

# A summer bloom of the marine benthic cyanobacterium *Lyngbya majuscula* at Musick Point, Eastern Beach and Howick

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*Lyngbya majuscula* is a filamentous blue-green alga or cyanobacterium of the family Oscillatoriaceae (Chapman 1956). It is often considered identical to *Microcoleus lyngbyaceus*, though some authorities treat them as separate species. The filaments are unbranched, have undifferentiated cells, and are enclosed in a thick sheath.



Fig. 1. Filament, *Lyngbya majuscula* (Susie Wood).

A large expanse of *Lyngbya majuscula* was observed on the seashore at Musick Point, Auckland, Hauraki Gulf, on 4 March 2007. It grows in finely-filamentous, hair-like, felty tufts attached to coralline turf (*Corallina officinalis*) and in shallow mid-tidal runnels on the Waitemata Sandstone platforms. It may also get entangled around intertidal brown seaweeds such as *Hormosira banksii* and *Sargassum scabridum*. In colour the tufts vary from dark brown, to black, and dry to a blue-green coloured scum. On 19 March 2007 the bloom at Musick Point was even more noticeable, and similar blooms were observed on flat, intertidal sandstone reefs at Eastern Beach and Howick. Further occurrences were seen at Kaitarakihi Bay (Manukau Harbour), and at North Head (Waitemata Harbour).

Blooms of this same cyanobacterium are regularly experienced in coastal Queensland, Australia (Albert et al. 2005). Factors noticed there for blooms to occur include high concentrations of organics, phosphorus and bio-available iron in the water, warm waters, high

light availability and a relatively shallow substrate. At these Auckland sites limonite (iron oxide) deposits are common, and at least at Eastern Beach and Howick there are large storm water drain pipes exiting to the beach.



Fig. 2. *Lyngbya majuscula*, Musick Point, 19 March 2007 (Mike Wilcox)

*Lyngbya majuscula* grows rapidly and becomes obvious only during the warm summer months (Blair & Meyer 1986). It is known to produce toxins that can cause seaweed dermatitis, a stinging rash to the skin (Osborne et al. 2001). According to Simon Albert of the University of Queensland, just handling it fresh or swimming near it will not generally give a reaction — it is the abrasion of fresh or dried material against skin (e.g. fishermen cleaning their nets) or inhalation of dried material that has been responsible for most health effects. The long term chronic responses to low level exposure (swimming/handling), however, are completely unknown.

Willan (1979) records that the woolly sea hare *Bursatella leachii* — an opisthobranch mollusc — feeds heavily on *Lyngbya* in Auckland waters. *Bursatella* was not seen at Musick Point, Eastern Beach or Howick, and indeed the areas covered by the bloom were rather bereft of other marine life.

## Representative herbarium specimens

Howick, AK 247406, B.W. Hayward, 22 January 2000; Howick, AK 247407, M. Morley, 12 May 2000; Musick Point, AK 299038, M.D. Wilcox, 3 March 2007; Kaitarakihi Bay, AK 299037, M.D. Wilcox, 21 February 2007; North Head, AK 299039, M.D. Wilcox, 21 March 2007; Eastern Beach, AK 299040, M.D. Wilcox, 27 March 2007.

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