

MANAWATU RIVER ACCORD AND CLEAN-UP FUND

PROGRESS REPORT

Lucy Ferguson, Anna Regtejn, Jon Roygard, Maree Clark, Logan Brown

Horizons Regional Council, Palmerston North

Abstract:

Water Quality in the Manawatu Catchment has been subject to much debate over recent years particularly during the regional planning process known as the One Plan, consenting processes and the media. There are a range of views on the state of water quality and how it should be addressed. This paper focuses on the efforts of the Manawatu River Leaders' Forum in partnership with the Government's Fresh Start for Freshwater Clean-up fund to address water quality issues in the Manawatu Catchment.

In early 2010, Horizons invited key leaders with a stake in the future of the river to meet and discuss the state of water quality in the Manawatu Catchment. These leaders represented iwi across the catchment, local government, industry, farmers and environmental representatives. This meeting occurred in the midst of the One Plan process and following the Manawatu River being reported as one of the worst in the western world. Over the next six months they debated the issues from contrasting perspectives with a view of reaching an agreed solution. In August 2010, the Leaders' Forum signed an accord pledging to work together to improve the health of the Manawatu River. The Accord set out a focus, goals, and vision for the Manawatu River and, most importantly, committed the leaders to a path of action. The group continued its work and in June 2011 launched an Action Plan to the community that contained over 130 volunteered actions.

In 2012, the Manawatu River Leaders' Forum received \$5.2 million from the Government's Fresh Start for Freshwater Clean-up fund. This assisted toward implementation of a suite of projects totalling over \$30 million. The further funding for the project was contributed by Tararua, Manawatu and Horowhenua District Councils, landowners, DairyNZ and Horizons Regional Council. The projects involve upgrading sewage treatment plants, land-based disposal, environmental farm plans, stream fencing, habitat restoration and supporting community-based initiatives.

This paper discusses the scientific background to the selection of the projects and how they complemented other work in the catchment. Further it reports on the progress of the projects and the outcomes from these.

Introduction:

The Manawatu River Leaders Accord's overarching goal is to improve the Manawatu River, the mauri (lifeforce) of the Manawatu River Catchment, such that it sustains fish species, and is suitable for the contact recreation, in balance with the social, cultural and economic activities of the catchment community. This goal represents a community opportunity to develop leadership in catchment improvement and capture the social and economic benefits of such leadership.

The following further more specific goals set out in the Accord:

1. The Manawatū River becomes a source of regional pride and mana.
2. Waterways in the Manawatū Catchment are safe, accessible, swimmable, and provide good recreation and food resources.
3. The Manawatū Catchment and waterways are returned to a healthy condition.
4. Sustainable use of the land and water resources of the Manawatū Catchment continues to underpin the economic prosperity of the Region.

These goals were the focus during the development of the Manawatu River Leaders Accord Action Plan (Horizons Regional Council, 2011) where various groups and agencies volunteered actions. In total over 130 actions were volunteered for the Action plan that was released in June 2011. Shortly after the Action Plan was released, the funding round for Central Government's Freshwater Clean-up Fund was initiated. This fund provided a further opportunity to complete projects to achieve the goals of the Manawatu River Leaders Accord (Horizons Regional Council, 2010).

Project selection for the Manawatu Clean-up Fund programme

Developing the Freshwater Clean-up Fund programme was a different process to that of the voluntary action plan process. The Freshwater Clean-up Fund had strict criteria including requirement around the projects being for physical works (i.e. not monitoring or research) and that co-funding from within the region was required. The project selection process involved consideration of how the projects aligned and advanced the accords goals, meet the funding criteria, were able to complement, accelerate or enhance existing work, based on scientific information about water quality in the catchment.

A key part of selecting the projects was the use of Horizons water quality monitoring information. Water quality monitoring in Manawatu Catchment was significantly upgraded in July 2007 with the monitoring programme measuring upstream and downstream of 17 major point source discharges as a part of 63 sites in the catchment monitored on a monthly basis. This monitoring information combined with the water quality target information from the One Plan provided useful information to identify areas of poor water quality and the contributors to this. Figures 1 to 6 show this type of water quality information for the 63 monitoring sites in the Manawatu Catchment from July 2007 to December 2010. Several point sources discharges are notable in these figures (as annotated in the Figures). Projects to upgrade Dannevirke, Pahiatua, Woodville, Kimbolton, Feilding and Shannon wastewater plants were selected as a part of the Clean-up Fund project.

Bacteria levels throughout the catchment at low flows were also noted to be high in some areas where there were no known point source discharges. Stream fencing initiatives were targeted to these areas (Figure 1). The Clean-up Fund stream fencing project focussed on accelerating work on sheep and beef farms and dairy runoffs. This was to complement work underway on dairy farms and the work with hill country sheep and beef farmers through Horizons Sustainable Land Use Initiative (SLUI). It is noted that during the project monitoring of some areas was intensified to obtain better spatial delineation of the areas contributing to the *E. coli* results and works were targeted accordingly.

Native fish (including whitebait) are a key focus of the accord. To target works toward fish populations works included riparian planting, opening up fish habitat through repairing barriers to fish passage and restoring spawning grounds. This work drew heavily on information collected by the Regional Council and others on fish populations in the catchment. This was complemented with regional council staff completing extensive stream walking to identify fish barriers in key catchments for fish populations.

Environmental Farm Plans work with Dairy Farmers in the Mangatainoka catchment was selected as a project in response to the high nitrogen concentrations identified in that catchment (Figure 4). Community projects were also included in the application to enable community participation particularly with a focus on the goal of the Manawatu becoming a source of regional pride and mana.

Two further projects were originally submitted to MfE but not included in the final funded package as they were outside the scope of the funding criteria. These were community monitoring and investigation of a combined large scale land treatment system for several towns in the catchment.

In summary the eight projects funded in the Manawatu Clean-up Fund work programme were:

1. Tararua District Council – upgrades to Dannevirke, Pahiatua and Woodville sewage treatment plants
2. Manawatu District Council – upgrades to Feilding and Kimboltons sewage treatment plants
3. Horowhenua sewage treatment plant – purchase of land for a land treatment system
4. Stream Fencing
5. Native Fish Habitat Improvement
6. Whitebait Habitat Improvement
7. Environmental Farm Plans on Dairy Farms
8. Community projects

Progress report:

Progress on the Manawatu River Leaders Accord, Action Plan and Clean-up Fund projects has been reported in a number of ways. In April 2014, a full progress report on the Action Plan was completed and reported back publically (Horizons 2014a). Further, an independent science report on the state and trends of water quality in the Manawatu catchment was also produced (Snelder et al. 2014). A further public report back on progress was provided in November 2014 (Horizons 2015).

As at February 2015, the Clean-up Fund project for the Manawatu has been extended. Originally scoped for completion in two years the project was extended to July 2015 to enable work by Tararua District Council to be completed (including new work not originally within the funded work programme) and for further iwi-led community involvement work to be undertaken.

Significant progress has been made by the Tararua, Manawatu and Horowhenua Districts with upgrades to their sewage treatment plants including new lining of the ponds, new aerators, filters and clarifiers installed and land treatment options for the effluent being investigated by each. The preparation for land treatment for both Shannon and Feilding plants are well underway including the consenting processes.

The stream fencing project has achieved 177km over the two year period of the Clean-up Fund, focusing primarily on sheep and beef properties. The total budget for this project totalled just under \$1.5 million dollars of which landowners throughout the Manawatu contributed over 55% of the costs. A significant amount of this work was targeted to the Makakahi catchment (a sub catchment of the Mangatainoka) due to high levels of *E. coli* and recent water quality information is starting to show some encouraging results in this area.

One of the six key points of the action plan is to protect native fish habitat and both the native fish and whitebait habitat projects addresses this goal. These two projects combined achieved the planting of 66,420 native riparian plants, 12 fish barrier remediation projects to open up more habitat and a further 31 km of fencing to exclude stock and enhance native fish habitat. In March 2013, the largest known whitebait spawning site in New Zealand was found on the main stem of the Manawatu River with help from experts in this field including Dr Mike Hickford (Canterbury University), Martin Rutledge (DOC) and Hans Rook (DOC).

The environmental farm plan project completed plans for 98 dairy farms. The plans included detailed soil mapping and land use capability assessment, documentation of the farm system and nutrient budgets for the farms including the run-off blocks. Further detail of this project can be found (Hughes et al. 2015) that is part of this same conference proceedings.

The community project plan enabled the public and community groups to get involved with Clean-up Fund efforts also. Eleven different community groups completed fourteen projects. These projects included riparian planting projects, walkway establishment at a popular swimming spot and signage along the river.

Next Steps

With the Manawatu Clean-up Fund project nearing completion and many of the actions in the Action Plan now underway or complete, the Manawatu River Leaders Forum have embarked on a process to refresh the Action Plan. The second iteration of the Action Plan is underway in 2015, with a first step being a gathering of Science and Matuaranga Maori Advisory Panel in March 2015. This group has been tasked with providing an update on the state of the river and to provide recommendations into the next iteration of the action plan. This work will be presented to the Manawatu River Leaders at their April/May meeting.

References:

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E.coli concentration at low flow

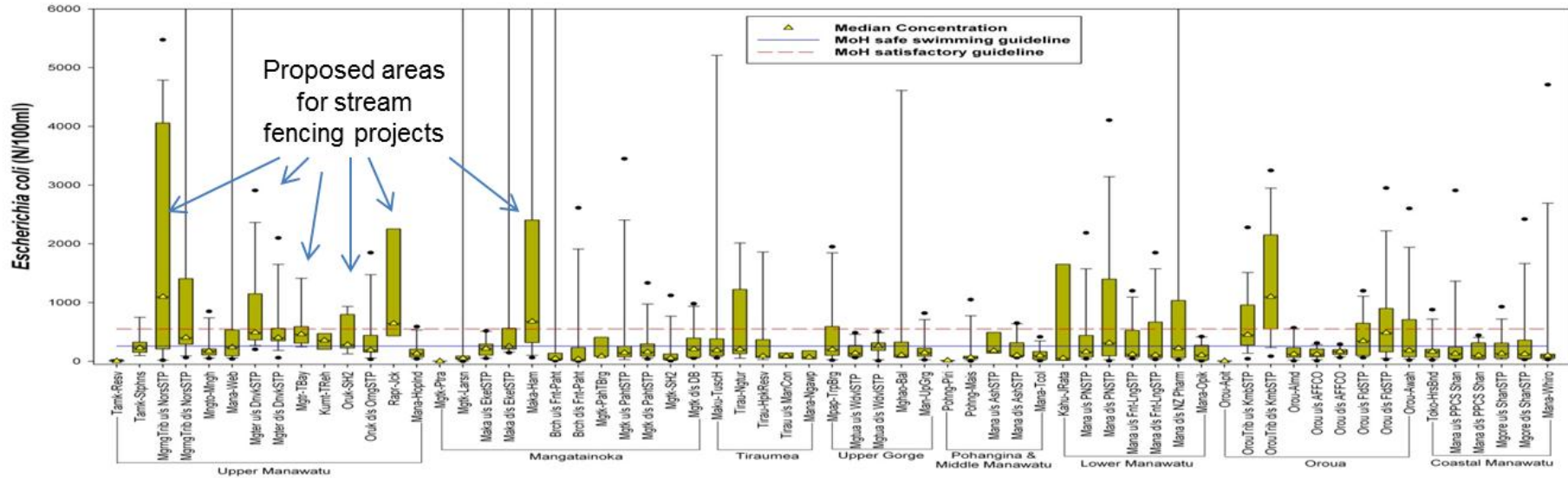


Figure 1: Concentrations of the bacteria *Escherichia coli* (*E. coli*) at low flows at the 63 monitoring sites in the Manawatu catchment from July 2007 to December 2010. The red lines show the contact recreation water quality targets for *E. coli* (550 MPN/100 ml and 260 MPN/100ml). Values below 550 MPN (dashed red line) are considered satisfactory for swimming, values below 260 MPN/100 are considered safe for swimming. The triangles show the average concentrations recorded.

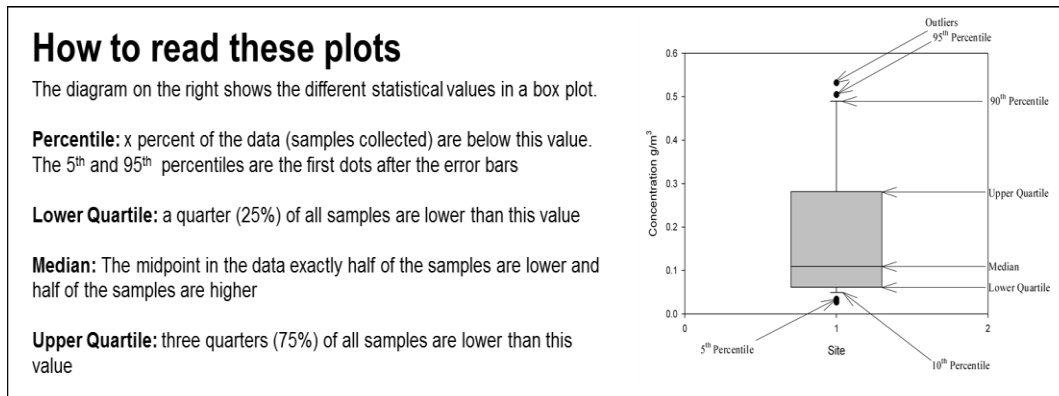


Figure 2: Overview of the statistics presented in the various box plots presented in this paper.

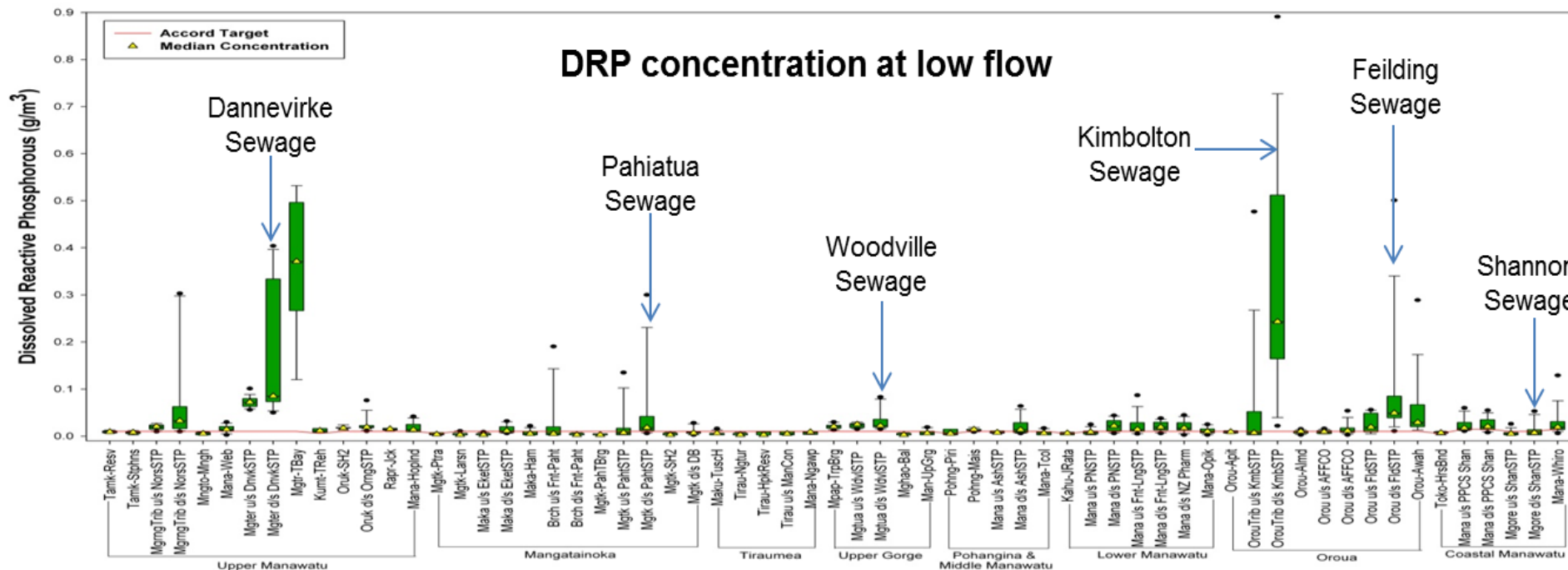


Figure 3: Concentrations of dissolved reactive phosphorus (DRP) at low flows at the 63 monitoring sites in the Manawatu catchment from July 2007 to December 2010. The red line shows the One Plan water quality targets for DRP. The triangles show the average concentrations recorded.

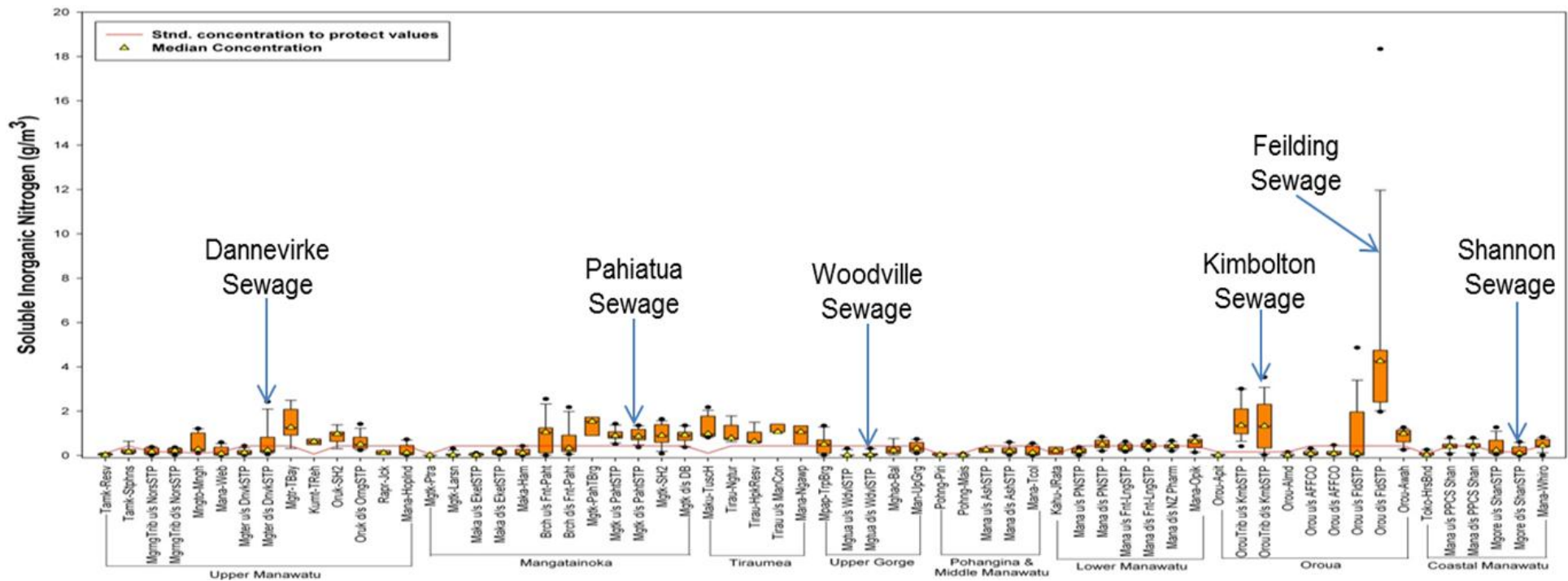


Figure 4: Concentrations of soluble inorganic nitrogen (SIN) at the 63 monitoring sites in the Manawatu catchment from July 2007 to December 2010 during low flows (25% of the time). The red line shows the One plan water quality targets for SIN. The triangles show the average concentrations recorded.

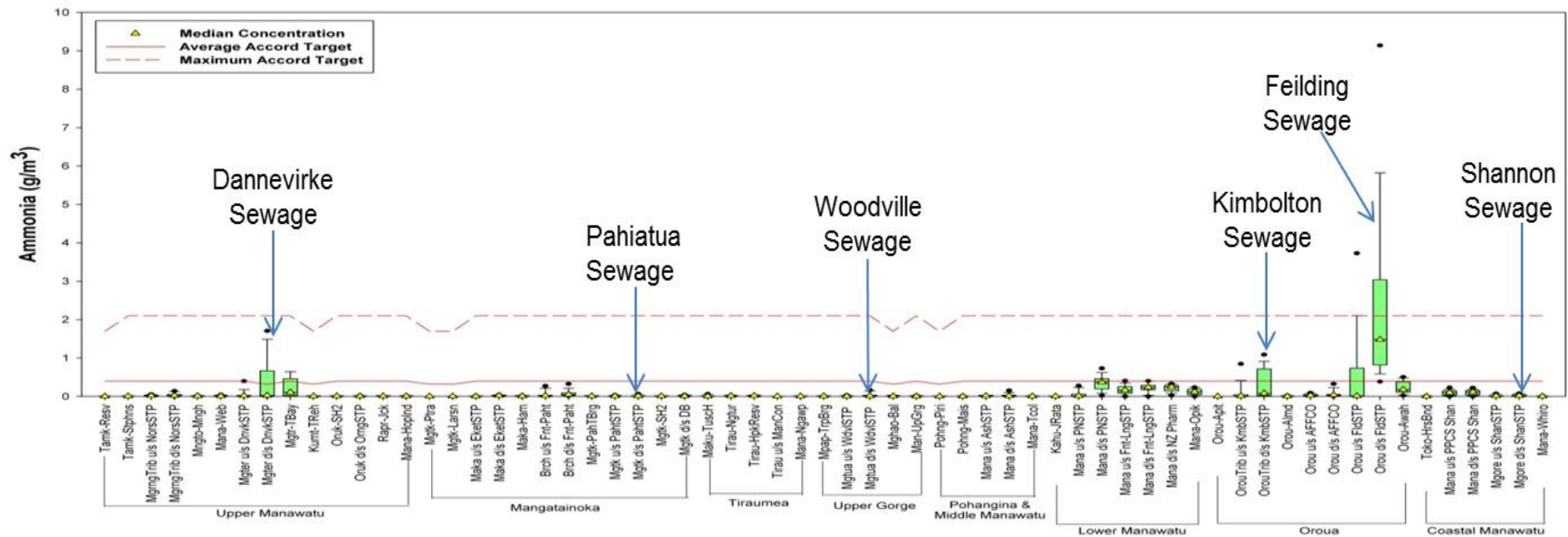


Figure 5: Concentrations of ammonia at the 63 monitoring sites in the Manawatu catchment from July 2007 to December 2010 during low flows (25% of the time). The dashed red line is the One Plan water quality target for ammonia that no single sample concentration should exceed to protect against ammonia toxicity. The solid red line shows the target that median ammonia values should be less than to protect against ammonia toxicity. The triangles show the average concentrations recorded.