VME Encounter Protocols

(VME indicators, thresholds and move-on-rules)

Comparative study: SEAFO+NAFO+CCAMLR

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Encounter Protocols

Part of VME process

To protect VMEs from bottom fishing activities that have significant adverse impacts

UNGA Res 61/105 (2006)+FAO DSF Guidelines (2009)

To protect VME, we need to consider [1W+2H]

- **W**hat do we need to protect? ➔ **VME indicators**
- **H**ow **much** do we need to protect? ➔ **Thresholds**
- **H**ow **far** do we keep away to protect ? ➔ **Move-on-rule**

What do we need to protect ?

VME Indicator (FAO DSF guideline)(2009))

The following examples of species groups, communities, habitats and features often display characteristics consistent with **possible VMEs.**

Corals, hydroids, stony corals, gorgonians, black corals, hydrocorals, sponge, Protozoans, invertebrates…

[**CAUTION**] Merely detecting the presence **of an element itself is not sufficient to** identify a VME.

Indicator should be a part of VME communities

In reality….

VME indicators are largely different by RFMOs/CCAMLR

Due to different geographical locations (**habitats and topography)** and objectives/ideas among RFMOs

We now go through actual situation..

VME indicators (**Major species**) by RFMO/CCAMLR (sponges, corals, sea squirts and erect bryozoans)

Division (class/order)	English name	FAO CODE	NAFO	SEAFO	CCAMLR
Porifera	Sponges	PFR	1	1	1
Cnidaria (Anthozoa /corlas)	Stony corals	CSS	2	2	2
	Gorgonian	GGW	3	3	3
	Sea pens	NTW	4	4	4
	Hydroides	AZN		5	5
	Zoanthids	ZOT		6	6
	Black corals	AQZ		7	7
	Soft corals	AJZ		8	8
	Tube-dwelling anemones	ATX	5		9
	Hydrocorals	AXT			10
Chordata	sea squirts	SSX	6	9	11
Bryzoan	Erect bryozoans	BZN	7	10	12

VME indicators (minor species)

CCAMLR lists many ↕ ecosystem

Division	English name	FAO CODE	NAFO	SEAFO	CCAMLR
Echino-dermata	Sea lilies	CWD	8	11	13
	Basket stars	OWP		12	
	Basket and snake stars	OEQ			14
	Pencil spine urchins	CVD			15
Annelida	Serpulid tube worms	SZS		13	
Chemosynthetic communities		CXV			16
Brachiopoda	Lamp shells	BRQ			17
Hem-ichordata	Acorn worms	PBQ			18
Xenophyophores		XEF			19
Arthropoda	Goose and acorn barnacles	BWY			20
Mollusca	Antarctic scallop →	DMK			21

Number of VME indicators by RFMO/CCAMLR and Division(Order)

Division	NAFO	SEAFO	CCAMLR
Sponges	1		
Corals (order)	4	7	9
Chordata	1 (sea squirt)		
Bryzoan	1 (erect bryozoan)		
Echino -dermata	1 (sea lilies)	2 (sea lilies+1)	3 (sea lilies+2)
Others	0	1	6
total	**7**	**13**	**21**

How much do we need to protect?

We need to consider “Encounter threshold” for each VME indicator

Encounter thresholds

Criteria to prevent SAI (Significant Adverse Impact)

Again different among RFMO/CCAMLR due to different habitats, abundance and ideas

Now we review the current situation..

CURRENT THRESHOLDS BY FISHERIES, INDICATOR AND RFMO/CCAMLR

SEAFO (SPONGE) : DIFFERENT BY EXISTING AND NEW AREA

FISHERIES	VME INDICATOR	RFMO/ORG		
		NAFO	SEAFO	CCAMLR
TRAWL	CORALS	7 KG (SEA PEN) 60 KG (OTHERS)	60 KG	
	SPONGES	300 KG	600 KG (EXITING) 400 KG (NEW)	
BOTTOM LONGLINE	CORALS	7 KG (SEA PEN) 60 KG (OTHERS)	10 VME UNITS(*) =10(L OR KG) /1000 (HOOKS OR 1200M)	
	SPONGES	300 KG		
POT (CRAB)	CORALS		10 VME UNITS(*) = 10(L OR KG)/1200M	
	SPONGES			

(*) includes ALL VME indicators defined by CCAMLR and SEAFO

Encounter **threshold** (values) How to evaluate ?
NAFO : GIS method

Contour (biomass) estimation (e.g. sea pen)

\+ (overlay) +

Commercial trawl tow tracks

Conduct virtual operation and simulation (Re-sampling sea pen)

(cumulative) Freq. distribution of simulated (sea pen) weights

Decide thresholds (arbitrary)

(normally probability encounter < 1%)

Encounter **threshold** (values)

How to evaluate ?

CCAMLR (LL + Pot)

10 VME units ➔ Arbitrary

Now, new evaluation is on-going

(per comm. David Ramm data manager)

SEAFO

(no original methods)

NAFO+CCAMLR methods applied

VME indicators subject to Encounter **thresholds**

CCAMLR/SEAFO (Bottom LL + Pot)

➔ **ALL VME indicators**

NAFO (Trawls and Bottom LL)+SEAFO (Trawls)

Subject Only *to Sea pen, other corals and sponges*

*New attempt **NAFO** (2013)*

Small gorgonian (0.2 kg), large gorgonian(2kg)

*+ 4 new indicators (**new concept: presence**)*

*too small (**was not agreed**)*

Number of VME indicators subject to thresholds by RFMO/CCAMLR and gear type

	NAFO	SEAFO		CCAMLR
Division	Trawls (+LL)	(Trawls)	LL+POT	
Sponges	1			
Corals (order)	4	7		9
Chordata	(No Thresholds)		1 (sea squirt)	
Bryzoan			1 (erect bryozoan)	
Echino -dermata			2 (sea lilies+1)	3 (sea lilies+2)
Others			1	6
No (%) of VME indicators subject to thresholds	**5** (71%)	**8** (62%)	**13** (100%)	**21** (100%)
(Total no of VME indicators)	**(7)**	**(13)**	**(13)**	**(21)**

How far do we need to move away to protect VME (indicators)?

Move-on-rule

Move-on-rules : After encounter, **2 important responsibilities** for vessels (NAFO+SEAFO+CCAMLR)

If VME indicators weights > thresholds, Vessel shall…

Action (1)
Move away 1-2 miles from the reference point of the gear to any direction avoiding further encounters (then re-start operation)

Action (2)
Report to Secretariat
↓
Establish closed (circle) areas(*)
↓
Inform to CPCs

(*) Once closed, same regulation imposed to re-open as in the closed area

➔ *SC need to evaluate no SAI on VEM indicators for re-open*

Action (1) How to move away ?

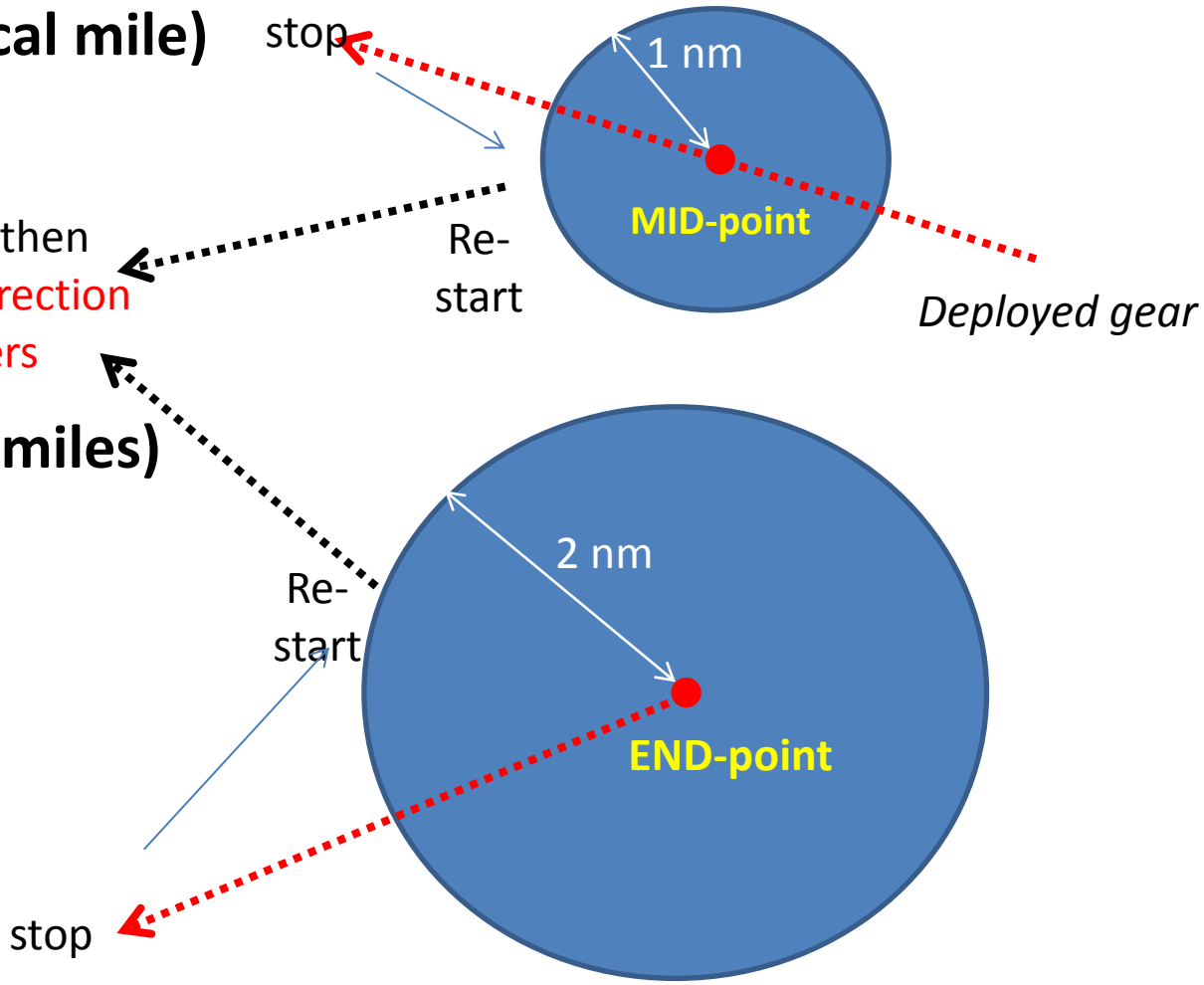
- **CCAMLR (1 nautical mile)**

  (LL+POT)

Leave at least 1 nm away then re-start operation in ANY direction avoid further encounters

- **NAFO (2 nautical miles)**

  (Trawl+LL)



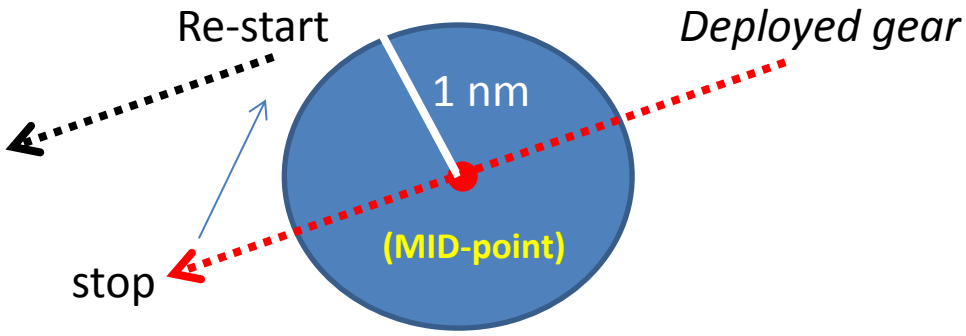
SEAFO: move-on rule → a bit strange before

Bottom LL and crab pot fisheries

- **Previous rule (2011 or before)**

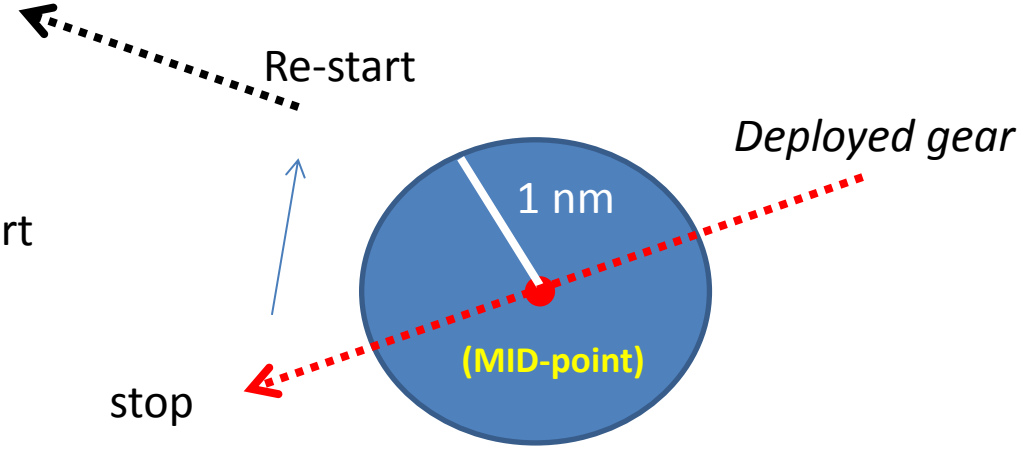
Leave at least 1 nm away then re-start operation **ONLY PARALLEL direction**

Can not necessarily avoid VME encounter



- **New rule (2012 -)**

Leave at least 1nm away then re-start operation **in ANY direction** avoid further encounters (similar to CCAMLR)



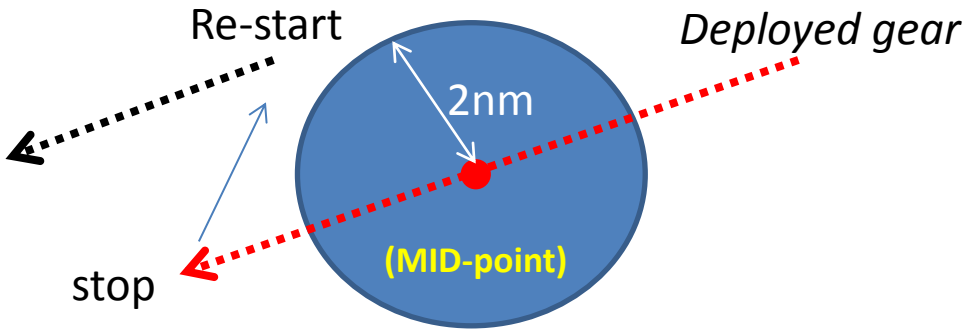
SEAFO: move-on rule ➔ new effective approach (2012)

Trawl fisheries (LINE based)

- **Previous rule (2011 or before)**

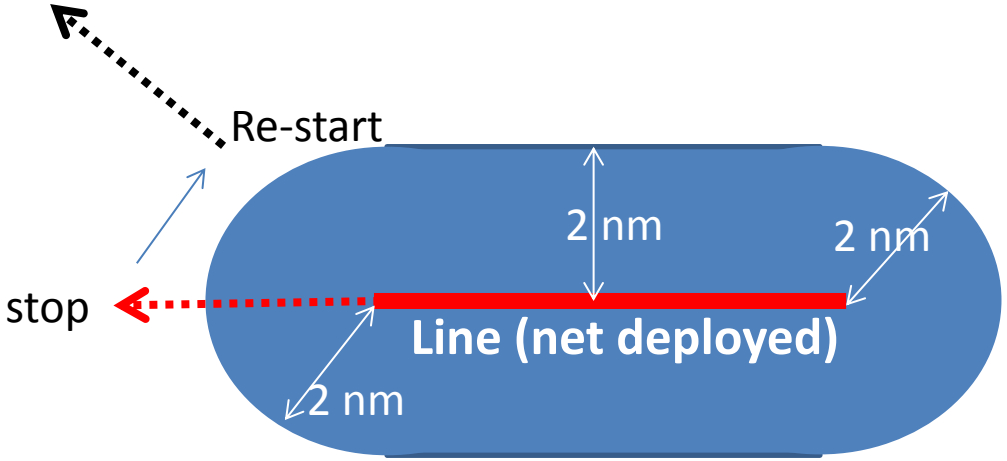
Leave at least 2 nm away then re-start operation ONLY PARALLEL direction

Can not necessarily avoid VME encounter



- **New rule (2012 -)**

Leave at least 2 nm away from **LINE (Net deployed)** then re-start operation in ANY direction avoid further encounters



Summary : Move-on-rule
(*move away distances and management measure)*

<table>
<tr><th></th><th>GEAR (*)</th><th>FISHING GROUNDS</th><th>TRAWL</th><th>BOTTOM LL</th><th>CRAB POT</th><th>AREA SET TO</th></tr>
<tr><td>NAFO</td><td>END</td><td>BOTH</td><td colspan="2">2 NM (POINT)</td><td></td><td rowspan="3">CLOSED AREA</td></tr>
<tr><td rowspan="2">SEAFO</td><td rowspan="2">MID</td><td>EXISTING</td><td rowspan="2">2 NM (LINE)(*)</td><td colspan="2">1 NM (POINT)</td></tr>
<tr><td>NEW</td><td colspan="2">2 NM (POINT)</td></tr>
<tr><td>CCAMLR</td><td>MID</td><td>BOTH</td><td></td><td colspan="2">2 NM (POINT)</td><td>RISK OR RECTANGLE (**)</td></tr>
</table>

(*) Reference point (line) of the gear

(**) CCAMLR RISK (closed) area (VME > 10 unit)

Fine-scale rectangle area (VME > 5 units) ← not closed but for warning

Action (2): 2nd responsibility (vessel)
Report (> thresholds) to the Secretariat
How is the situation ?

- ***SEAFO+NAFO*** ➔ ***NO*** *encounter reports to now*

  ➔***NO closed*** *(circle) area established*

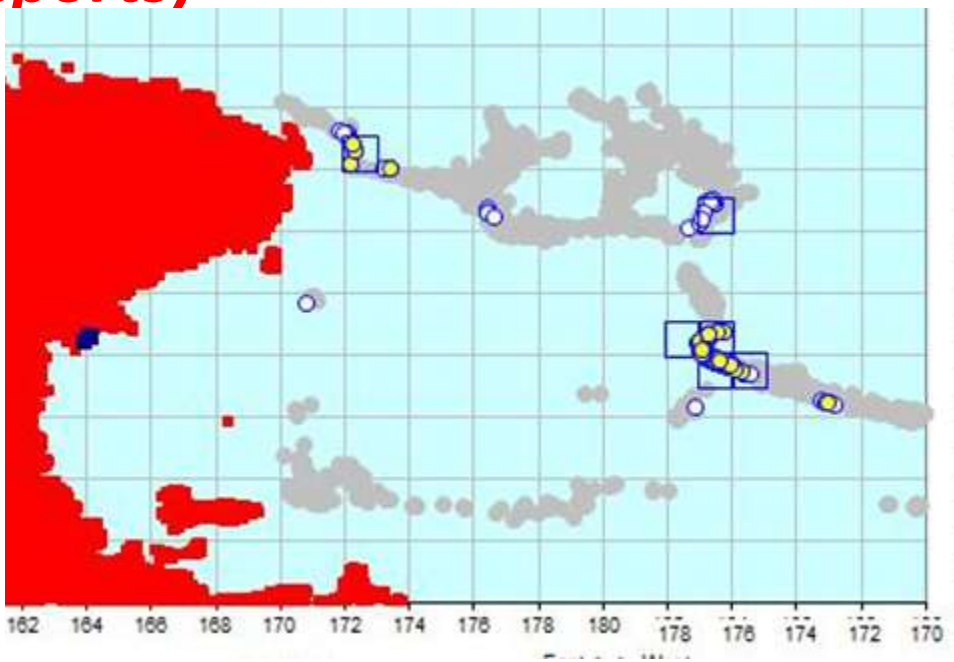
- ***CCAMLR*** ➔ ***YES (many reports)***

  (e.g. Ross sea)

  Risk (closed: ***circle****) area*

  Fine-scale (warning)

  rectangle *area*



NAFO: Special situation (ad hoc based closed area)

No encounter report from **commercial vessels**

↓

But in the past, survey data show high concentration areas of VME indicators

↓

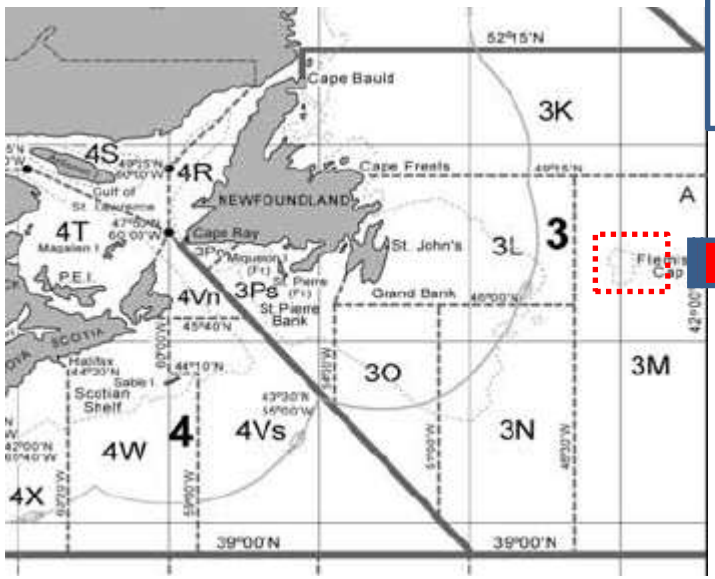
Closed areas proposed (Deep Sea ecosystem WG➔ SC) and agreed (COM)

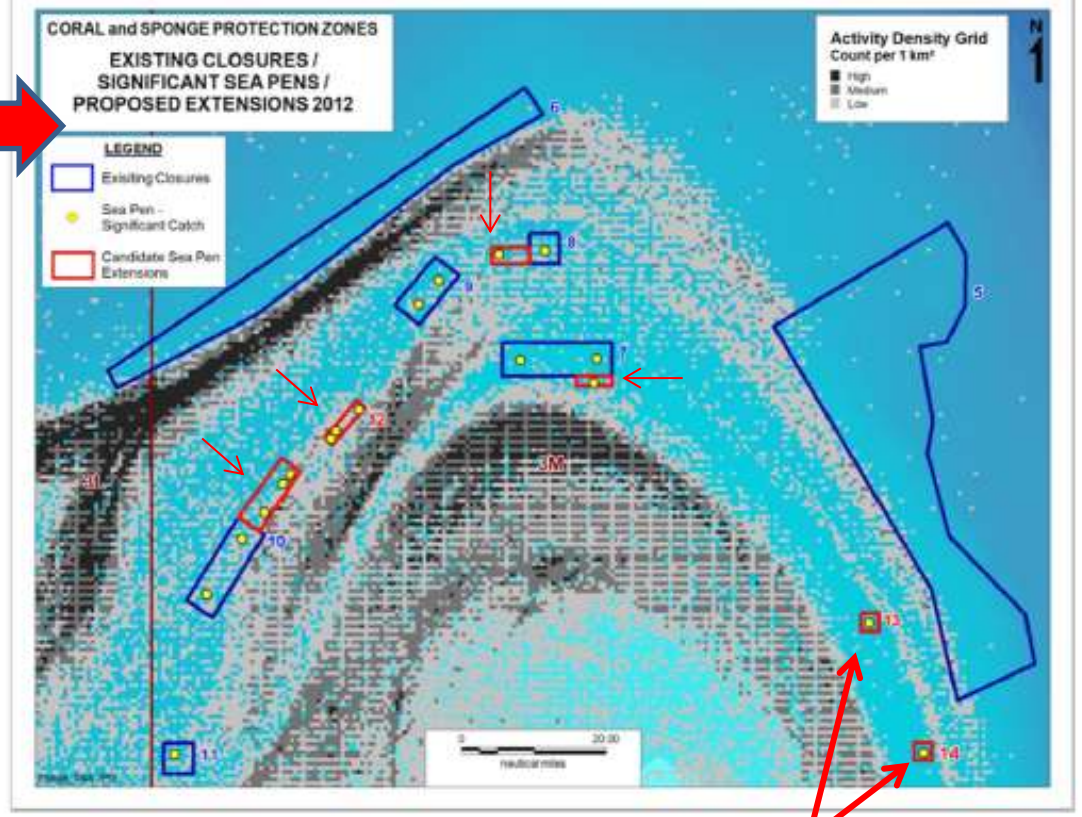
(see recent example)

High Sea Pen concentration areas identified (Flemish Cap) 4 spots (⟶)were agreed (2013).

6 closed area (proposed): 4 west side agreed

Current closed area (corals and sponges)





NOT AGREED

Survey data has been used for closure

"Move-on rule" or "Closed area" recent **HOT** dispute (NAFO)

Scientists + some CPCs : prefer to closed area

➔No encounter report

➔more effective to protect VMEs

Industries + some CPC: prefer to move-on rule

➔More flexible to operate

➔ prefer to even recent complicate move-on rule (by SC), i.e., move longer distances to shallower waters

Summary **Encounter Protocols (1W+2H)** (NAFO+SEAFO+CCAMLR)

(1) **What** do we protect? ➔ **VME indicators**

Major : Corals (4-9 orders) and Sponges (1)

Minor : Other benthos : CCAMLR(11) >SEAFO(5)>NAFO(3)

(2) **How much** we need to protect? ➔**Thresholds**

Corals : 7-60kg Sponges :300-600kg (NAFO+SEAFO : Trawl)

10 VME units (@10kg) (all species) (CCAMLR+SEAFO : LL+POT)

(3) **How far** do we need to move? ➔ **Move-on-rule**

1-2 nm from reference point or line of the gear

➔ closed area established (CCAMLR)

Thank you

Good luck on your (NPFC) successful development on the VME process

(from SEAFO SC)

and ……Sayonara (5PM)