

### Rossinver GWB: Summary of Initial Characterisation.

| Hydrometric Area<br>Local Authority                         | Associated surface water bodies  | Associated terrestrial ecosystems   | Area (km <sup>2</sup> ) |
|---|--|---|-------------------------|
| Hydrometric Area 36<br><br>Leitrim Co. Co.<br>Sligo Co. Co. | <p><b>Rivers:</b> Glenaniff, Duff, Ballagh, Ballaghnatrillick, Black, County, Roogagh.</p> <p><b>Streams:</b> 452 unnamed streams</p> <p><b>Lakes:</b> None identified.</p>  | Ben Bulben, Gleniff and Glenade Complex and Arroo Mountain (O’Riain, 2004). | 56                      |
| <b>Topography</b>   | This narrow, E-W aligned GWB meanders along the northern slopes of the mountains that are west of Lough Melvin. The Lough itself constitutes the GWB’s eastern boundary. The western boundary comprises a topographic divide (Hydrometric Area 35) and more productive aquifers provide the northern (fractured rock) and southern (karstified rock) boundaries. The topography rapidly changes from gently slopes in the valleys to steeper, more mountainous zones. Elevations sharply increase south-westwards, from 30 mAOD at Lough Melvin to c.570 mAOD at the top of Benwisikin. Surface water generally flows northwards, either towards Lough Melvin over the eastern end of the body, or as tributaries of the Rivers Duff and Ballaghnatrillick over the central and western zones.   |   |                         |
| <b>Geology and Aquifers</b>                                 | <p><b>Aquifer type(s)</b> This GWB is predominantly underlain by <b>Ll</b>: Locally important aquifer, moderately productive only in local zones. There is also an area of <b>Rk<sup>c</sup></b>: Regionally important karst aquifer dominated by conduit flow along the western boundary.</p> <p><b>Main aquifer lithologies</b> Dinantian Shales and Limestones (62.21%) is the main bedrock group within the GWB although band of Dinantian Upper Impure Limestones (34.52%) are located along the southern boundary. The small area (2.18%) of karst aquifer is classified as a Dinantian Pure Bedded Limestone. The remaining area of the GWB comprises Dinantian Sandstones (c.1%) and a small area of Granites and other intrusive rocks (&lt;1%). Refer to Table 1 for details.</p> <p><b>Key structures.</b> The rock succession dips to the south by 5-10°.</p> <p><b>Key properties</b> No data are available for this GWB however, yields are expected to be limited and transmissivity values are thought to be &lt;20 m<sup>2</sup>/d, and possibly &lt;10 m<sup>2</sup>/d in the shale-dominated lithologies. Storativity is also expected to be low.<br/><br/>Groundwater gradients are expected to be relatively steep, given the relatively low permeability of the rock and mountainous topography. Flow is expected to be down-gradient, which is generally northwards.<br/><i>(Dinantian Shales and Limestones Aquifer Chapter)</i></p> <p><b>Thickness</b> Most groundwater flux is expected to be in the uppermost part of the aquifer comprising a broken and weathered zone typically less than 3 m thick, a zone of interconnected fissuring 10-15 m thick, and a zone of isolated poorly connected fissuring typically less than 150 m.</p> |   |                         |
| <b>Overlying Strata</b>                                     | <p><b>Lithologies</b> No data are available for the majority of the GWB (c.80% - Leitrim and NI). Over the very western portion of the body, the subsoil is dominated by peat (9%) and then by scree/shallow rock (7%). These proportions would be expected where the topography is similar i.e. upland zones.</p> <p><b>Thickness</b> Although available data are limited, the distribution of outcrops and steeper topography suggest that the subsoil in this GWB is relatively thin i.e. mainly less than 3 m thick and unlikely to be greater than 10 m thick .</p> <p><b>% area aquifer near surface</b> <i>[Information will be added at a later date]</i></p> <p><b>Vulnerability</b> Although no data are available, the vulnerability is likely to be extreme over a large proportion of this GWB, especially in the upland areas.</p>   |   |                         |
| <b>Recharge</b>   | <p><b>Main recharge mechanisms</b> Diffuse recharge occurs via rainfall percolating through the thinner/more permeable subsoil and rock outcrops. Due to any low permeability subsoil deposits and the aquifers, a high proportion of the effective rainfall will discharge to the streams in the GWB. In addition, the steep slopes in the upland areas promote surface runoff. The high stream density is likely to be influenced by the lower permeability rocks.</p> <p><b>Est. recharge rates</b> <i>[Information will be added at a later date]</i></p>  |   |                         |
| <b>Discharge</b>  | <p><b>Important springs and high yielding wells</b> Springs: None identified.<br/>Sources: None identified.<br/>Excellent Wells: None identified.<br/>Good Wells: None identified.</p> <p><b>Main discharge mechanisms</b> The main groundwater discharges are to the rivers and streams crossing the GWB, reflecting short groundwater flow paths. Small springs and seeps are likely to issue at the stream heads and along their course. Groundwater may also flow into the down-gradient, higher permeability Lm GWB.</p>  |   |                         |

