INTEGRATED CATCHMENT MANAGEMENT

for the

Water allocation in the Motueka Valley: is more science/research needed?

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lotneka River

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- Distinct hydrological sub catchments
- Water stress and previous work was in Lower Motueka Plains
- Increasing demand in Upper Valley
- Dynamic water allocation strategy







- Mapping done
- Series of terraces of differing ages
- Not all contain significant groundwater





• Complex relationship between runoff, groundwater and river flow



Tools to achieve a dynamic water allocation strategy

• Principally 3d groundwater flow model developed using FEFLOW software



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Tools to achieve a dynamic water allocation strategy

- Principally 3d groundwater flow model developed using FEFLOW software
- Linked to several other models
 - WATYIELD (water yield with land use change)
 - Crop irrigation model (calculating water seepage and extraction)
- Data gathering
 - Hydro-geological mapping (completed)
 - Piezometric surveys and low flows (completed)
 - Hillslope runoff and isotopic analysis (ongoing)



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 Contribution water to aquifer from hillslopes

- Currently steady state
- This year developing dynamic version with nonexplicit linkage to other models

Upwelling & flow loss

- Extra information from temperature profiling
- Fish congregation
- Scenarios with community engagement

