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14 th September 2007

Dear Erica,

**Aberdeen Western Peripheral Route (AWPR)  
River Dee Crossing Appropriate Assessment**

Thank you for your letter of 1 June 2007 with comments on the discussion paper for the above Appropriate Assessment. We welcome your input to our approach and have provided information regarding points raised in your letter, described below.

**Cumulative and In-Combination Effects**

The proposed approach is to identify all proposed projects or developments in the vicinity of the River Dee crossing which might impact on the qualifying interests of the River Dee Special Area of Conservation (SAC) by altering the river flow, introducing sediment and/or contaminants and/or causing disturbance.

The proposed area of search is within Evaluated Catchment Section (ECS) 32 of the River Dee, as defined in Langan et al.'s (2006) report<sup>1</sup> on the management and conservation of the freshwater pearl mussel in the River Dee. The following criteria are suggested for identifying development proposals which may impact on the River Dee in combination with the AWPR:

1. Applications which involve:

- (i) Altering the flow of any watercourses
- (ii) Water abstraction
- (iii) Discharge to watercourses
- (iv) Construction 'in the vicinity' of a watercourse as defined by SEPA guidance on determining engineering authorisations under the Water Environment (Controlled activities) (Scotland) Regulations 2005<sup>2</sup>.

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<sup>1</sup> Langan, Cooksley, Young, Stutter, Scougall, Dalziel & Feeney (2006). The management and conservation of the freshwater pearl mussel *Margaritifera margaritifera* L. in Scottish Catchments designated as SACs or SSSIs: River Dee. Scottish Natural Heritage Commissioned Report F05AC607pe.

<sup>2</sup> SEPA (2006). Water Use: Regulatory Method (WAT-RM-02) Engineering Activities.

2. Applications relating to works/developments that have not been implemented, but may be in construction at the same time as the AWPR.

There are potentially a large number of planning and similar applications for consent within the area of search which would require screening for potential cumulative effects. A view from SNH would be appreciated on the appropriateness of the area of search and the level of detail required on individual proposals that may have cumulative effects on the River Dee SAC, in combination with the AWPR.

### **Freshwater Pearl Mussel**

Thank you for supplying a copy of the SNH report on freshwater pearl mussels on the River Dee and also the condition assessment reports for the three SAC qualifying interests. Within the watercourses affected by the River Dee crossing, survey work carried out by Jacobs has identified the presence of mussels only in the River Dee in the vicinity of the proposed bridge. No mussels were found in the Dee further downstream in the immediate vicinity of the confluence with the Milltimber Burn. The Appropriate Assessment report will include details of the areas surveyed (a combination of wading and boat transects) as well as the number and location of mussels found. With respect to the tolerance limits of mussels for suspended solids, we note the suggestion in Langan et al. 2006<sup>1</sup> that the upper limit may be closer to 25mg/l than 30 mg/l as used in the sediment modelling; and that long term the limit may be as low as 10 mg/l. We are reviewing this information along with data from the Spey. We are taking the approach that you suggested and providing robust method statements for engineering activities to prevent the release of sediment into the Dee and tributaries. In addition, we are investigating the use of silt curtains as an additional safeguard to protect the mussels in the vicinity of the River Dee crossing should any temporary increase in the sediment load occur.

### **Atlantic Salmon**

The approach taken by Jacobs to establish the likely presence or absence of salmon in watercourses in the vicinity of the proposed AWPR has been to carry out a habitat assessment supported by the use of the HABSCORE methodology for all tributaries and to carry out electric fishing only in watercourses which were identified as having the potential to support either salmon or trout. No electric fishing was carried out in the River Dee and the Crynoch Burn as they are included within the River Dee SAC which is designated for its population of salmon and as such the presence of salmon was assumed. The Appropriate Assessment Report will clarify which of the watercourses affected by the proposed crossing were subject to HABSCORE assessments and electric fishing. Some watercourses were obviously manmade, highly modified or too small to support any lifestage of salmonids and were not subjected to any more than an initial habitat assessment.

HABSCORE is a computer-based program designed by the National Rivers Authority (now the Environment Agency, EA) to measure and evaluate salmonid stream habitat features and to predict expected densities of juvenile salmon and trout (Milner et al 1993<sup>3</sup>). Based on a series of

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<sup>3</sup> Milner NJ, Wyatt RJ & Scott MD (1993). Variability in the distribution and abundance of stream salmonids and the associated use of habitat models. *Journal of Fish Biology* 43 (Suppl A). 103–119.

empirical models, the software predicts estimates of the expected salmonid population and, by comparing these with field survey results, computes the degree of habitat utilisation.

HABSCORE should be relevant to at least some Scottish rivers, although its predictive power has the potential to be poorer in Scotland because it was developed using data from rivers in England and Wales which are potentially rather different in typical habitat features and climatic conditions than many Scottish rivers (Hendry & Cragg-Hine 2003<sup>4</sup>). The Environment Agency Thames Region salmon technical specialist (Darryl Clifton-Dey) felt that as HABSCORE had been developed mainly on Welsh streams that the program would be applicable to upland areas, such as Scotland and the Lake District (Darryl Clifton-Dey, pers comm.). Miran Aprahamian (EA) stated that in principle there was no reason why HABSCORE would not be applicable for use in tributaries of a Scottish spate river, but pointed out that HABSCORE was developed from sites within England and Wales and the densities of juvenile salmonids are lower in E & W than in Scotland potentially under-predicting salmonid density and that HABSCORE should be confined to wadeable streams less than 15m wide. Although it is acknowledged that the densities predicted by HABSCORE may therefore be underestimates, as we are primarily interested in presence/absence, this should not affect the applicability of the data to the streams in question.

## Otter

Otter surveys have been carried out on all the watercourses affected by the River Dee crossing (see enclosed map), in the vicinity of the proposed road corridor. These surveys have been used to assess the presence of otters and the potential value of the habitat along each watercourse in terms of foraging and lying up. Details of the extent of survey along each watercourse and the survey results will be included in the Appropriate Assessment report.

In terms of the appropriate assessment, the key direct impact on otters (in the absence of mitigation) is the potential for disturbance and the introduction of barriers to normal movements through the Dee catchment due to construction activities. The potential for disturbance is considered to be greatest along the River Dee and the Crynoch Burn in the vicinity of the main crossing. For this reason, in addition to the original surveys carried out in March 2006, further surveys of these watercourses were undertaken in November 2006 and January 2007. These surveys covered the River Dee 500m either side of the proposed bridge, and the Crynoch Burn between the Invercrynoch Bridge and the confluence with the River Dee.

It is considered that otters using the Culter Burn, which enters the River Dee approximately 2km upstream of the proposed Dee bridge, will not be affected by the proposed crossing. This is because this watercourse is sufficiently far removed from the areas where construction activities will take place. While it is recognised that to the north of the Dee the AWPR will cross some of the tributaries of the Ord Burn, which drains to the Culter Burn, these crossings involve small watercourses and are very close to the sources of the burns involved. It is considered that these crossings are sufficiently far removed from Ord, Brodiach and Culter burns and the Silver Dam, and from the SAC boundary, so as not to cause a significant impact on the otter population of the SAC. Works at each crossing will of course include mitigation to address potential disturbance of any otters which may be present, including otter surveys prior to the start of construction.

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<sup>4</sup> Hendry K & Cragg-Hine D (2003). *Ecology of the Atlantic Salmon*. Conserving Natura 2000 Rivers Ecology Series No. 7. English Nature, Peterborough.

Thank you for your offer to review a draft of the Dee Crossing Appropriate Assessment and will forward for your comments as soon as possible.

Yours sincerely,

Shirley Henderson  
Environmental Coordinator

Cc Stephanie Baldwin