North Western River Basin Management Plan

Heavily Modified Water Bodies – North Western River Basin District

December 2009

An Agency within the Department of the Environment
www.doeni.gov.uk
INVESTOR IN PEOPLE
NIEA Northern Ireland Environment Agency
www.ni-environment.gov.uk

In this document:

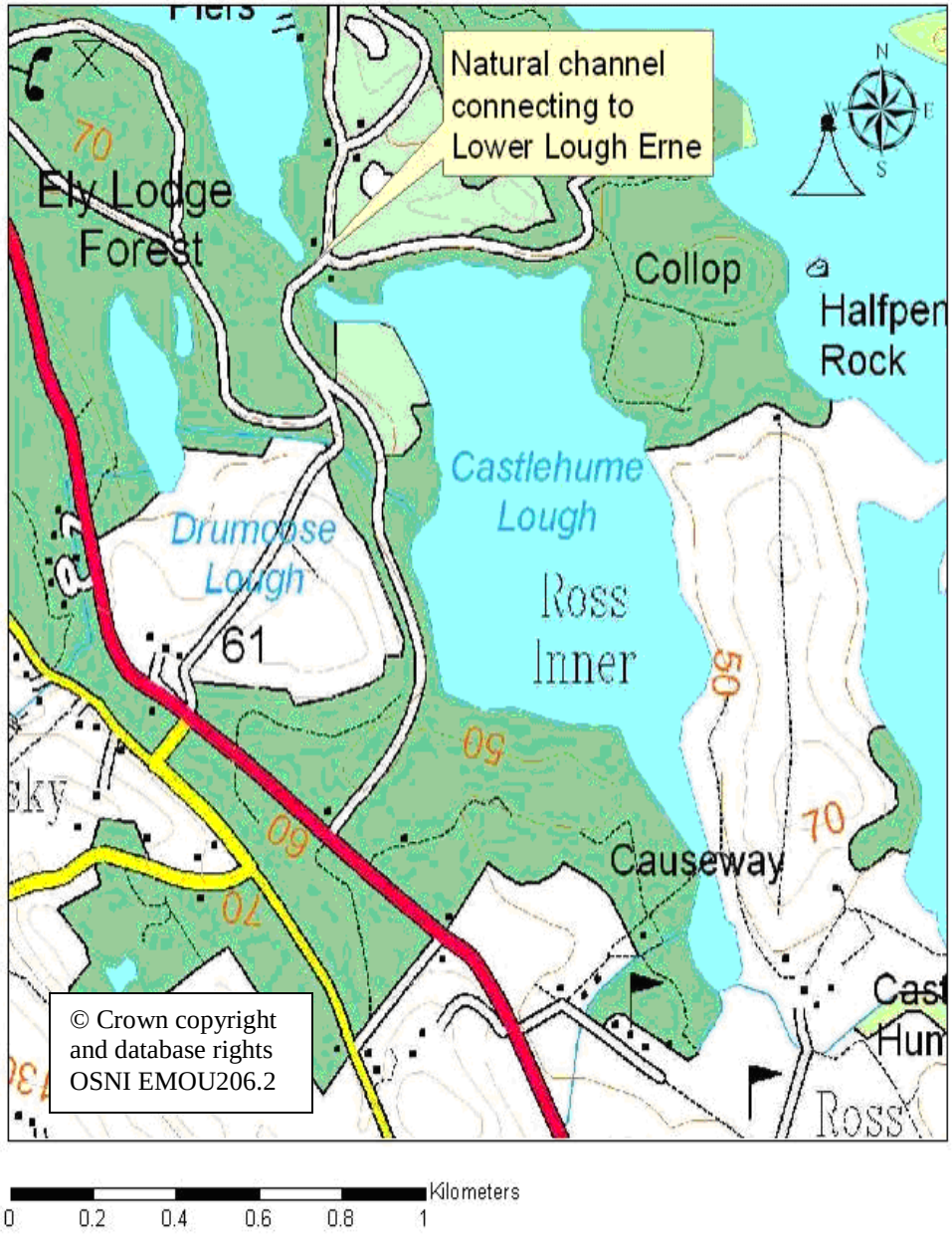
GBNI3NW0025	**- CASTLEHUME**
GBNI3NW0008	**- UPPER LOUGH ERNE**
GBNI3NW0006 AND GBNI3NW0007	**- LOWER LOUGH ERNE**
GBNI1NW363602039	**- RIVER ERNE, ENNISKILLEN**
GBNI1NW363601072	**- RIVER ERNE, BELLEEK**
GBNI1NW010102093	**- RIVER STRULE, OMAGH**
GBNI1NW010102033	**- GLENHORDIAL**
GBNI1NW010102030	**- LOUGH MACRORY & L. FINEGREAN**
GBNI1NW010102009	**- LOUGH BRADAN**
GBNI1NW010102074	**- RIVER MOURNE, SION MILLS**
GBNI1NW020202010	**- ALTNAHEGLISH**
GBNI1NW393901002	**- RIVER SKEOGE**
GBNI1NW020204031	**- RIVER FAUGHAN**

In *Water bodies removed from heavily modified water body list* document:

GBNI1NW010102050	**- LOUGH LEE**

GBNI3NW0025 – HEP / FRM

Castlehume Lough



Castlehume Lough

Castlehume Lough has direct connectivity to Lower Lough Erne via a natural channel and is therefore impacted by Ballyshannon HEP scheme. It has a maximum depth of 9.2m and a mean depth of 3.1m. NIEA has estimated its turnover time to be approximately 0.2 years. Field evidence suggests that Castlehume Lough was lowered as a result of the Lough Erne drainage and HEP schemes. The natural water level regime has therefore also been altered.

From the workshop it was agreed that the main ecological impact occurred when the water level was lowered and resulted in the loss of wetland habitats. The water level is now controlled and drawdown takes place in autumn to prepare for winter flooding. The mitigation measures currently in place are adequate and managed by Electricity Supply Board (ESB) in ROI. Fish representatives indicated that Castlehume did not have suitable spawning habitat for salmon and therefore the HEP scheme had no impact on the fish population in the lough.

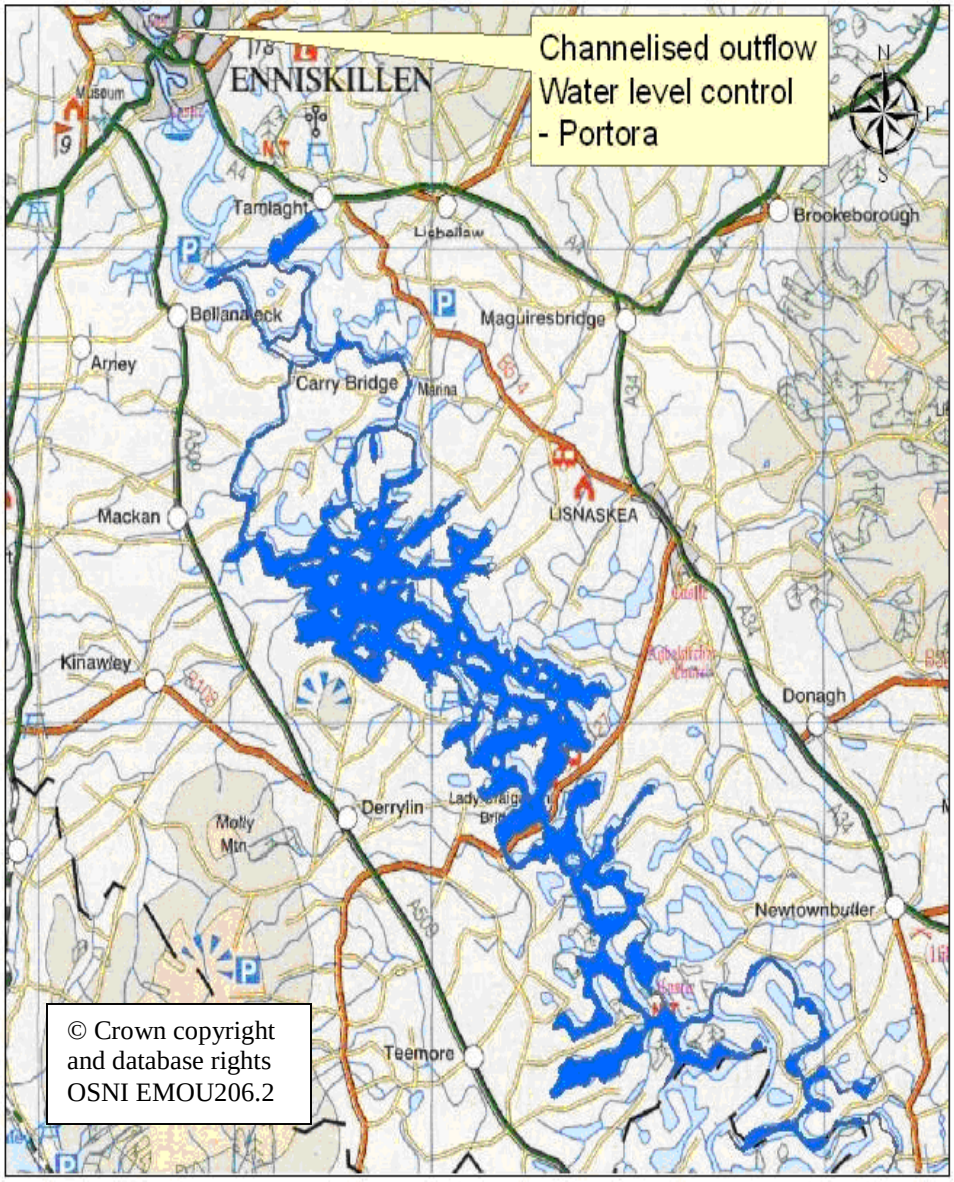
GBNI3NW0025 – HEP / FRM

Workshop Classification: GEP
Phys/chem. status: Moderate
Biological status: Good

2009 Classification: MEP

GBNI3NW0008 – HEP / FRM / WE

Upper Lough Erne



Upper Lough Erne

Upper Lough Erne is designated as a RAMSAR site, an ASSI, SPA and SAC. The lough has a complex morphometry because of the drumlin landscape it is situated in. It has a maximum depth of 27m and mean depth of 2.3m. The turnover time is approximately 0.04 years (Pers. Comm. Foy). As with Lower Lough Erne, the water levels in Upper Lough Erne were lowered by the introduction of the Ballyshannon HEP scheme. The levels are now controlled by the water management structure at Portora and Ballyshannon.

At the workshop the barrage at Portora was not thought to be impacting on the migration of fish. There was concern raised over the level regime rising, causing excess flooding and impacting on breeding cycles of wader birds, including Corncrake species.

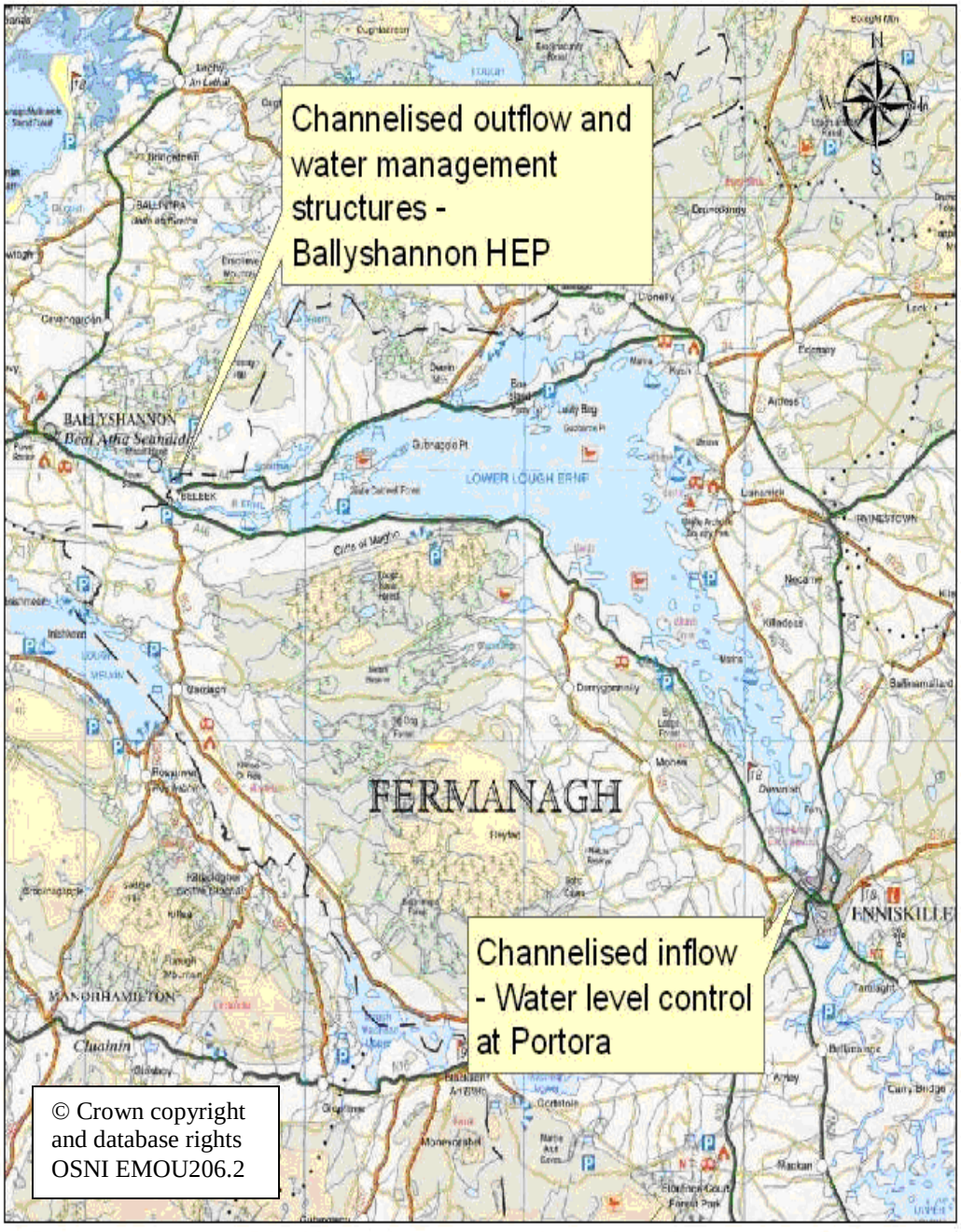
GBNI3NW0008 – HEP /FRM /W.E

Workshop classification: MEP
Phys/Chem status: Moderate
Biological status: Moderate

2009 Classification: Moderate Ecological Potential

GBNI3NW0006 and GBNI3NW0007 – HEP / FRM / WE

Lower Lough Erne



Lower Lough Erne

Parts of Lower Lough Erne are designated as Nature Reserves and ASSIs. The Lough has a maximum depth of 69 and mean depth of 11.9m. The turnover time is estimated to be 0.5 years (Pers. Comm. Foy). The hydrological regime is managed by controls at both the inflow and the outflow. These are managed primarily for the Ballyshannon HEP scheme. Overall, the water levels in the lake were lowered as a result of the scheme and the natural variability of the water levels is now controlled.

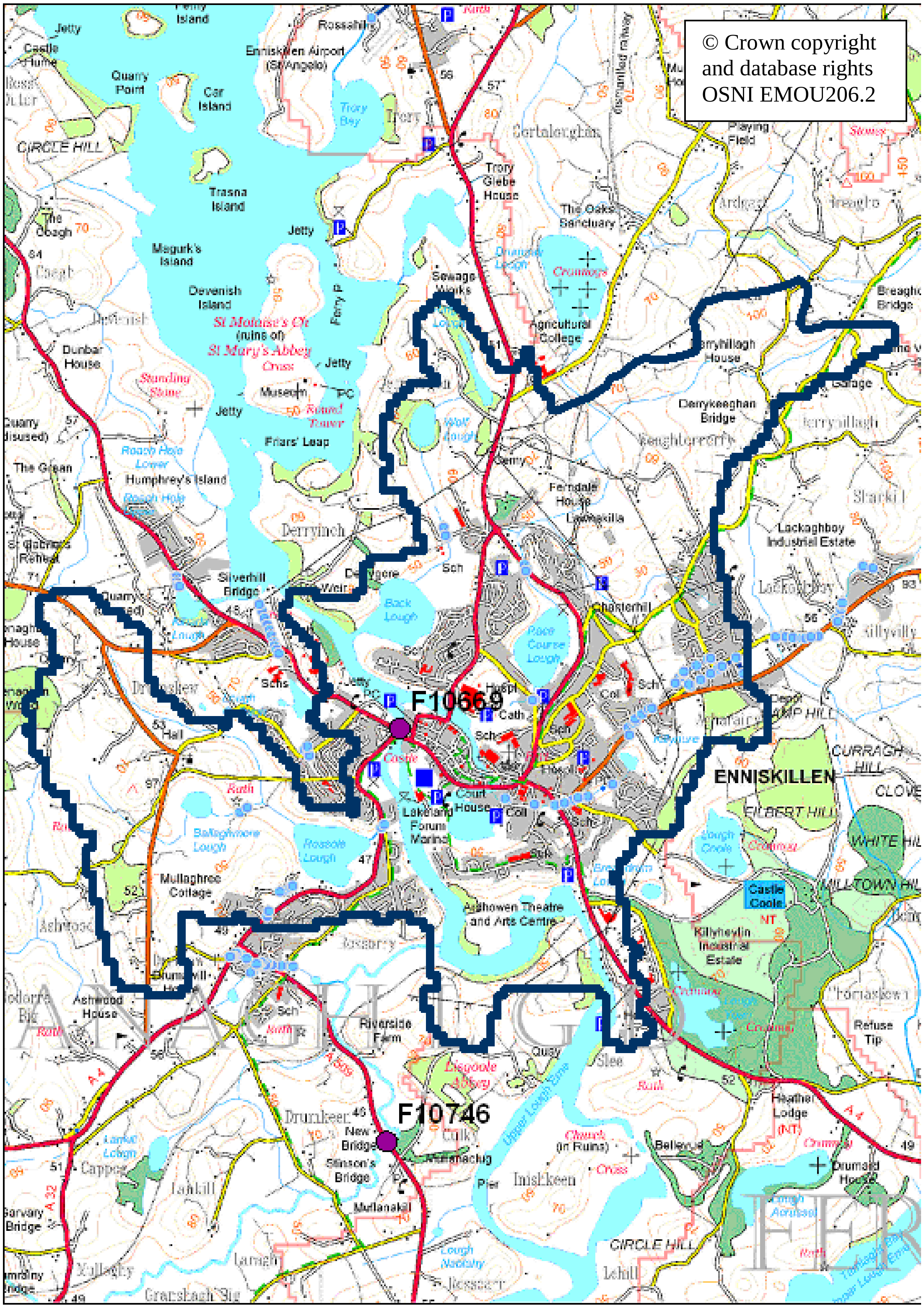
From the workshop the level regime once again is the main hydromorphological pressure. For the waterbody the modifications are impacting on the movement of salmon smolts. Mitigations for the other measures are in place, but may not be adequate for the protection of migratory birds such as the common scooter. Note for Kesh the HEP impoundment is within the riverine stretch and therefore should be considered in any river investigation.

GBNI3NW0006 and GBNI3NW0007 – HEP / FRM / WE

Workshop classification for both waterbodies: MEP
Phys/Chem status: Moderate
Biological status: Moderate

2009 Classification: Moderate Ecological Potential

GBNI1NW363602039 – NAV.



River Erne, Enniskillen

The main land cover is urban with some pastures to the periphery of the waterbody. Reinforcement is found at Portora wharf (waterfront houses) and at the bridges and castle. Some soft engineering works are also present. There are no weirs but there is a lock gate that maintains the upper lough at a minimum level and is passable by fish. There are marinas, slipways, the round "o" jetty, fishing stands etc that could be a source of invasive species transfer to other locations (zebra mussels). The tributary draining Racecourse Lough and at the main river to the rear of Queen Elizabeth Rd is artificially straightened. There is some culverting under the Dublin Rd (numerous pollution incidents reported here) and weeds are removed in some of the small streams and historical dredging was carried out on the main river.

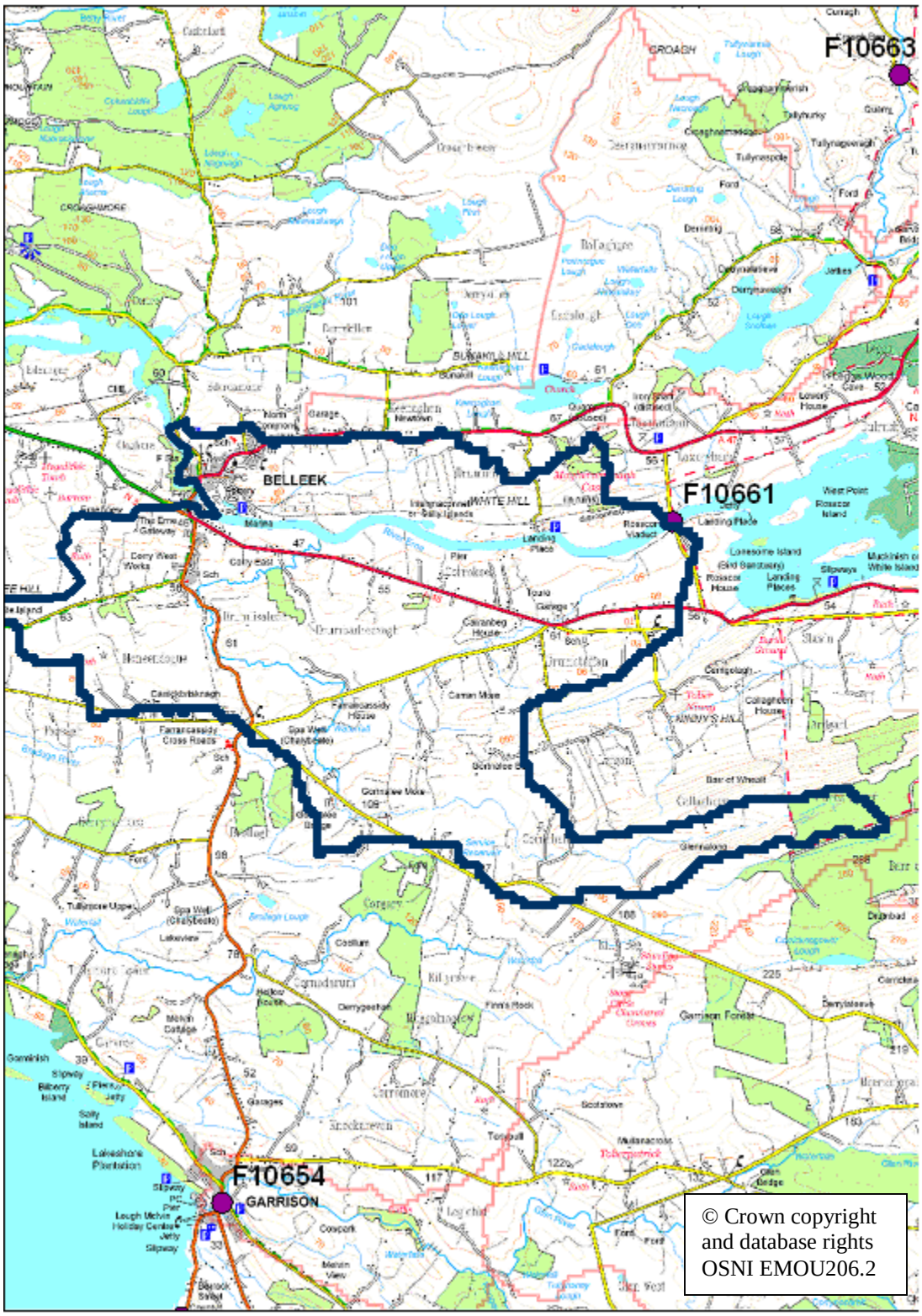
At the workshop the main areas requiring review under POM are invasive bank side aliens and environmentally friendly boats. There was a query over whether the council has or will install cleaning facilities for boats. For the next cycle, dredging may be a future pressure. Waterways Ireland does not dredge at present but there may be a need in the future due to the movement of boats and the presence of sluice gates leading to a build up of sediment.

GBNI1NW363602039 – NAV.

Workshop Classification of river: GEP
Phys/Chem status: Moderate
SP: High
Biological status: Moderate

2009 Classification: MEP

GBNI1NW363601072 – NAV and FRM



River Erne, Belleek

The main land cover is pasture. The town of Belleek has reinforcement at the bridge and reinforcement at the 2 marinas (one was used by boat hire company but is now closed). There are a number of small concrete structures across the channel at Belleek that have been used for eel fishing. It is not known if the substrate is dredged for navigation or if the strong flow negates the need for dredging. Levees or embankments at
Assaroe (used as a balancing lake) are outside this water body. Flow is controlled at Portora.

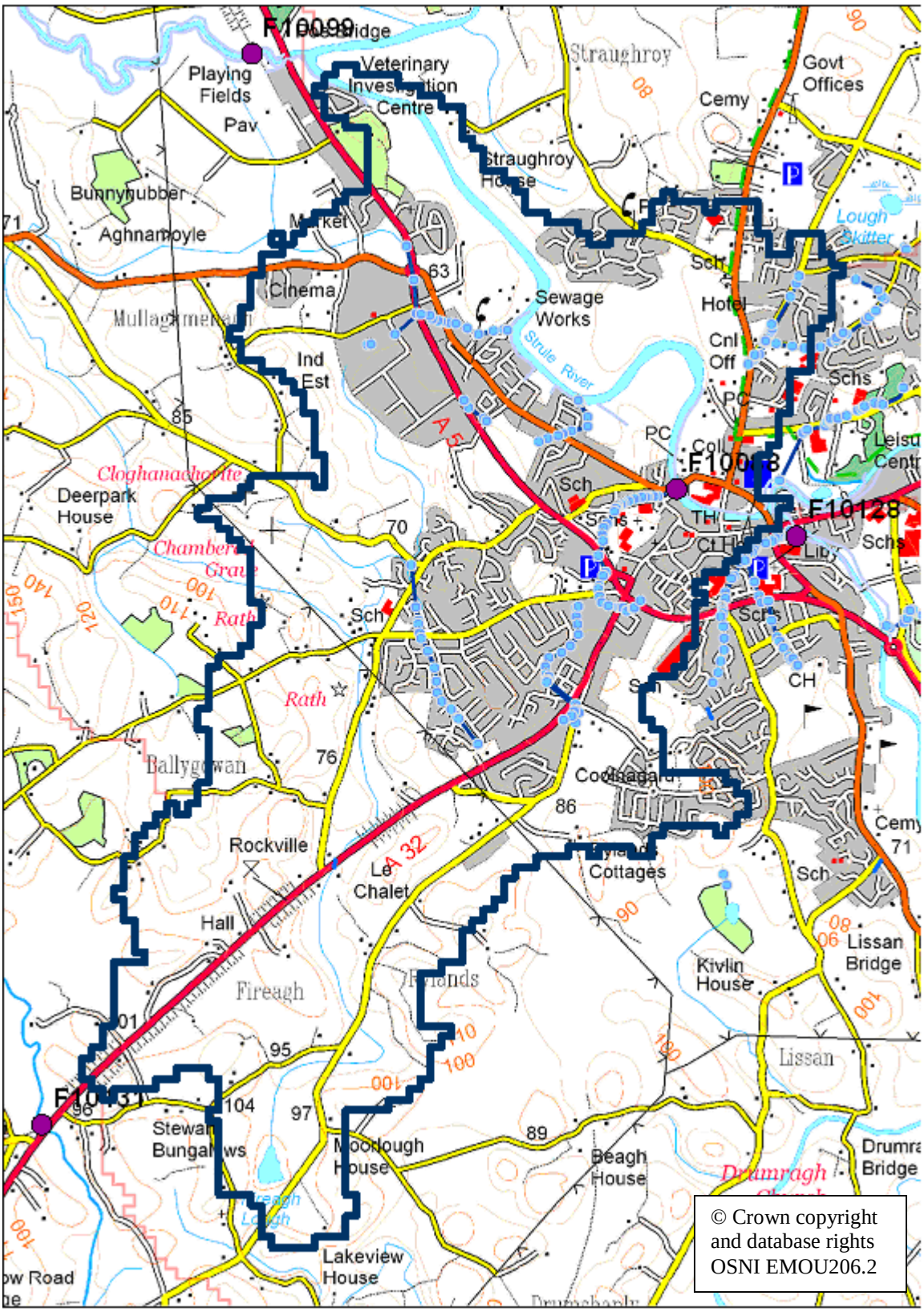
From the workshop it was considered that mitigations are already in place and are adequate.

GBNI1NW363601072 - NAV and FRM

Workshop Classification of river: GEP
Phys/Chem status: High
SP: High
Biological status: Moderate (diatoms)

2009 Classification: MEP

GBNI1NW010102093 - FRM



River Strule, Omagh

The River Strule is not culverted, but the tributaries through the town are. There are weirs in the water body, but they have fish access. There are vertical walls and flood banks with concrete banks at the town boundary. Storm tanks discharge into the river from the site of the old sewage works. The main land uses are urban and grazing.

At the workshop it was felt that the best engineering solutions were in place in Omagh, however it was suggested that the placement of berms could mitigate some of the potential impacts. Increasing in-channel morphology and retaining any historical aquatic habitats was discussed. Most of the mitigation measures are not practical due to limited space in the urban area. But as always it is possible to look at areas upstream. Under any new building developments mitigations could be put in place for best practice. In-channel there are numerous weirs but it is unclear whether all have fish passes. However it was discussed that there are eels, salmon and trout upstream, and lamprey have also been found above the weirs.

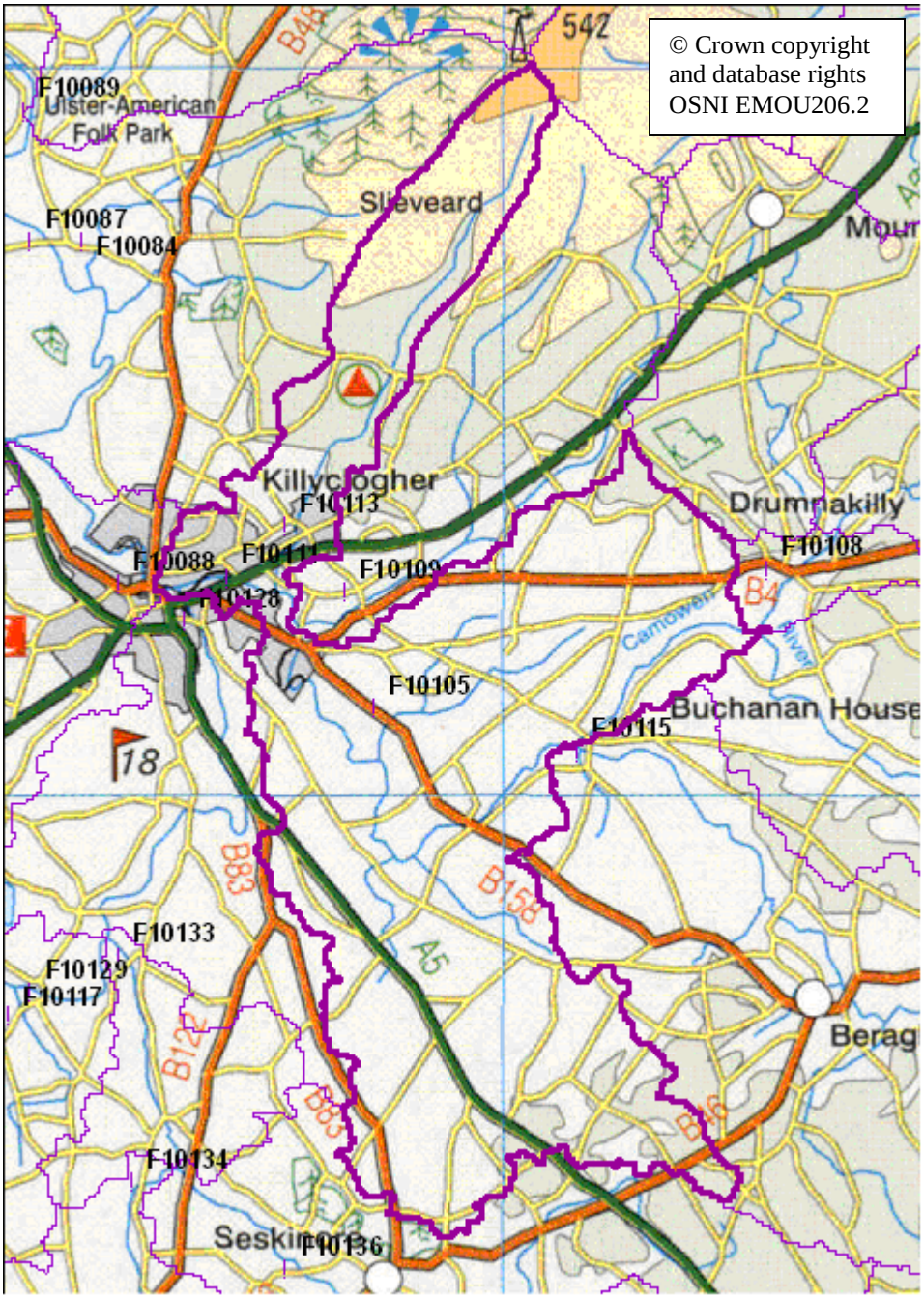
GBNI1NW010102093 - FRM

Workshop Classification of river: MEP
Phys/Chem status: Good
SP: High
Biological status: Good

2009 Classification: MEP

GBNI1NW010102033 - DWS

Impoundment Name/Works	Glenhordial
Morphological Impact	Yes Impoundment Present
Height of Impoundment	10m
Compensation Flow Ml/D	No
Hydrology Impacted	No



Glenhordial

At the workshop it was discussed that it may be possible to split this water body, with a new water body for the impoundment and Killyclogher Burn only. It was also discussed that the movement of salmon and trout may be impacted by the impoundment and extraction by NIW. There is a small stream down one side of the impoundment that is relatively easy for fish to pass. There are trout present below the impoundment although no salmon have been recorded. The siliceous acid waters may be a major reason for this.

The impoundment is impacting on the downstream tributary until it meets the next confluence and not on the whole water body. There is currently no flow release from the impoundment and an investigation into the feasibility of setting a baseline flow with NIW should be investigated. The impoundment is also impacting on the movement of sediment and a feasibility study for freshets would need investigated.

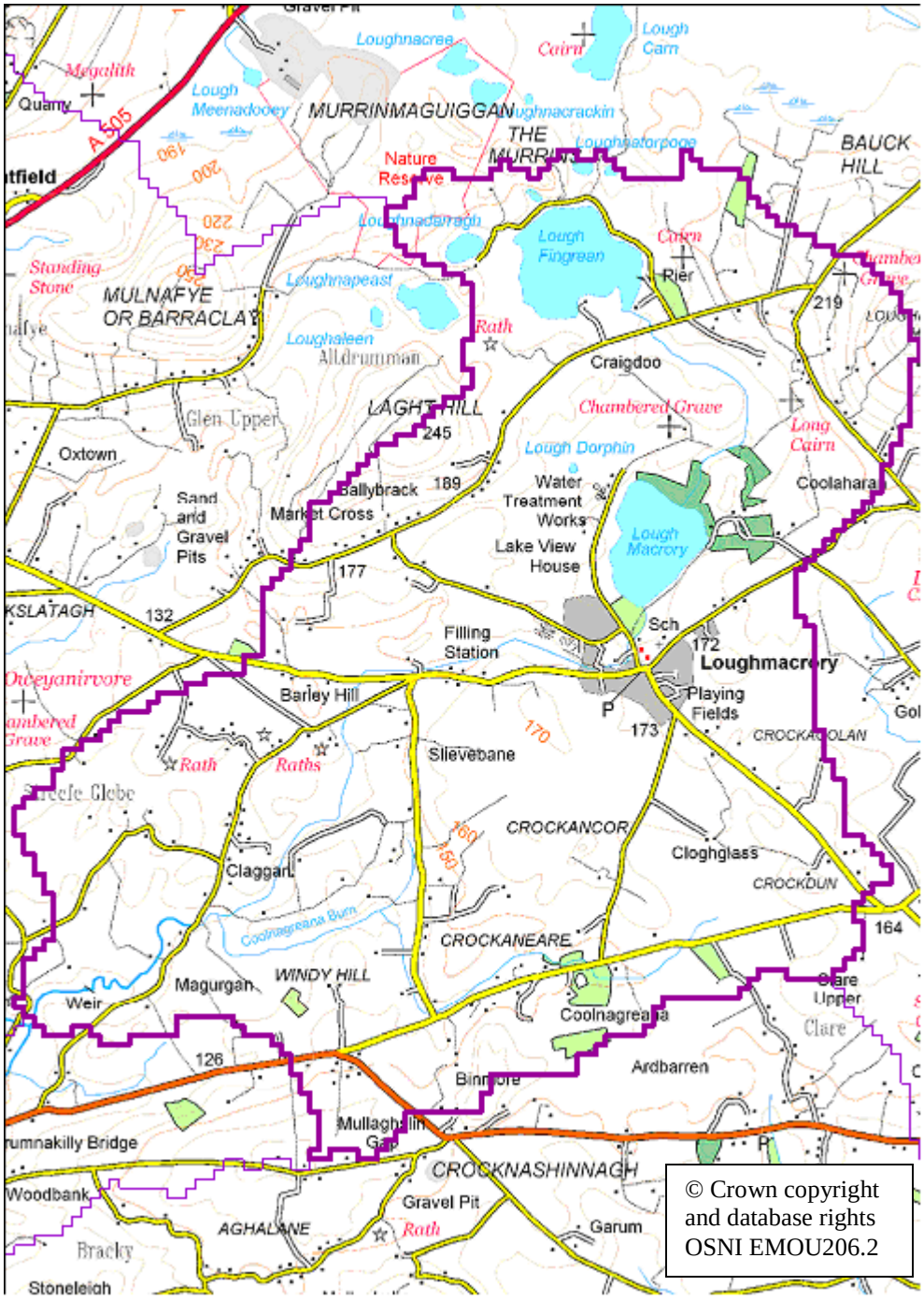
GBNI1NW010102033 - DWS

Workshop Classification of river: MEP
Phys/Chem status: Good
Final SP: High
Biological status: Poor (diatoms)

2009 Classification: PEP

GBNI1NW010102030 – DWS

Impoundment Name/Works	Lough Macrory, Lough Finegrean
Morphological Impact	Yes 2 Impoundments Present
Height of Impoundment	10m and 7m
Compensation Flow Ml/D	No @Macrory Yes @ Finegran
Hydrology Impacted	Yes



Lough Macrory, Lough Finegrean

At the workshop the issue of fish spawning grounds was discussed. In Lough Macrory trout and perch are present and the inflowing stream is a spawning area. Trout may spawn in the out-flowing stream. Feeder streams are deep but could possibly be considered as spawning grounds. There is no fish pass or screens at present. Both are practicable measures although the cost may be an issue.

Hydrology is impacted downstream. There is no compensation flow; it is not known what the environmental impact is but, a compensation flow may not be of much benefit to compensate as this is a low yield system. The impoundment is also impacting on the movement of sediment and a feasibility study for freshets would need discussed and taken forward under monitoring plans (AILRegs) with NIW.

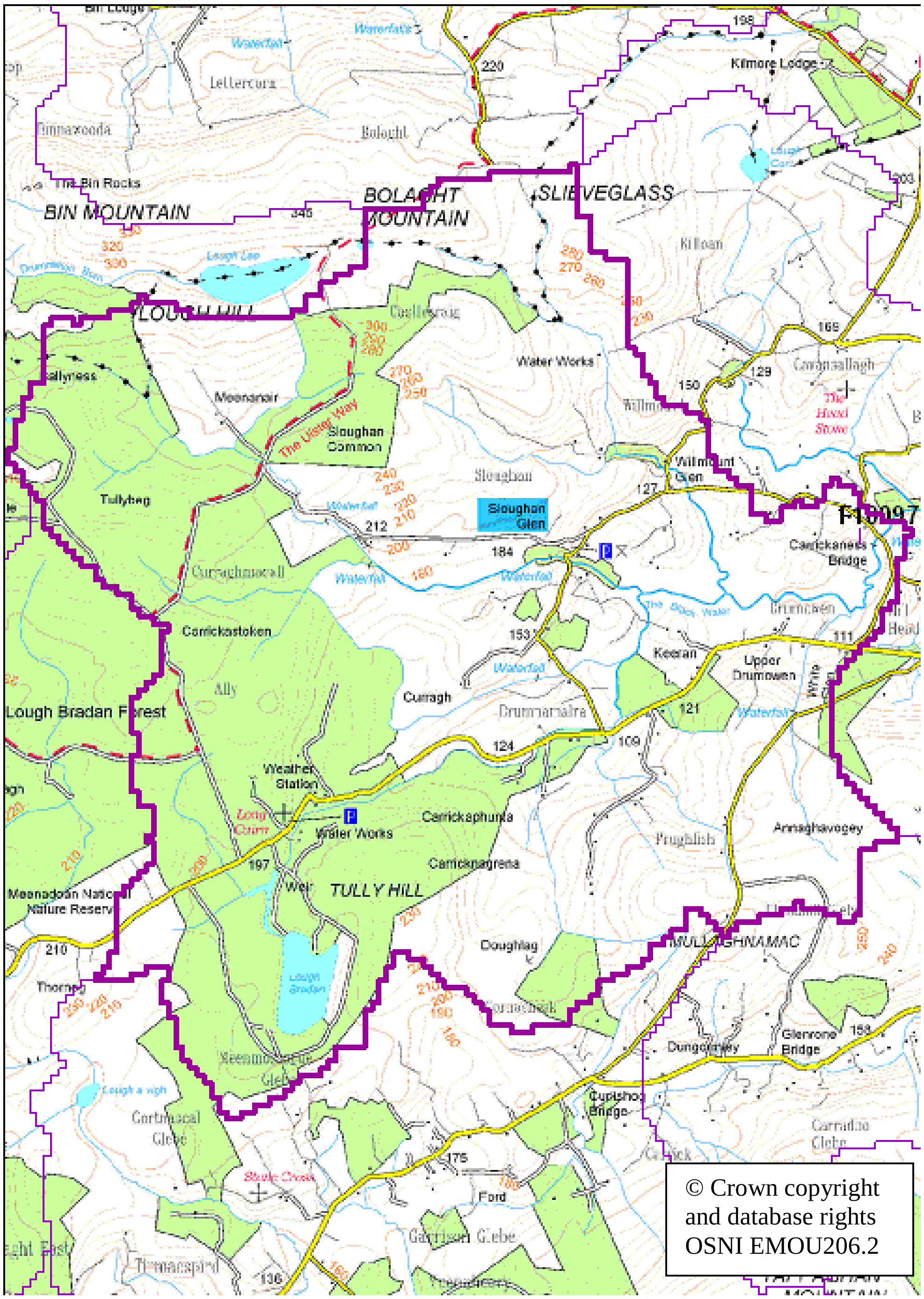
GBNI1NW010102030 – DWS

Workshop Classification of river: MEP
Phys/Chem status: Good
Final SP: High
Biological status: Good

2009 Classification: MEP

GBNI1NW010102009 – DWS

Impoundment Name/Works	Lough Bradan
Morphological Impact	Yes Impoundment Present
Height of Impoundment	10m
Compensation Flow Ml/D	No
Hydrology Impacted	Yes



Lough Bradan

DCAL stock the reservoir. Trout are present upstream and downstream but there are natural barriers to fish that might negate the need for a fish pass.

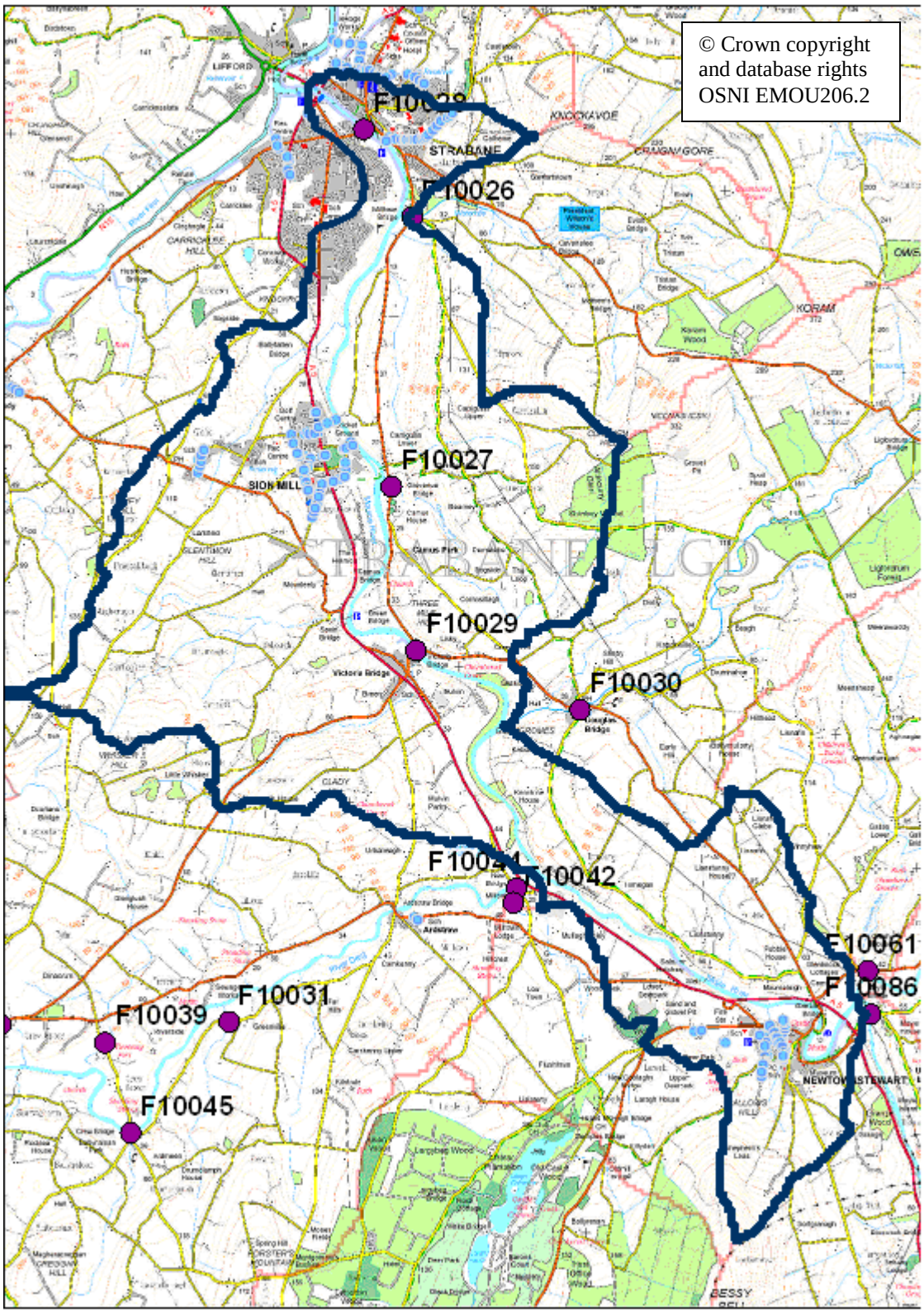
The flow is at risk hydrologically, as it rises and falls very quickly. The measure of establishing an appropriate baseline flow regime is not in place and the feasibility will have to be raised with NIW. The impoundment is also impacting on the movement of sediment and a feasibility study for freshets would need discussed and taken forward under monitoring plans (AILRegs) with NIW.

GBNI1NW010102009 – DWS

Workshop Classification of river: MEP
Phys/Chem status: Good
SP: High
Biological status: High

2009 Classification: MEP

GBNI1NW010102074 – FRM



River Mourne, Sion Mills

The main land cover is pasture for cattle and sheep. There is very little reinforcement apart from flood walls at Strabane that were built over 25 years ago. There are a couple of weirs at Herdmans Mill at Sion Mills that are passable to fish and a second near Newtownstewart. The area is an ASSI and does not appear to be artificially straightened or altered. There will be a lot of arterial drainage due to the land use. The mill at Sion Mills used to abstract water but their consent was revoked this year and they have closed. There are outfalls from sewage works at Victoria Bridge, Newtownstewart and Sion Mills and smaller discharges to tributaries from Douglas Bridge and Camus WWTW. There are also a number of industrial consents present on the stretch.

The River Mourne is often considered the best river for salmon in Ireland and UK. Eels and lamprey are found upstream of the weirs and there is no sediment build up behind these. There is also some concern over the increasing amounts of Himalayan Balsam for which there is no current measure in place.

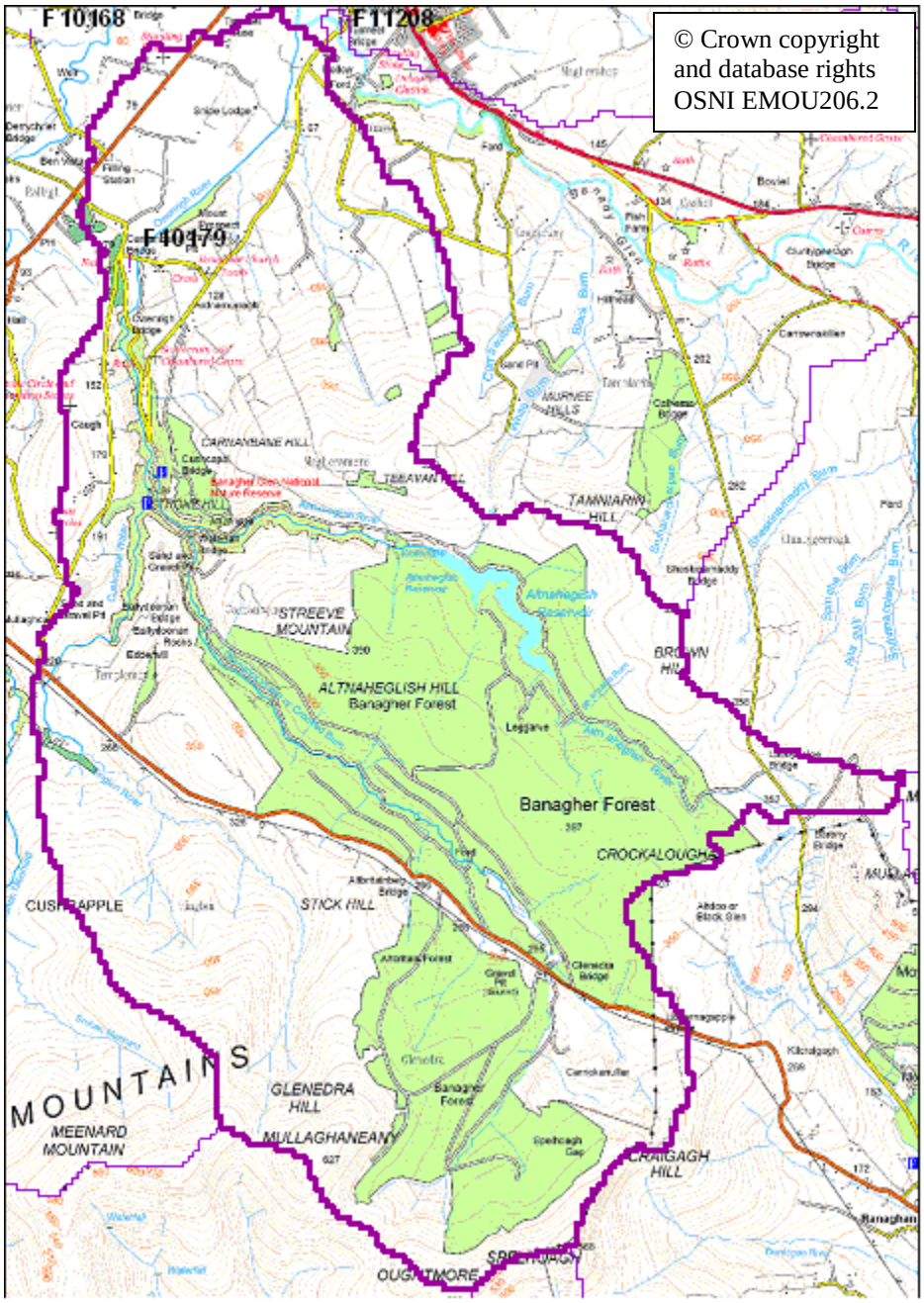
GBNI1NW010102074 – FRM

Workshop Classification of river: GEP
Phys/Chem status: Good
Final SP: High
Biological status: Poor (diatoms)

2009 Classification: PEP

GBNI1NW020202010 – WE / DWS

Impoundment Name/Works	Altnaheglish
Morphological Impact	Yes Impoundment Present
Height of Impoundment	40m
Compensation Flow Ml/D	No
Hydrology Impacted	Yes
Wider Environment	Banagher Glen ASSI, AONB NNR SAC



Altnaheglish

At the workshop it was clarified that the designation of the ASSI and AONB are for the woodland and the designation of SAC is for the river. The impoundment is likely to be having an impact on the flow downstream and on the morphological aspects of the downstream river as there is no compensation flow. Previous River Habitat Surveys reveal that the morphology is not impacted. It is inconclusive that there is an impact on the level regime. The measure of establishing an appropriate baseline flow regime is not in place and the feasibility will have to be raised with NIW. The impoundment is also impacting on the movement of sediment and a feasibility study for freshets would need discussed and taken forward under monitoring plans (AILRegs) with NIW.

GBNI1NW020202010 – WE / DWS

Workshop Classification of river: MEP
Phys/Chem status: High
Final SP: Moderate
Biological status: Good

2009 Classification: MEP

GBNI1NW393901002 – FRM

Skeoge River

The Skeoge water body is heavily urbanised through Londonderry/Derry with the majority of the river culverted through the city. There are possibly flood banks near the border and gabions have been put in place at new housing developments. The remainder of the water body is used for cattle grazing. The channel appears to be artificially straightened but there are no dams, weirs or sluices recorded. Silt removal may take place and Himalayan balsam is present on the banks. Storm drains, road drains and outfalls are present along this stretch.

At the workshop it was decided that it would be possible to increase in-channel morphological diversity. Following the workshop, it was confirmed that sediment is only dealt with following inspection for maintenance but that this is only done if an issue arises.

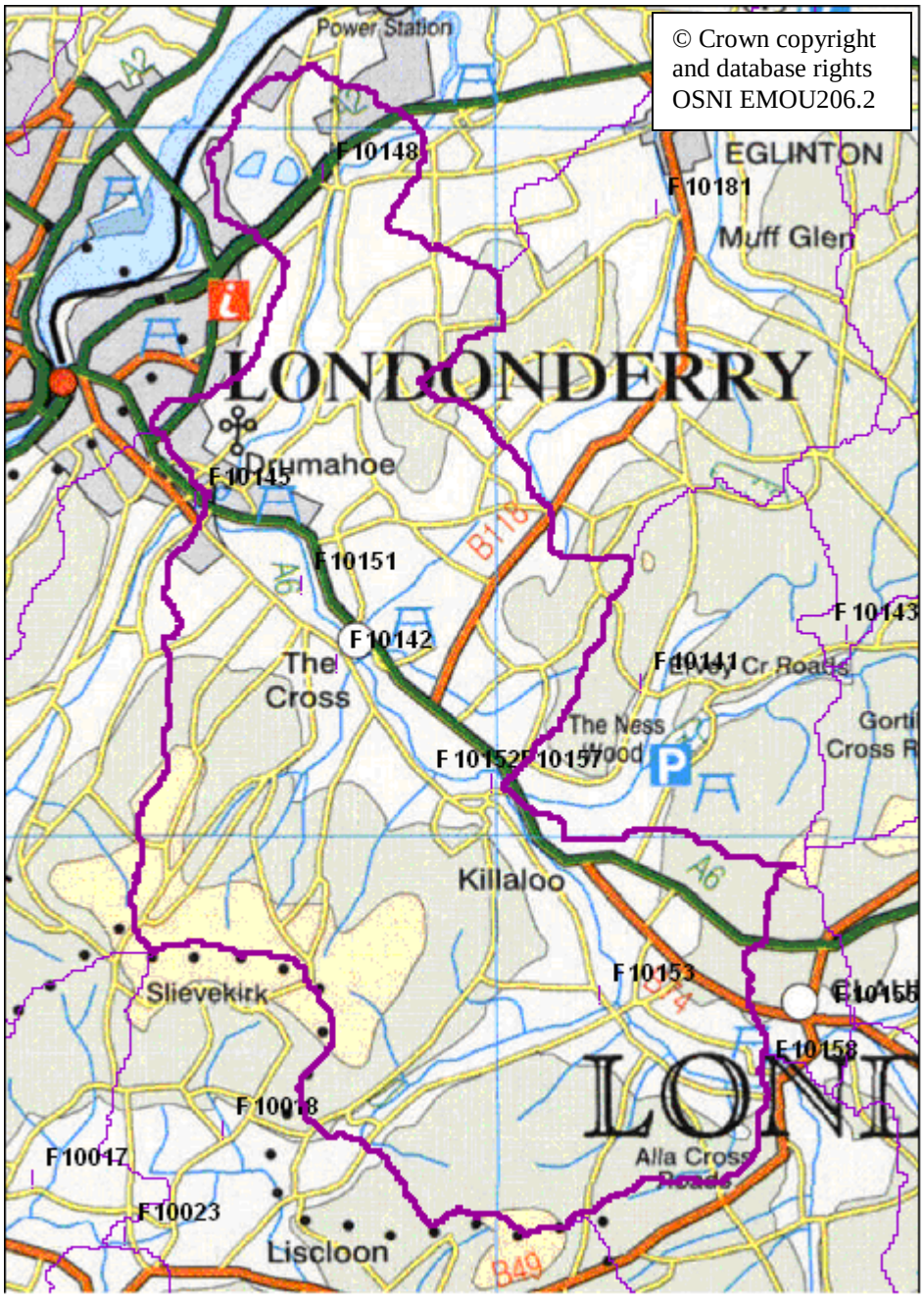
GBNI1NW393901002 – FRM

Workshop Classification of river: MEP
Phys/Chem status: Moderate
Final SP: Moderate
Biological status: Poor (invertebrates and diatoms)

2009 Classification: PEP

GBNI1NW020204031 – DWS

Impoundment Name/Works	Faughan
Morphological Impact	Yes Impoundment Present
Height of Impoundment	1m
Compensation Flow Ml/D	Yes 14.8
Hydrology Impacted	Yes
Wider Environment	ASSI, SAC River Faughan and tribs



River Faughan

At the workshop it was discussed that migration of fish is likely to be impacted particularly during low flows. There is a fish pass present at the weir which is in place and adequate, as eels and lamprey are present above the weir, however the screens at the abstraction may impact on smolts. This abstraction/impoundment is causing an exceedance in UKTAG water resource standards. NIW is reviewing this volume and as such this classification may need reviewed.

GBNI1NW020204031 – DWS

Workshop Classification of river: MEP
Phys/Chem status: High
Final SP: High
Biological status: Poor (diatoms)

2009 Classification: PEP