Distribution of Cold-Water Coral Communities in the Gulf of Mexico

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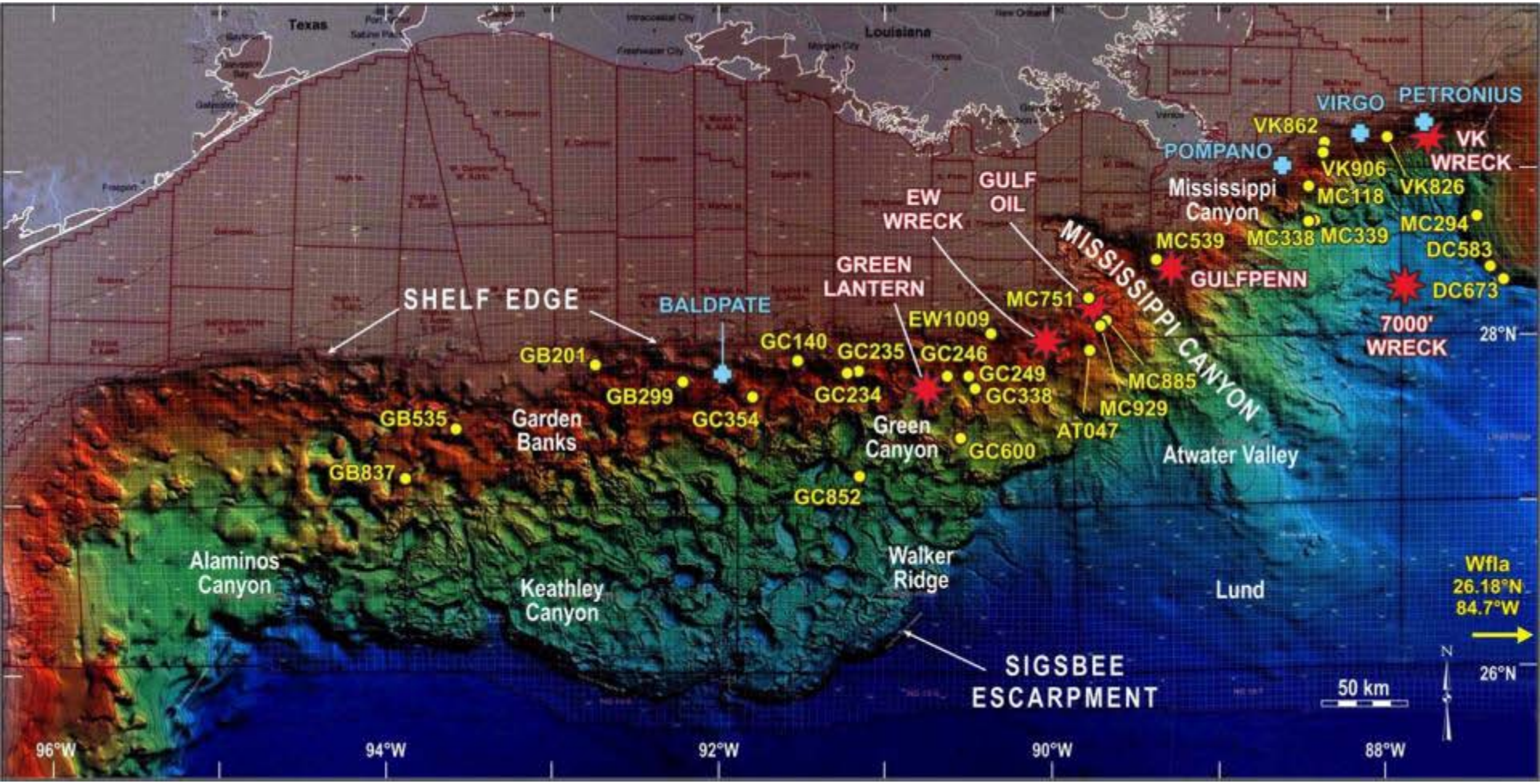
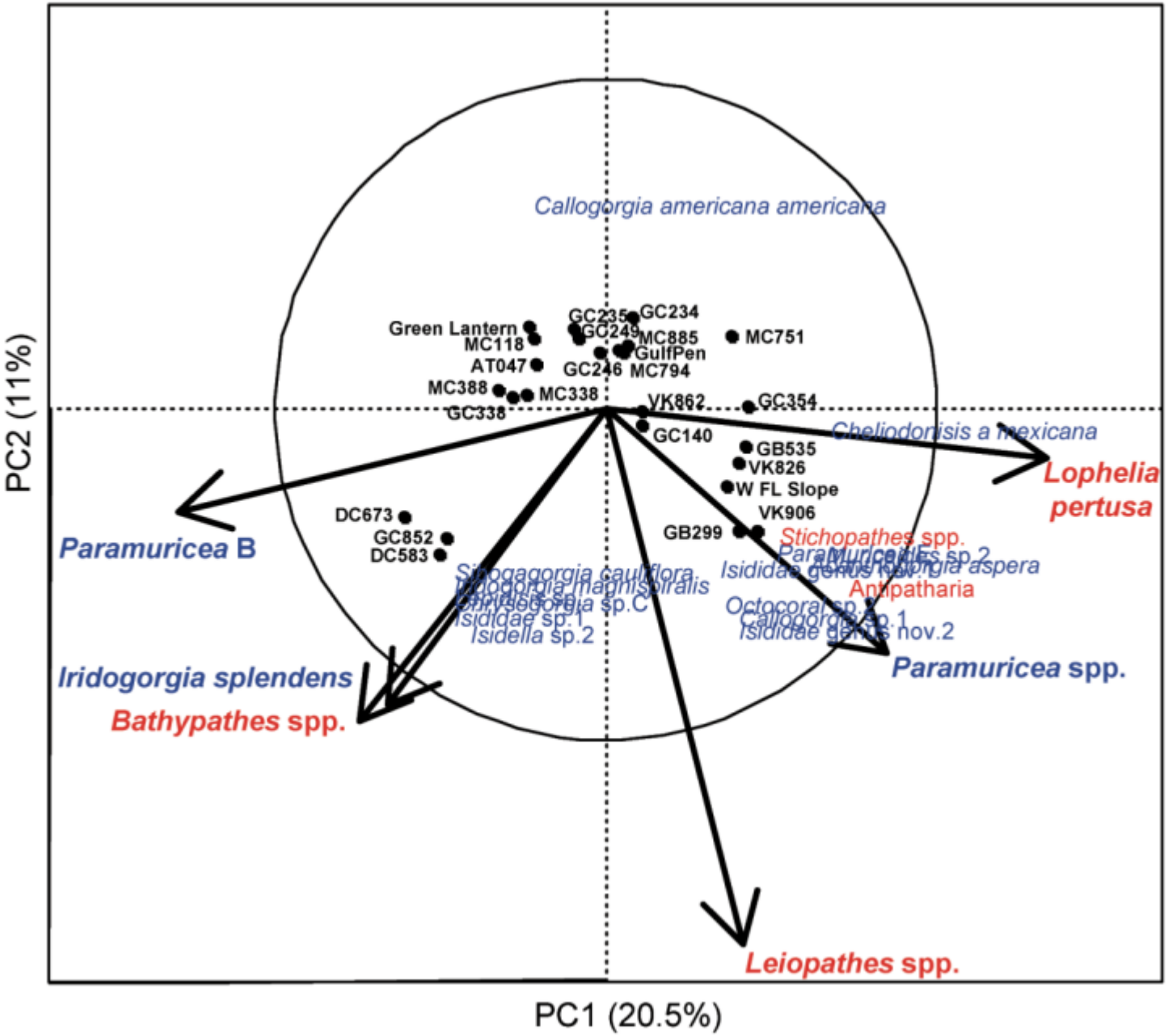
Sites from *Lophelia* II



Coral community similarity reveals different community types



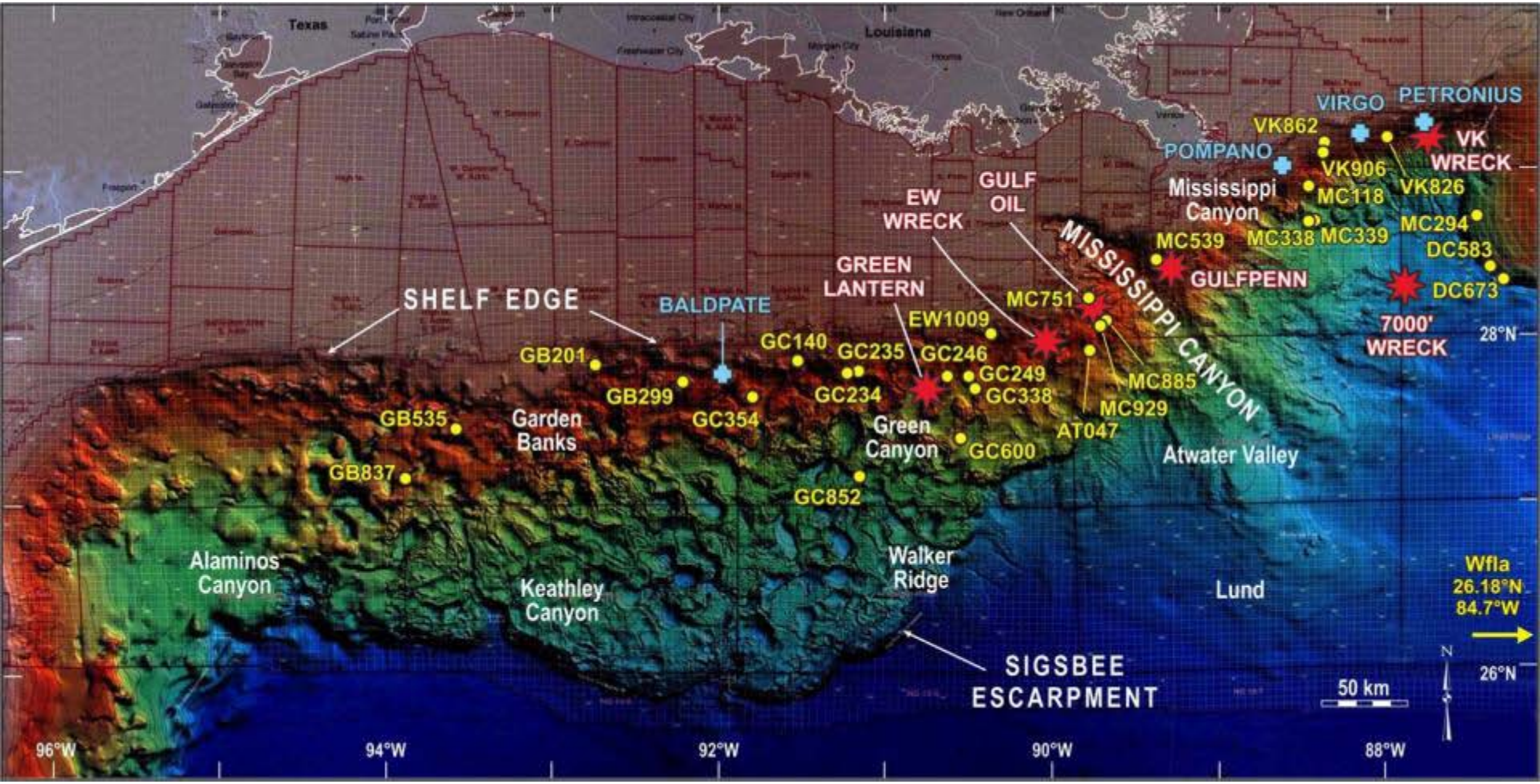
Coral presence/absence only

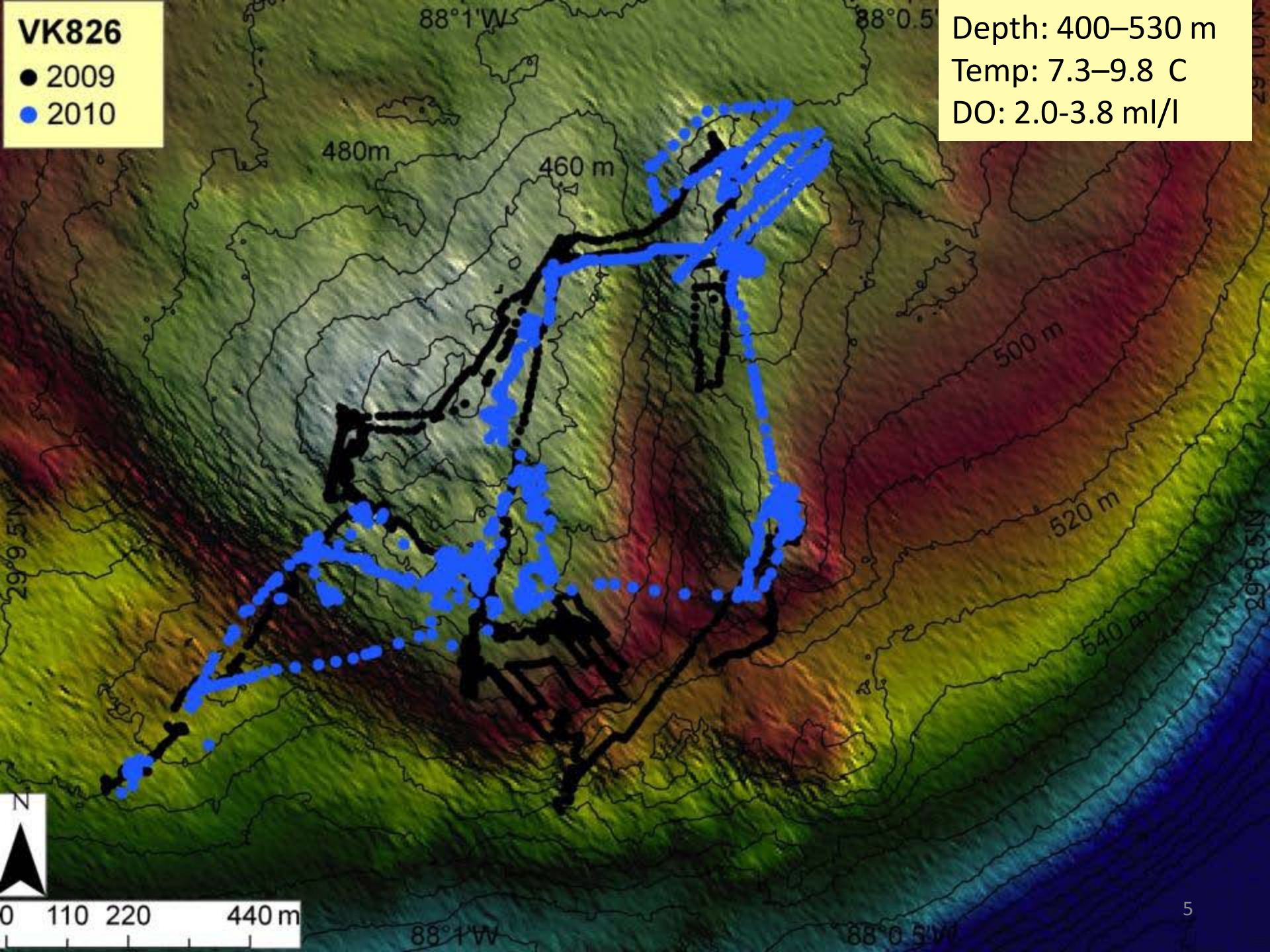
Arrows indicate increased abundance of coral species

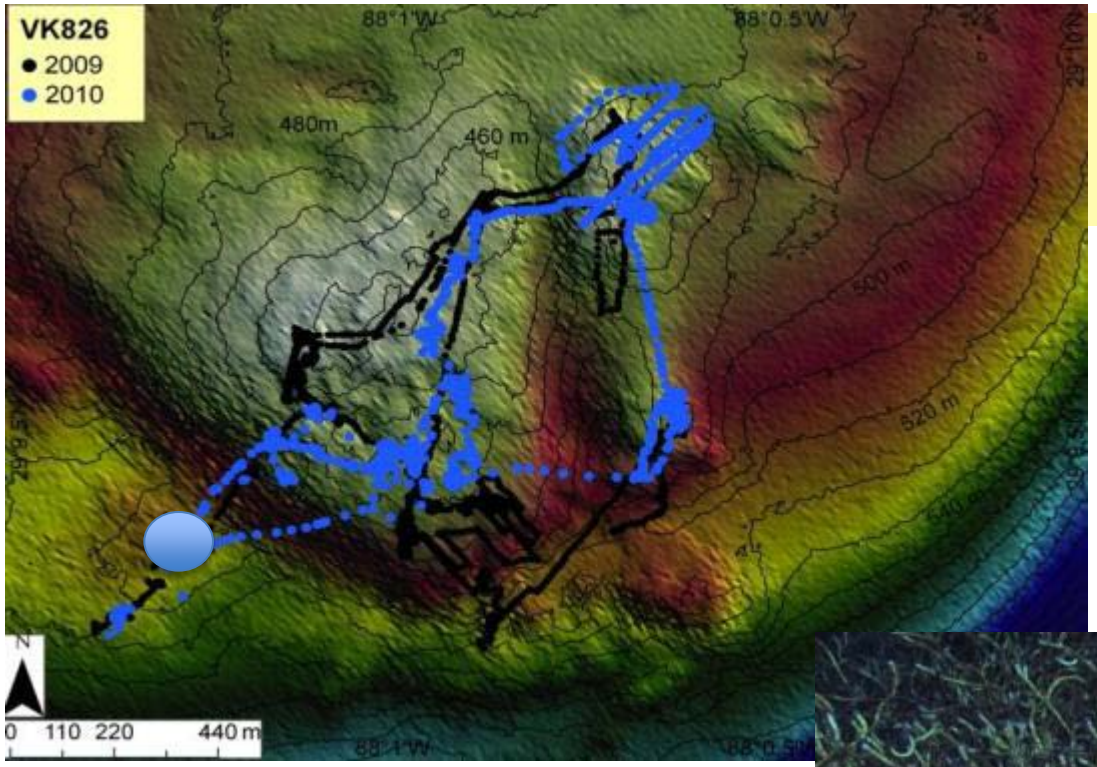
Scleractinians and Antipatharians

Octocorals

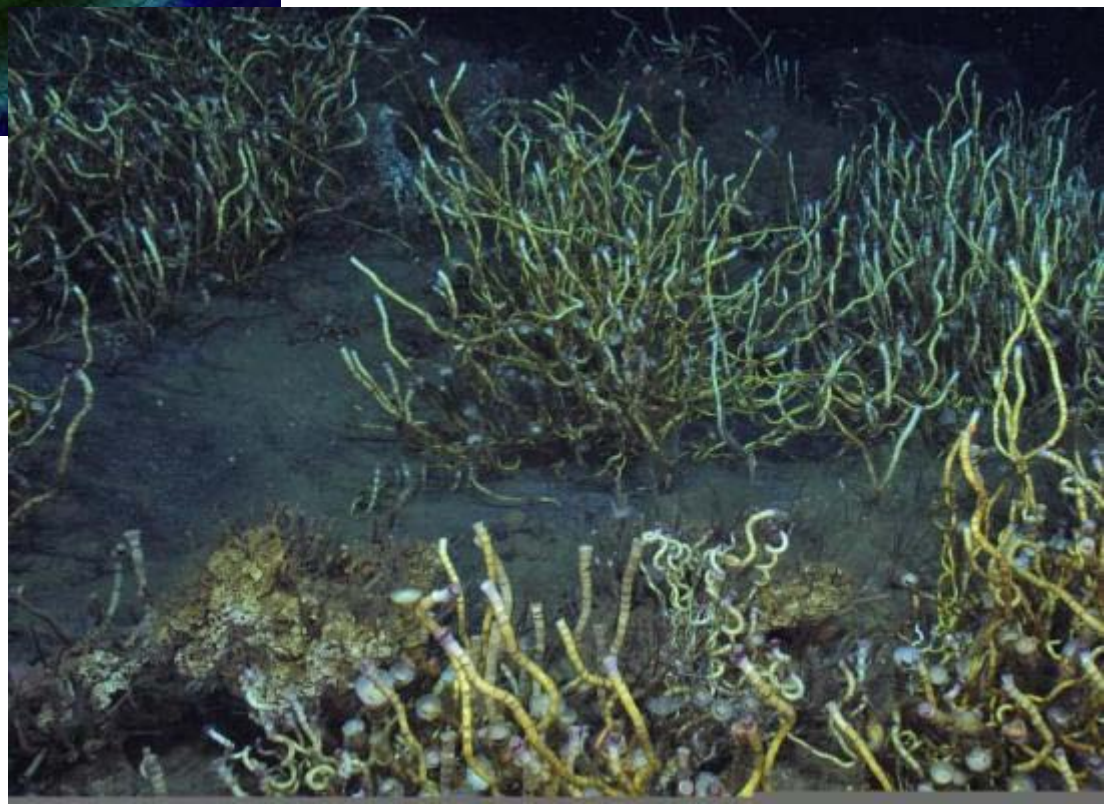
Sites from *Lophelia* II

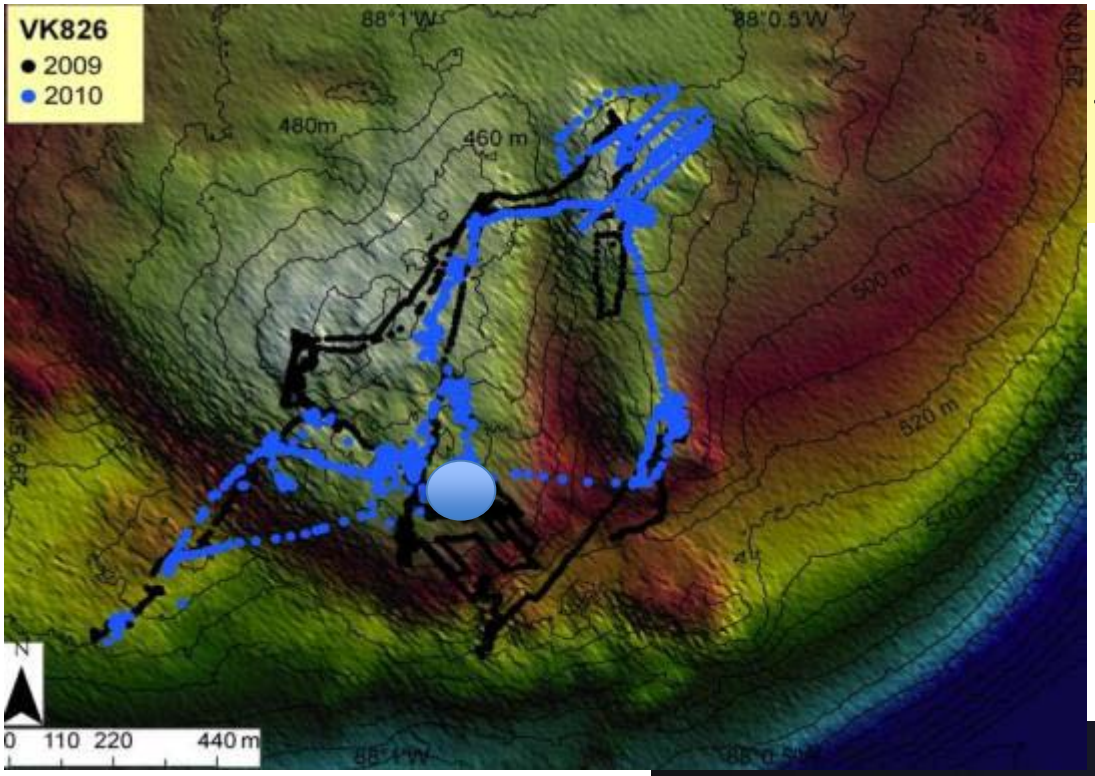



VK826
2009
2010
Depth: 400–530 m
Temp: 7.3–9.8 C
DO: 2.0-3.8 ml/l
88°1'W
88°0.5'
480m
460 m
500 m
520 m
540 m
29°9.5'N
29°8.5'N
N
0 110 220 440 m
88°1'W
88°0.5'W

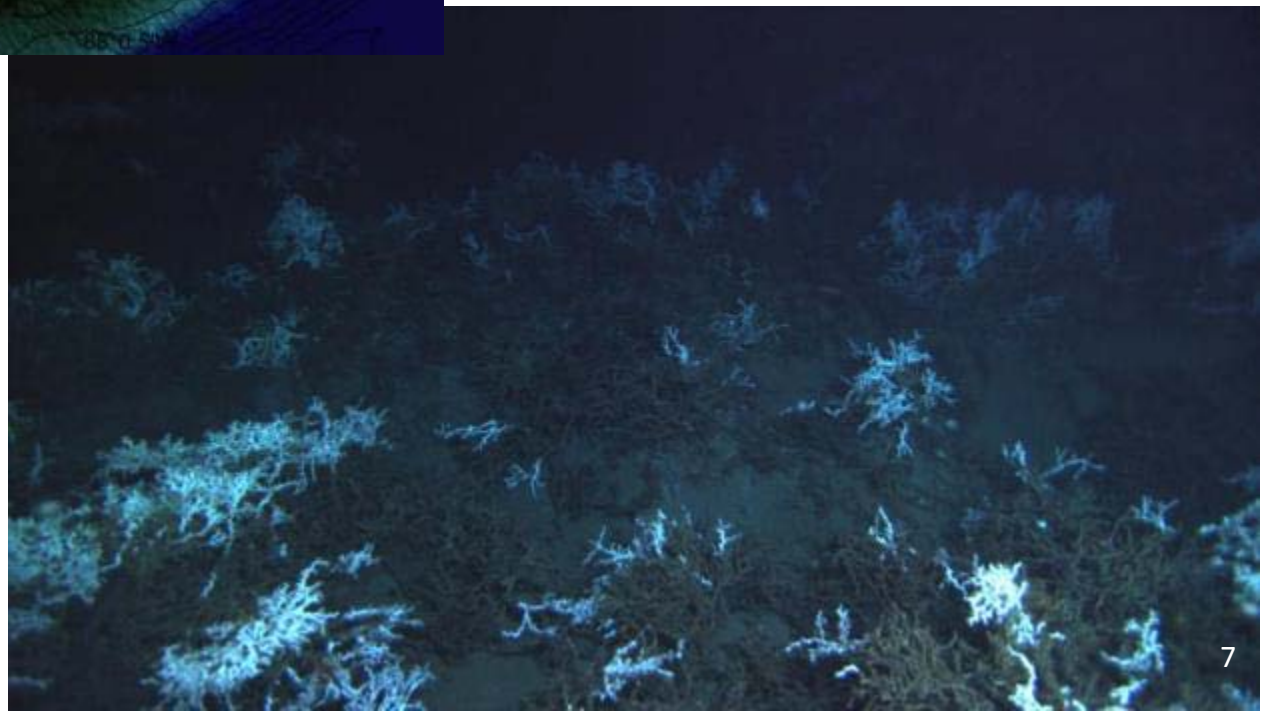


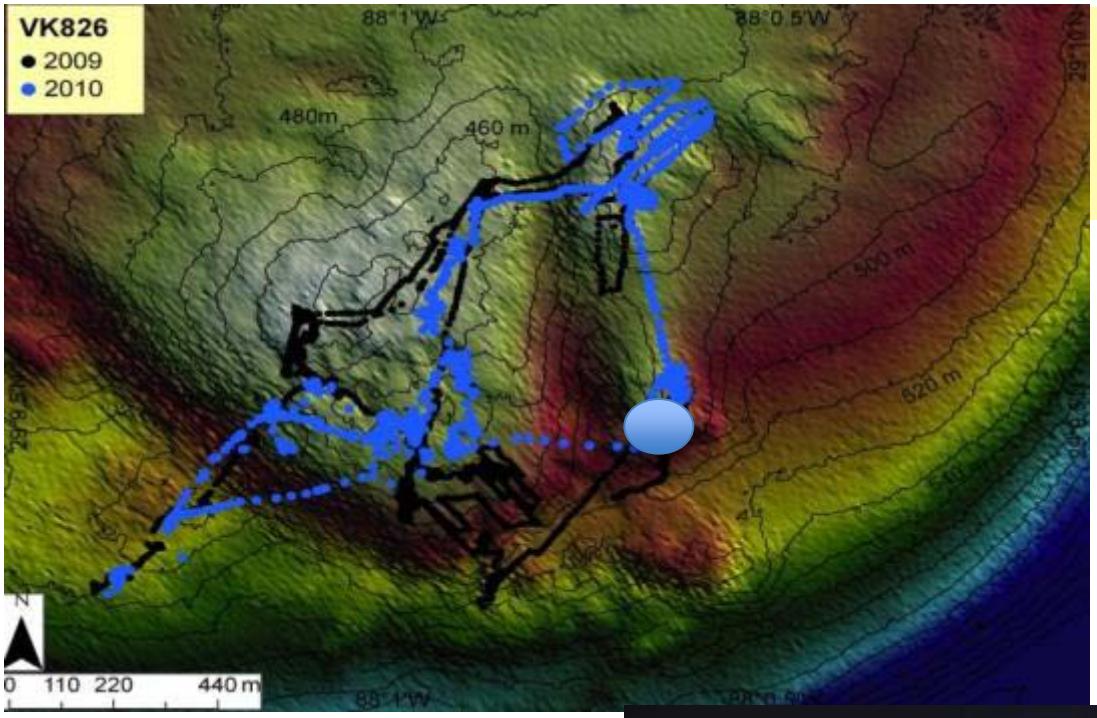
Depth: 400–530 m
Temp: 7.3–9.8
DO: 2.0–3.8 ml/l



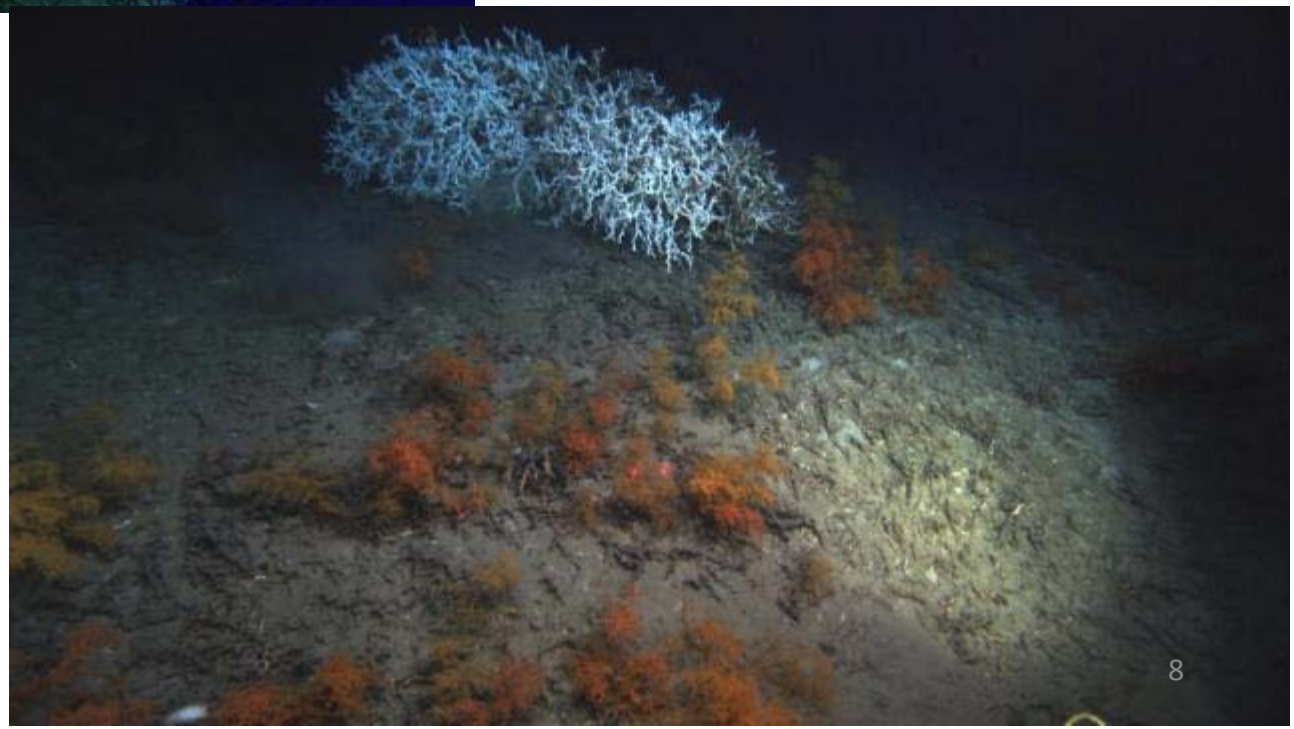


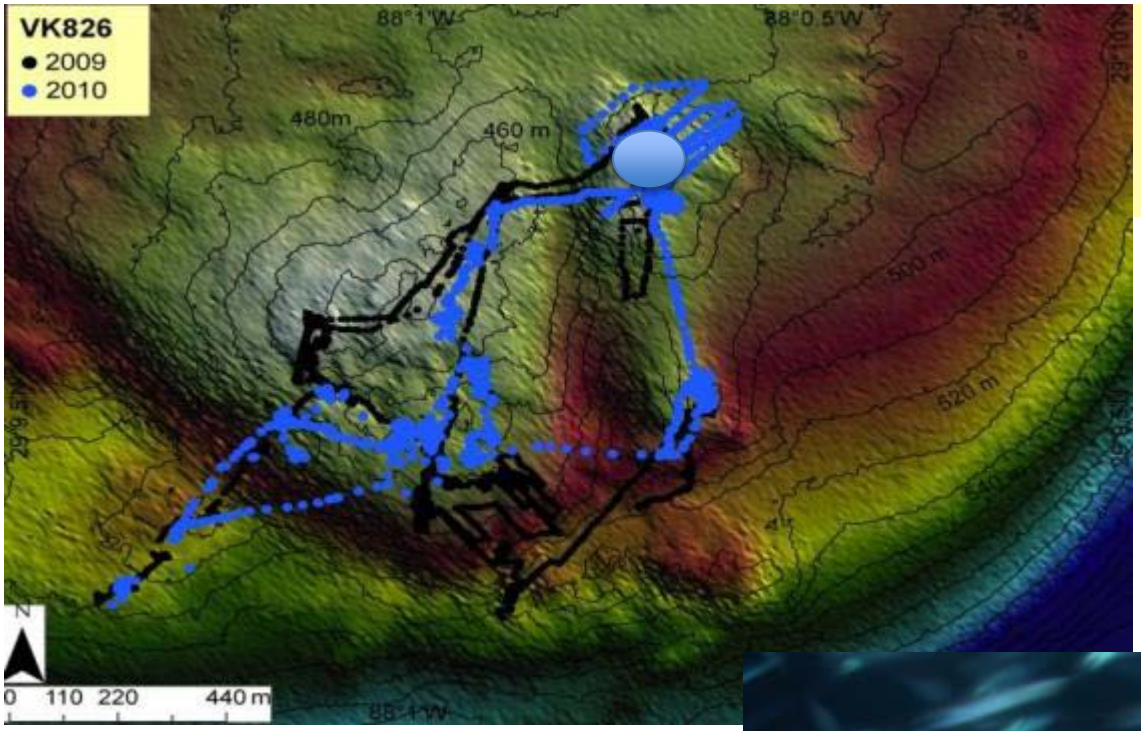
Depth: 400–530 m
Temp: 7.3–9.8
DO: 2.0–3.8 ml/l



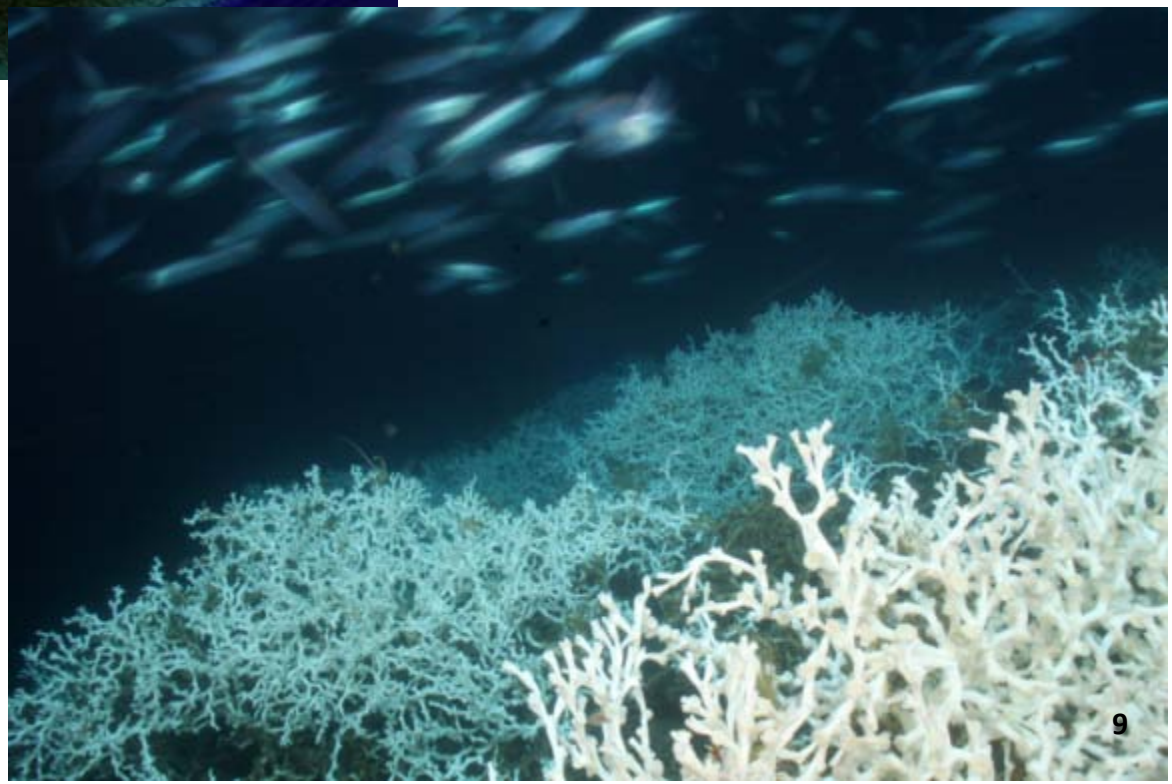


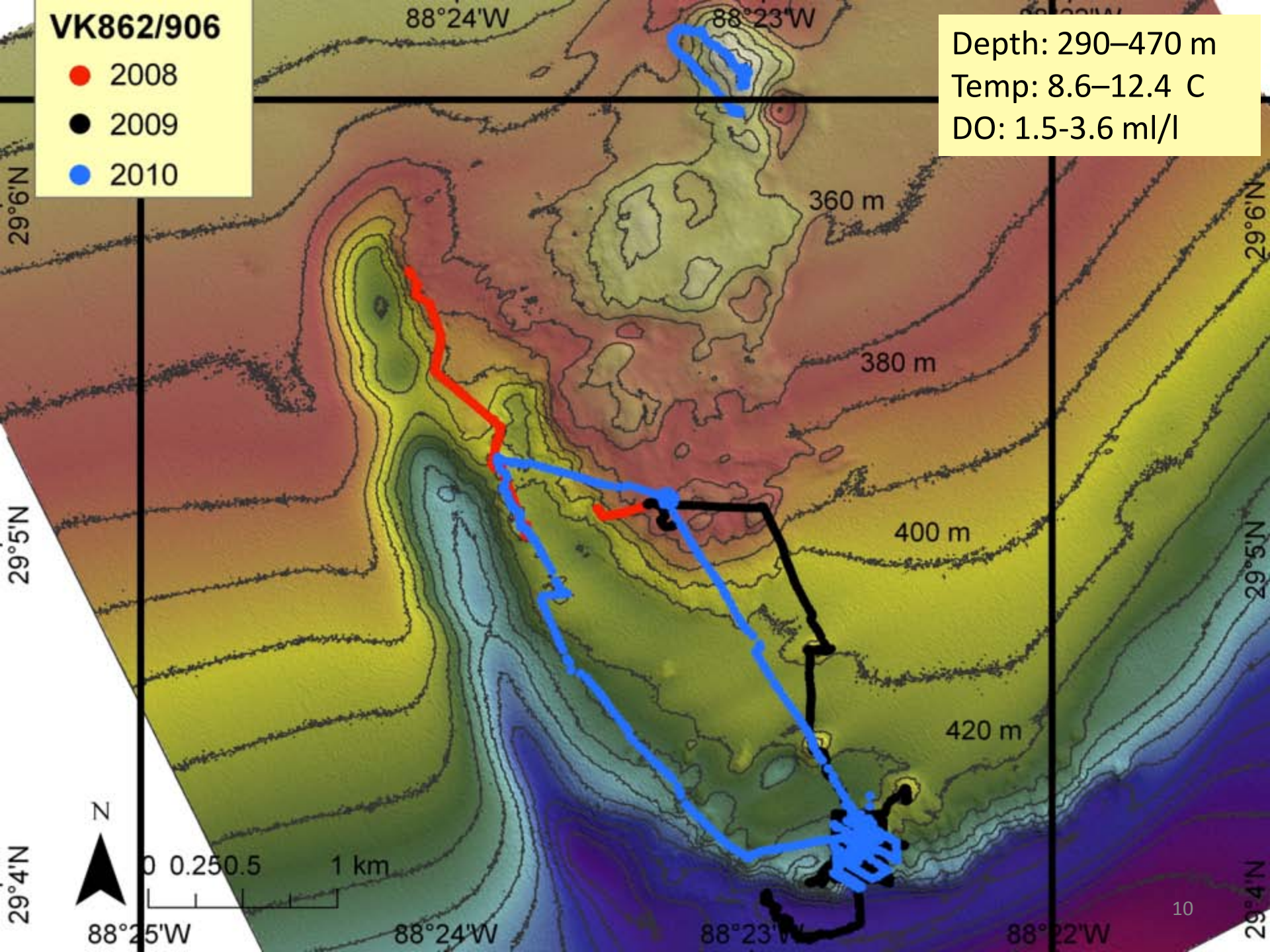
Depth: 400–530 m
Temp: 7.3–9.8
DO: 2.0–3.8 ml/l



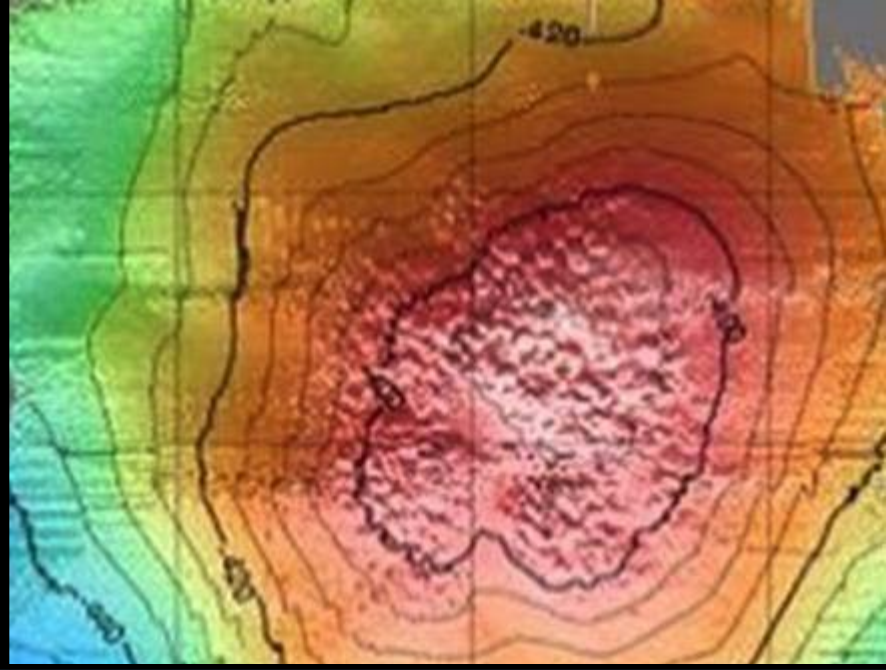


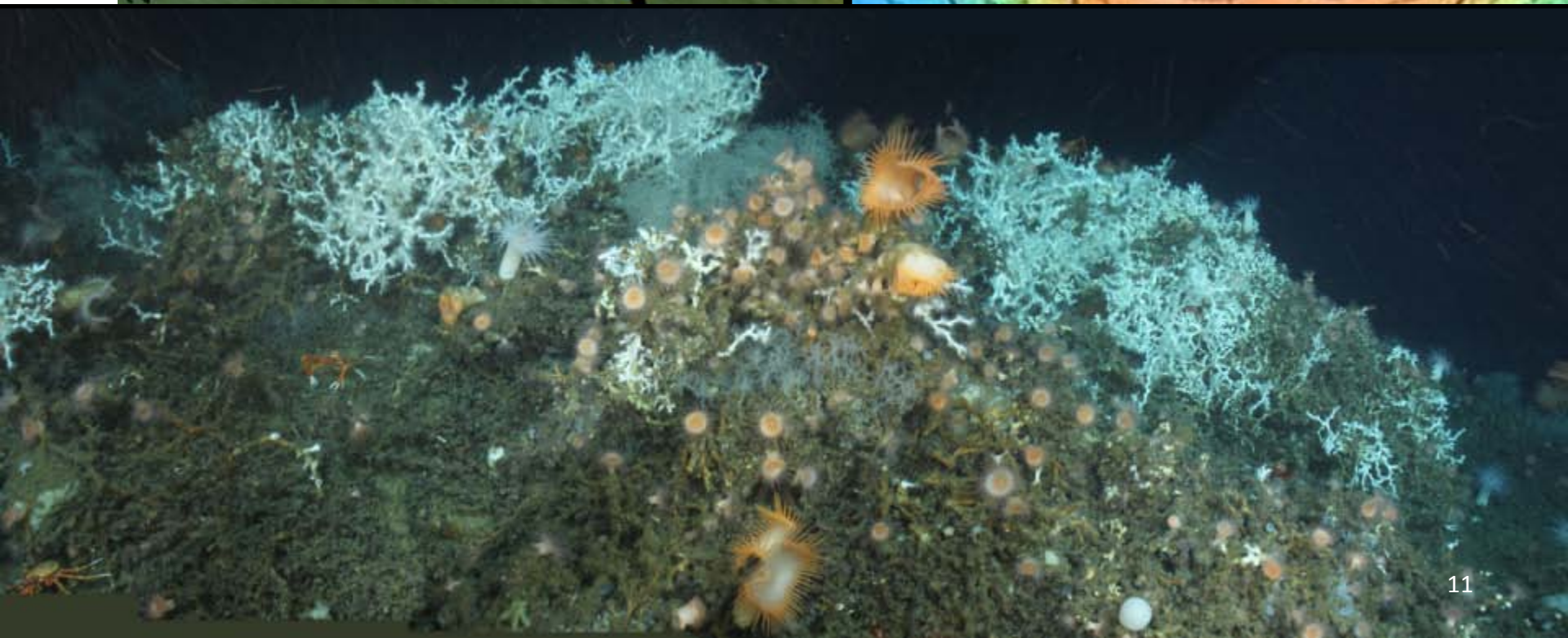
Depth: 400–530 m
Temp: 7.3–9.8
DO: 2.0–3.8 ml/l

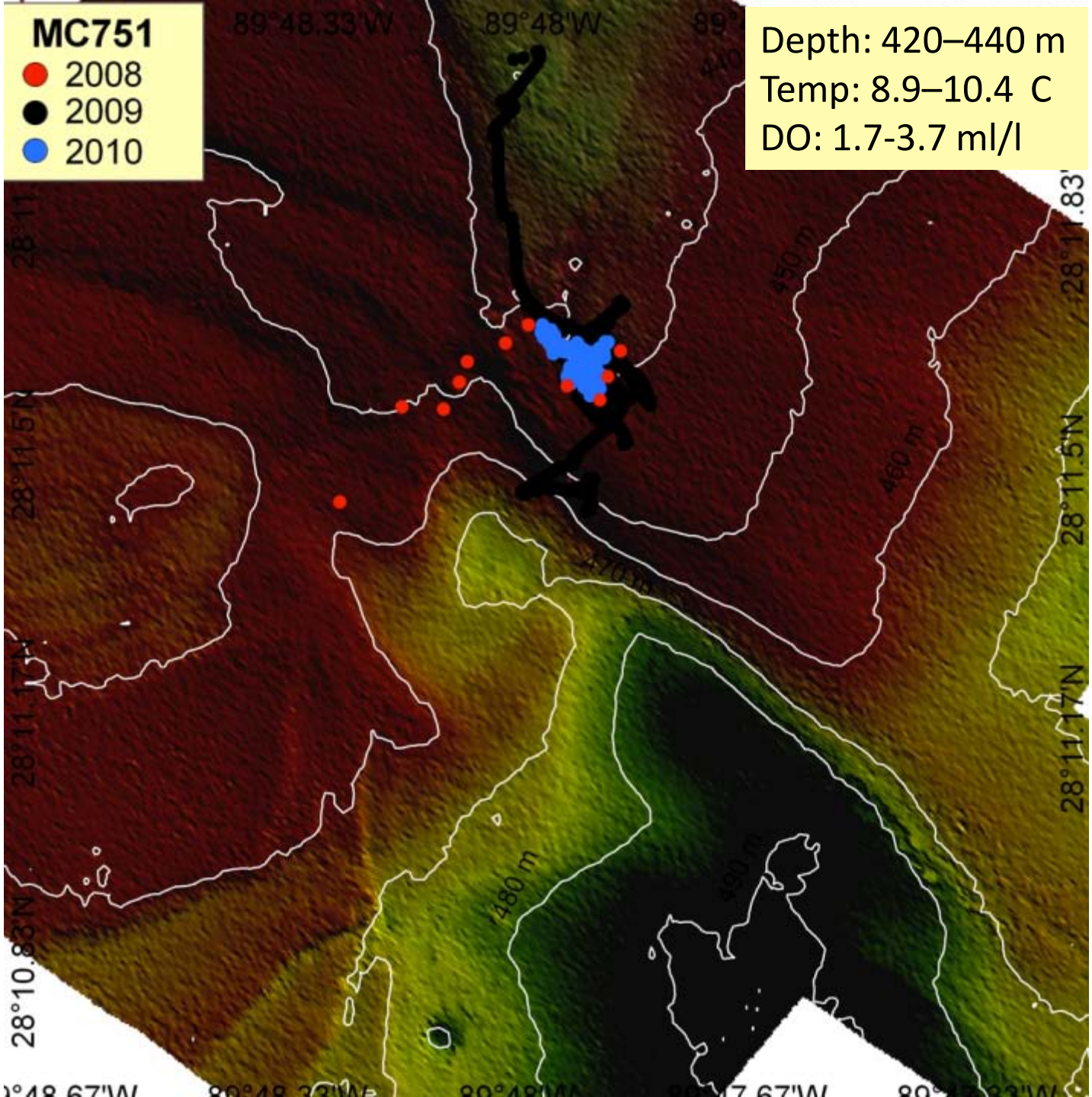


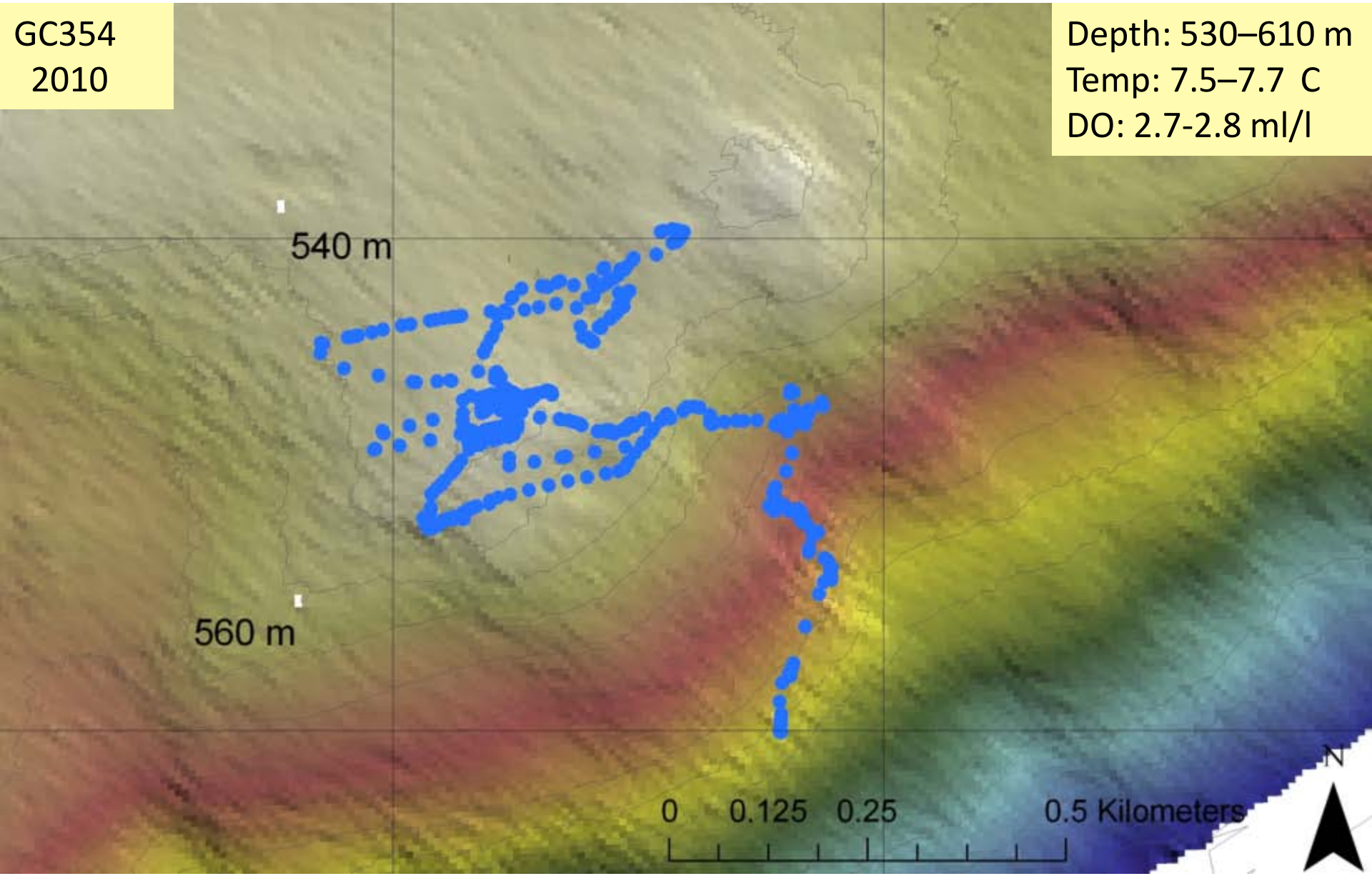

VK862/906
2008
2009
2010
Depth: 290–470 m
Temp: 8.6–12.4 C
DO: 1.5-3.6 ml/l
88°24'W
88°23'W
29°6'N
29°5'N
29°4'N
360 m
380 m
400 m
420 m
N
0 0.250.5 1 km
88°25'W
88°24'W
88°23'W
88°22'W

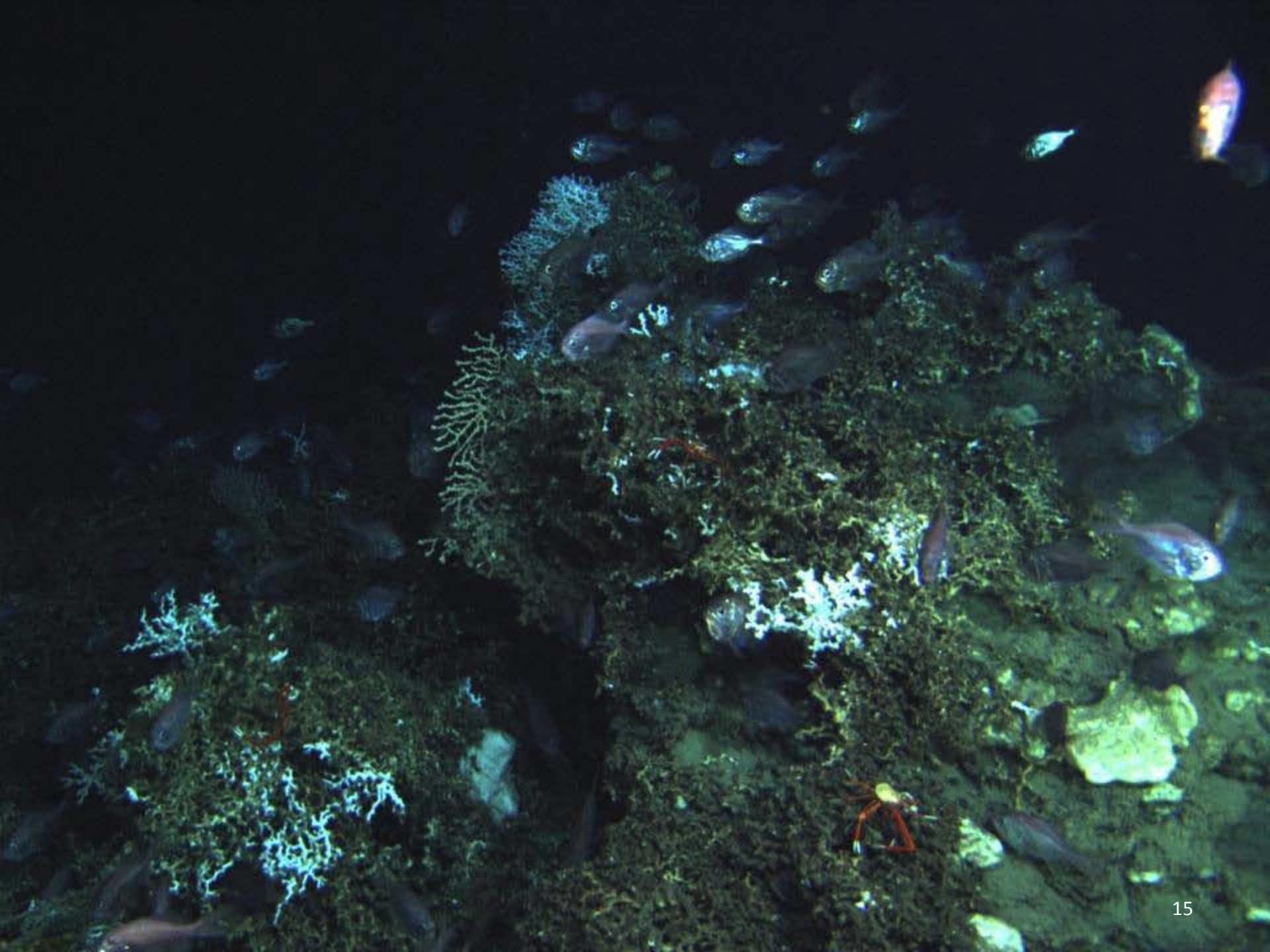
VK906
2009
2010
88°22.67'W
29°4.33'N

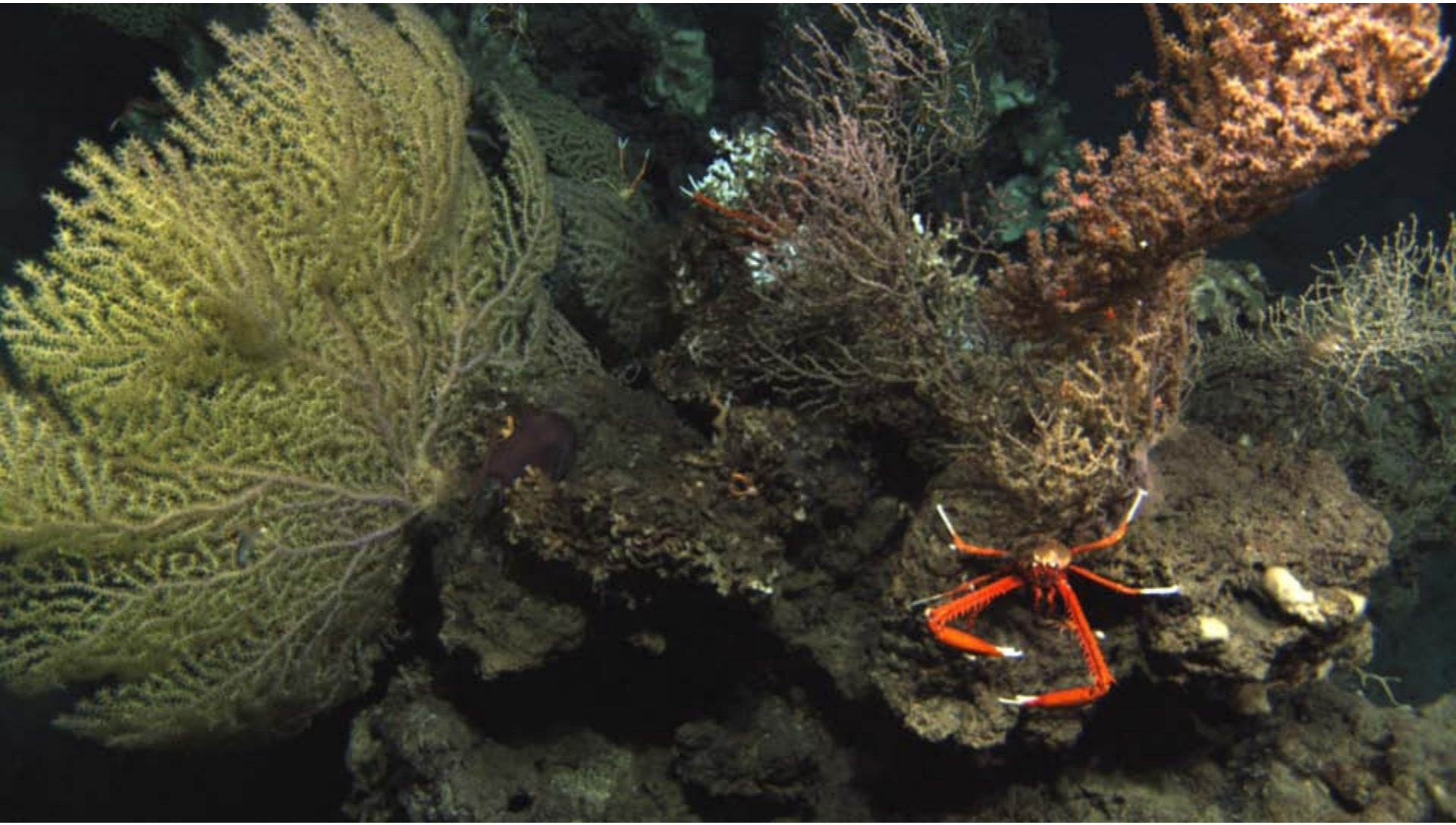


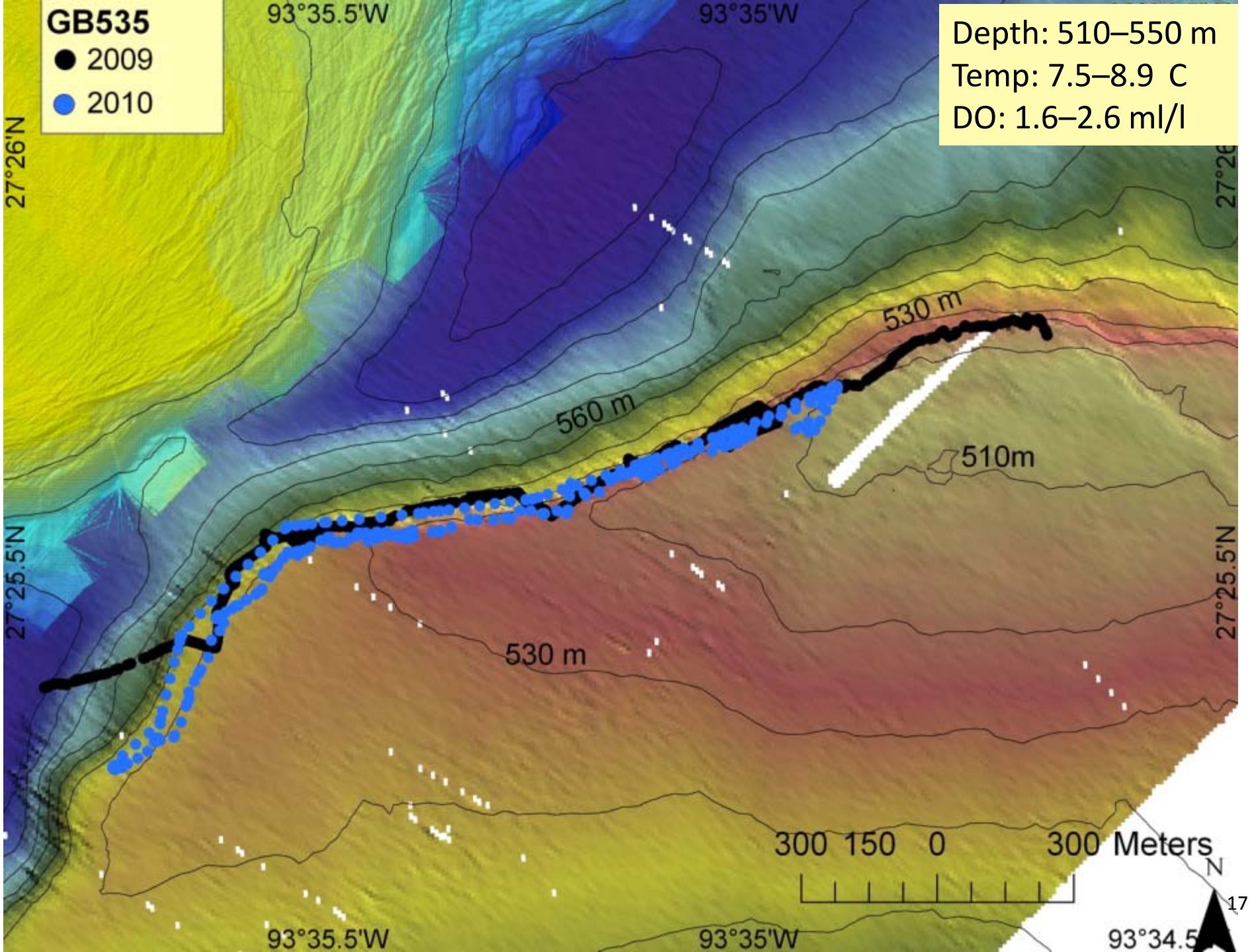



MC751
2008
2009
2010
Depth: 420–440 m
Temp: 8.9–10.4 C
DO: 1.7-3.7 ml/l
89°48.33'W
89°48'W
28°11.5'N
28°11.17'N
28°10.83'N
450 m
460 m
470 m
480 m

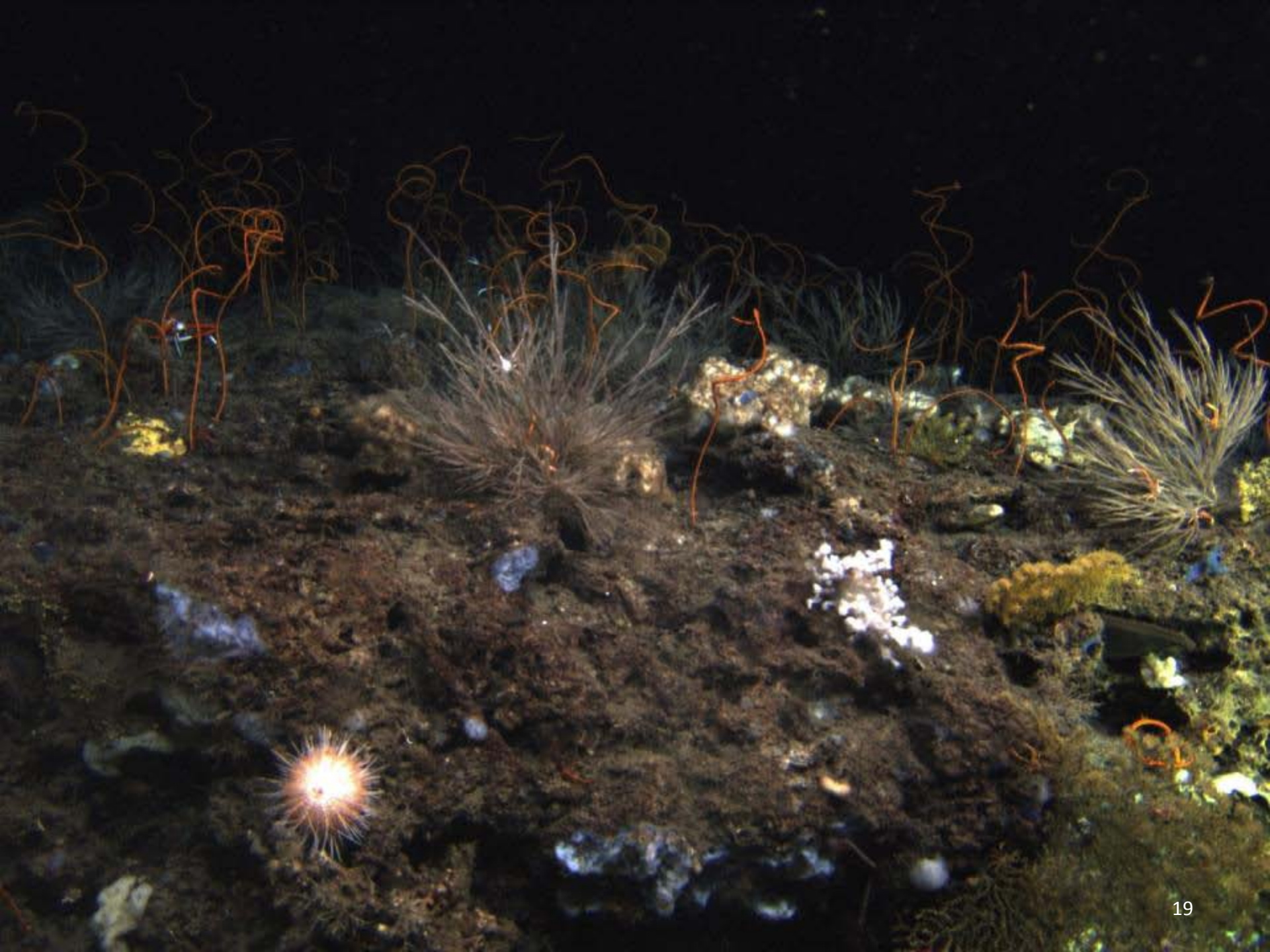

GC354
2010
Depth: 530–610 m
Temp: 7.5–7.7 C
DO: 2.7-2.8 ml/l
540 m
560 m
0
0.125
0.25
0.5 Kilometers
N



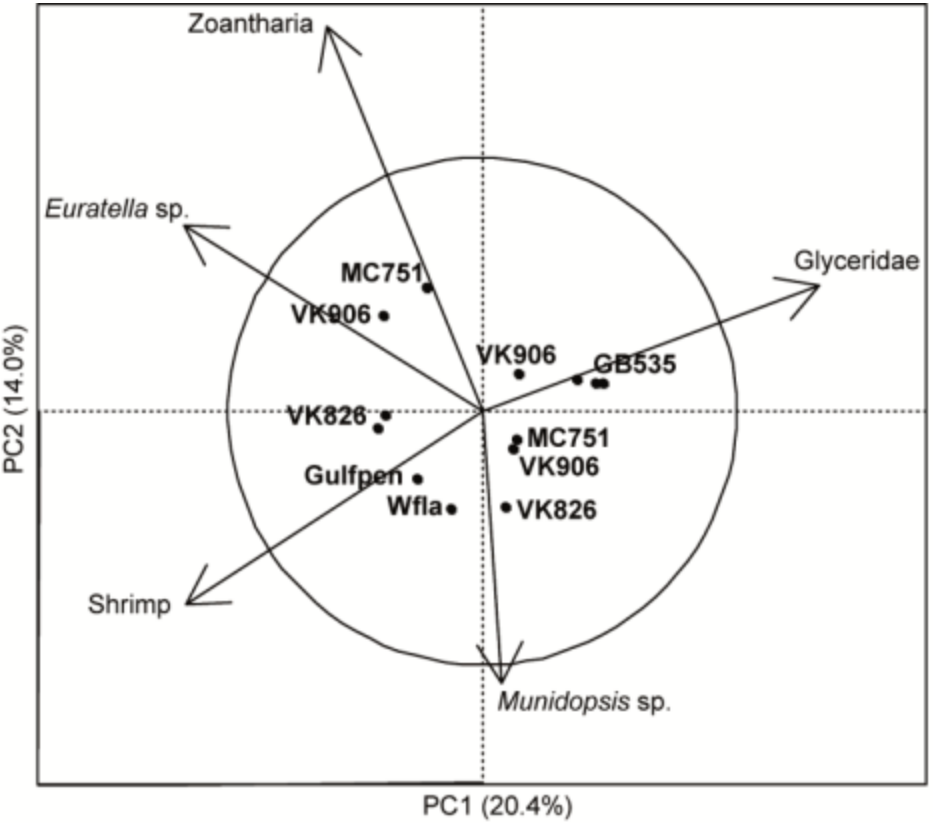


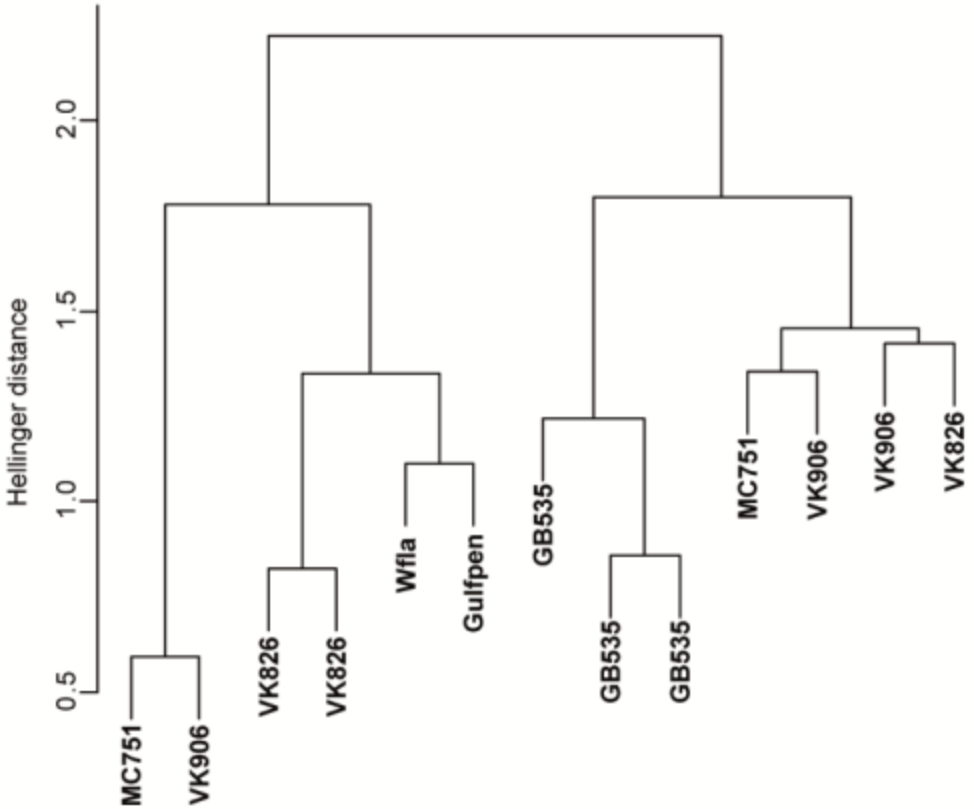


Depth: 510–550 m
Temp: 7.5–8.9 C
DO: 1.6–2.6 ml/l



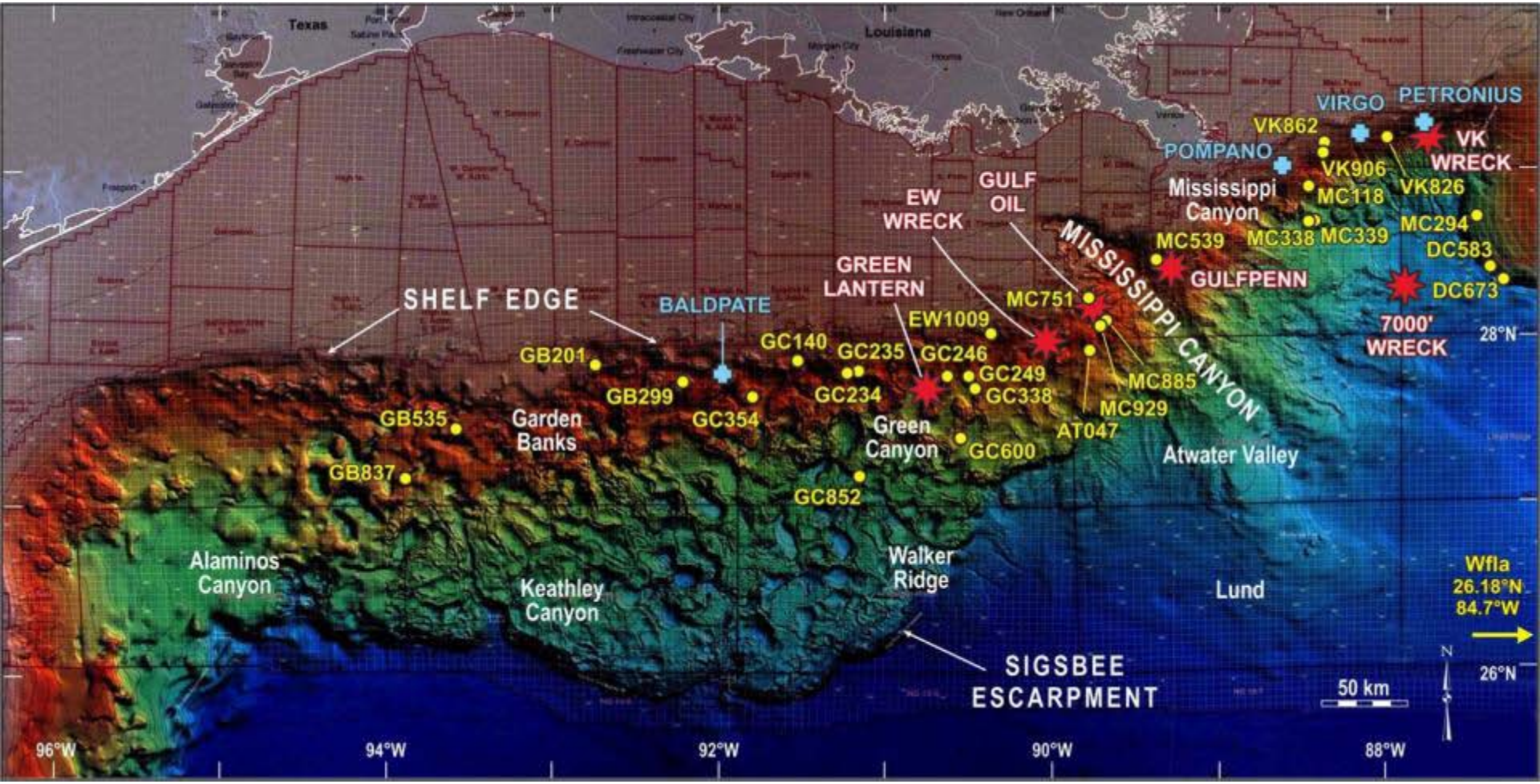
High variability in *Lophelia*-associated community within some sites

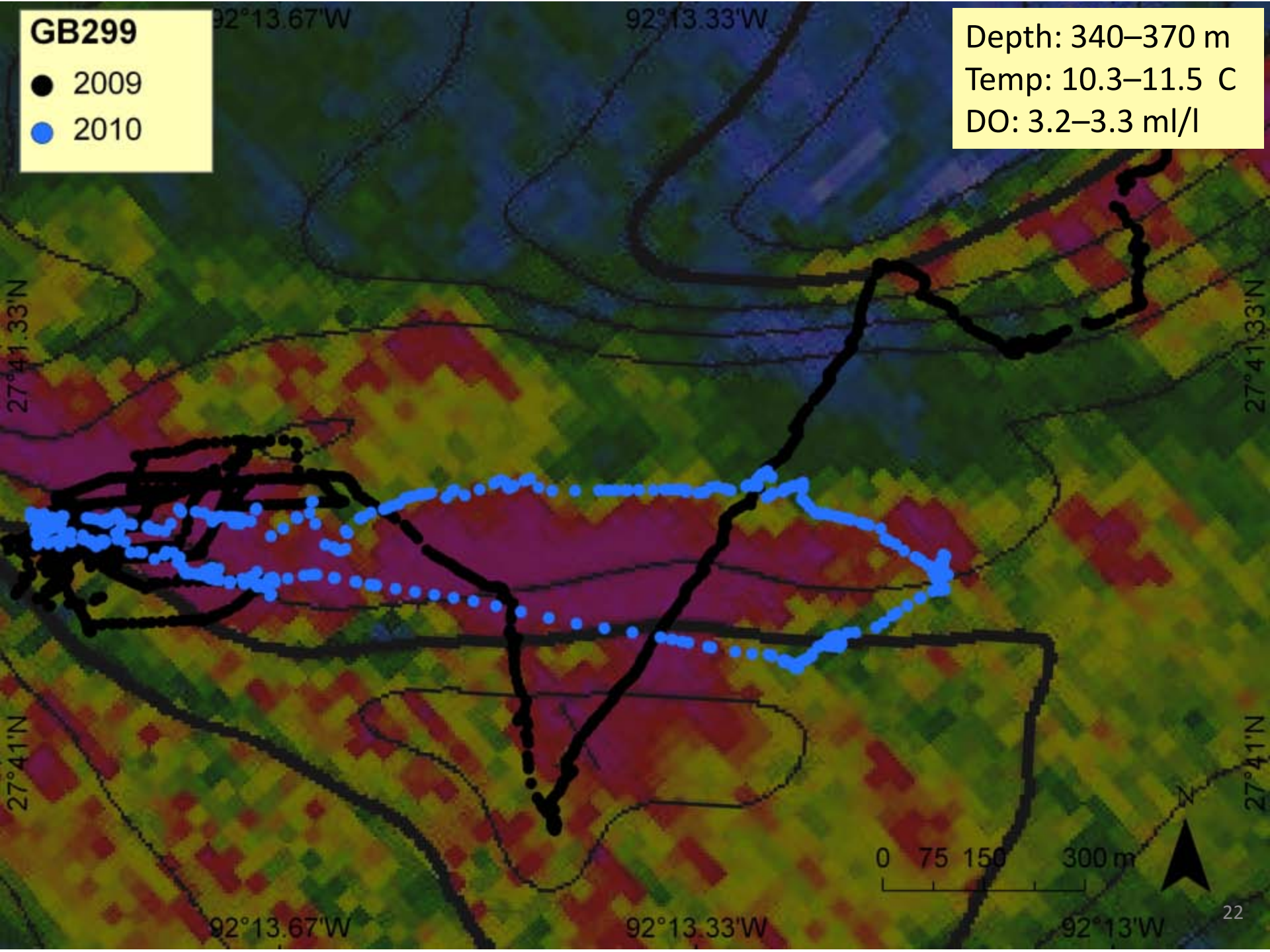


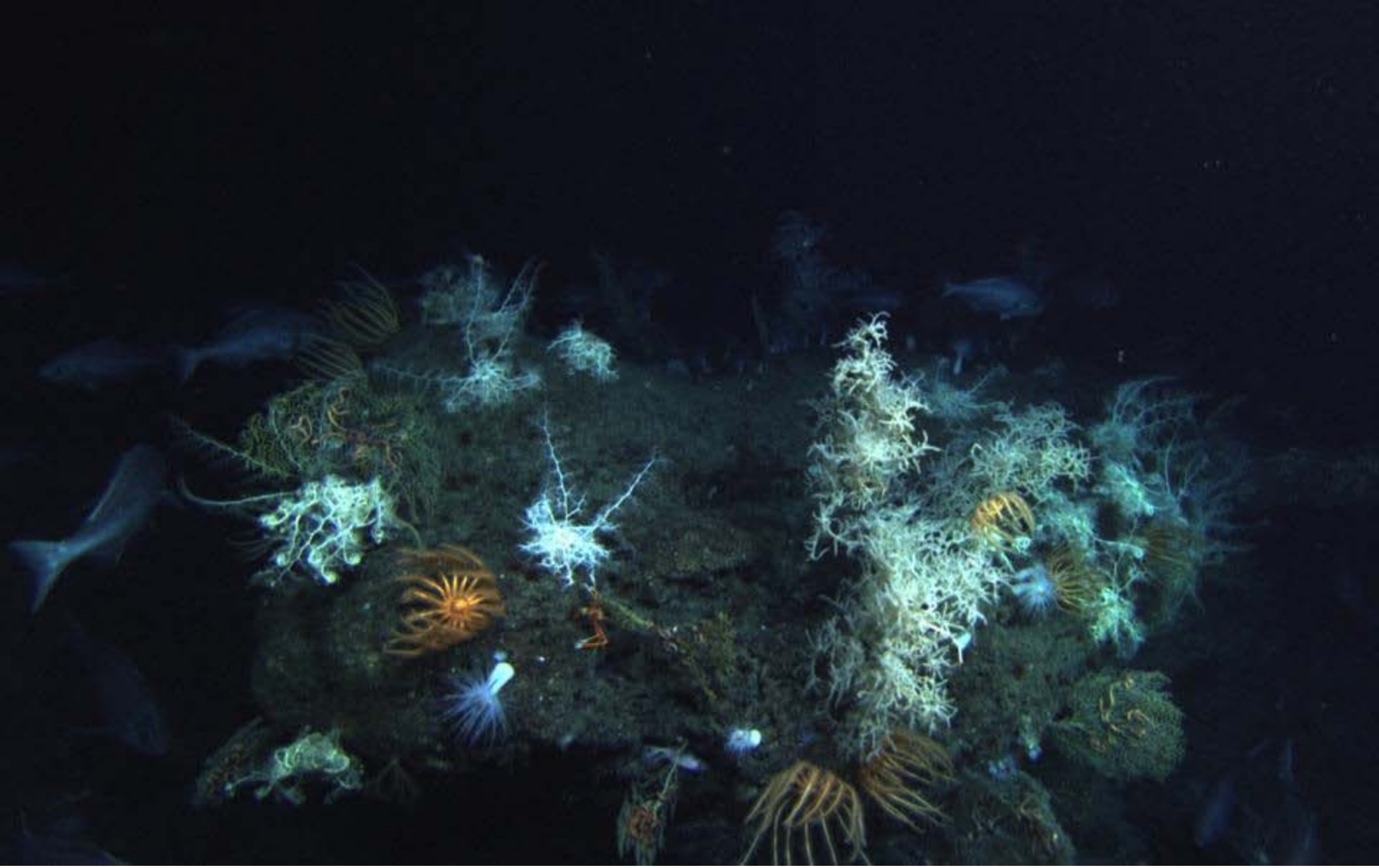


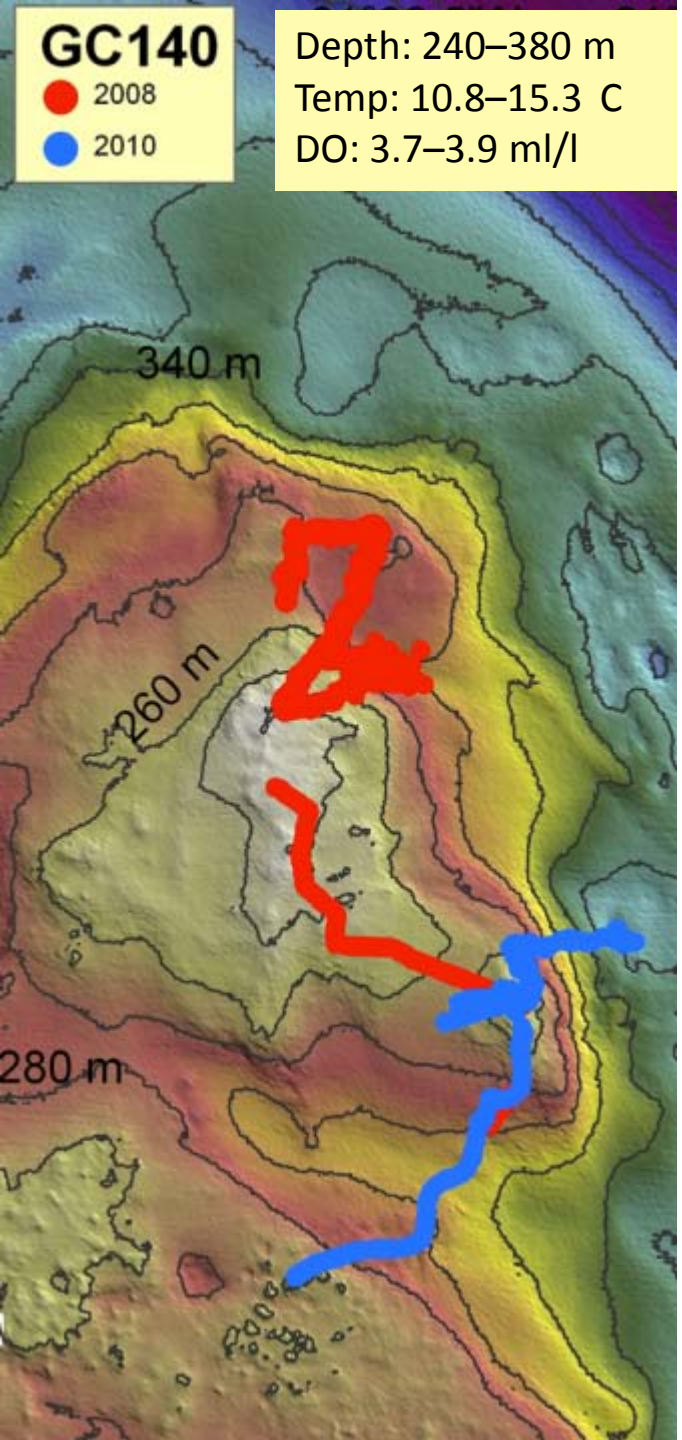
Macrofauna from coral pot collections in 2009 and 2010

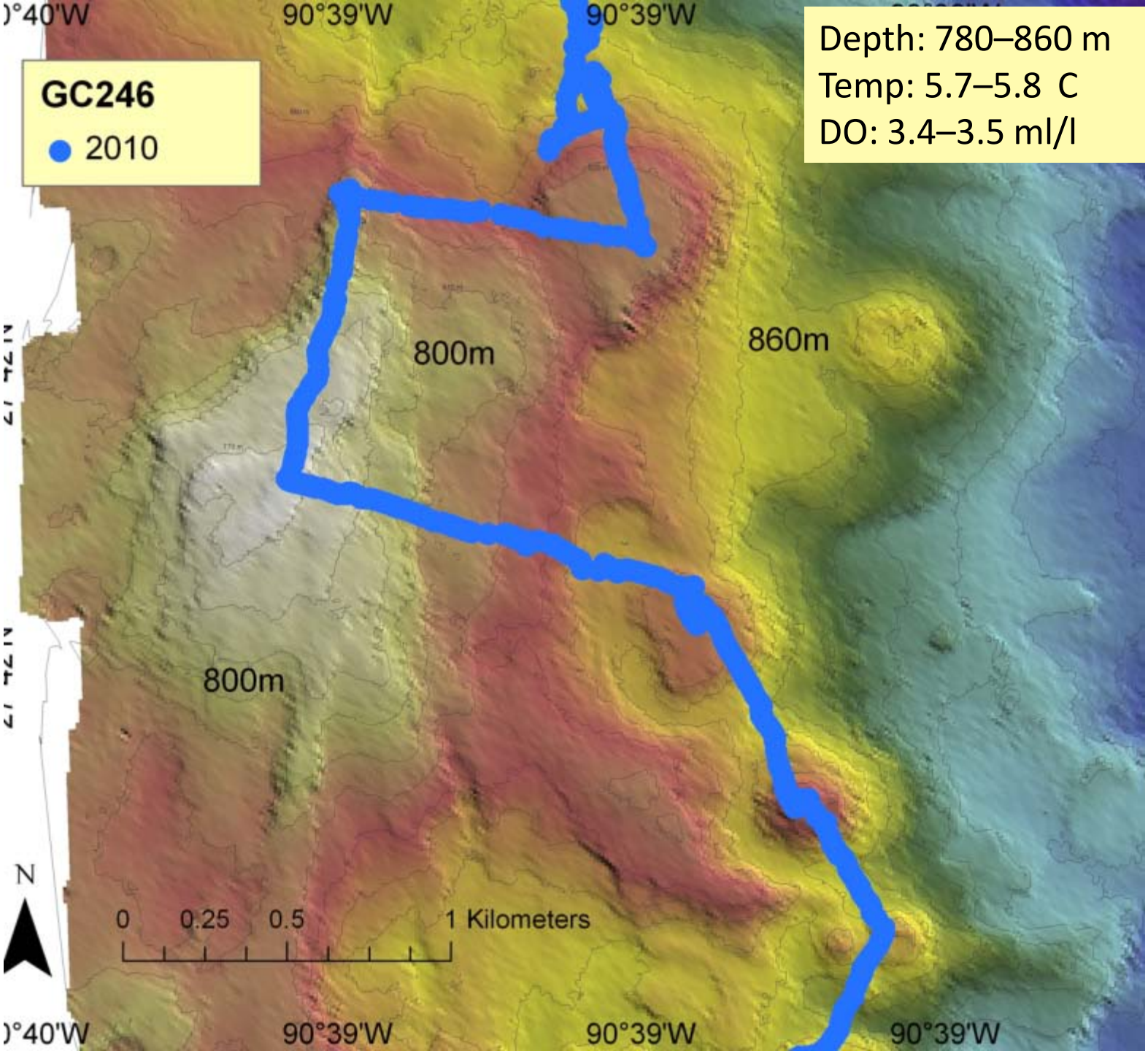
Sites from *Lophelia* II

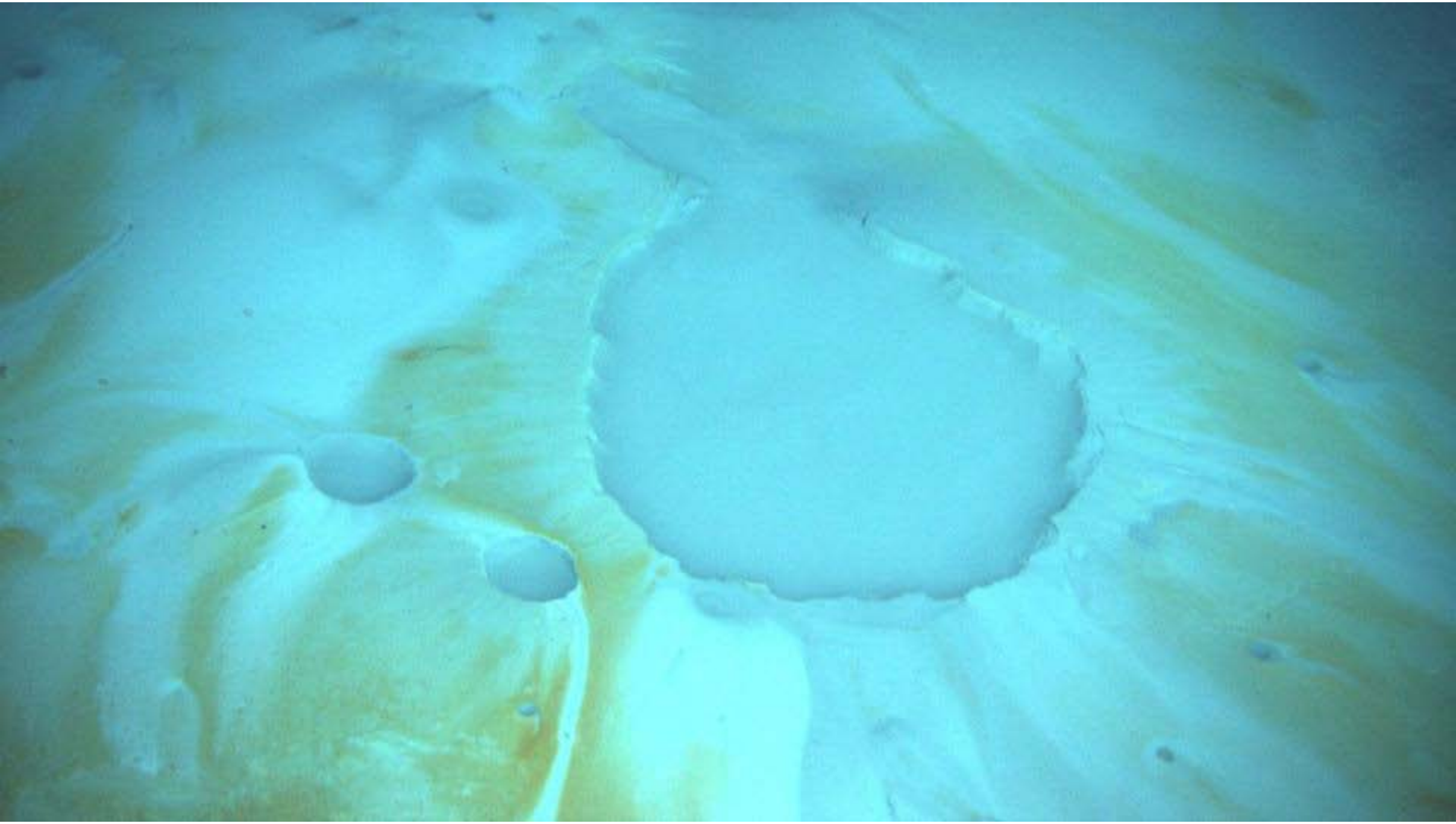


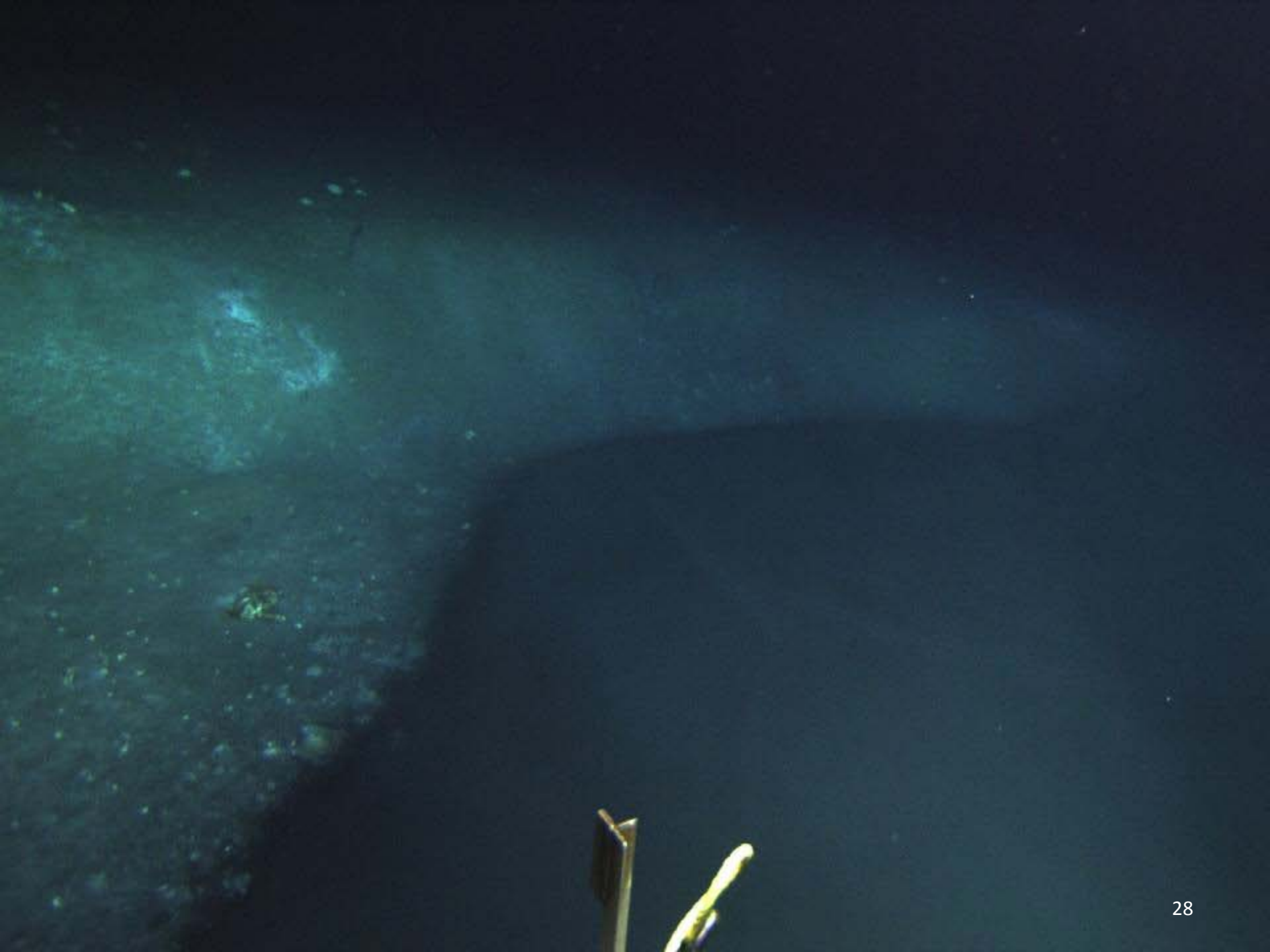

GB299
2009
2010
Depth: 340–370 m
Temp: 10.3–11.5 C
DO: 3.2–3.3 ml/l
92°13.67'W
92°13.33'W
92°13'W
27°41.33'N
27°41'N
0 75 150 300 m
N

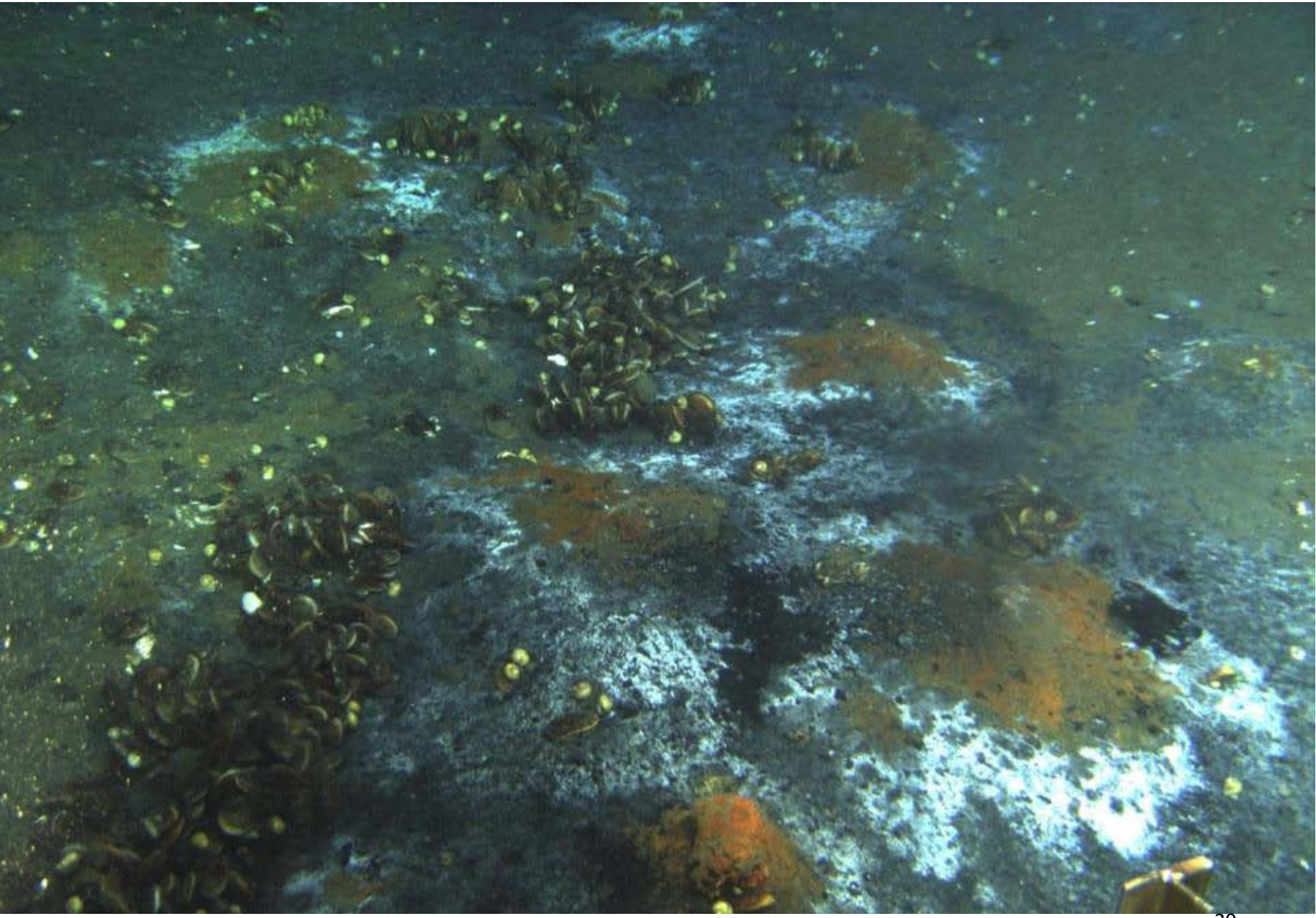


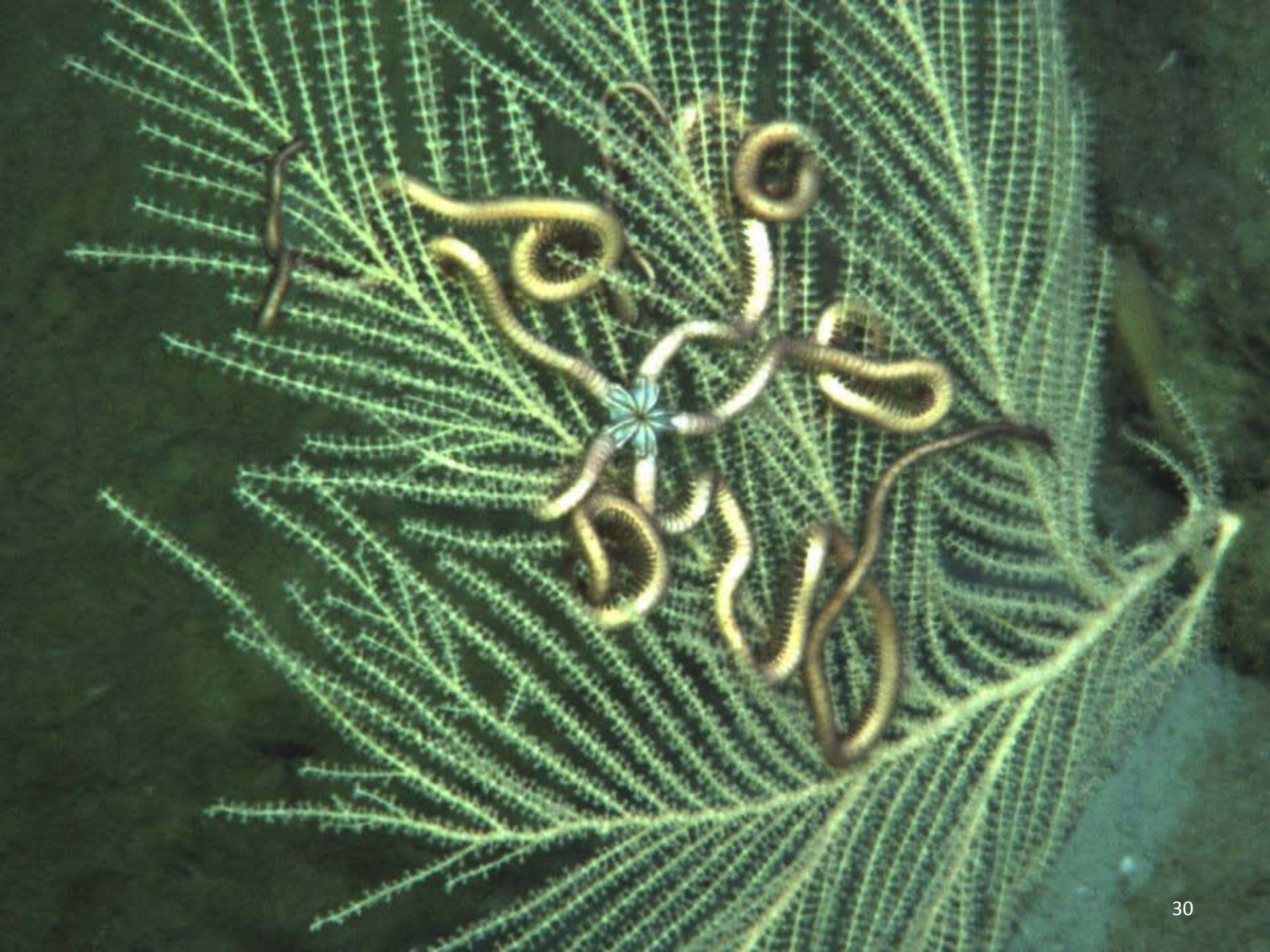

GC140
2008
2010
Depth: 240–380 m
Temp: 10.8–15.3 C
DO: 3.7–3.9 ml/l
340 m
260 m
280 m

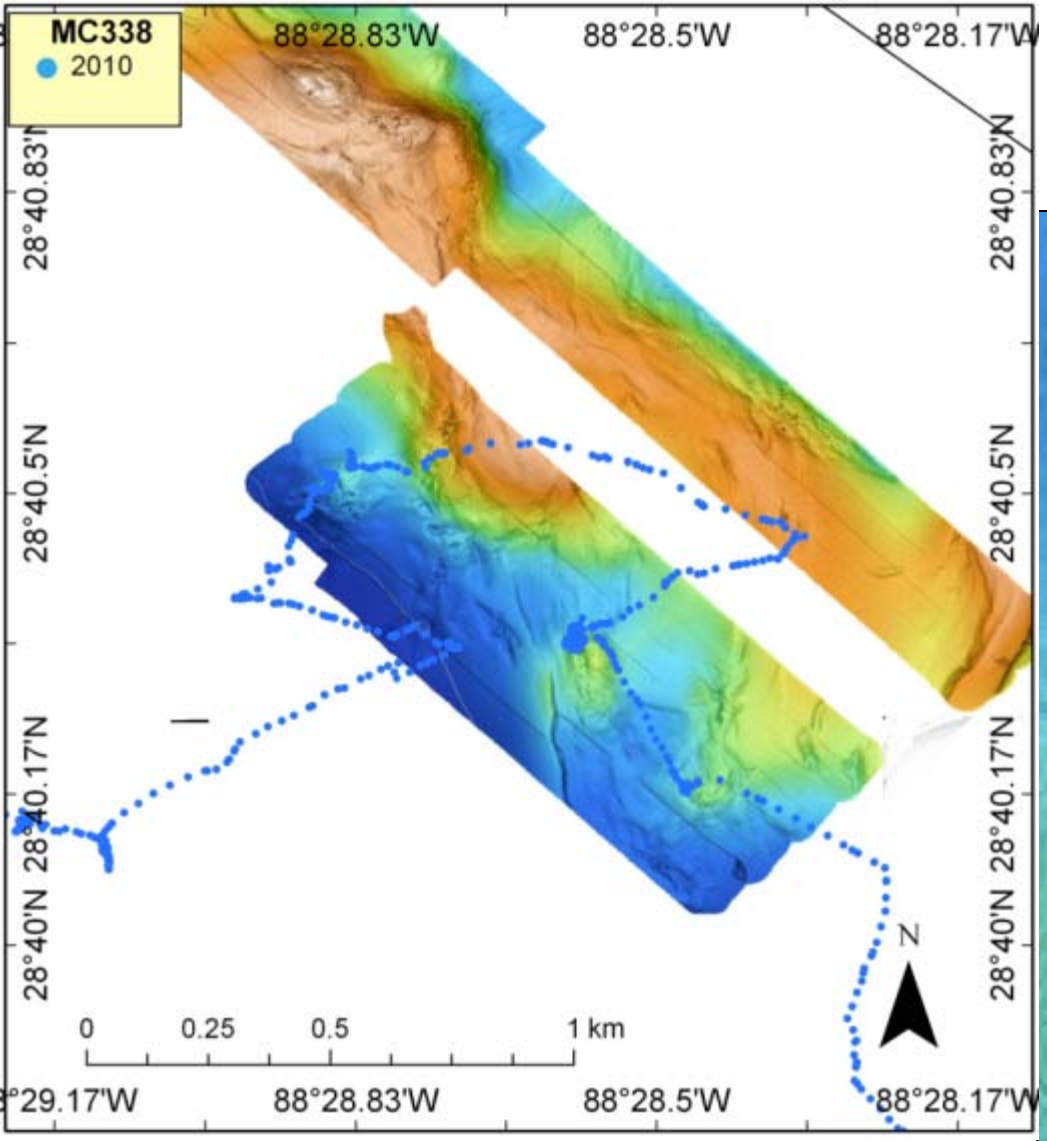

Depth: 780–860 m
Temp: 5.7–5.8 C
DO: 3.4–3.5 ml/l
GC246
2010
90°39'W
90°39'W
800m
860m
800m
N
0 0.25 0.5 1 Kilometers
90°39'W
90°39'W
90°39'W

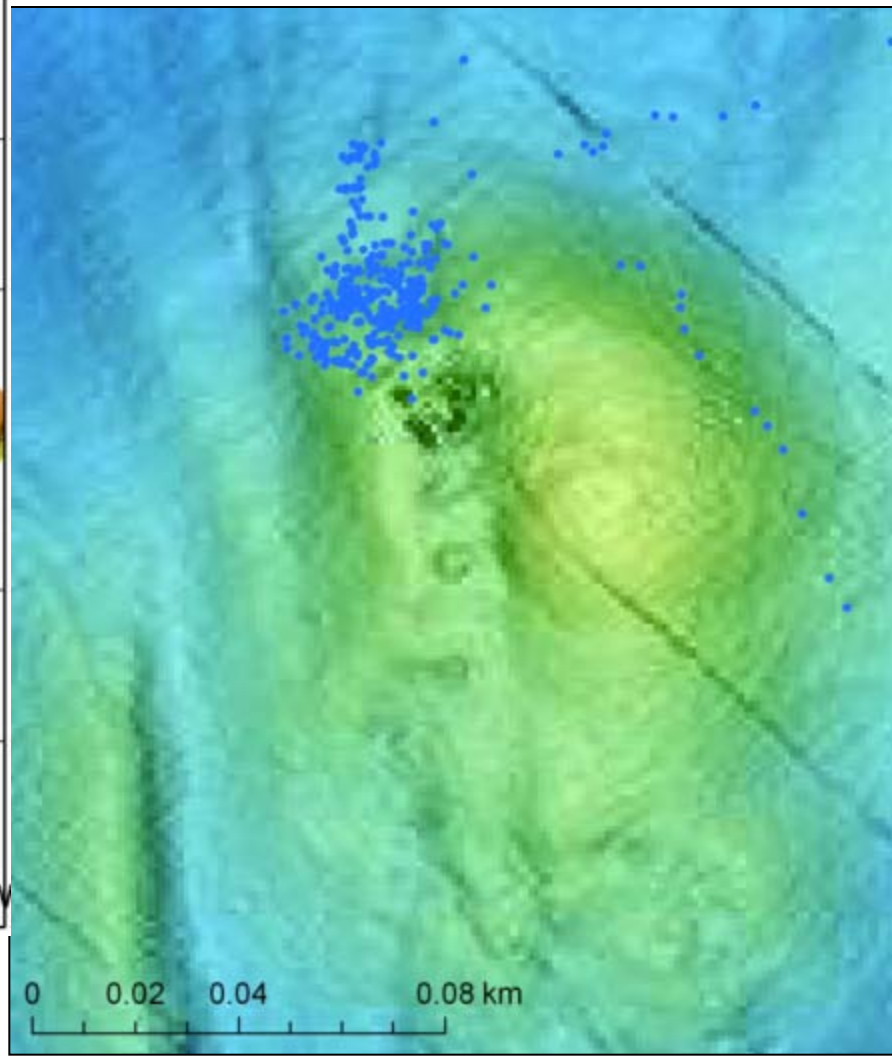


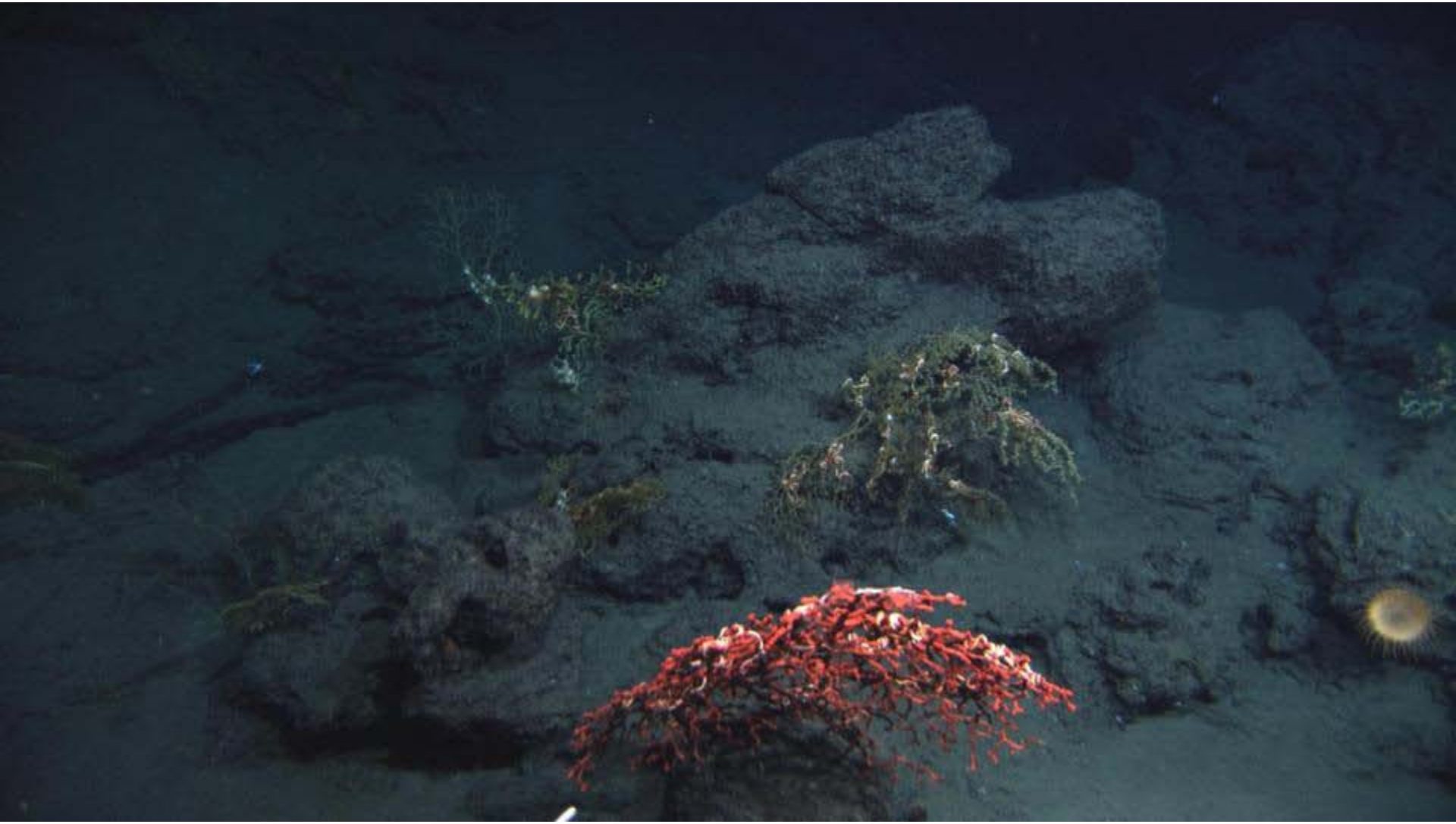


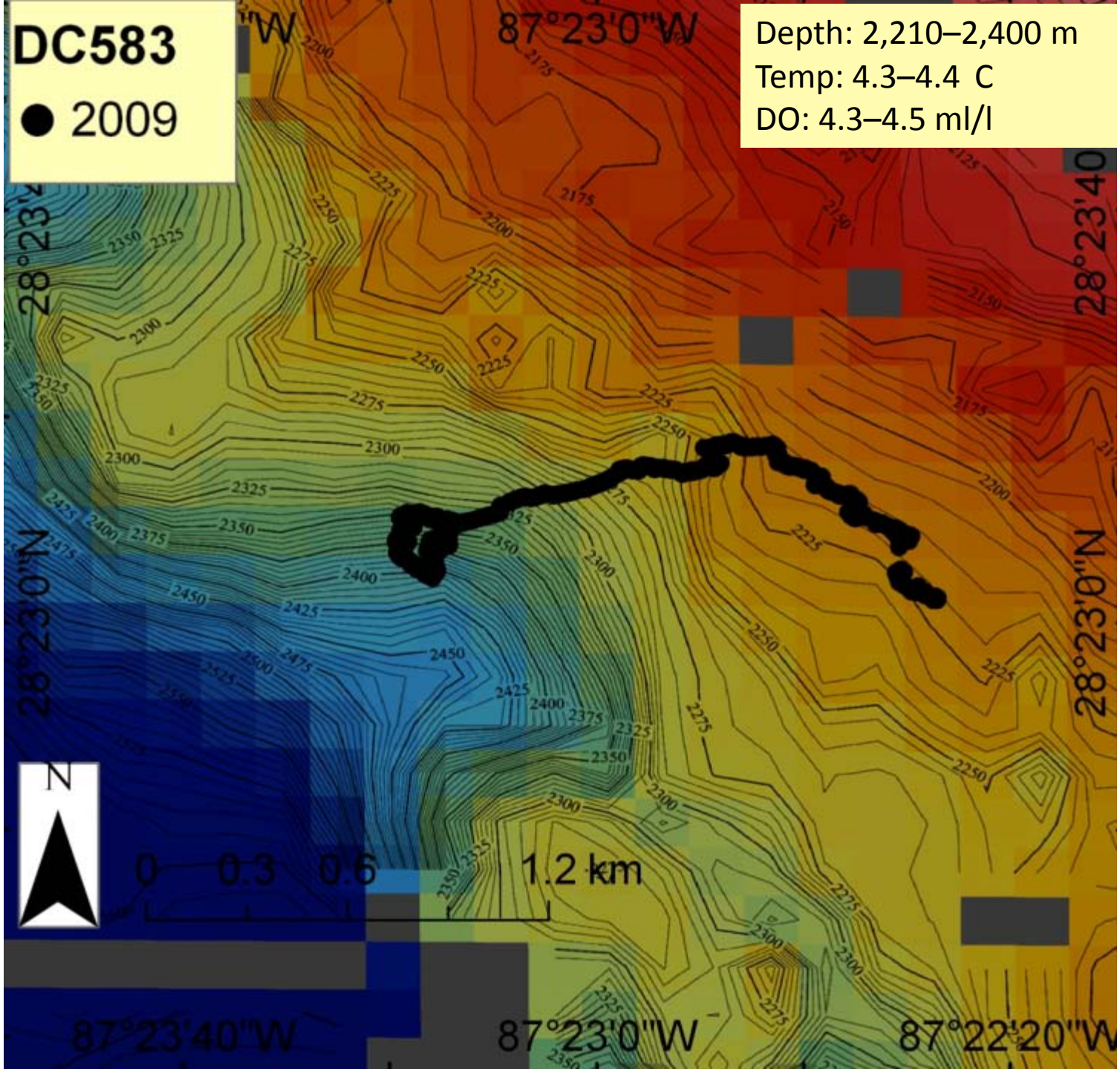




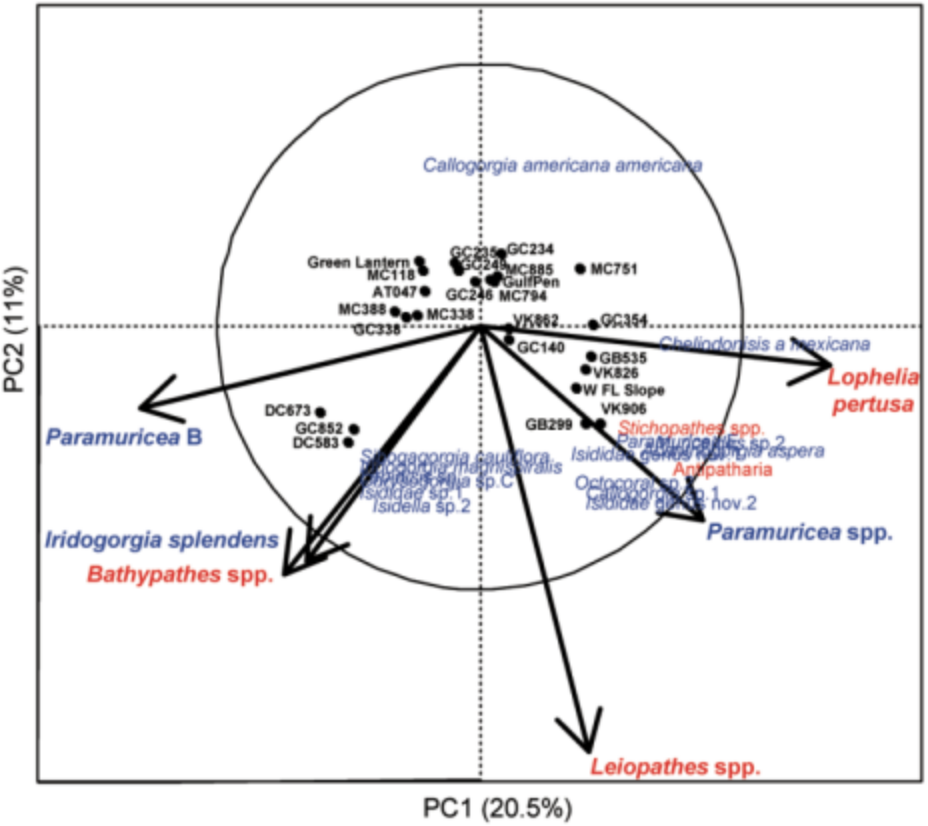

MC338
2010
88°28.83'W
88°28.5'W
88°28.17'W
28°40.83'N
28°40.5'N
28°40.17'N
28°40'N
N
0
0.25
0.5
1 km
88°28.83'W
88°28.5'W
88°28.17'W

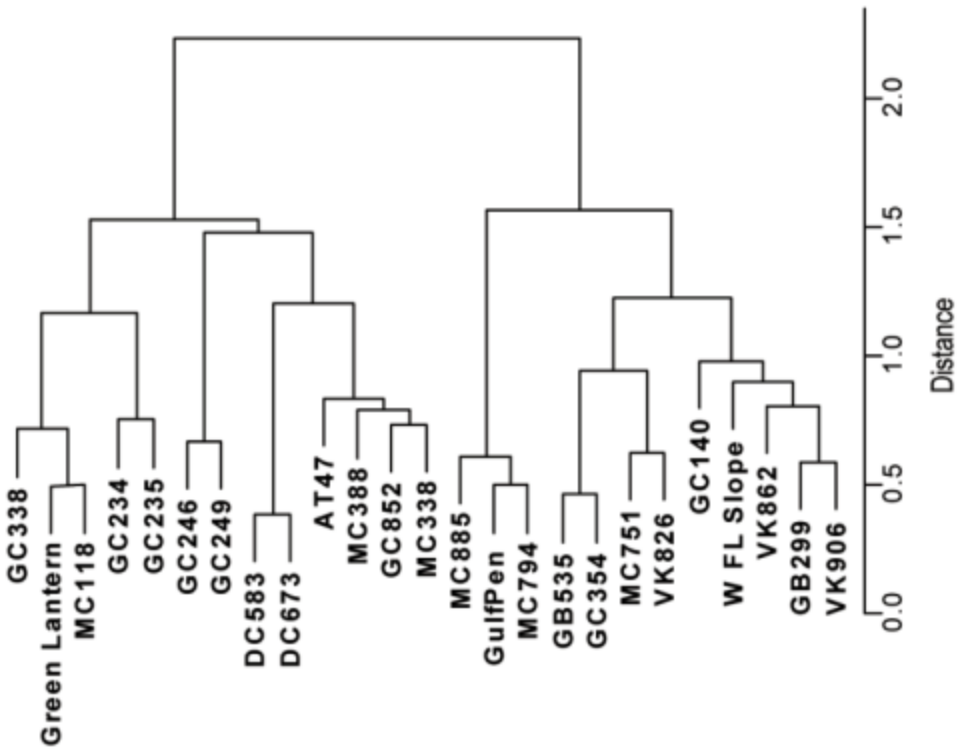

0
0.02
0.04
0.08 km




DC583
● 2009
Depth: 2,210–2,400 m
Temp: 4.3–4.4 C
DO: 4.3–4.5 ml/l
87°23'0"W
28°23'40
28°23'0"N
N
0 0.3 0.6 1.2 km
87°23'40"W
87°23'0"W
87°22'20"W

Coral communities defined by
1. depth, 2. *Lophelia*, 3. octocoral diversity





Principal components and cluster analysis of coral presence/absence data

Acknowledgments

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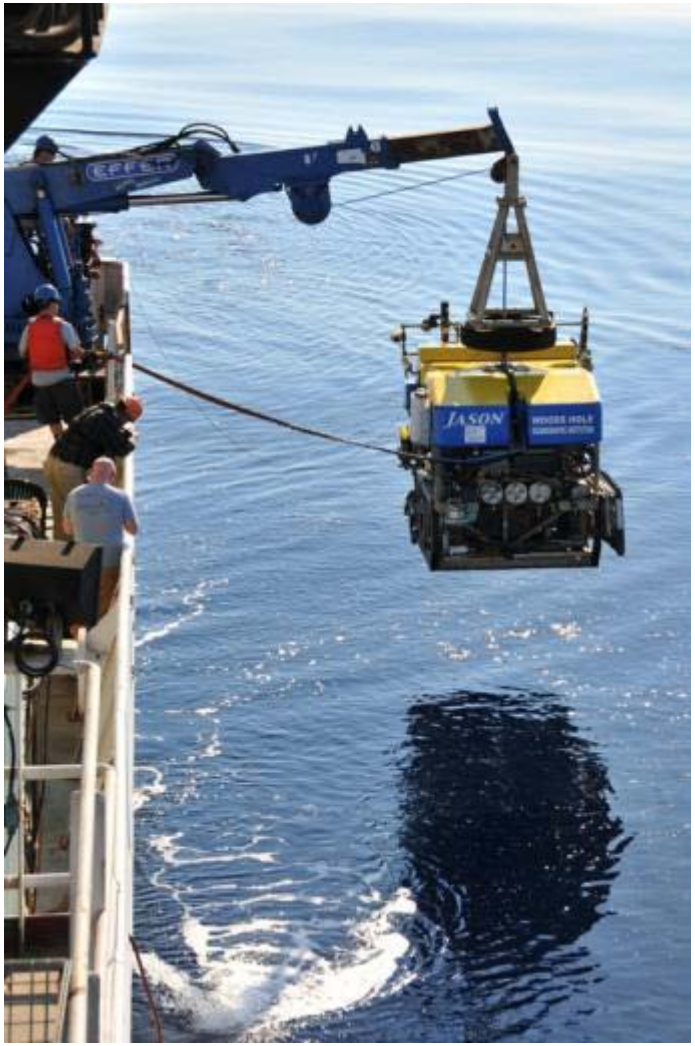
Funding from BOEMRE and NOAA OER

TDI-Brooks and the entire *Lophelia* II team