Jeffrey A. Hutchings and Dylan J. Fraser. *Fishing, farming, and their evolutionary consequences to fishes.* Department of Biology, Dalhousie University, Canada.

Be they large animals or antibiotic-susceptible pathogens, humans have a penchant for selecting against that which they desire most. In fishes, historically unprecedented declines in abundance have been associated with dramatic reductions in age and size at maturity, resulting in increasingly smaller populations comprised of increasingly smaller fish. Fishing, the predominant cause of marine fish population collapses, is thought to have generated evolutionary change through selective removal of individuals of larger sizes and older ages. Farming, and its associated selective milieux, may also effect negative changes to fitness and persistence by increasing the probability of interbreeding between domesticated species and their wild counterparts. Atlantic cod and Atlantic salmon represent two widely distributed species that have been over-fished, declining more than 90% throughout much of their ranges, and that are subjected to increasing levels of domestication. We evaluate the hypothesis that reductions in age and size at maturity in cod represent evolutionary responses to exploitation; we then explore the population consequences of these changes to life history. We also consider the degree to which fishing might alter the shapes of life-history reaction norms, potentially affecting the ability of populations to respond to environmental change. The potential for farming to generate negative genetic consequences to divergent wild populations is explored through the interbreeding of first- and second-generation Atlantic salmon, using a common-garden experimental protocol. As with other types of unintentional, human-induced selection, the long-term repercussions of fishing and farming are almost certainly more complicated than previously believed.