Fish welfare indicators

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FISH WELFARE INDICATORS: LESSONS LEARNED FROM WELFARE STANDARDS IN TERRESTRIAL ANIMALS.

Vincent Lugert*, Dieter Steinhagen, Verena Jung-Schroers, Mikolaj Adamek, Stefan Reiser

Introduction

There is substantial scientific evidence, that most animals, including fish, are sentient beings. Accordingly, animal welfare has become an established scientific discipline with great public awareness. The mass collection and analysis of data has led to a number of valid and reliable indicators to assess the status of animal welfare of almost every kind of terrestrial farm animal. However, the situation is more complicated in fish. The list of parameters related to fish health and welfare easily exceeds several hundred items and largely varies between species, life-stage, and production system. As fish welfare is a comparatively novel discipline and confronted with this great number of measurable parameters it seems obvious to consult the developmental process and application of indicators for welfare in terrestrial animals. This approach can help to develop appropriate strategies for the assessment of fish welfare and to avoid the repetition of errors.

Approach

Current legal regulations prescribe a regular corporate self assessment of fish welfare on each aquaculture farm. However, until now an approved set of indicators in not available to be implemented in an assessment equivalent to terrestrial livestock. We reviewed the current guidelines for the assessment of welfare in terrestrial farm animals as well as the methodology used to develop these, in order to adopt a strategy for fish welfare indicators. We collect and evaluate parameters and welfare indicators for rainbow trout (*Oncorhynchus mykiss*) and common carp (*Cyprinus carpio*) which are the most important species in the traditional, pond-based aquaculture in Germany. Despite this long
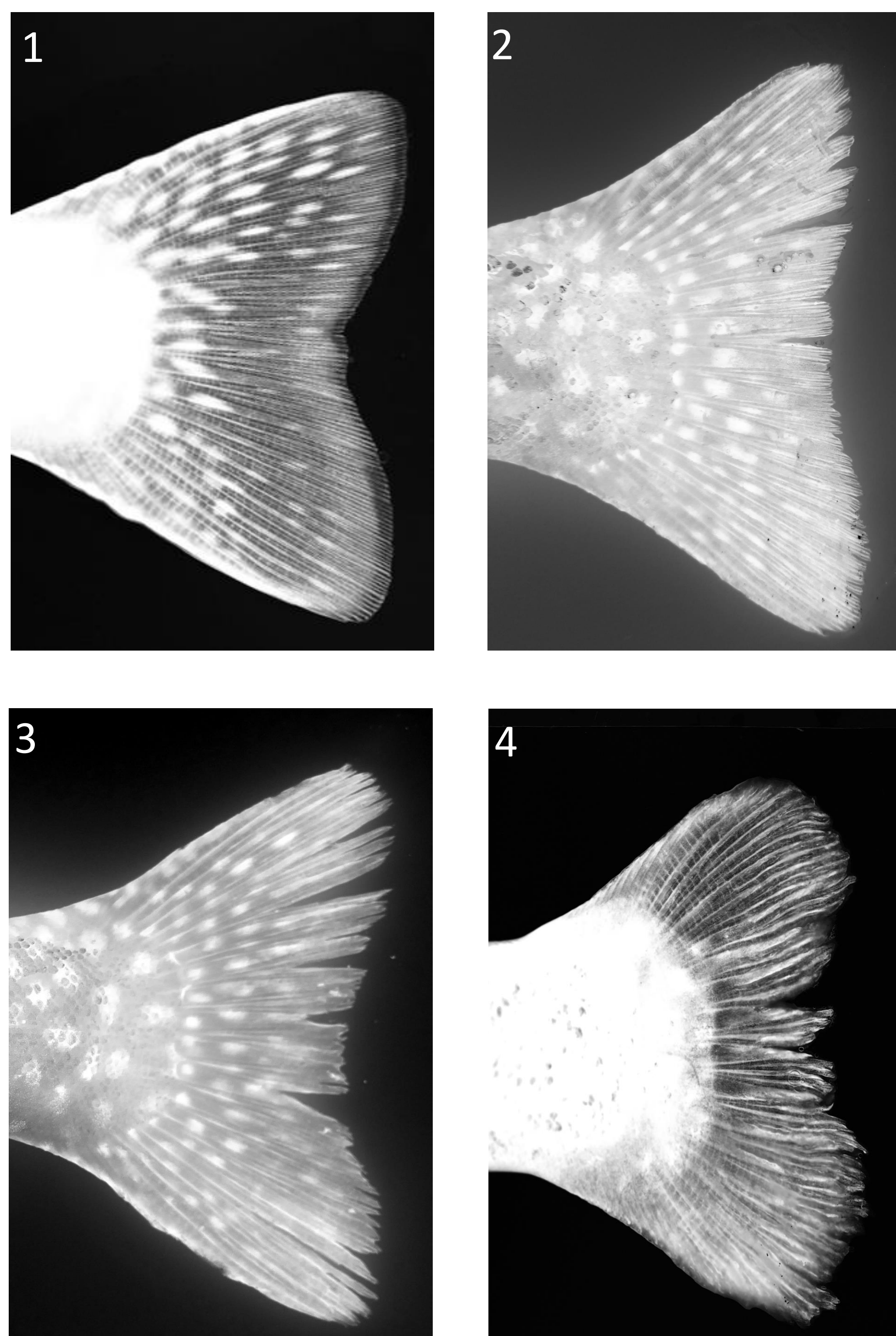

Figure 1-4: Fin status is a widely accepted welfare indicator in rainbow trout. The figures show different levels of fin condition on the caudal fin. Figure 1: 'Perfect' condition. Figure 2-4: Increasing levels of fin erosion.

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tradition, little is known about the state of animal welfare of the two species, which differ fundamentally both in their biological requirements and in the husbandry systems used for rearing.

Outcome

Our results will enable farmers and farm managers to routinely assess the status of animal welfare on their farms. This will also enable individual farms to survey the development of their husbandry conditions and to detect trends in husbandry at an early stage. Additionally, they can check the success of changes and implemented measures. immediately.

Project: National Animal Welfare Monitoring (NaTiMon)

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The state of animal welfare in livestock farming is a controversial topic in Germany. Nevertheless, at the federal level, there is still no profound reporting structure established. The aim of the project is to develop the basis for a regular, indicator-based monitoring and reporting structure on the status of animal welfare in livestock farming in Germany. The documentation of the results can also show the development of the animal welfare situation over time. The project is supported by a large consortium consisting of: the Thünen Institutes of Farm Economics, Fisheries Ecology and Organic Farming and the University of Veterinary Medicine Hannover (Department of Fish Diseases and Farming); the Federal Statistical Office of Germany; the Kuratorium für Technik und Bauwesen in der Landwirtschaft; the Friedrich Loeffler Institute for Animal Husbandry and Animal Welfare; Kiel University (Institute for Animal Breeding and Animal Husbandry), and the Chair of Animal Husbandry and Poultry Sciences of the Hochschule Osnabrück University of Applied Sciences. The project is supported by the Federal Office for Agriculture and Food (BLE). The project will identify meaningful and reliable animal welfare indicators for pigs, cattle, poultry, and aquaculture (rainbow trout and carp) covering the life stages of husbandry, transport, and slaughter.