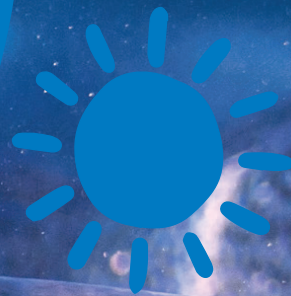
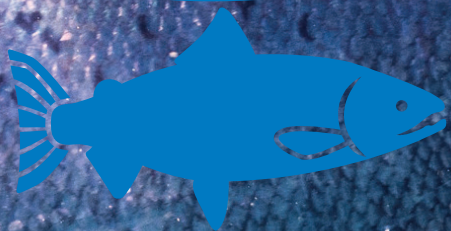




# Chinook (King) Salmon (Hāmana)

Farm Audit Checklist



# Farm Audit Checklist for Chinook (King) Salmon (Hāmana)

Version 1 – 2022



## Contact

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# Introduction

This Farm Audit Checklist for Chinook (King) salmon provides a summary of the relevant SPCA Certified standards and is intended to help members assess their farm and prepare for an audit.

It is not exhaustive and not intended as a replacement for the standards, which should be read and understood before this checklist is used.

In addition, while completing this checklist and addressing any problems it raises, will increase the likelihood of a successful audit, it is not a guarantee of success.

Please do not send this document to SPCA Certified. It is provided purely for your own reference.

<b>Date of assessment:</b>		<b>Procedures to be audited at site(s):</b>	<input type="checkbox"/> Stripping <input type="checkbox"/> Spawning <input type="checkbox"/> Egg picking/shocking <input type="checkbox"/> Crowding <input type="checkbox"/> Culling/euthanasia <input type="checkbox"/> Handling <input type="checkbox"/> Smolt testing <input type="checkbox"/> Pumping <input type="checkbox"/> Grading <input type="checkbox"/> Vaccinations <input type="checkbox"/> pre-transfer <input type="checkbox"/> Transport <input type="checkbox"/> post-transfer <input type="checkbox"/> Net cleaning <input type="checkbox"/> Slaughter (harvest) <input type="checkbox"/> Feeding
<b>Date of assessment:</b>		<b>Life-stage(s) of fish at sites:</b>	
<b>Overall comments:</b>			

Reference Standard	Summarised standard	Check (Y/N)	Comments
	<b>Good Nutrition</b>		
	<b>Feed Contents</b>		
<b>N1 &amp; N2</b>	Ingredients and size of feed pellets must be appropriate for the species and life-stage and sourced from independently certified manufactures.		
<b>N3</b>	Feed must not contain growth regulators or hormones.		

	<b>Feed Methods</b>		
<b>N4, N6 &amp; N7</b>	Feed programmes must be documented for each life-stage.		
<b>N5</b>	Feed must be dispensed and distributed in a way that reduces competition for the feed amongst the fish.		
	<b>Feed Behaviours</b>		
<b>N8 &amp; N9</b>	Fish must be observed during feeding and behaviour documented.		
	<b>Feed Withdrawal</b>		
<b>N10 &amp; 11</b>	Feed withdrawal periods must be in accordance with veterinary recommendation and duration kept as minimal as possible. All feed withdrawal decisions must be made with consideration of the welfare risks, benefits and alternative strategies.		
<b>N12-N14</b>	Periods of feed withdrawal must be documented and justified and alternative strategies implemented if the withdrawal period result in negative fish health and welfare outcomes.		
	<b>Feed Equipment and Storage</b>		
<b>N15</b>	Feed must be stored appropriately.		



<b>N16-18</b>	Feed equipment and storage containers must be well maintained and cleaned between lots of feed. Prior to use, feed must be visually inspected.		
	<b>First Feeding</b>		
<b>N19-N22</b>	Feeding must be initiated when approximately 90 % of alevins have “buttoned-up” and must be monitored frequently to ensure success of first feeding and prompt removal of uneaten feed.		

<b>Reference Standard</b>	<b>Summarised standard</b>	<b>Check (Y/N)</b>	<b>Comments</b>
	<b>Good Physical Environment</b>		
	<b>Hatcheries/Nurseries</b>		
<b>E1</b>	Eggs and juvenile fish must be either produced ‘in house’ or supplied by an SPCA Certified farm.		
<b>E2 &amp; E3</b>	Maximum stocking densities must be set at level to allow maintenance of optimal water quality and provide adequate space to facilitate normal behaviours.		
<b>E4-E10</b>	Water quality parameters must be monitored and recorded and a contingency plan established to mitigate any unanticipated deviations from optimal range.		

<b>E11</b>	Efforts must be made to reduce noise pollution and vibrations in the enclosures and surrounding environment.		
<b>E12-E15</b>	Light levels must be set to facilitate the salmon's ability to see feed. Gradual light changes from dark to light, and vice versa must be applied and rapid changes avoided. Where appropriate protection from UV light must be provided.		
	<b>Eggs</b>		
<b>E16-E20</b>	Eggs must be incubated in darkness, water temperature must be kept within 6- 14°C and at least 90 % oxygen saturation must be maintained.		
<b>E21</b>	Shocking must only be carried out by trained members of staff. Eggs must not be shocked until the eye spots are visible and the chosen method must minimise mortalities of viable eggs.		
<b>E22</b>	Egg trays must be designed to minimise movement of the eggs		
<b>E23-E25</b>	Eggs must be checked daily. Where picking is practised, dead/unviable eggs must be removed with minimum disturbance to remaining eggs. Green eggs must not be disturbed for at least 24hrs after placement.		

	<b>Alevin</b>		
<b>E26</b>	Alevins must have access to an appropriate hatching substrate that provides a secure environment and facilitates normal behaviours.		
<b>E27 &amp; E28</b>	Nets must not be used to transfer alevins weighing less than 0.5 g.		
<b>E29</b>	Alevins must be monitored daily and any mortalities removed and recorded.		
<b>E30</b>	Light levels must be kept at low intensities/ preferably dark.		
	<b>Fry</b>		
<b>E31</b>	The load of suspended solids must allow visibility to the bottom of the enclosure.		
<b>E32</b>	Grading must not occur before the majority of fish weigh a minimum of 1-2 g.		
	<b>Parr</b>		
<b>E33</b>	Parr must be observed for signs of aggression and action taken to reduce social stress if aggression occurs.		
<b>E34</b>	Length of feed withdrawal prior to grading parr must be justified and durations kept as minimal as possible.		



	<b>Smolt</b>		
<b>E35 &amp; E36</b>	Smolts must not be transferred to seawater until all fish have completed smoltification. Length of feed withdrawal prior to smolt transfer must be justified and durations kept as minimal as possible		
<b>E37</b>	If used, sodium potassium ATPase tests must only be conducted on fish once they have been humanely euthanised.		
<b>E38 &amp; E39</b>	After seawater transfer, smolts must not be handled for a least 4 months. Percentage of runting post-transfer must be recorded weekly.		
	<b>Grow-Out Site</b>		
<b>E40 &amp; E43</b>	Water temperature and oxygen saturation must be monitored and recorded daily. If water quality parameters, are outside the optimal range, non-urgent procedures that may cause additional stress must be postponed.		
<b>E41 &amp; E42</b>	Maximum stocking density in pens must be within 10- 20 kg/m <sup>3</sup> and be evaluated at the end of each production cycle.		
<b>E44</b>	Efforts must be made to reduce background noise/ potential acoustic stresses in the surrounding environment		

<b>E45 &amp; E46</b>	Fish must be provided with access to the surface. If submergence is required for health and welfare reasons, it must be implemented for a short period and at an appropriate depth.		
<b>E47</b>	Manipulation of photoperiods to control sexual maturation must only be performed during appropriate times of the year.		
	<b>Equipment</b>		
<b>E48, E49 &amp; E53</b>	The locations of tanks and enclosures must be carefully considered with regard to fish welfare. Enclosures and equipment must be designed and maintained to minimise the risk of injury or disease, provide protection from predators and prevent fish escaping.		
<b>E50-E52</b>	Emergency systems must be fully operational and maintained as required. Procedures must be in place to manage equipment failures and other breakdowns that may impact on fish welfare.		
	<b>Net Cleaning and Maintenance</b>		
<b>E54-E56</b>	Enclosure nets must be cleaned frequently. A biofouling management plan must be developed.		
<b>E57 &amp; E58</b>	Timing of net cleaning procedures must take into account proximity to other husbandry procedures and consideration of environmental conditions.		

<b>E59</b>	The use of copper-based antifoulants are not permitted.		
<b>E60 &amp; E61</b>	Enclosure nets must be inspected regularly and maintained accordingly. Nets must be appropriately tensioned and weighted to prevent distortion.		
<b>E62</b>	Nets that are used to handle fish must be knot free.		
	<b>Site Selection</b>		
<b>E63</b>	The process of site selection must include a comprehensive assessment of potential health and welfare risks to the fish.		
	<b>Predator Management</b>		
<b>E64-E67 &amp; E70</b>	Physical exclusion must be the primary means of protecting fish. Acoustic deterrent devices (ADD's), electronic seal scarers, seal crackers, models of seal 'predators' and any lethal forms of predator management are not permitted. A site specific predator control plan must be developed.		
<b>E68 &amp; E69</b>	Top nets must be of a mesh size that deters but does not ensnare birds. Appropriate net tension must be maintained and net maintenance regimes enforced.		

<b>E71 &amp; E72</b>	A record must be kept of all significant wildlife interactions. If a predator attack has taken place, the fish in the pen must be checked for signs of injury.		
<b>E73</b>	Regular removal of dead fish must occur.		
	<b>Emergency Preparedness</b>		
<b>E74 &amp; E75</b>	A written emergency response and preparedness plan must be created, reviewed annually and updated as appropriate.		
<b>E76 &amp; E77</b>	Mitigation strategies for algal blooms and routine monitoring for jellyfish at a site specific level must be developed and incorporated into management practices.		
	<b>Transport – General</b>		
<b>E78 &amp; E79</b>	All journeys must have a transport plan and records. Whenever possible, fish must not be transported in poor road/sea conditions.		
<b>E80 &amp; E81</b>	All staff in charge of transporting fish must be specifically trained. All equipment used for transport must be fit for the purpose of transporting fish.		
<b>E82-E85</b>	Only healthy fish can be transported. Fish behaviour and/or water quality parameters must be continuously monitored and recorded during transport.		

<b>E86</b>	The maximum stocking density must be determined prior to loading and be set with consideration for water quality maintenance, fish behaviour and health.		
<b>E87 &amp; E88</b>	Unloading fish must be done in a manner that avoids injuring the fish. Any fish that die during transportation must be removed and recorded upon arrival.		
	<b>Transport – Road</b>		
<b>E89 &amp; E91</b>	Tanks must be insulated to allow for a constant water temperature throughout the journey. Oxygen saturation levels must be continuously monitored.		
<b>E90</b>	Transporters must drive in a manner that minimises the risk of sloshing, injury and uncontrolled movement of fish.		
<b>E92-E95</b>	Fish should be unloaded from tanks through valves, rather than netting. Valves must be suitable for more than one fish to pass through at any one time. There must be no delays in unloading the fish unless justified.		
	<b>Transport – Wellboat</b>		
<b>E96-E101</b>	Wellboats should be operated on an open-valve system and fitted with moveable bulkheads, and equipped with water quality monitoring and fish monitoring equipment.		

<b>E102- E105</b>	Wells must contain a sufficient amount of water before loading fish to prevent injuries. Fish must be loaded and unloaded from the vessel via pumping. There must be no unnecessary delays in unloading fish.		
<b>E104</b>	All crowding, loading and unloading of fish must be recorded using CCTV.		
	<b>Transport – Pushing/towing pens</b>		
<b>E106</b>	Nets must be sufficiently cleaned to prevent biofouling from compromising fish welfare during transport.		
<b>E107 &amp; E108</b>	Pushing/towing speed must be appropriate for the size of the fish and swimming speed. Pen nets must be tensioned to avoid net distortion, entanglement or injury.		

<b>Reference Standard</b>	<b>Summarised standard</b>	<b>Check (Y/N)</b>	<b>Comments</b>
	<b>Good Health</b>		
	<b>Animal health plan</b>		
<b>H1 &amp; H2</b>	An animal health plan must be developed in collaboration with a registered veterinarian. It must be life-stage and site specific and reviewed annually.		



	<b>Fish Health Monitoring</b>		
<b>H3 &amp; H4</b>	A programme must be developed to monitor and document the health status of fish at each life stage.		
	<b>Medicines</b>		
<b>H5</b>	Prophylactic use of antibiotics and other veterinary medicinal products is not permitted.		
	<b>Vaccination (immunisation)</b>		
<b>H6-H10</b>	Prior to vaccination, there must be a documented vaccination programme in the Animal Health Plan. All vaccination procedures must be recorded. Vaccination must only be performed by trained members of staff.		
<b>H11-H14</b>	Vaccination of fish weighing less than 30g must be by immersion method only. Fish health status must be assessed before grading and vaccination. For vaccination by injection, fish must be anaesthetised before being vaccinated.		
<b>H15-H16</b>	Fish must be monitored for two weeks after vaccination.		

	<b>Anaesthesia</b>		
<b>H17-H20 &amp; H22</b>	Anaesthesia must only be administered by specifically trained personnel and used according to the manufacturers' instructions. The optimal anaesthetic dosage at different water temperatures must be identified.		
<b>H21 &amp; H25</b>	Fish behaviour must be monitored whilst under anaesthesia and during recovery. Treatment should cease if there are any signs of reduced welfare.		
<b>H23 &amp; H24</b>	Oxygen levels, within the anaesthetic bath, must be maintained between 105 and 120 % saturation. Anaesthetic baths must be periodically refreshed.		
	<b>Humane Slaughter (Harvest) – Pre-slaughter</b>		
<b>H26-H28</b>	Stunning and killing equipment must be operated, inspected and maintained by trained personnel. Slaughter systems must be tested before each use. There must be control and backup equipment for stunning and bleeding.		
<b>H29-H32</b>	Pre-slaughter handling must be kept to a minimum. Crowding must never exceed two hours. Pumping distance must be kept as short as possible and with an appropriate pumping speed.		

	<b>Humane Slaughter (Harvest) – Stunning</b>		
<b>H33-H38</b>	Fish must be stunned prior to bleeding. Use of ice slurries and CO2 are not permitted as a method of stunning and/or slaughter.		
<b>H39-H42</b>	Fish must be monitored immediately after stunning, to assess the effectiveness of the stun. Staff involved in stunning/slaughter must be trained to recognise signs of effective stunning. Any fish that have not been effectively stunned, must be re-stunned immediately.		
	<b>Humane Slaughter (Harvest) – Slaughter</b>		
<b>H43-H45</b>	Bleeding must occur no more than 10 seconds following stunning. Fish must be unconscious during bleeding and remain unconscious until death.		
<b>H46 &amp; H47</b>	A CCTV system must be installed to provide clear footage of the stunning/slaughter process. Footage must be regularly reviewed and saved for a minimum of two-weeks.		
	<b>Euthanasia</b>		
<b>H48-H51</b>	Where accessible, any fish found to be injured, experiencing pain or showing symptoms of disease must be immediately treated or euthanised by specifically trained staff.		

<b>H52-H54</b>	Approved euthanasia methods include a non-recoverable percussive blow to the head and an overdose of a suitable anaesthetic using immersion. The euthanasia method implemented must be appropriate for the life stage of the fish.		
<b>H55 &amp; H56</b>	Female broodfish must be euthanised prior to stripping. Male broodfish must be anaesthetised or euthanised prior to stripping, if procedure length is >15 seconds.		
<b>H57 &amp; H58</b>	If using anaesthetics, parameters need to be set correctly to ensure fish are killed effectively and efficiently. Fish must be checked to ensure they are dead.		
	<b>Mortality</b>		
<b>H59 &amp; H61</b>	Mortality rates for each life-stage must be recorded. Any fish found dead, must be disposed of immediately.		
<b>H60</b>	Regular sampling of mortalities for necropsies must be performed.		
	<b>Breeding</b>		
<b>H62-H63</b>	Breeding procedures must not adversely affect the health and welfare of fish. The farming of triploid salmon is not permitted.		

<b>H64</b>	Stripping of male broodfish more than twice over one season is not permitted.		
	<b>Biosecurity</b>		
<b>H65</b>	A comprehensive biosecurity plan must be developed and implemented.		

<b>Reference Standard</b>	<b>Summarised standard</b>	<b>Check (Y/N)</b>	<b>Comments</b>
	<b>Appropriate Behavioural Interactions</b>		
	<b>Fish Observations</b>		
<b>B1-B3</b>	Fish must be observed at least daily and remedial actions taken if problems are identified. Descriptions of abnormal behaviours specific to life-stage and farming system must be developed.		
<b>B4-B6</b>	Fish distribution within their rearing environment must be monitored. Fish behaviour must be monitored by a designated member of staff during husbandry procedures.		
	<b>Handling – General</b>		
<b>B7-B9</b>	Fish must never be out the water for longer than 15 seconds, unless anaesthetised. Fish must never be placed on dry surfaces or handled with dry hands. Wherever possible, fish must be handled in water.		

<b>B10-B12</b>	Fish must not be subjected to impact, pressure or strain when handled. Fish should not come into contact with sharp edges, rough or absorptive surfaces.		
	<b>Handling – Pumping</b>		
<b>B13 &amp; B14</b>	Only appropriate equipment fit for the purpose of transporting fish must be used and where appropriate, pipes must be transparent.		
<b>B15–B18</b>	Pumping speed must be controlled so that the fish swim in a smooth and calm motion during pumping and do not appear exhausted or damaged on exit. Pumping distances/duration must be kept to a minimum.		
<b>B19-B22</b>	All pipes must be smooth with swept bends and of a diameter which is appropriate for the size of the fish. Only healthy, robust fish can be pumped and fish must not be overcrowded in the pump.		
<b>B23 &amp; B26</b>	Oxygen saturation levels at input end must be maintained above 80 %. Water in the pipe must be observed for signs of fish damage.		
<b>B24 &amp; B25</b>	The pump must be checked during breaks and at the end of the procedure. A procedure must be developed and implemented to ensure that all fish are removed at the end of pumping or if a breakdown occurs.		



	<b>Handling – Crowding</b>		
<b>B27- B29</b>	Efforts must be made to reduce the frequency of crowding events.		
<b>B30</b>	Oxygen saturation levels must be continuously monitored during crowding and maintained above 80 %.		
<b>B31-B34</b>	Fish must not be crowded for more than two hours. Crowding devices/nets must be moved at a slow and steady pace and efforts made to avoid “pockets” or shallow areas where fish can get stuck. Nets must be used to crowd a portion of the population rather than crowding the whole enclosure.		
<b>B35-B37</b>	Crowding devices/nets must be constructed of knotless mesh and be of an appropriate size for the fish to prevent escapes or becoming entangled. Brail nets must not be used unless for the purposes of sample weighing, in which case they must be ‘wet’ (water filled) brail nets.		
	<b>Handling – Grading</b>		
<b>B38- B40</b>	The grading system must be suitable for the size and life-stage of the fish and be situated in such a way that fish can be observed at all times.		

<b>B41- B43</b>	Fish health must be assessed before grading. Only healthy fish must be subjected to the grading process.		
<b>B44 &amp; B45</b>	Fish must only be graded when it is essential and reasons for grading must be recorded. A grading plan must be developed, that is life-stage and site specific and must be a part of the Animal Health Plan.		
	<b>Behavioural Enrichment</b>		
<b>B46</b>	Fish must be able to move freely in their enclosure to explore natural or induced environmental gradients.		
<b>B47</b>	If any enrichment is added to the fishes' environment it must be monitored for its effect on fish behaviour.		
	<b>Management</b>		
<b>B48 &amp; B58</b>	Managers must ensure that all staff responsible for fish adhere to the SPCA Certified standards, the relevant Codes of Welfare, regulations/Acts, and must be fully aware of their personal roles and responsibilities.		
<b>B49</b>	There must be a written policy that allows employees to report any concerns they have regarding situations that negatively impact fish health and welfare.		

<b>B50 &amp; B51</b>	Specific to their area of work and responsibilities, staff must be able to demonstrate a good working knowledge of the health and behaviour of Chinook salmon.		
<b>B52</b>	Staff must be trained in fish handling techniques, including netting and crowding, that minimise stress and pain.		
<b>B53- B56</b>	Staff involved in the slaughter process, vaccinations/ anesthesia, predator management and/or transportation must undergo specific training in these areas.		
<b>B57</b>	Records of staff training, including periodic refresher courses where applicable, must be maintained and be available for inspection.		

## END OF ASSESSMENT



### **Contact**

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