

## **NS SHARE Region**

### **Bonnet** (feeds Lough Gill)

Area 279km<sup>2</sup>; Hydrometric station DROMAHAIR 35011

Comments: Velocity-area station with natural control. Stable control. Since Civil Works carried out in 1986 there are very good ratings over the entire flow range.

Topography: Large variation in standard deviation of catchment height (104m) although the slope of the catchment is relatively low in considering the height variations (10%).

Geology: Complex mixed aquifer geology. Dominated by NE-SW trending karst Rkc aquifers (Dinantian Pure Bedded Limestones) juxtaposed and bedded against poorly productive Pu (Preambrian Quarzites and Gneisses, Namurian Shales), Pl (Preambrian Quarzites and Gneisses, Dinantian Shales and Limestones) and Ll aquifers (Dinantian Shales and Limestones). There is also a small proportion of productive fissured bedrock Lm aquifer and karst Lk aquifer in the catchment. The hydrometric station is located in Rkc aquifer. There is a small proportion of extreme vulnerability (<3m) in the catchment area, mainly overlain by Blanket Peat. Subsoils are dominated by Namurian Sandstones and Shales and Blanket Peat.

Characteristics: 24% OPW channelisation, 23% pasture.

### **Erne**

Area 1509km<sup>2</sup>, Hydrometric station BELTURBET 36019

Comments: Velocity-area station with natural control. Stable control. Good ratings over the entire flow range. Did not select FOALIES BRIDGE and KILCONNY downstream because water level only and poor low and middle flow ratings respectively.

Topography: Relatively shallow slopes in the catchment (7%), standard height deviation of catchment 38m.

Geology: Mainly Pl aquifer in the catchment, restricted to the upper part (mainly Ordovician Metasediments and Silurian Metasediments and Volcanics) with some granites. The lower reaches of the catchment are more complex. The lower reaches contain Ll aquifer (mainly Dinantian Shales and Limestones), NE-SW trending Rf (mainly Dinantian Lower Impure Limestones and Lower Sandstones, Shales and Limestones) and Lm (mainly Dinantian Shales and Limestones) aquifers as well as karst Rkc aquifer (Dinantian Pure Bedded Limestones). Large proportion of extreme vulnerability. Small percentage of peat. Main subsoils are Lower Paleozoic Sandstone and Shale tills.

Characteristics: Some large lakes; 84% pasture, 23% OPW channelisation.

### **Finn**

Area 313km<sup>2</sup>, Hydrometric station DREENAN 1042

Comments: Velocity-area station with natural control. Stable control. Fair rating at low flow. Good middle and high flow rating. Not rated for peak flows. 1043 upstream has unstable control.

Topography: Quite steep slopes in catchment. Standard deviation in height of catchment, 94m. Average slope 12%.

Geology: Dominated by Pl and Lk aquifer. Main rock types are Precambrian Quartzites, Gneisses and Schists, and Granites. Dominated by extreme vulnerability. Subsoils dominated by Blanket Peat.

Characteristics: Pasture 15%, Forestry 7%.

**Woodford**

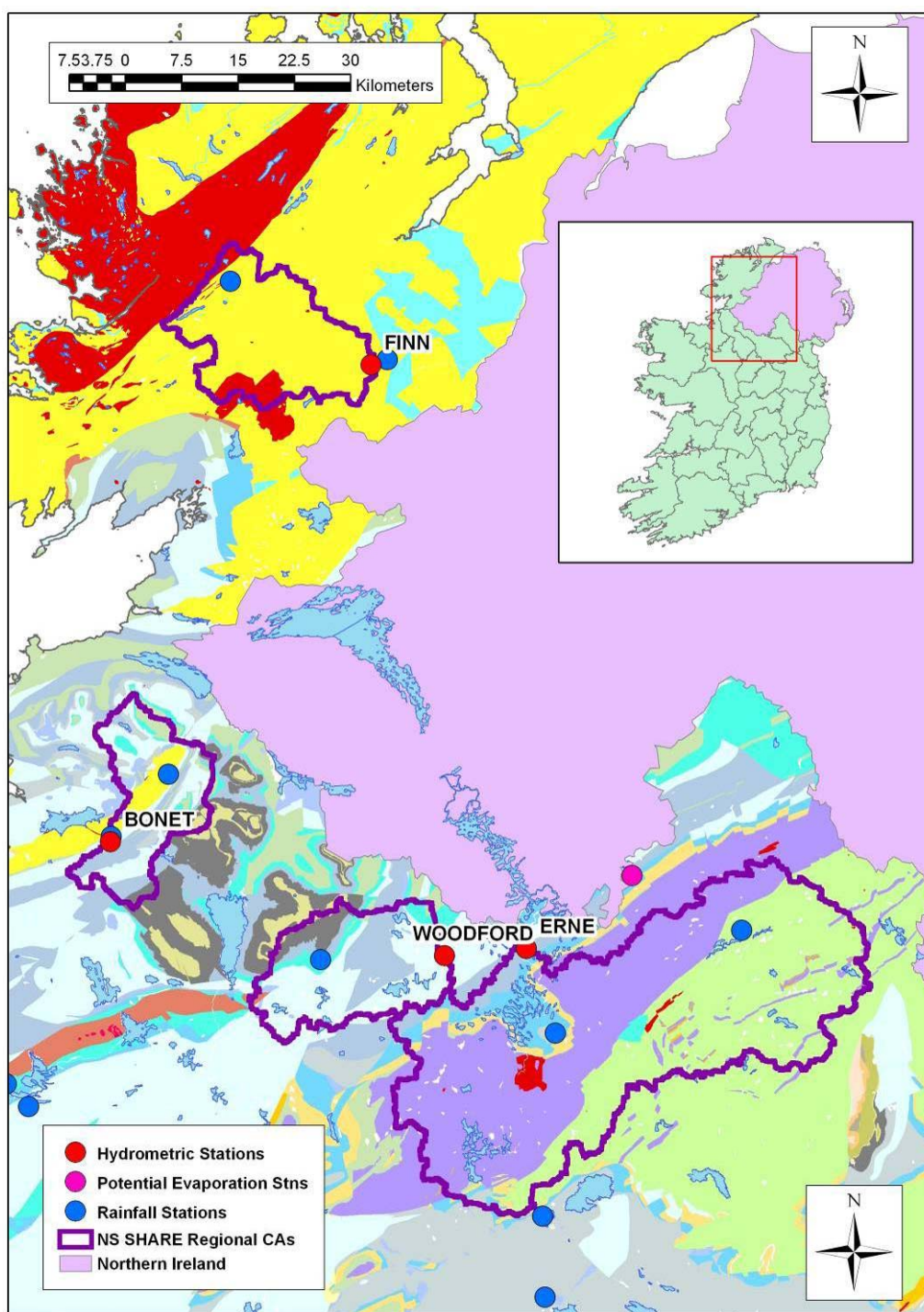
Area 361km<sup>2</sup>; Hydrometric station BELLAHEADY 36027

Comments: Water level only since restoration of canal. Water level only since the opening of the Shannon-Erne Waterway. Pre 1991 stable control. Very good ratings over the entire flow range. Digitised Daily Mean Flow Data only for 1990-1992

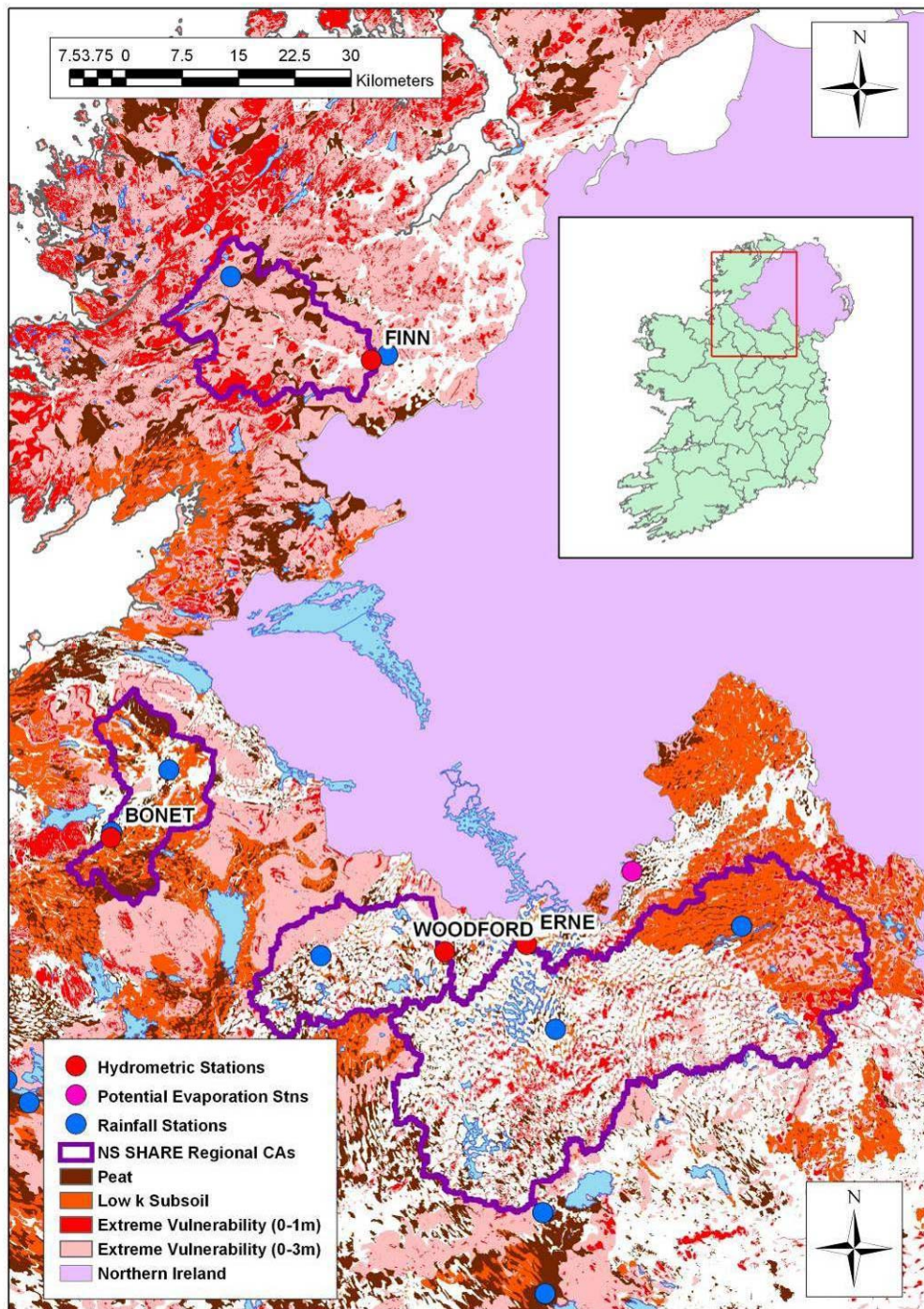
Topography: Standard deviation in height of catchment, 91m. Average slope 7%.

Geology: Dominated by Rkc aquifer in the south of the catchment (Dinantian Pure Bedded Limestones). Mainly poorly productive Ll, Pl and Pu aquifers in the north of the catchment (mainly Dinantian Pure Bedded Limestones, Dinantian Mixed Sandstones, Shales and Limestones, Dinantian Pure Unbedded Limestones, Namurian Shales and Sandstones). Extreme vulnerability mainly in the northwest of the catchment (generally overlain by peat). Subsoils are mainly undifferentiated tills, Cambrian Sandstone and Chert tills, Namurian Sandstone and Shale tills, and Blanket Peat.

Characteristics: 25% OPW channelisation, 36% pasture. Large lakes.

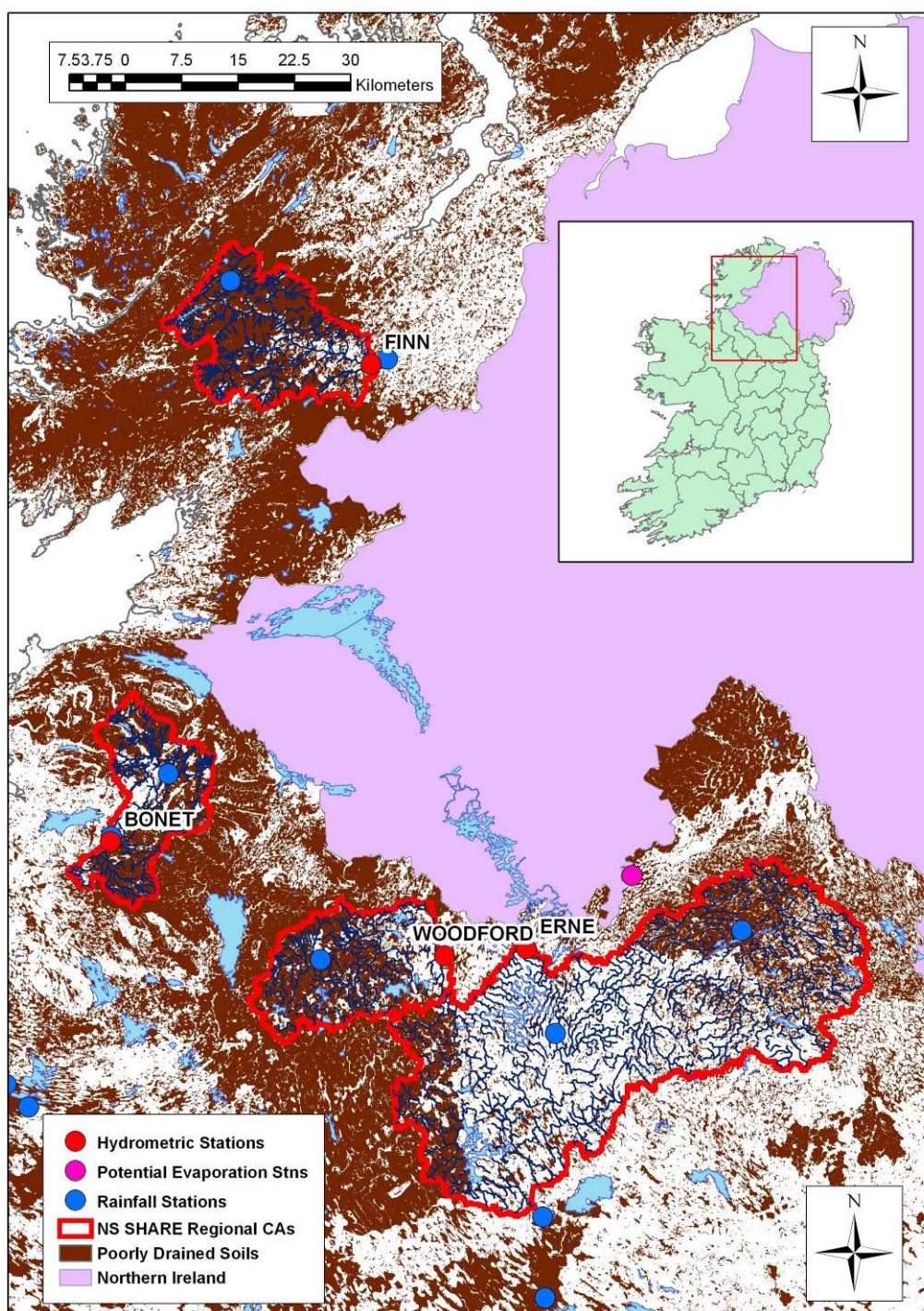


**Figure 14. Rock units in the regional catchments selected for the Republic of Ireland NS SHARE region: Bonet, Erne, Finn and Woodford catchments.**

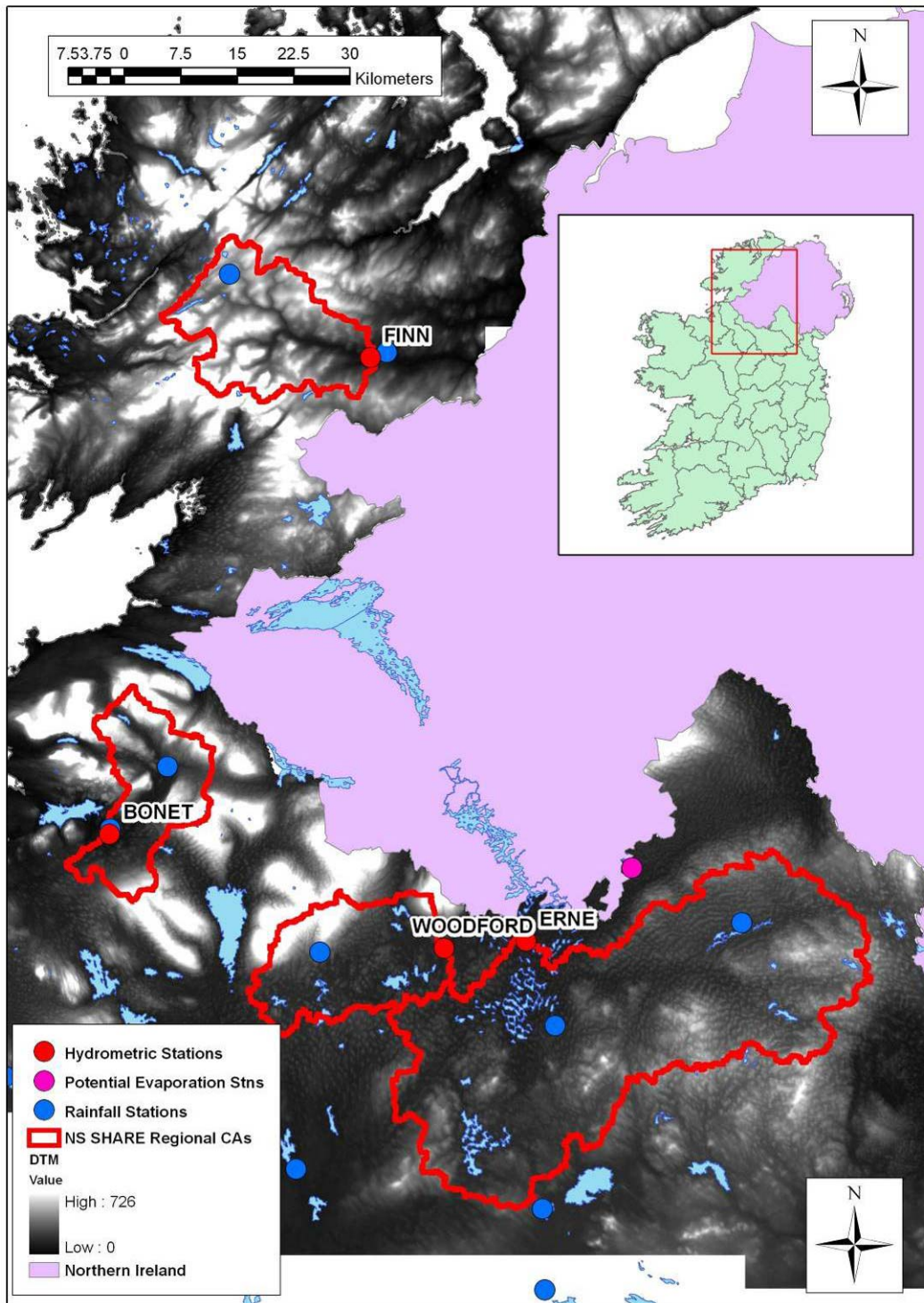


**Figure 15. Vulnerability and subsoils in the regional catchments selected for the Republic of Ireland NS SHARE region: Bonet, Erne, Finn and Woodford catchments.**





**Figure 16. Poorly drained soils in the regional catchments selected for the Republic of Ireland NS SHARE region: Bonet, Erne, Finn and Woodford catchments.**



**Figure 17. Digital Terrain Model (DTM in metres) of the regional catchments selected for the Republic of Ireland NS SHARE region: Bonet, Erne, Finn and Woodford catchments.**



## **Southeastern RBD**

### **Anner**

Area = 437km<sup>2</sup>, Hydrometric Station ANNER 16010

Comments: Velocity-area station with natural control. Variable but predictable control. Fair rating at low flow, good at medium and high flow.

Topography: Catchment has greatest elevation to the east and north of the catchment area. Standard deviation in height of catchment, 72m. Average slope 4.9%.

Geology: Complex mixed aquifer. Main aquifer types include Ll, Pl and Rk aquifers. Also small percentages of Lm, Lk and Rf aquifers. Devonian Old Red Sandstones and Silurian Metasediments and Volcanics in the high regions of the catchment, in south adjacent to Devonian Kiltorcan-type Sandstones. Dinantian strata trending NE-SW through the low-lying regions of the catchment. Small quantity of gravel aquifer in the catchment. Extreme vulnerability areas mainly constrained to the high regions. Subsoils are mainly undifferentiated tills, Devonian Sandstone tills, Lower Paleozoic/Devonian Sandstone tills and Lower Paleozoic/Devonian Sandstone and Shale tills.

Characteristics: Approximately 75% pasture land and 3% forestry

### **Barrow**

Area 2617km<sup>2</sup>, Hydrometric station ROYAL OAK 14018

Comments: Velocity-area station with natural control. Navigation channel in part of channel. Stable control with some effect from weed growth. Fair rating at low flows. Good rating at medium to high flows. Did not use BORRIS station downstream because rating poor for low range. Records for BORRIS cease 1988.

Topography: Mainly low slopes, standard deviation in height of catchment; 51m. Average slope 2%.

Geology: Complex mixed aquifer type. Dinantian Pure Bedded Limestones along main channel length which is karst aquifer (Rkd). Other main aquifer types include Pu (Silurian Metasediments), Ll (Dinantian Upper Impure Limestones, Dinantian Lower Impure Limestones and granites and intrusive igneous rocks), Pl (granites and intrusive igneous rocks) categories. Productive fissured bedrock (Lm) aquifers at upper part of catchment. Relatively large proportion of gravels in the catchment. Hydrometric station location on Ll aquifer. Extreme vulnerability areas mainly occur in the lower reaches of the catchment. Mixed subsoils in catchment; dominated by gravels along lower main channel length and tills and cut peat in the rest of the catchment.

Characteristics: Mainly pasture ~ 61%.

### **Nore**

Area 2446km<sup>2</sup>; Hydrometric Station BROWNSBARN 15006

Comments: Velocity-area station with natural control. Stable control. Very good rating over the full range of flows.

Topography: Generally quite a shallow catchment. Standard deviation in height of catchment, 67m. Average slope 4%.

Geology: Complex mixed aquifer. Main aquifer types include karst Rk aquifer, poorly productive Pl, Ll and Pu aquifers, and productive fissured Lm and Rf aquifers. General trend of strata is NE-SW. Ordovician Metasediments at outlet of the catchment. Hydrometric station located on Ll aquifer. In a very generalised sense the strata in the

catchment is folded along an antiform, the axis of which trends NE-SW through the centre of the catchment. Again in a very generalised sense the strata becomes older towards the crest of the antiform as it progresses from Devonian sandstones to Dinantian Lower Impure Limestones, Dolomitised Limestones, Upper Impure Limestones, Pure Bedded Limestones, to Namurian Shales and Limestones at the crest of the fold. There is a large amount of gravel aquifers along the main channel of the Nore. There is a large quantity of extreme vulnerability in the catchment. There is peat at the periphery of the catchment, in the upper reaches. Subsoils are dominated by undifferentiated tills, Namurian Sandstone and Shale tills, and Devonian Sandstone tills in the north and south of the catchment.

Characteristics: 72% pasture, 12% OPW channelisation, 6% forestry.

### **Suir**

Area 1578km<sup>2</sup>; Hydrometric Station CAHER PARK 16009

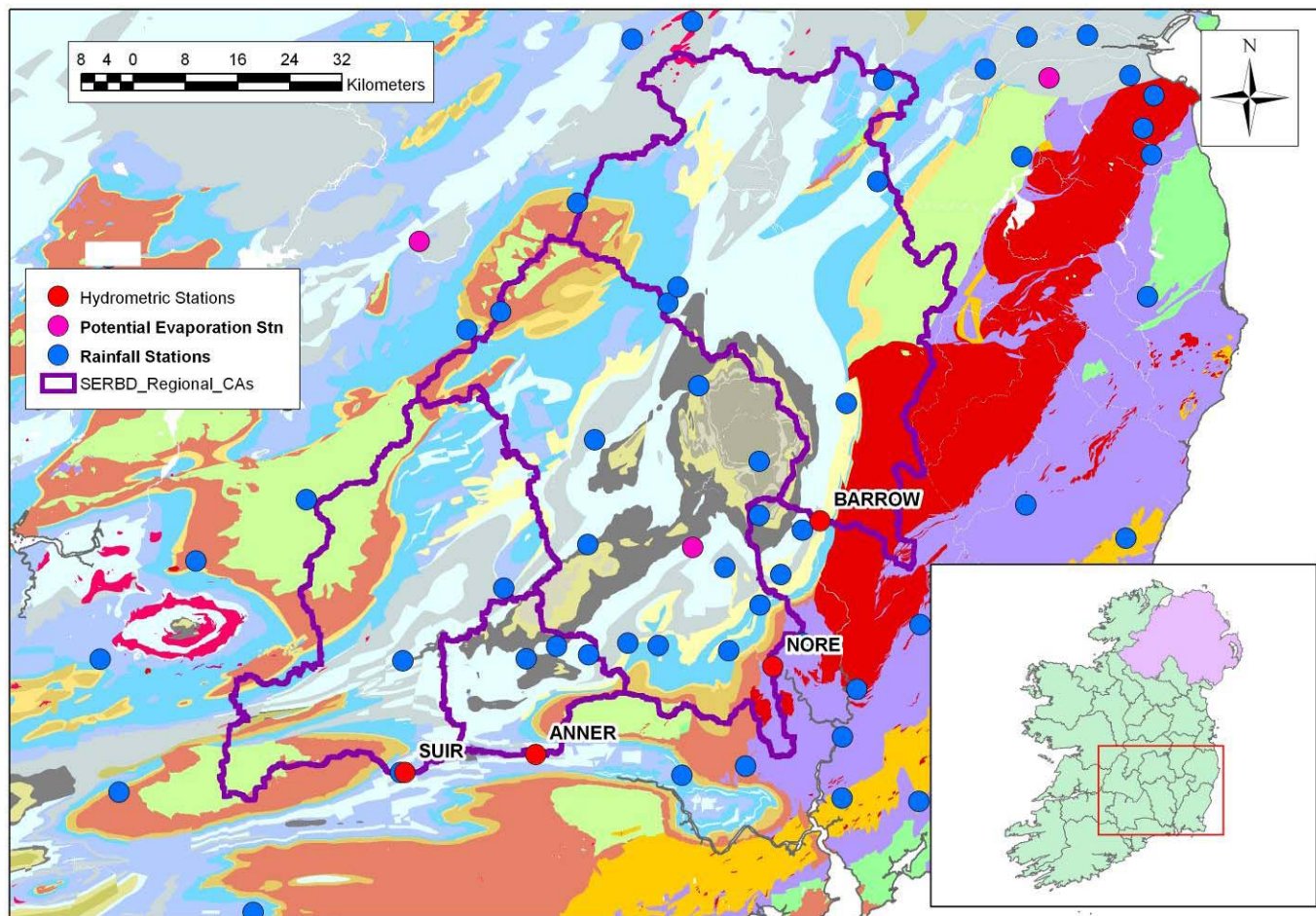
Comments: Velocity-area station with natural control. Fitted with cableway. Stable control affected by weeds. Fair rating at low flow. Very good rating at middle and high flows.

Topography: Standard deviation in height of catchment, 78m. Average slope 5%.

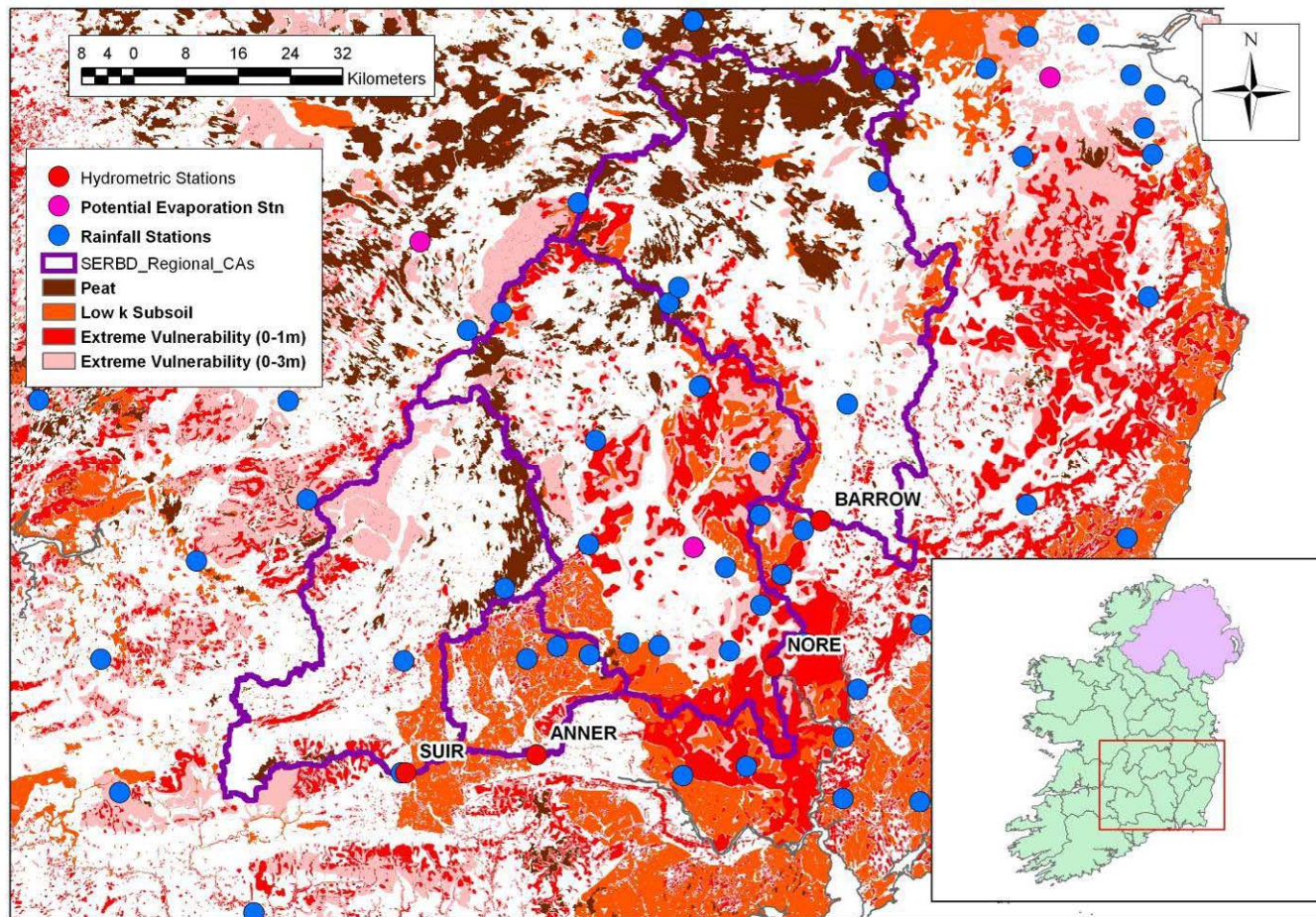
Geology: Complex mixed aquifer. Main aquifer types include Ll, Pl and Rk aquifers. Also small percentages of Lm, Lk and Rf aquifers. Devonian Old Red Sandstones and Silurian Metasediments and Volcanics in the high regions of the catchment, in south adjacent to Devonian Kiltorcan-type Sandstones. Dinantian strata trending NE-SW through the low-lying regions of the catchment. Small quantity of gravel aquifer in the catchment. Extreme vulnerability areas mainly constrained to the high regions. Subsoils are mainly undifferentiated tills, Devonian Sandstone tills, Lower Paleozoic/Devonian Sandstone tills and Lower Paleozoic/Devonian Sandstone and Shale tills.

Characteristics: 75% pasture, 5% forestry.



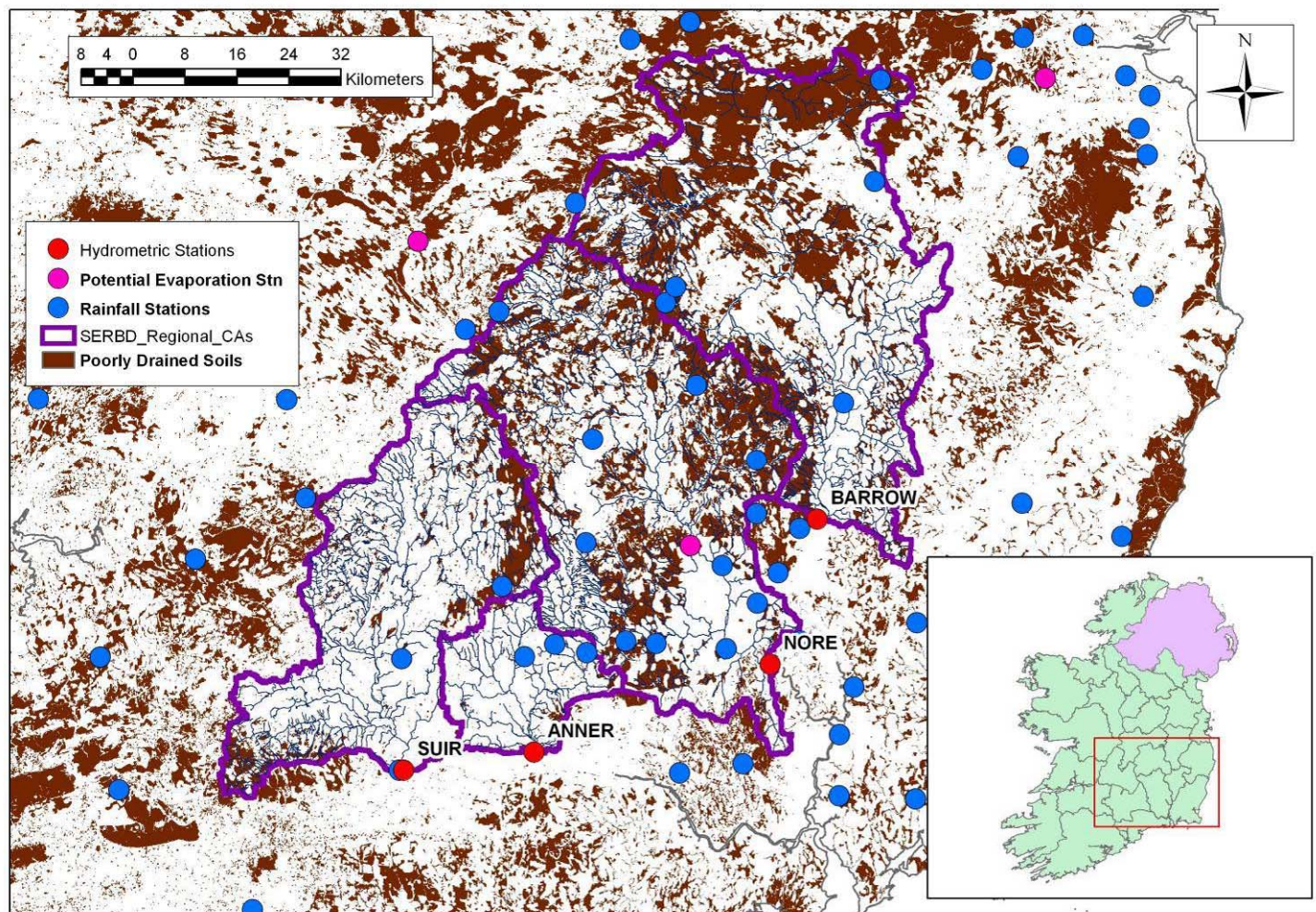


**Figure 18. Rock units in the regional catchments selected for the Southeastern RBD: Anner, Barrow, Nore and Suir catchments.**



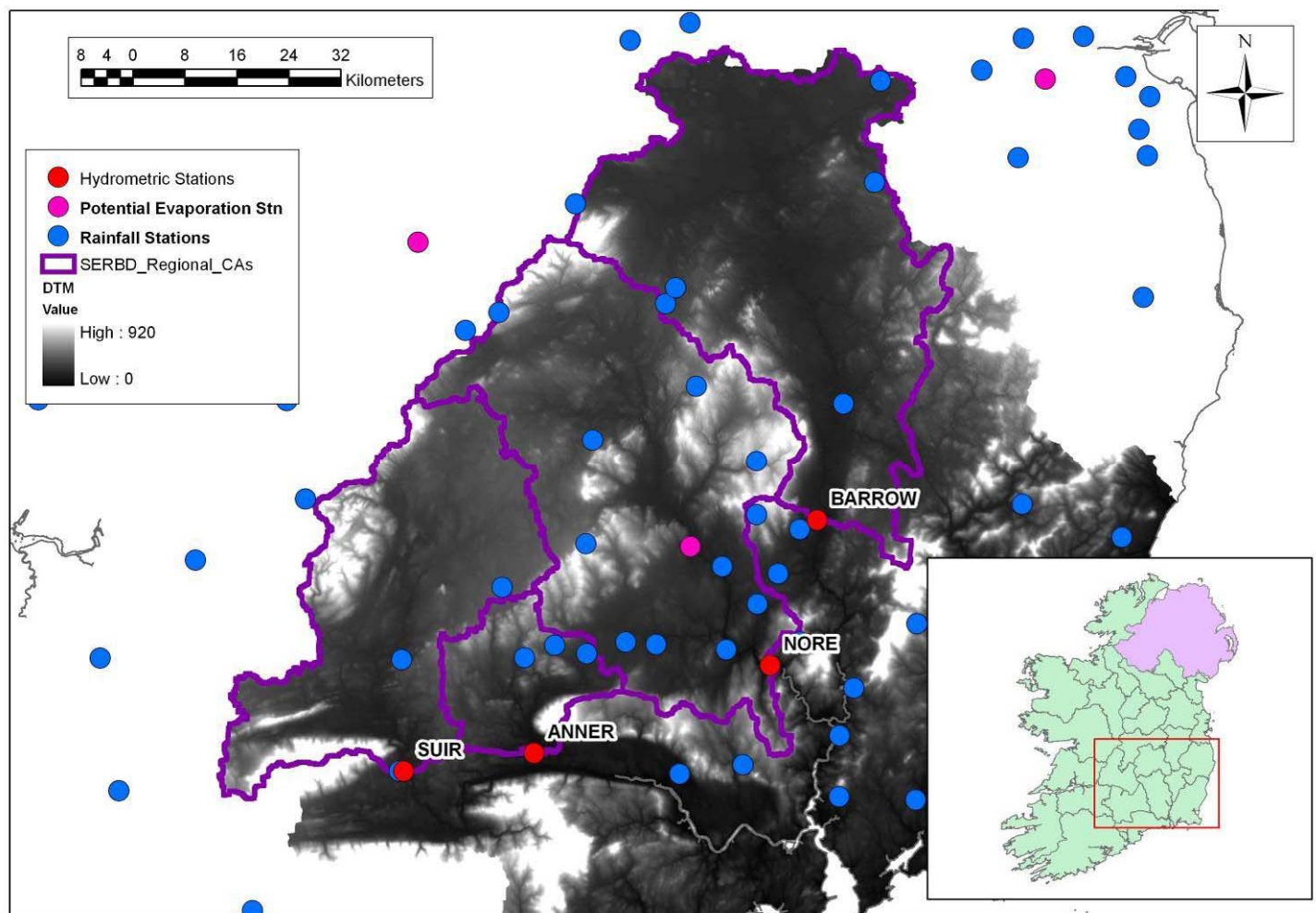
**Figure 19. Vulnerability and subsoils in the regional catchments selected for the Southeastern RBD: Anner, Barrow, Nore and Suir catchments.**





**Figure 20. Poorly drained soils in the regional catchments selected for the Southeastern RBD: Anner, Barrow, Nore and Suir catchments.**





**Figure 21. Digital Terrain Model (DTM in metres) of the regional catchments selected for the Southeastern RBD: Anner, Barrow, Nore and Suir catchments.**

## **Southwestern RBD**

### **Bandon**

Area = 513km<sup>2</sup>, Hydrometric station CURRANURE 20002

Comments: Velocity-area station with boulders in channel forming control. Stable control. Very good rating over the full range of flows. Did not take station upstream (Bandon 20001) because velocity-area station with natural control. Control affected by weed growth and debris. Station 20002 Curranure was installed to provide processed data for this river. Topography: Standard deviations in height of catchment; 62m. Average slope 8%. Geology: Dominated by L1 aquifers and also P1 aquifers. Rock units are Devonian Old Red Sandstones and Dinantian Mudstones and Sandstones. Subsoils dominated Devonian and Carboniferous Sandstone and Shale tills to the south of the catchment and Devonian and Carboniferous Sandstone tills to the north of the catchment. Very little peat. Large proportion of extreme vulnerability with rock close to the surface. Characteristics: Mainly pasture ~ 65%.

### **Blackwater**

Area 2436km<sup>2</sup>, Hydrometric station BALLYDUFF 18002

Comments: Velocity-area station with natural control. Stable control. Good low flow rating. Very good middle and high flow ratings.

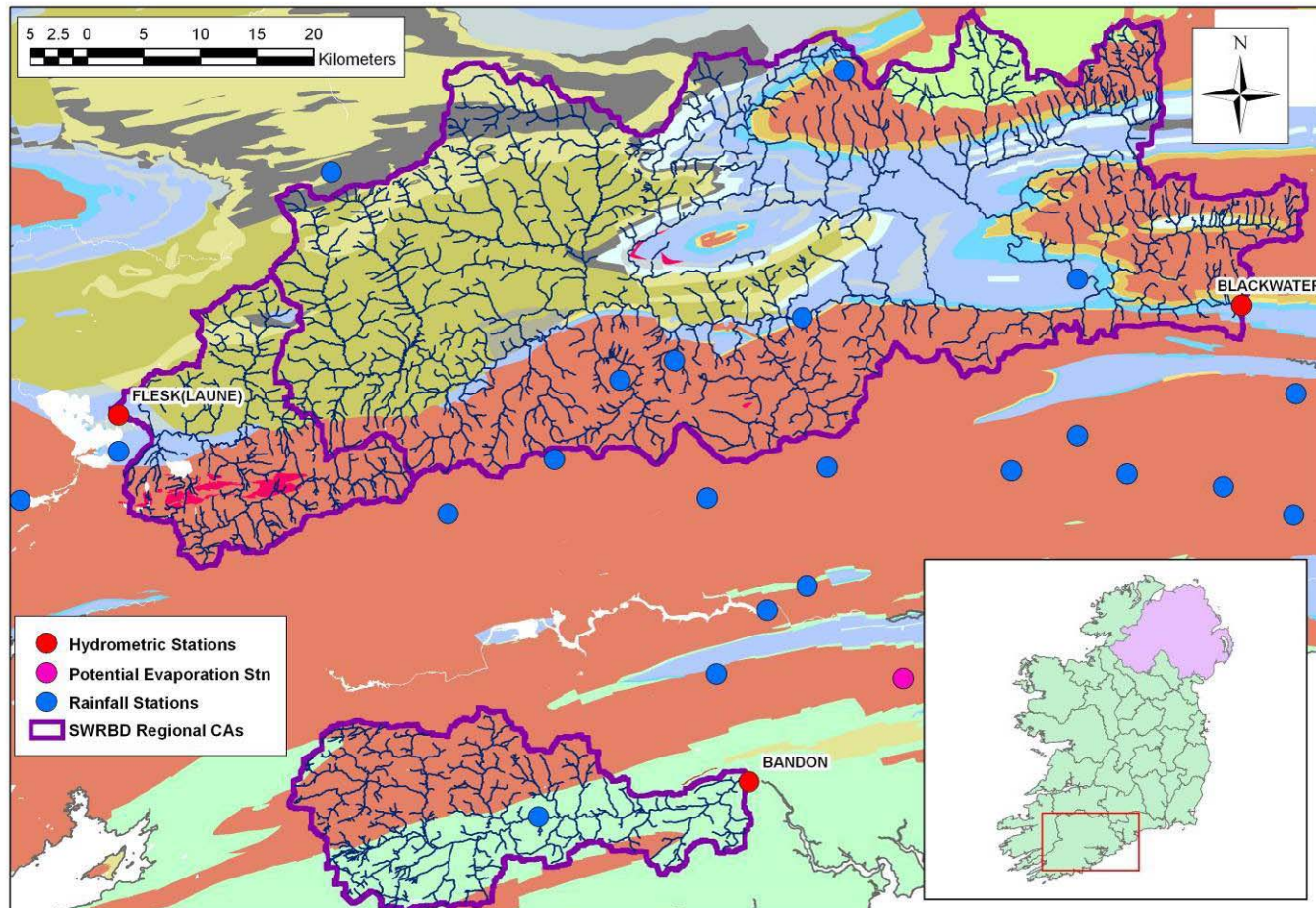
Topography: Steepest slopes in south of catchment area and to north of the hydrometric station; standard deviation in height of catchment; 97m. Average slope 3%.

Geology: Mainly poorly productive L1 aquifers in higher regions (e.g. Devonian Old Red Sandstones, undifferentiated Namurian rock types, Silurian Metasediments and Volcanics) and karst Rkd aquifers (Dinantian Pure Bedded limestones) and L1 aquifers (Dinantian Upper and Lower Impure Limestones) in the lowlands. There are also productive fissured bedrock Rf aquifers (Devonian Kiltorcan-type Sandstones) at the foothills of mountains in the north of catchment. There are also small proportion of Lm and Pu aquifer types in the catchment. There is a large proportion of extreme vulnerability regions in the mountaineous regions of the catchment. The main subsoil types include Namurian Shale and Sandstone tills in the west of the catchment and Devonian Sandstone tills to the east and south. Characteristics: Approximately 61% pasture land and 8% forestry.

### **Flesk (Laune)**

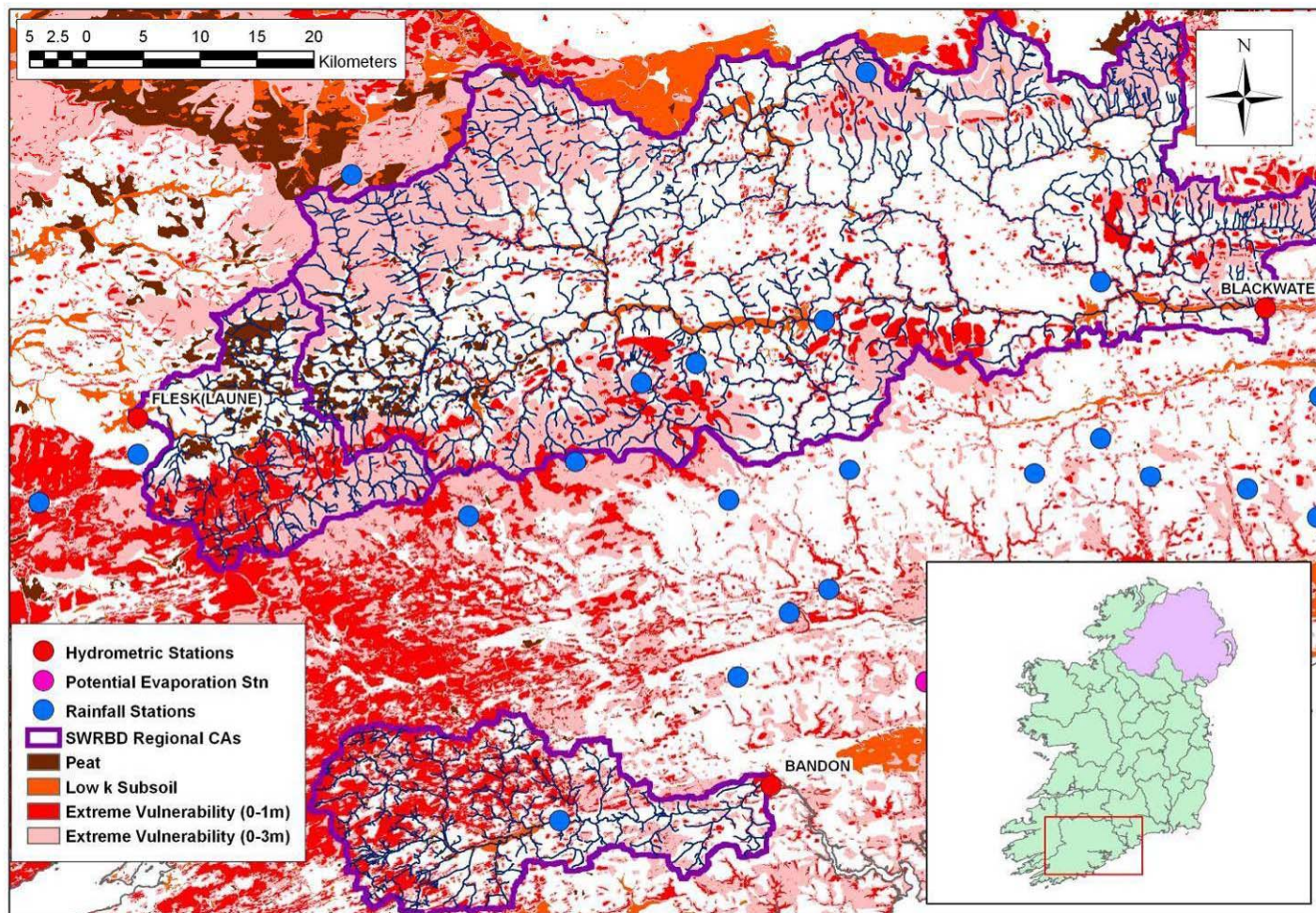
Area 329km<sup>2</sup>, Hydrometric station FLESK 22006

Comments: Velocity-area station with natural control. Stable control. Very good rating over the full range of flows. Topography: Steepest slopes in south of catchment area. Average slope 12.5%.m. Geology: Mainly poorly productive L1 aquifers in higher regions (e.g. Devonian Old Red Sandstones, undifferentiated Namurian rock types, Silurian Metasediments and Volcanics) and karst Rkd aquifers (Dinantian Pure Bedded limestones) and L1 aquifers (Dinantian Upper and Lower Impure Limestones) in the lowlands. There are also a small proportion of Pu aquifer type in the catchment. There is a large proportion of extreme vulnerability regions in the south of the catchment. The main subsoil types include Namurian Shale and Sandstone tills in the west of the catchment and Devonian Sandstone tills to the east and south. Characteristics: Approximately 29% pasture land and 7% forestry.



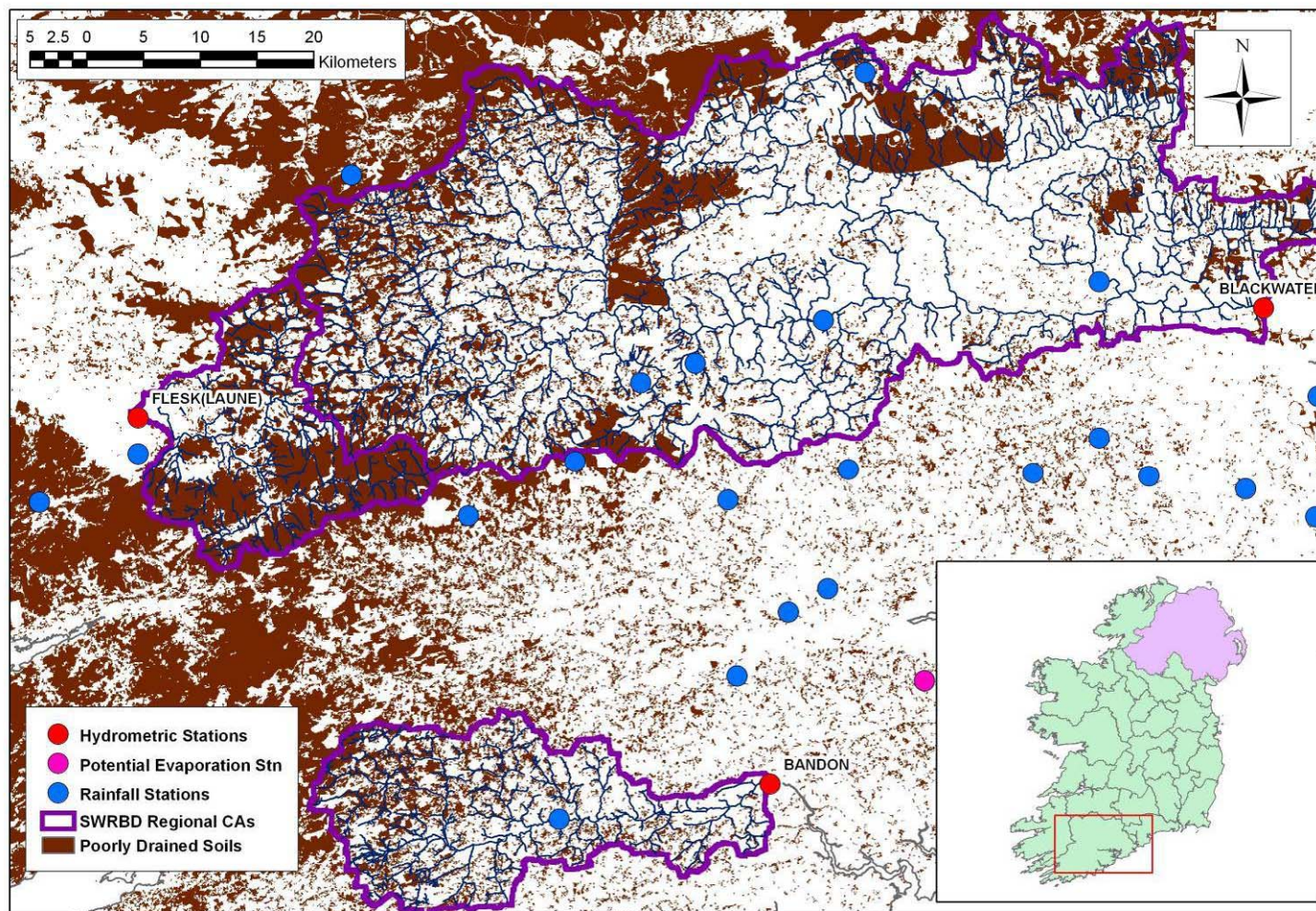
**Figure 22. Rock units in the regional catchments selected for the Southwestern RBD: Bandon, Blackwater and Flesk catchments.**





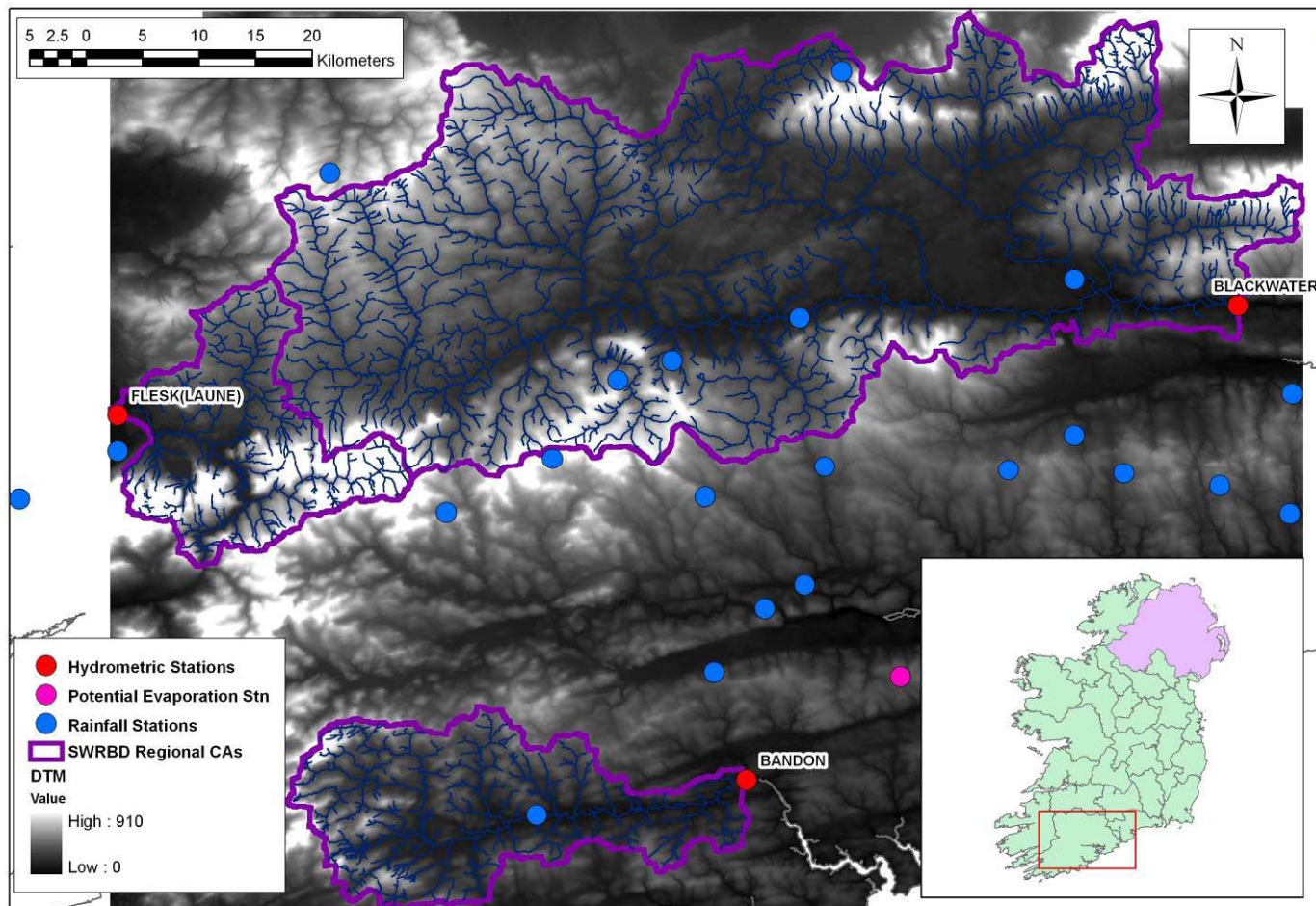
**Figure 23. Vulnerability and subsoils in the regional catchments selected for the Southwestern RBD: Bandon, Blackwater and Flesk catchments.**





**Figure 24. Poorly drained soils in the regional catchments selected for the Southwestern RBD: Bandon, Blackwater and Flesk catchments.**





**Figure 25. Digital Terrain Model (DTM in metres) of the regional catchments selected for the Southeastern RBD: Anner, Barrow, Nore and Suir catchments.**



## **Western RBD**

### **Clare**

Area 702km<sup>2</sup>; Hydrometric station CORROFIN 30004

Comments: Velocity-area station with rock outcrop as control. Stable control. Very good rating over the entire flow range.

Topography: Generally a very shallow catchment; standard deviation in height of catchment, 20m. Average slope 2%.

Geology: Dominated by Rkc aquifer (Dinantian pure bedded limestones). Also small proportion of Ll aquifer (Dinantian Mixed Sandstones, Shales and Limestones, Dinantian Lower Impure Limestones). Small proportion of gravel aquifer in the catchment. Small proportion of extreme vulnerability in the catchment, mainly towards the outlet of the catchment. Main subsoil types include undifferentiated tills and Devonian Sandstone tills. Characteristics: 96% OPW channelisation, 61% pasture.

### **Moy**

Area 1977km<sup>2</sup>; Hydrometric station RAHANS 34001

Comments: Velocity-area station with natural control. Stable control. Good ratings.

Topography: Quite steep slopes around main lake in catchment. Standard deviation in height of catchment, 71m. Average slope 5%.

Geology: Complex mixed aquifers. Mainly karst Rk, Rkc aquifers and poorly productive Pl and Ll aquifer, trending mainly NE-SW. Small amounts also of productive fissured Rf and poorly productive Pu aquifers as well. Hydrometric station located in Rk aquifer. Much of the poorly productive aquifers are granites and Precambrian, Gneisses and Schists. The karst aquifers are composed mainly of Dinantian Pure Bedded Limestones. There are also gravels in the catchment. There is a large quantity of extreme vulnerability in the catchment. Subsoils are dominated by Blanket Peat and Devonian Sandstone tills. Characteristics: 41% OPW channelisation, 30% pasture, Lough Conn.

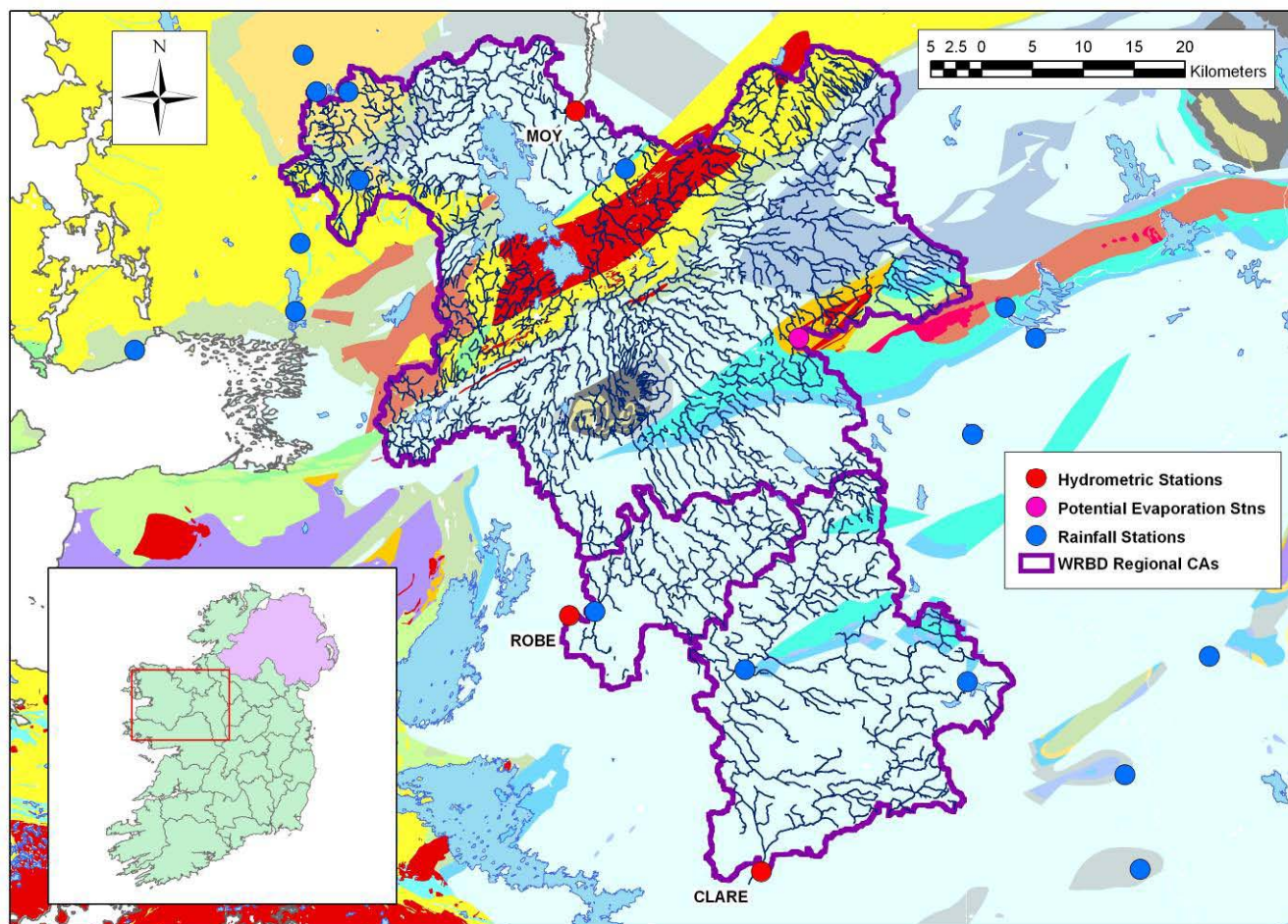
### **Robe**

Area 247km<sup>2</sup>; Hydrometric station Foxhill 30005

Comments: Velocity-area station with natural control. Stable control. Very good rating over the entire flow range.

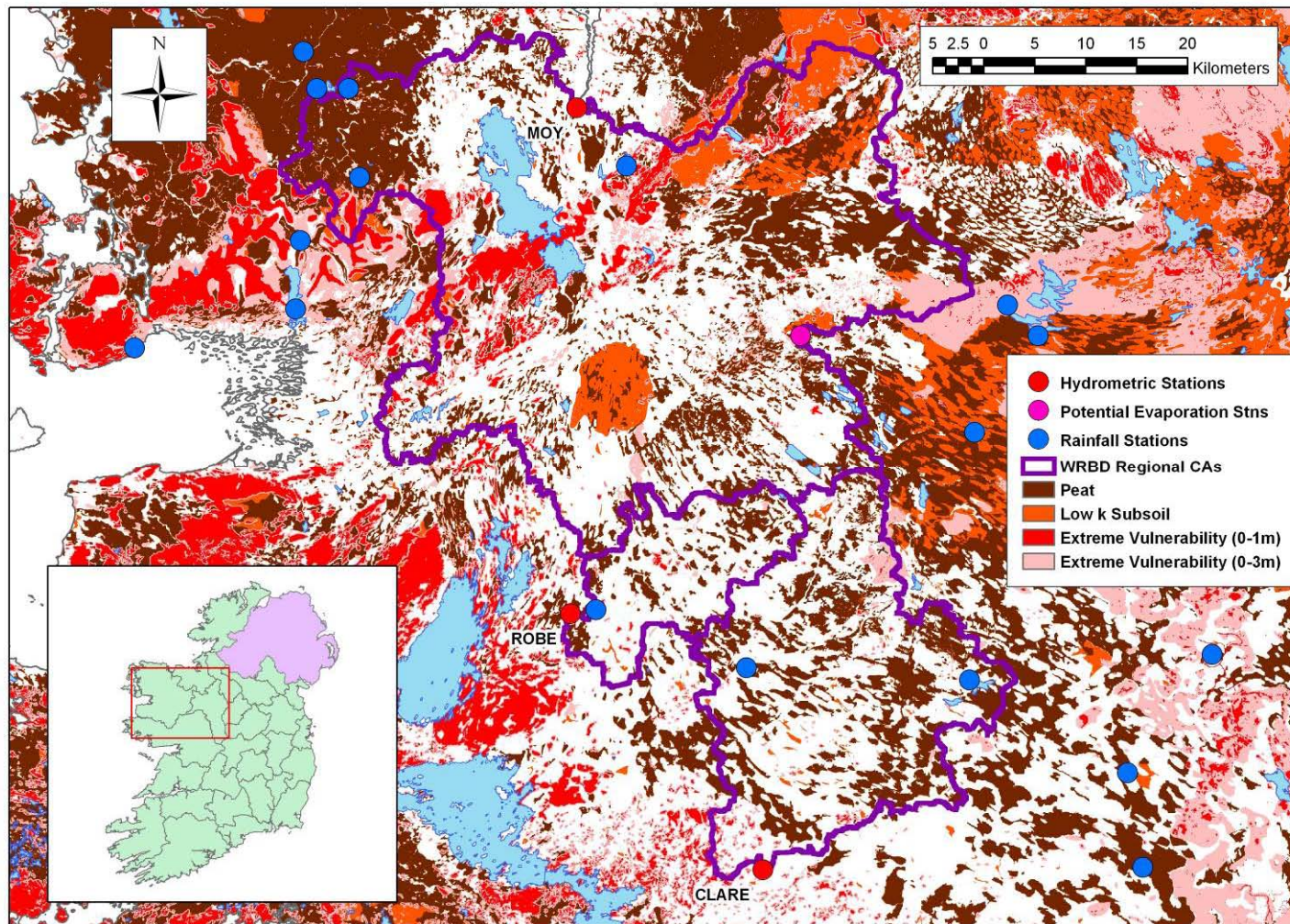
Topography: Shallow catchment. Standard deviation in height of catchment, 18m. Average slope 2%.

Geology: Dominated by Rkc aquifer (Dinantian Pure Bedded Limestones). Gravel aquifer in catchment as well. Some extreme vulnerability but not high percentage (4% <3m). Subsoils dominantly undifferentiated tills and Cut Peat. Characteristics: 90% OPW channelisation, 50% pasture.



**Figure 26. Rock units in the regional catchments selected for the Western RBD: Clare, Moy and Robe catchments.**





**Figure 27. Vulnerability and subsoils in the regional catchments selected for the Western RBD: Clare, Moy and Robe catchments.**



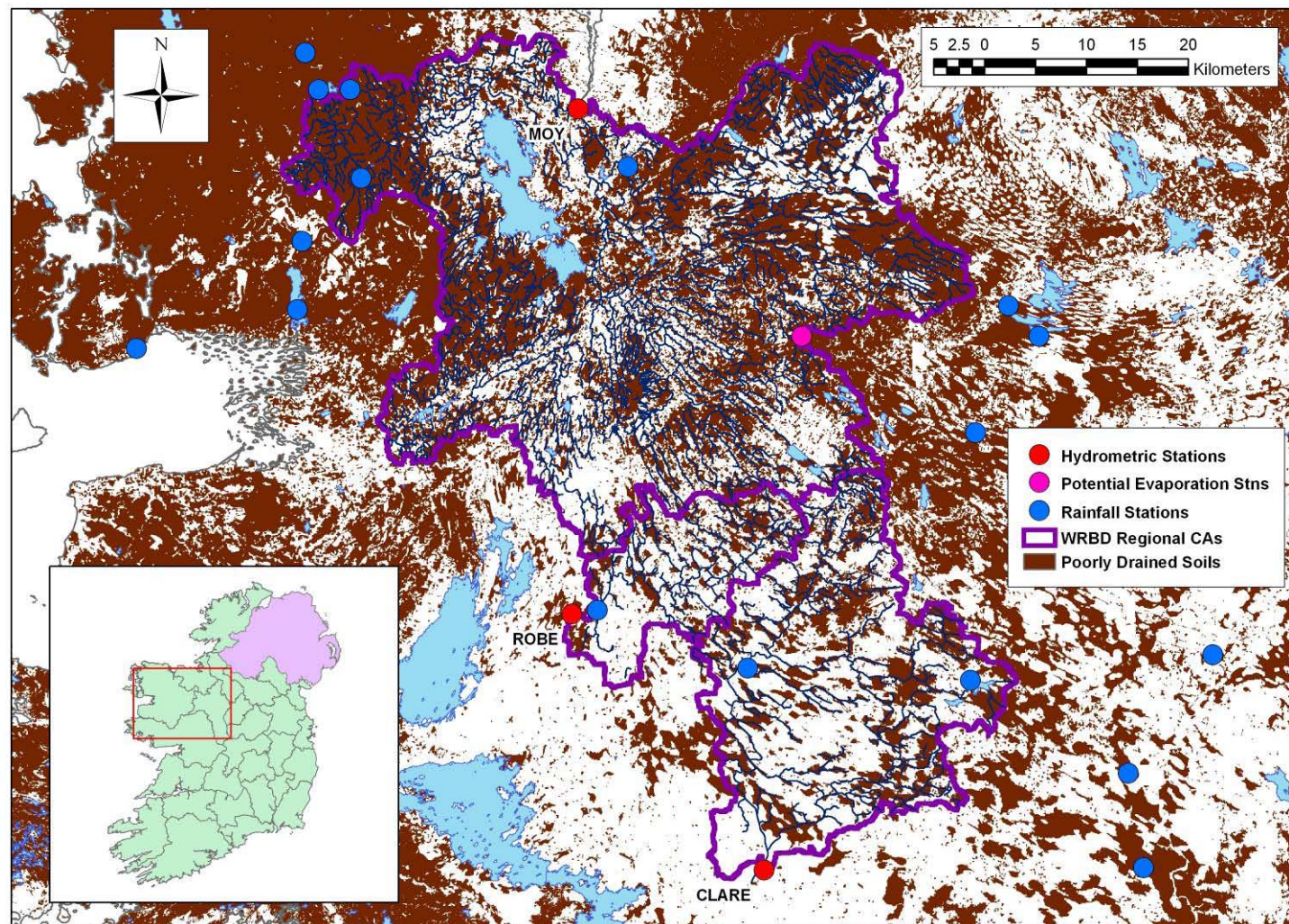
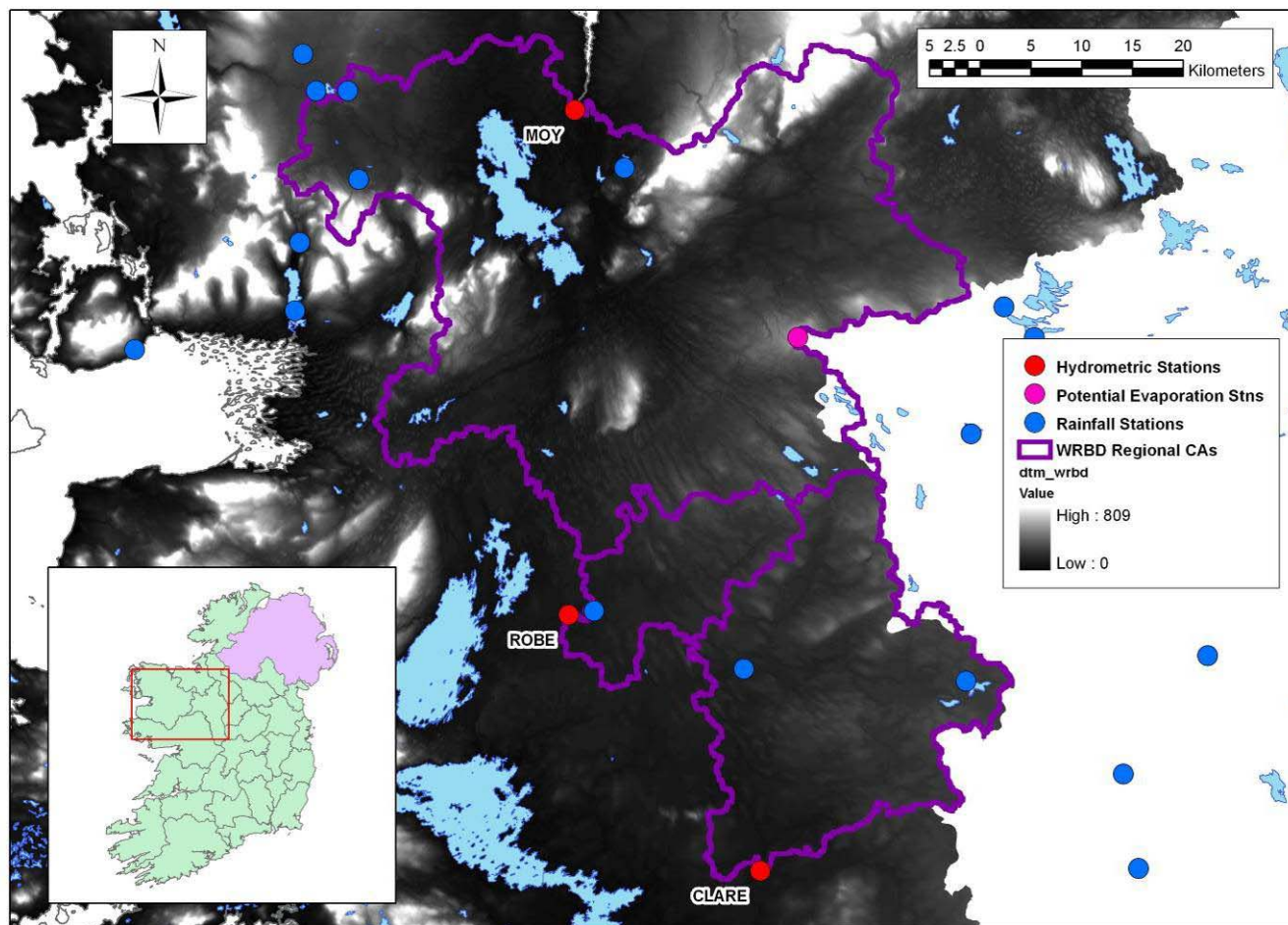


Figure 28. Poorly drained soils in the regional catchments selected for the Western RBD: Clare, Moy and Robe catchments.





**Figure 29. Digital Terrain Model (DTM in metres) of the regional catchments selected Western RBD: Clare, Moy and Robe catchments.**