

These are data on macroinvertebrates living in beds of *Trapa natans* (an exotic plant) and *Vallisneria americana* (a native plant) in the freshwater tidal Hudson River in eastern New York. The data include both animals living on the plants and animals living in the sediments beneath the plants. Densities are given as numbers of animals per square meter of river bottom. This work was supported by the Tibor T. Polgar Fellowship program (a joint program of the Hudson River Foundation, the New York State Department of Environmental Conservation, and the Hudson River National Estuarine Research Reserve) and the New York State Department of Environmental Conservation, which are not responsible for the reliability of the data or their interpretation. Further information about these data and their interpretation is given in Strayer, D.L., C. Lutz, H.M. Malcom, K. Munger, and W.H. Shaw. 2003. Invertebrate communities associated with a native (*Vallisneria americana*) and an alien (*Trapa natans*) macrophyte in a large river. *Freshwater Biology* 48: 1938-1949.

We studied four plant beds: two pairs of adjoining beds of *Trapa* and *Vallisneria* in the freshwater tidal section of the Hudson River in eastern New York. There is no trace of sea salt in this part of the river, but the tidal cycle affects water depth (tidal range ~ 1m) and current speed and direction. Cruger Island is a peninsula along the east bank of the Hudson at river kilometre (RKM) 158. Just south of the peninsula is a large area of shallow water, which supports a large bed (19 ha, areas of beds from Findlay *et al.* 1997) of submersed vegetation. A small bed of *Trapa* (1.7 ha) abuts the northern end of this bed. Esopus Meadows is a large shallow-water area along the west bank of the river at RKM 138. A large bed (19 ha) of *Vallisneria* occurs outside of a large bed (93 ha) of *Trapa* at this site. As is typical in the tidal Hudson, all four study beds are nearly

monospecific stands of either *Trapa* or *Vallisneria*. The water at both study sites is fully fresh (< 1 psu), and is <1 m deep at low tide. Sediments at the study sites are soft sands and muds, averaging 44% sand, 43% silt, and 14% clay (n=85). Loss on ignition averaged 4.3% (n=71).

We took macroinvertebrate samples at 12 sites within each pair of plant beds (six in each species of plant, three along its outer edge and three in its interior) and at three sites just outside the plant beds. Samples from the interior of *Trapa* beds were taken only ~ 50 m from the bed's edge because of the difficulty of moving through these very dense beds. Within the plant beds, we collected animals from the plants as well as the sediments at each sampling site. All sites were sampled in July (before the vegetation was fully developed) and again in August 2000 (near peak biomass).

We sampled macroinvertebrates in the different habitats using three different methods. Animals living in shallow-water sediments were collected using a hand-held coring tube of 20 cm². Three cores ~ 5 cm long were taken from each sampling site and pooled in the field. Invertebrates living on macrophytes were collected with a Downing box sampler (Downing, 1986). We collected two (*Trapa*) or three (*Vallisneria*) samples per site, which were pooled in the field. Sediment-dwelling animals living just outside the plant beds in water too deep to sample with our corer were collected with a petite Ponar grab (232 cm²); again, three samples per site were taken and pooled in the field. All samples were sieved through a 0.5-mm mesh sieve and preserved in buffered 10% formalin in the field. We sorted samples under 6 – 12 X magnification, and placed animals into 70% ethanol or 10% buffered formalin for long-term storage. Sixteen percent of the samples were double-sorted; we estimated recovery efficiency from these samples using the

removal method of Zippen (1958) and corrected all samples for these efficiencies.

Random subsamples (up to 10 individuals sample⁻¹) of oligochaetes, chironomids and nematodes were slide-mounted in CMC-10 on microscope slides prior to identification. Most animals were identified to genus or species using Gosner (1971), Holsinger (1972), Bousfield (1973), Wiederholm (1983), Andrassy (1988), Peckarsky *et al.* (1990), Smith (1995) and Kathman & Brinkhurst (1998). Voucher specimens have been deposited in the American Museum of Natural History, New York City.

To estimate the areal density of plant biomass (necessary to convert counts of invertebrates from the Downing sampler into areal densities), we took 16 samples from each *Vallisneria* bed with a standard Ponar grab (523 cm²), and hand-clipped six plots of known dimension within the *Trapa* beds. Only aboveground plant parts were retained in the samples. Plants were dried overnight at 60° C before being weighed.