of dissolved nutrients with overflow	N2
Seabed dredging – H ₂ S fluxes	N1	Seabed dredging – H ₂ S fluxes	N2
Seabed dredging – anoxic conditions in lower water column	N1		
Seabed dredging – removal of thio-bacteria mats	N1		

What are the real Impacts?

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(All Scores)

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Major (negative) 75 - 100

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What are the real
Impacts?

ESIA Findings –
Impacts – Fish, Mammals, Seabirds and Jellyfish

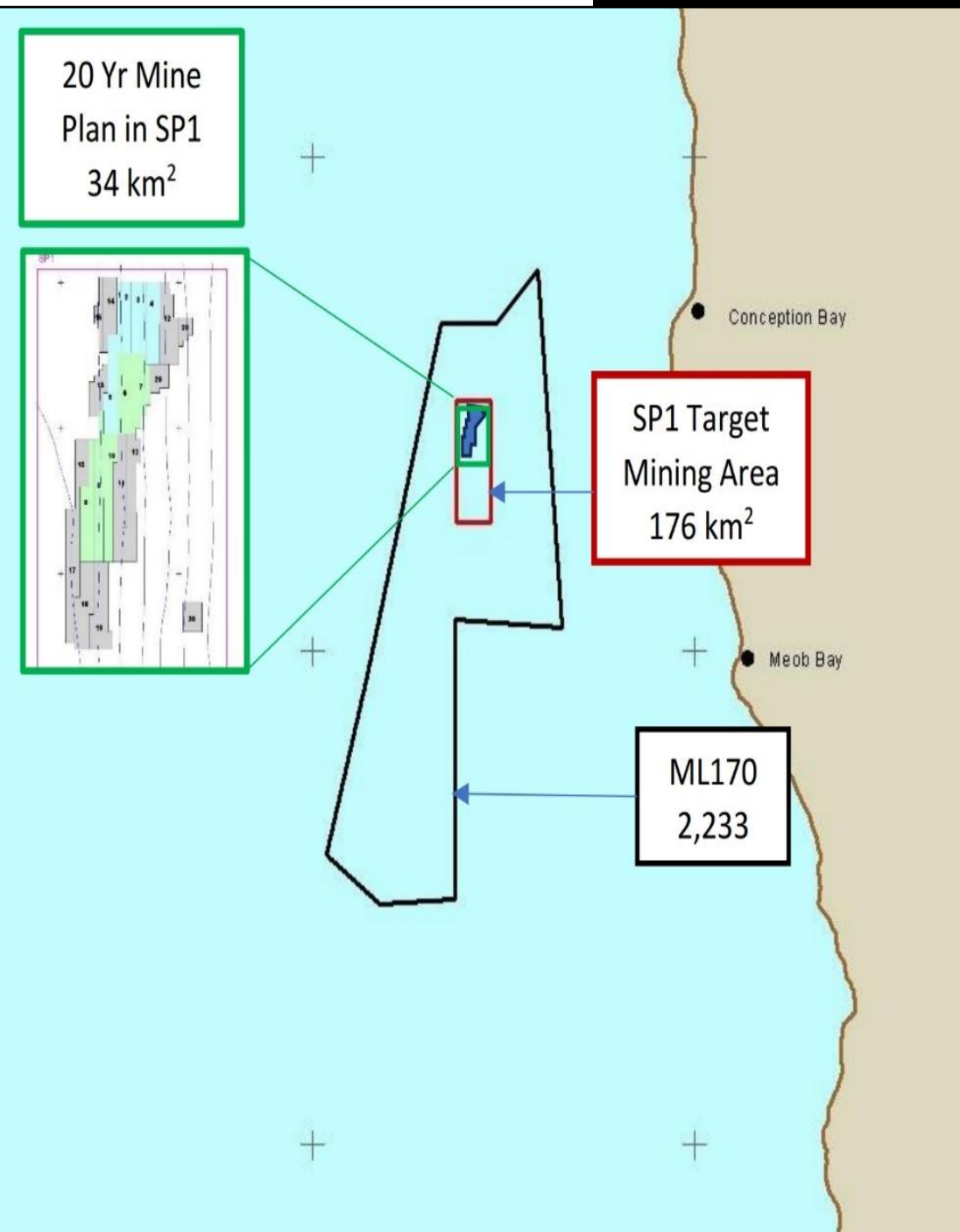
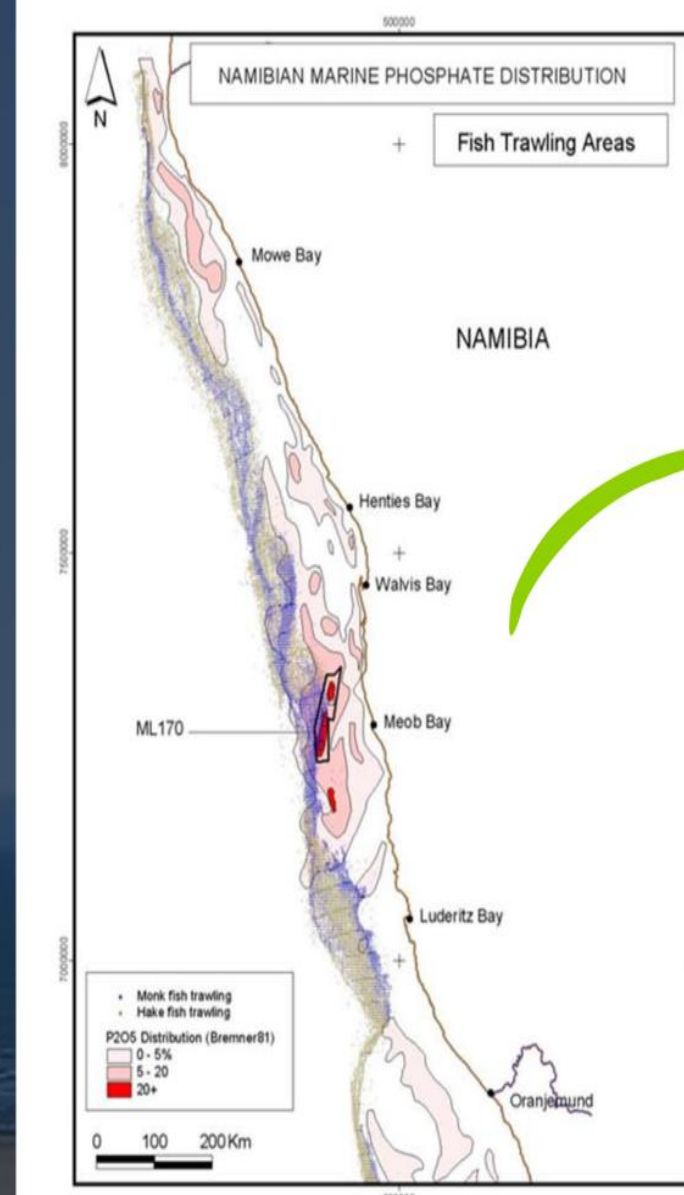
Fish, mammals and seabirds		Jellyfish	
Seabed dredging - impact on main Namibian fishing sectors	N1	Seabed dredging - blocking of vessel water intake system	N2
Seabed dredging - impact on ecologically important demersal and pelagic fish species	N1	Seabed dredging - H ₂ S releases	N1
Seabed dredging - recruitment on key commercial fish species	N1	Seabed dredging - tailings plume	N1
Seabed dredging - impacts on biodiversity	N4	Seabed dredging - removal of seabed sediments alters the sediment surface	B1
Seabed dredging - impacts on seabirds, mammals (including seals) and turtles	N4		



How will the Fishing Industry be Impacted?

Impact is related to scale of operations

- 20-year footprint 34 km² (less than 2% of ML170)
- Annual mining area average 1.7 km² (0.08% of ML170)
- Dredging non-continuous and 3 cycles per week,
 - approx. 16-20 hours onsite
- Specific concerns raised by fishing industry addressed by experts in specialist studies
- Mine site located outside 200m water depth and main Hake/Monk commercial fishing areas
- Operational impacts minimal.





Will the Seabed & Marine Environment Recover?



Seabed habitat can and does recover after dredging – functional capacity



Ceremonema
Nematode worm



Scololopios
uniramus



Odontaster
australis



Evidence from 20 years of Marine Diamond Mining

- Reference BCLME 2008 Report (10 years)
- Only publicly available data
- Confirmed by NCE who have observed the data noting:

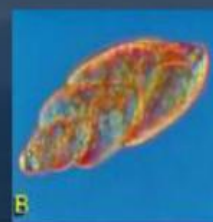
“... over a very short time relatively the organisms on the seafloor will start to recolonize that area”.

“Now we see from the marine diamond sector how quickly the seabed recovers..., over a very short period of time relatively, the organisms on the sea floor will start to recolonize that area.”

- Dr. Chris Brown, CEO,
Namibian Chamber of Environment



Evidence from UK aggregate dredging industry



The Bolivinitid type
Foraminiferan



The Planospiral
foraminiferan of
Elphidiidae family



Quadricoma



[Image Source: The Telegraph, 16 Sept 2016](#)

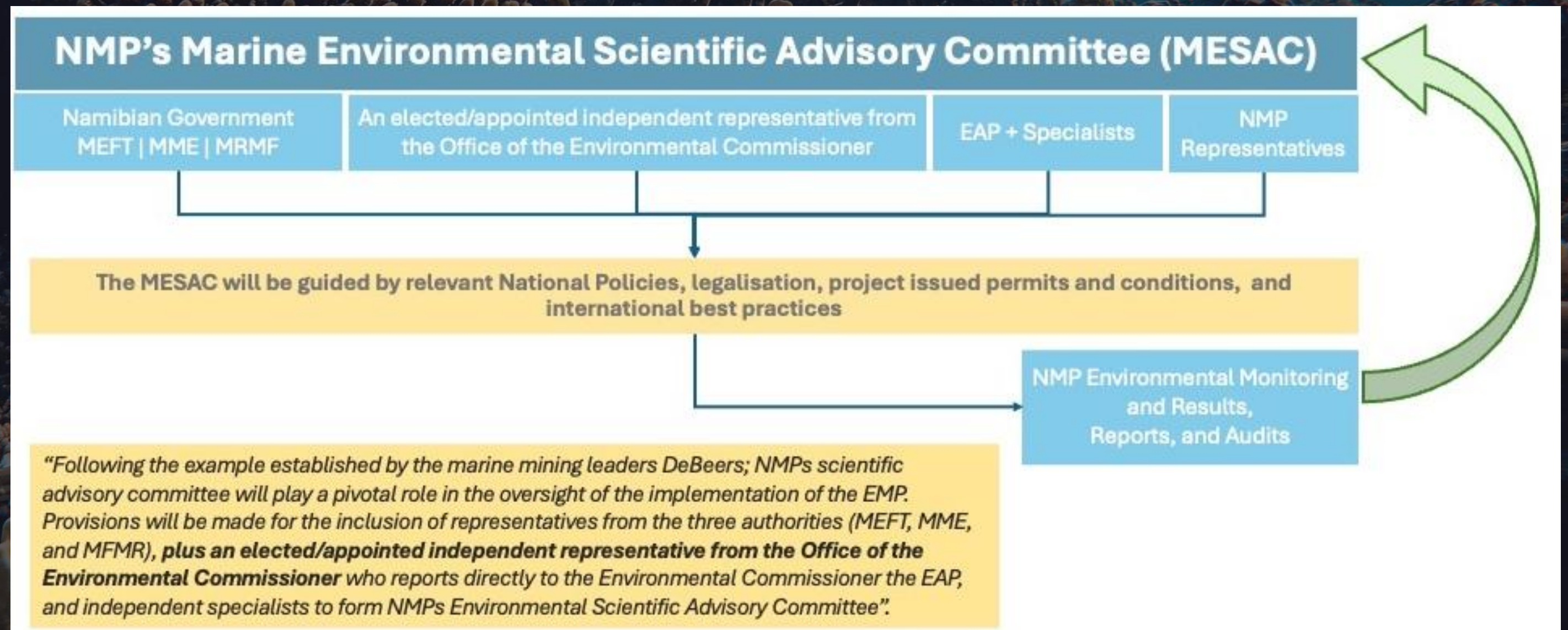
ESMP and Management Measures

- The monitoring program includes a pre-dredging update on baseline survey data and regular post-operation surveys for environmental clearance certificate renewal.
- The pre-dredging survey, updating 2014 data, is scheduled 12–24 months post EC approval, before dredging in ML 170.
- Monitoring surveys start every 3 years after operations, aligning with the 3-year environmental clearance term, and continue in the 1st, 4th, 7th, and 13th years of dredging.

Comprehensive Monitoring Programme

 Namibian Marine Phosphate (Pty) Ltd		Environmental Monitoring Programme Summary		Legend Year from Start ECC Issued ECC Renewal																					
Environmental Survey Activity		Timing/Interval	Activity/Year	Pre-Dredging		Dredging (D1-D20)																			
				PD1	PD2	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D17	D18	D19	D20
Pre-Pre Dredging Environmental Baseline Update Surveys		Legend	Surveys			Schedule assumes Dredging Operations commence in Yr 3 after award of ECC																			
Water quality		Pre-Dredging	1																						
Sediment quality		Pre-Dredging	1																						
Benthic macrofauna		Pre-Dredging	1																						
Thiobacteria presence/absence survey (ROV or Camera)		Pre-Dredging	1																						
Full Geophysical Survey (bathymetry, sss and sub-bottom profiling)		Pre-Dredging	1																						
Benthic Large Epifauna Survey		Pre-Dredging	1																						
Acoustic /Ambient Noise survey in dredge area		Pre-Dredging	1																						
Marine Ecology Survey (Fish, Mammals, seabirds, turtles & other marine life)		Pre-Dredging	1																						
ADCP Mooring: Seasonal deployments - (spring/summer & autumn/winter)		Pre-Dredging	4																						
			Activity/Year			Dredging (Years D1-D20)																			
Operations - Environmental Monitoring Surveys - Onsite		Timing/Interval	Surveys			D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D17	D18	D19	D20
Water quality/Plume model Verification - 3D survey and Profiling of dredge plume		Yr 1 of Operations	2																						
Dredged area topography - From dredger survey data		Annual	1																						
Water quality: 3D and Profiling in annual dredge areas (related to annuyal mine areas)		Yrs 1,2, 3, 4 then every 3 years	4																						
Sediment quality: Sampling at control and impact sites		3 years	1																						
Benthic macrofauna recovery: Sampling at control and impact sites		3 years	1																						
Thiobacteria prescence/absence:Survey in control and impact areas		3 years	1																						
Full Geophysical Survey (Bathy, SSS and Sub Bottom) D1, D4, D7, D1, D13		3 years	1																						
Marine Ecology Survey (Fish, Mammals, seabirds, turtles & other marine life)		Yrs 1, 2, 4 then every 3 years	1																						
Vessel Based EMP (MMO) Monitoring		years	12																						
Vessel Based Topographic Surveys (Bathymetry/Multibeam)		Regular / monthly	12																						
Vessel Based Water Quality & Suspended Sediment sampling		Regular / monthly	12																						
Vessel Based Acoustic /Ambient Noise survey in dredge area recording		Regular / monthly	12																						
Vessel Based Marine Mammal/Cetacean Watch		Continuous while operational	n/a																						

Comprehensive Monitoring



Conclusion

When assessing the three spheres of our environment, the social, economic and biophysical environments and evaluating the impacts, the 28 studies completed, and the independent reviews - all conclude that the potential impacts can be managed with mitigation measures contained in the EMP. The project benefits can offset potential negative impacts and the various industries should coexist

Environmental Compliance Consultancy Pty Ltd

THANK YOU

Have questions?

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Q&A Session

Proponent and EAP
