



Context

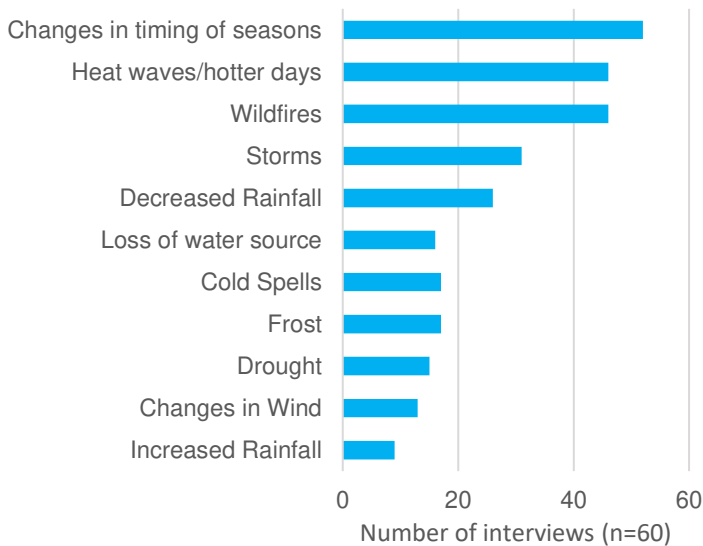
[Climate Crowd](#) is a crowdsourcing initiative that convenes and supports a network of partners to gather data on how climate change is impacting people and nature, and supports on-the-ground [projects](#) that help rural communities adapt while reducing pressure on biodiversity.

As a part of this initiative, WWF partnered with The School for Field Studies, an environmental study abroad program, to conduct 61 interviews (28 male, 31 female, 2 unspecified) in villages along the northern edges of the Tonlé Sap, the largest freshwater body in Southeast Asia. Those interviewed rely on the lake's historically abundant and diverse fisheries as their primary source of income. However, recent hydrological shifts combined with increased fishing pressure threaten fish stocks.



Figure 1. orange marker indicates location of interviews.
Source: WWF Climate Crowd, Accessed: 11/19/2019.

Reported changes in weather/climate



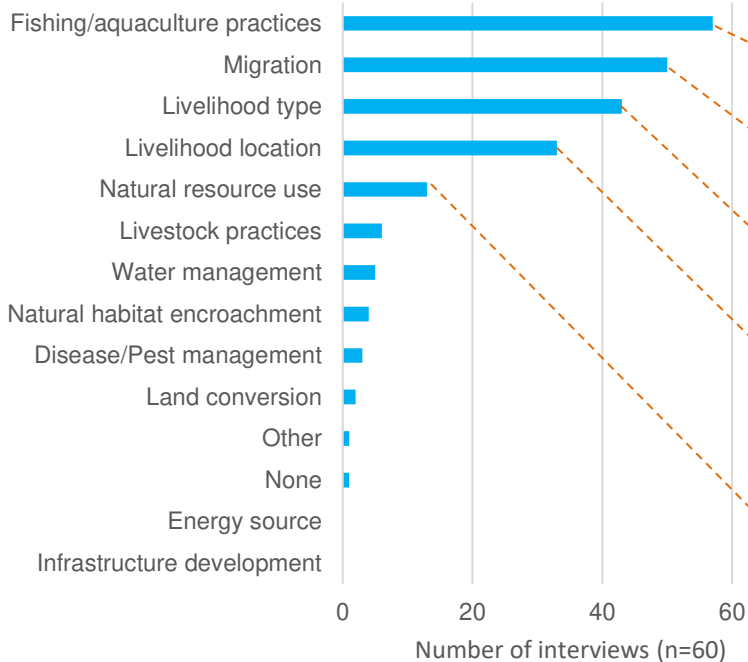
Respondents (87%) observed changes in the timing of seasons, primarily a longer dry season in recent years, with 43% noting an overall decrease in rainfall. The majority of those interviewed also noted warmer temperatures in recent years. Combined with other factors including dam construction, changes in climate have reportedly contributed to a significant drop in water levels of the Tonlé Sap and an unprecedented wildfire in the nearby flooded forest in 2016 according to nearly three quarters of respondents. In this region of Cambodia, flooded forests serve as important feeding and breeding grounds for fish. With reduced water levels coupled with increased pollution, water quality has also declined according to one in five respondents.

Impacts on communities

Over the last few years, nearly all respondents witnessed a steep decline in fish stocks, with over half reporting reduced household income as a result. The most commonly reported drivers of this decline include loss of flooded forest (43%), reduced water levels (40%), and population growth (33%). Other drivers mentioned include increased water temperature (22%) and more destructive fishing practices (12%). As one fisherman explains, “when the temperature is very high, the water becomes very hot and the fish die.” More frequent and intense storms have also reportedly limited the time during which people can fish. Nearly a third of respondents observed more illness particularly among children, which many attribute to hotter temperatures.



Community responses to climate impacts



Many have begun using more nets, particularly ones that are longer and have finer mesh (77%). Some nets are reportedly up to 1,000 meters long and many are under the minimum legal mesh size. Several respondents note that more affluent people are the ones using the longest nets.

Permanent and seasonal migration to Siem Reap and Thailand (45%) to find employment as construction workers, in factories, etc. Families from upland also come to the lake in the dry season to fish (22%).

Beyond employment in cities, households have turned to vegetable gardens (35%, mostly women), alligator farming (15%), and loans (10%) as alternatives or to supplement fishing.

People must travel farther and spend more time fishing to catch enough (40%).

Many noted that firewood access became easier after the 2016 fire (15%), though others (10%) said it became harder. As one person describes "The first year after the fire was easier to collect firewood because there was a lot of dead wood, but now firewood has gone bad after being in water for too long

Impacts on biodiversity

Overfishing presents the most serious ecological threat as evidenced by declining fish sizes, observed by nearly half of respondents. As one respondent remarked, "the change in types of fishing gear used has affected biodiversity as longer nets and smaller mesh size catch a larger amount of fish and also catch fish of a smaller size...that would have otherwise grown to reproduce and feed a larger amount of people." Government enforcement of fishing regulations has reportedly been limited, with some citing corruption as the cause. Use of such gear, however, is unequal. More affluent families have the means to purchase long nets, while many poorer families still rely on traditional techniques according to several respondents.

Few alternatives exist, and those that do can still result in environmental harm. Three respondents described how some people have turned to wildlife poaching in recent years, with one noting a decline in the leopard population as a result.

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Photos: Peak catch in Tonle Sap © Zeb Hogan / WWF; Nets in flooded forest © SFS
Citation: Climate Crowd, 2019. Cambodia summary report. World Wildlife Fund, Washington, DC.



A few respondents also note that use of medicines in aquaculture has led to pollution of the lake.

Besides impacts to fisheries, the 2016 fire resulted in high wildlife mortality, particularly amongst birds (27%), snakes (25%), turtles (11%) and other wildlife according to respondents. But the fire is not the only cause of deforestation. Four respondents explained that forest had been cleared for vegetable growing and to create space for long fishing nets. With many people searching for new fishing areas, there is a risk that fishing could occur in sensitive habitats. One respondent noted that some people fish inside protected areas, for example.