



SHELLFISH HEALTH REPORT

Pacific Biological Station
Nanaimo, B.C.
V9T 6N7

Sample Information

Case No.: 8359
Collection Date: September 9, 2013
Location: Howe Sound, Lions Bay (Kelvin Grove)
Species: Sea Stars (tentative species identification)
Specimen #1: *Solaster* sp. n=1
Specimen #2: *Pycnopodia* sp. n=1
Size / Age: Size, R= 170 and 140 mm respectively / Age = Unknown
History: Wild
Purpose: Investigate the cause of high sea star mortalities reported from Howe Sound and surrounding areas.
Contact Info.: Jonathon Martin, Simon Fraser University, E-mail: jma34@sfu.ca
Phone: (778) 782-8090

Macroscopic Observations (Sample Size = 2)

- Approximately 6 bags containing sea stars in various conditions were submitted, however most were very decomposed and only the 2 specimens noted above were suitable for examination.
- Specimen #1 was classified as freshly dead with nothing unusual noted.
- Specimen #2 was also classified as freshly dead, but was noted as having what appeared to be at least 3 puncture wounds (approx. 1 cm dia.) causing extrusion of the internal organs (gut and gonad).

Microscopic and Histological Examination (Sample Size = 2)

- Sex ratio: specimen #1 was a mature male and #2 was a mature female.
- The ciliate *Orchitophyra stellarum* which is known to parasitize the gonads of sea star was not detected in either of these samples using both wet mount and histological examination.
- Tissues examined (but not present in all specimens) include: gut, gonad, epidermis, calcareous skeleton, connective tissue, spines, pedicellariae, tube feet and water vascular system.
- In specimen #1 several lesions were observed characterised by focal aggregations of coelomocytes within the fibrous connective tissue below the epidermis. Many of the cell nuclei associated with these lesions show varying levels of hypertrophy, emarginated chromatin, pyknosis and karyorrhexis (fragmentation of the nuclei). Also small aggregations of necrotic looking coelomocytes were observed in the vascular spaces of the tube feet and tentacles. Although this pathology is somewhat suggestive of a viral

infection, no discrete inclusion bodies were observed and it could also just be the result of tissue necrosis.

- In specimen #2 damage to the muscle and connective tissue was evident, however this was suspected to be the result of sectioning artefact due to incomplete decalcification of the calcareous skeleton. No “lesions” per se were detected, however some nuclei of coelomocytes and connective tissue did exhibit similarities to those noted for specimen #1.
- Otherwise the tissues appear to be in relatively good condition; with no parasites, bacterial or fungal infections or other pathology of concern detected

Bacteriology

- Bacterial culture samples taken from the coelomic cavity of both specimens did not reveal any significant findings.

Conclusions

No infectious diseases were detected in these samples that would help to explain the cause of the mass die off observed in sea stars from the Howe Sound area.

Gary Meyer (250) 756-7034

October 4, 2013

Date

Please note: this report applies solely to the animals examined and should not be considered as a certificate of health for the entire stock or population. Such certification cannot be absolute and would require repeat sampling and monitoring to guidelines specified by the World Animal Health Organisation (OIE). The scope of this examination is limited to the detection of pathology, symbionts, parasites or infectious organisms that can impact the health of shellfish. It does not include any tests concerning chemicals, pollutants or human health concerns.