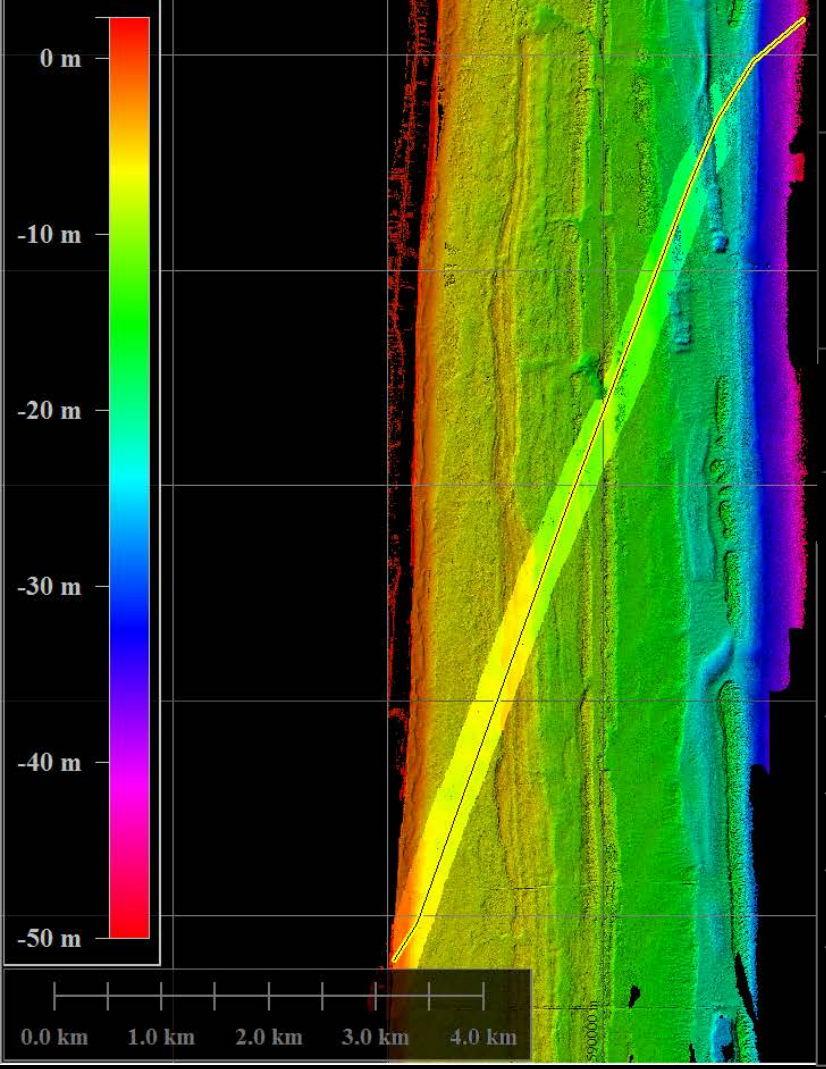
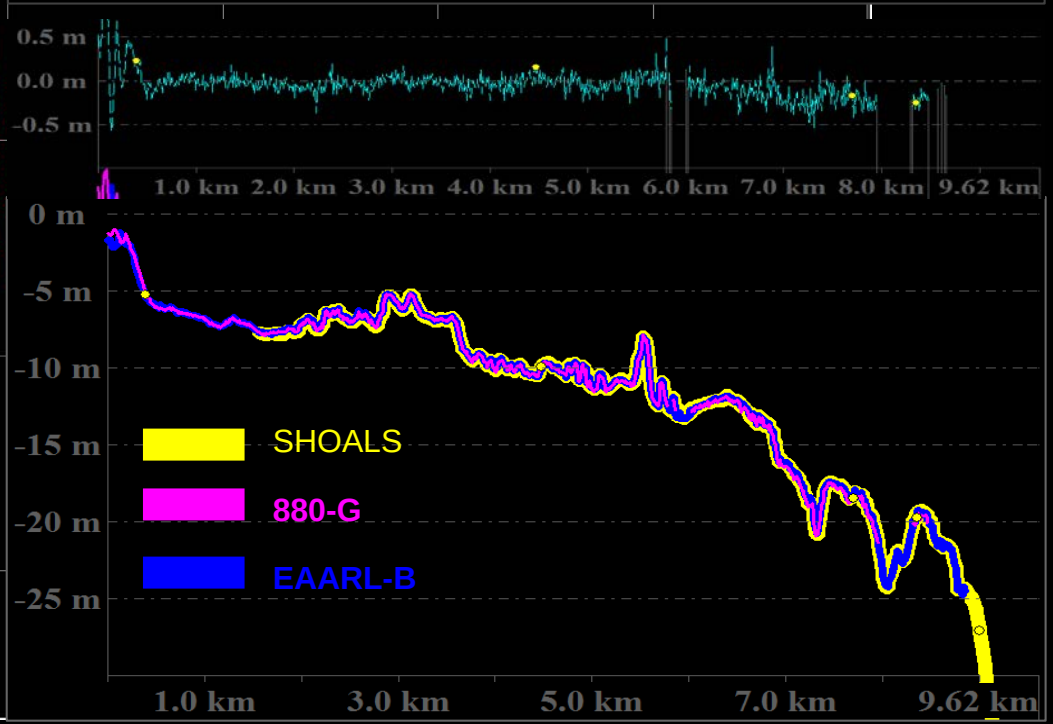
2016 JALBTCX Riegl 880-G Calibration & Validation

Wayne Wright Lidar532@gmail.com

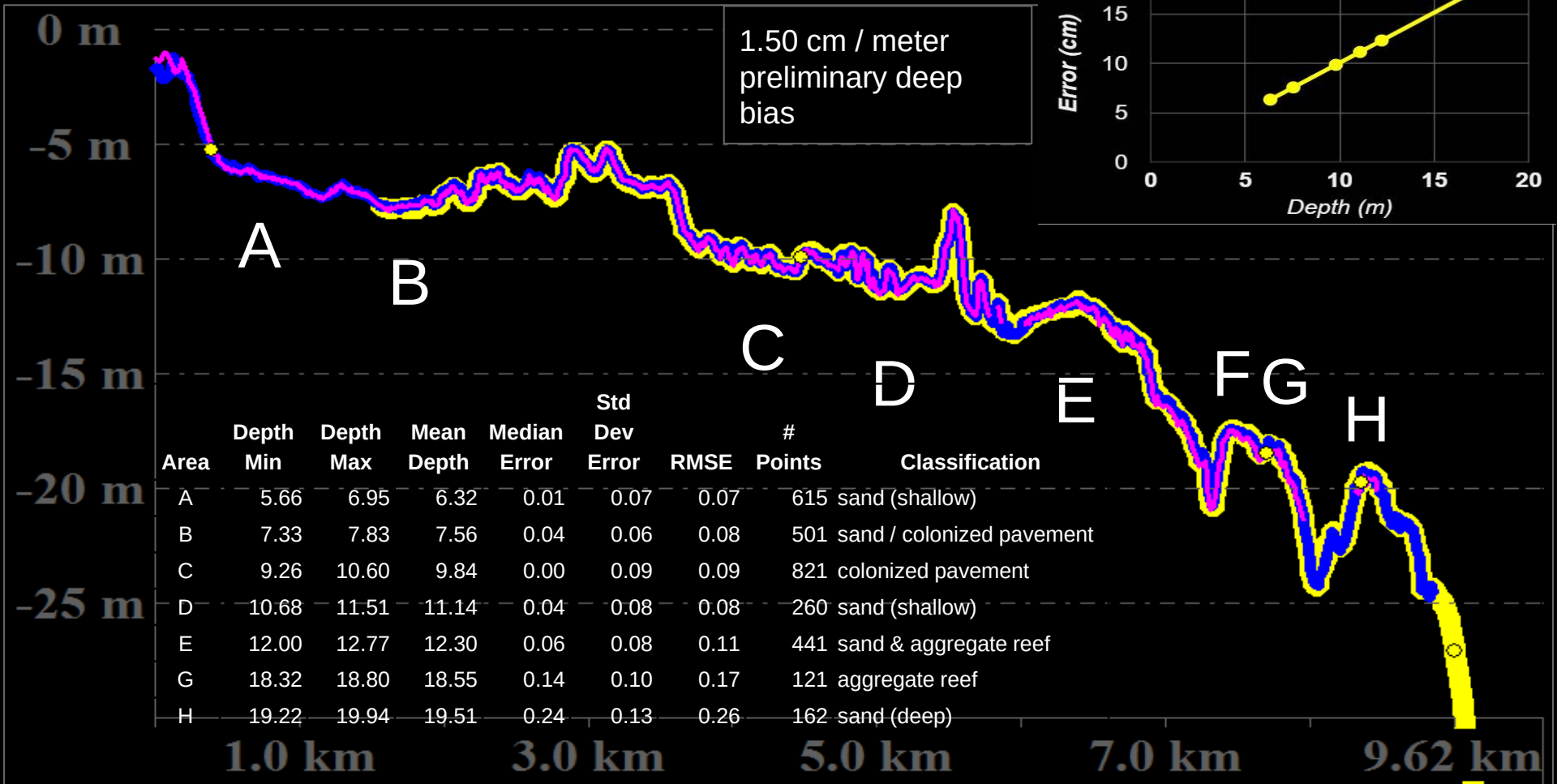
Ft. Lauderdale Test Site

- Reference datasets:
  - 10 year old SHOALS-3000
  - 2 year old EAARL-B
- 1 meter averaged binned Riegl 880-G





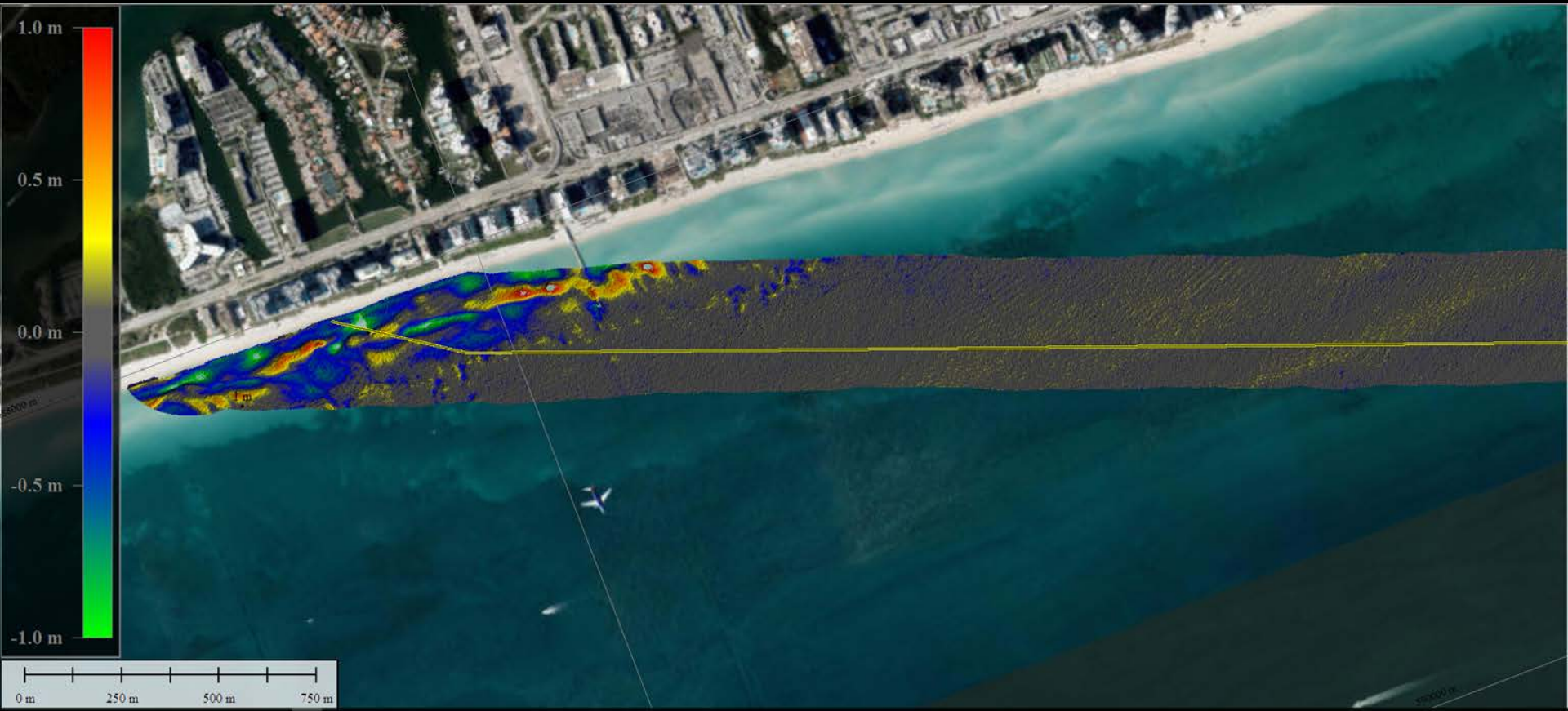
880-G vs Calibrated EAARL-B



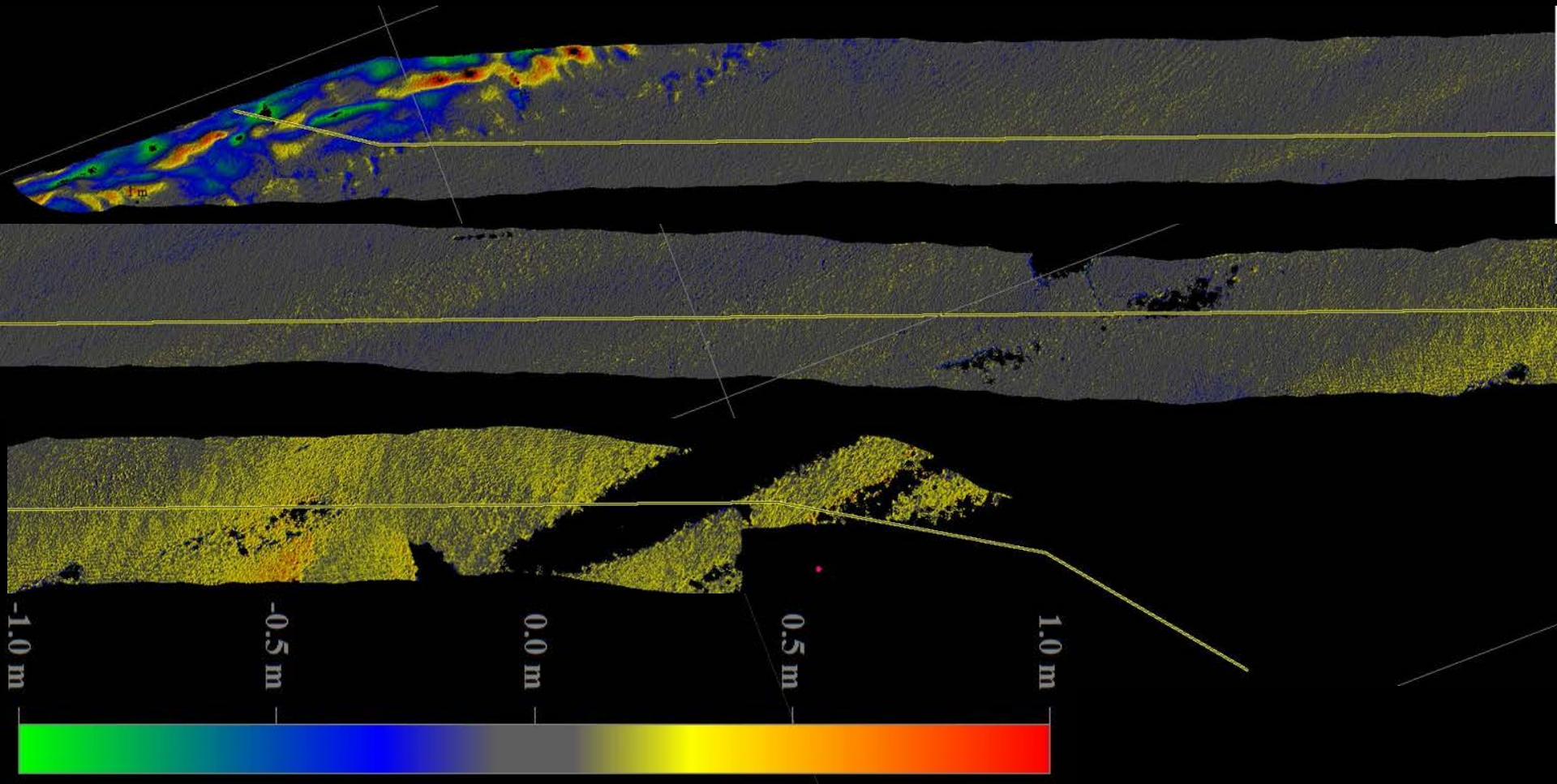
1.50 cm / meter preliminary deep bias

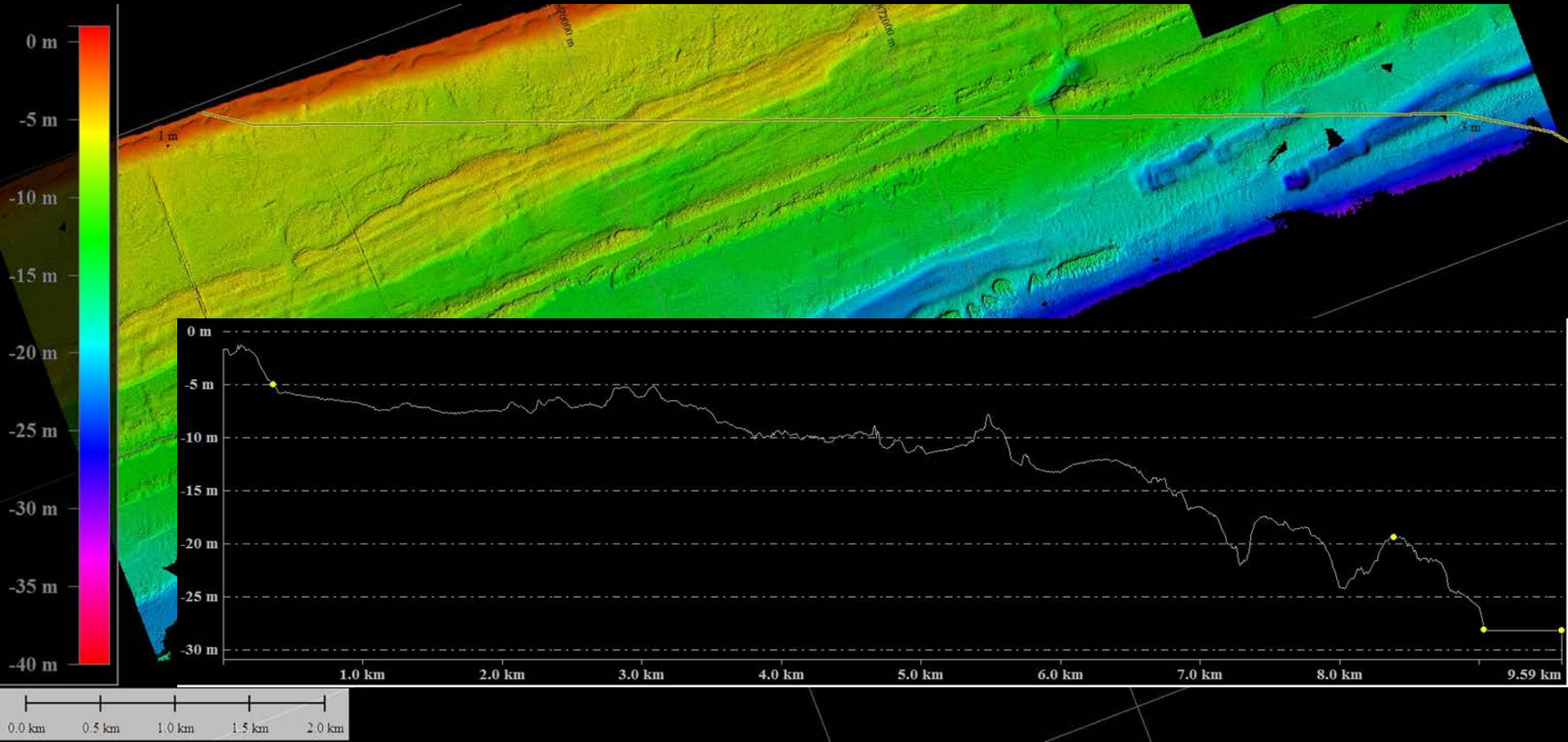
Area	Depth Min	Depth Max	Mean Depth	Median Error	Std Dev Error	RMSE	# Points	Classification
A	5.66	6.95	6.32	0.01	0.07	0.07	615	sand (shallow)
B	7.33	7.83	7.56	0.04	0.06	0.08	501	sand / colonized pavement
C	9.26	10.60	9.84	0.00	0.09	0.09	821	colonized pavement
D	10.68	11.51	11.14	0.04	0.08	0.08	260	sand (shallow)
E	12.00	12.77	12.30	0.06	0.08	0.11	441	sand & aggregate reef
G	18.32	18.80	18.55	0.14	0.10	0.17	121	aggregate reef
H	19.22	19.94	19.51	0.24	0.13	0.26	162	sand (deep)

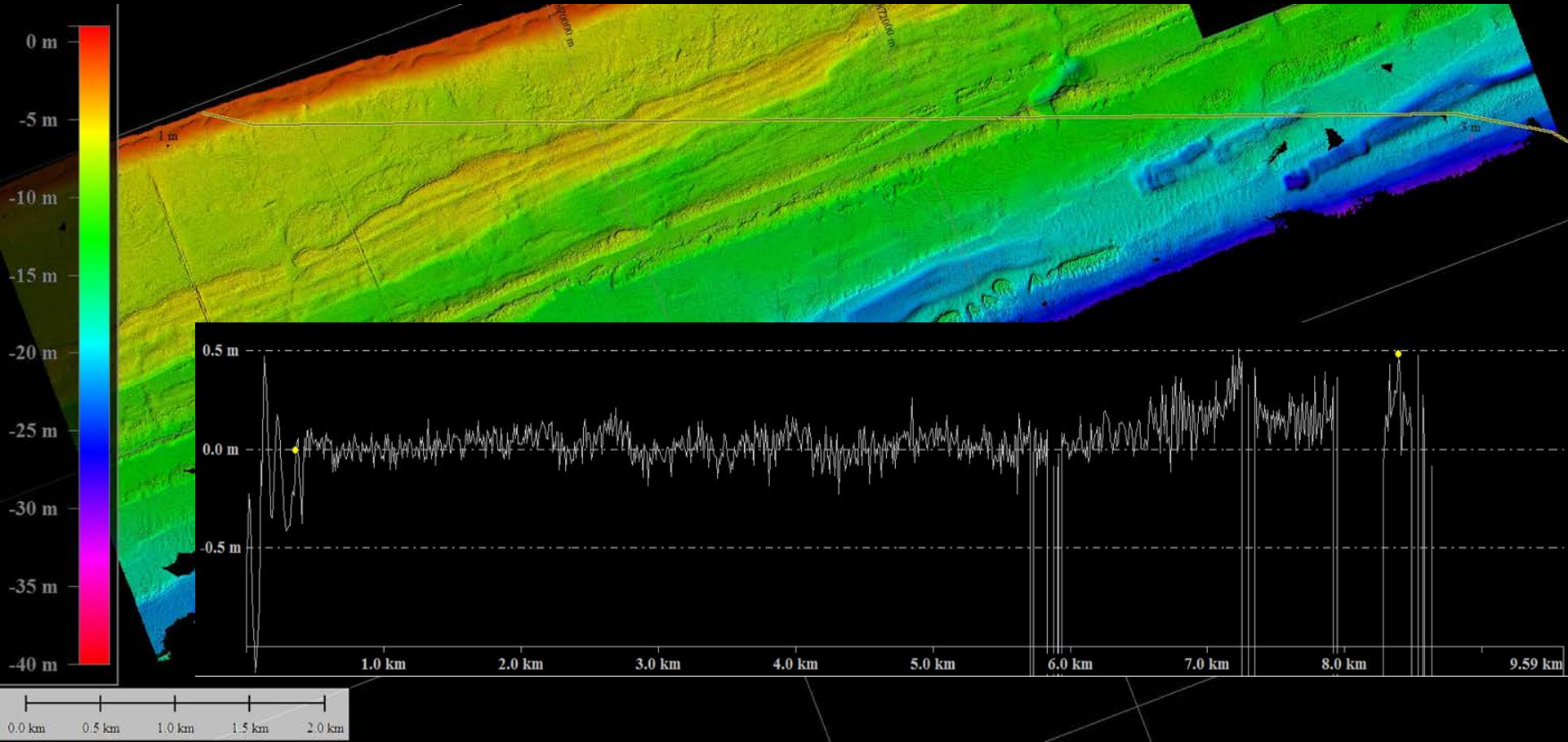
Difference Map. Unusable area 0 to 5.5m



Difference map

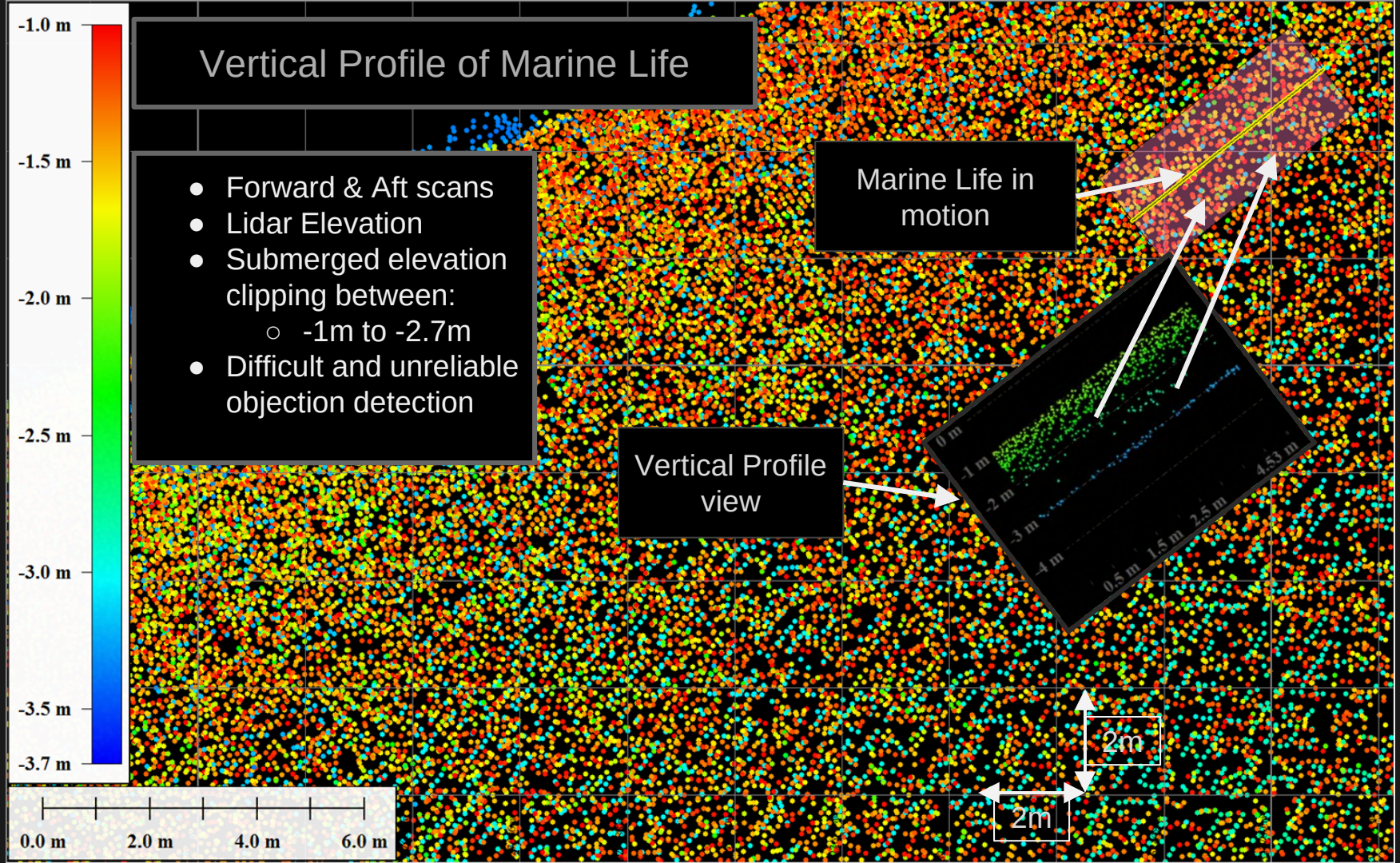



0 m
-5 m
-10 m
-15 m
-20 m
-25 m
-30 m
-35 m
-40 m
1 m
3 m
0 m
-5 m
-10 m
-15 m
-20 m
-25 m
-30 m
1.0 km
2.0 km
3.0 km
4.0 km
5.0 km
6.0 km
7.0 km
8.0 km
9.59 km
0.0 km
0.5 km
1.0 km
1.5 km
2.0 km


0 m
-5 m
-10 m
-15 m
-20 m
-25 m
-30 m
-35 m
-40 m
0.5 m
0.0 m
-0.5 m
1.0 km
2.0 km
3.0 km
4.0 km
5.0 km
6.0 km
7.0 km
8.0 km
9.59 km
0.0 km
0.5 km
1.0 km
1.5 km
2.0 km

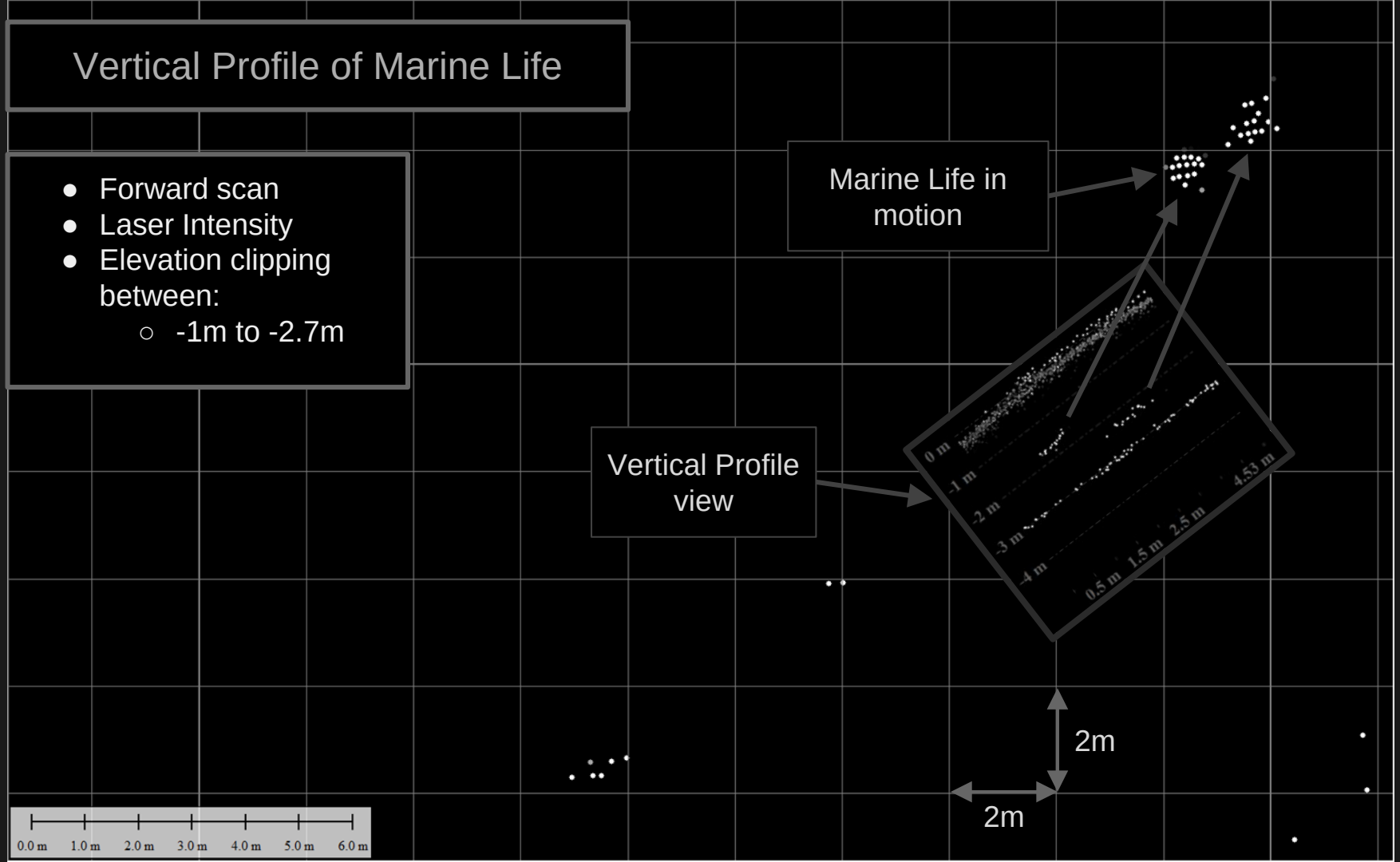
Vertical Profile of Marine Life

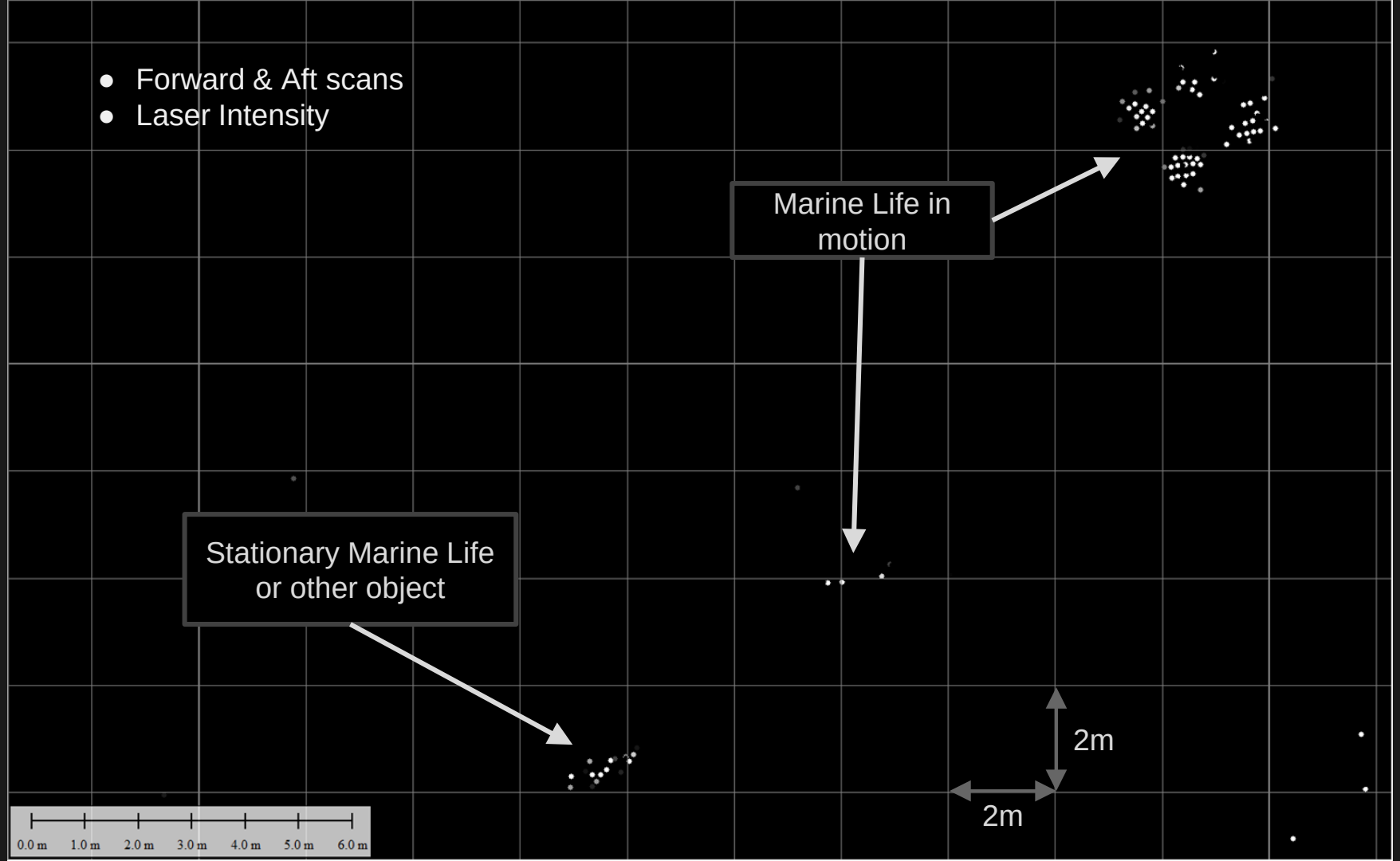
- Forward & Aft scans
- Lidar Elevation
- Submerged elevation clipping between:
  - -1m to -2.7m
- Difficult and unreliable objection detection

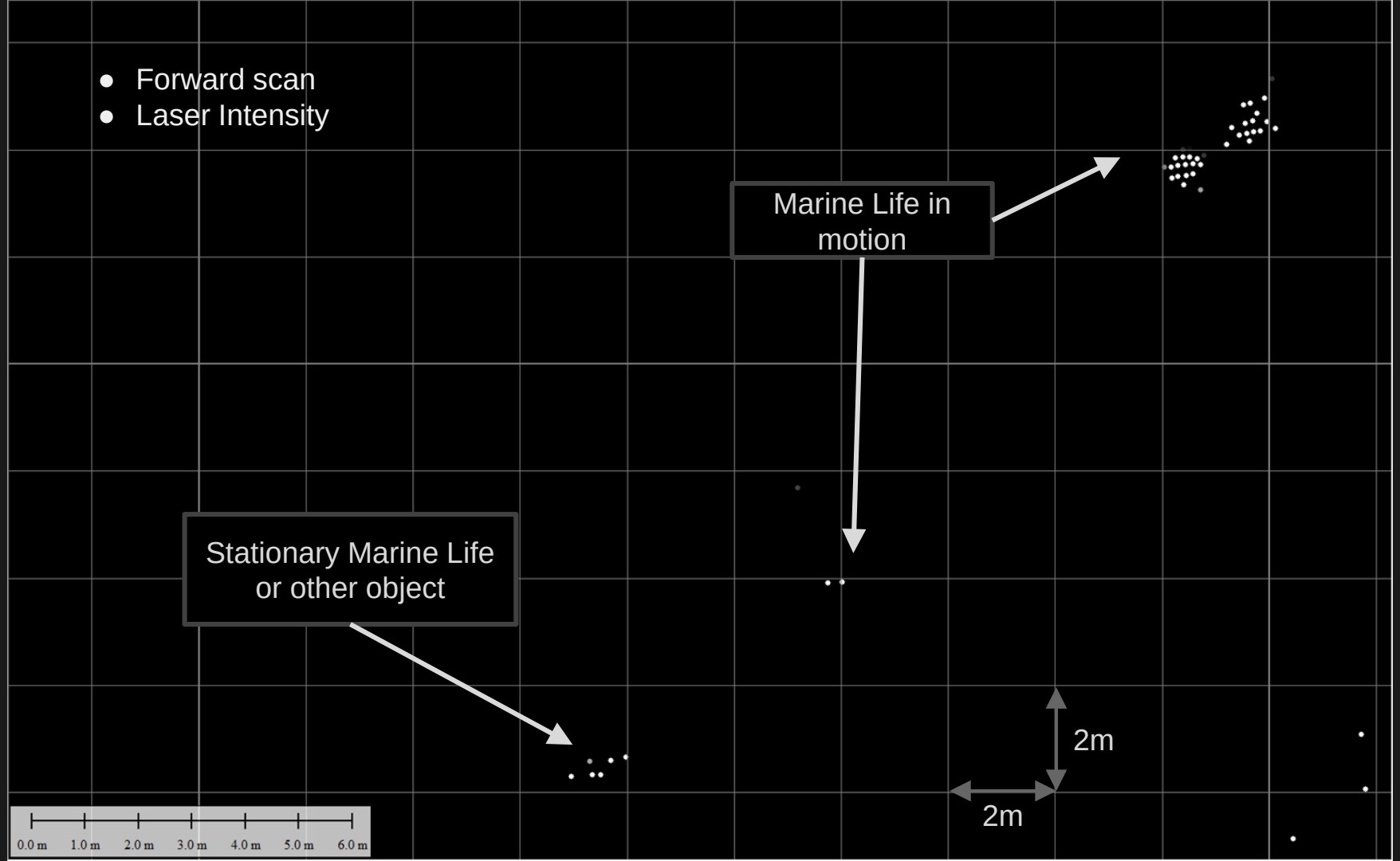


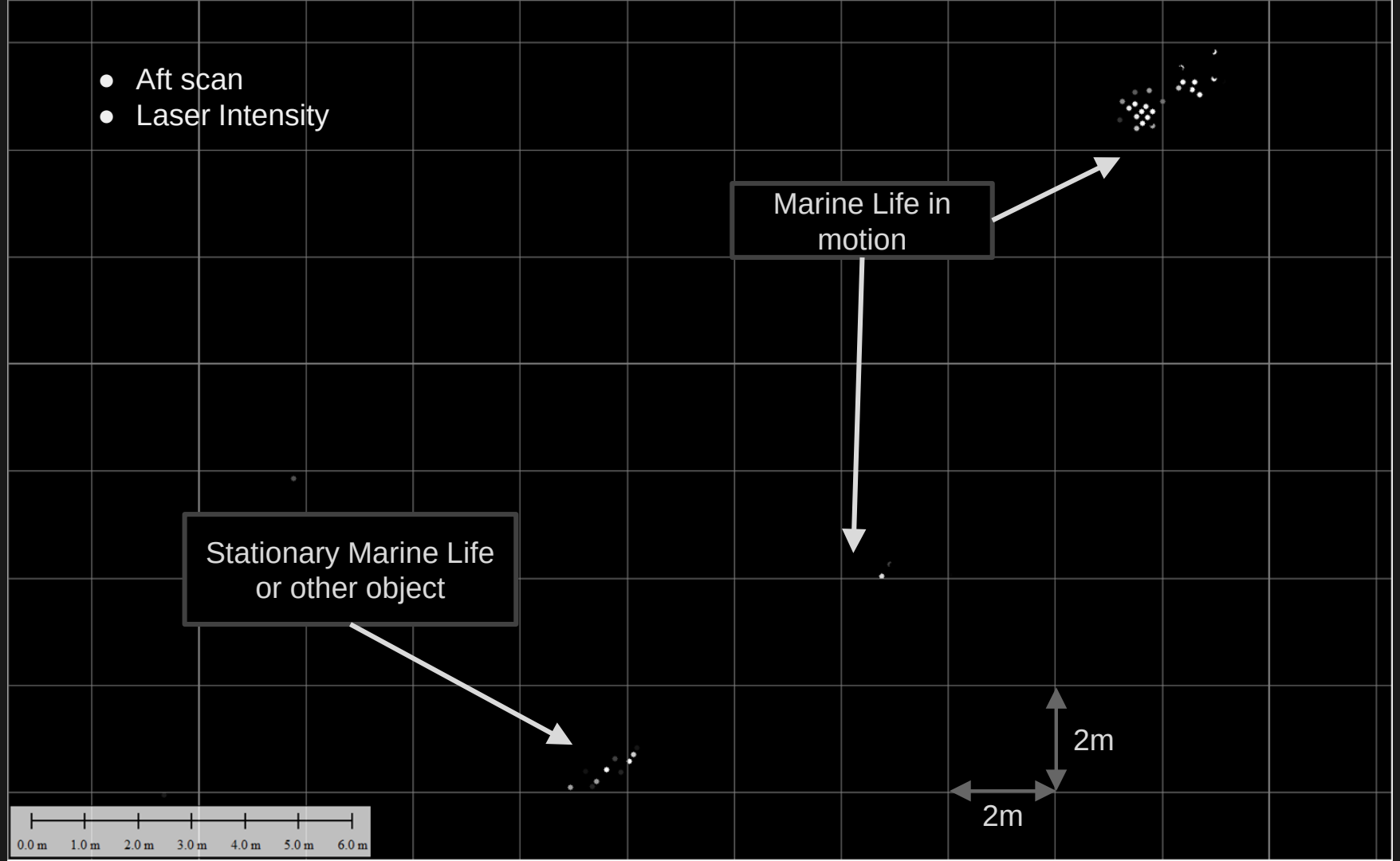
Vertical Profile of Marine Life

- Forward scan
- Laser Intensity
- Elevation clipping between:
  - -1m to -2.7m




Forward & Aft scans
Laser Intensity
Marine Life in motion
Stationary Marine Life or other object
2m
2m
0.0 m
1.0 m
2.0 m
3.0 m
4.0 m
5.0 m
6.0 m


Forward scan
Laser Intensity
Marine Life in motion
Stationary Marine Life or other object
2m
2m
0.0 m
1.0 m
2.0 m
3.0 m
4.0 m
5.0 m
6.0 m


Aft scan
Laser Intensity
Marine Life in motion
Stationary Marine Life or other object
2m
2m
0.0 m
1.0 m
2.0 m
3.0 m
4.0 m
5.0 m
6.0 m