Voluntary angler logbooks reveal long-term changes in a lentic pike, Esox lucius, population

Sixty-two years of voluntarily collected angling logbook data from a large natural Danish lake were used to study variation in pike, Esox lucius L., CPUE (expressed as no. of captured per boat trip) as an index of stock size. Pike CPUE was positively related to pike release rate by anglers and negatively affected by certain commercial shers. The stocking of young-of-the-year pike and a shery-dependent index of perch, Perca uvitaLis L., abundance (which may be pike prey or predator depending on size) did not correlate with pike CPUE. Analyses of the size distribution of pike, based on sizes of annual record trophy pike captured by anglers, confirmed the negative impact of commercial pike shing and revealed a positive influence of air temperature. It is concluded that high-quality angler logbooks that record effort and catch can be a cost-effective tool to inform lake fisheries management by revealing long-term population trends. Further, state space modelling, a statistical technique not yet seen in recreational fisheries science, is recommended as a tool to model proxies for population dynamics from angler logbook data.