

Natural Resources Wales

Prince Llewelyn Reservoir Decommissioning

Environmental Action Plan

March 2020

Version 2

Project Name	Prince Llewelyn Reservoir Decommissioning
Project Reference	10035306
Region and Area	Prince Llewelyn, Dolwyddelan, Conwy
Date	16 th March 2020
Version Number	P01
Author(s)	Alex Ellis BSc MCIEEM

Revision History

Revision Date	Summary of Changes	Author(s)	Version No.
03/04/2020	WISI Review Comments	Alex Ellis	P02

EAP Approvals

Name	Signature	Title	Date	Version

Distribution

Name	Title	Date	Version
Jo Parkinson	Project Manager for NRW.		
Richard Pierce	NRM Meirionnydd – Fisheries. - NRW		
Liz Jones	NRM Meirionnydd – Biodiversity - NRW		
Nathan Owen	Environment Officer - NRW		
Dylan Williams	Operations Manager for North West - NRW		
Alex Ellis	Ecology Consultant		

Domenico Santoro	Designer (Arcadis)		
------------------	--------------------	--	--

Purpose

This Environmental Action Plan (EAP) summarises the actions and requirements identified in relation to the Prince Llewelyn Reservoir decommissioning, following an environmental appraisal, initial site surveys and design development of the proposed works. It sets out specific objectives and targets defining the way in which we wish the findings to be addressed during the implementation phase of the project (detailed design, during construction and post-construction phases). It will be updated through the delivery phase of the Project to account for any changes during detailed design and take into consideration any additional baseline information that becomes available. It also details roles and responsibilities of those involved in the project with reference to all **temporary** and **permanent** works.

This EAP follows Natural Resources Wales (NRW) guidance as an example of best practice for addressing environmental risks. It will form the basis of any future contract documentation and must be adhered to at all times. **Please note that any changes from the method detailed in the EAP must be discussed with the Ecology Consultant beforehand.**

Roles

Each action in the table below has **one** named person who is responsible for ensuring that the action is implemented. It is ultimately the contractor's responsibility for ensuring the EAP commitments are delivered.

The contractor is also responsible for implementing good environmental practice on site, in line with their own Environmental Management System (EMS). Typical issues include:

- Any working hour restrictions.
- Dust suppression measures.
- Traffic management.
- Pre-construction and post-construction recording of highway and footpath conditions; carry out remedial repairs if necessary.
- Site waste management.
- Materials management.
- Vehicle maintenance and management.
- Pollution prevention and control (including Guidance for Pollution Prevention (GPPs) for storage, refuelling and incident response¹); including silt management if necessary.
- Response procedures, e.g. services strike, contaminated land.
- Hazardous materials handling and storage.
- Noise management.
- Securing and delineation of working areas including signage and fencing.

¹ Pollution Prevention Guidelines have now been officially withdrawn and have been in part replaced by Guidelines for Pollution Prevention (GPPs). Refer to: <http://www.netregs.org.uk/environmental-topics/pollution-prevention-guidelines-pgps-and-replacement-series/guidance-for-pollution-prevention-gpps-full-list/> for a full list of replacement guidance.

- Keeping construction sites clean and tidy during the works, including no storage of material outside of pre-defined working areas; and
- Waste removal. All waste to be removed and sites to be left clean and tidy at the end of the works. All temporary works removed, and areas reinstated to as good a condition as previously, including reinstatement of vegetation.

Consents and Licences

The following consents and licences are required for the Prince Llewelyn Reservoir decommissioning works:

- Water Discharge Licence
- Water Resources Licence (Impoundment)
- Habitats Regulation Screening Assessments (HRA)
- Ordinary Watercourse Consent

Based on the current survey information, no protected species licenses are anticipated. However, if species were identified during the works, further advice would be sought from NRW's protected species licensing team.

Environmental Audits

Site audits will be carried out on a weekly basis.

The appended template should be used when undertaking any site audits during the work. Such audits can be undertaken by NRW Environmental Project Managers or other suitably qualified individuals. NRW Environmental Project Manager has screened this project as low risk; liaison regarding environmental matters is via the NRW Project Manager. Technical assistance can be obtained from specialist staff as appropriate. Site audits can potentially highlight good practice and can be separate to the review of EAP actions as undertaken in progress meetings. They do not replace the regular checks undertaken by an NRW representative during the works; no set template has been provided for this.

Environmental Incident Reporting system

All environmental incidents must be reported to the **NRW Incident Hotline 0300 065 3000** at the earliest opportunity and the NRW Project Manager and Site Supervisor. In addition, near misses must be reported via the hotline where there was/is the potential for a significant impact and where lessons can be learned.

Initial reports for such incidents and near misses must be followed by a written report using the contractor's in-house forms. This must include the following information:

- Project/location
- Date
- Contractor

- National Incident Recording System (NIRS) reference number
- Details of what happened
- Cause of incident
- Lessons learned.

This final and comprehensive investigation report is to be provided by the Contractor to the NRW Project Manager within 14 days.

Summary of scope of works

This EAP covers the actions required to undertake the Prince Llewelyn Reservoir decommissioning, which will involve the following work:

- Vegetation clearance of the embankment, and spillway.
- Reduce the water level of the reservoir for the duration of the works to create a dry working area for the deconstruction works.
- Removal of the top section of the dam (c. 2.6m)
- Remove over-pumping works following completion of works.

Relevant contact details

NRW Project Sponsor	Dylan Williams
NRW Project Executive	Angela Ellis EllisAC@bv.com 07500 991790
NRW Project Manager and Employer's Rep under ECSC	Jo Parkinson jo.parkinson@cyfoethnaturiolcymru.gov.uk
NRW Environmental Project Officer	Nathan Owen
Conservation and Heritage Manager	Gwynedd Archaeological Trust
NRW Biodiversity	Liz Jones
NRW Fisheries	Richard Pierce
Environmental Clerk of Works (ECoW)	TBC
Contractor	TBC
Site Supervisor	TBC
Design Consultant	Domenico Santoro, Arcadis

ENVIRONMENTAL ACTION PLAN							
Ref. No.	Objective	Action	Responsibility	Ref. to Additional Information	Further Action / Comments	Sign Off	Date of Revision
A - Prior to Construction							
1 – Human Population							
A1.1	To communicate information about proposed works	Publicise works via NRW website, letter drops and local notices and advertisements, as necessary, to inform members of the public. All publications should provide contact details for queries and an indication of programme/duration of work.	NRW PM		NRW PM to inform members of the public.		
A1.2	Advertise works under Land Drainage Improvement Regulations and Town and Country Planning	Advertise permitted development works	NRW PM				
A1.3	To minimise impact to road users from construction traffic	Produce a Traffic Management Plan including details of all access routes and public safety signage to be implemented within the area. Plan works to enable walking and cycling access routes to be maintained safely throughout the construction works.	Contractor/NRW		Contractor to obtain necessary consents from the Highway Authority for a closure if required.		
2- Flora and Fauna							
A2.1	To prevent impacts on bats	There are gaps in the stonework that offer only occasional suitability for roosting bats, due to intermittent flooding within the stonework. While it is highly unlikely that they support roosting bats, a pre-construction fibrescope inspection for bats should be undertaken prior to commencement of works on the dam structure. Inform Contractor and update EAP if any identified.	Ecology Consultant	Phase 1 survey completed December 2015 Update Ground Truthing survey completed March 2020	Dependent upon the outcomes of the pre-construction fibrescope inspection, the need for a licensed bat ecologist to be present will be confirmed. Although unlikely, bats are found, work stops, and licensed bat ecologist immediately contacted. Any bat roost space found must be reinstated under advice from a licensed bat ecologist in consultation with NRW. Low risk – standard mitigation should suffice		

ENVIRONMENTAL ACTION PLAN							
Ref. No.	Objective	Action	Responsibility	Ref. to Additional Information	Further Action / Comments	Sign Off	Date of Revision
A - Prior to Construction							
	To minimise the impact on breeding birds	No additional tree felling is required. If any additional vegetation clearance is required, clear the vegetation outside the nesting bird season (March -August inclusive) If this is not possible carry out pre-construction checks for nesting birds prior to commencement of vegetation clearance. Inform contractor and update EAP if any identified.	Ecology Consultant	Phase 1 survey completed December 2015 Update Ground Truthing survey completed March 2020	Avoid bird breeding season (March-August inclusive) for works. If working inside this period, a two-visit pre-construction bird survey is recommended to ensure birds are not present within the vegetation required to be removed. If breeding birds found to be present, work in affected area to be stopped until a resurvey confirms breeding finished. Low risk – standard mitigation should suffice.		
	To minimise the impact on fish.	Programme in water works between 21st May – 30th Oct	Ecology Consultant	Phase 1 survey completed December 2015 Update Ground Truthing survey completed March 2020	Work can proceed within the watercourse between 21st May – 30th Oct. No in watercourse work to be undertaken between 31st October and 20th May. Any change to this date must be agreed with NRW Gwynedd fisheries team (Tel: 0300 065 3000). Fish and eel rescue to be undertaken by NRW Fisheries, where required, during dewatering works, sufficient water levels will not be maintained within the reservoir to support the current fish population and so a suitable receptor site will need to be identified Ensure bio-security measures in place so that no invasive or alien species brought into the site, and to prevent the spread of water borne diseases. Low risk – standard mitigation should suffice.		

ENVIRONMENTAL ACTION PLAN							
Ref. No.	Objective	Action	Responsibility	Ref. to Additional Information	Further Action / Comments	Sign Off	Date of Revision
A - Prior to Construction							
	Ensure that the site remains free from badger and otter setts and holts and/or couches	Carry out preconstruction checks for otter (<i>Lutra lutra</i>) and badger (<i>Meles meles</i>) prior to commencement of any works. Inform Contractor and update EAP if any identified.	Ecology Consultant	Phase 1 survey completed December 2015 Update Ground Truthing survey completed March 2020	Ecology check immediately prior to works commencing. Low risk – standard mitigation should suffice.		
	Minimise the impacts on reptiles and amphibians	Vegetation along the dam and to facilitate access should be cleared in advance by NRW; however, if there is significant regrowth then it should be made unsuitable for reptiles and amphibians prior to construction to encourage displacement by strimming grassland/heath in a two-staged approach under supervision of an ecologist during the active period (March-October) to allow animals to vacate the area.	NRW PM	Phase 1 survey completed December 2015 Update Ground Truthing survey completed March 2020	Strim & cut wall top and face vegetation in March (or between March and October) to discourage reptiles and amphibians. Vegetation and any structural clearance work to be carried out under supervision of Ecologist Low risk – standard mitigation should suffice.		
	Avoid clearing habitat supporting the plant Devils Bit Scabious, which is the larval food plant of Marsh Fritillary Butterfly	Avoid clearing areas where this plant is supported. Undertake pre-construction checks for Devil's Bit Scabious during growing season (May to September inclusive re optimal). Inform contractor if found. Update EAP accordingly.	NRW PM	Phase 1 survey completed December 2015 Update Ground Truthing survey completed March 2020	If this plant cannot be avoided during works, it is recommended that surveys for the larval webs of Marsh Fritillary Butterfly are undertaken. These surveys can be undertaken during March and early April, and late August and September, when the larvae have hatched and are feeding. Where larval webs and caterpillars are discovered, then consultation with the NRW local officer should be sought and an NRW licence would be required. Mitigation, such as vegetation translocation of 1m ² turf, may be recommended by NRW		

ENVIRONMENTAL ACTION PLAN							
Ref. No.	Objective	Action	Responsibility	Ref. to Additional Information	Further Action / Comments	Sign Off	Date of Revision
A - Prior to Construction							
	Minimise the impacts on SACs designated for Bats (zone of potential influence within 10km0.	Avoid impacts to Mwyngloddiau Forest Gwydir/ Gwydyr Forest Mines and Coedydd Derw a Safleoedd Ystlumod Meirion/ Meirionnydd Oakwoods and Bat Sites Special Areas of Conservation (SAC)	NRW PM	Phase 1 survey completed December 2015 Update Ground Truthing survey completed March 2020	SACs, which are designated for lesser horseshoe bats are approx. 7km and 8km away from works respectively, therefore it is unlikely that the sites will be impacted. However, an HRA screening exercise (Test of Likely Significance) should be completed for each site to ensure there will not be any adverse effects to the SACs and any further recommendations or mitigation will be identified. Low risk – confirmation of avoidance via ToLS.		
A2.2	To prevent the spread of non-native invasive species during the work. Rhododendron and Japanese knotweed are present outside of the works area.	Undertake pre-construction checks for invasive species during growing season (May to September inclusive re optimal). Inform contractor if found. Update EAP accordingly.	Ecology Consultant	Phase 1 survey completed December 2015 Update Ground Truthing survey completed March 2020	Check for invasive species prior to any enabling works (return in May for confirmation as to extents of species spread). If invasive species are recorded within the site boundary during pre-construction surveys develop an invasive species management plan, as required. Ensure bio-security measures in place so that no invasive or alien species brought into the site. Low risk – standard mitigation should suffice.		
3- Archaeology and Cultural Heritage							

ENVIRONMENTAL ACTION PLAN							
Ref. No.	Objective	Action	Responsibility	Ref. to Additional Information	Further Action / Comments	Sign Off	Date of Revision
A - Prior to Construction							
A3.1	The Contractor shall undertake the works in accordance with the requirements set out by Gwynedd Archaeological Trust (GAT) during the design process	Procure the following archaeological services from GAT: <ul style="list-style-type: none"> Pre-works photographic record of the site; and Watching brief throughout the duration of the works 	NRW PM/ GAT representative		Although there are no specific designations for the site the reservoir and its associated assets are historically interesting. GAT will have a remit during construction to monitor the works and record the construction of the structure. The Contractor will be expected to induct 2 people from GAT and provide them access to the works. It is expected that they will attend site three times.		
4- Water							
A4.1	To prevent pollution of watercourses as a result of the work	Prepare and submit method statements to employer for acceptance. Method statements should include: <ul style="list-style-type: none"> The use of biodegradable oils in all equipment hydraulics. No refuelling of machinery or handheld equipment within 15m of the watercourse. No entry of machinery within watercourse. Ensure the adequate containment of any material storage on site. Ensure all high risk activity occurs away from the watercourse. Include adequate provision for the protection of downstream drinking water supplies. 	Contractor	Water Quality and Silt Management Plan	Note: NRW has screened the work under their respective Water Framework Directive (WFD) regulations, confirming that it does not require an WFD Assessment.		
A4.2	To prevent an adverse impact on flooding as a result of the works	Obtain Ordinary Watercourse Consent from Gwynedd Council for works within channel.	NRW PM				

ENVIRONMENTAL ACTION PLAN							
Ref. No.	Objective	Action	Responsibility	Ref. to Additional Information	Further Action / Comments	Sign Off	Date of Revision
A - Prior to Construction							
5- Materials and Waste							
A5.1	Ensure appropriate management of materials and waste	Undertake photographic record of all work locations including storage areas and access routes, prior to works commencing.	Contractor				
A5.2	Waste Management	Develop a Site Waste Management Plan (SWMP) for the scheme, comply with duty of care for Waste Management, classification of waste, manage waste on site – segregation and storage, obtain waste transfer note and record in SWMP	Contractor		Provide details of waste carriers and disposal sites.		

ENVIRONMENTAL ACTION PLAN							
Ref. No.	Objective	Action	Responsibility	Ref. to Additional Information	Further Action / Comments	Sign Off	Date of Revision
B – During Construction							
1 – Human Population							
B1.1	To minimise impact to the public	Adhere to Traffic Management Plan (Clause A1.3). Ensure adequate provision for public safety throughout the works	Contractor				
2- Biodiversity and Conservation							
B2.1	To minimise the impacts on ecological receptors including protected species	Comply with Clause A2.1. No night-time working, as this would disturb protected nocturnal fauna. Fish and eel rescue to be undertaken by NRW Fisheries, where required, during dewatering works. Contractor to undertake daily checks for otter and badger on site prior to work commencing. Ensure no food waste is left on site overnight, unless in closed skips.	Contractor		Ecological toolbox talk		
		The vegetation should be maintained at the height of <150mm until breaking ground, to discourage reptiles from entering the site.	Contractor (under supervision of Ecologist)		Ecological toolbox talk		
		Avoid clearing woodland adjacent to site. If some clearance is needed at any access points, a pre-commencement check for bats, otter, badger, birds, reptiles will be needed.	Contractor		Ecological toolbox talk		

ENVIRONMENTAL ACTION PLAN							
Ref. No.	Objective	Action	Responsibility	Ref. to Additional Information	Further Action / Comments	Sign Off	Date of Revision
B – During Construction							
		Use temporary track matting to cross wet areas, to help reduce poaching and therefore silt run-off and wetland habitat damage.	Contractor		Agree areas for temporary track matting with NRW PM		
		Vehicular machinery and other heavy plant will not access areas outside the agreed areas.	Contractor		Agree areas for temporary track matting with NRW PM		
B2.2	To prevent the spread of invasive species during the repair work	Equipment and plant must be cleaned/jet washed and dried prior to deployment to ensure that no invasive species are introduced, and prior to vacating site.	Contractor		Ecological toolbox talk		
3- Archaeology and Cultural Heritage							
B3.1	Protect unknown archaeological assets	Contractor to undertake works with due regard for unknown archaeological assets. If any archaeological assets are encountered work should be stopped immediately and the NRW PM informed.	Contractor	Refer to A3.1			
	Visual appearance of the finished work to be in-keeping with original style	The Contractor to undertake works in accordance with the requirements set out by GAT during the design process.	Contractor	Refer to A3.1			
4- Water							

ENVIRONMENTAL ACTION PLAN							
Ref. No.	Objective	Action	Responsibility	Ref. to Additional Information	Further Action / Comments	Sign Off	Date of Revision
B – During Construction							
B4.1	To prevent pollution of watercourses as a result of the work	Comply with Clause A4.1 and adhere to all agreed method statements and Water Quality and Silt Management Plan.	Contractor	Water Quality and Silt Management Plan that describes how the works will be undertaken without adversely affecting water quality in the downstream watercourse.			
		Any spills or leaks which occur during the work should be immediately reported to the NRW Incident Hotline 0300 065 3000 and NRW PM.	Contractor				
		Follow best practice guideline for water quality (as described in Forests and Water Guidelines, 5 th Edition and GPPS).	Contractor	Work should stop if there is any sign of water discolouration until it has cleared.	Enhance this by establishing and maintaining silt traps and using Terrastop (or similar).		
5- Material and Waste							
B5.1	Ensure appropriate management of material	Adhere to Clause A5.1 and to Water Quality and Silt Management Plan as appropriate.	Contractor				

ENVIRONMENTAL ACTION PLAN							
Ref. No.	Objective	Action	Responsibility	Ref. to Additional Information	Further Action / Comments	Sign Off	Date of Revision
C – Post Construction							
1 – Human Population							
C1.1	N/A						
2- Biodiversity and Conservation							
C2.1	N/A						
3- Archaeology and Cultural Heritage							
C3.1	N/A						
4- Water							
C4.1	N/A						
5- Material and Waste							
C5.1	Ensure works area is reinstated to as per previous, or better, condition	Reinstate all working areas and temporary access routes to as per previous, or better, condition. Undertake photographic record of all reinstatement works.	Contractor				

Environmental Audit Record

Project	Prince Llewelyn Reservoir decommissioning	Project ref.:	
Project Manager:	Jo Parkinson	Environmental PM:	
Location	South of Betws-y-Coed, Snowdonia	Grid reference	SH 74278 53053

Site Visit Audit Details

Visit During/Post Construction:		Date of Visit:		Time of Visit:	
Audit Officer:		Photos taken (y/n):		Referenced to Pre-Photos(y/n):	

Does the Site Supervisor have an up to date copy of the EAP?

Yes / No

General Comments