

"Defining and delineating “VME” areas" in the NPFC area based on the investigations of Japan

Takeshi Hayashibara

National Research Institute of Far Seas Fisheries
Fisheries Research Agency, Japan

Scientific research activity in the Emperor Seamount area by Japan (2006～)

2006～2008 (Initial phase)

Basic investigations and bathymetric survey of all the fished seamounts.

2008 Impact assessment was submitted to UN in the end of 2008. Interim and voluntary measure including provisional closure of Koko Seamount started in 2009.

2009～2011

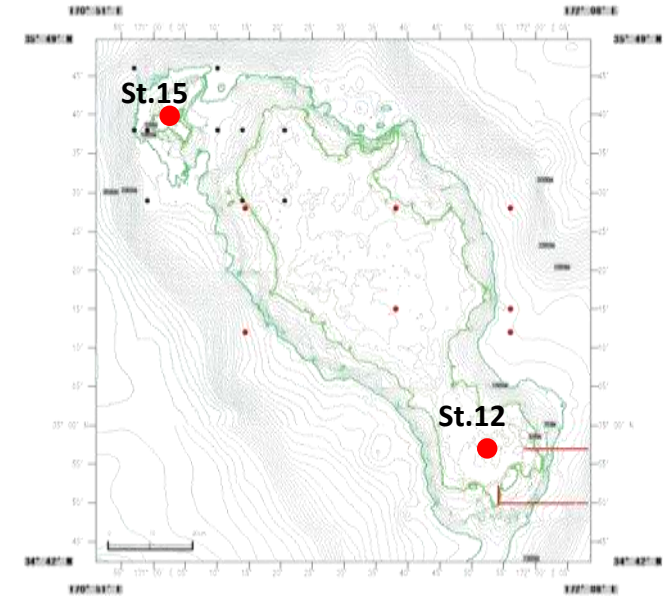
Intensive survey focused on the provisional closed area of Koko Seamount.

2010～ (Current phase)

Intensive survey on the other area of Koko Seamount and other seamount. Multibeam echo-sounder survey for detailed topographical data. Delineating the distribution range of coral assemblage.

A certain level of “aggregation” of corals were observed by the ROV survey in 2006

North-western part of Koko Seamount **St.15**



South-eastern part of Koko Seamount **St.12**



It is not certain whether these corals are qualified as VMEs.

Typical example of a VME in the Antarctic Ocean



CCAMLR (2008) Notification of VMEs in statistical area 58.4.1. reported by Australia

Scientific research has continued by Fisheries Agency of Japan

Because information is necessary to figure out the condition of benthic communities and to form common understanding of VMEs in the NPFC area



ROV (2006, 2010~)



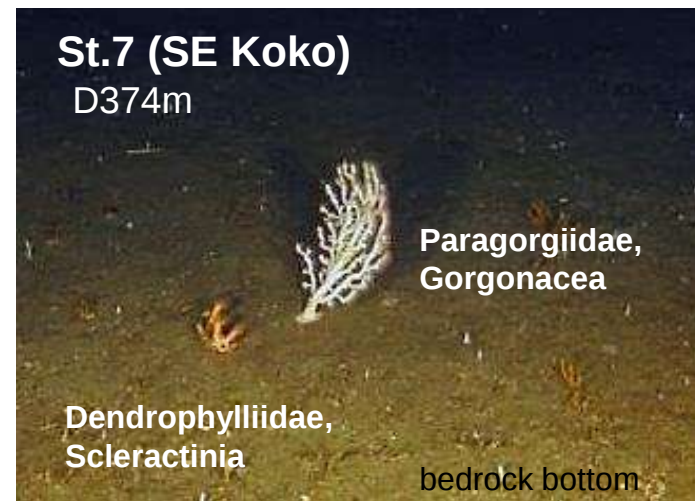
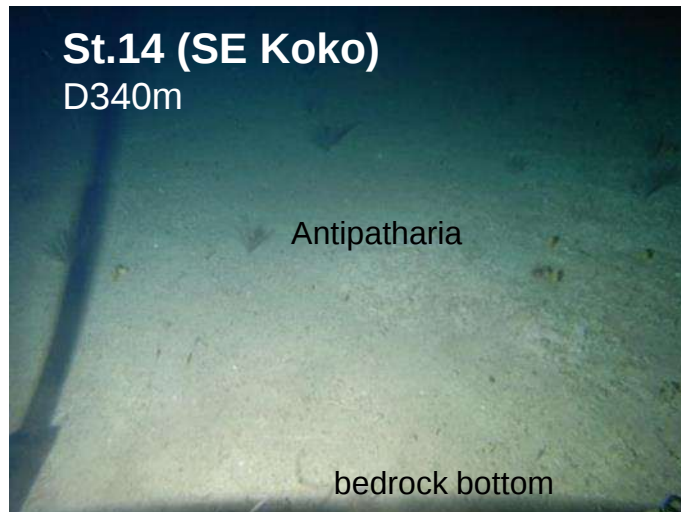
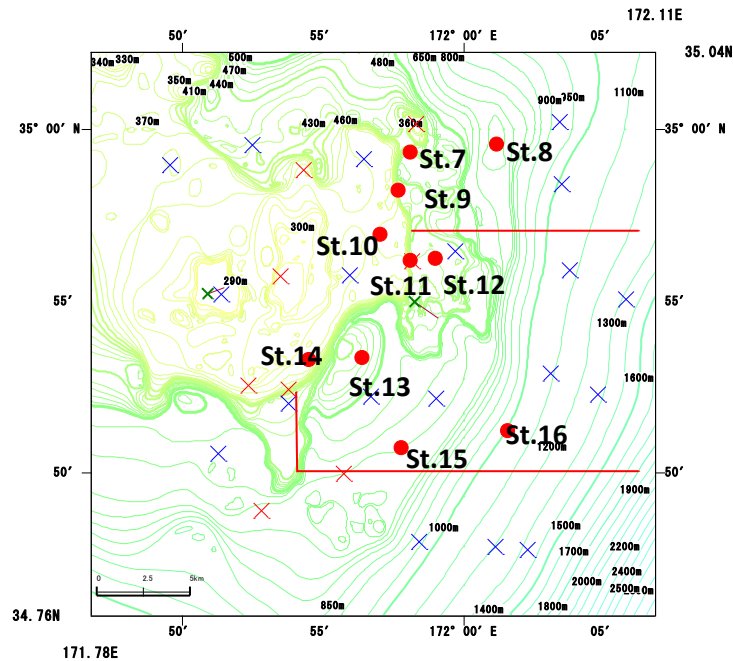
Drop camera (2008~)



Beam trawl (2008~)

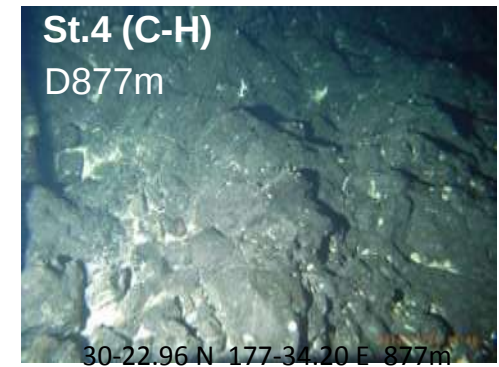
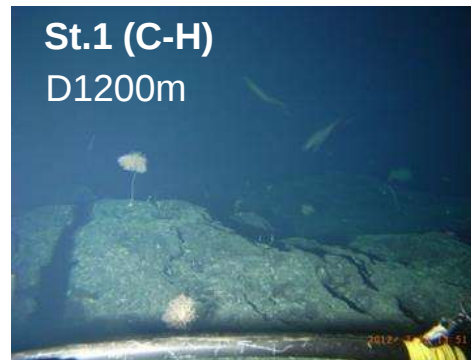
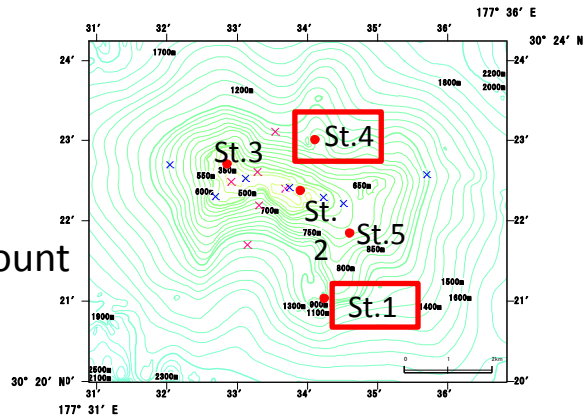


Examples of bottom condition in the southeast of Koko Seamount

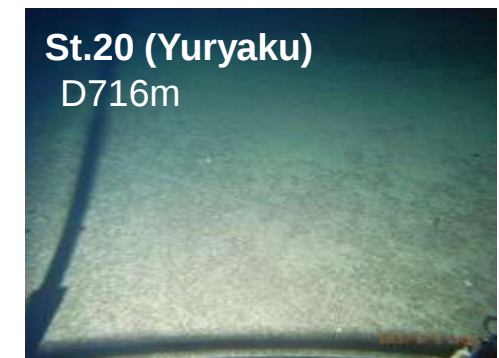
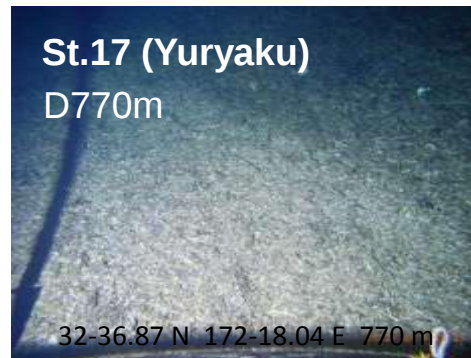
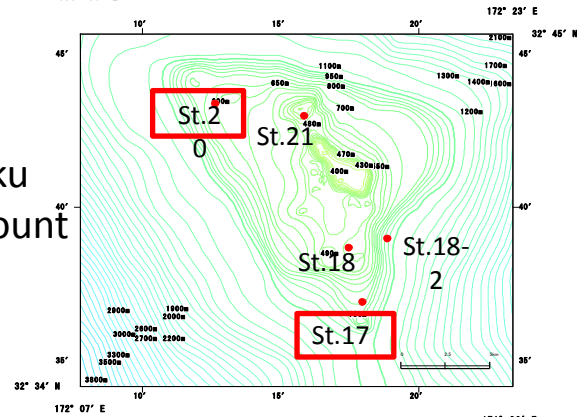


Examples of bottom condition in the slope part of seamounts

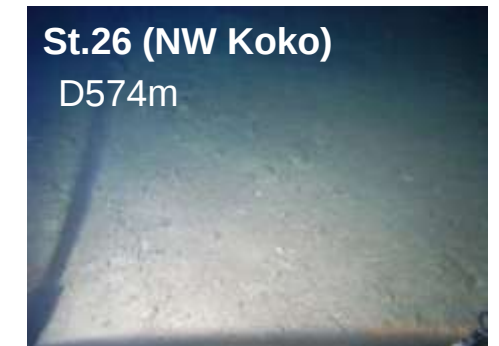
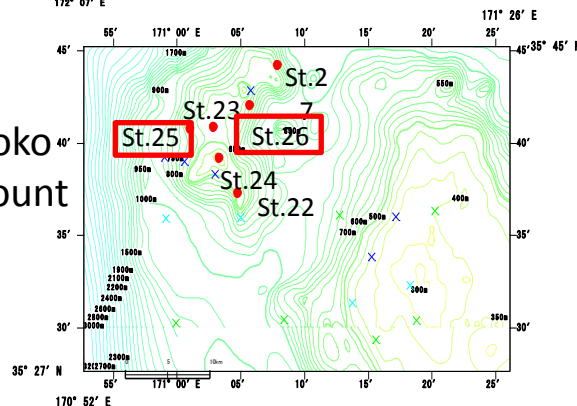
C-H
Seamount



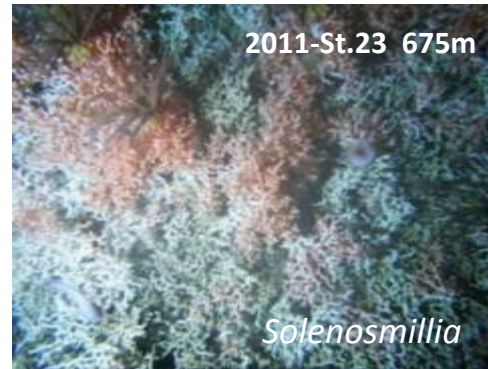
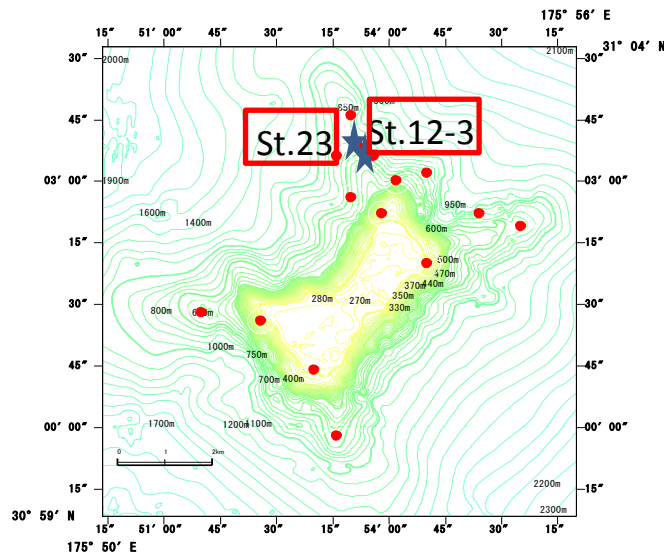
Yuryaku
Seamount



NW Koko
Seamount



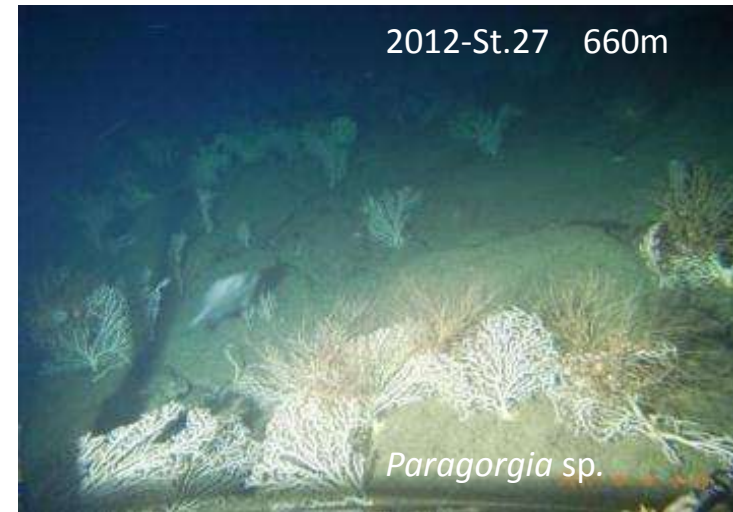
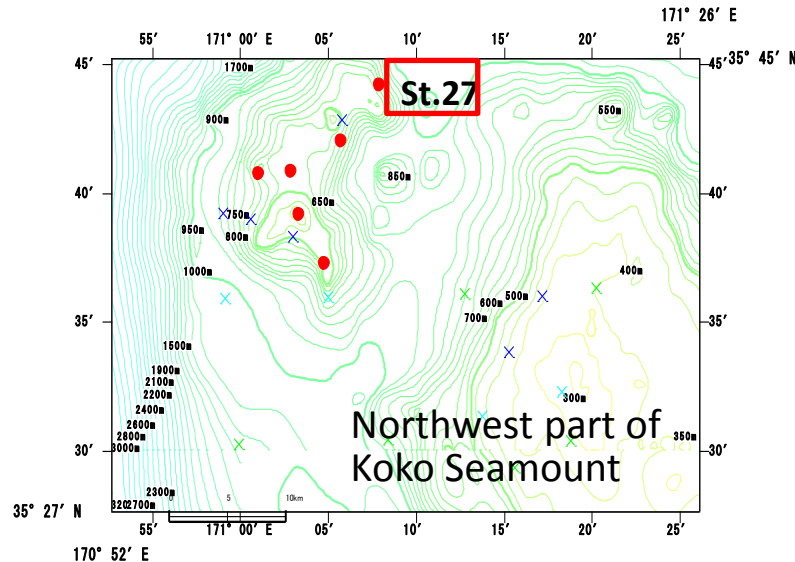
Assemblage of Scleractinian coral in Colahan Seamount



Experimental application of the VME criteria in the FAO DSF guidelines

Uniqueness and rarity	YES						
	The only dense assemblage of stony coral known in the North Pacific						
Functional significance of habitat	YES						
	May form a habitat of variety of organisms						
Fragility of ecosystem	YES						
	Weak for physical destruction						
Life-history traits that make recovery difficult	YES						
	Scleractinian coral have slow growth rate as a general character						
Structural complexity	YES						
	The component organisms known as a reef-forming species						

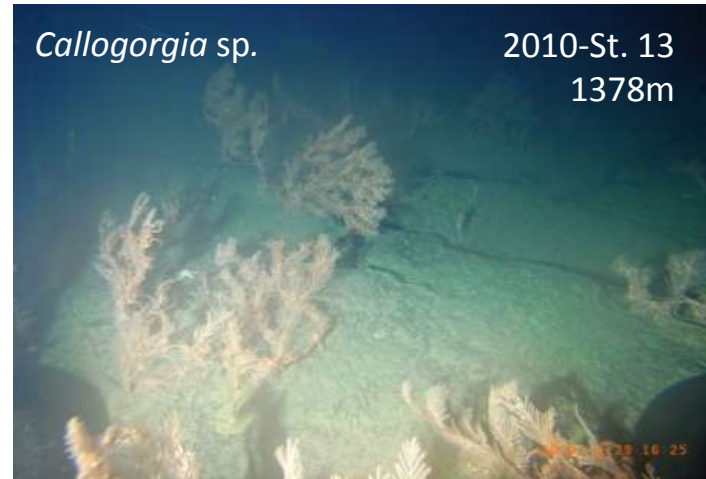
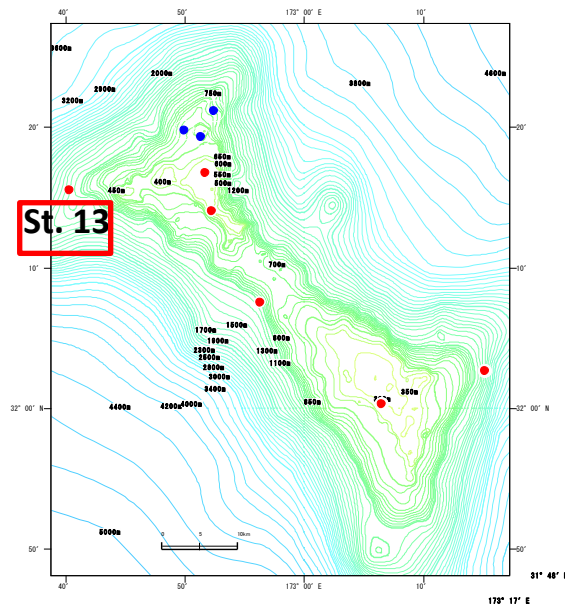
Assemblage of large gorgonian coral in Koko Seamount



Experimental application of the VME criteria in the FAO DSF guidelines

Uniqueness and rarity	No available information				
Functional significance of habitat	No available information				
Fragility of ecosystem	YES Weak for physical destruction				
Life-history traits that make recovery difficult	YES Gorgonian coral have slow growth rate as a general character				
Structural complexity	Depends on subjectivity Not form a reef but provide structured habitat when densely aggregated				

Assemblage of large gorgonian coral in Kammu Seamount

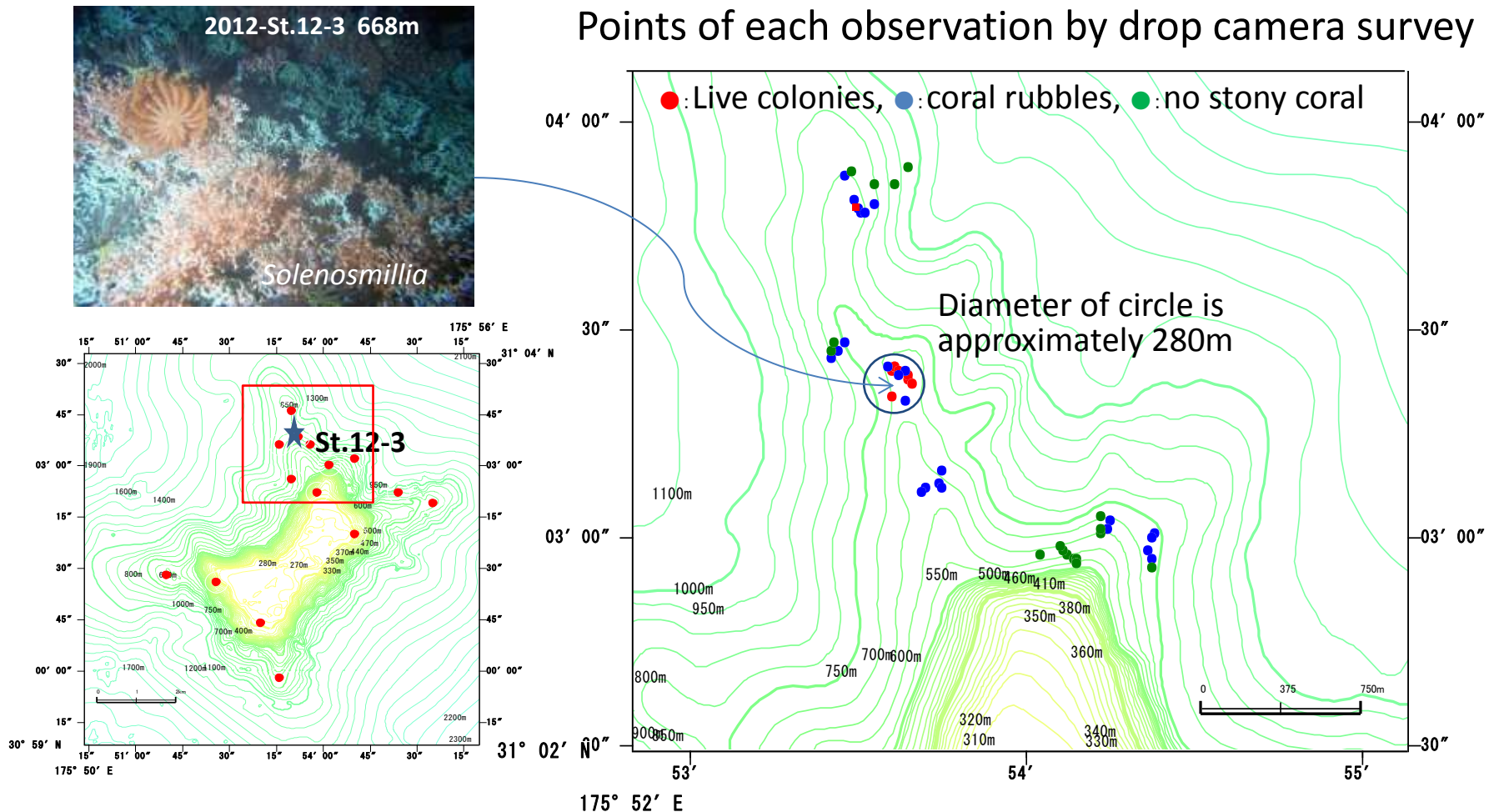


Experimental application of the VME criteria in the FAO DSF guidelines

Uniqueness and rarity	No available information				
Functional significance of habitat	No available information				
Fragility of ecosystem	YES Weak for physical destruction				
Life-history traits that make recovery difficult	YES Gorgonian coral have slow growth rate as a general character				
Structural complexity	Depends on subjectivity Not form a reef but provide structured habitat when densely aggregated				

Delineating the distribution range of coral assemblage

Points of each observation by drop camera survey



The range of the coral assemblage was estimated to small area.

Summary and Conclusion

- Fisheries Agency of Japan has continued scientific research in the Emperor Seamount area to obtain necessary information.
- Results suggested that density of benthic communities were generally low in the Emperor Seamount area.
- Several benthic communities of various density were observed in the periphery of fishing grounds.
- To determine whether they are qualified as VMEs, it is necessary a common understanding about VME in the NPFC area, among the parties concerned.
- Further investigations are also necessary to identify the exact distribution range of a certain community.