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Predominant jellyfish (Cnidaria: Scyphozoa) in the Inland Sea of Japan: a recent transition from *Aurelia aurita* to *Chrysaora pacifica*

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Two scyphozoan medusae *Aurelia aurita* s.l. and *Chrysaora pacifica* are sympatric, and show a similar seasonal occurrence in the plankton, i.e. from winter through summer/fall, in the Inland Sea of Japan. *A. aurita* showed a prominent population enlargement since the 1980s, paralleling increased anthropogenic impacts. *C. pacifica*, on the other hand, has become notably predominant from the turn of this century, frequently overwhelming *A. aurita*, and caused serious damage to local fisheries and power plant operations. We examined species-specific ecophysiological properties in the laboratory and geographical distribution in the field, and assessed possible causes for the recent change in dominant jellyfish species. *A. aurita* polyps, owing to their budding propagation, exhibit much higher asexual reproduction rates than *C. pacifica*; the latter propagates only by means of podocyst production. *A. aurita* polyps can also utilize an ample number of coastal artificial structures as attachment substrates, enabling the species to build large populations in human perturbed coastal waters. On the other hand, because of their halophilic nature, *C. pacifica* polyps inhabit offshore waters, where food supply is usually low. Newly released ephyrae from strobilating polyps can tolerate an extremely long starvation period (i.e. >9 months), and *C. pacifica* ephyrae and medusae are capable of ingesting their *A. aurita* counterparts. The recent and current trend of regional oligotrophication, due to effective law enforcement preventing eutrophication, may result in shrinkage of *A. aurita* populations, while leading to proliferation of *C. pacifica* populations that expand in geographical range as *A. aurita* individuals become scarce.

Aurelia, *Chrysaora*, jellyfish bloom, polyp, Inland Sea of Japan

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