

Community-based participatory data collection of tarpon catch rates in Barra del Colorado, Costa Rica

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Barra del Colorado (BdC) was the birthplace of recreational fishing in Costa Rica and has historically been a world class tarpon (*Megalops atlanticus*) sportfishing location. Its economy depends heavily on the sportfishing industry but according to local anecdotic perception, tarpon abundance has decreased in recent times. The lack of systematic surveys to monitor catch rates has prevented the quantification of this potential decline, and the national fisheries agency has allowed tarpon fishing without using systematic fisheries data to support decision-making. In collaboration with the Costa Rican Sportfishing Federation, the local tourism association started collection of catch rates in 2024. Catch data are collected daily by sportfishing guides on charter boats, including number of releases, tarpon size, time spent fishing, and number of rods used. Relative abundance was estimated as Catch-per-unit effort (CPUE). CPUE (tarpon released per hour fished) ranged from (mean ± SD) 0.07± 0.07 in September to 0.21± 0.10 in November. This CPUE range matches CPUE from premiere tarpon fisheries in Florida from 20 years ago, indicating that the fishery at BdC still offers premiere quality. The total length of released tarpon switched from 176±24cm to 186±9cm in the same months, suggesting potential size-based migration. Local CPUE data will be used to monitor fishery success and to propose management strategies to the local fishery authority in the near future. This project highlights that local communities can actively contribute to generating the data required to manage the local fishery they depend on.