

handling is the most important, with 100% mortality reported for some treatments. This is despite the introduction of legislation in 2018 that requires cleaner fish to be recaptured prior to delousing or harvest of salmon. In part, this is because of the difficulty of recapturing the cleaner fish. There are also issues as to what to do with recaptured cleaner fish as they pose an infection risk to any salmon they are rehoused with. The Report calls for a continued focus on increasing the knowledge of the health and welfare requirements of cleaner fish.

Amongst some of the other welfare challenges discussed in the welfare section are those relating to production of large smolts, water quality in juvenile salmon production and water quality in marine facilities.

In the sections on the various diseases and infections of farmed salmonids, detailed descriptions, control measures and breakdowns of the disease situation are given for the various diseases covered. Viral diseases are considered to have the greatest effect on fish welfare after salmon lice infestations. Cardiomyopathy syndrome (CMS) is the most important of these, followed by pancreas disease (PD). The Report raises the concern that recent research has indicated that CMS has the potential to transmit from parent to offspring. Amongst the other six diseases detailed are infectious salmon anaemia (ISA) and heart and skeletal muscle inflammation (HSMI).

For bacterial disease, the Report indicates that vaccination programmes against diseases such as vibriosis and furunculosis have brought the previously huge losses caused by these under control. Use of antibiotics to control such diseases remains low, both compared to previous use and to the increased levels of salmon production. Developing areas of health and welfare concern are winter ulcer — which presents as visible lesions on the flanks of fish caused by systemic infection by *Moritella viscosa* normally during the autumn and winter and which causes increased mortality and yersiniosis (or enteric redmouth diseases), a systemic disease caused by the bacterium *Yersinia ruckeri*. Stress caused by handling and thermal/physical delousing are thought to be important factors in outbreaks of yersiniosis.

This Report gives an excellent overview of the situation in Norway regarding farmed fish and should be of interest to anyone working in aquaculture and/or interested in fish welfare.

**The Health Situation in Norwegian Aquaculture 2018** (February 2019). A4, 132 pages. Hjeltnes B, Bang-Jensen B, Bornø G, Haukaas A and Walde CS (eds). Norwegian Veterinary Institute report series nr 6b. Available online from: [www.vetinst.no](http://www.vetinst.no) or [https://www.vetinst.no/rapporter-og-publikasjoner/rapporter/2019/fish-health-report-2018/\\_/attachment/download/cdb0d230-03ee-44bb-a139-7b3df553ff84:1a35928cc7d96375db49c2fcd337524e37f437eb/Fish%20health%20report%202018%20eng-enkeltsider.pdf](https://www.vetinst.no/rapporter-og-publikasjoner/rapporter/2019/fish-health-report-2018/_/attachment/download/cdb0d230-03ee-44bb-a139-7b3df553ff84:1a35928cc7d96375db49c2fcd337524e37f437eb/Fish%20health%20report%202018%20eng-enkeltsider.pdf).

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## Tourism and animal welfare

ABTA (a travel trade association for tour operators and travel agents within the UK) has recently published a Best Practice Guidance Manual for animals in tourism. ABTA consulted with stakeholders from around the world (industry experts, scientists, zoological organisations, and other non-governmental organisations) to produce the manual with the aim of encouraging suppliers of animal experiences and attractions to take into account animal welfare.

The manual consists of twelve sections. Sections 1 to 5 introduce the concept of animal welfare (based on the Five Freedoms and the Welfare Quality® criteria), discuss the ways in which animals may be used in tourism, and put forward minimum requirements and best practice. Section 6 goes on to describe what are considered to be unacceptable practices within the tourism industry (eg ostrich riding, crocodile wrestling and trophy hunting) and discouraged practices (eg feeding animals with live vertebrate prey, tethering birds of prey). Unacceptable practices are those which are known to be detrimental to animal welfare and should therefore not be offered for sale to customers. Sections 7 to 12 go on to cover: legal requirements — CITES; acquisition of animals; animal sanctuaries; protecting livelihoods; wildlife souvenirs; and volunteer tourism. The manual emphasises that animal welfare is best protected by working with and engaging local communities.

ABTA is the largest travel organisation in the UK and it hopes that by encouraging its members to subscribe to the manual that the standard of animal welfare across the tourism industry can be improved.

**Global Welfare Guidance for Animals in Tourism: A Best Practice Guidance Manual** (2019). A5, 67 pages. ABTA Animal Welfare Guidelines. ABTA The Travel Association. Available to download (free) online at: <https://www.abta.com/industry-zone/abta-shop/abta-animal-welfare-guidelines>.

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## Updated Code of Practice for the welfare of pigs in England

Ten species-specific Codes of Recommendations for farmed animals have been published by the Department for Environment, Food and Rural Affairs (Defra). The Codes support legislation and guide owners and keepers in how best to care for their animals. However, some of the Codes are significantly out of date and do not reflect the latest scientific and veterinary knowledge or legislative changes. Consequently, Defra is in the process of updating the Codes and the latest update to be published is the Code of Practice for the Welfare of Pigs in England (Scotland, Wales and Northern Ireland each have their own codes of welfare).

The Code applies to all farmed pigs in England and is intended to help owners and keepers practice good standards of stockmanship — an essential prerequisite to