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Pilot assessment – UK Glass Eels - glass eel buyers, Gloucester, UK
Dr. Jo Gascoigne
12 April 2011

FINAL

1. Introduction

This document presents the first pilot assessment carried out under the Sustainable Eel Standard (final version 2 of April 2011). The assessment is of a glass eel buyer from Gloucester, UK – UK Glass Eels. UK Glass Eels (UKGE) buy glass eels from the Severn, Parrett and Wye in the UK.

UKGE is also ‘sister’ company to a glass eel buyer in France – Chez Mouchet of Royan. UKGE receive a considerable proportion of Chez Mouchet’s glass eels and forward to the customer. However, these eels (including mortality at both Chez Mouchet and UKGE) have been considered under the pilot assessment for Chez Mouchet (see separate document).

2. The assessment

The assessor was Dr Jo Gascoigne of MacAlister Elliott and Partners Ltd. Jo visited UKGE for the assessment 10-11 February 2011. The visits included a tour of the glass eel holding facility, interview with the facility manager and the business manager and a review of the business paperwork.

The following sources of data were reviewed:

- UKGE record-keeping spreadsheets – purchases, sales, mortality, shrinkage, dates, suppliers, customers – for 2009-10 season;
- Daily stock-book and record-keeping book (records glass eel purchase by weight, sales by estimated weight and mortality by weight) as well as other general observations;
- Sales tickets given to individual fishermen and spreadsheet of sales ticket data;
- Invoices from Chez Mouchet for purchases from France;



- Copies of Chez Mouchet sales tickets;
- Veterinary certificates;
- Import notification to Environment Agency for glass eels from France;
- Purchase statistics as reported to the Environment Agency;
- EU health certificates (required for transport to/from the UK from other countries);
- CITES paperwork for export of glass eels;
- Export consignment notes;
- Biosecurity plan

3. Results of the assessment

UKGE pass the assessment with 100% green scores, and they also receive the bonus score. They therefore **should be considered sustainable under the SEG standard.**

The table below gives the standard (final version 2 of April 2011) with for each element a discussion of the system at UKGE in relation to the given element of the standard and a rationale for the score given, with the source of information. The score is highlighted in the appropriate colour.

1. Traceability	
PASS	Traceability allows each eel in each batch delivered to a buyer to be connected back to a river and time period (maximum duration one month) with high confidence. This should include as a minimum: i) separation and detailed labelling of batches at all times; ii) labels which connect each batch back to an individual fishermen or group of fishermen or supplier or river, and a date; iii) daily record-keeping of mortality according to a set procedure; iv) recording of weight in and weight out for each batch; v) rectification of supplier invoices, shrinkage and buyer invoices.
FAIL	Any lack of confidence in any aspect of the above procedures should lead to a failure in certification: this might include for example any unlabelled batches, labels being insufficiently detailed, amalgamation of several batches, failure of record keeping, problems rectifying invoices etc.
Discussion	<p><u>Separation of batches:</u> Glass eels are kept in numbered tanks. Eels from each river (including the rivers in France for eels bought by Chez Mouchet) are kept separate, but eels from several days of purchase at the same site will be amalgamated into one tank because daily catches are relatively small quantities. Maximum duration of time in the tank would be around 4 weeks.</p> <p><u>Labelling:</u> Tanks are numbered. Each tank has its own logsheet (‘stock book’ - updated daily) which notes the quantities put into the tank and their sources, as well daily mortality, water quality monitoring data and other notes and observations.</p> <p><u>Mortality:</u> There are at least daily inspections of the eels for mortality, and</p>



	<p>mortality is measured daily in grams. Mortality for each tank is recorded in the daily stock book.</p> <p><u>Recording of weight in and weight out:</u> Weighing needs to be minimised, but whenever there is a commercial transaction, the eels are weighed, so for example the eels are weighted when bought from the fishermen, and on eventual sale to the customer. Eels received from Chez Mouchet are not, however, weighed - weight is rather estimated by wet volume, since this is less stressful for the animals. Final weight delivered to the customer is rectified against the purchase weight from the fishermen (to calculate 'mortality plus shrinkage' - loss of weight by the eels) and losses are shared between UKGE and Chez Mouchet on an agreed basis.</p> <p><u>Rectification of invoices:</u> As noted above, since frequent weighing turns out to be inappropriate, invoices in and out are not always rectified by weight directly. However, the weight recorded on sales tickets to fishermen (either from UKGE or from Chez Mouchet) can be compared with eventual weight delivered to customers, and with known mortality (if applicable at both facilities). The percentage differences between the sales tickets to fishermen and the weight delivered to customers represents mortality plus shrinkage – so should be slightly greater than the percentage mortality measured separated by weight of dead fish removed from the tanks. This is done at UKGE after each batch is delivered to a customer.</p> <p><u>Other traceability requirements:</u> Glass eel purchases, imports and exports are reported to the Environment Agency at the end of each season. The Environment Agency can therefore see glass eels into UKGE (and their sources) and glass eels out of UKGE (and their eventual destination).</p> <p>Overall, there is high confidence in the traceability system for UKGE, which is backed up by an effective administrative system using well-designed spreadsheets.</p> <p>The assessor was confident that the system allows any episodes of high mortality to be traced back to a given location and fisherman or group of fishermen, during a given time period. Patterns in daily mortality can also be analysed by source. It is also possible to rectify the mortality rates for each batch in each tank with the final total of dead glass eels sold (frozen for human consumption) at the end of the season. This is particularly important given the undesirability of frequent weighing of batches.</p>
Score	PASS



2. Mortality in storage facility	
green score indicator	Mortality rate over the season is <2% on average
amber score indicator	Mortality rate over the season is <5% on average
Discussion	<p>For glass eels from UK Rivers, the mortality rates in the 2010 season were as follows:</p> <ul style="list-style-type: none">• Parrett collected Peter Neusinger – 0.17%• Parrett collected Stacey Hancock – 0.24%• Severn and Wye – 0.17% <p>For the Parrett, these percentages are loss rates from mortality at UKGE only. For the Severn and Wye, the percentage is the loss from weighing on purchase from the fishermen to weighing by the customer, and therefore includes losses from fishing-induced injuries and from transport to the customer, as well as from shrinkage.</p> <p>The mortality of glass eels from France at UKGE is taken into account in the pilot assessment of Chez Mouchet (see separate document). It is also taken into account here, because handling at UKGE is also an important element of reducing mortality on these eels. Overall, last season, 2676 kg of glass eels were purchased from Chez Mouchet, with 28.7 kg of dead eels sold by UKGE, giving a mortality rate of 1.07% for these eels (at UKGE only – this does not include mortality at Chez Mouchet).</p> <p>Overall, mortality rates from UK rivers are well within the ‘green’ requirement. Mortality rates from France are also low at UKGE – the total mortality on these eels is considered in the pilot assessment for Chez Mouchet.</p>
Score	Green – mortality rates at UKGE less than quarter of a percent last year for UK glass eels and just over 1% for French glass eels.



3. Transport and initial holding if transported to farm																									
green score indicator	Mortality during transport and for the first week at the farm is <1.5% on average																								
amber score indicator	Mortality during transport and for the first week at the farm is <3% on average																								
Discussion	<p>One farm / restocking facility was visited which has taken eels from UKGE over a long period of time, and which has good records on mortality by piece by day – this is Scandinavian Silver Eels in Sweden. These mortality rates are as follows (note – data taken from a graph so figures are approximate):</p> <table border="1" data-bbox="441 632 883 1157"> <thead> <tr> <th>year</th> <th>initial mortality % (estimated)</th> </tr> </thead> <tbody> <tr><td>2011</td><td>0.5</td></tr> <tr><td>2010</td><td>0.5</td></tr> <tr><td>2009</td><td>0.5</td></tr> <tr><td>2008</td><td>1.0</td></tr> <tr><td>2007</td><td>0.1</td></tr> <tr><td>2006</td><td>0.5</td></tr> <tr><td>2005</td><td>0.1</td></tr> <tr><td>2004</td><td>0.1</td></tr> <tr><td>2003</td><td>0.1</td></tr> <tr><td>2002</td><td>0.5</td></tr> <tr><td>2001</td><td>0.5</td></tr> </tbody> </table> <p>The glass eels came from Chez Mouchet in 2010 and 2011, and from UKGE before this. The ‘mortality peak’ arising from fishing/holding/transport is always 0.5% or less for UKGE.</p>	year	initial mortality % (estimated)	2011	0.5	2010	0.5	2009	0.5	2008	1.0	2007	0.1	2006	0.5	2005	0.1	2004	0.1	2003	0.1	2002	0.5	2001	0.5
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Score	Green																								
4. Storage system																									
green score indicator	Biosecurity plan in place; water from borehole, ground or potable (to avoid importing disease); loss of electricity, water pressure, overflow or air pressure (for oxygen levels) connected to a permanent alarm system with back-up.																								
amber score indicator	Loss of electricity, water pressure, overflow or air pressure (for oxygen levels) connected to a permanent alarm system.																								
Discussion	<p>The facility uses dechlorinated mains water cooled to 7-8°C (empirical observation suggesting that this is the temperature at which the glass eels do best). The eels are cooled to 5°C the day before packing.</p> <p>The system is recirculating with 10 litres per kg of fish changed each time. All the water is changed about every two days. The circulation system includes a UV light tube for removing bacteria, and a drum filter</p>																								



	<p>for removing particulates down to ~ 40 microns.</p> <p>The aeration system is backed up by oxygen tanks as well as by a back-up compressor. There are three water pumps plus a back-up pump. There is also a back-up generator. The malfunction of electricity, water or air in the system triggers an alarm which calls mobile phones of three staff members.</p> <p>A bio-security plan is in place.</p>
Score	Green
5. Water quality	
green score indicator	A filter system for particulates and dissolved organics is in place that is expected to keep water quality high. Water quality management procedures are in place and there is regular monitoring of relevant parameters which shows that water quality is always high and stable (what relevant parameters are depends on whether any feeding, whether flow through or recirculating and water source). Effluent quality meets national standards and effluent is highly unlikely to have ecological impacts. There is regular analysis of the incoming water.
amber score indicator	A filter system is in place that is expected to keep water quality acceptable. There is regular monitoring of relevant parameters that shows that these are generally kept within optimum bounds. Effluent quality meets national standards.
Discussion	<p>The water in the system is replaced on a relatively short time scale (changed completely every two days). For filters, there is a drum filter to remove particulates down to 40 microns, as well as a UV system for bacteria. Oxygen levels are always kept at saturation via air bubblers, with extensive back-up – see above. Problems traced to issues of water chemistry in the facility have never been encountered.</p> <p>Effluent from the facility is treated via a soak-away gravel filter. The system is approved by the local authorities and conforms to EU standards.</p>
Score	Green – systems in place appear to ensure that water quality management problems are never encountered.
6. Hygiene and disease	
green score indicator	All tanks and associated infrastructure are washed and effectively disinfected between batches. Eels are visually checked for disease problems regularly, with microscope parasite checks being carried out periodically during storage. Eels are diagnosed and treated if necessary according to established procedures.
amber score indicator	All tanks and associated infrastructure are washed and effectively disinfected between batches. Eels are visually checked for disease problems regularly and treated if necessary.
Discussion	After sale, the whole recirculation system is emptied and cleaned with an agreed product (used in aquaculture, dairy farms etc.), then rinsed and



	<p>refilled with new water. There is routine disinfection of water via a UV tube in the circulation system.</p> <p>A few eels from each batch arriving at the facility are checked for disease and parasites and the batch is treated if necessary (usually by raising the salinity). Eels are visually checked daily. Eels are stored >4 weeks only on very rare occasions.</p> <p>The facility has a medicine book indicating what medicines can be used in what doses and on what basis. Medicines are only used under prescription and supervision of a vet (Peter Wood of UK Glass Eels).</p>
Score	Green
7. Handling and welfare	
green score indicator	Systems are in place and the facility is designed to keep handling to an absolute minimum. Procedures are in place for handling, and handling, where necessary, is careful. The infrastructure is designed to avoid injuries, and so that the use of nets is rarely necessary. When used, nets are small-mesh (1mm maximum). Eels are moved without being allowed to dry out.
amber score indicator	The facility may not be optimally designed, but systems are in place to keep handling as low as possible within the constraints of the facility. Handling, where necessary, is careful. The infrastructure has been optimised as far as possible to avoid injuries. Nets are small-mesh (1mm maximum). Eels are moved without being allowed to dry out.
Discussion	The eels are handled only on arrival and on leaving. They are only weighed on collection from the fishermen (see above). Fishermen bring their catch to UKGE, where they are weighed and put directly in the tanks. The tanks in the facility are rectangular but do not have sharp edges. For sale, eels are emptied from the tanks by means of a central 'plughole' which flushes the eels gently out of the tank into an area in which they are caught in a sieve for packing. The mesh size of the sieve is 1mm.
Score	Green
8. Transport	
pass/fail score indicator	Transport is carefully planned to minimise travel time. Packing is done in a way that minimises handling, time and stress. Eels are kept cool and wet with an adequate supply of oxygen.
Discussion	Eels are packed in the hours before departure, using insulated boxes with cold water. Either the boxes include ventilation holes, or the water in the boxes is given a dose of oxygen before sealing. Transport is by small plane or by van direct to the customer.
Score	Pass



9. The required percentage of glass eels from the fishery is being used for restocking	
green score indicator	The buyer makes glass eels available for restocking at least 5% greater than requirements of the EU Regulation.
amber score indicator	The buyer makes glass eels available for restocking according to the requirements of the EU Regulation.
Discussion	<p>The target level for restocking under the EU Regulation is 40% for the 2010-11 season.</p> <p>UKGE and Chez Mouchet, the two glass eel buyers assessed under the standard so far, market their glass eels jointly as one company. Restocking programmes often do not want to wait for glass eels from the Severn, which arrive very late in the season, so frequently choose to buy preferentially from Chez Mouchet in France. This means that it is most appropriate to consider the two companies together when assessing this criterion.</p> <p>According to figures provided by UKGE, the two companies together in the 2010-11 season sold a total of 7163 kg of glass eels. Of these, 3165 kg went for restocking, while 3758 kg went for aquaculture, with 240 kg being unknown at the time the figures were provided. Leaving aside these 240 kg, the percentage used for restocking was thus 46%.</p>
Score	Restocking percentage met.
10. Research / education – bonus	
green score indicator	The enterprise actively participates in or contributes to research and monitoring to support implementation of the EMPs, or to education projects to promote eel awareness and conservation (this excludes legal requirements which are covered above).
Discussion	UKGE do not have any direct involvement in scientific work, except for providing data to the Environment Agency as noted above. However, they do have an ongoing project with local primary schools where glass eels are kept in tanks and eventually released to into local wetlands. UKGE provides the eels and helps with tanks and logistical support.
Score	Bonus score for education work