

## Relationship between catfish activities and earthquakes : History and future plan of research.

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Macroscopic anomalies associated with earthquakes, such as rumbling, lightening, and unusual behavior of animals, are defined as the unusual phenomena that can be noticed without scientific instruments but by ordinary human sense. Although there have been a number of reports on such phenomena, sufficient scientific research has not been made.

Tokyo Metropolitan Fisheries Experiment Station studied the relation between the catfish behavior and the earthquakes during the period from 1976 to 1992. For the first phase of our research, we summarized the results of this research: Catfish was chosen because of the most numerous reports on their earthquake related activity. Underground water, pumped up from a 70 m deep well, was fed to the aquarium and was allowed to overflow onto a water bath. The water bath made of En-tout-cas was placed on the ground. The catfish motion was detected by monitoring the water vibration using a pickup vibroscope. Results of the observations and their possible relationship with earthquakes, based on some criteria, are described in 13 reports by Tokyo Metropolitan Government (1980-1992).

In this paper, we present, in addition to a summary of their experiment, our views on how to proceed this type of research in scientific framework and some initial attempts to analyse fish motion quantitatively by various methods, including video recording.