Explanatory note

The current version of the RSPCA welfare standards for farmed Atlantic salmon that RSPCA Assured members are required to implement is dated February 2021. As part of the on-going process of reviewing the welfare standards, they have now been amended and updated, which includes the addition of a number of new standards and guidance (information boxes).

The review process, which is undertaken in consultation with the farming industry, veterinary profession and welfare research sector, is necessary to ensure that the standards take proper account of the latest scientific research, veterinary knowledge and practical developments, and therefore continue to represent 'good practice' in farm animal care.

These changes will be incorporated into a revised edition of the RSPCA welfare standards for farmed Atlantic salmon, to be issued in May 2024.

All the amendments made to the 2024 version of the standards are listed below and have been marked with NEW or REVISED.

RSPCA Assured scheme members have three months from the date of this letter to fully implement these changes (i.e. by 19th May 2024), unless otherwise stated by the standard.

Please note:

All standards in the 2024 edition that are not shown below or are shown but do not have a NEW or REVISED next to them remain unchanged in the new edition. Due to the amendment process, some existing standards have been re-ordered and therefore re-numbered.

RSPCA Farm Animals Department

1st February 2024

Management

Manager and stock-keeper training

REVISED Examples of recognised courses include, the University of the Highlands and Islands (UHI) Shetland Fish Welfare Training Course and the Pharmaq Analytiq Fish Welfare Training Course.

Inspection and records

M 3.6 REVISED Removal of dead fish must occur as frequently as is necessary and without undue delay and, in any case:

a) On at least two separate days per week, which are spaced approximately evenly apart e.g. a Monday and a Thursday,

b) at least daily for land-based systems.

NEW Regarding standard M 3.6, instances where removal of dead fish might occur more frequently include, but are not limited to, upon the diagnosis of an infectious disease that leads to increased mortalities, increased level of mortalities, or an increased level of predator interactions leading to higher mortality.

NEW The RSPCA strongly recommends daily removal of all dead fish and will consider making this a requirement in future publications of the standard.

M 3.8 NEW Tanks/enclosures must be inspected daily for the presence of moribund (dying) fish.

M 3.9 NEW If found at the time of inspection, moribund (dying) fish must be:

a) removed promptly

b) humanely culled according to:

   i. standard H 2.2 in freshwater or

   ii. standard H 2.3 in seawater.

NEW The RSPCA strongly supports and encourages further research and development of technologies that help to identify moribund fish at an early stage and enable efficient removal of such fish from enclosures.

Where such technology is being considered, please contact the RSPCA Farm Animals Department.

Use of Artificial Intelligence

NEW The RSPCA is reviewing the role of artificial intelligence and the wide-ranging benefits it can bring to salmon welfare, particularly in the areas of welfare outcome assessment, health inspection and lice checks.

It is strongly recommended that producers investigate the feasibility of such technology to further safeguard and advance fish welfare.

Where such technology is being considered, please contact the RSPCA Farm Animals Department.

Health

H 1.6 REVISED The VHWP must be treated as a live document.

H 1.6.1 NEW If a problem is identified, the VHWP (see standard H 1.1) must be revised without delay to ensure that the welfare of the fish is not compromised.

NEW In relation to Standard H 1.6.1, the term 'without delay' means that the VHWP is to be updated as soon as the problem has been investigated and the cause/s identified. Therefore, it is acknowledged that there may be a period of time before the VHWP is updated following an event to allow for any investigation required. However, if the time to investigate the event is likely to extend beyond 48 hours, this is to be noted in the VHWP along with an estimated time for completion, and the VHWP regularly updated as the investigation proceeds and until it is concluded.

Casualty slaughter

H 2.2 NEW During the freshwater stage, only the following methods are permitted for the emergency killing of fish:

a) being put into an anaesthetic overdose under veterinary prescription

b) electrical stun-to-kill

c) for fish over 5g, a priest of appropriate size.

H 2.4 REVISED Use of the emergency killing methods listed under standard H 2.2 c) and standard H 2.3 a) and b) must result in a non-recoverable percussive blow to the head of the fish to render it immediately insensible.

H 2.5 NEW Where an electrical stun-to-kill system is used in regard to standard H 2.2 b):

a) the electrical parameters must be set to ensure fish are rendered unconscious immediately (within 1 second)

b) there must be no pre-stun shocks

c) post stunning, the fish must remain unconscious until death supervenes

d) visual inspection must take place on a regular basis to establish that fish have been effectively killed. Fish must have:

   i. no eye movement

   ii. no rhythmic opercular movement

   iii. only mild short term involuntary muscular twitches

   iv. no reaction to tail pinch.

Medicinal products

H 3.5 LEGAL REVISED Any veterinary medicines used must be in accordance with current UK legislation for the species.

The RSPCA recognises that the welfare of farmed fish may be adversely affected by the limited availability of vaccines or therapeutic medicines approved for the treatment of fish. In exceptional circumstances, on the advice of the designated veterinary surgeon, specific products licensed in the UK for use in other food producing species can be administered (following the requirements of the cascade principle) as detailed in the Veterinary Health and Welfare Plan (see standard H 1.1), providing that a valid discharge consent is held from the appropriate Government body. All proven medications should be made available to aid disease treatment as advised by the designated veterinary surgeon.

H 3.11 NEW The use of antibiotics on-farm must be reviewed annually or at the end of a production cycle.

H 3.11.1 NEW The antibiotics review (standard H 3.11) must form part of the VHWP

H 3.12 NEW When reviewing the use of antibiotics on-farm, the following must be considered:

a) the different classes of antibiotic drug used

b) the health condition(s) treated

c) the species treated

d) the number of fish treated

e) which group/s of fish were treated

f) the average weight of the fish or the point within the production cycle

g) the total amount of each individual drug that was used (in mg/kg) per occasion

h) the method in which the fish were treated.

H 3.13 NEW In light of the findings of the antibiotic use review (see standard H 3.11), a written action plan aimed at reducing the use of antibiotics on the farm through improvements in animal husbandry must be developed and implemented.

Sea lice

NEW The RSPCA strongly supports and encourages research into new sea lice prevention tools and equipment.

If you would like to trial such technology, or are considering the possibility of implementing it, please contact the RSPCA Farm Animals Department.

Mortality recording and reporting

H 5.1 REVISED Where the level of salmon mortality exceeds the threshold figures shown below, this must be recorded and reported to the certification scheme responsible for assessing these standards within 72 hours of the end of the weekly period:

Freshwater:

- Egg to 1st feed: 6% weekly
- 1st feed to 5g: 3% weekly
- 5g to smolting: 1.5% weekly

Seawater:

Site average weight (g)	Max. Weekly mortality (%)	Max. 5-week rolling mortality (%)
Under 750	1.5	6
750+	1.0	4

Welfare Outcome Assessment

NEW To ensure we are improving farm animal welfare we need to be able to measure it. Measuring welfare enables us to know what level is being achieved and therefore better understand what impact the resources being provided and management practices being implemented are having on the animals. Measuring welfare in this way is known as Welfare Outcome Assessment (WOA). This information is only useful if it is used to improve fish welfare via the Veterinary Health and Welfare Plan.

H 7.1 NEW Welfare Outcome Assessments must be conducted:

a) On a regular basis in both freshwater and seawater

b) By a suitable competent person who has received fish welfare training

c) According to the following protocols:

   i. in freshwater, on at least four occasions throughout this stage. Each assessment must be undertaken on 30% of, or five (whichever is higher), units and a minimum of ten fish per sampled unit

   ii. in seawater, at least once every month, on a minimum of 50% of enclosures and a minimum of ten fish per sampled enclosure.

NEW Examples of recognised courses include, the University of the Highlands and Islands (UHI) Shetland Fish Welfare Training Course and the Pharmaq Analytiq Fish Welfare Training Course.

NEW During the freshwater stage, if fish are moved between sites, any previous welfare outcome assessment results should be passed onto the receiving site.

The four assessments during the freshwater stage can happen across different sites.

H 7.2 NEW Welfare Outcome Assessments must include scoring of the following indicators, as a minimum:

a) fin malformation – worst fin scored

b) eye loss/damage

c) jaw deformity

d) spine deformity

e) snout injury

f) scale loss, skin damage

g) physical wounds and lesions

h) operculum damage

i) sea lice damage (in seawater only).

NEW The scoring system in Appendix 1 is the suggested scoring system. However, producers may use other system/s, as long as the indicators in standard H 7.2 are assessed.

NEW It is preferable that Welfare Outcome Assessments are completed at the time of other handling events to minimise the number of times fish are handled.

In freshwater, this could include during grading and vaccination. For seawater, this could include during lice/gill checks.

H 7.3 NEW A record, either hard or digital, of the results of the Welfare Outcome Assessment must be kept:

a) on farm

b) for a minimum of two cycles or three years, whichever is longer

c) must be made available on request.

H 7.4 NEW With regard to standard H 7.3, the Welfare Outcome Assessment documentation left on farm must include the following information:

a) the date of the assessment

b) site name and enclosure ID

c) the name of the competent person who undertook the assessment

d) the average weight of the fish at the time of the assessment

e) any action to be taken (see standard H 7.5).

H 7.5 NEW Any health/welfare issue(s) identified as an area of concern must be included within the VHWP (see standard H1.1).

NEW **The Welfare Outcome Assessment may not always provide a definitive farm level prevalence of welfare for the measures assessed. The assessment should help to identify areas of welfare concern that are likely to be more wide-spread on the farm and therefore warrant further investigation and careful monitoring.**

NEW **The RSPCA recognises the limitations of current Welfare Outcome Assessment protocols in gaining a fuller representation of the farmed fish population. The RSPCA encourages further research and trials into developments and advances in technology that might overcome these issues.**

Husbandry practices

HP 1.7 REVISED All personnel working with, or handling the fish must:

a) be trained and fully competent to carry out their duties

b) understand the likely stress factors and welfare risks fish may be subjected to

c) be aware of the procedures to address any potential welfare risks

d) understand when and where fish may be prone to welfare problems during the handling event

e) be able to recognise signs of normal and abnormal behaviour.

Crowding

NEW These standards apply to all crowding operations, regardless of location.

HP 2.3 REVISED Fish must be monitored throughout the operation by a designated person.

HP 2.3.1 NEW The designated person must take:

a) responsibility to recognise welfare issues

b) appropriate action if necessary to rectify the situation.

HP 2.4 REVISED Oxygen levels must be:

a) monitored at least every 30 minutes

b) recorded, and

c) maintained at a minimum of 7mg/l.

HP 2.4.1 NEW If oxygen levels fall below 7mg/l, appropriate action must be taken.

NEW In relation to standard HP 2.4, various parameters, such as salinity and water temperature, will affect the solubility of oxygen in water. Therefore, the minimum oxygen level of 7mg/l is to be increased, as required, to ensure the optimum oxygen level for the fish is always maintained.

The RSPCA is considering including oxygen saturation levels in future publications of the standard.

HP 2.6 REVISED Sweep nets must be:

a) of knotless construction

b) of optimal design for the enclosure

c) of an appropriate mesh size for the fish.

HP 2.7 REVISED Enclosure nets in freshwater lochs and at seawater sites must be kept clean to avoid water quality problems during crowding.

Grading

HP 3.8 REVISED Prior to grading, any period of feed withdrawal must be as short as possible so as not to compromise fish welfare and, in any case, not exceed 48 hours.

A longer fasting period may be required if advised by the veterinary surgeon/animal health manager due to sub-optimal conditions occurring.

Non-medicinal treatments for sea lice and amoebic gill disease – general

NEW **Non-medicinal treatments for the control of sea lice and amoebic gill disease are treatments that do not require a veterinary prescription during the seawater phase of on-growing. These treatments include, but are not limited to, delousing techniques, such as thermal and mechanical delousing, and freshwater bathing treatments for gill pathogens and sea lice.**

HP 8.1 NEW Any new non-medicinal treatment or technology for the control of sea lice and amoebic gill disease, or development to existing treatments/technology that could negatively impact on the welfare of the fish, must be referred to the RSPCA Farm Animals Department for review and decision before it can be used.

NEW **The use of non-medicinal treatments is relatively new and, as such, technology is developing at a rapid pace and the scientific knowledge, particularly in regard to the welfare impacts, is often behind industry application.**

Non-medicinal treatments for sea lice and amoebic gill disease – vessels

HP 9.1 NEW All vessels used for administering non-medicinal treatments must be approved for use by the farm assurance scheme assessing against these *RSPCA welfare standards for farmed Atlantic salmon*.

HP 9.2 NEW Vessels arriving into the United Kingdom (UK) to work within UK waters must carry a valid certificate of disinfection from their country of origin.

HP 9.3 NEW Fish counting equipment must:

a) be installed and used at all times

b) be positioned according to manufacturer's guidelines

c) be fully maintained in good working order

d) be calibrated according to the manufacturer's guidelines

e) not cause damage or injury to the fish.

Non-medicinal treatments for sea lice and amoebic gill disease – pre-treatment

HP 10.1 NEW Non-medicinal treatments must only be performed under veterinary advice.

HP 10.2 REVISED Prior to each use of the technology, non-medicinal treatments must be risk assessed against the impact they may have on the welfare of the fish.

HP 10.2.1 NEW Non-medicinal treatments must only be carried out where it is in the best welfare interests of the fish (as determined by the risk assessment).

> **The Farmed Fish Welfare Risk Assessment template in Appendix 3 can be used to record the activity outlined in standard HP 10.2.**

HP 10.3 REVISED The non-medicinal treatment risk assessment (standard HP 10.2) must be:

a) included in the VHWP

b) made available on request.

HP 10.4 NEW The choice of treatment must be appropriate for the:

a) health status

b) size of the fish, as evidenced in the non-medicinal treatment risk assessment (standard HP 10.2).

HP 10.5 NEW A written treatment plan must be:

a) agreed between farm management (including site staff), a veterinarian or health manager and the treatment leader/operator prior to operations commencing

b) implemented

c) kept on farm for two years

d) made available on request.

HP 10.5.1 NEW The treatment plan must include:

a) the reason for the need to treat the fish

b) a pre-treatment risk assessment (see standard HP 10.2)

c) the average weight and number of fish to be treated, both for the site and for each enclosure

d) the location of fish populations both pre- and post-treatment

e) the pre-treatment fasting period

f) the health status of the fish

g) the non-medicinal treatment to be used

h) any relevant contingency plans (see standard HP 10.6)

i) the named person responsible for the treatment

j) the agreement and signatures of the site manager, veterinarian, health manager and the person in charge of the treatment.

HP 10.6 NEW A written contingency plan(s) must be in place to detail courses of action to be undertaken should any unexpected issues arise that compromise the welfare of the fish.

HP 10.6.1 NEW The contingency plan must include the:

a) potential impacts on the fish

b) actions that can be taken to address the issues identified.

HP 10.7 NEW Fish must not be subjected to more than one non-medicinal treatment within a 28 day period, unless approved by a veterinarian.

HP 10.8 REVISED There must be a designated person responsible for the welfare of the fish during the non-medicinal treatment process.

HP 10.9 NEW All personnel involved in the handling of fish during a non-medicinal treatment must:

a) have access to a digital or paper copy of the current version of the *RSPCA welfare standards for farmed Atlantic salmon*

b) be familiar with the relevant content

c) understand and be able to apply the relevant content

d) have completed a recognised fish welfare course

e) understand the likely stress factors or welfare risks fish may be subjected to

f) understand the times and circumstances where fish are prone to welfare problems during the treatment event

g) be able to recognise signs of normal and abnormal behaviour.

NEW Examples of recognised courses include, the University of the Highlands and Islands (UHI) Shetland Fish Welfare Training Course and the Pharmaq Analytiq Fish Welfare Training Course.

HP 10.10 NEW Prior to treatment, the fasting period must be as short as possible and, in any case, not exceed the following:

a) 48 hours for physical delousing

b) 72 hours for freshwater bathing.

NEW The fasting period may only be extended if this is beneficial to the welfare of the fish and on the written advice of the veterinary surgeon or health manager.

HP 10.11 NEW Thermal delousers must adhere to the following limits:

a) maximum water temperature must not exceed 34^{o}C

b) maximum delta temperature must not exceed 22^{o}C

c) maximum length of time fish are exposed to the thermal treatment must not exceed 35 seconds.

HP 10.12 NEW When salmon are bathed in freshwater on a wellboat, the maximum stocking density in the well must be based on the liveweight of the fish as follows:

Liveweight (kg)	Maximum stocking density (kg/m^3)
5.0	125
4.0	110
3.5	100
3	90
2	75
1	60
0.1	45

HP 10.13 NEW A full welfare outcome assessment of the fish treated on the site must be performed:

a) within seven days of a non-medicinal treatment commencing

b) again, within 14 days of the treatment completing, unless this may have a detrimental impact on the welfare of the fish and on the written advice of the veterinarian or health manager

c) by a suitable competent person who has received fish welfare training.

Non-medicinal treatments for sea lice and amoebic gill disease – during treatment

HP 11.1 NEW Water flow throughout the entire process must:

a) be sufficient to facilitate constant movement of the fish

b) not be so strong as to cause the fish injury.

HP 11.2 NEW Pumps and pipes must be installed and positioned to minimise the height and distance that the fish have to be pumped and/or discharged.

HP 11.3 NEW During physical delousing events, checks of the fish to examine i) lice numbers and ii) welfare outcome indicators, must:

a) take place regularly, at least hourly, and each time operating parameters are changed

b) be recorded.

HP 11.4 NEW In relation to standard HP 11.3 the following welfare indicators must be scored, as a minimum:

a) skin damage

b) scale loss

c) eye damage

d) gill bleeding.

NEW These regular checks are to be used to ensure that the treatment is achieving the desired lice clearance whilst not causing undue negative welfare impacts to the fish.

HP 11.5 **NEW** In the event of obvious and serious welfare concerns being identified during the treatment, the treatment must be stopped.

HP 11.6 **NEW** Operating parameters, including the starting parameters and any changes made during the procedure, must be recorded throughout the treatment process.

HP 11.7 **NEW** For freshwater bathing, the following water quality parameters must be maintained at all times:

Parameter	Value
Oxygen (O_2)	At least 7 mg/l (see information box below)
Carbon dioxide (CO_2)	Less than 20 mg/l
pH	Above 6.8
Ammonia (NH_3)	Less than 0.0125 mg/l

NEW In relation to standard HP 11.7, various parameters, such as salinity and water temperature, will affect the solubility of oxygen in water. Therefore, the minimum oxygen level of 7mg/l is to be increased, as required, to ensure the optimum oxygen level for the fish is always maintained.

The RSPCA is considering including oxygen saturation levels in future publications of the standard.

HP 11.8 **NEW** All crowding of fish must be clearly recorded using CCTV.

HP 11.8.1 **NEW** Footage relating to standard HP 11.8 must be kept for at least 14 days.

Non-medicinal treatments for sea lice and amoebic gill disease – post-treatment

HP 12.1 **NEW** After the completion of the treatment for a site, a post-treatment report must:

a) be completed within 14 days

b) form part of the VHWP.

HP 12.2 NEW The post-treatment report in standard HP 12.1 must include details of the following:

a) mortality for each enclosure and for the site as a whole

b) efficacy of lice removal (where applicable)

c) results of welfare outcome assessments (showing a comparison for pre- and post-treatment)

d) where any issues have been identified relating to increased mortality, less than expected lice removal, and/or increased welfare scores, an action plan developed to avoid/improve on the issue/s in the future.

HP 12.3 NEW The following records must be kept of all treatments:

a) dates of treatments

b) enclosures treatment

c) treatment method used

d) number of fish treated

e) average weight of fish treated.

HP 12.4 NEW Vessels must be thoroughly cleaned and disinfected after completion of treatments and before moving to a new site.

HP 12.5 NEW Disinfection logs must be

a) completed

b) made available on request.

NEW Every effort should be made to continuously improve non-medicinal treatments to minimise the welfare impact on fish. New technology that better safeguards fish welfare should be used where possible.

Protection from other animals

REVISED LEGAL The killing of seals by the salmon industry in Scotland to protect their salmon is prohibited by law.

HP 13.1.1 NEW Farmers in Scotland must not kill seals that may present a predatory threat to the fish, as this is prohibited by law.

HP 13.10.1 REVISED If ADDs/ASDs are used they must be:

a) models which operate in a way that do not negatively impact the welfare of non-target species,

b) models that have been accepted for use by the Scottish Government,

c) effective in deterring seal predation,

d) serviced and maintained according to the manufacturer's instruction, to ensure that they are in good working order at all times.

HP 13.21 NEW LEGAL All producers must abide by the mandatory standards of the Scottish Government's Aquaculture Code of Practice - Containment of and Prevention of Escape of Fish on Fish Farms in relation to Marine Mammal Interactions (please see information box below).

NEW **In relation to standard HP 13.21, the Code sets out the standards expected from Aquaculture Production Businesses in order to provide for the containment of fish on fish farms and to prevent their escape in relation to marine mammal interactions.**

It is a legal requirement in Scotland for Scottish producers to adhere to the mandatory standards.

However, under these RSPCA standards, producers that are not operating in Scotland are also required to abide by the mandatory standards set out in the Code, but are not required to report to the Scottish Government (Marine Scotland) where required under the Code.

The Code is available at: https://www.gov.scot/publications/aquaculture-code-practice-containment-prevention-escape-fish-fish-farms-relation-marine-mammal-interactions-2/

Enrichment

NEW **Some forms of environmental enrichment have been shown to improve the health and welfare of captive fish. As this area of knowledge is still relatively new and developing, particularly in commercial farming systems, the RSPCA strongly encourages further trial work to determine appropriate forms of enrichment in all salmon farming enclosures.**

We will be looking to update the standards in future publications, as knowledge develops in this important area.

Tanks

E 2.4 REVISED All tanks must have the following alarms fitted:

a) oxygen

b) water level.

Freshwater (pre-smoltification/juvenile fish)

General

Below FW 1.6

NEW In relation to standard FW 1.6, various parameters, such as salinity and water temperature, will affect the solubility of oxygen in water. Therefore, the minimum oxygen level of 7mg/l is to be increased, as required, to ensure the optimum oxygen level for the fish is always maintained.

The RSPCA is considering including oxygen saturation levels in future publications of the standard.

FW 1.7 REVISED Flow rates must be such that fish can comfortably maintain and adjust their position in the water column.

Parr

FW 6.1 NEW Written production plans must be implemented that minimise any potential need for the culling of healthy, viable fish.

Vaccination

FW 9.19 REVISED There must be a team member with responsibility for a) monitoring, and b) maintaining oxygen levels in the anaesthetic bath at a minimum of 7mg/litre.

NEW In relation to standard FW 9.19, various parameters, such as salinity and water temperature, will affect the solubility of oxygen in water. Therefore, the minimum oxygen level of 7mg/l is to be increased, as required, to ensure the optimum oxygen level for the fish is always maintained.

The RSPCA is considering including oxygen saturation levels in future publications of the standard.

Below FW 9.35

NEW In relation to standard FW 9.35, various parameters, such as salinity and water temperature, will affect the solubility of oxygen in water. Therefore, the minimum oxygen level of 7mg/l is to be increased, as required, to ensure the optimum oxygen level for the fish is always maintained.

The RSPCA is considering including oxygen saturation levels in future publications of the standard.

Transport

General transport

T 1.4 NEW There must be a named and agreed person/s present that is responsible for overseeing the transport operations.

NEW **An agreed person is defined as a person that has been agreed between those supplying the fish, those receiving the fish and those transporting the fish.**

Site staff responsible for moving fish

T 2.18 NEW Pipes used for moving fish must be an appropriate diameter for the size of the fish to ensure the fish can flow with ease.

NEW **For clarity, regarding standard T 2.18, the fish should flow freely through the pipes without frequently contacting the side, should not form blockages at any time and should not easily turn to swim against the flow of water. This is all to minimise the potential for injury and harm to the fish and to minimise the time spent in the pipe.**

Transport staff

Below T 3.4

NEW **In relation to standard T3.4, various parameters, such as salinity and water temperature, will affect the solubility of oxygen in water. Therefore, the minimum oxygen level of 7mg/l is to be increased, as required, to ensure the optimum oxygen level for the fish is always maintained.**

The RSPCA is considering including oxygen saturation levels in future publications of the standard.

Fry transport

Below T 4.5

NEW **In relation to standard T4.5, various parameters, such as salinity and water temperature, will affect the solubility of oxygen in water. Therefore, the minimum oxygen level of 7mg/l is to be increased, as required, to ensure the optimum oxygen level for the fish is always maintained.**

The RSPCA is considering including oxygen saturation levels in future publications of the standard.

Road transport

T 5.24 NEW Prior to smolt delivery to wellboats, sufficient freshwater must be:

a) available to flush the tanks

b) used instead of seawater to flush the tanks.

T 5.25 NEW There must be a contingency plan in place to ensure the welfare of the fish can be safeguarded in case of a delay to unloading, a failure of equipment or an unforeseen event that could compromise the welfare of the fish at the time of smolt delivery to wellboats.

T 5.25.1 NEW The contingency plan must include the:

a) potential impacts on the fish

b) actions that can be taken to address the issues identified.

T 5.26 NEW There must be equipment (hand nets, buckets) available in case of a failure of unloading equipment or an unforeseen event that may lead to the loss/escape of fish.

T 5.27 NEW Pipes running from the lorry to the wellboat must:

a) have joints fully enclosed in netting to prevent the loss of fish

b) be regularly inspected for signs of damage

c) be maintained in a good state at all times.

Helicopter transfer

Below T 6.13

NEW In relation to standard T6.13, various parameters, such as salinity and water temperature, will affect the solubility of oxygen in water. Therefore, the minimum oxygen level of 7mg/l is to be increased, as required, to ensure the optimum oxygen level for the fish is always maintained.

The RSPCA is considering including oxygen saturation levels in future publications of the standard.

Wellboat transport – smolts

Below T 7.5.1

REVISED Examples of recognised courses include, the University of the Highlands and Islands (UHI) Shetland Fish Welfare Training Course and the Pharmaq Analytiq Fish Welfare Training Course.

T 7.7 NEW Carbon dioxide levels must not exceed 20mg/l.

Harvest wellboats

Below T 9.21

NEW In relation to standard T9.21, various parameters, such as salinity and water temperature, will affect the solubility of oxygen in water. Therefore, the minimum oxygen level of 7mg/l is to be increased, as required, to ensure the optimum oxygen level for the fish is always maintained.

The RSPCA is considering including oxygen saturation levels in future publications of the standard.

T 9.22 NEW Carbon dioxide levels must not exceed 40mg/l.

Slaughter/killing including cage-side harvest

S 1.4 NEW The following slaughter methods are considered to be inhumane and must not be used:

a) bleeding (exsanguination) or decapitation without prior stunning

b) asphyxia

c) evisceration

d) live chilling

e) ice slurry or bath

f) carbon dioxide narcosis.

S 1.6 REVISED Humane automated, mechanical devices must be used in preference to a manual percussive blow (except for emergency killing).

S 1.7 NEW The flow of fish into the stunning system must be of an appropriate speed as to:

a) not cause fish to be out of water for longer than necessary

b) allow operators to handle individual fish with care through the stunning system, or

c) ensure only single fish are entering the stunning systems.

S 1.8 REVISED Each fish must receive a percussive blow:

a) to the top of the head just behind the eyes

b) of sufficient force to kill the individual or cause immediate loss of consciousness that lasts until death.

S 1.10.1 NEW Where fish have not been effectively stunned:

a) they must be effectively stunned immediately

b) this must be reported without delay to the named person responsible for fish welfare (standard S1.14), and the stunning/killing operator/s

c) action must be taken immediately to rectify the issue/s as necessary

d) the action taken to rectify the issue must be recorded.

S 1.11 NEW Where the stun and/or bleed has not been effective, equipment and procedures must be:

a) checked immediately and

b) adjusted to correct the fault before any further fish are slaughtered/killed.

S 1.12 NEW All fish must be bled (exsanguinated).

S 1.12.1 REVISED Bleeding must follow within 10 seconds of the stun/kill method.

S 1.15 REVISED Before the beginning of each harvest:

a) the stunning system must be tested to ensure it is working properly

b) the first 10 fish through each stunner must be assessed and demonstrate the following to ensure the system is functioning correctly:

   i. no eye movement

   ii. no rhythmic opercular movement

   iii. only mild short term involuntary muscular twitches

   iv. no reaction to tail pinch.

c) the results of the checks listed in a) and b), must be:

   i. recorded

   ii. made available on request.

d) The operating parameters of the stunning system must be:

   i. recorded

   ii. made available on request.

Below S 1.16

NEW **The RSPCA strongly recommends that all fish are electrically stunned, which is then followed by a percussive blow to the head and then bleeding. We believe that this approach currently offers the best method to safeguard salmon welfare at the time of killing.**

We acknowledge that there are some issues to be addressed in the short-term with electrical stunning, and we strongly support and encourage further research and work to address these issues as soon as possible.

We will be monitoring this research with the intention of requiring the above killing process under these standards within the next five years.

We strongly encourage the adoption of this killing process as soon as possible.

Slaughter/killing including cage-side harvest – Closed Circuit Television (CCTV)

NEW The use of Closed Circuit Television (CCTV) in areas where live animals are present can assist those responsible for monitoring and enforcing animal welfare in ensuring that standards are maintained. It is strongly recommended that CCTV footage is also used for in-house training programmes.

S(TV) 1.1 NEW A functional CCTV system must be installed and operational to clearly monitor fish undergoing the following processes:

a) initial tank/dewaterer entry and exit

b) stunning, including entry and exit

c) killing

d) passing through post-stun assessment area.

S(TV) 1.2 NEW CCTV cameras must be positioned to ensure a clear view of the processes being monitored is achieved at all times.

S(TV) 1.3 NEW It must be possible to observe clearly the view from each camera at all times via one or more monitors.

S(TV) 1.4 NEW CCTV footage must be recorded at all times where animals are undergoing any of the processes listed under standard S(TV) 1.1.

S(TV) 1.5 NEW The recorded CCTV footage must be:

a) retained for a period of at least three months

b) available for viewing upon request.

Electrical stunning (electronarcosis) followed by bleeding

ES 1.1 REVISED Whatever electrical process is used (batch, continuous flow etc.) it must be ensured that:

a) insensibility of the fish is achieved immediately (within 1 second)

b) there are no pre-stun shocks

c) the stun is maintained until the fish dies, or is insensible to percussive stunning

d) fish are assessed on a regular basis to ensure they have been effectively stunned and demonstrate the following:

   i. no eye movement

   ii. no rhythmic opercular movement

   iii. only mild short term involuntary muscular twitches

   iv. no reaction to tail pinch.

Cleanerfish

Catching of wild wrasse and transport of wild and hatchery reared wrasse

CF 2.1.1 NEW All staff on vessels used to catch wild wrasse (see standard CF 2.1) must have access to, be familiar with, and adhere to the relevant sections of the current version of the *RSPCA welfare standards for farmed Atlantic salmon*.

CF 2.5 REVISED Transport tank stocking density must not exceed 60kg/m^3

Below CF 2.8

NEW In relation to standard CF 2.8, various parameters, such as salinity and water temperature, will affect the solubility of oxygen in water. Therefore, the minimum oxygen level of 7mg/l is to be increased, as required, to ensure the optimum oxygen level for the fish is always maintained.

The RSPCA is considering including oxygen saturation levels in future publications of the standard.

Deployment of cleanerfish into the pen after transport: wild and hatchery reared wrasse and lumpfish

CF 3.9 NEW Cleanerfish mortality must be recorded.

CF 3.10 NEW The cause of death of all cleanerfish must be:

a) classified using the categories developed in the VHWP (see standard CF1.3.3)

b) recorded.

CF 3.11 REVISED Removal of dead cleanerfish must occur as frequently as is necessary and without undue delay and, in any case, on at least two separate days per week, which are approximately spaced evenly apart e.g. Monday and a Thursday (see information box below).

NEW The RSPCA strongly recommends daily removal of all dead cleanerfish and is considering making this a requirement in the future publications of the standard.

CF 3.12 REVISED Tanks/enclosures must be inspected daily for the presence of moribund cleanerfish.

CF 3.12.1 NEW If found at the time of inspection, moribund cleanerfish must be:

a) removed promptly

b) humanely culled according to standard CF 6.2

c) recorded.

NEW **To improve the welfare of cleanerfish, we must be able to measure their welfare. The development of Welfare Outcome Assessment (WOA) in cleanerfish is not as advanced as it is in salmon.**

The RSPCA strongly encourages and supports the development of a standardised WOA approach for both wrasse and lumpfish.

The RSPCA intends to formalise WOA for both wrasse and lumpfish in the next iteration of the *RSPCA welfare standards for farmed Atlantic salmon*, which is planned for publication in 2025.

Handling of cleanerfish in the pen: wild and hatchery reared wrasse and lumpfish

CF 4.2 NEW By 1st May 2025, cleanerfish must be removed from the crowd or prevented from participating in the crowd prior to any salmon handling event that requires the fish to be removed from the pen environment.

CF 4.7 NEW A risk assessment must take place to identify the potential for injury and suffering prior to exposing cleanerfish to any non-medicinal treatments.

CF 4.7.1 NEW Cleanerfish must not be exposed to any non-medicinal treatment that will cause injury or suffering (as identified in the risk assessment in standard CF 4.7).

CF 4.8 NEW The impact of non-medicinal treatments on the welfare of the fish must be recorded in the VHWP.

Slaughter: wild and hatchery reared wrasse and lumpfish

CF 6.1 REVISED All cleanerfish must be killed humanely.

CF 6.2 NEW The following methods are permitted for the killing of cleanerfish:

a) being put into an anaesthetic overdose under veterinary prescription

b) a percussive blow or electrical stun-to-kill for wrasse over 50g only.

CF 6.3 NEW The following killing methods of cleanerfish are considered to be inhumane and must not be used:

a) bleeding (exsanguination) or decapitation without prior stunning

b) asphyxia

c) evisceration

d) live chilling

e) ice slurry or bath

f) carbon dioxide narcosis.

NEW The RSPCA strongly encourages further work into establishing alternative, humane methods of killing cleanerfish to eliminate any potential negative impacts.

CF 6.4 NEW Cleanerfish must only be culled by trained and competent personnel.

Transport of lumpfish

CF 16.4 REVISED Transport stocking density must not exceed a maximum of 60kg/m^3.

Vaccination of farmed cleanerfish

NEW Wherever possible, farmed cleanerfish should always be vaccinated to protect them from diseases which may represent a risk to them.

The RSPCA recognises that the development of effective vaccines for cleanerfish lags behind salmon.

The RSPCA strongly encourages further development in this area to improve cleanerfish health and welfare.

CF 17.1 NEW All vaccination procedures must be conducted with care and with the minimum possible distress caused to the cleanerfish.

CF 17.2 NEW Cleanerfish must be continuously monitored throughout the vaccination process to ensure their welfare is not compromised.

CF 17.3 NEW Prior to vaccination, there must be a vaccination plan in place, which must:

a) be agreed and signed by the:
   i. vaccination team leader, and
   ii. site appointed supervisor.

b) include:
   i. the species
   ii. number
   iii. average weight of the cleanerfish to be vaccinated
   iv. expected timetable of vaccination
   v. vaccine to be used
   vi. location/s of cleanerfish populations both pre- and post-vaccination
   vii. the health status of the fish.

CF 17.4 NEW Vaccination team members must have a copy of the current version of the *RSPCA welfare standards for farmed Atlantic salmon* and:

a) be familiar with and understand the relevant content

b) implement what is required.

CF 17.5 NEW Vaccination teams must:

a) ensure that all staff are trained and competent in the aspects of the vaccination process to which they are assigned

b) have a named team leader who has attended a recognised fish welfare course.

NEW Examples of recognised courses include, the University of the Highlands and Islands (UHI) Shetland Fish Welfare Training Course and the Pharmaq Analytiq Fish Welfare Training Course.

CF 17.6 NEW Vaccination teams must maintain records of all staff training.

CF 17.7 NEW Vaccination Team Leaders and Vaccinators must be able to demonstrate their proficiency in procedures that have the potential to cause pain or distress, including the vaccination technique, hand grading of cleanerfish to be culled and their humane euthanasia.

CF 17.8 NEW Vaccination Team Leaders and members must be able to recognise indicators of poor welfare in cleanerfish, including abnormal behaviours, physical injury and symptoms of disease.

CF 17.9 NEW The appointed supervisor/vaccination Team Leader must ensure that the vaccination procedure is being carried out correctly:

a) at the beginning of the process

b) at regular intervals during the process and, in any case, at least hourly

c) and the above checks are recorded.

CF 17.10 NEW An adequate number of experienced site staff and vaccinators must be available to deal sufficiently with any problems that arise.

CF 17.11 NEW The following minimum weights for cleanerfish must be adhered to for injection vaccination:

a) wrasse must be a minimum of 20g

b) lumpfish must be a minimum of 10g.

CF 17.12 NEW If cleanerfish below the weights specified in standard CF 17.11 are to be vaccinated, this must be via immersion only.

CF 17.13 NEW Needle size and injection depth must be appropriate for the species being vaccinated as to avoid damaging the internal organs whilst allowing safe delivery of the vaccine.

CF 17.14 NEW Vaccination needles must:

a) be in good condition at all times

b) be replaced as often as is required and in any case according to manufacturer's instructions.

CF 17.15 NEW Only healthy cleanerfish must be vaccinated.

CF 17.16 NEW Prior to vaccination, cleanerfish must be fasted for the minimum period required and in any case not more than 48 hours.

CF 17.17 NEW All cleanerfish must be pre-graded before they are vaccinated.

CF 17.18 NEW Any veterinary medicines used must be in accordance with current UK legislation for the species.

CF 17.19 NEW Vaccines and anaesthetics must:

a) be available on site before vaccination commences

b) only be administered to fish by suitably trained and competent staff

c) be used according to manufacturers' instructions.

CF 17.20 NEW Veterinary products must be properly labelled and stored appropriately.

CF 17.21 NEW Wrasse must be anaesthetised before being vaccinated.

CF 17.22 NEW Anaesthetics must only be administered by trained, competent personnel.

CF 17.23 NEW Dissolved oxygen saturation levels in the anaesthetic bath must be:

a) monitored regularly and in any case at least every 30 minutes

b) maintained above 95%.

CF 17.24 NEW Where lumpfish are vaccinated on a vaccination table without the use of anaesthetic, they must be kept in flowing water that is deep enough to fully submerge them.

CF 17.25 NEW Dissolved oxygen saturation levels of the water on the vaccination table must be:

a) monitored regularly and in any case at least every 30 minutes

b) maintained above 95%.

CF 17.26 NEW The design of the vaccination table must be appropriate for the species being vaccinated.

CF 17.27 NEW Water temperature for vaccination must be according to the vaccine manufacturer's instructions.

CF 17.28 NEW Any equipment defects must be rectified immediately or, if this is not possible, measures must be taken to ensure the welfare of the cleanerfish is not compromised.

CF 17.29 NEW If hand nets are used, they must be:

a) of a suitable size

b) of a design that avoids physically damaging the cleanerfish

c) managed hygienically

d) in a good state of repair.

CF 17.30 NEW Seriously ill, injured or moribund cleanerfish identified during the vaccination process must be humanely culled without delay.

CF 17.31 NEW The handling of the cleanerfish must only be done when necessary and kept to an absolute minimum.

CF 17.32 NEW The removal of cleanerfish from the water must:

a) only be done when necessary

b) be kept to an absolute minimum, and in any case never exceed 15 seconds (unless anaesthetised).

CF 17.33 NEW Where fish are rejected on the table and are to be returned to tanks, they must be transferred back to their tank as soon as possible and in any case within no more than 30 minutes.

CF 17.34 NEW Care must be taken when returning the recovering cleanerfish to the tank following the vaccination process.

CF 17.35 NEW Any gradients from the vaccination table to the recovery tank must be such that the cleanerfish are not at risk of hitting the bottom of the tank or landing on top of each other as they enter the tank.

CF 17.36 NEW The water in the return tank must be:

a) deep enough to avoid the potential of hitting the bottom of the tank

b) at the correct flow rate to allow cleanerfish to recover normal swimming behaviour.

CF 17.37 NEW There must be enrichment/refuges in the recovery tanks.

CF 17.38 NEW Dissolved oxygen saturation levels in the recovery tank must be:

a) monitored regularly and in any case at least every 30 minutes

b) maintained above 95%.

CF 17.39 NEW Site staff must:

a) check the recovering cleanerfish regularly and in any case at least every 30 minutes, to ensure they are recovering from the anaesthetic

b) immediately:

i. rectify

ii. record any issues identified.

CF 17.40 NEW At the end of the vaccination process there must be a calculation reconciliation to determine the amount of vaccine used against the number of cleanerfish vaccinated.

CF 17.40.1 NEW If the calculation reconciliation is found to be inappropriate, there must be:

a) an investigation undertaken

b) action taken to rectify the issue

c) an action plan created to avoid the issue occurring again in the future

d) records of all results and findings made.