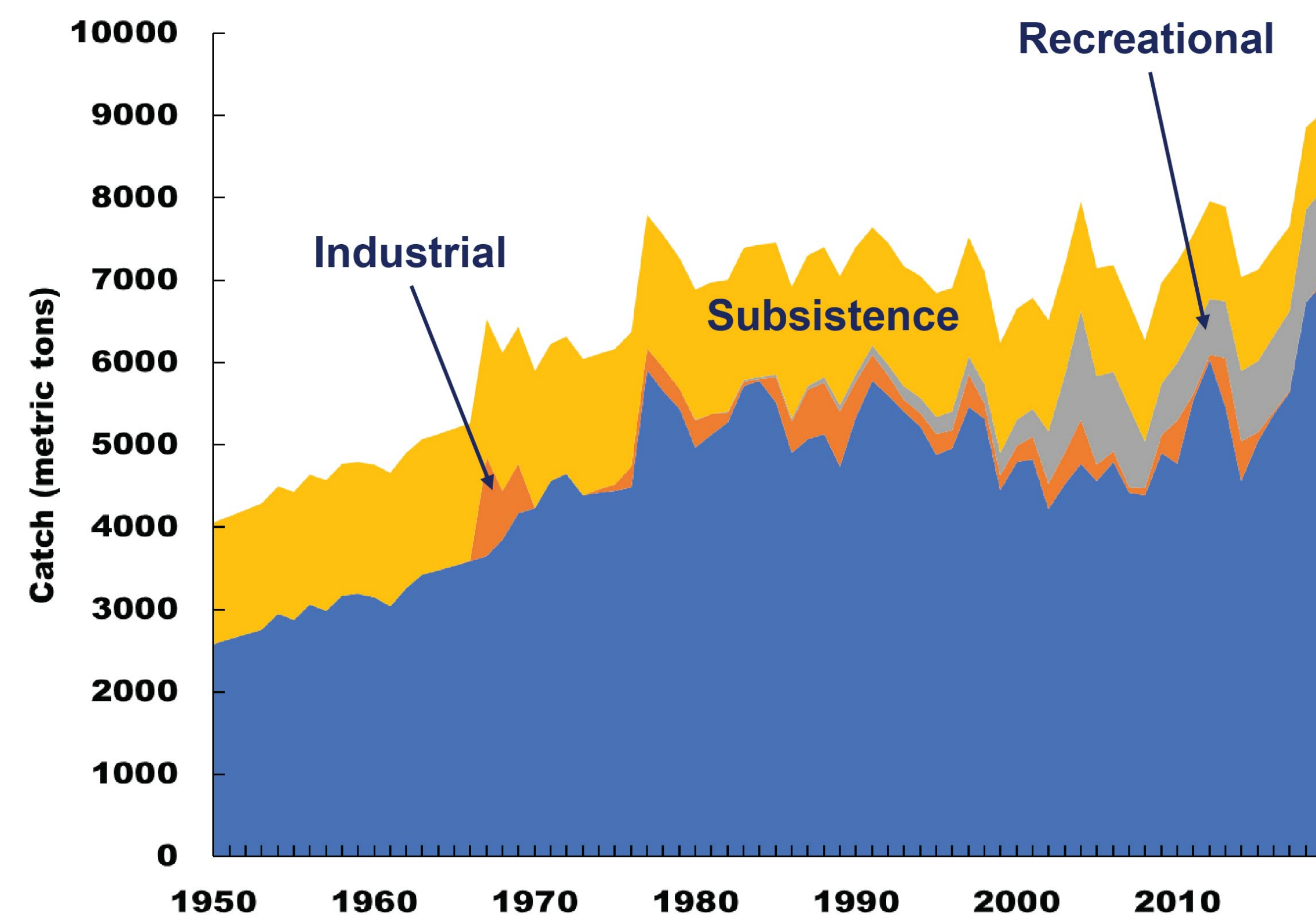


The Belize Fisheries Project: Analyze, Inform and Discuss for a Sustainable Future

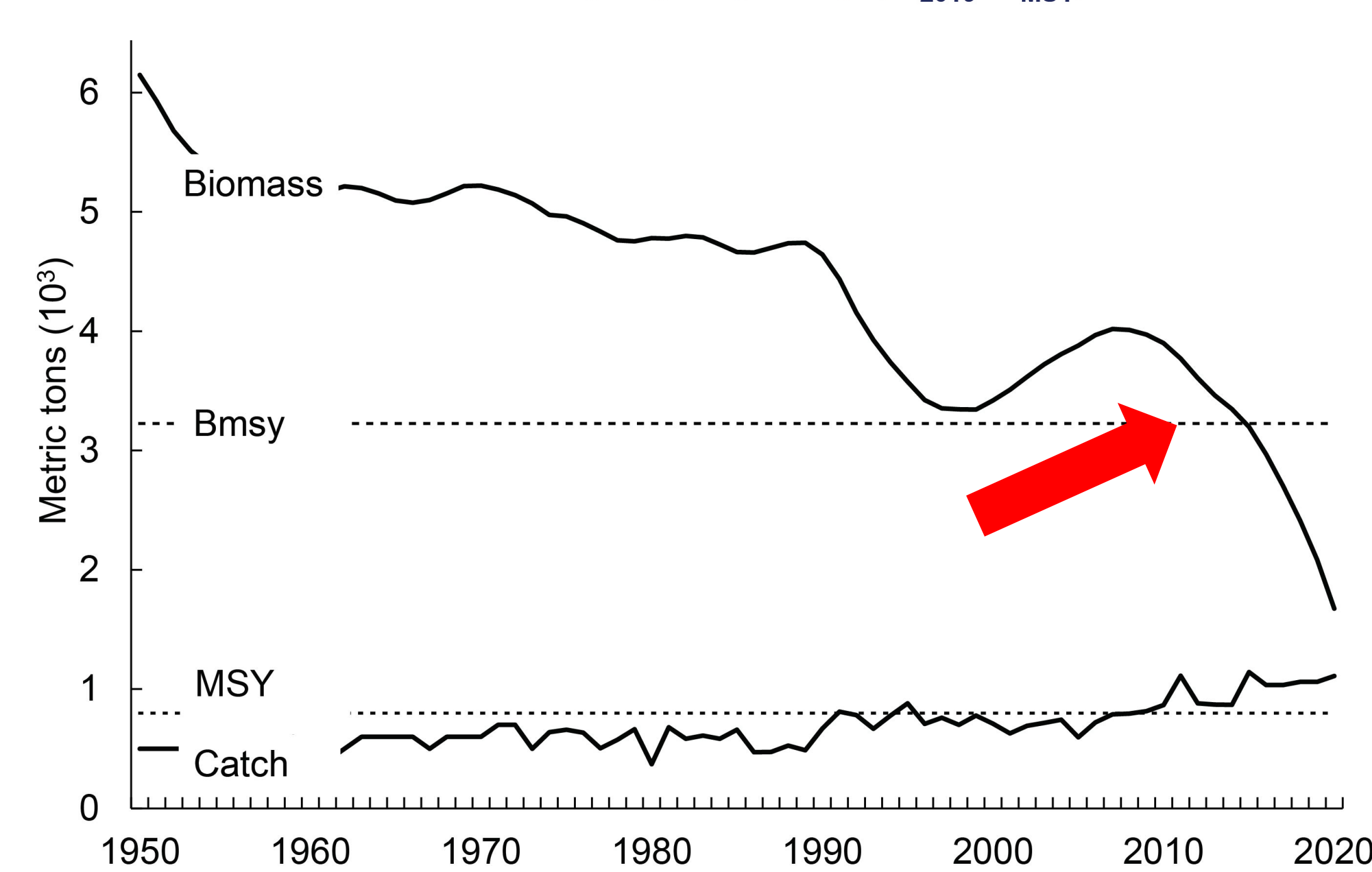
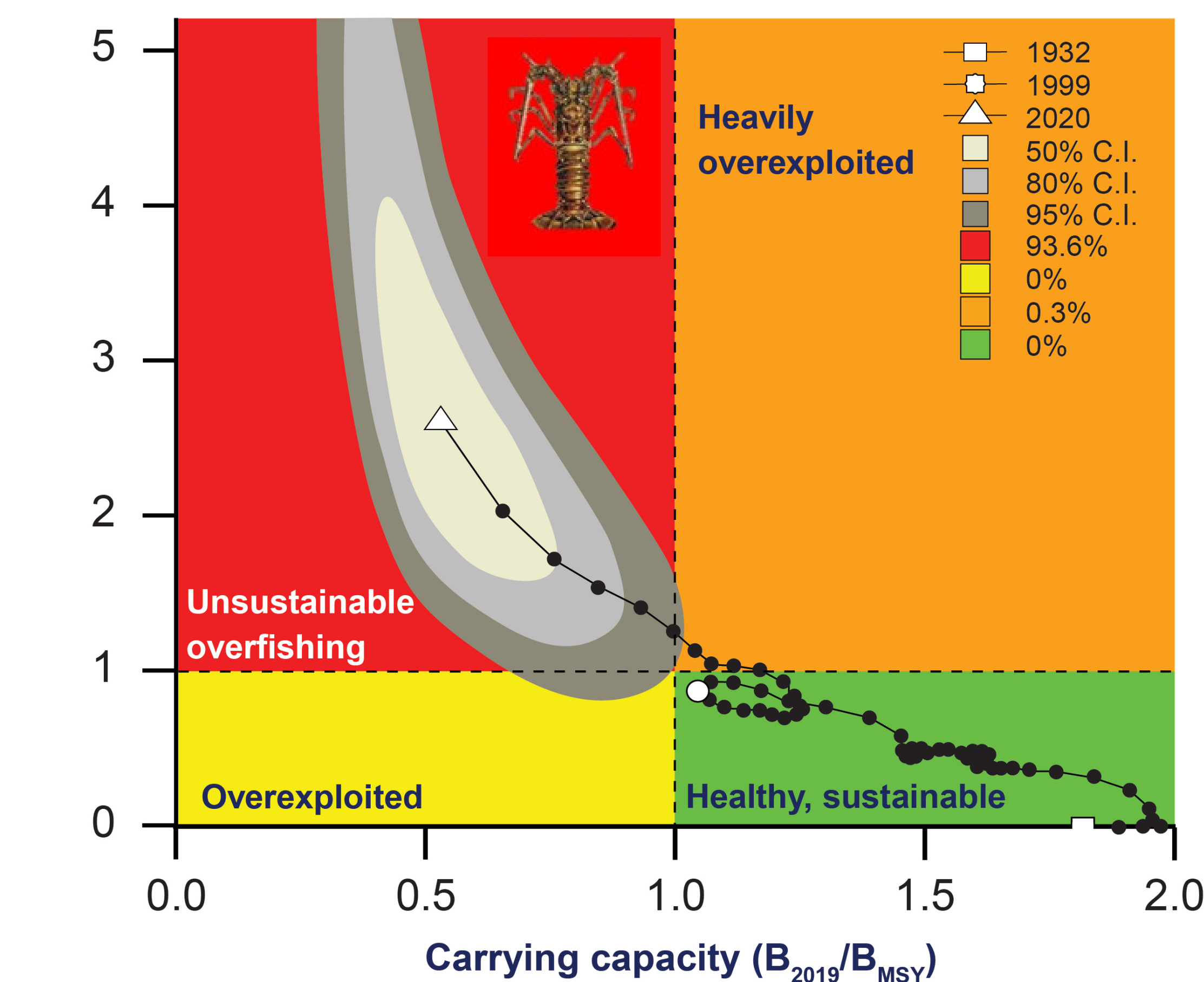
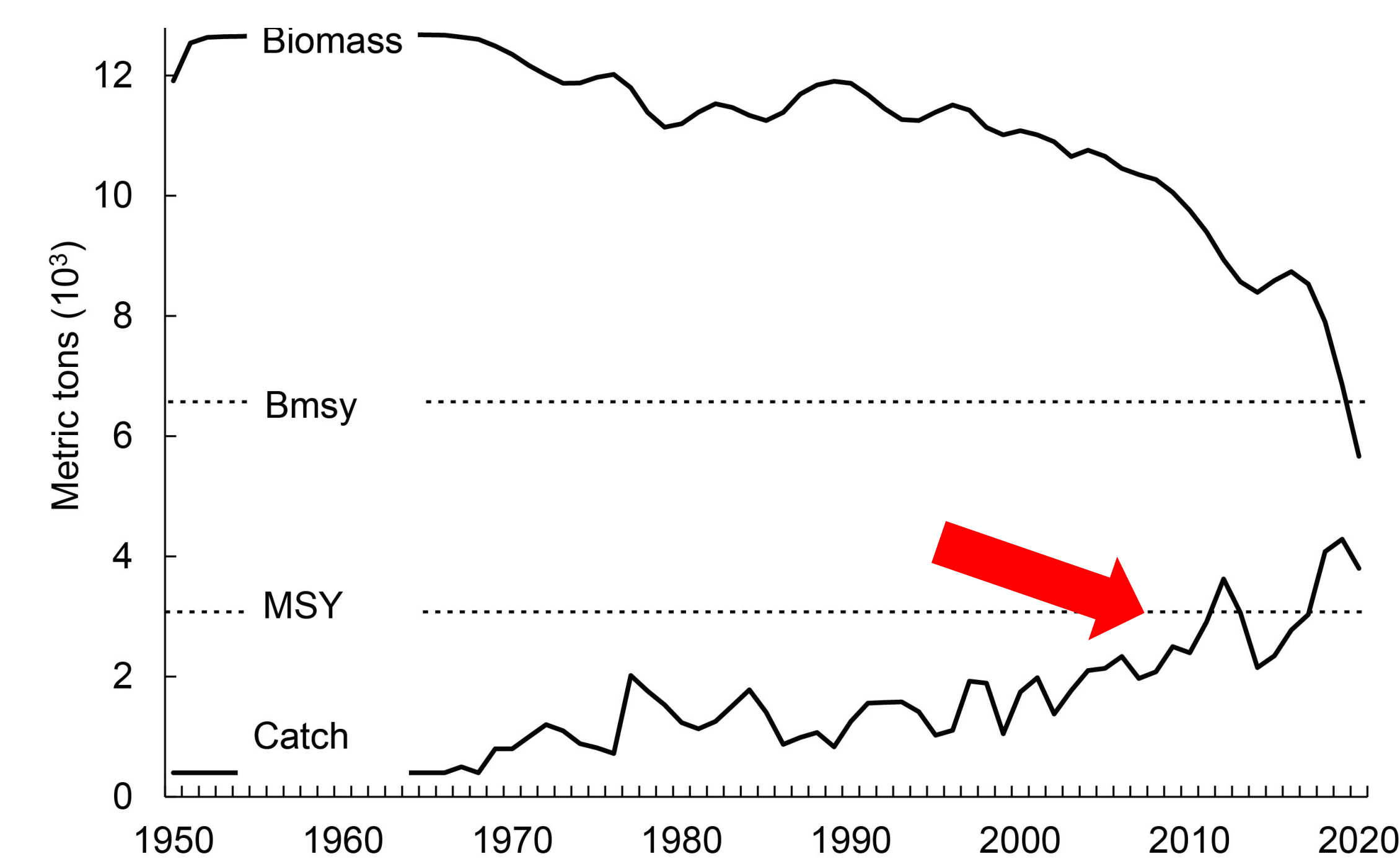
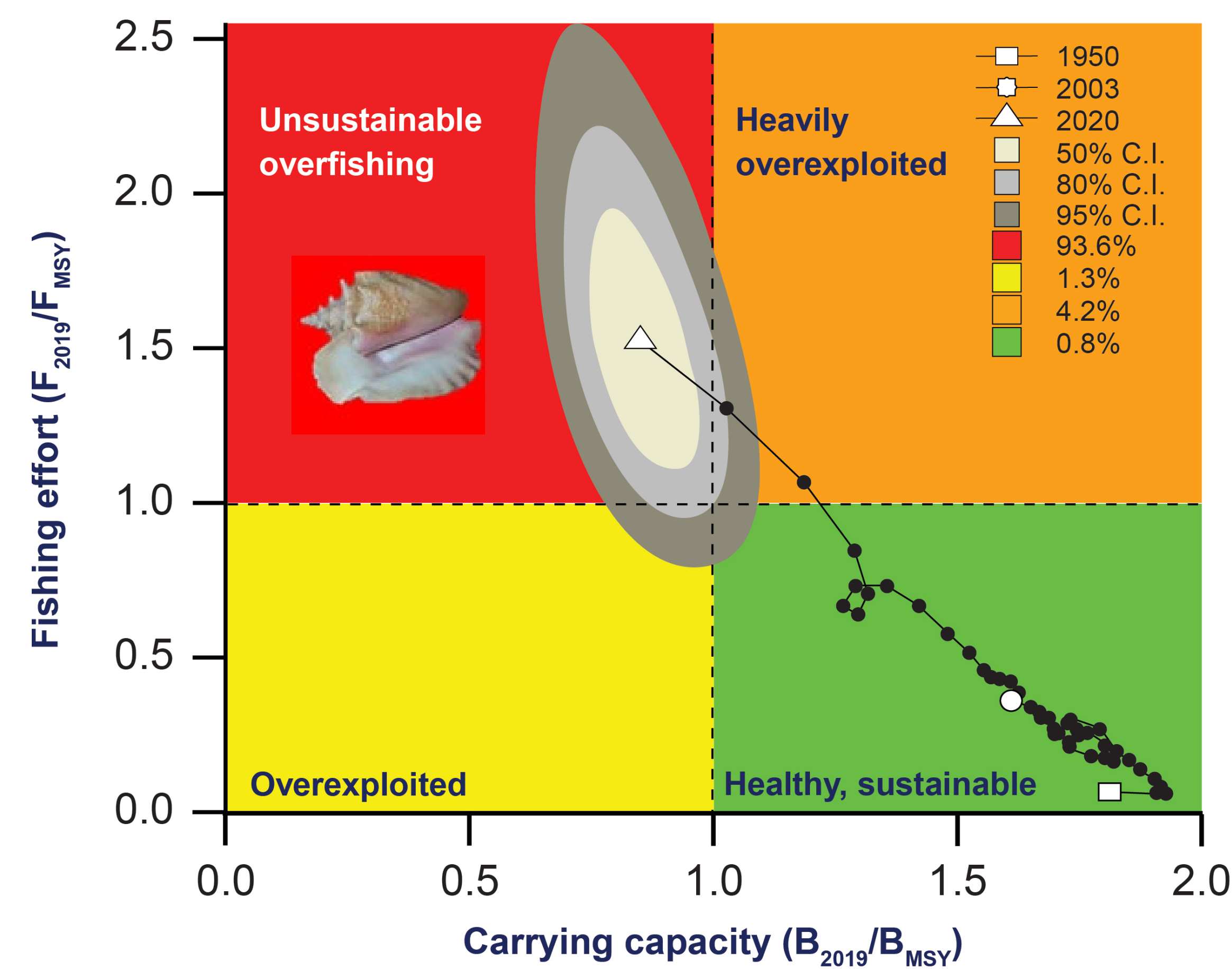
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The *Sea Around Us* reconstructed catches of the fisheries within the EEZ of Belize updated to 2019 from an earlier study (Zeller et al. 2011). These are dominated by artisanal (67%) and subsistence (22%) fisheries. Industrial and recreational fisheries made up only 11%; note that since the trawling ban, industrial fishery catches are absent. Catches consist predominantly of queen conch (21% of the total catch) and Caribbean spiny lobster (10%), and snappers (26%) with jacks, king mackerel and groupers making up the remainder.

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Other assessments were done on 18 fish species which suggested that all but 3 (including deep-sea snappers) are unsustainably fished (Palomares et al. 2023). Results were presented to fishers, who mostly agreed, during workshops held June 12 - 16, 2023. An independent study by the Healthy Reefs Initiative also found a recent 60% decline in groupers and snappers (McField et al. 2022). Tewfik et al. (2019, 2020) indicate unsustainable trends for the conch and lobster across selected fishing grounds. A governance review indicates that numerous policies exist in Belize for managing fisheries and maritime spaces. However, minimum harvestable sizes are too low and enforcement is limited (Foley and Takahashi 2017; Tewfik et al. 2022). **Rebuilding the biomass of overexploited species by allowing juveniles to mature and protecting large females (mega-spawners) using size limits based on well-known sizes at maturity are a priority.**

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Standard Kobe Plot results of the CMSY++ assessments using the *Sea Around Us* reconstructed catches for the dominant Belize fisheries species, the queen conch (*Aliger gigas*) and the Caribbean spiny lobster (*Panulirus argus*) based on the Bayesian Schaefer model (BSM) implemented in Froese et al. (2017). The white square refers to the start year of the assessment, white circle to an intermediate year of the assessment, and white triangle to the end year.

Annual biomass (top) of the conch (left) and lobster (right) stocks and their annual reconstructed catches (bottom) for 1950-2020. Dotted line labeled Bmsy is the biomass at maximum sustainable yield. Dotted line labeled MSY is the maximum sustainable yield. Sustainability of the stock is measured against these two reference points. Biomass that goes below the Bmsy limit or catch that goes above the MSY limit are indications of overexploitation (red arrows). These align with the terminal position of these stocks in the Kobe plots.

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