

SEA-CAGE FISH FARMING AND DECLINES OF WILD FISH

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It has often been observed that after sea-cage fish farming begins in a coastal area, nearby wild fish populations steadily or precipitously decline due to elevated levels of pathogens and parasites. Such declines can be understood using three methods, in increasing level of mathematical difficulty: (1) an intuitive approach based on the inverse-square law of radiation applied to parasite transmission, (2) a probabilistic model that begins with the understanding that parasites regulate their hosts at least to some extent, and (3) an extension of the classical Anderson-May coupled differential equation model for macro parasites.