Philippine Society for Freshwater Science

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Statement of Support for the Conservation and Sustainable Management of *Sardinella tawilis* and of Lake Taal

Sardinella tawilis (locally known as tawilis) is the only freshwater species of *Sardinella* and is only found in Lake Taal, Batangas, Luzon Island, the Philippines. Recently, the International Union for the Conservation of Nature (IUCN) has classified tawilis as endangered.

In the assessment of a taxon's threatened category, IUCN follows its well-established, regularly-updated guidelines. In the case of tawilis, IUCN based its evaluation using criteria A2bd, which is on population reduction measured over the longer 10 years or 3 generations, and B1ab and B2ab, which are the extent of occurrence (EOO) and area of occupancy (AOO), respectively.

On December 11, 2018, the Philippine Society of Freshwater Science (PSFS), a professional association whose members are from the academe, research institutions, environmental organizations, government agencies, and civil society engaged in the promotion of scientific knowledge and stimulation of scientific investigation for the advancement of freshwater science in the Philippines, was established.

On February 19, 2019, the PSFS, together with the University of Santo Tomas Department of Biological Sciences (UST), University of the Philippines Diliman Institute of Biology (UP), Department of Agriculture-National Fisheries Research and Development Institute (DA-NFRDI), Department of Agriculture-Bureau of Fisheries and Aquatic Resources (DA-BFAR), and the Department of Environment and Natural Resources (DENR), organized the Tawilis Summit 2019: "4Ts: Talakayan Tungkol sa Tawilis at Taal."

Data presented during the Tawilis Summit 2019 that formed the basis for classifying tawilis under the Endangered category, indeed show a decline in the tawilis catch since 1998 and that harvest dropped by about 49% over the past 10 years.

Moreover, Lake Taal, which is the habitat of the tawilis, has a surface area of only 244 km^2. Therefore, the area of occurrence (AOO) of this Lake Taal endemic fish is less than 244 km^2 and its extent of occurrence (EOO) is 297 km^2 that are way smaller than the thresholds of < 5,000 km^2 and < 500 km^2, respectively. Given these and the

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continuing declines in the number of mature individuals presented above, tawilis has been categorized as Endangered.

Based on two separate studies on the reproductive biology of tawilis, data show that spawning season peaks during the months of March and April. Similarly, it was observed that during the spawning season, tawilis are mostly found nearshore where the “macrophytes” are located. Coincidentally, these areas will likewise be affected in the planned circumferential road to be built around Lake Taal.

Given the situation and conditions connected with the declining tawilis catch and habitat quality of Lake Taal, we the members of the Philippine Society for Freshwater Science support for the conservation and sustainable management of *Sardinella tawilis* and Lake Taal through the following measures:

1. Implementation of the PAMB ordinances for close season during the months of March and April, the implementation of a recommended mesh-size for fishing, and establishment of tawilis sanctuary areas in Lake Taal;
2. Law enforcement should be multisectoral and should include the participation of government agencies such as DENR, NFRDI, BFAR, LGUs and the fisherfolk organizations including those involved in aquaculture practices;
3. Regular, long-term monitoring of the lake in terms of catch per unit effort, water quality parameters, and aquaculture practices through the continued efforts of the government agencies such as NFDI, BFAR and other researchers;
4. Progress report and discussion after one year of implementation of programs and policies should be done to evaluate success and effectiveness of management initiatives; and
5. Research program, participated in by Batangas-based Higher Education Institutes including State Colleges and Universities with funding from the national government and other institutions, with the aim of getting tawilis off the IUCN red list.
6. Reconsider the location and construction of the Taal Lake Circumferential Road (TLCR), which, according to current plans, is too close to the lakeshore areas. The placement of this road would have a negative impact on littoral vegetation, which the tawilis and other aquatic organisms in Lake Taal (including the Lake Taal sea snake, *Hydrophis semperi*) utilize heavily as their breeding grounds or actual habitat.