ISPP PROJECT - FIELD REPORT

Project
ISPP

Date of site visit
20/05/2018

Purpose of visit
To observe mussel settlement on ISPP test line.

Location of fieldwork
ISPP test line in Bantry Harbour

Equipment
GoPro hero 5
Trimble Geo 7X Handheld - Trimble Geospatial
Digital calipers
Sample bags

Findings
Dense settlement (>100 individuals per 10 cm) of small seed (<1mm) on ISPP line one month after deployment (See Figure 3).

Summary
Size of mussel seed varied in relation to depth of rope sampled with larger seed found at greater depths. Previous reports recorded smaller and less dense settlement of seed two months after deployment had larger sizes and lower density per 10 cm. The following sampling event should verify if smaller seed is recorded in areas of dense settlement.

Action items
Revisit line in the next (28/05/2018) or the following week (04/06/2018).

Note
A suggestion for the methodology to be amended. The samples collected by scraping 10cm of rope could be suspended and agitated in a known volume of sea water. A subsample e.g. 2ml could be taken from the suspension for a thorough count. Alternatively, sample could be preserved to be later measured and counted with the help of a microscope photo and free image analysis software

ImageJ.

Site:

Figure 1: (a) ISPP test line site within Bantry Harbour (Google Maps, 2018)

Method:

Sampling was carried out according to previous reports. Three depths of rope where sampled. Six samples were taken of 10cm of rope. The seed collected was counted and the first 50 encountered were measured with digital callipers.

Results:

Table 1 Summary of Mussel seed samples

Sample number	Length (mm)	Count (#)	Rope	Depth sampled (m)
1	0.74 ± 0.24	3064	Old	1
2	0.80 ± 0.22	675	Old	2 (will be cut to be 5)
3	0.96 ± 0.31	400	Old	2
4	0.72 ± 0.25	2456	New	1
5	0.93 ± 0.26	3624	New	2
6	0.82 ± 0.20	490	New	2 (will be cut to be 5)
Grand Total	0.83 ± 0.26	1785 ± 1310		

A one way analysis of variance (ANOVA) and post hoc test (TukeyHSD) found statistically significant differences between the samples ($F_{5, 294}$=6.17, P<0.001). Significantly larger seed was found at the mid depth samples i.e. samples 3 and 5 (P<0.001). No significant effect of rope age, i.e. “old” or “new”, was found in relation to seed size ($F_{1, 298}$=0, P>0.05).

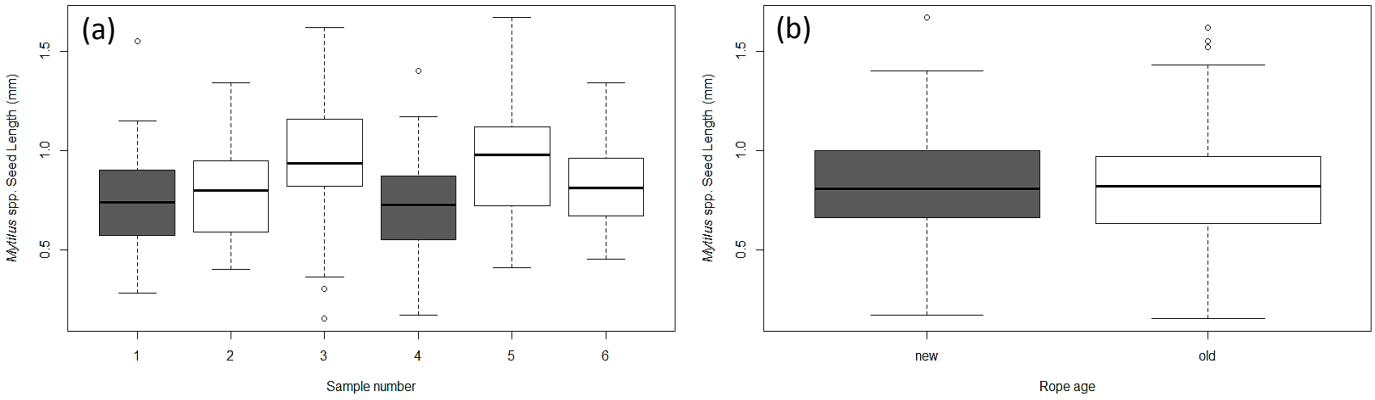

Figure 2: Mussel seed length in relation to (a) sample number and depth 1m (grey) and 2m (white) and (b) age of rope from which the sample was collected.

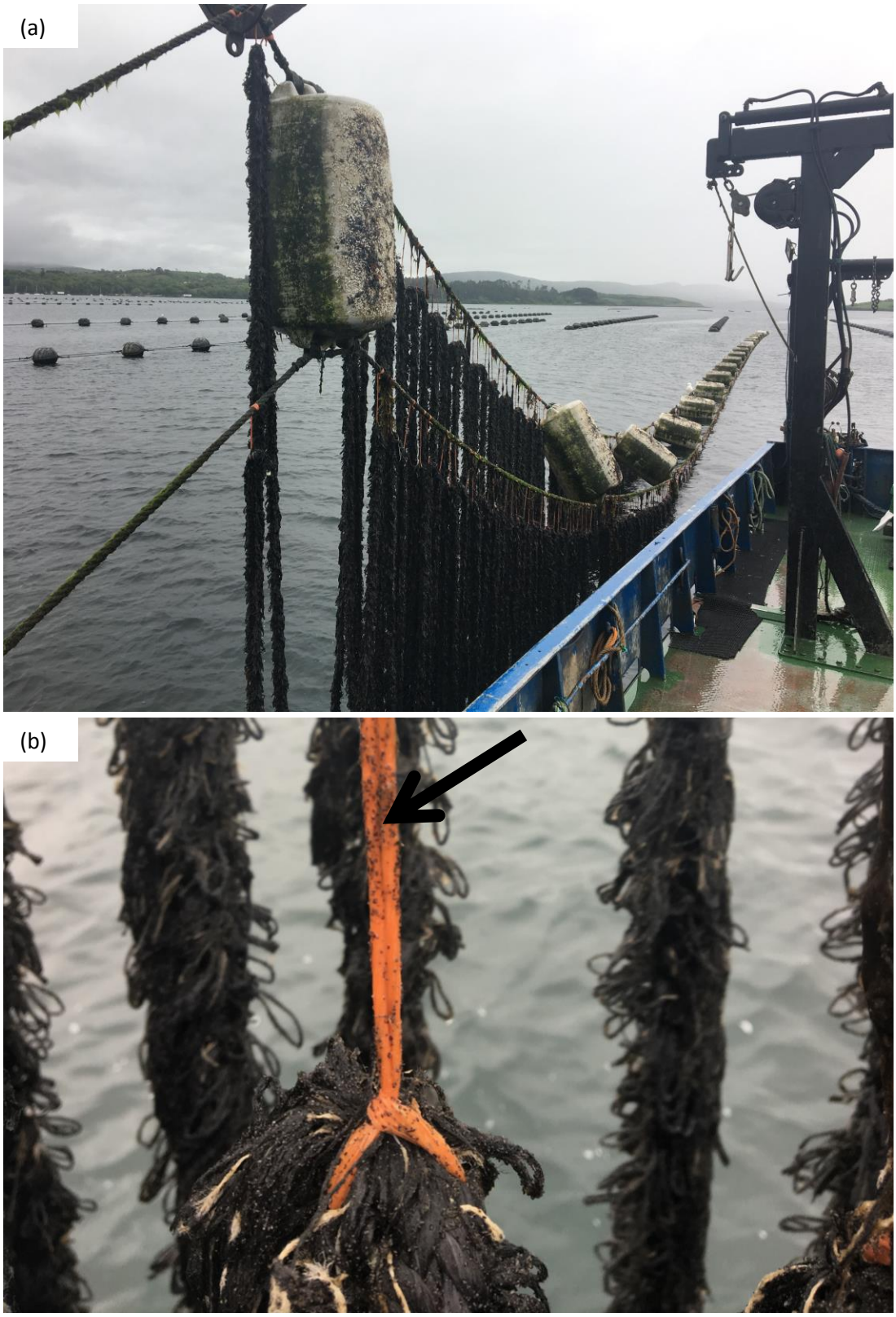

Figure 3: (a) ISPP test line raised for inspection. (b) Dense *Mytilus* spp. seed settlement above the rope (arrow).