Lower Wairarapa Valley Development Scheme – Proposed Adoption of a New Rating Classification

The benefits both direct and indirect (community area of benefit) which have been used to develop the new rating classification are described below and presented as a series of maps from within the Council's GIS.

The direct benefits are as follows:

(a) The Flood Extent (Map 1)

This is the area flooded by the 1947 flood event the largest flood on record. The opening at Lake Onoke was partially blocked. Based on the aerial photography, LIDAR information and an actual flood level marking on a bridge, this included all land below 13.6m (the Lower Valley datum), plus upstream of this area the zone of flooding on the floodplain. This layer regardless of location has been allocated 40 points.

(b) The Depth of Floodwaters (Map 1)

Up to 210 points have been allocated dependent on the difference between the 13.6m level and the ground level determined by the LIDAR survey. The depth of floodwaters is based on no stopbanks being present.

(c) The Flooding Protection Layer (Map 2)

The flooding protection layer proportions the points allocated for the flood hazard, being

- The floodability layer, 40 points
- The depth, up to 210 points.

The totals are reduced on a percentage basis dependent on the protection afforded by the scheme. The depth of water pre and post scheme has been compared using a hydraulic model. Upstream of the Barrage Gates the hydraulic model has been used to see what occurs with and without stopbanks. Downstream of the Barrage Gates the flood levels of the 1947 flood event have been used to show the benefit of the stopbanks constructed in this area.

The adjustments are shown on Map 2. They are made by reducing the points by a percentage. For example, where flood water has been diverted to floodways, a maximum of negative 10% has been allocated, i.e. points received from this layer has been deducted from the total points. Areas around Lake Wairarapa have benefited from the diversion and the operation of the Barrage Gates and the Lake Onoke openings. However, Lake Wairarapa is used to store floodwaters and so a

reduction has been applied. This layer then shows the flood mitigation benefits from the protection works developed by the LWVDS.

(d) Erosion Risks Flow Paths (Map 3)

All the rivers are vulnerable to erosion. The river edge has been mapped and assessed from an erosion perspective. Areas vulnerable to erosion on the edge of Lake Wairarapa have been identified. Flow paths where the river could break out from its current alignment have been mapped. Points have been allocated (see Map 3) varying from 15 to 300. Landowners adjacent to the river receive a direct benefit from scheme works to hold the river alignment by protecting the river edge and maintaining the river channel capacity.

(e) The Erosion Protection Layer (Map 4)

The points allocated for erosion and flow path hazards are reduced on a percentage basis dependent on the protection afforded by the Scheme. The Scheme provides different levels of management of erosion hazards to the tributaries and different reaches of the Ruamahanga River. The percentages reflect the different levels of protection provided by the Scheme (see Map 4).

(f) Drainage Benefits (Map 5)

The Scheme has resulted in lower water levels, whether it is lake or river levels. This has enabled various areas to be drained more effectively. Depending on the location 15 & 30 points have been allocated to cover such a benefits (see Map 5).

(g) Ponding (Map 6)

In some areas, water gets ponded behind the stopbank during flood times as the floodgates get closed, thereby causing pasture damage etc. Water can also be ponded along the Whakawiriwiri drain. This is a negative benefit to the land. Therefore 20, 40 and 60 points have been deducted respectively depending on the severity of ponding (see Map 6).

(h) Dredge Fillings (Map 7)

The initial construction phase of the LWVDS was to dredge upstream from Lake Onoke to the top of the Diversion. The dredge tailings have filled in low lying areas of the Lower Valley. The areas have been mapped as either gravel or silt. The landowners at these locations have received a direct benefit by having less low lying land with 40 points being allocated as shown on Map 7.

(i) Manganui Diversion and Realignment of other Watercourses (Map 8)

The Manganui Stream originally flowed to the south into the Ruamahanga River. During the development of the Scheme the stream was diverted such that it now flows into Allsops Bay in Lake Wairarapa. Landowners situated along the old course of the Manganui have gained a significant benefit with reduced flooding

and incidence of course change. Other watercourses have similarly been realigned. Points varying from 25 to 50 have been allocated as shown on Map 8.

(j) Risk (Map 9)

There are nearly 200 kilometres of stopbank within the LWVDS. Scheme works to protect and maintain the berm adjacent to the stopbanks form a major part of the annual works programme. Due to various reasons stopbanks have been constructed too close to the river edge in many areas. Over time it has become apparent that some stopbanks have become very vulnerable to erosion, slumping and erosion of the berm e.g. outside bends in Pukio area and wavelap erosion in the lower reaches of the Ruamahanga River. An assessment of the relative risk to the stopbanks has been completed by Gary Williams (Consultant). Points have been allocated, up to 48 in the high risk areas, and are shown on Map 9. The high risk areas have been identified as the areas requiring upgrade in a development works programme totalling $6.5 million over 8 years. Landowners living adjacent to the stopbanks or situated downstream of the stopbanks clearly gain benefit from the proposed works. A failure in the stopbank can have a significant effect on the integrity of the scheme.

(k) Dwelling Charge (Map 10)

The dwelling charge covers the fact that the roading network etc is better protected as a direct consequence of the scheme. Two charges have been developed $17.50 and $35 plus GST dependant on whether access is isolated by the operation of the floodways or location. These are plotted on Map 10. These are described as Sa and Sb rates in the funding impact statement of the Annual Plan.

(l) Community area of benefit (Map 11)

The indirect benefit is described as the community area of benefit from the public works. The public works of the scheme have enabled the general community to obtain additional opportunities for both the directly benefiting land and the land at the fringe of the directly affected area e.g. Western Lake road, the area upstream of State Highway 2, Battersea and on the eastern side of the scheme the land to the west of the Martinborough – Lake Ferry Road.

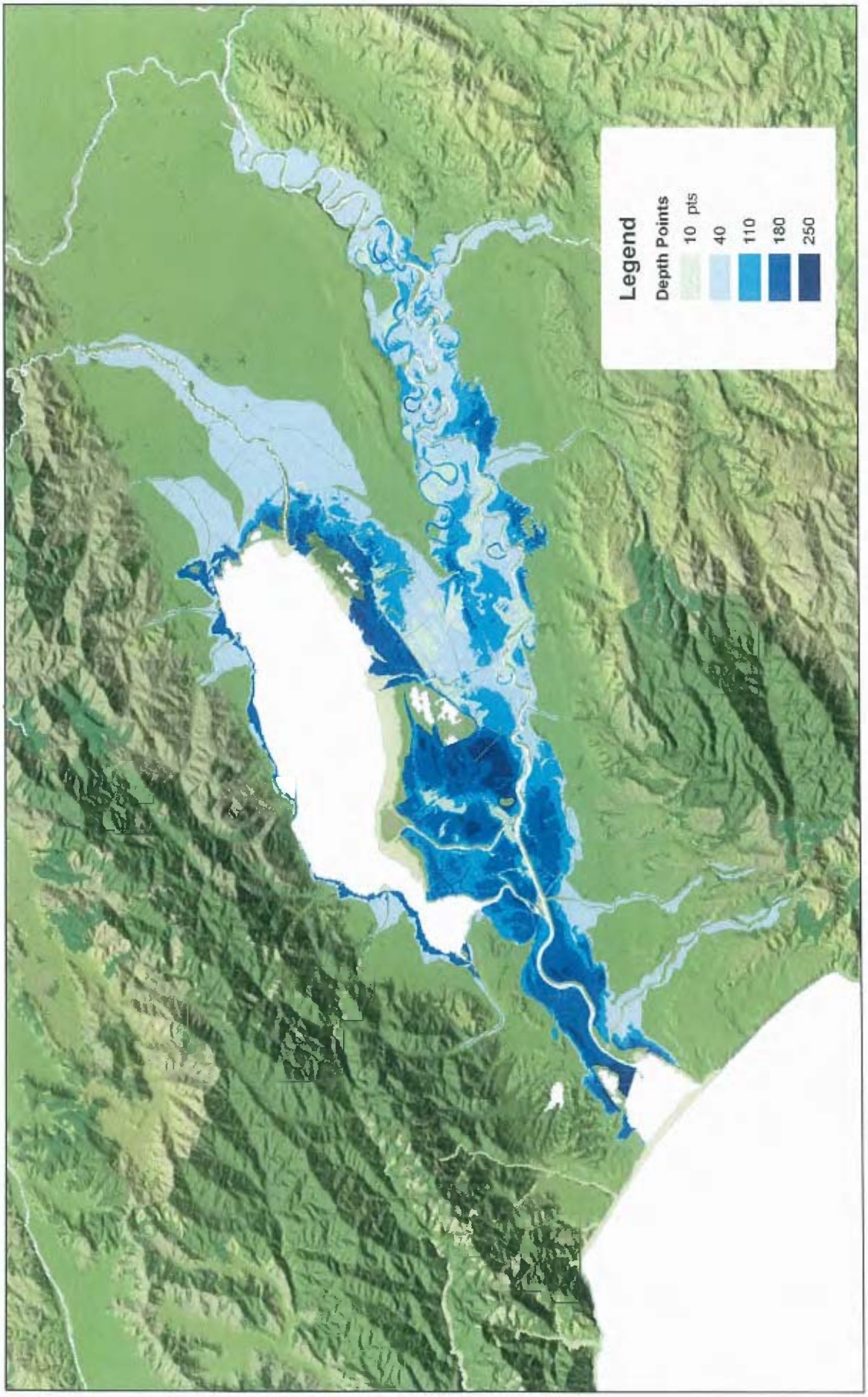
6 points have been allocated to this layer.

These indirect benefits cover the general social benefits arising from the scheme in general. It covers the advantages from higher levels of social activities to everyone, like retained or improved general services, like schooling, trade services, local transport firms. At the same time the lower residual risk mean there is a lower likelihood (less frequency) of disruption to the general social activities of the area. The boundary has been defined by the Scheme Classifier as the community of interest bounded by the 80 metres above sea level contour in some areas and property/road boundaries in other areas.

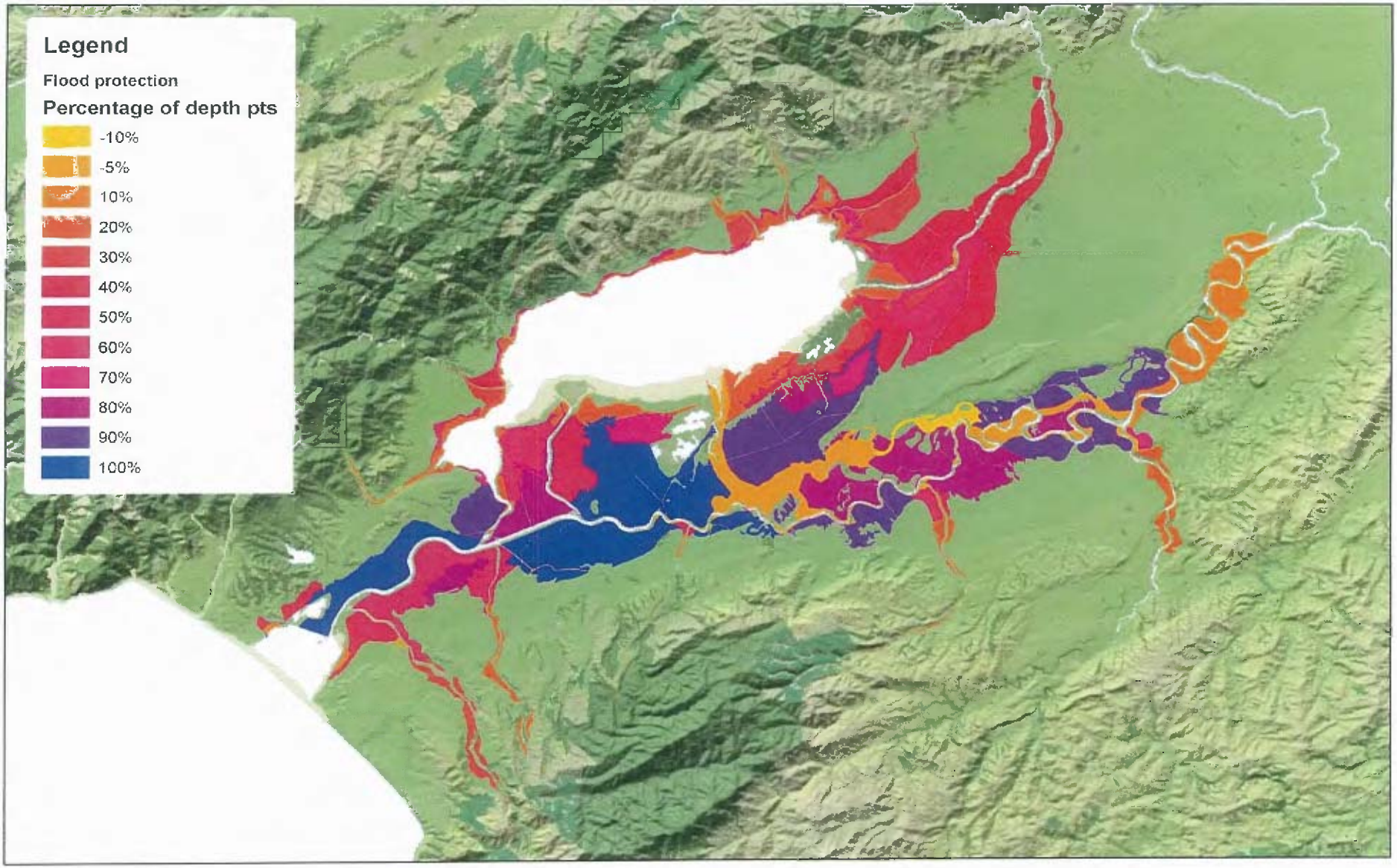
Any wetlands over 4,000 square metres have been excluded from the community area of benefit.

(m) The Final Classification (Map 12)

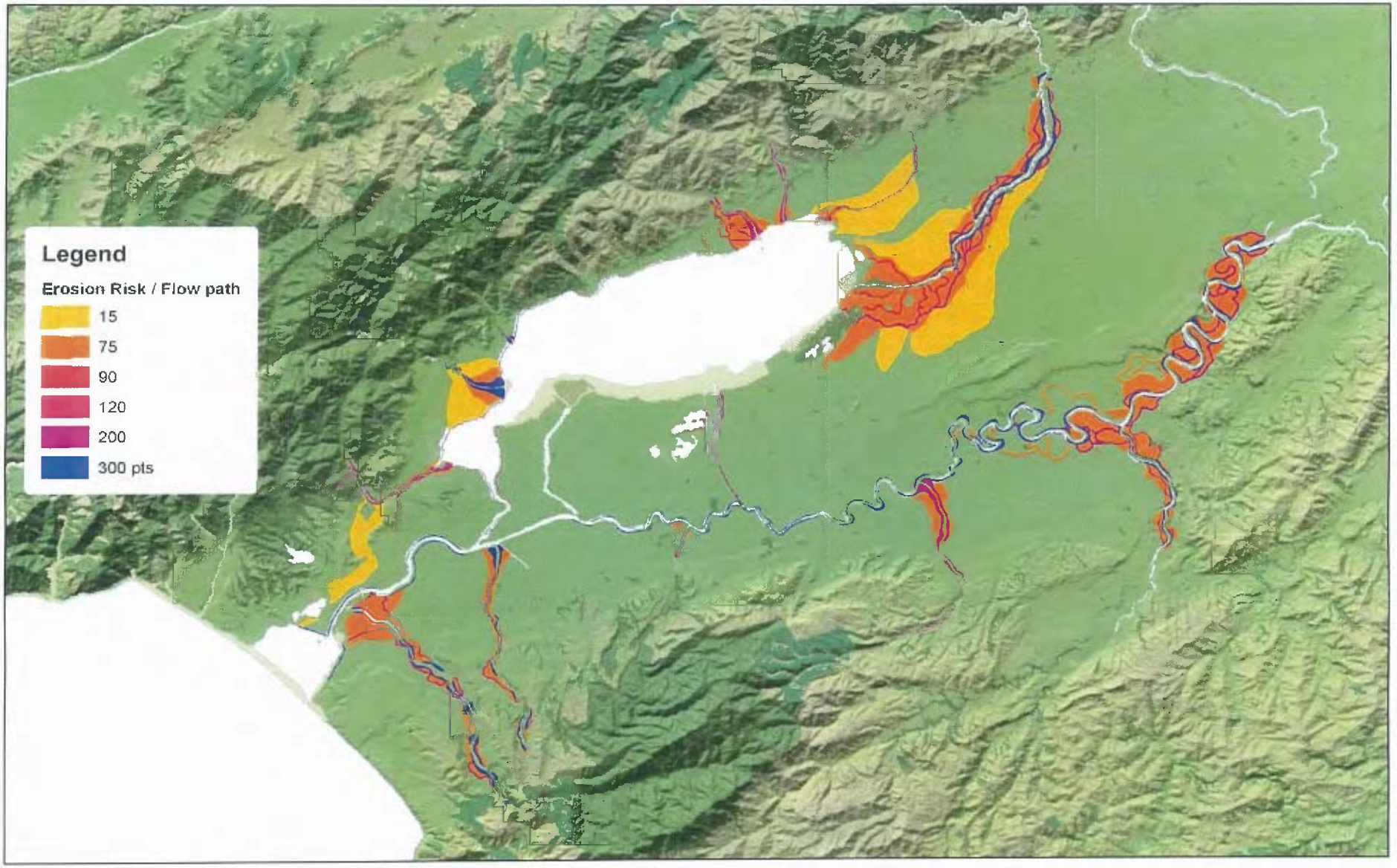
All the points allocated per hectare within each layer are totalled. The total number of points from the classification is then divided into the balance of the local share of funds required to fund the works in the scheme – half of the funds coming from the Greater Wellington's general rate (the balance being the total local share minus the funds collected from the dwelling charges). Thus a charge per area is derived. The points then being summed for each particular property. These are described as Class A rates in the Annual Plan.



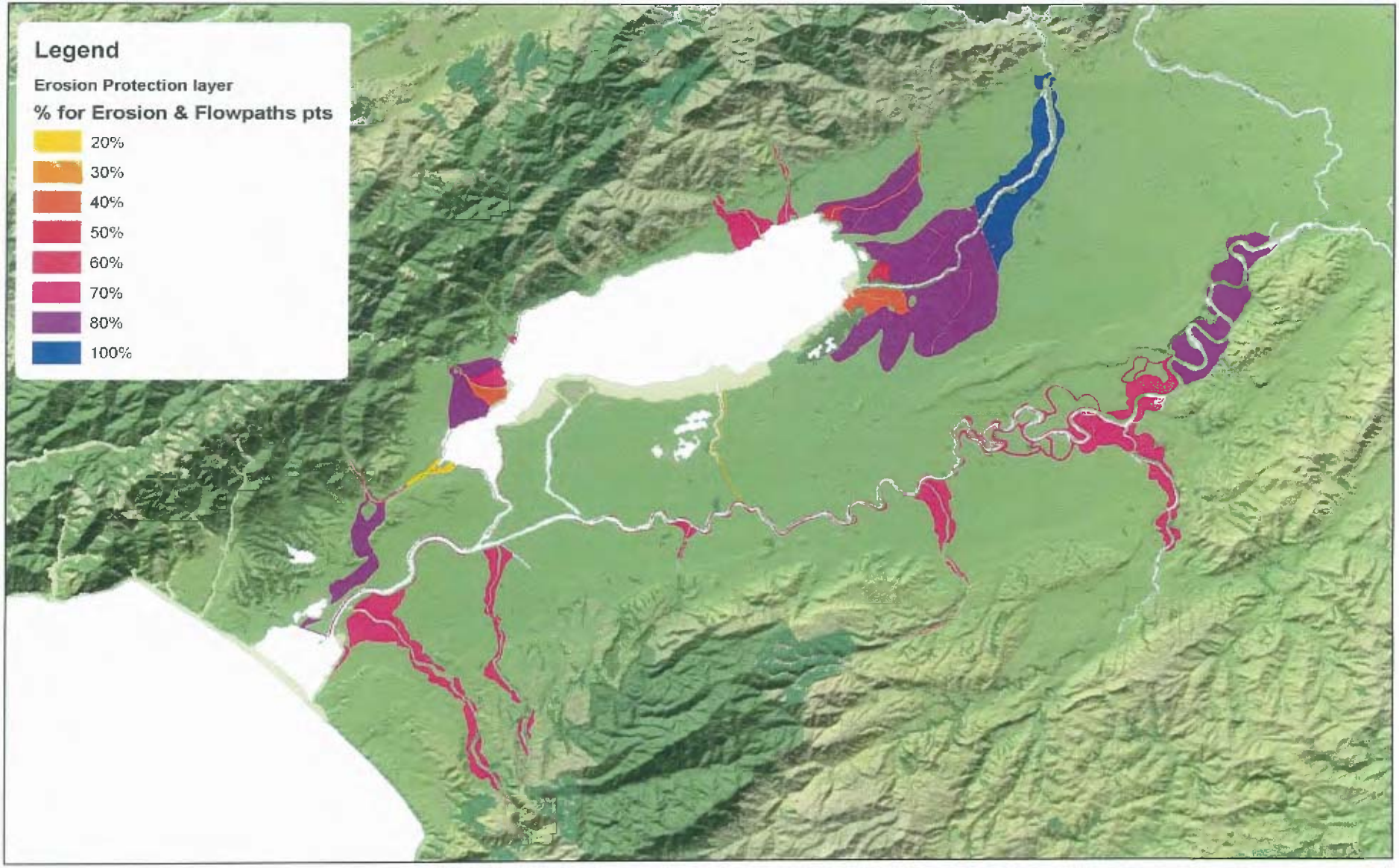
Map 1. Flood extent / Depth of floodwaters



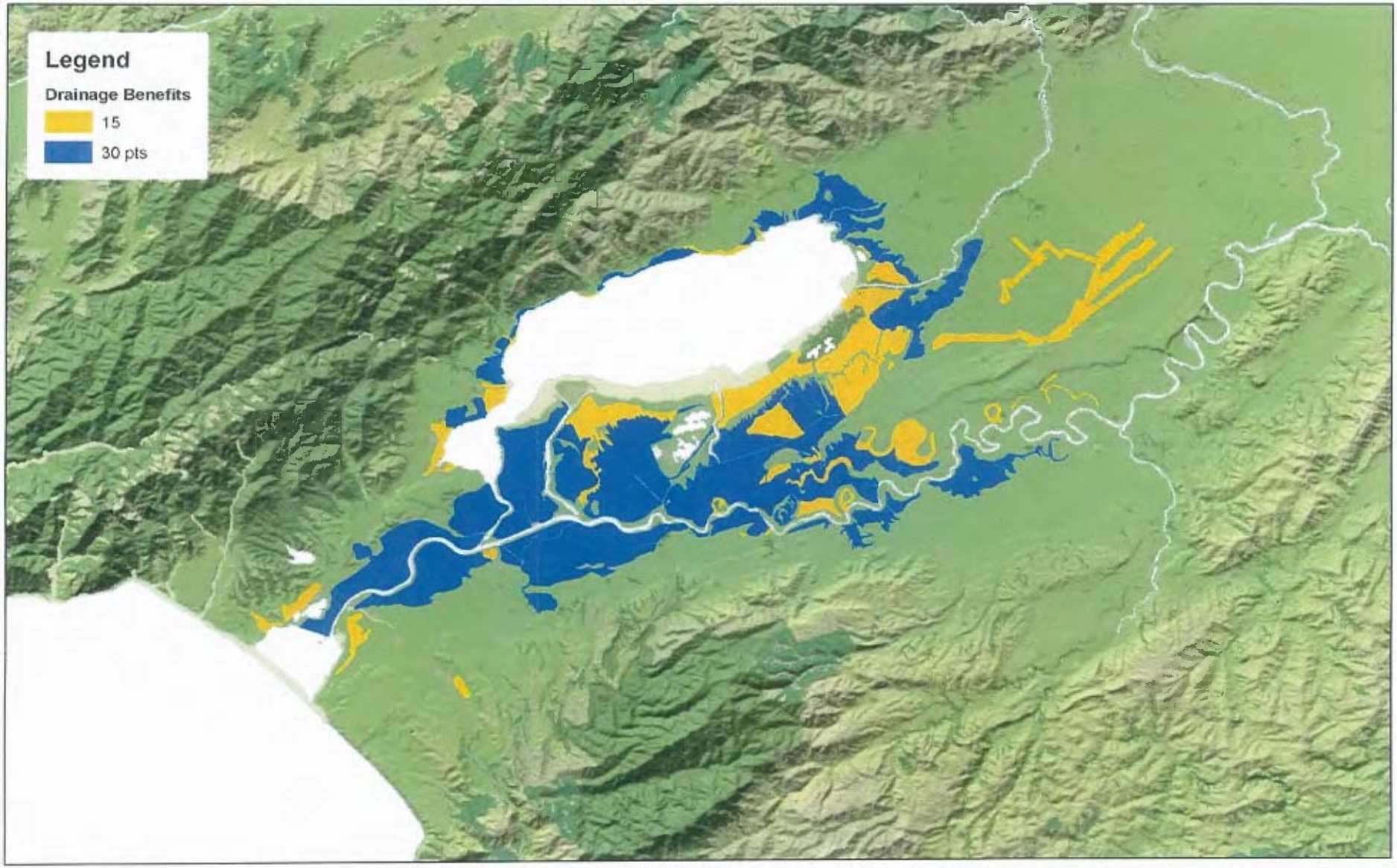
Map 2. The flooding protection layer



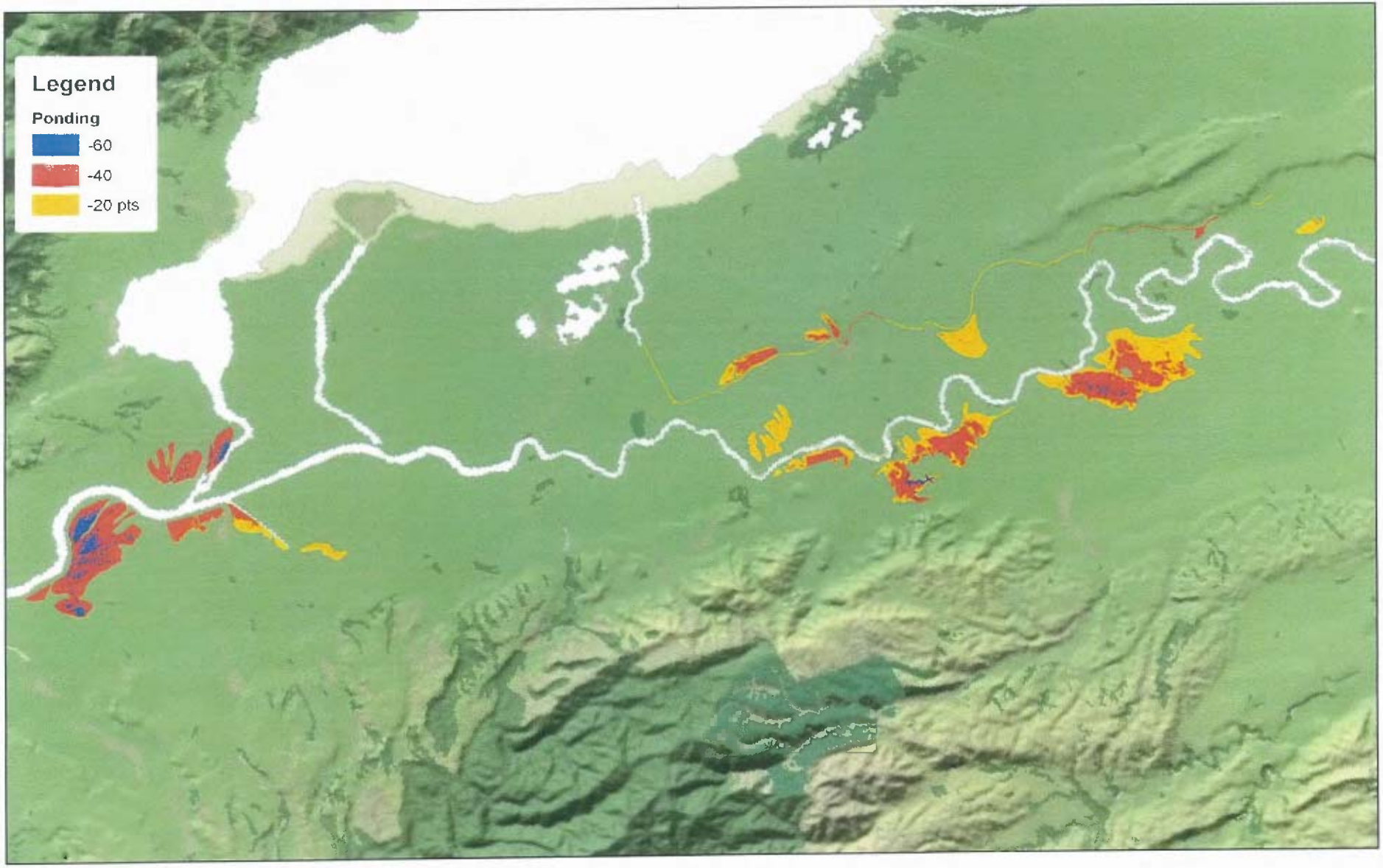
Map 3. Erosion risk / Flow paths



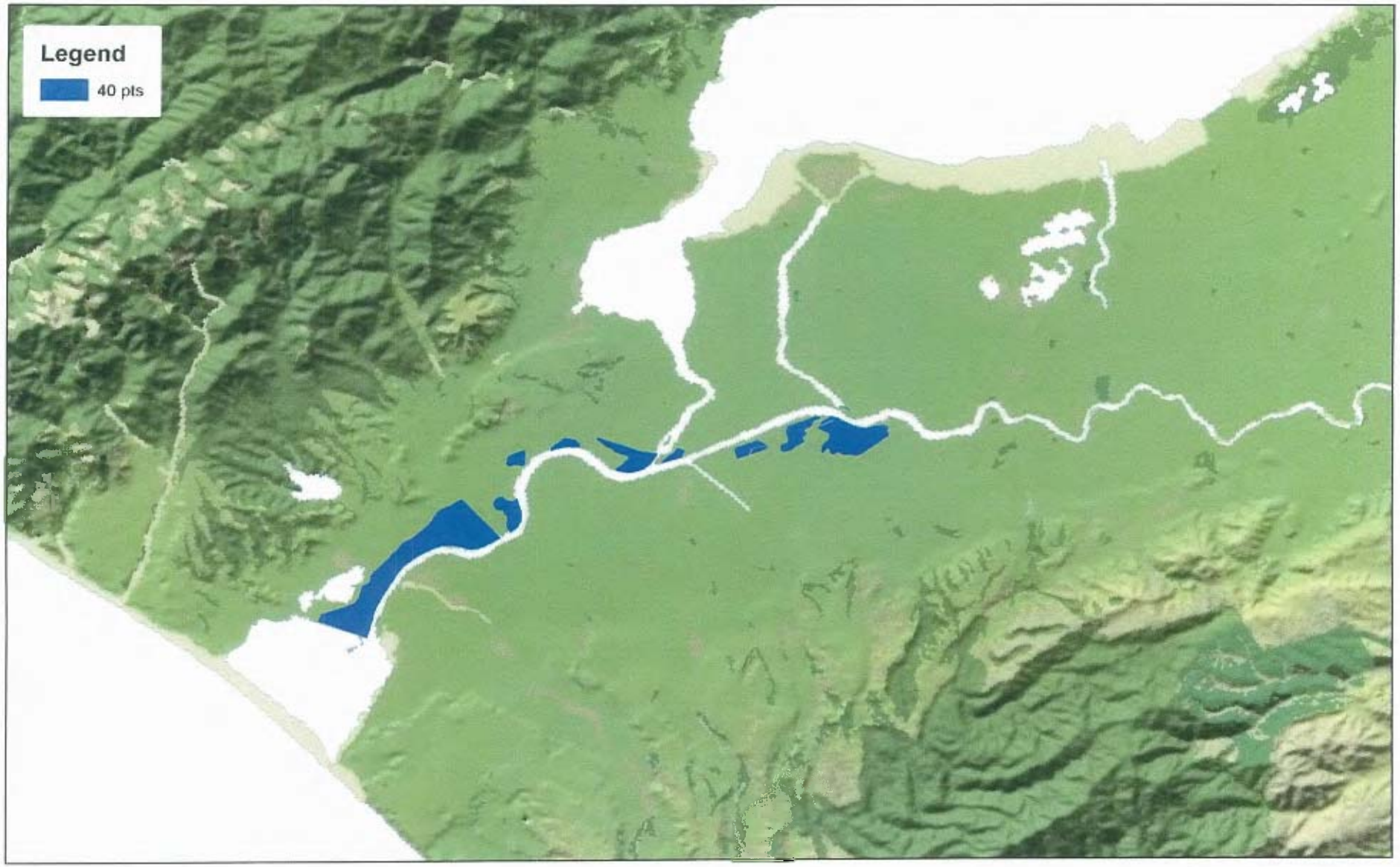
Map 4. Erosion / Flow Protection layer



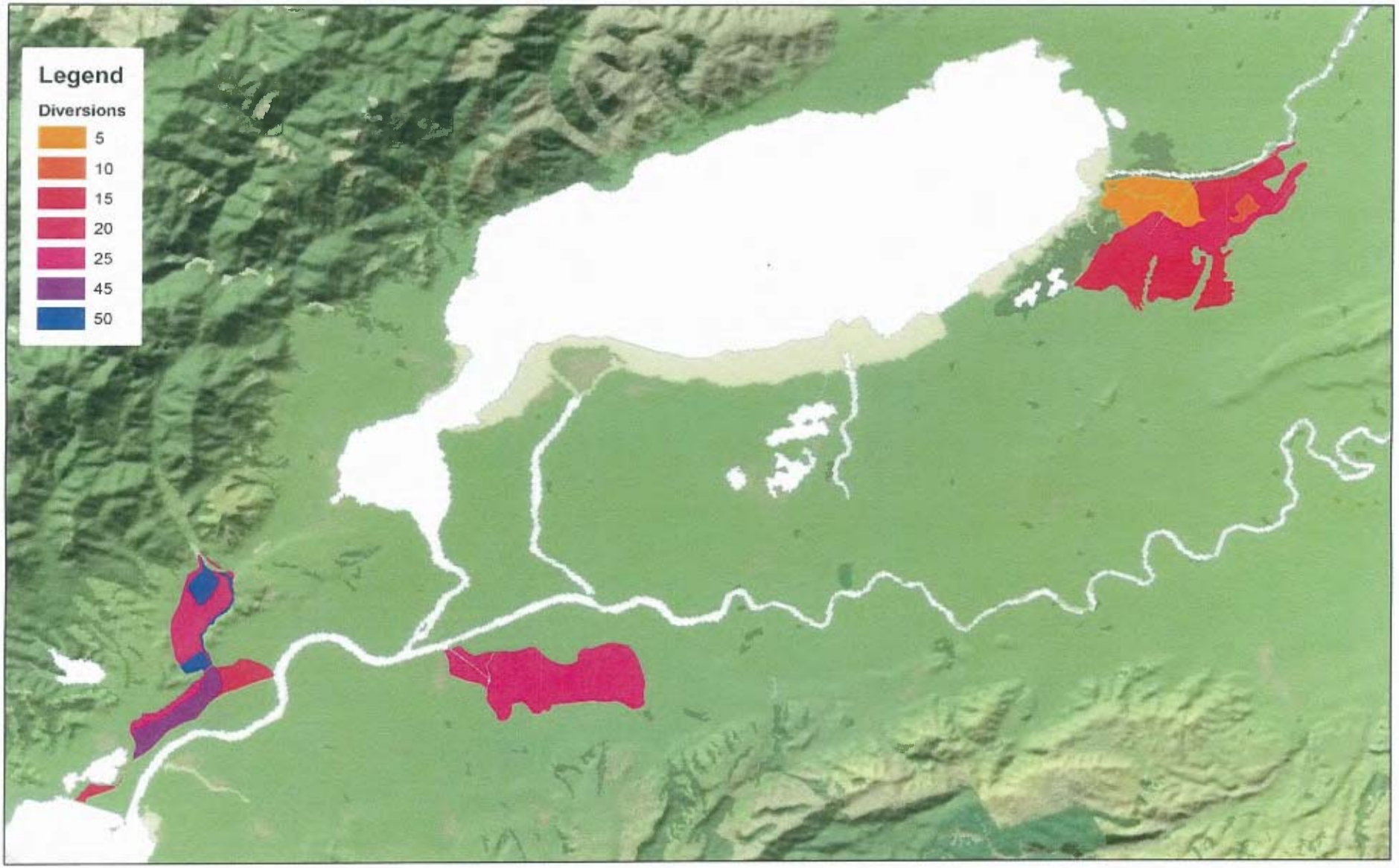
Map 5. Drainage Benefits



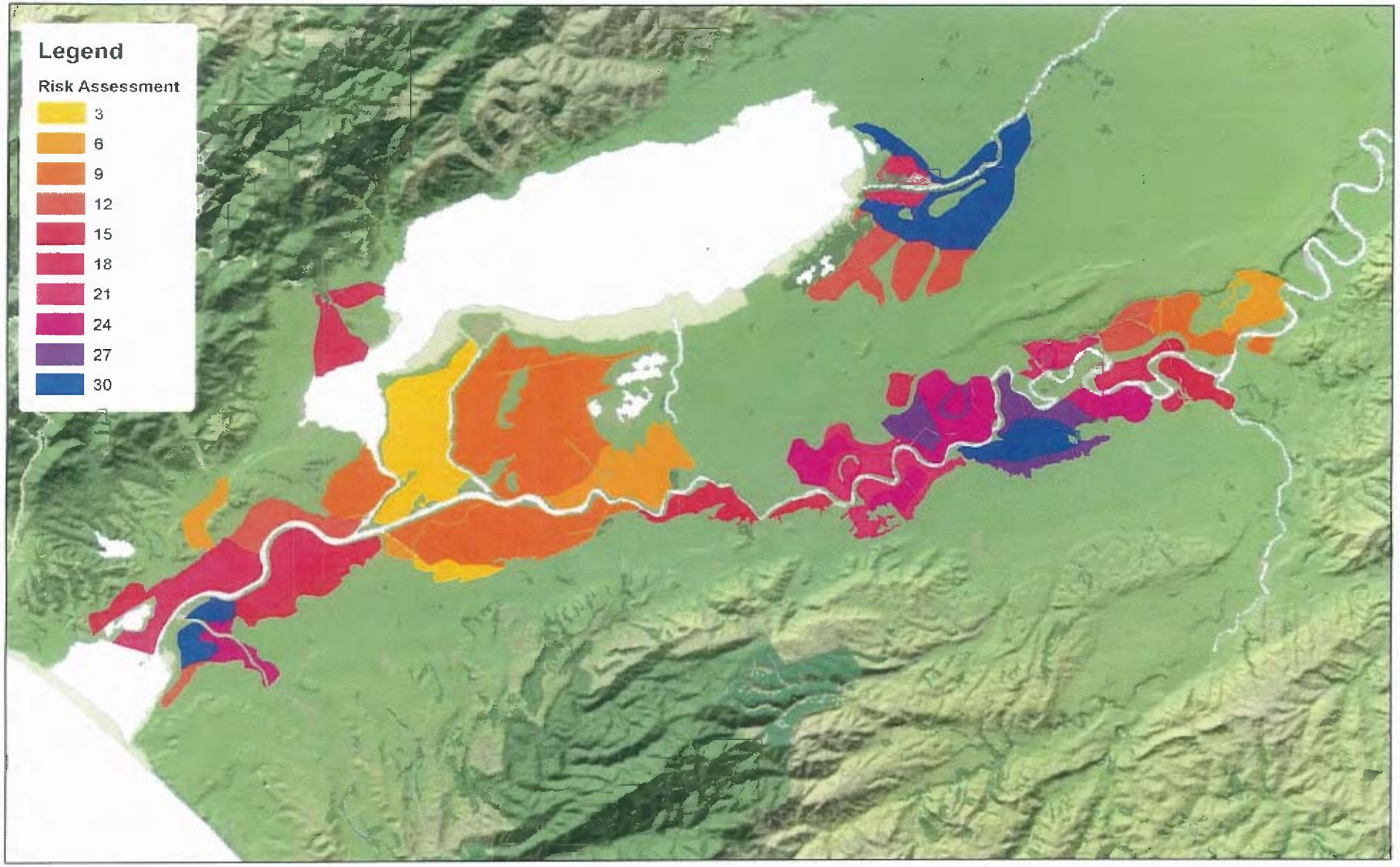
Map 6. Ponding



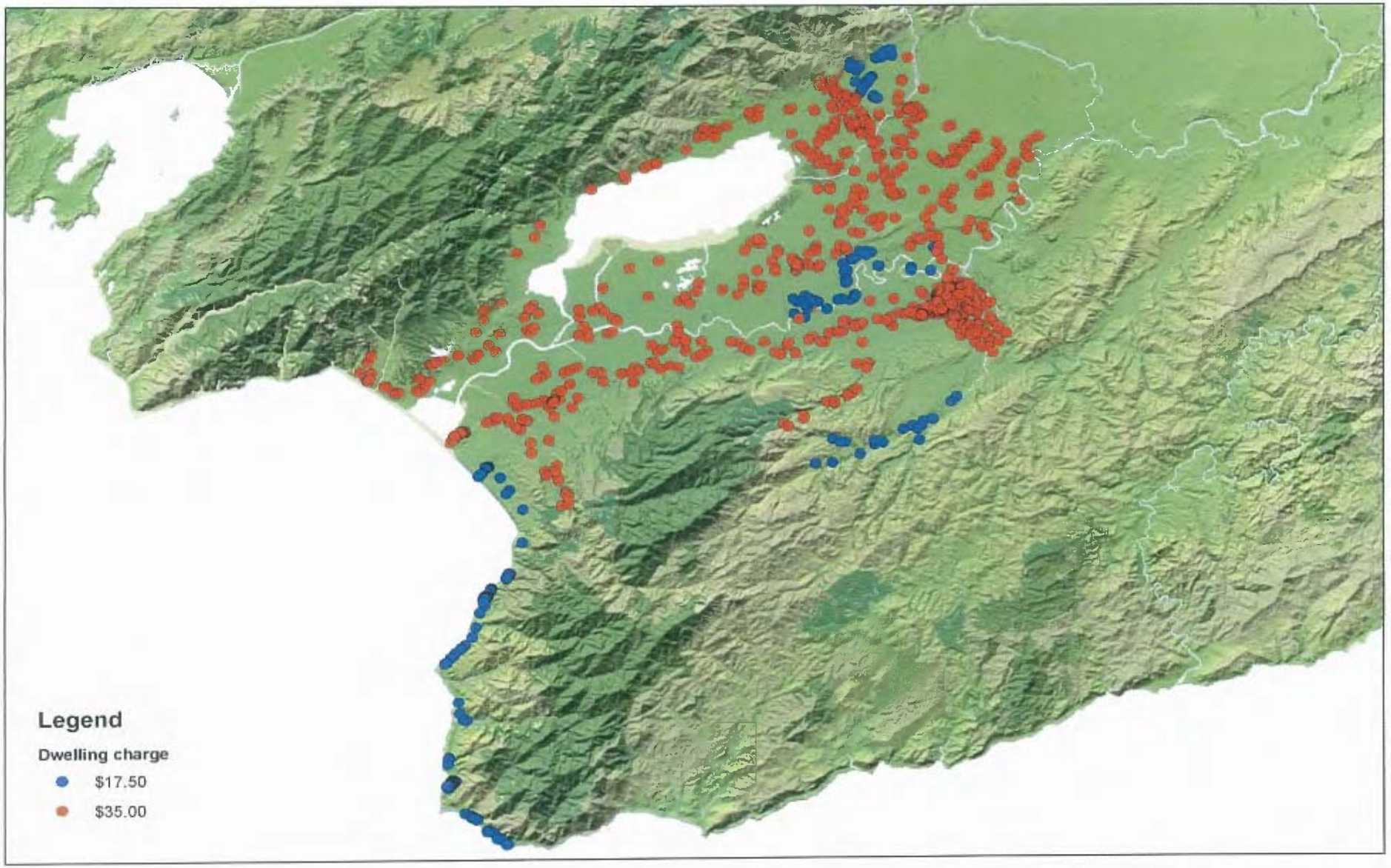
Map 7. Dredge Fillings



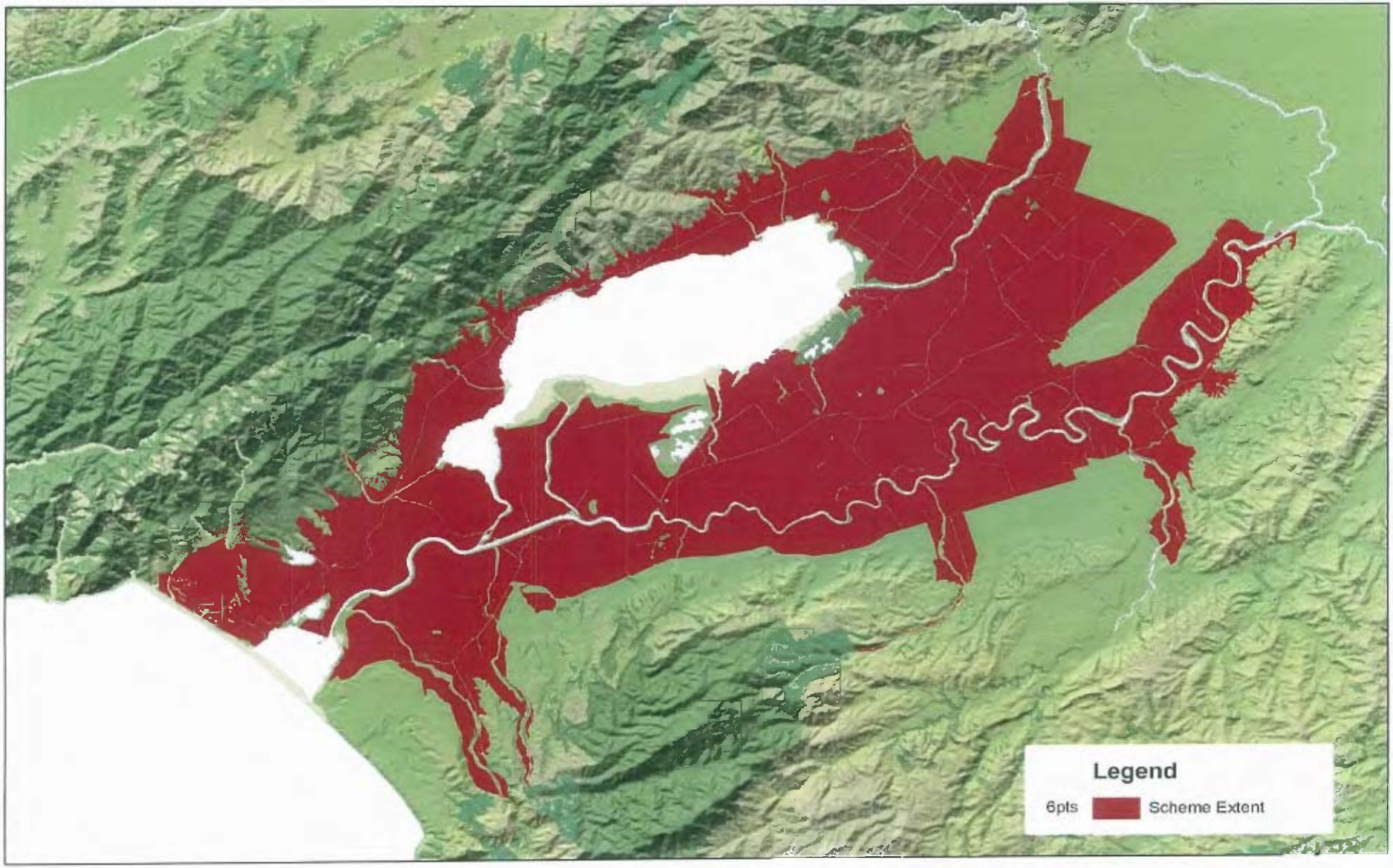
Map 8. Diversions and realignment of water courses



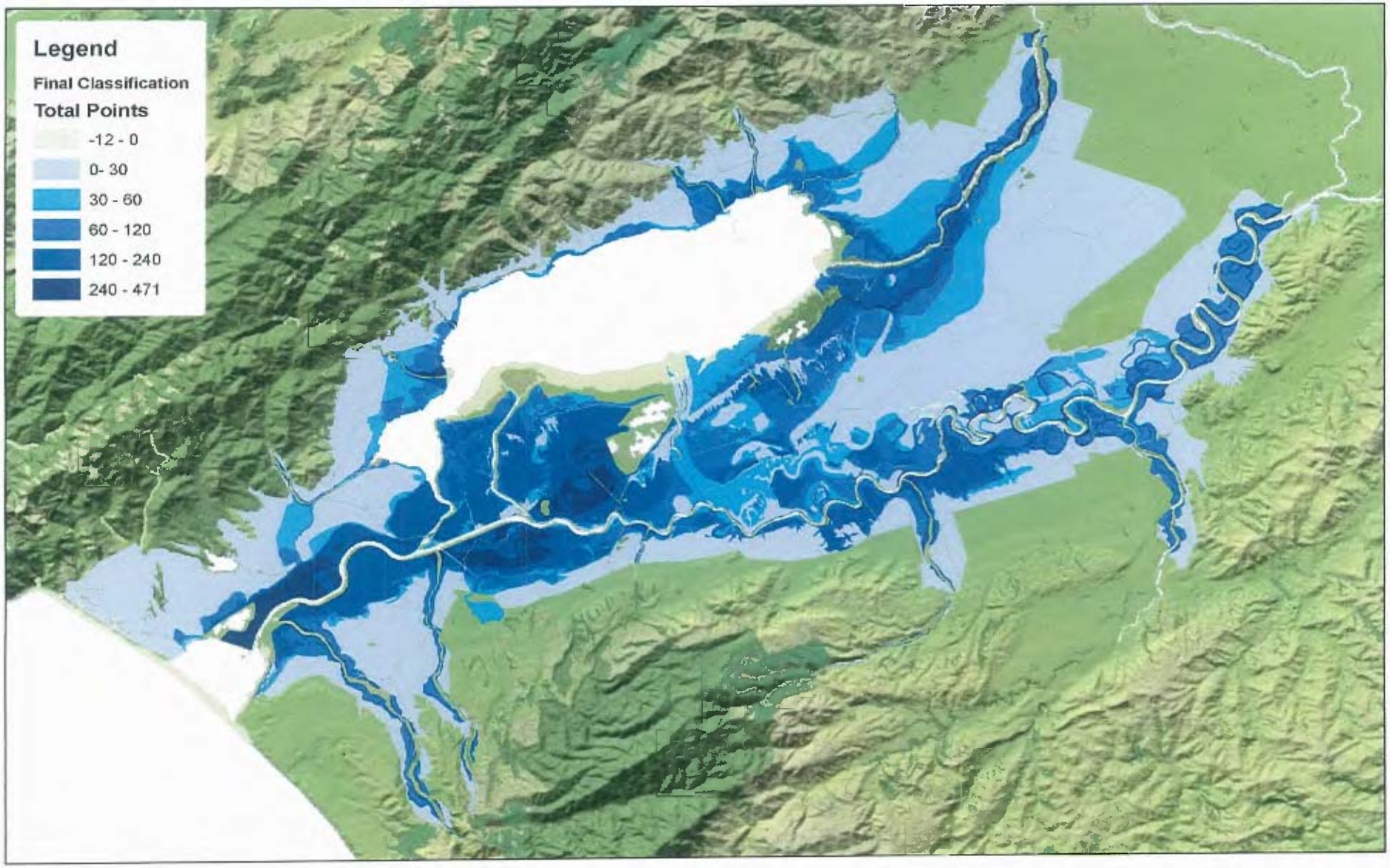
Map 9. Risk



Map 10. Dwellings



Map 11. Community area of benefit



Map 12. Final Classification