



STAFF REPORT

TO: Environment & Planning Subcommittee - Special Meeting

FROM: Kathryn Bunting, Compliance Officer

REFERENCE: C653

SUBJECT: **REPORT ON PROGRESS: CLEAN STREAMS – REPORT EP06/05/21** - Report Prepared for 30 May 2006 meeting

1. INTRODUCTION

The purpose of this report is to present a snap-shot of where Tasman District lies with respect to the five national targets as set out in the Clean Streams Accord (the Accord). This data will indicate how far away the district, as a whole, is to meeting the various Accord targets and also highlight any issues or regions within Tasman where more work will be necessary to meet these targets.

There are five separate elements to the Accord. In broad terms these are: that dairy cattle be excluded from larger streams, that regular dairy crossings be bridged or culverted, that all dairy farmers comply with resource consent or permitted activity standards, that all dairy farmers carry out nutrient budgeting, and that all regionally significant wetlands on dairy farms be fenced out.

The results presented in this report come from a comprehensive survey of all farm dairies in Tasman District that operate under Permitted Activity status and those that have a Discharge Permit that authorises the discharge of treated farm dairy effluent to water.

This report does not assess effects on water quality, amenity, or aquatic ecology. Furthermore, no sampling of waterways or soils was undertaken as part of this study.

1.1 Background

The Dairying and Clean Streams Accord (the Accord) was signed by the Minister of Agriculture, the Minister for the Environment, the Chairman of Fonterra Co-operative Group, and the Chairman of the Regional Affairs Committee of Local Government New Zealand (on behalf of Regional Councils) in May 2003. The Accord reflects an agreement between these parties to improve the environmental performance of dairying and it establishes a goal of achieving “clean healthy water in dairying areas”.

A Regional Action Plan (RAP) has been developed by Tasman District Council (TDC) and Fonterra with input from Federated Farmers. The purpose of the RAP is to detail regional commitments toward achieving the goal of the Accord and meeting the national performance targets, while taking into account circumstances specific to Tasman District. The RAP was signed by TDC and Fonterra in May 2005.

The Accord covers all rivers, streams, creeks, springs, drains, ponds, wetlands, and estuaries that permanently hold water and flow through or border a property used as a farm dairy. In Tasman District many drains are modified streams (i.e. streams that have been excavated or straightened). These waterways are to be considered as streams for the purposes of the Accord provided they are deeper than a red band (300mm) and wider than a stride (1m) and permanently flowing.

The district currently has 155 farm dairies between Puponga, at the base of Farewell Spit to Maruia, located approximately 50 kilometers south of Murchison. The largest concentration of farms is in Golden Bay, particularly within the Takaka Valley and Bainham/Rockville areas. Of these 155 farm dairies, 148 (95%) supply Fonterra and are therefore subject to the Accord targets.

In Tasman District, farm dairy effluent is disposed of as either a land based application and is regarded as a Permitted Activity (i.e. no resource consent from TDC is required), provided that conditions to minimise potential adverse effects on water quality are met (Rule 36.1.3 of the Tasman Resource Management Plan (TRMP)), or treated effluent is discharged to water. In the latter case a resource consent from TDC is required, as there is more potential for adverse effects on water quality. During the 2005/2006 season 132 (85%) farms in Tasman District use land disposal as a means of disposing of effluent from the farm dairy, and 23 (15%) farm dairies have resource consent to discharge treated effluent from oxidation ponds to water.

1.2 Method

Due to the scale of this initial baseline study, the data presented in this report was collect over two consecutive seasons, these being 2004/2005, and 2005/2006. Every farm in Tasman District was visited at least once over this two season monitoring period.

The gathering of information on compliance with the Accord targets was integrated into a larger project that assessed all farm dairies in Tasman with respect to Permitted Activity Rule 36.1.3 of the TRMP – Discharge of Dairy Effluent to Land and compliance of those farm dairies that hold resource consent to discharge treated effluent water. Results from this larger study is present in two separate reports. One report discusses compliance of farms operating under Permitted Activity Status and the other compliance with respect to conditions of resource consents. Combined, these two other reports provide a full and comprehensive account of compliance in Tasman District for the two year period 2004 to 2006.

A list of supplier postal addresses was provided by Fonterra at the beginning of each season. Each farm was then located on the Council's GIS database from which a map consisting of an aerial photograph of each farm dairy and surrounding land and water-ways was produced. This map was later used during the farm inspections, when it was annotated to show the effluent disposal area, water-ways and any stream crossings. There were a large number of farms that were not able to be located using the above method, as the postal addresses either related to post boxes or the farm owner resided outside Tasman District. In such cases each farm property was located on the ground by locating the supplier number at the farm gate. Once the farms had been found, a location map like that described above was produced.

In order to manage the project, all farms were divided into three 'sub-regions', these being Golden Bay, Central, and Murchison. These sub-regions were then split into zones that either related to an area or had a common environmental feature such as a river.

Approximately two weeks prior to the first inspection being undertaken, all farm owners were notified by letter that the survey was going to be undertaken. All farm owners were then contacted by telephone closer to the time of the survey to make an appointment to meet onsite.

A survey form (Appendix 1 and 2) was developed and each farm was assessed against the relative form to ensure that a common standard was achieved. An element of each farm dairy inspection was to photograph (as a way of documenting) the washdown system, sump, effluent area, stream crossings, bridges, fencing, and any potential non-compliance. Also photographed were fully compliant farm dairies, both old and new systems and examples of different measures that have been implemented to prevent run-off of effluent from races or yards into water with the aim to provide future educational tools.

1.3 Structure of Report

A general description of typical farm size, herd numbers and stocking rates for each of the sub-regions is presented in Part Two of this report.

A snap-shot of where Tasman District lies and how far away the district as a whole is to meeting the five national performance targets as set out in the Clean Streams Accord is presented in Part Three. Also identified are regions within Tasman where more work will be necessary to meet these targets.

Part Four concludes the report with an overall summary of compliance in the Central, Golden Bay, and Murchison sub-regions. Recommendations from the findings of this report are put forward in Part Five.

2. DESCRIPTION OF THE FARM DAIRY INDUSTRY IN TASMAN

In Tasman District, farm dairies are concentrated in three main areas, referred to as sub-regions for the purpose of this report. These sub-regions are Golden Bay, Central, and Murchison. The location and spatial area of each sub-region is shown in Figure 1.

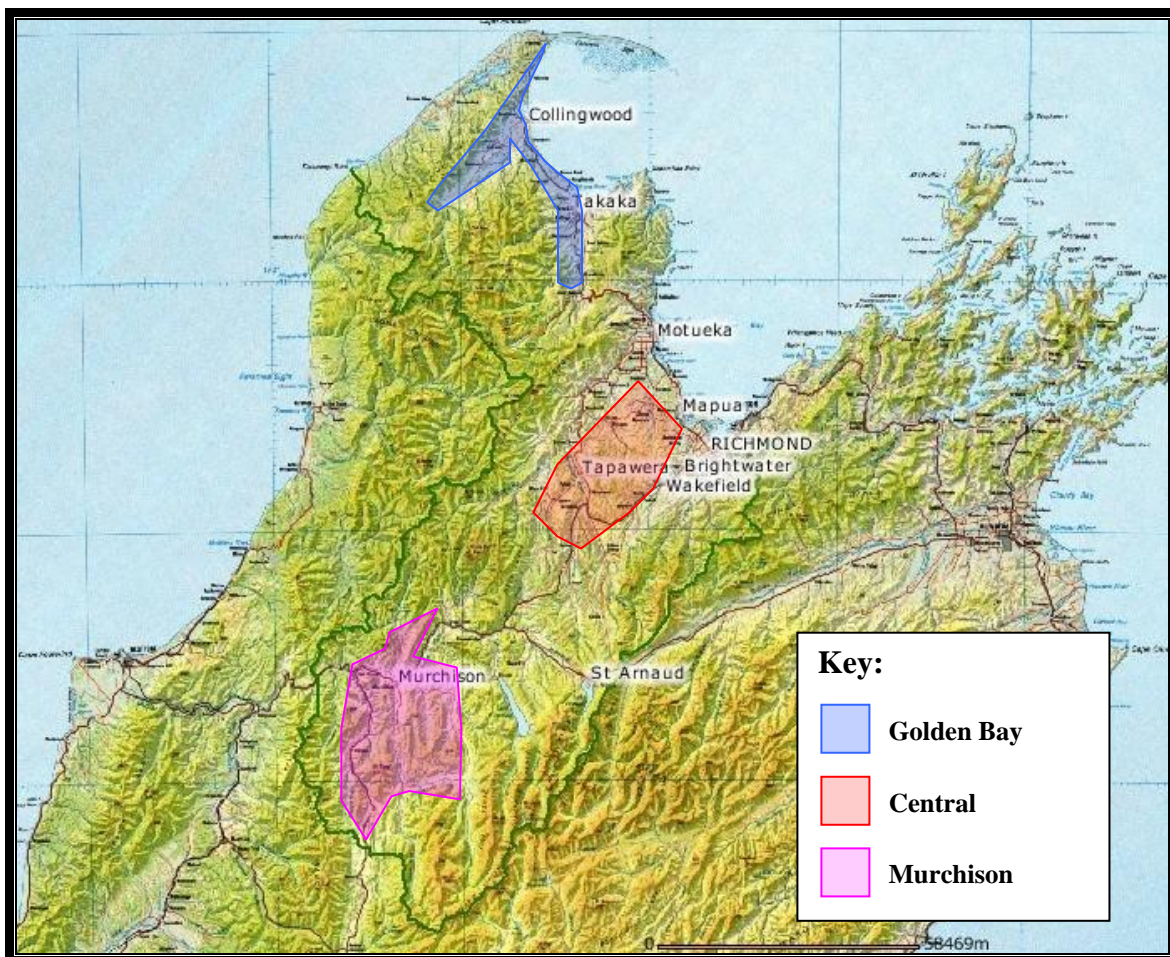


Figure 1 : Map of Tasman District with the three sub-regions overlaid.

Of the 155 farm diaries (both permitted activities and consented discharges) operating in Tasman District during the 2005/2006 season, 92 (59%) are located in Golden Bay, and the remaining 63 farms are evenly divided between the Central (19%) and Murchison (22%) sub-regions.

2.1 The Changing face of Dairy Farming in Tasman District

Dairy farming has a long history in Tasman and remains one of the strongest and most dominant industries in the district.

Figure 2 presents the changing dairy cow population in Tasman District for the ten year period from 1993 to 2003, from which it can be seen that the total population has varied from approximately 45 000 to 55 000 head. From this graph it can also be seen that after the mid 1990s when the population peaked at approximately 54 000 it decreased significantly during the next three years to 1999 to reach a low of 45 000. However, the Tasman herd has since recovered to be similar in number to that milked in the mid 1990s.

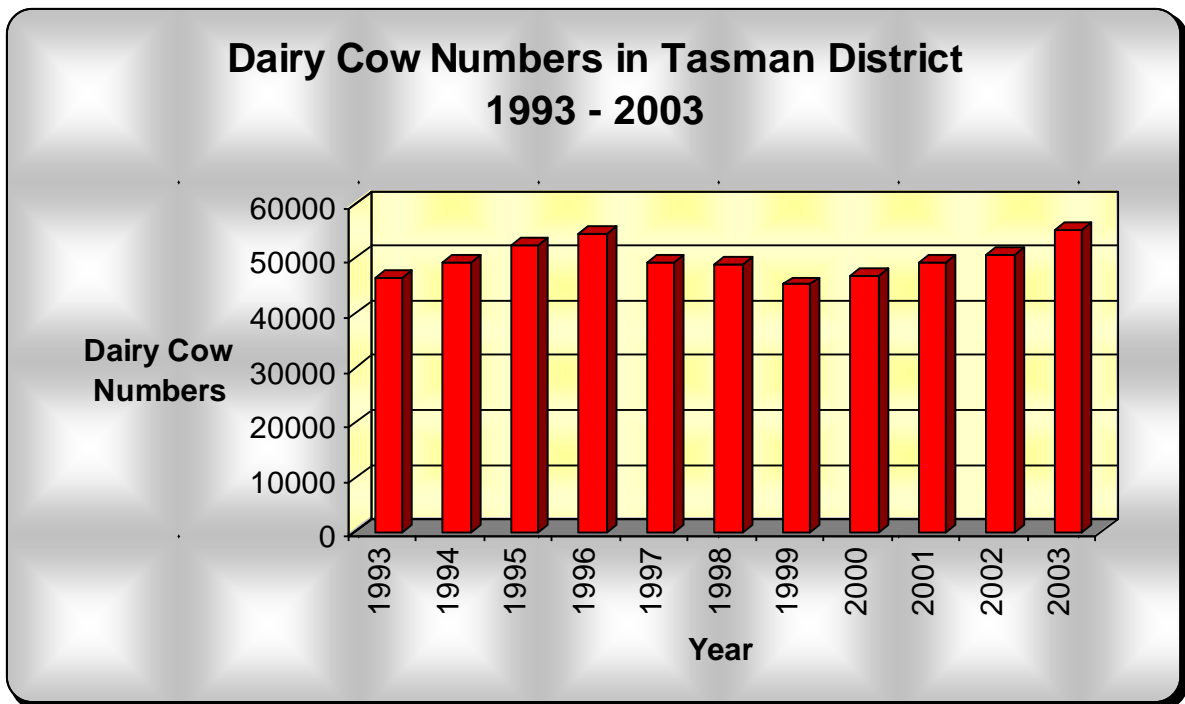


Figure 2: Number of Dairy Cows Milked Tasman District 1993 – 2003. Source: Statistics New Zealand (2003)

Farm numbers from three seasons (1999/2000, 2000/2001, and 2004/2005) are presented in Figure 3 (page 5). It is interesting to note that although Tasman’s dairy herd was increasing during all three seasons displayed, the number of farms actually decreased from 210 in 1999/2000 to 160 in 2004/2005. This trend mirrors the national trend of increasing herd numbers but an overall decrease in farm numbers, a trend that indicates that the dairy farm industry is clearly growing and becoming more intensive. Between 1994 and 2004, the nation dairy herd increased by 34%, while the area of land directly used for dairy farming increased by only 12% (Statistics New Zealand, 2003). This pattern, at both a national and district scale suggests a trend towards amalgamation of farms and expansions by individual farms.

At a local level, many of the small farms in and around the Moutere/Motueka, Brightwater/Wakefield, and Maruia areas have ceased supply in the last five years. The farms concerned have either been bought and incorporated into a neighbouring farm, been converted into orchards, sub-divided into lifestyle blocks, or converted to sheep and/or beef cattle units.

Figure 3 also shows that the number of farm dairies that hold resource consents to discharge treated effluent to water decreased from 50 to 23, and those farms that operate under permitted activity status decreased from 160 to 125 during the period 199/200 to 2005/2006.

Tasman District has an average stocking rate of 1.7 cows per hectare (Statistics New Zealand, 2003). This stocking rate is marginally less than the national average of 2.0 cows/hectare. However, within Tasman District there are areas of intensive dairy farming where stocking rates are in excess of this national average. These trends are presented below.

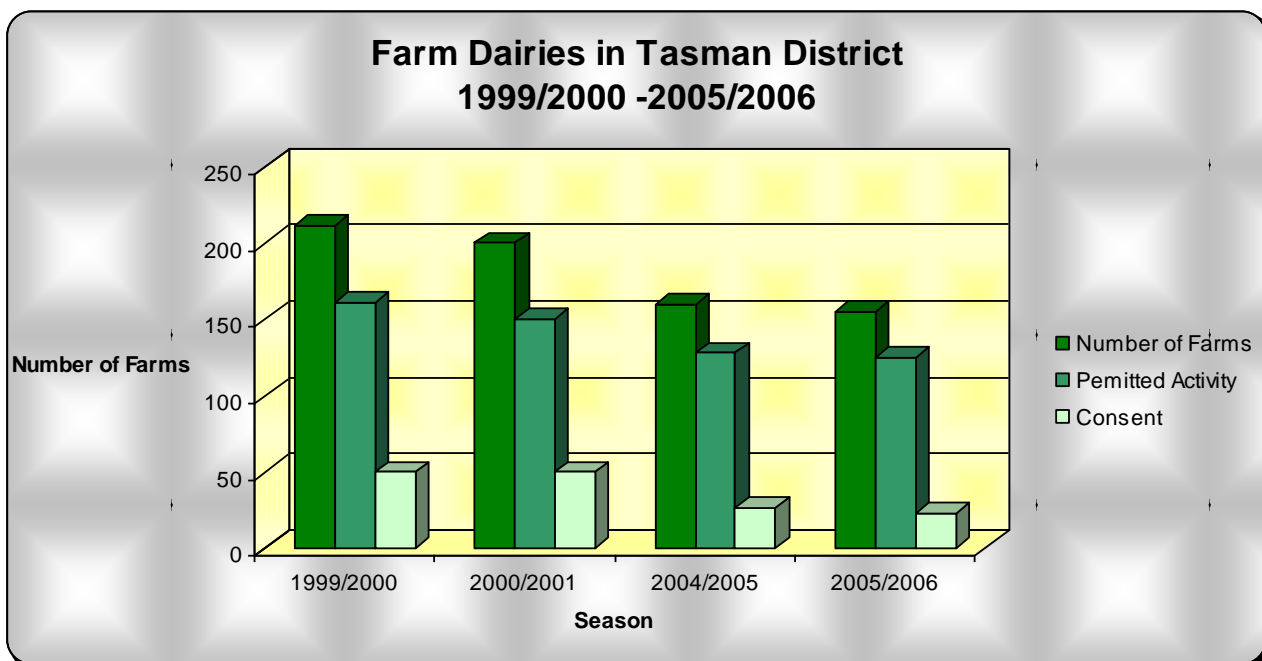


Figure 3: Changing Farm Numbers in Tasman District 1999/2000 – 2005/2006 (Adapted from Irvine, 2000 and Goldschmidt, 2001)

2.2 Central Sub-region

The 'Central sub-region' is made up of three zones that are quite separate from each other in the fact that they are located in isolated valleys or river flats. For the purpose of this report the zones are regarded as belonging to one group as they all lie within the central region of Tasman District. These zones are the Waimea Plains, Upper Motueka Catchment, and Moutere. Combined, these three dairy zones have a total land area of 3650 hectares with 3955 cows milked during the 2004/2005 season. Figure 4 (page 6) shows the location and spatial area of all three zones within the Central sub-region referred to in the following section of this report.

Figure 5 (page 7) illustrates the number of dairy cows milked during the 2004/2005 season in each of the three zones of the Central sub-region, while Figure 6 (page 7) shows the average stocking rates of each zone. It is clear from Figure 7 that the Upper Motueka zone with its 17 farm dairies has the greatest population at approximately 5 500 head, with Waimea (ten farms) and Moutere (three farms) having 2 200 and 550 head respectively.

Although the Upper Motueka zone has more than twice the number of dairy cows than that farmed in Waimea, the stocking rate, as shown in Figure 6 is just over half the average stocking rate of the Waimea farms, a rate of 1.6 cows/hectare in Upper Motueka compared with 3.1 cows/hectare in Waimea. This comparatively lower stocking rate is directly related to the large land areas contained within each farm. This is particularly so in the Korere, Matariki, and Wangapeka areas.

Moutere also has a relatively low stocking rate at 1.0 cows/hectare, but in contrast with Upper Motueka this is not a reflection of large land areas involved in each farm, but rather the small number of cows milked on each farm.

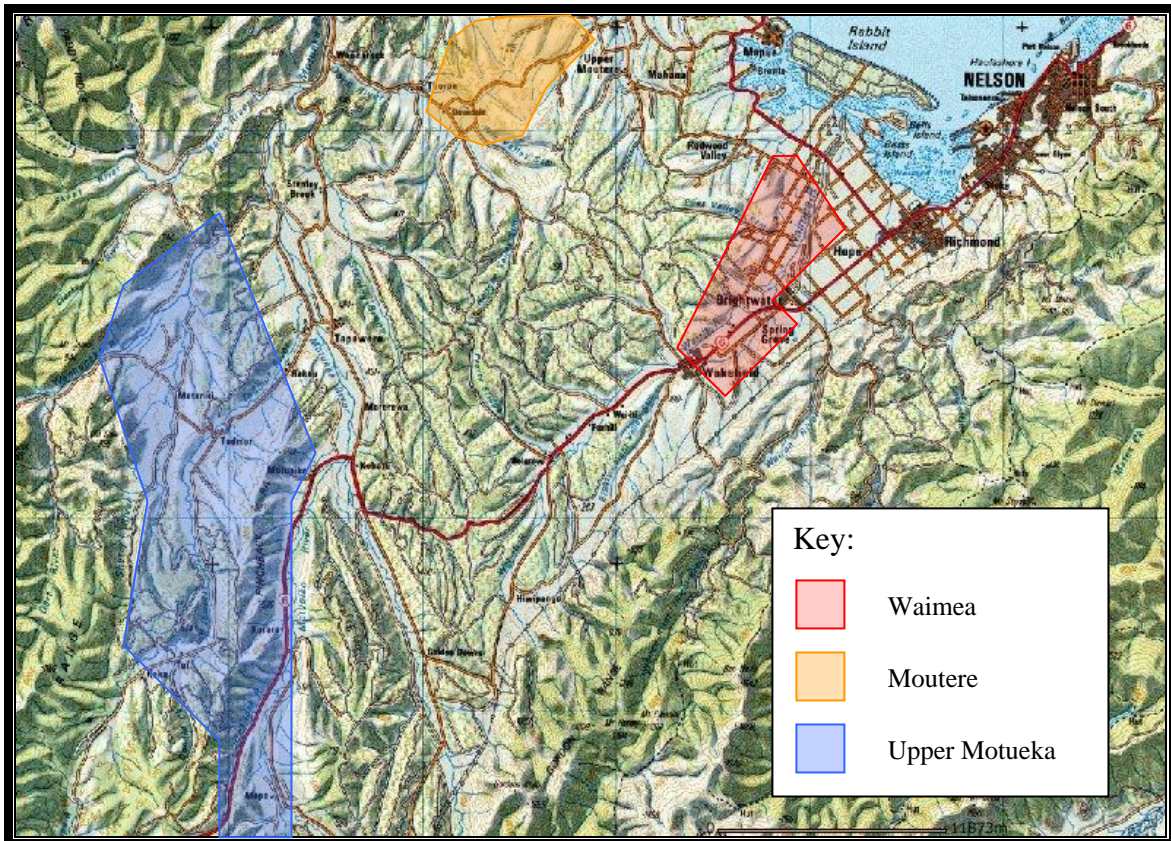


Figure 4: Central sub-region with Waimea, Moutere, and Upper Motueka zones overlaid

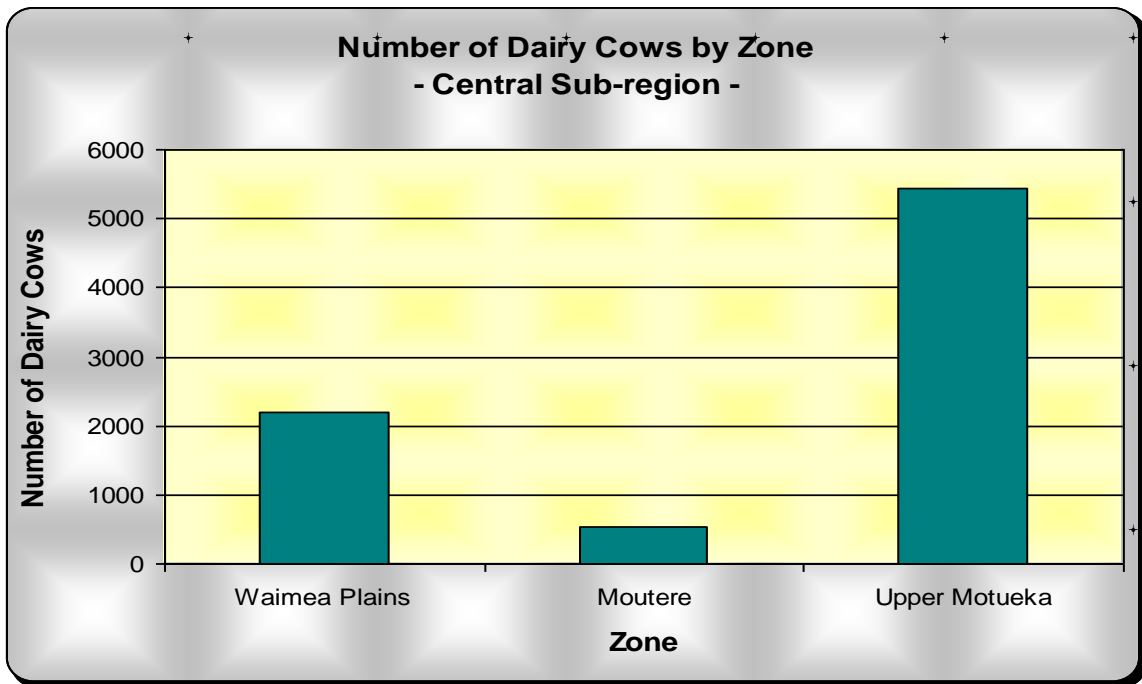


Figure 5: Dairy Cow Numbers for the 2004/2005 season in the Waimea, Moutere, and Upper Motueka, Zones of the Central Sub-region.

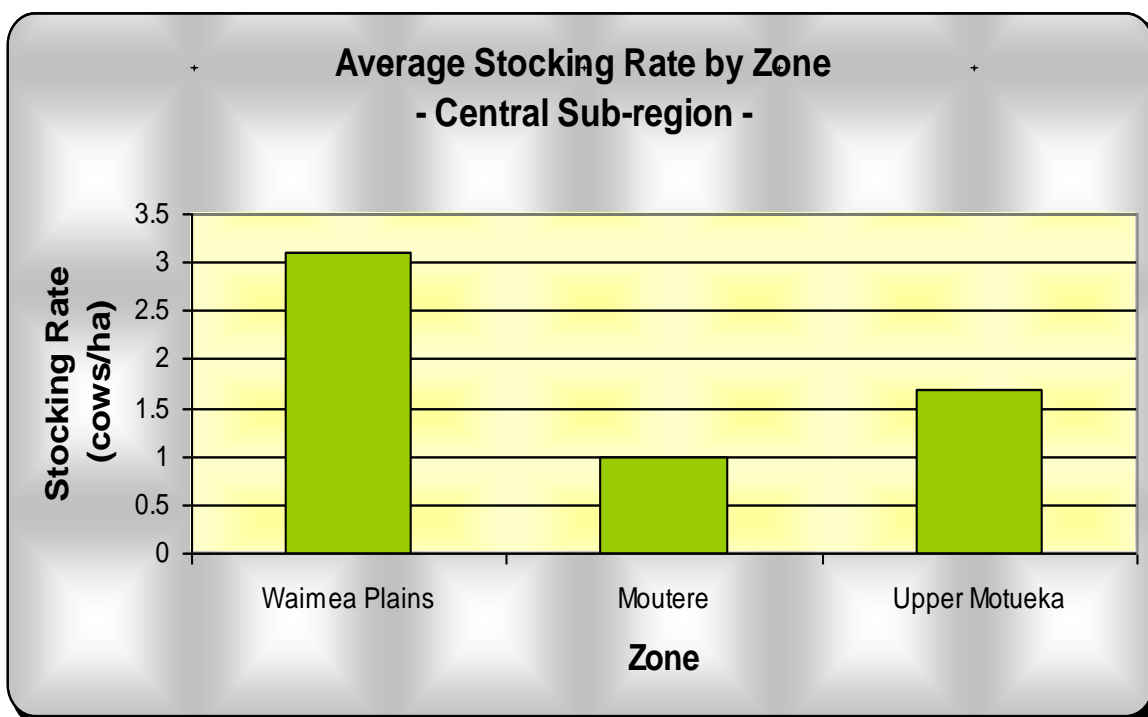


Figure 6: Average Stocking Rates for the 2004/2005 season in the Waimea, Moutere, and Upper Motueka, Zones of the Central Sub-region

2.3 Golden Bay Sub-region

The Golden Bay sub-region is made up of six zones. These are Bainham/Rockville, Pakawau, Puramahoi/Onekaka, Motupipi, Kotinga/Anatoki, and Takaka Valley. The location and spatial area of each zone is illustrated in Figure 7.

Of the 155 farm dairies in Tasman District, 92 (59%) are in Golden Bay and are concentrated predominately in the Takaka Valley, and Bainham/Rockville zones. The remaining farms in the Bay are located in small pockets along the narrow coastal margin between the Takaka River Mouth to Puponga. Approximately 13 400 hectares of land is farmed in Golden Bay with approximately 21 900 dairy cows milked during the past season. This equates to an average stocking rate of approximately 1.6 cows per hectare.

Figure 8 (page 9) shows the number of dairy cows milked in each zone of the Golden Bay sub-region during the 2004/2005 season. From this graph it is evident that the greatest populations of dairy cows can be found in the Bainham/Rockville and Takaka Valley zones with each zone having in the order of 5 850 and 6 200 dairy cows respectively. The other four zones have comparatively smaller populations ranging between 1 300 in Pakawau to 2 600 in Kotinga/Anatoki.

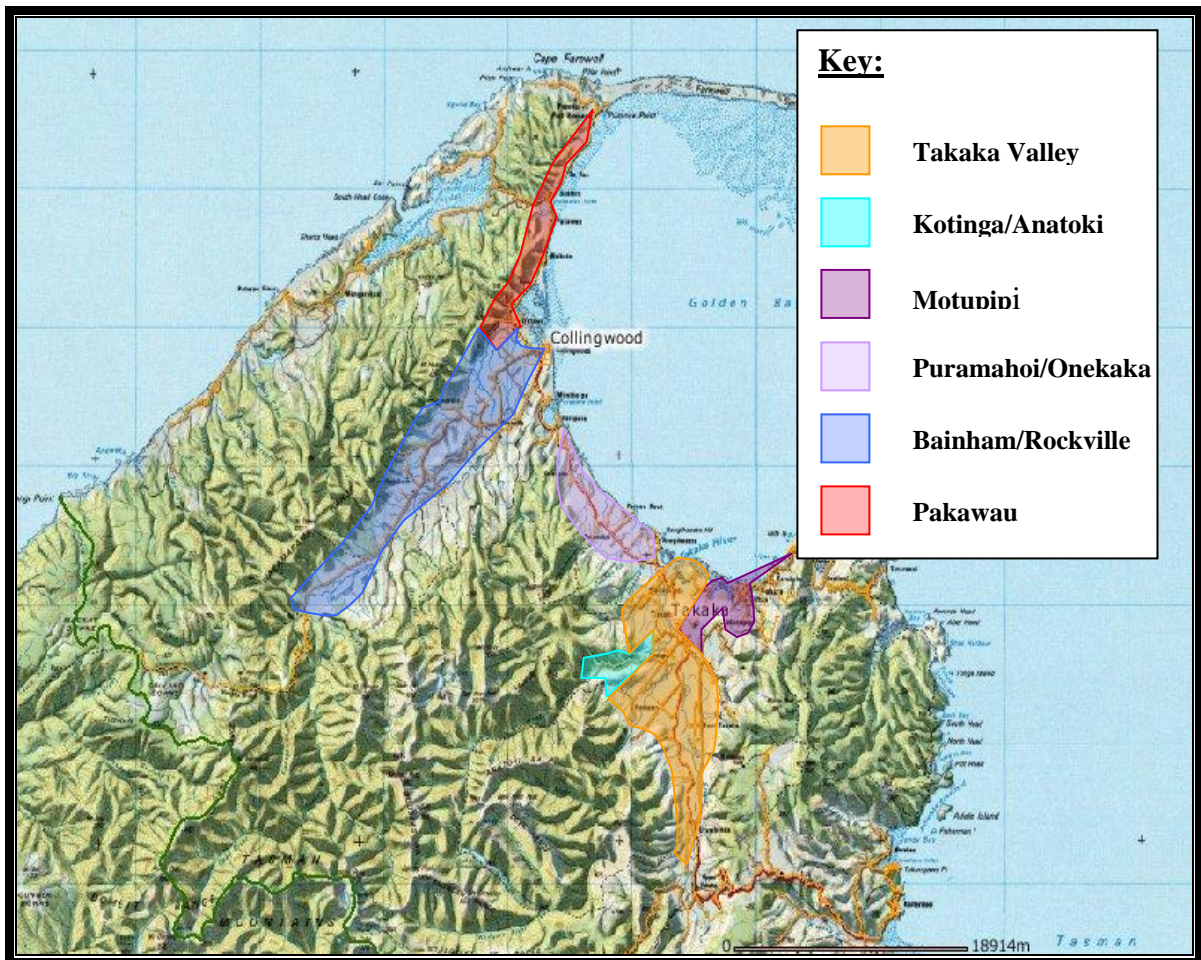


Figure 7: Golden Bay sub-region with zones overlaid

The average stocking rate for each of the six zones with the Golden Bay sub-region is graphically illustrated in Figure 9 (page 10), where the rate ranges from 1.6 cows/hectare in Takaka Valley to 2.7 cows/hectare in Motupipi. From Figures 8 and 9 it is clear that although Motupipi and Kotinga/Anatoki have smaller overall populations, they do have the highest stocking rates at 2.7 and 2.6 cows/hectare respectively.

Also apparent from Figure 8 and Figure 9 is that the Bainham/Rockville zone is the most intensely farmed zone in Golden Bay. Here, approximately 5 900 dairy cows were milked during the 2004/2005 season and were stocked at an average rate of 2.5 cows/hectare.

The low relative stocking rate to population in the Takaka Valley zone is a reflection of the relatively small herds farmed in this zone compared to the farms in the Bainham /Rockville zone.

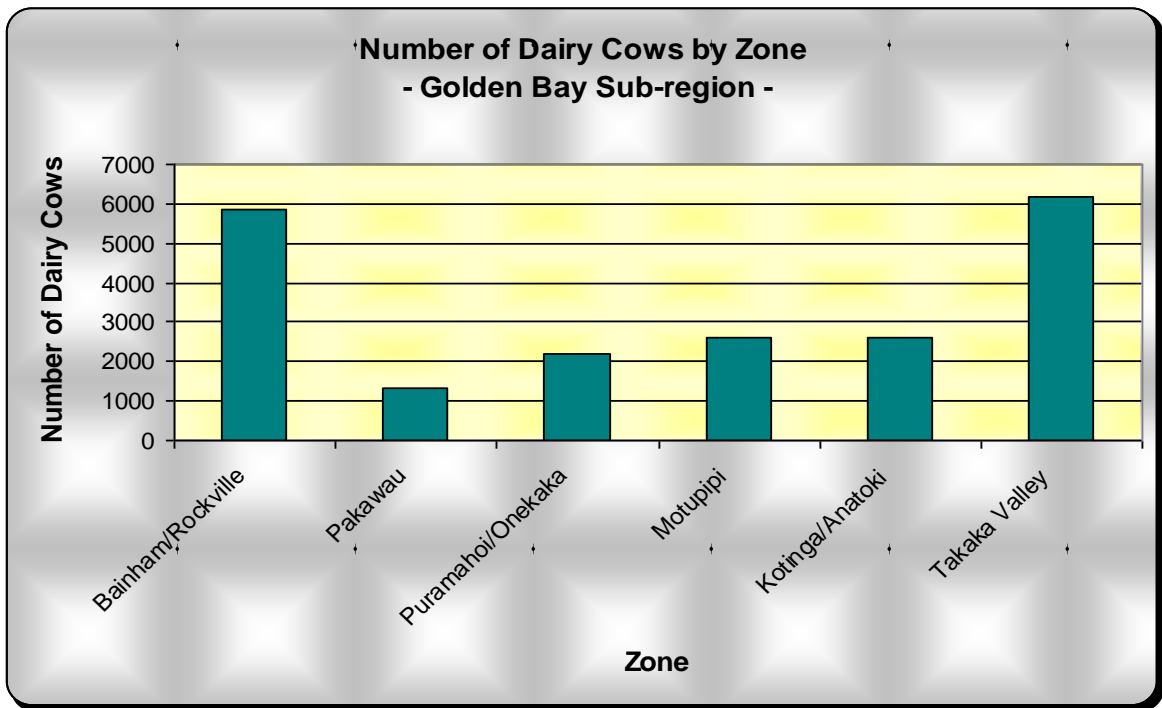


Figure 8: Number of Dairy Cows milked in each zone in the Golden Bay Sub-region during the 2004/2005 season.

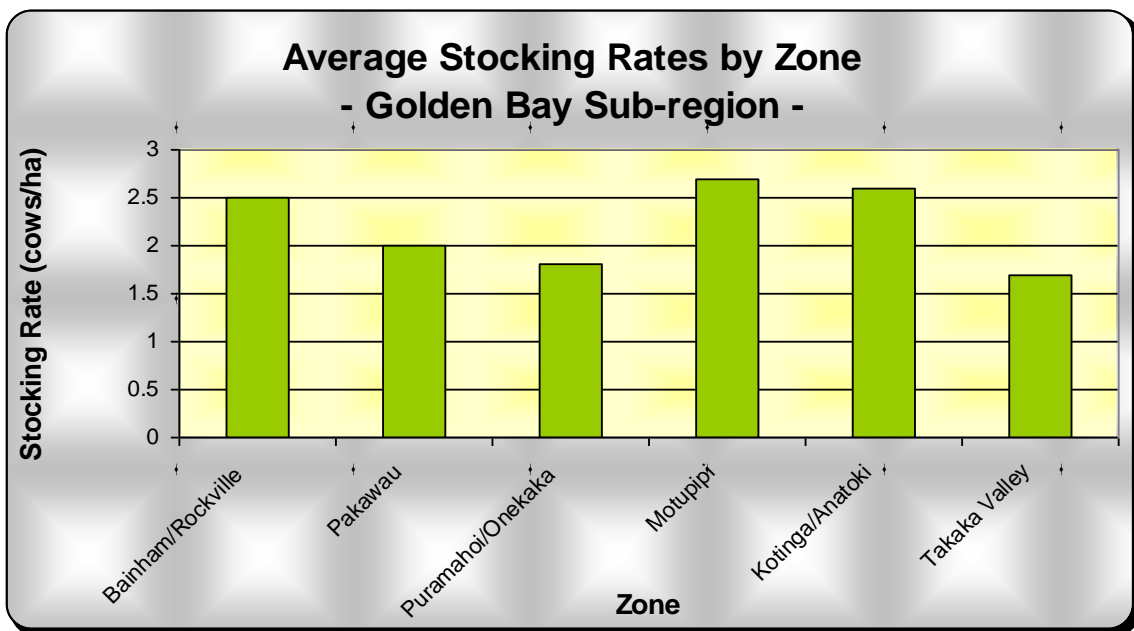


Figure 9: Average stocking rate (cows/hectare) in each survey zone in the Golden Bay Sub-region during the 2004/2005 season.

2.4 Murchison Sub-region

The Murchison sub-region is made up of six zones. These are Owen, Matiri Valley, Town, Mangles/Tutaki, Matakītiki Valley, and Maruia/Shenandoah. The location and spatial area of each zone is illustrated in Figure 10 (page 11).

A total of 34 farm dairies are located in the Murchison area, with 27 of these suppliers to Fonterra. Each zone has a similar number of farms each, ranging from 4 to 6. Approximately 7220 hectares of land is farmed in Murchison with approximately 14 300 dairy cows milked during the 2005/2006 season. This equates to an average stocking rate of approximately 2.0 cows per hectare.

Figure 11 (page 11) shows the number of dairy cows milked in each zone of the Murchison sub-region during the 2005/2006 season. From this graph it is evident that the greatest population of dairy cows can be found in the Mangles/Tutaki zone where 3660 cows were milking during the 2005/2006 season. The other five zones have comparatively smaller populations ranging between 760 in Matiri Valley to 2200 in Marui/Shenandoah.

The average stocking rate for each of the six zones with the Murchison sub-region is graphically illustrated in Figure 11 (page 11), where the rate ranges from 1.3 cows/hectare in Maruia/Shenandoah to 2.8 cows/hectare in the Town and Matakītaki zones. From Figures 10 and 11 it is clear that the Matakītaki Valley was the most intensely farmed area within Murchison having the highest population and also the highest stocking rate.

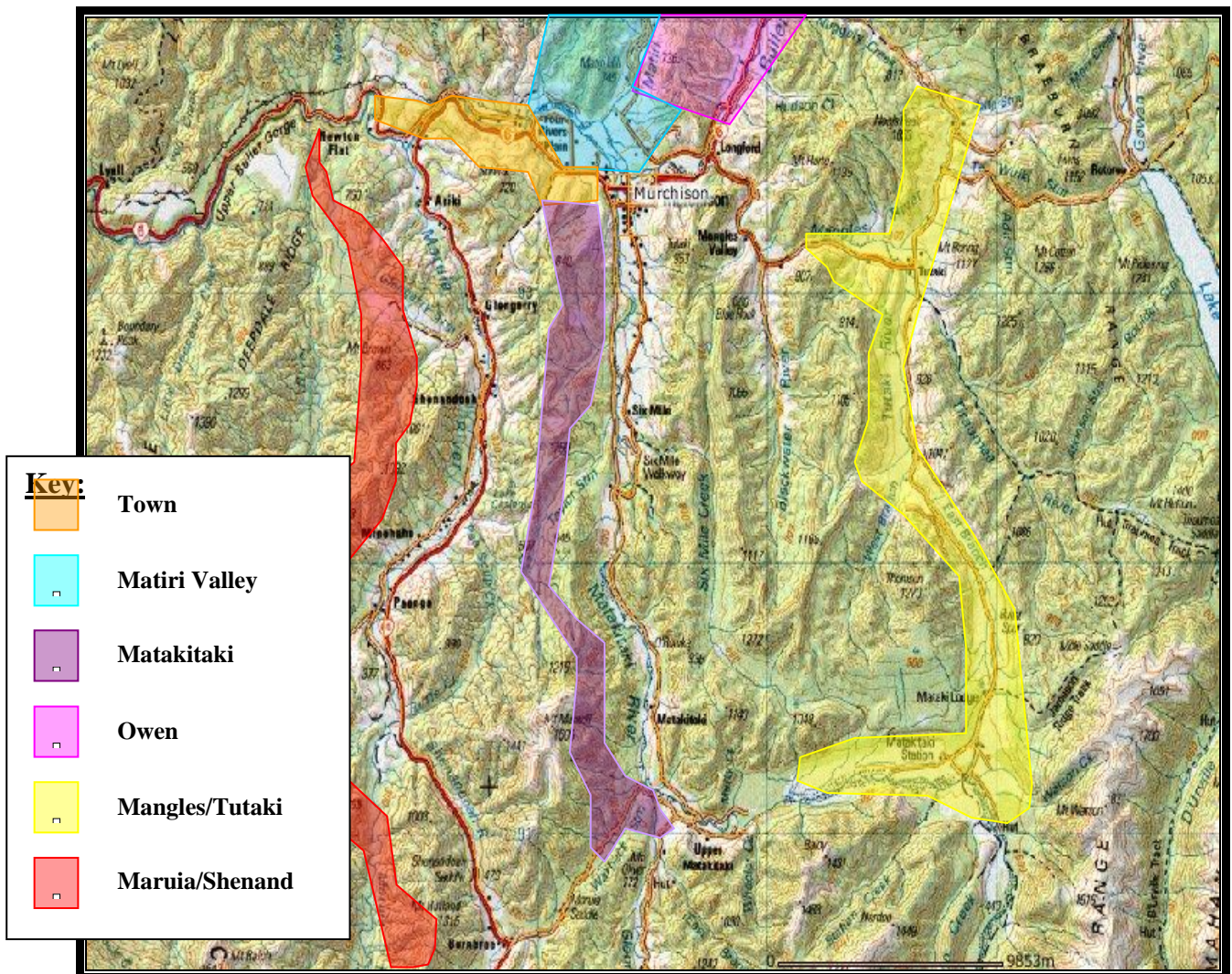


Figure 10: Murchison sub-region with zones overlaid

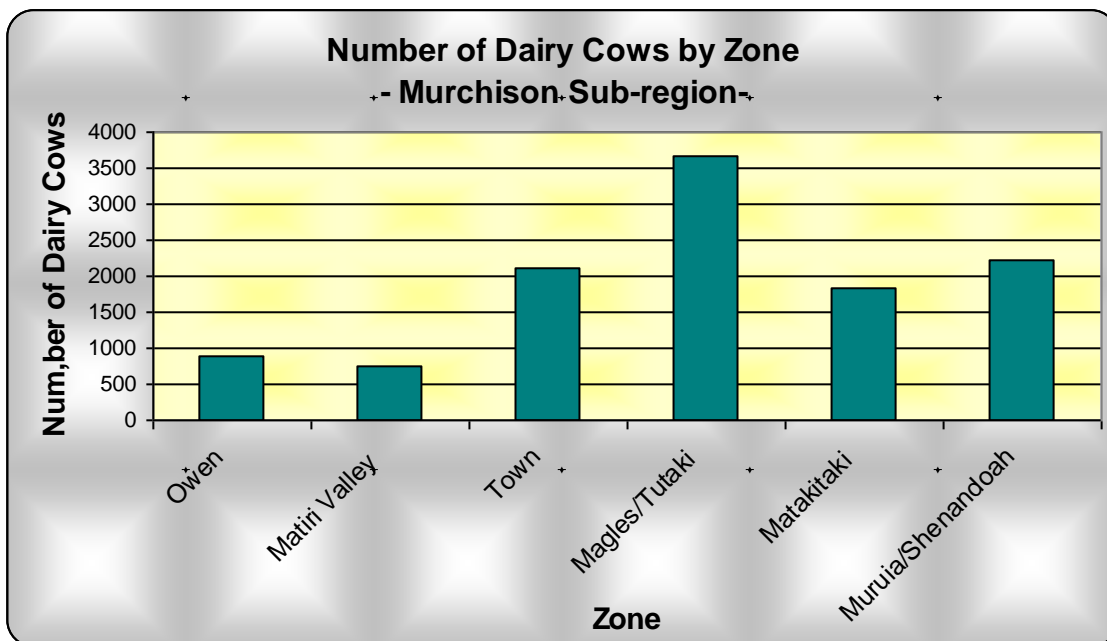


Figure 11: Number of Dairy Cows milked in each zone in the Murchison Sub-region during the 2005/2006 season.

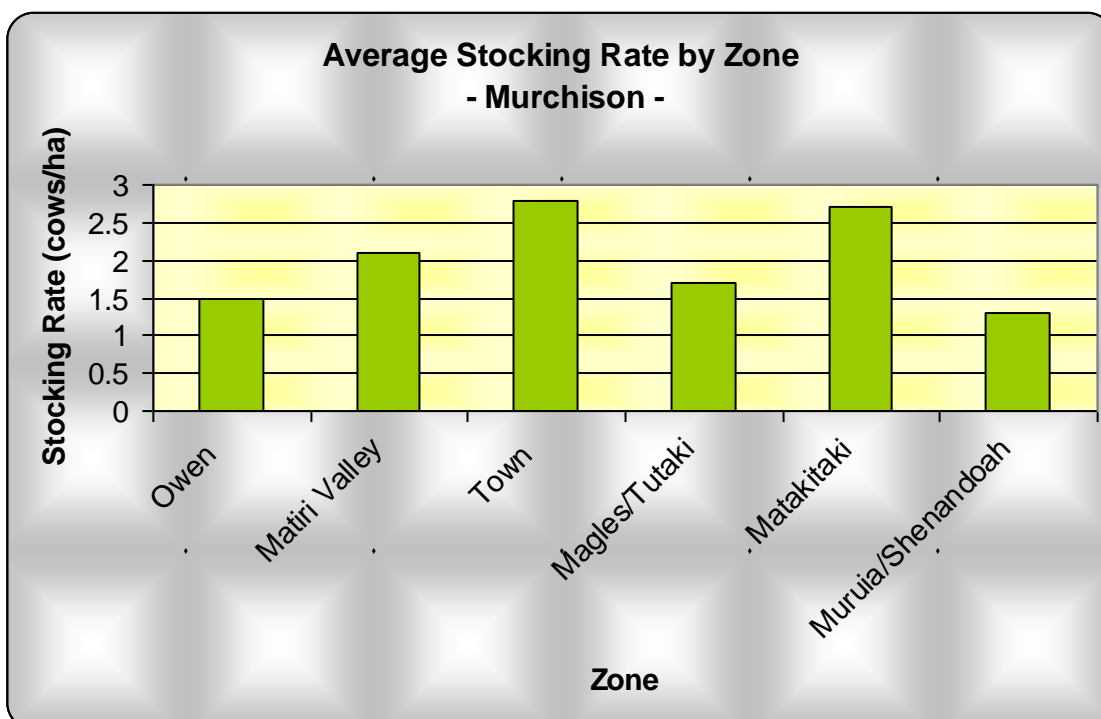


Figure 12: Average stocking rate (cows/hectare) in each survey zone in the Murchison Sub-region during the 2005/2006 season.

3. CLEAN STREAM ACCORD NATIONAL TARGETS

Five priorities for action are identified in the Accord to reduce the impact of dairying on streams, rivers, lakes and wetlands. Each of the five priorities is discussed in detail below together with statistics and information on compliance gathered during the farm inspections. The statistics presented below relate only to the 148 farm dairies in Tasman that supply Fonterra.

3.1 Preventing Stock Access to Waterways

Accord Target:

Dairy cattle are excluded from 50% of streams and rivers by 2007, 90% by 2012.

Dairy cattle are excluded from 100% of estuaries and lakes by 2007.

In most cases, fencing is the only practical method of excluding stock access to waterbodies. However, there may be circumstances where fencing is not required due to natural barriers, such as dense vegetation and steep river and stream banks.

Table 1 (page 13) shows the total number of farms together with the number of farms in each zone that has either 0%, 1-25%, 26-49%, 50-74%, 75-89%, or $\geq 90\%$ of their streams fenced or some other form of stock exclusion. Presented alongside these six categories for stock exclusion rates is the average percent of streams with stock exclusion in each zone. Also presented at the bottom of Table 1 is the total of all farms surveyed with respect to all six exclusion rates and also the total average of all streams with stock exclusion in Tasman District.

The data presented in Table 1 shows that 76% of Tasman District's streams as defined under the Accord are fenced or have stock excluded from them by other means, thus indicating that Tasman District already meets the 2007 target but still needs to increase the total number of fenced streams by a further 14% to meet the 2012 target of 90% of all streams fenced. Encouragingly, 79 farms (39%) have more than 90% of streams fenced or other means of stock exclusion and already meet the 2012 target.

Central sub-region has a marginally better rate of stock exclusion. This is likely to be due to the small number of streams that flow through the area. All farm dairies in the Central sub-region presently meet the 2007 target of 50% of all streams having stock excluded from them. It gives confidence to see that the average for each zone in Central is relatively high, ranging from 70 to 100% of all streams have some form of stock exclusion.

The Maruia/Shenandoah zone have the poorest rate of stock exclusion at 25%, however, it should be noted at only two of the nine farms of this zone are suppliers to Fonterra and therefore the statistics presented here are not a true reflection of the situation.

Although Golden Bay sub-region has the majority of the District's streams, this sub-region has a high rate of stock exclusion, ranging from 71% to 96% in each of the zones. However, presently there are 11 farms (7.4%) in Tasman District that have less than 50% streams fenced or other means of stock exclusion. The majority of these farms are located in Golden Bay, particularly the Bainham/Rockville zone. These statistics indicate that the Bainham,/Rockville Zone in particular will require extra work by the RAP signatories (Fonterra and TDC) to assist the farm owners concerned to meet the Accord targets.

Most farmers are aware of Councils 'River and Stream Management Fund' which is able to assist farmers with fencing materials. Many have, or are considering applying for funding. All estuaries and lakes have 100% stock exclusion and therefore meet the 2007 target.

Table 1: Percent of streams on Fonterra Supply farms in Tasman District that have stock excluded from them

		Percent of Streams with stock exclusion							
		Total No. Fonterra Farms	0%	1-25%	26-49%	50-74%	75-89%	≥90%	Average
Central	Waimea	9	-	-	-	1	1	0	92%
	Upper Motueka	17	-	-	-	2	4	11	88%
	Moutere	3	-	-	-	1	-	2	80%
Golden Bay	Bainham/Rockville	29	1	2	1	8	2	16	70%
	Pakawau	7	-	-	1	1	1	4	79%
	Puramahoi/Onekaka	13	-	-	-	2	2	6	71%
	Motupipi	11	1	-	1	1	3	5	75%
	Kotinga/Anatoki	9	-	-	-	1	-	6	96%
	Takaka Valley	23	1	-	1	3	2	16	76%
Murchison	Owen	3	-	-	-	2	-	1	70%
	Matiri Valley	4	-	-	-	-	1	3	95%
	Town	6	-	-	-	1	1	4	71%
	Magles/Tutaki	6	-	-	-	1	1	4	85%
	Matakitaki	6	-	-	1	1	3	1	68%
	Maruia/Shenandoah	2	1	-	-	-	1	-	25%
	TOTAL	148	4	2	5	25	22	79	76%

3.2 Stock Crossings

A 'regular stock crossing' is defined under the Accord as a stream that is "deeper than a 'Red Band' (300mm) and 'wider than a stride' (1m), and permanently flowing"... "where stock regularly (more than twice a week) cross a watercourse".

Accord Target:

50% of regular crossing points have bridges or culverts by 2007, 90% by 2012.

Dairy cows are 50 times more likely to defecate during a stream crossing than elsewhere on the farm race (Davis-Colley et. al. 2004), hence stock crossings are a significant potential source of stream contamination.

The total number farms and un-bridged crossings in each zone together with the percentage of crossings that have been bridged in Tasman District and in each zone is presented in Table 2 (page 15). The total number of unbridged crossings is also presented at the bottom of Table 2, together with the total percent of stock crossings in Tasman that are bridged or culverted.

During the course of this study a total of 244 stock crossings, as defined by the Accord were identified on the 148 Fonterra supply farms in Tasman District that are subject to the Accord. Of the 224 crossings, 188 (77%) are bridged or culverted and 56 (23%) remain as un-bridged crossings that are regularly used.

Table 2: Number of Un-bridged Regular Stream Crossings in Tasman District

		Total Number of Fonterra Farms	Total Number of Un-bridged Crossings	% of Crossings that are Bridged
Central	Waimea	9	1	97%
	Upper Motueka	17	7	81%
	Moutere	3	1	83%
	TOTAL	29	9	87%
Golden Bay	Bainham/Rockville	29	9	90%
	Pakawau	7	3	70%
	Puramahoi/Onekaka	13	7	73%
	Motupipi	11	3	92%
	Kotinga/Anatoki	9	6	82%
	Takaka Valley	23	8	79%
	TOTAL	92	36	81%
Murchison	Owen	3	4	80%
	Matiri Valley	4	1	95%
	Town	6	0	100%
	Magles/Tutaki	6	0	100%
	Matakitaki	6	3	82%
	Maruia/Shenandoah	2	3	25%
	TOTAL	27	11	80%
TASMAN DISTRICT GRAND TOTAL		148	56	77%

All zones in Tasman have at least 70% of all regular crossing bridged and therefore already meet the 2007 Accord target. The exception to this is the Maruia/Shenandoah zone. As explained above, this result is likely to be due to the fact that at only two of the nine farms of this zone are suppliers to Fonterra and therefore that statistics presented here are not a true reflection of the situation. The greatest number of crossings are located in Golden Bay sub-region where 36 (64%) of all unbridged crossing are located. This statistic is likely to be related to the geography of Golden Bay, particularly the Bainham/Rockville, Pakawau, and Puramahoi/Onekaka zones all of which have many streams transecting the farms. This survey shows that these three zones in Golden Bay will require extra attention from the RAP signatories to assist the farm owners concerned in order for them to meet the 2012 Accord target.

It is import to note that most of the crossings that remain un-bridged require a culvert to satisfy the Accord target, not a bridge as such. When Part IV is released it is anticipated that it will be easier for landowners to install culverts under Permitted Activity Rules than it is at present.

3.3 Management of Farm Dairy Effluent

Accord Target:

100% of farm dairy effluent discharges to comply with resource consents and regional plans immediately.

Compliance with respect to Resource Consents and the Tasman Resource Management Plan is discussed in full in two separate reports. One details compliance with respect to the Permitted Activity Rules prescribed by Rule 36.1.3 of the TRMP. The other report details compliance with respect to those farms that have Discharge Permits and therefore have authorisation to discharge treated farm dairy effluent to water. Presented below in Table 3 is the number of fully compliant Fonterra supply farms (both Permitted Activities and those with discharge permits) in each zone. These figures are also expressed as a percent of all farms in each zone that where fully compliant at the time of the writing of this report. Also presented is the total number of fully compliant farms in Tasman District as a whole, together with the percentage of fully compliant farms. The data presented in Table 3 shows that of the 148 farms that supply Fonterra, 88 fully complied with either the Permitted Activity Rules or all of their resource consent conditions, this corresponds to a 59% compliance rate for all of Tasman District.

The Central sub-region has a slightly lower compliance rate than either Golden Bay or Murchison. The main non-compliance found in Central related to 'set-back' rules as prescribed in Rule 36.1.3 of the TRMP, in particular the rules that require the discharge to be at least 20m from a waterway, 10m from a property boundary, and 50m from a dwelling on a neighbouring property. Another prominent area of non-compliance was the absence of a contingency plan to avoid a discharge to water in the event of system failure. Non-compliance with resource consent conditions included no stormwater diversion system, and the final discharge not meeting the quality standards as prescribed by the conditions of consent.

Table 3 shows that there are zones within Tasman that have particularly low rates of compliance (less than 50%). These zones are the Moutere (33%), Takaka Valley (48%), and Matiri Valley (25%). Most of this non-compliance related to the farms not having a contingency plan.

The data in Table 3 are broken down further and presented in Table 4 (page 18) where compliance with respect to those farms operating Permitted Activity Status and those farms with Discharge Permits.

Table 3: Rate of Compliance on Fonterra Supply Farms in Tasman District

		Total Number of Fonterra Farms	Number of Fully Compliant Fonterra Farms	% of Fully Compliant Fonterra Farms
Central	Waimea	9	5	55%
	Upper Motueka	17	10	59%
	Moutere	3	1	33%
	Bainham/Rockville	29	18	62%
Golden Bay	Pakawau	7	4	57%
	Puramahoi/Onekaka	13	7	54%
	Motupipi	11	8	73%
	Kotinga/Anatoki	9	7	78%
	Takaka Valley	23	11	48%
Murchison	Owen	3	3	100%
	Matiri Valley	4	1	25%
	Town	6	4	66%
	Magles/Tutaki	6	3	50%
	Matakitaki	6	5	83%
	Maruia/Shenandoaha	2	1	50%
	TOTAL	148	88	59%

There are 125 farm dairy in Tasman District that operate under permitted activity status and are supplies to Fonterra. Table 4 shows that of these 125 farms, 70 Farms (56%) fully complied with all sections of Rule 36.1.3 of the TRMP, 50 Farms (40%) presented technical non-compliances resulting in a minor adverse effect on the environment. Three farm dairies (2.6%) presented non-compliances resulting in a moderate adverse effect, and two farms (1.6%) presented serious non-compliance resulting in a significant and immediate adverse effect.

It is interesting to note that of the 44% of farms that showed some degree of non-compliance, 85% of this non-compliance in related to the absent of an adequate contingency plan to prevent effluent entering water in the event of system failure (Rule 36.1.3(c)). This highlights an area of non-compliance that the RAP signatories need to address. Once all farms have a contingency plan, compliance in Tasman District, will be close to meeting the Accord target of 100% compliance.

There are 23 farm dairies in Tasman District that currently have authorisation in the form of a resource consent to discharge treated farm dairy effluent to water, each consent has a number of conditions that must be complied with. All farms in Tasman that have a resource consent are Fonterra suppliers. Table 4 shows that of these 23 farms, 6 (26%) fully complied with all conditions of their respective consents, 8 farms (35%) presented technical non-compliances resulting in a minor adverse effect on the environment, six farm dairies (26%) presented non-compliances resulting in a moderate adverse effect, and three farms (13%) presented serious non-compliance resulting in a significant and immediate adverse effect.

Also shown in Table 4 is amount of formal enforcement action taken by Council. Throughout the two season period over which these data were collected, a total of 17 Abatement Notices and four infringement fines were issued.

It should be noted that the data presented in Table 4 show the rate of compliance with respect to discharge permits will increase in 2006/2007 season by which time all due dates on the Abatement Notices issued will have expired and the works required to be undertaken to fully comply with the respective conditions of consent will have been completed.

3.4 Nutrient Management

Accord Target:

100% of dairy farms to have in place systems to manage nutrient inputs and outputs by 2007.

A nutrient budget is an annual snapshot of a farm which takes into account the total nutrient inputs and outputs. The information is then used to address any deficiencies or excesses of nutrients in the soil structure.

Inputs include: fertiliser, effluent added, atmospheric/clover N, nutrients from irrigation, slow release supply from soil and fertiliser, and supplement brought onto the farm.

Outputs include: losses through product leaving the farm, transfer of nutrients to unproductive parts of the farm (for example, laneways and troughs), supplement sold from the farm, atmospheric losses (volatilisation), leaching/run-off immobilisation/absorption which is when nutrients are converted by the soil to less available forms.

As a result of a nutrient plan, farmers are able to modify their fertiliser plan to promote optimal grass growth and reduce the amount of nutrients lost through leaching to ground and surface waters.

Table 5 (page 18) shows the number of Fonterra supply farms in each zone and in Tasman District as a whole that currently have a nutrient budget for the farm. These figures are also expressed as a percentage of farms in each zone and for the district.

Table 5 shows that during the 2005/2006 season 19.6% of Fonterra supply farms in Tasman have a nutrient budget. The remaining 80.4% of farms rely on annual soil

tests undertaken by their respective fertiliser supplier to determine any nutrient excesses and deficiencies within their soils.

Furthermore, Golden Bay has the greatest number of farms with a budget (an average of 32.8% of all farms in the Bay have one). Most farmers in Golden Bay are aware of what a nutrient budget is as a result of recent road-shows and promotions by Fonterra and Dexcel.

Murchison has the least number of farms with a budget, only 1 of the 27 farms (3.7%) having one. Most farmers in Murchison region were unsure what a nutrient budget was, and had not received any education/promotional material about them.

The fertiliser companies that have undertaken the nutrient budgets have all used a product called Overseer, a model developed by AgResearch Limited.

Table 4: Rate of Compliance on Fonterra Supply Farms in Tasman District (Resource Consent Conditions and Permitted Activity Rules)

Percent of Fonterra suppliers inspected	Percent of Fonterra farms complying fully with consent or permitted activity requirements	Percent of Fonterra farms with technical non-compliances resulting in a minor adverse effect.	Percent of Fonterra farms with non-compliances resulting in a moderate adverse effect	Percent of Fonterra farms with serious non-compliance resulting in a significant and immediate adverse effect	Number of Abatement notices issued to Fonterra suppliers	Number of Infringement fines issued to Fonterra suppliers	Number of prosecutions initiated against Fonterra suppliers.
(100%) 148	Permitted Activities: 56% (70 Farms) * Resource consent: 26% (6 Farms)**	Permitted Activities: 40% (50Farms) * Resource consent:35% (8 Farms)**	Permitted Activities: 2.6% (3 Farms) * Resource consent:26% (6 Farms)**	Permitted Activities: 1.6% (2 Farms) * Resource consent:13% (3Farms)**	17	4	0
TOTAL	51% (76 Farms)	37% (55 Farms)	7% (11 Farms)	4% (6 Farms)	17	4	0

*Following initial visits in Golden Bay and Central regions but prior to Abatement Notice checks in Murchison region (125 farms)

** Following initial visits but prior to Abatement Notice checks – 23 Farms

Table 5: Percent of Fonterra Supply Farms with Nutrient Budgets in Tasman District

		Total Number of Fonterra Farms	Number of Fonterra Farms with Nutrient Budgets	% of Fonterra Farms with Nutrient Budgets
Central	Waimea	9	1	11%
	Upper Motueka	17	4	24%
	Moutere	3	0	0%
Golden Bay	Bainham/Rockville	29	3	10%
	Pakawau	7	0	0%
	Puramahoi/Onekaka	13	5	38%
	Motupipi	11	3	27%
	Kotinga/Anatoki	9	9	33%
	Takaka Valley	23	3	13%
Murchison	Owen	3	1	33%
	Matiri Valley	4	0	0%
	Town	6	0	0%
	Magles/Tutaki	6	0	0%
	Matakitaki	6	0	0%
	Maruia/Shenandoaha	2	0	0%
	TOTAL	148	29	19.60%

It is clear from the data presented in Table 5 that Tasman District has a long way to go to meet the Accord Target of 100% of all farm dairies having a nutrient budget of some kind by 2008, particularly in the Murchison area. A recommendation of this report will be for the RAP signatories to develop a strategy to ensure that all farms have a nutrient budget of some sort by 2007 in order to meet this Accord target.

3.5 Wetlands

Accord Target:

50% of regionally significant wetlands to be fenced to prevent stock access by 2009, 90% by 2012.

The Accord acknowledges that over 90% of lowland wetlands in Tasman District have been drained and that natural water regimes of wetlands need to be protected.

The Council is in the process of further developing the inventory of wetlands from which staff will determine the level of significance (at a regional level) of the wetland(s) on or adjacent to dairy farms. Until this work is completed the level of compliance with respect to each of the Accord targets cannot be assessed.

4. CONCLUSION

It will be recalled that the purpose of this report was to present a 'snap-shot of where Tasman District lies with respect to the five national performance targets as set out in the Clean Streams Accord. Summarised below are the major findings of this report.

Tasman District appears to be well placed with respect to most of the performance targets as set out in the Clean Streams Accord. In particular, 76% of streams in Tasman presently have some form of stock exclusion, thus satisfying the 2007 target of 50% of streams having stock excluded from them and goes a long way towards satisfying the 2012 target of 90% stock exclusion. However, there are eleven farms in the District that have 50% or less of the streams with stock excluded from them, most of these farms are located in the Golden Bay area. This finding highlights the need for extra work by the RAP signatories to assist the farm owners concerned to meet the Accord targets.

All estuaries and lakes have 100% stock exclusion and therefore meet the 2007 target.

Of the 224 regular stock crossings identified in this survey, 188 (77%) presently have bridges or culverts, and all zones presently meet the 2007 Accord target of 50% of regular crossings bridged or culverted. Of the 56 crossings that remain un-bridged in Tasman 36 (64%) are located in Golden Bay. This finding indicates that Golden Bay will have to be made a focus area where extra attention from the RAP signatories will be needed to assist the farm owners concerned to meet the Accord targets.

With respect to the Accord target that aims to have all farm dairies compliant with their respective resource consent conditions or permitted activity rules, this report has highlighted that 44% of all farm dairies that operate under Permitted Activity status do not fully with Rule 36.1.3 of the TRMP. This study found that 85% of this non-compliance related to the farms not having an adequate contingency plan in place to avoid discharges to water in the event of system failure (Rule 36.1.3(c) of the TRMP). This concerning trend of non-compliance needs to be addressed by the RAP signatories. Furthermore, of the 23 farm dairies that have a discharge permit, only 6 farms (26%) fully comply with all conditions of their respective consents. However, it must be noted that the data presented in this report regarding compliance with consent conditions relates to compliance found at the initial farm inspection. This rate of compliance will increase in the 2006/2007 season when all due dates on all Abatement Notices issued will have expired, and the works required to be undertaken to fully comply with the discharge permits should have been completed.

At present only 29 farms (19.6%) in Tasman District have a nutrient budget, the majority of farms rely on annual soil tests to determine any nutrient excesses and deficiencies in the soil. The number of farms with a budget is most likely to improve during the 2006/2007 season due to a roadshow by Dexcel that has recently toured the District. However, it was concerning to find that only 1 farm in the Murchison area had a budget, and that most farm owners were un-aware of what one was. This is likely to be due to the fact that the roadshow did not stop in Murchison, and the farmers have not received any education pamphlets/brochures about nutrient budgeting from either Fonterra or Dexcel. This finding highlights that much work needs to be done in the Murchison area by the RAP signatories in order to meet the 2007 target of all farms managing their nutrient inputs and outputs.

Until an inventory of wetlands is completed by TDC, compliance with respect to the exclusion dairy cows from regionally significant wetlands cannot be assessed.

5. RECOMMENDATIONS

From the findings of this report it is recommended that

- the report be received.
- the RAP signatories (TDC and Fonterra) develop and implement a strategy to ensure that all farms have a nutrient budget of some sort by 2008 in order to meet this Accord target.
- the RAP signatories (TDC and Fonterra) develop and implement a strategy to ensure all farms (particularly those in the Golden Bay sub-region who have the poorest bridging rate) have 50% of their regular crossings bridged/culverted by 2007, and 90% by 2012.
- the Compliance Team in conjunction with the RAP signatories develop a strategy to classify all unbridged crossings in the district based on their environmental effects with the aim of prioritising bridging.

- the RAP signatories (TDC and Fonterra) develop and implement a strategy to ensure full compliance with Section C of Rule 36.1.3 of the TRMP (contingency plans).
- ongoing and regular (annual) inspections of all farm dairies be undertaken to ensure compliance with the permitted activity rules, resource consent conditions, and to keep track of Tasman's progress towards meeting the various performance targets as asset out in the Clean Streams Accord.

6. REFERENCES

Davis-Colley, RJ, Nagels, JW, Smith, RA, Young, RG, and Phillips, CJ. 2004. Water Quality Impacts of a Dairy Cow Herd Crossing a Stream. *New Zealand Journal of Marine and Freshwater Research*. 38:569-576.

Goldschmidt. I. 2001. Dairy Farm Compliance Report 2000/2001. Unpublished report prepared for Tasman District Council.

Irvine, C. 2000. Assessment of Farm Dairy Discharge Permits in the Tasman District for 1999/2000. Unpublished report prepared for Tasman District Council.

Statistics New Zealand. 2003. 2002 Agricultural Production Census (Final Results) June 2002 Commentary. Wellington: Statistics New Zealand

Kathryn Bunting
Compliance Officer

SURVEY FORM
-PERMITTED ACTIVITES



Private Bag 4
RICHMOND 7031
Telephone: (03) 543 8400
Facsimile: (03) 543 9524

Date of inspection _____

**FARM DAIRY INSPECTION 2004/2005
(PERMITTED ACTIVITIES)**

PROPERTY DETAILS

Farm Name _____

Supply Number

Valuation Number

Easting

Zone

Northing

Herd numbers

Friesians/Jersey/Mix

Farm Address _____

Postal Address _____

Farm Owner _____

Phone: _____

Share-milker _____

Phone: _____

MANAGEMENT OF EFFLUENT FROM FARM DAIRY

Description of effluent collection

Description of stormwater controls

Sump size (m³)

Number of storage days provided by sump

Contingency measures in place in case of system failure

Method of effluent application

Total discharge area (ha)

Frequency of discharge

Volume of discharge/application

Area of discharge\application

Application depth(mm)

Soil type

Quantity of artificial fertiliser used (kg/ha/yr)

Source of water

Total area that is pasture irrigated (ha)

Name of nutrient budget model/ programme

Number of un-bridged stream crossings

Percentage of fenced water ways

PERMITTED ACTIVITY RULES

YES NO			COMPLIANT	NON-COMPLIANT
<input type="checkbox"/>	<input type="checkbox"/>	Is the discharge in the Waimea Plains aquifer Protection Area	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Does the discharge result in run-off into any water way or river bed	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Are there contingency measures in place to avoid discharge into water in the event of system failure	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Is the discharge more than 20 meters from a surface waterbody or the coastal marine area	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Is the discharge more than 20 meters from any bore for domestic water supply	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Is the discharge more than 10 meters from any adjoining property	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Is the discharge more than 50 meters from any dwelling on an adjoining property	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Are the effluent storage facilities sealed	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Is the nitrogen loading rate less than 200kgN/ha/yr when considering with any other applied fertiliser	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Does the discharge area have more than 90% vegetative cover	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Does the discharge create an offence or objectionable odour beyond the property boundary	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Does the discharge resulting in ponding for more than one hour	<input type="checkbox"/>	<input type="checkbox"/>

Compliance issues

SURVEY FORM
DISCHARGE PERMITS



Bag 4
RICHMOND 7031
Telephone: (03) 543 8400
Facsimile: (03) 543 9524

Date of inspection _____

**FARM DAIRY INSPECTION 2005/2006
(DISCHARGE PERMITS)**

1. PROPERTY DETAILS

Farm Name _____

Supply Number <input style="width: 150px; height: 25px;" type="text"/>	Valuation Number <input style="width: 150px; height: 25px;" type="text"/>
Easting <input style="width: 150px; height: 25px;" type="text"/>	Zone <input style="width: 150px; height: 25px;" type="text"/>
Northing <input style="width: 150px; height: 25px;" type="text"/>	Herd numbers <input style="width: 150px; height: 25px;" type="text"/>
Stocking Rate <input style="width: 150px; height: 25px;" type="text"/>	Friesians/Jersey/Mix <input style="width: 150px; height: 25px;" type="text"/>

Farm Address _____

Postal Address _____

Farm Owner _____

Phone: _____

Share-milker _____

Phone: _____

2. MANAGEMENT OF EFFLUENT FROM FARM DAIRY

Description of effluent collection _____

Description of stormwater controls _____

Anaerobic Pond (First Pond)

Age of Pond System

(accounts for a 2:1 batter slope)

Anaerobic Pond Volume

Length m x Width m x Depth m = m³ x 0.5 = m³

Recommended Anaerobic Pond Sizes

No. of cows	Recommended Volume	No. of cows	Recommended Volume
100	550m ³	350	1870m ³
150	800m ³	400	2130m ³
200	1060m ³	450	2380m ³
250	1310m ³	500	2640m ³
300	1620m ³		

Does the Anaerobic Pond meet the recommended volume for the size of herd YES NO

Are the solids retained in the Anaerobic Pond by an effective baffle or 'T' pipe

Is stormwater from the farm dairy and surrounding land diverted away from ponds

FEED PADS Description of effluent collection and disposal: _____

Size m² Frequency of Use

Length of time used Volume of washdown water m³

Aerobic Pond(s) (Second/Third/Fourth Ponds)

Depth of Aerobic Pond(s) m m

m		
---	--	--

Location of Point of Discharge

Northing	Easting

Aerobic Pond #1	=	Width	x	Length	=	Surface Area
		m		m		m ²
+						
Aerobic Pond #2 (if relevant)	=	m	x	m	=	m ²
+						
Aerobic Pond #3 (if relevant)	=	m	x	m	=	m ²

Total Surface Area of Aerobic Ponds = m²

Recommended Aerobic Pond Sizes

No. of cows	Recommended Surface Area	No. of cows	Recommended Surface Area
100	480m ²	350	1660m ²
150	720m ²	400	1900m ²
200	950m ²	450	2140m ²
250	1190m ²	500	2370m ²
300	1420m ²		

	NO	YES
Does the aerobic pond(s) meet the recommended surface area for the size of herd		
Is the pond system designed to cater for additional effluent from stand-off/feed pad areas		
Are all ponds within the treatment system sealed to prevent contamination of groundwater by seepage		
Is the effluent periodically discharged to land		*

* Complete Section 4 - LAND APPLICATION OF EFFLUENT (RULE 36.1.3 of the TRMP)

Description of how the ponds are desludged, how the sludge is disposed of, where, and area

(ha)
over which the sludge is
spread

How often are the ponds desludged	<input type="text"/>	When were the ponds last desludged	<input type="text"/>
Soil Type	<input type="text"/>	Source of water for farm dairy	<input type="text"/>
Quantity of artificial fertiliser (kgN/ha/yr)	<input type="text"/>	Name of nutrient budget model/programme	<input type="text"/>
Number and Percent of un-bridged stream crossings	<input type="text"/>	Percentage of fenced water- ways	<input type="text"/>

3. CONSENT CONDITIONS

Condition No.	Description of Condition	Compliant	
		NO	YES
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Sample results

Point of Discharge:

BOD₅ TSS

Upstream

TSS	BOD ₅	E. coli	Faecal C.	D.O	Nitrate N	√. Ammonia
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Downstream

TSS	BOD ₅	E. coli	Faecal C.	D.O	Nitrate N	√. Ammonia
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Description of receiving waters

-
colour, slime, smell, aquatic
flora and fauna

4. LAND APPLICATION OF EFFLUENT (RULE 36.1.3 of the TRMP)

Method of effluent application to land _____

Total discharge area (ha)	<input type="text"/>	Frequency of discharge	<input type="text"/>
Volume of discharge/application	<input type="text"/>	Area of discharge/application	<input type="text"/>

PERMITTED ACTIVITY RULES

YES	NO		COMPLIANT	NON-COMPLIANT
<input type="checkbox"/>	<input type="checkbox"/>	Is the discharge in the Waimea Plains aquifer Protection Area	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Does the discharge result in run-off into any water way or river bed	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Are there contingency measures in place to avoid discharge into water in the event of system failure	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Is the discharge more than 20 meters from a surface waterbody or the coastal marine area	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Is the discharge more than 20 meters from any bore for domestic water supply	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Is the discharge more than 10 meters from any adjoining property	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Is the discharge more than 50 meters from any dwelling on an adjoining property	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Are the effluent storage facilities sealed	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Is the nitrogen loading rate less than 200kgN/ha/yr when considering with any other applied fertiliser	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Does the discharge area have more than 90% vegetative cover	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Does the discharge create an offence or objectionable odour beyond the property boundary	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	Does the discharge resulting in ponding for more than one hour	<input type="checkbox"/>	<input type="checkbox"/>

Compliance _____

