Study report:

Predicting SAR response and operational requirements based on NZ population projections through to 2030

Volume 2: Profiles of SAR agency capability
(SAR supply)

Prepared for:

Search & Rescue Institute New Zealand Ltd.

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1. A brief summary of volunteer profiles

These profiles were developed primarily to provide baseline data for comparisons with regional populations and the pattern of SAR demand incidents. They were developed using selected descriptive data from membership databases. As required by the contributing SAR organisations, the source data was filtered to remove any personal contact information and results were presented in summary form only. This ensured that no individual member could be identified in any way from this information.

The information available for analyses varied between the different SAR organisations, and Table 1-1[1] summarises the variables recorded in respective databases. Note that AREC (Amateur Radio Emergency Communications) had no electronic database of membership information, and it was necessary to conduct a member survey to get descriptive data on AREC volunteers. Overall, this set of data was the basis for developing the volunteer group profiles used in this study, and summarised on following pages.

Table 1-1. Descriptive profile data* in respective membership databases

* + denotes presence; - denotes absence.

SAR Group	Date of Birth	Gender	Ethnic origin	Home area	Occupation	SAR Group area	Area of interest
LandSAR	+	+	-	+	-	+	-
Coastguard	+	+	-	+	-	+	+
Surf Life Saving	+	+	-	+	+	+	+
AREC	-	-	-	-	-	-	-

Basic data was available on respective volunteer's date-of-birth, gender, general home location and the SAR-group region they belonged to. This was the bare minimum required for developing the demographic profiles. Some groups had more data available on occupation type and areas of SAR interest, and this is reflected in their specific profiles. The depth of the demographic profiles developed was limited by the range of variables available. Here it is worth noting that McLennan (2004)[2] reviewed similar descriptive data collected on volunteer members by Australian Fire Fighting agencies. Most there also collected only the basic information necessary for administrative purposes. Few collected additional information that would allow more detailed strategic planning for future needs. It was recommended that there was a general need to review the collection of descriptive data and to improve its range and content. This would be a clear recommendation also made by the present study.

Based on these data sources, the detailed demographic profiles are presented in the following sections for the four specific SAR sector volunteer groups. An additional profile is also presented for those who did SAR training courses with SARINZ. Before presenting these profiles, some generic comparisons between these four groups are briefly summarised overleaf, including selected data on SARINZ trainees. This raises some generic overall issues related to volunteer numbers, gender, age and regional distribution around New Zealand. These issues are all explored at greater depth in the main body of the report (Volume 1)

[1] A list of tables and figures is provided in the back section of this report.

[2] See: http://www.bushfirecrc.com/downloads/REPORT_3-PROFILE.pdf.

1.1. Volunteer numbers

The number of volunteers involved in each sector group are summarised in Table 1-2 (graphed in Figure 1-1) using membership data for 2008-09. The large number of volunteer members in Surf Life Saving NZ is exceptional, although many are involved in the youth sport aspects of surf activities rather than being active volunteer life savers and support staff. Volunteer numbers are very similar between LandSAR NZ and Coastguard NZ. And given the specialised nature of their communication-support roles in SAR, AREC volunteers are currently relatively numerous.

Table 1-2. Membership numbers in respective SAR-Sector groups

SAR group	LandSAR	Coastguard	Surf Life Saving	AREC
Member no	2806	2110	15003	1292

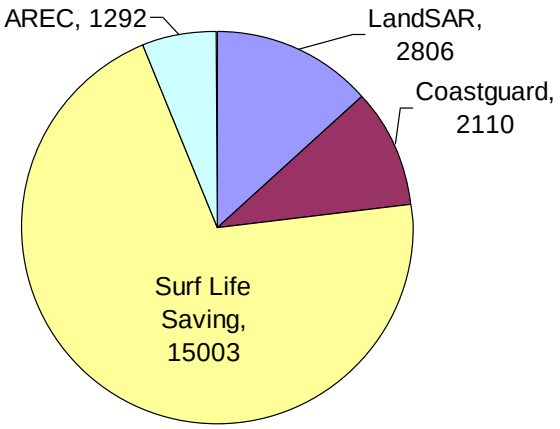


Figure 1-1. SAR agency membership numbers.

1.2. Volunteer Gender

There is considerable gender imbalance in three of the four SAR groups, with an extreme proportion of males being the typical characteristic. The main exception is Surf Life Saving were the proportions are almost 50:50. However as is shown in its profile the female proportion in Surf Life Saving drops quickly in older age groups. Table 1-3 (and Figure 1-2) illustrates the overall balance for each organisation. The SARINZ trainee group most closely represents the LandSAR group, which as shown in the corresponding trainee profile reflects LandSAR as being the source of most SARINZ trainees to date.

Table 1-3. Gender balance for different SAR-Sector groups

SAR group	% Female	% Male
AREC	6	94
Coastguard	15	85
LandSAR	21	79
SARINZ trainees	24	76
Surf Life Saving NZ	45	55

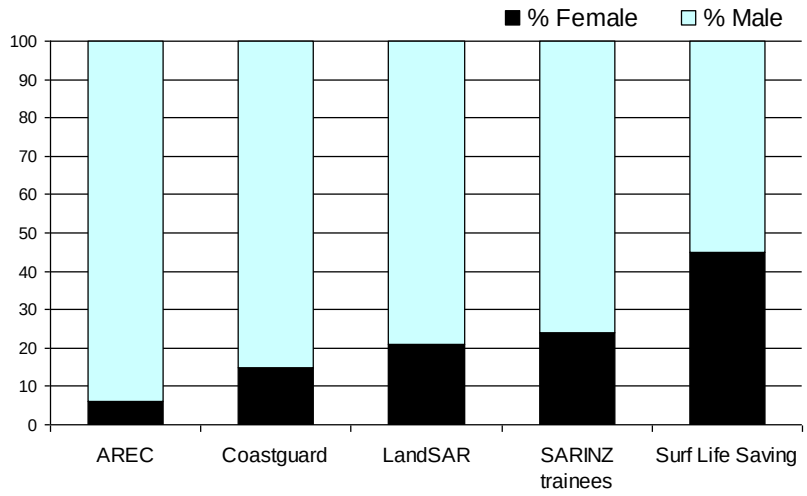


Figure 1-2. Gender balance for different SAR-Sector groups

1.3. Volunteer Age profiles

Each of the SAR groups shows an age profile quite different from that the overall NZ population (Figure 1-3) – demonstrating that they are generally non-representative of the NZ population in this respect. However they are non-representative in very different ways. Volunteers from Surf Life Saving are relatively much 'younger', those from AREC much 'older', and those from LandSAR and Coastguard much more 'middle-aged'.

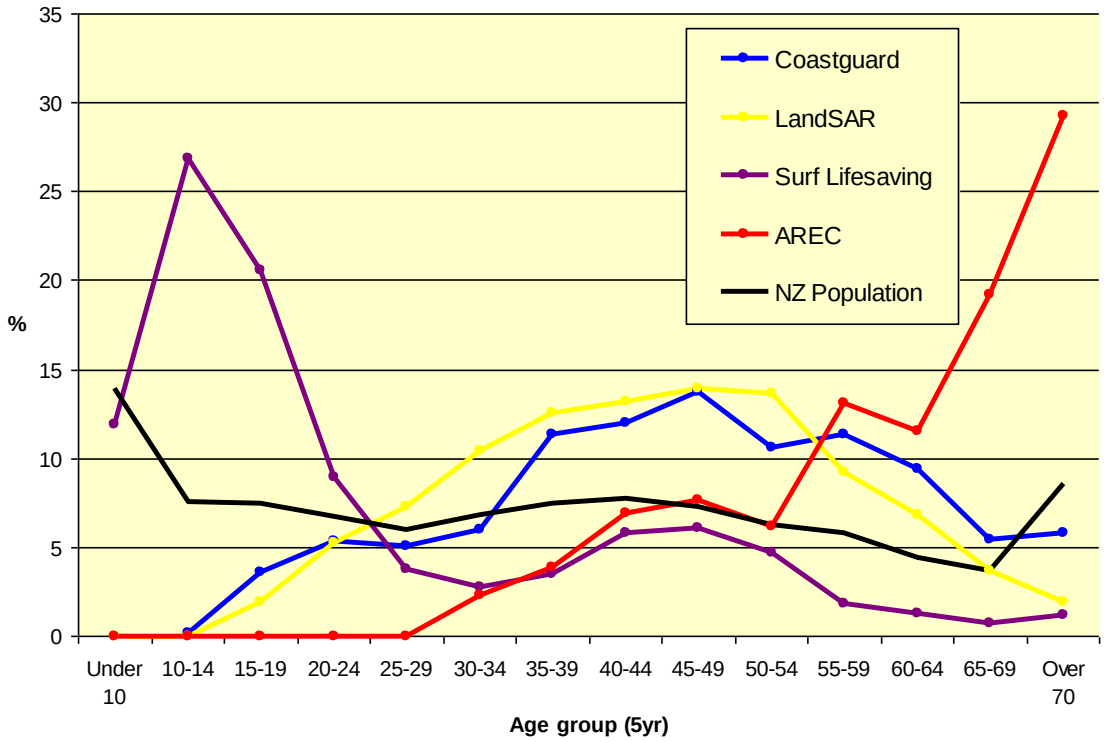


Figure 1-3. Age structure of SAR volunteer agencies – vs. NZ population

This has implications for the succession-planning that may need to be considered for the different SAR groups. However to do such planning effectively more specific information on volunteer 'careers' or 'pathways' within the different organisations would be required. There is little other data collected on the respective volunteer

groups that would allow such analysis from existing membership databases. This suggests a specific research stream may need to be considered, along with an enhanced collection of key volunteer baseline information.

1.4. Volunteer Distribution - Regional variations

The detailed profiles show generally that volunteer numbers are unevenly distributed around New Zealand relative to NZ population. And within each SAR group there is also considerable regional variation in the number of volunteers potentially available per incident. Summarising briefly, Table 1-4 shows the proportion of SAR group members across New Zealand regions, compared with the wider New Zealand population proportions. Where figures are shaded red there is under-representation of the SAR group members relative to the local population. Where they are shaded green there is a relative over-representation. This highlights regional variations in distribution, although it may not represent relative SAR capacity issues. That is also affected by local conditions of SAR supply and demand such as Police SAR operational practices, recreation activity settings and types, tourism patterns and population characteristics.

Table 1-4. SAR Group Volunteer distribution in New Zealand regions

NZ Region	LandSAR %	Coastguard %	AREC %	Surf %	NZ Popn %
Auckland	2	28	21	25	32
Canterbury	14	8	15	10	13
Wellington	9	8	7	8	11
Waikato	15	12	10	11	10
BOP	3	10	9	16	6
Manawatu Wanganui	7	2	3	4	6
Otago	16	4	6	5	5
Northland	2	11	6	5	4
Hawkes Bay	2	4	7	5	4
Taranaki	4	2	1	6	3
Southland	7	3	2	1	2
Tasman	4	0	1	0	1
Gisborne	1	3	1	4	1
Nelson	1	1	3	0	1
Marlborough	3	1	6	1	1
West Coast	10	2	2	0	1
n=	2805	2110	125	15002	4027426

Overall, these brief summary comparisons of quite basic demographic characteristics reinforce a general finding that SAR-sector volunteers and groups are diverse and different. They are distributed unevenly around the country according to local conditions of demand and opportunity. These issues are explored in greater depth in the main body of the report (Volume 1), and the more specific detail of tables and figures for SAR-Volunteer groups are presented in the following data summary profiles. These are not developed further then simple presentation here as their primary role has been to inform the development and application of the SAR supply and demand model.

2. LandSAR Volunteer Profile

2.1. Data Source

Data were sourced from an edited summary subset of the LandSAR NZ membership database. The database used for these analyses was edited by having all variables removed that were in any way related to individual member names or contact details. As a result no individual member could ever be identified from these data.

The final database subset comprised 2806 records, and included data related to member gender, date-of-birth, summarised home area, LandSAR site, and LandSAR region. From these data sources were estimated member age-group and summarised home area variables. The 'home area' variables generated included member's respective Regional Authority area, Territorial Authority Area, Police District and Police Area. These were generated in summary form to enable comparisons with general population data using corresponding data and spatial units from Statistics NZ.

Limitations:

Some data records did not include information for all the variables listed on the membership form. Complete data records were present for 1692 of the 2806 records (60%). Provision of complete records varied between respective LandSAR districts, and this breakdown can be presented if required.

Main Information Areas:

- Gender
- Age-group - 5yr & 10yr groups, Median age – also by gender and region
- Region - LandSAR and Regional Authority – also by age and gender
- LandSAR % vs. NZ Region % - relative distributions and representativeness
- Data Completeness – Identifies gaps in the LandSAR member database coverage

2.2. LandSAR Member Distribution – LandSAR Regions

The size of LandSAR's membership varies regionally, and contrasts with the regional pattern shown in respect of the NZ population overall (Table 2-1). LandSAR members are highly under-represented relative to population in Northern LandSAR Region (4% of LandSAR members vs. 36% of NZ pop). LandSAR members are highly over-represented relative to population in Tasman (18% vs. 4%) and Southern Regions (22% vs. 7%); this may reflect higher recreational based demand in these particular areas.

Table 2-1 LandSAR Member Distribution - % vs. NZ % across LandSAR Regions

	Member numbers	Member %	NZ Pop	NZ Pop %
Southern	640	23	284676	7
Central	629	22	*775506*	19
Tasman	513	18	*161397*	4
Midland	461	16	*640095*	16
Canterbury	374	13	*521832*	13
Northern	117	4	*1451538*	36
Eastern	71	3	*192282*	5
n=	2805	100	4027326	100

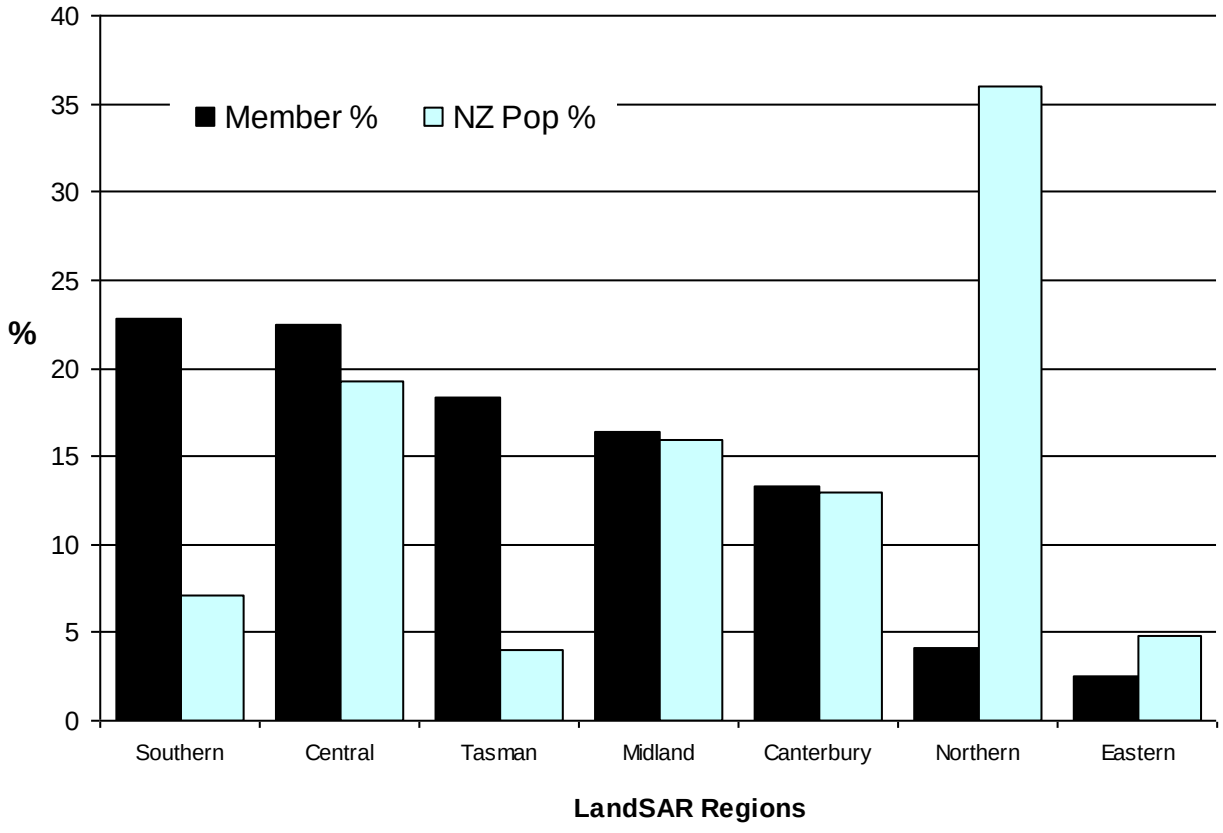


Figure 2-1. LandSAR Member Distribution - % vs. NZ % across LandSAR Regions

2.2.1. LandSAR Member Distribution – NZ Regions

LandSAR membership levels vary across NZ relative to Regional Authority populations. Membership is very highly under-represented relative to NZ population in Auckland Region (2% vs. 32% NZ population), and BOP, Northland and Hawke's Bay Regions (Table 2-2). Membership is most highly over-represented in West Coast (10% vs. 1% NZ population), Otago, Southland and Tasman Regions.

Table 2-2. LandSAR Members by NZ Regions VS NZ Region Populations

NZ Region	LandSAR members	LandSAR member %	NZ Population	NZ Population %
Auckland	59	2	1303068	32
Canterbury	388	14	521832	13
Wellington	259	9	448959	11
Waikato	427	15	382716	10
BOP	74	3	257379	6
Manawatu Wanganui	204	7	222423	6
Otago	443	16	193800	5
Northland	58	2	148470	4
Hawkes Bay	55	2	147783	4
Taranaki	126	4	104124	3
Southland	197	7	90876	2
Tasman	106	4	44625	1
Gisborne	16	1	44499	1
Nelson	40	1	42888	1
Marlborough	83	3	42558	1
West Coast	270	10	31326	1
	2805	100	4027426	100

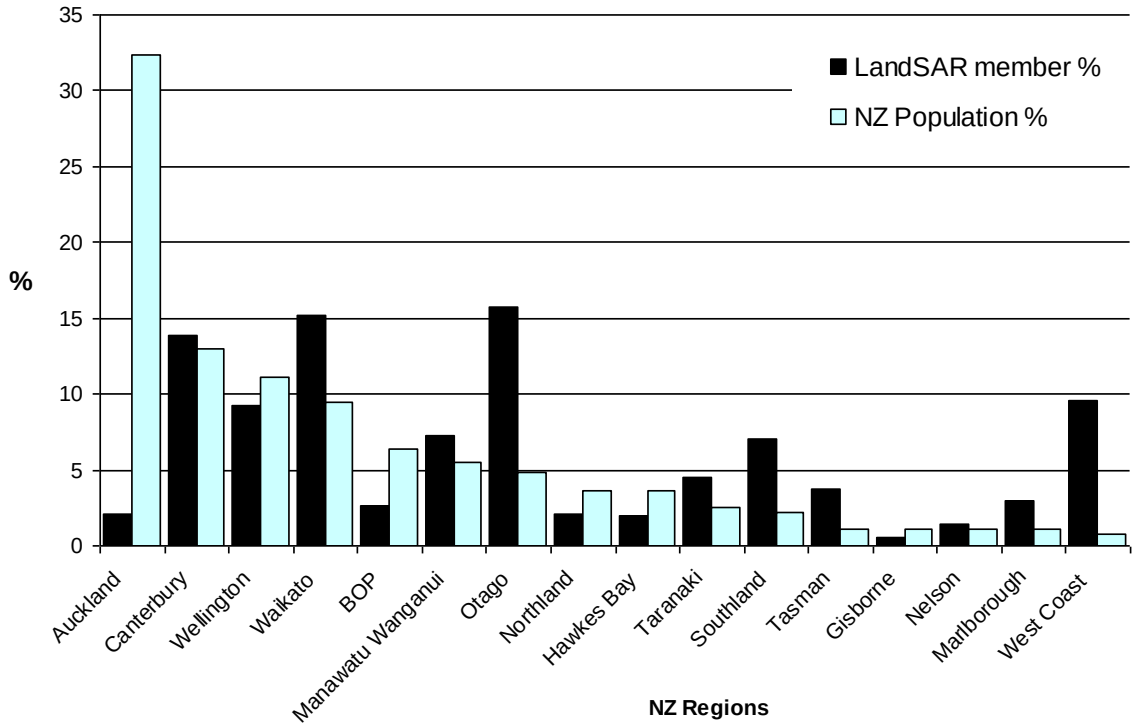


Figure 2-2. LandSAR Members % by NZ Regions VS NZ Region Populations %

2.3. LandSAR members - Gender

LandSAR members are predominantly male (79% vs. 21% female Table 2-3). There is some regional variation, with the highest proportions of females in Auckland (31%) and Bay of Plenty (26%). In contrast, Wellington and West Coast have lowest (15% each).

LandSAR Regions show up differences as well, with the highest female proportions in the Northern Region (28%) and the least in Southern Region (16% - Table 2-4).

2.3.1. Gender by region

Table 2-3. LandSAR Gender by NZ Regions

	Female	Male	*n=*
Auckland	31	69	*59*
Northland	26	74	*58*
Hawkes Bay	25	75	*55*
Marlborough	25	75	*83*
Wellington	25	75	*259*
Nelson	25	75	*40*
West Coast	24	76	*270*
Canterbury	22	78	*388*
All LandSAR	20	80	*2805*
Waikato	20	80	*427*
Southland	18	82	*197*
BOP	18	82	*74*
Taranaki	17	83	*126*
Tasman	17	83	*106*
Manawatu Wanganui	15	85	*204*
Otago	15	85	*443*
Gisborne	6	94	*16*

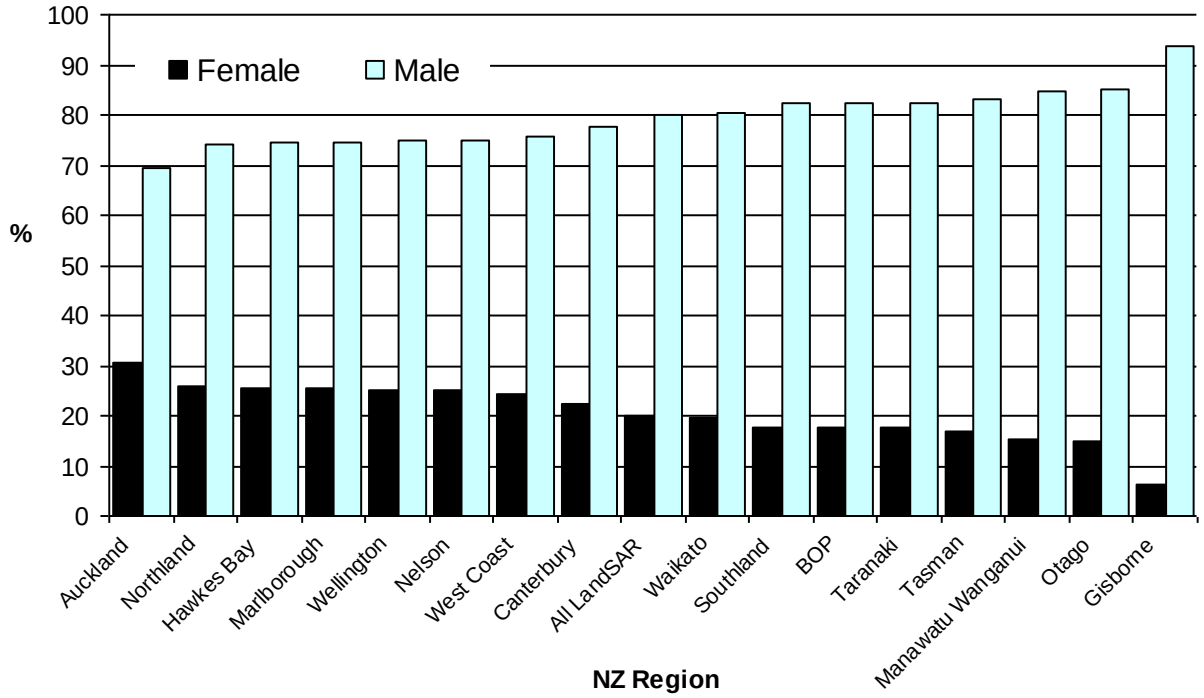


Figure 2-3. LandSAR Gender by NZ Regions

Table 2-4. Gender by LandSAR regions

	Northern	Canterbury	Tasman	Eastern	Midland	Central	Southern	All LandSAR
Male	72	77	77	79	80	81	84	79
Female	28	23	23	21	20	19	16	21
n=	117	374	513	71	461	629	640	2805

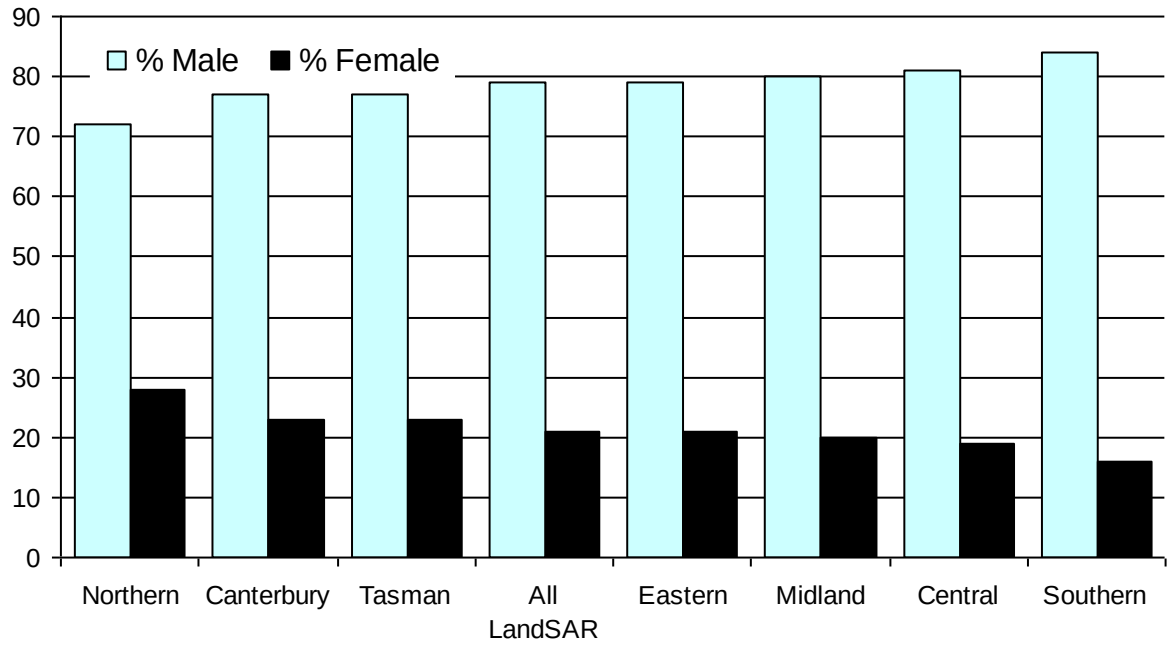


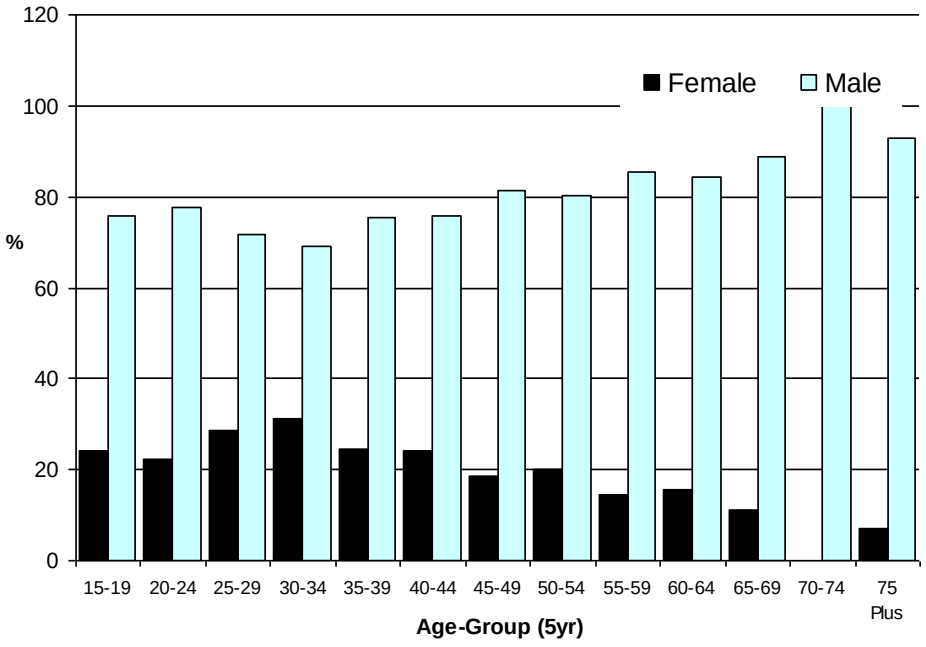
Figure 2-4. Gender by LandSAR regions

2.3.2. Gender by age-group – 5yr

The proportion of female LandSAR members is younger age categories and peaks during the late 20s and early 30s. It then declines in older age groups (Table 2-5). Reasons for the decline of females from 35yrs onwards is unclear, as there are no longitudinal data to make comparisons to determine whether there is a drop off in participation, or whether the peak in the younger age group is simply a cohort effect (meaning that cohort may be retained – this is an area needing further research).

Table 2-5. Gender by Age (5yr)

	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75 Plus	All
Female	24	22	28	31	25	24	19	20	15	16	11	0	7	21
Male	76	78	72	69	75	76	81	80	85	84	89	100	93	79
n=	33	89	123	177	212	224	236	231	157	115	62	19	14	1692



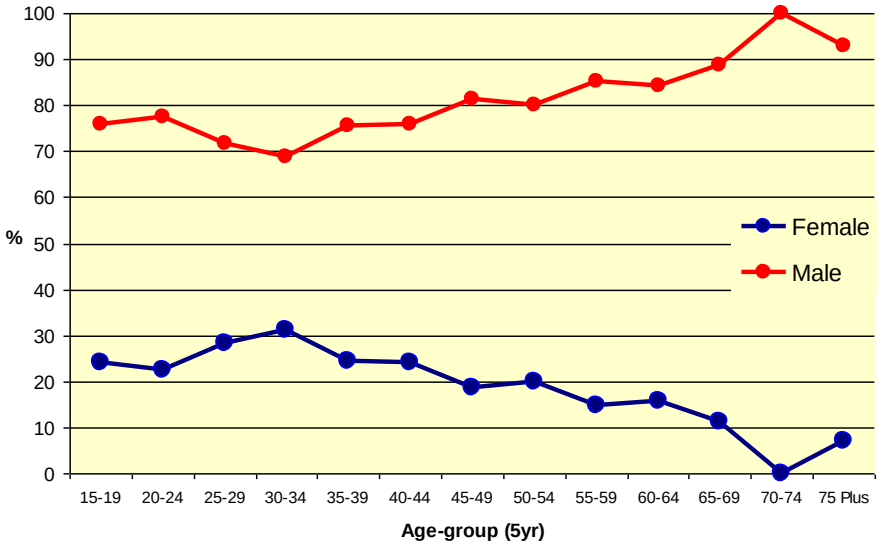


Figure 2-5. Gender by Age (5yr) – bar chart and line chart

2.3.3. Gender by age-group – 10yr

A similar pattern is shown in respect of the proportion of female LandSAR members (using 10 year age categories). It is higher when younger and peaks during the late 20s and early 30s and then declines in older age groups (Table 2-6).

Table 2-6. Gender by Age (10yr)

	Under 20	20-29	30-39	40-49	50-59	60-69	70plus	All
Female	24	26	28	21	18	14	3	21
Male	76	74	72	79	82	86	97	79
n=	33	212	389	460	388	177	33	1692

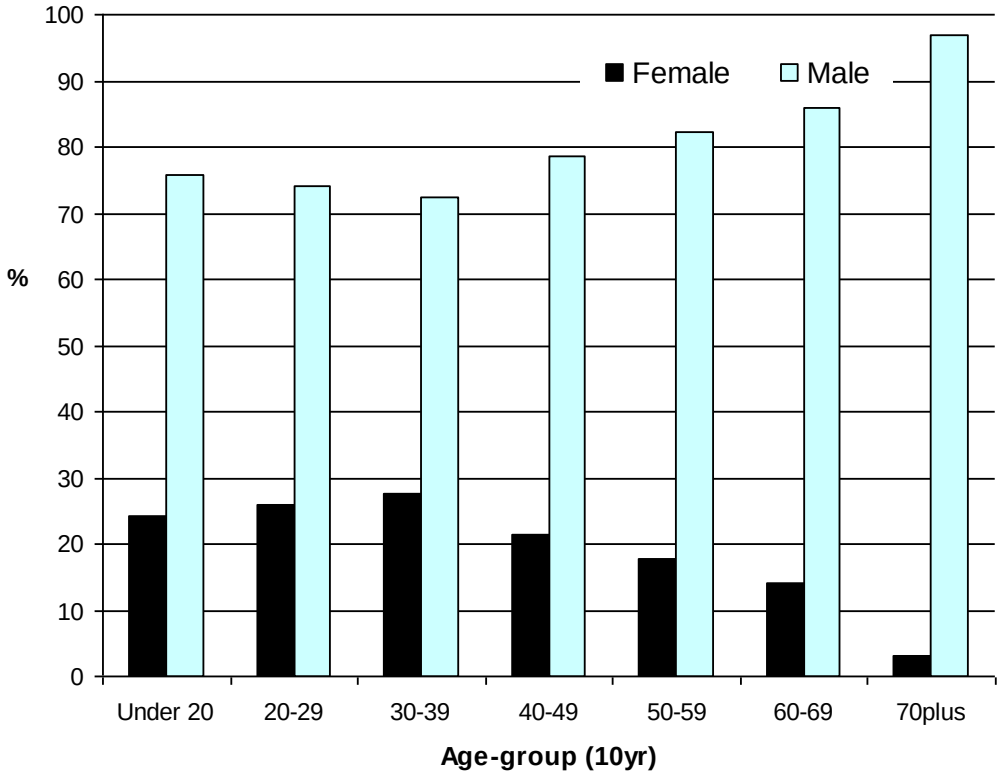


Figure 2-6. Gender by Age (10yr)

2.4. LandSAR members – Age

LandSAR membership is over-represented in the middle-age groups relative to the NZ population overall, as shown for both 5 year (Table 2-7) and 10 year age classifications. The distribution shows a marked peak in the 40-50yr categories (Figure 2-7 & Figure 2-8). Data are graphed for both LandSAR vs. NZ population for both 5yr (Figure 2-7) and 10yr categories (Figure 2-8) and by LandSAR region (Figure 2-9). The latter graph (Figure 2-9) indicates there is a consistent pattern across each of the regions (with exclusion of East Coast – which has limited data), showing that age and recruitment patterns appear to be constant nationally (and are not location specific).

Table 2-7. Age Groups (5yr)

	LandSAR members	LandSAR member %	NZ Population %
0-4	0	0	7
5-9	0	0	7
10-14	0	0	8
15-19	33	2	7
20-24	89	5	7
25-29	123	7	6
30-34	177	10	7
35-39	212	13	7
40-44	224	13	8
45-49	236	14	7
50-54	231	14	6
55-59	157	9	6
60-64	115	7	4
65-69	62	4	4
70+	33	2	9
Total	1692	100	100

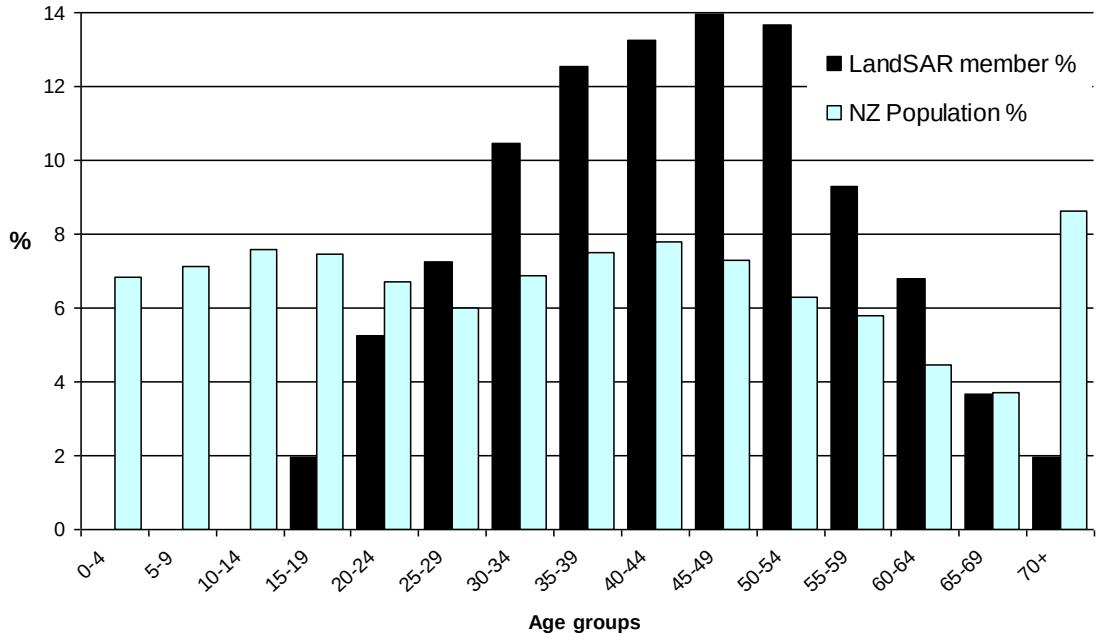


Figure 2-7. Age Groups (5yr)
Table 2-8. Age Groups (10yr)

	LandSAR members	LandSAR member %	NZ Population %
Under 20	33	2	29
20-29	212	13	13
30-39	389	23	14
40-49	460	27	15
50-59	388	23	12
60-69	177	10	8
70 plus	33	2	9
n=	1692		

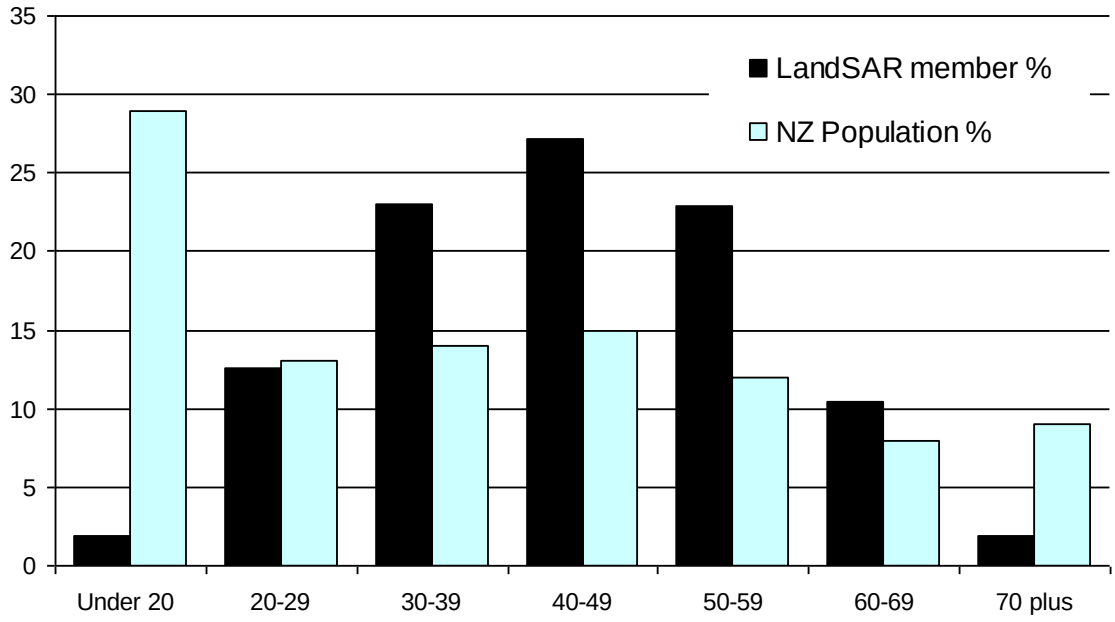


Figure 2-8. Age Groups (10yr)

Table 2-9. Age Groups (10yr) by LandSAR Region

	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70+	n=
Canterbury	0	1	14	28	29	19	8	1	216
Central	0	1	13	24	24	26	10	2	381
Eastern	0	0	10	10	50	10	20	0	10
Midland	0	2	13	18	31	19	13	4	377
Northern	0	0	7	27	28	23	14	1	96
Southern	0	2	11	26	25	25	9	2	305
Tasman	0	4	13	21	26	25	9	1	307
All LandSAR	0	2	13	23	27	23	10	2	1692
All NZ	*15*	*16*	*13*	*15*	*16*	*13*	*9*	*3*	

Table 2-10. Age Groups (10yr) by NZ Region
(Note low numbers in some regions)

	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70 +	n=
Auckland	0	0	5	30	32	20	11	2	56
BOP	0	2	9	14	26	29	16	5	58
Canterbury	0	1	14	28	29	19	8	0	216
Gisborne	0	0	0	17	50	17	17	0	6
Hawkes Bay	0	0	25	0	50	0	25	0	4
Manawatu Wanganui	0	3	11	20	22	34	8	2	107
Marlborough	0	0	0	14	57	14	7	7	14
Nelson	0	0	0	21	47	32	0	0	19
Northland	0	0	10	23	23	28	18	0	40
Otago	0	3	8	25	27	26	9	1	202
Southland	0	1	17	27	22	23	8	1	103
Taranaki	0	0	0	13	41	24	15	7	46
Tasman	0	7	6	17	27	29	12	2	102
Waikato	0	3	13	19	33	16	12	4	338
Wellington	0	0	18	29	18	24	11	0	209
West Coast	0	2	20	24	20	23	9	1	172
All LandSAR	0	2	13	23	27	23	10	2	1692
All NZ	14	15	13	14	15	12	8	8	

Table 2-11. Age Groups (5yr) by LandSAR Region
(Note low numbers in some regions)

Region	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70+	*n=*
Canterbury	1	6	8	17	11	14	15	12	7	6	2	1	*216*
Central	1	5	8	12	13	12	12	16	10	6	4	2	*381*
Eastern	0	0	10	0	10	20	30	10	0	10	10	0	*10*
Midland	2	6	7	7	10	16	15	12	6	7	6	4	*377*
Northern	0	2	5	11	16	18	10	10	13	10	3	1	*96*
Southern	2	6	6	9	16	10	15	14	11	7	2	2	*305*
Tasman	4	5	8	10	11	11	15	15	11	7	3	1	*307*
All LandSAR	2	5	7	10	13	13	14	14	9	7	4	2	*1692*
All NZ	7	7	6	7	7	8	7	6	6	4	4	9	

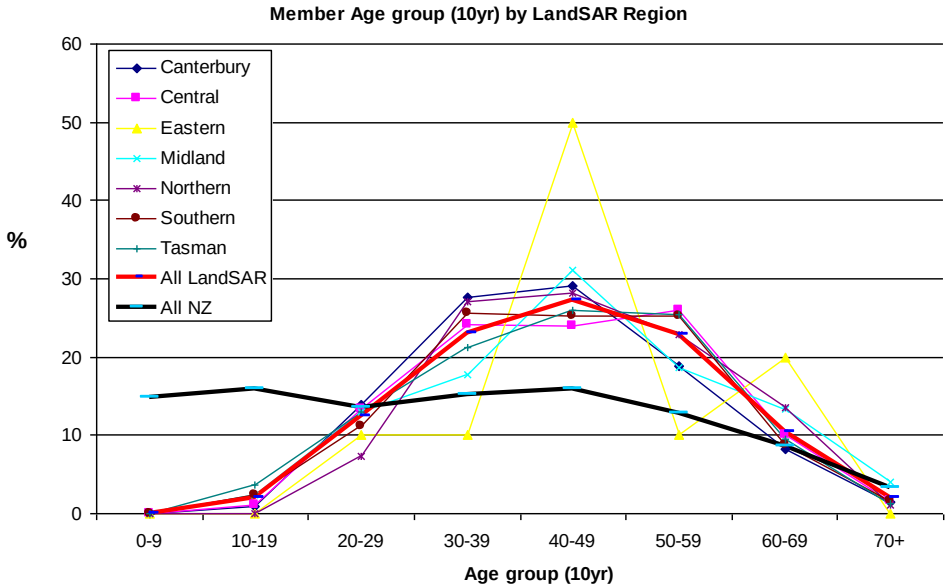


Figure 2-9. Member Ages (10yr) by LandSAR Regions

2.4.1. Median Age

LandSAR member – Median age by LandSAR Region

There are apparent differences in median ages by LandSAR Region (Table 2-12) and by NZ population region (Table 2-13). LandSAR Northern has notably higher median age (Figure 2-10).

Table 2-12. Median Age by LandSAR Region

	Canterbury	Midland	Central	Tasman	Southern	Eastern	Northern	All Regions
Median	42	44	44	45	45	47	48	45

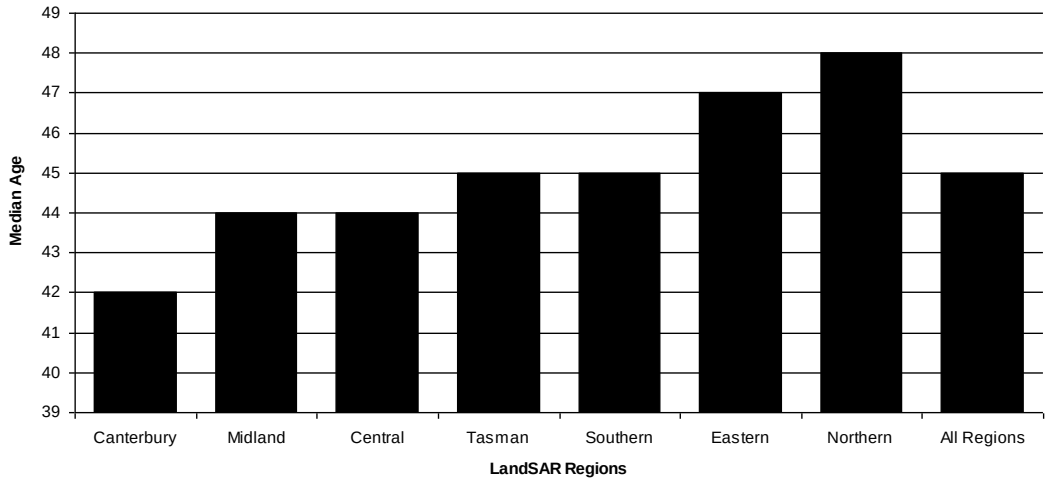


Figure 2-10. Median Age by LandSAR Region

Table 2-13. Median LandSAR Age by NZ Region

	Wellington	West Coast	Southland	Canterbury	Auckland	Waikato	Nelson	Otago	Manawatu Wanganui	Northland	Taranaki	Marlborough	Tasman	BOP	Gisborne	Hawkes Bay	All Region
Median	40	40	41	42	44	44	45	45	46	46	47	48	48	49			45
n =	209	172	103	216	56	338	19	202	107	40	46	14	102	58	6	4	1692

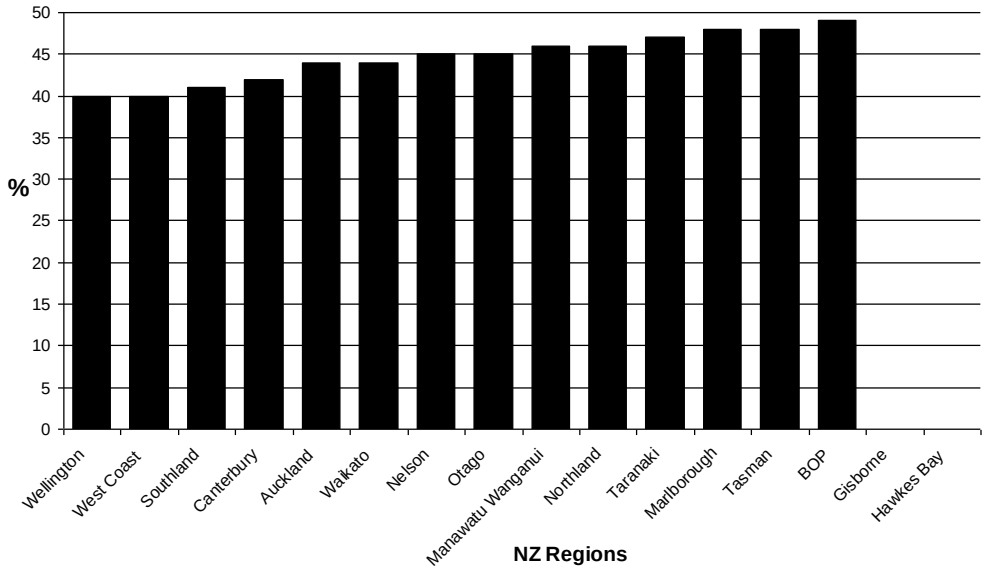


Figure 2-11. Median Age by NZ Region

3. Surf Life Saving - Volunteer Profile

3.1. Data Source

Data for tables and charts were sourced from an edited summary subset of the Surf Life Saving membership database for 2008-09. The database used for these analyses was edited by having all variables removed that were in any way related to individual member names or contact details. As a result no individual member could ever be identified from these data.

The final database subset comprised 15003 records, and included data related to member gender, date-of-birth, occupation (limited) Surf club, Surf Life-saving interest areas (e.g. patrolling, power craft, coaching, officials, sport, junior surf) and training status (e.g. Refresher, IRB). From these data sources were estimated member age-group and summarised home area variables. The 'home area' variables generated included member's respective Regional Authority area, Territorial Authority Area, and Surf Life Saving Region (old and new). These were generated in summary form to enable comparisons with general population data using corresponding data and spatial units from Statistics NZ.

Limitations:

Some data records did not include information for all the variables listed on the membership form. The occupation variable was only completed for 3811 of 150003 records (25%), although this is sufficient to give a good indication of occupation types and will be used.

Variables on 'area of interest' were optional and only meant to indicate where people were interested in participating, not necessarily where they eventually did contribute. But again it does provide some indication of interest type.

Occupation status fields were complete for 26% of the members (represent 3811 people). This is a useful indicator. Of these 3811, only 1496 are in work, while the remainder are students, retired and other non-work types.

Main Information Areas:

- Gender by Surf Region, by NZ Region, bay Ag 5 and 10 yr
- Age-group - 5yr & 10yr groups, Median age – also by gender and region
- Region – Surf NZ and Regional Authority – also by age and gender
- Area of Interest
- Occupation Status

3.2. Surf LS Members by NZ Region

Surf life saving NZ members are most highly over-represented in Gisborne Region (4% vs. 1% NZ population), followed by Bay of Plenty (16% vs. 6%) and Taranaki (6% vs. 3%, Table 3-1 & Figure 3-1). The most notably under-represented regions are Auckland (25% vs. 32%) and Wellington (8% vs. 11%).

Certain regions have only a limited number of surf clubs (or none at all as is the case with Tasman) – e.g., Nelson (n=27, only 1 surf club), and Marlborough (n=81, 1 club) and West Coast (n=70, 2 clubs) all have relatively low numbers.

Table 3-1. Surf LS Members by NZ Region

	Surf members	Surf members %	NZ Population %
Auckland	3805	25	32
BOP	2353	16	6
Waikato	1656	11	10
Canterbury	1546	10	13
Wellington	1176	8	11
Taranaki	870	6	3
Northland	733	5	4
Otago	680	5	5
HawkesBay	678	5	4
Gisborne	664	4	1
ManawatuWanganui	576	4	6
Southland	87	1	2
Marlborough	81	1	1
WestCoast	70	0	1
Nelson	27	0	1
Tasman	0	0	1
	15002		

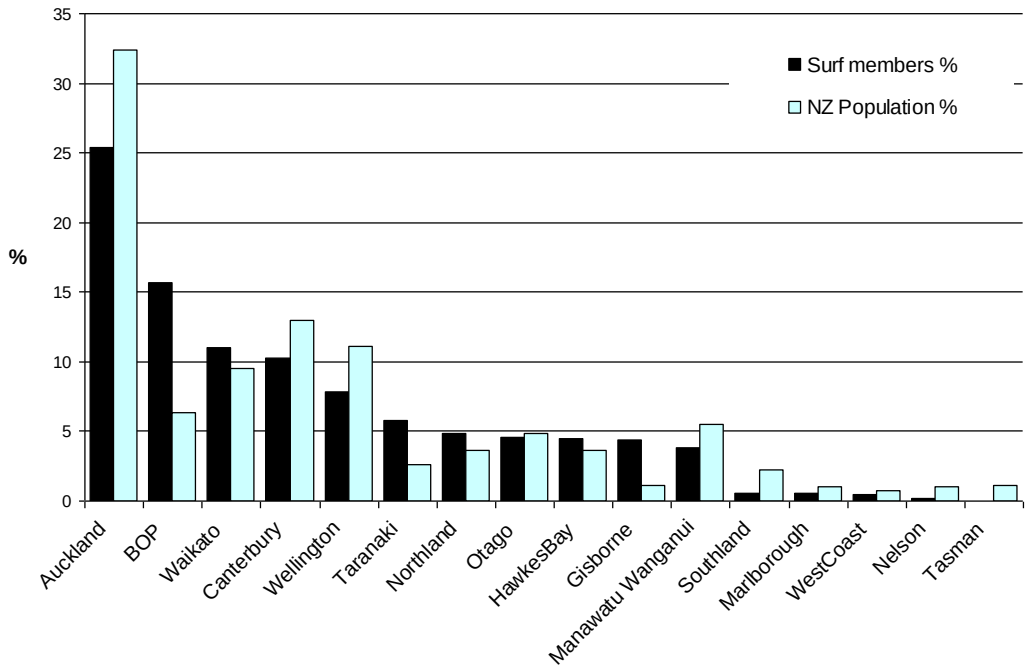


Figure 3-1. Surf LS Members by NZ Region

3.3. Surf LS members - Gender

There is quite an even balance in Surf LS gender overall, with females comprising 45% of Surf LS members (Table 3-2 & Figure 3-2).

Table 3-2. Gender - Surf LS

	Surf members %	NZ population %
Female	45	51
Male	55	49
n=	14953	

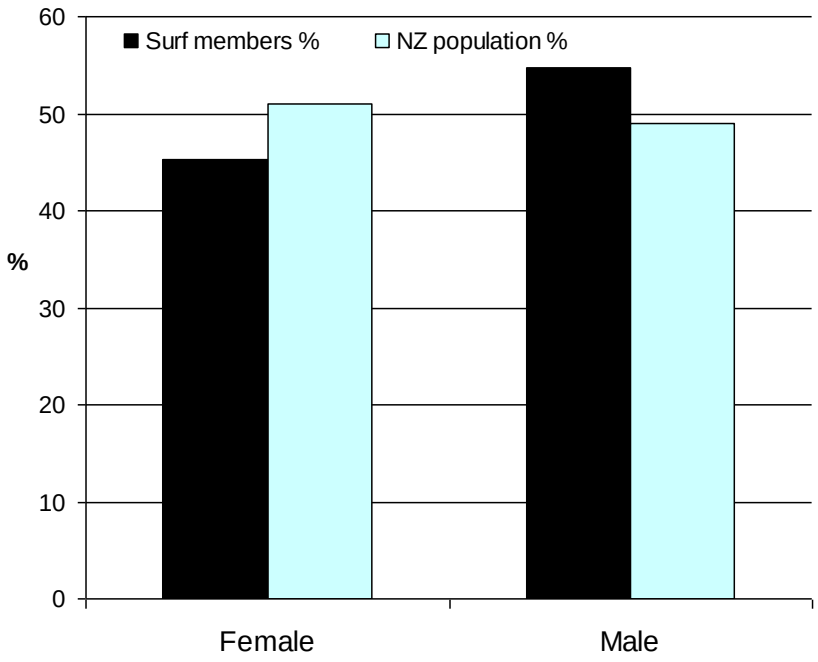


Figure 3-2. Gender - Surf LS

3.3.1. Gender by OLD Surf LS Regions

There is only minor regional variation in gender, with the proportion of females ranging from 47% (Hawke's Bay) to 42% (Gisborne - Table 3-3 & Figure 3-3).

Table 3-3. Surf LS members – Gender by Surf LS Regions (Old)

	Female %	Male %	n=
Gisborne	42	58	664
Wellington	42	58	1175
Otago	42	58	758
All SLSNZ	45	55	14953
Northern	45	55	4713
Bay of Plenty	46	54	3800
Western Districts	46	54	576
Canterbury	47	53	1723
Taranaki	47	53	869
Hawkes Bay	47	53	675

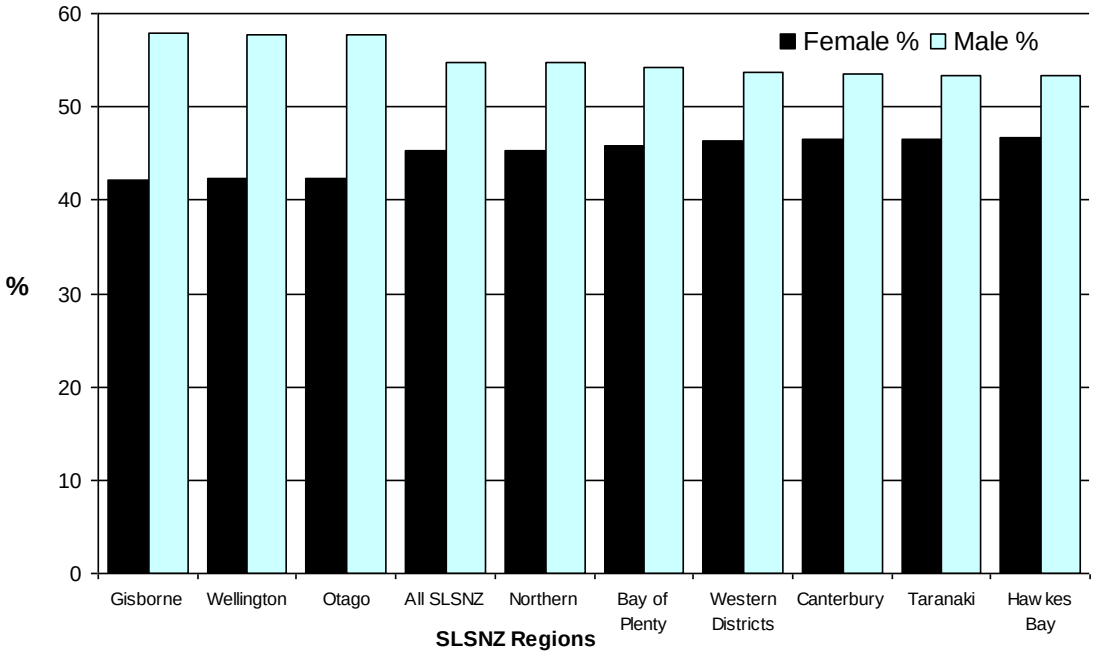


Figure 3-3. Surf LS members – Gender by Surf LS Regions (Old)

3.3.2. Gender by New Region

Gender variations are indiscernible using the new Surf LS Region profiles (Table 3-4).

Table 3-4. Surf LS members – gender by Surf LS Regions (New)

	Female %	Male %	n=
Central	45	55	3300
Eastern	45	55	4482
Northern	45	54	4729
Southern	45	55	2491
All SLSNZ	45	55	15002

3.3.3. Gender by NZ Region (Regional Authorities)

Using NZ region profiles, there is a greater variation in gender balance (although those regions showing the greatest variation have small numbers overall - Table 3-5 & Figure 3-4).

Table 3-5. Surf LS members (NZ region profile)

	Female	Male	n=
Nelson	26	74	27
WestCoast	41	59	70
Otago	42	57	680
Gisborne	42	58	664
Wellington	42	58	1176
Southland	43	57	87
Waikato	45	55	1656
Auckland	45	55	3805
All SLSNZ	45	55	15002
Manawatu Wanganui	46	54	576
BOP	46	53	2353
HawkesBay	46	53	678
Northland	47	53	733
Taranaki	47	53	870
Canterbury	47	53	1546
Marlborough	57	43	81

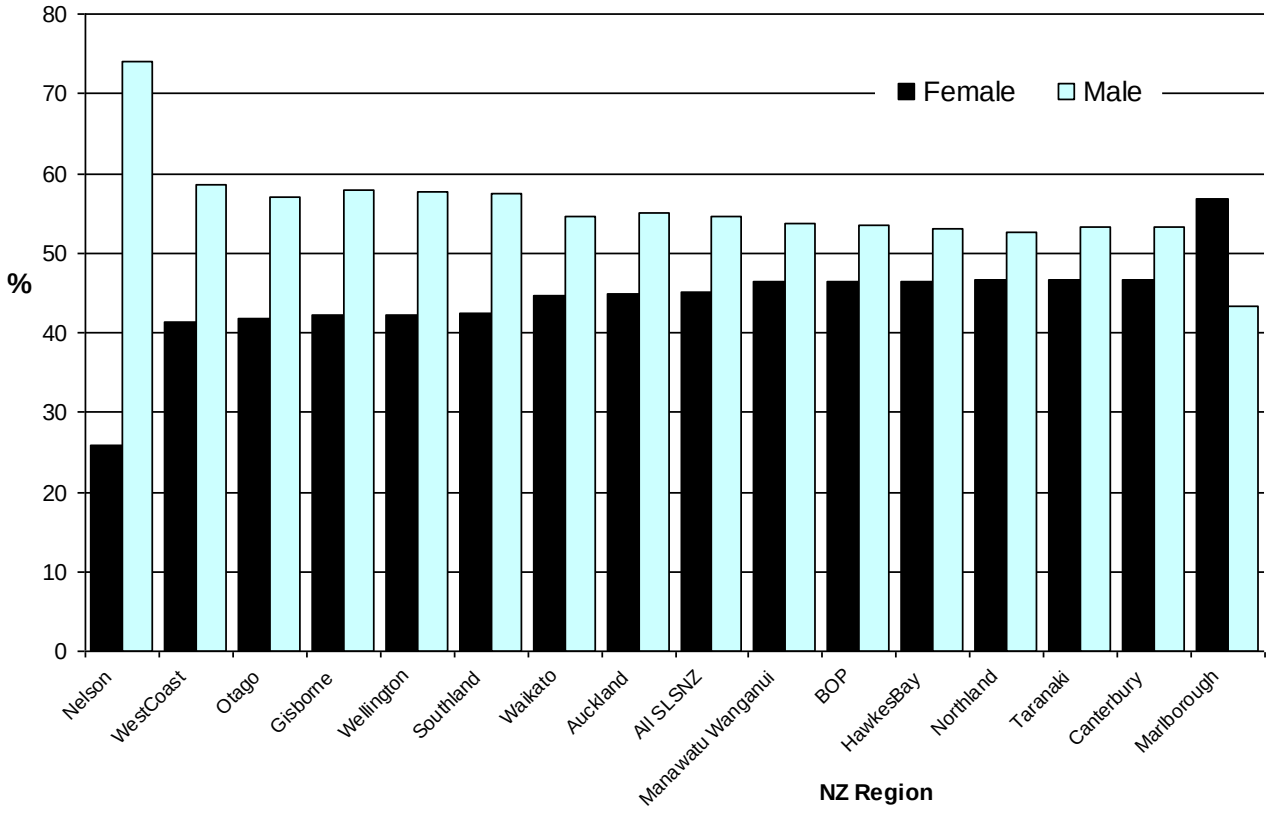


Figure 3-4. Surf LS members – Gender by NZ region population

3.3.4. Gender by age-group – 5yr

The pattern of gender and age within Surf LS's overall membership show that the gender balance is relatively even in younger age groups, however this changes with age with proportionately fewer females in the 20-34 age groups followed by more of a balance, with decreasing proportions of females from 45yrs onwards (Table 3-6 & Figure 3-5). This may reflect life-cycle/family stage patterns.

Table 3-6. Gender by Age (5yr)

	<10	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70+	All SLSNZ
Female	46	51	51	43	41	38	46	45	41	34	25	29	17	20	46
Male	54	49	49	57	59	62	54	54	59	66	75	71	83	79	54
n=	1703	3847	2951	1278	549	400	500	830	869	673	262	190	109	174	14335

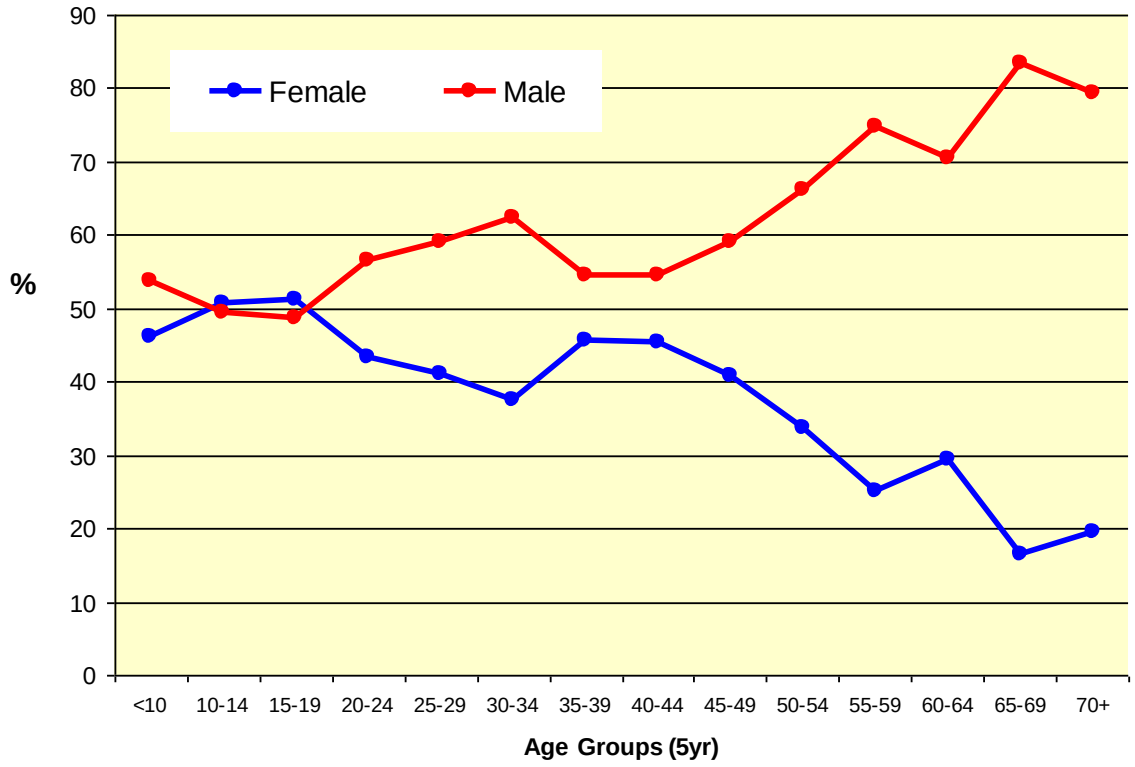


Figure 3-5. Gender by Age (5yr)

3.4. Surf LS members – Age

The overall age pattern for Surf LS members shows a clear over-representation in the younger age groups (10-19 age comprises 48% of membership, Table 3-7 & Figure 3-6). There is a categorical drop off in participation starting in the 20-24 yr bracket. There is a slight peak in 40s which then decreases with age. This pattern may be characteristic for this type of activity – perhaps relating to lifecycle stage or graduated stages of experience and capability – as may be found with other youth sporting activities.

This profile indicates a strong pattern of youth recruitment, but with low levels of retention past the teen years.

Table 3-7. Age Groups (5yr)

Age Group	Surf members	Surf member %	NZ Population %
>10	1703	12	14
10-14	3847	27	8
15-19	2951	21	7
20-24	1278	9	7
25-29	549	4	6
30-34	400	3	7
35-39	500	3	7
40-44	830	6	8
45-49	869	6	7
50-54	673	5	6
55-59	262	2	6
60-64	190	1	4
65-69	109	1	4
70+	174	1	7
n=	14335	100	100

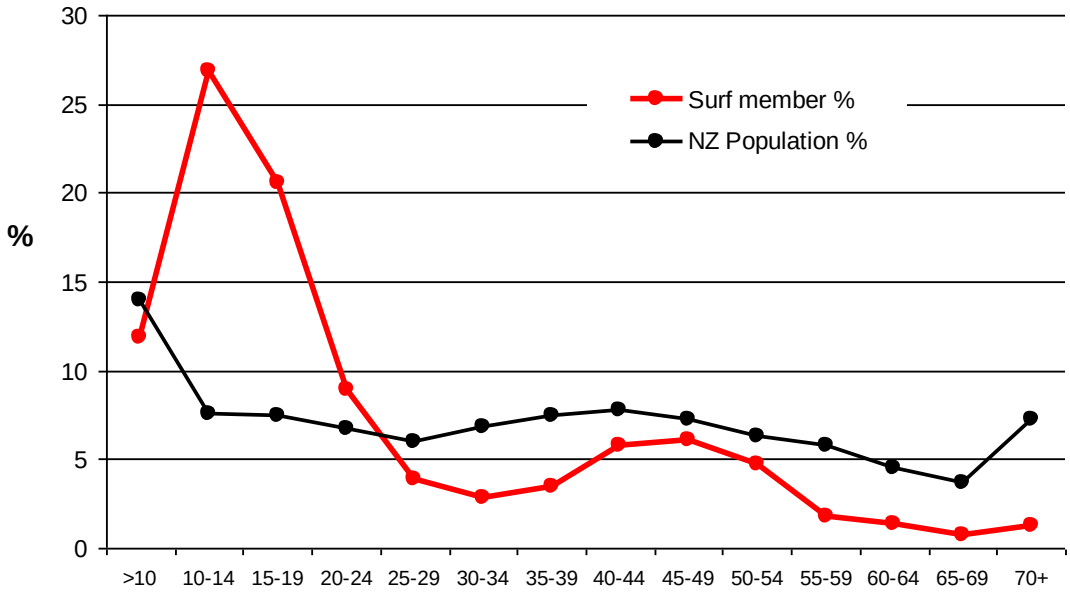


Figure 3-6. Age Groups (5yr)

3.4.1. Age groups – 10 year

A similar pattern is reflected in the 10 year age profile (Table 3-8 & Figure 3-7).

Table 3-8. Age Groups (10yr)

	Surf members	Surf member %	NZ Population %
0-9	1703	12	14
10-19	6798	47	15
20-29	1827	13	13
30-39	900	6	14
40-49	1699	12	15
50-59	935	7	12
60-69	299	2	8
70+	174	1	9
n=	14335	100	100

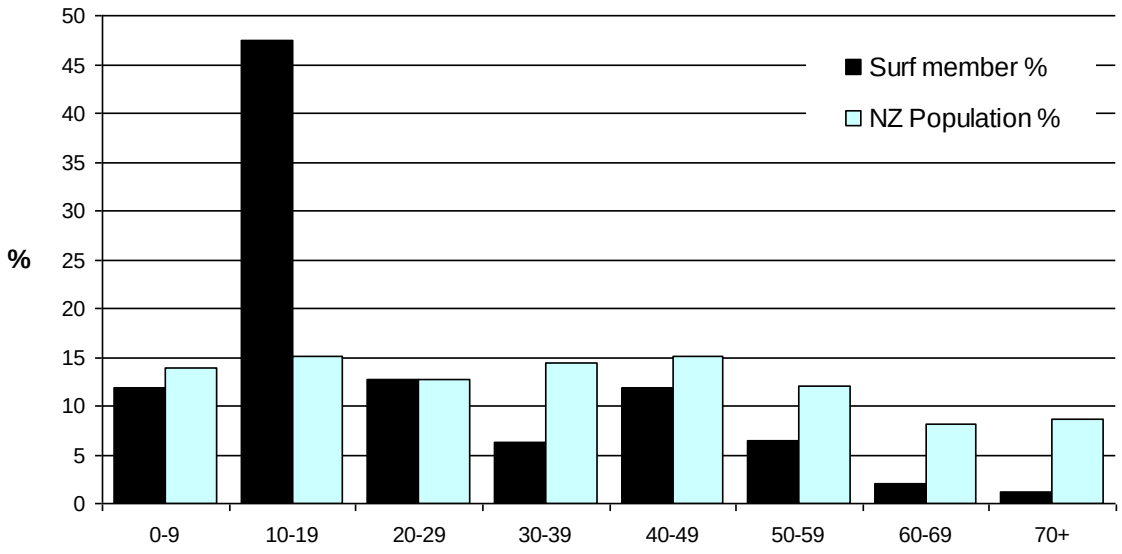


Figure 3-7. Age Groups (10yr)

3.4.2. Surf LS Age Groups (5yr) by Regions

Regional age group profiles show a consistent overall youth oriented pattern with few notable regional differences (Table 3-9 & Figure 3-8). Most different are Nelson and West Coast; however these both have low response numbers. Manawatu-Wanganui, Hawke's Bay and Otago seem to have higher carry-over in to the 15-19yr group.

Table 3-9. Surf LS Age Groups (5yr) by Regions

	>10	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70+	n=
Auckland	11	26	15	7	4	3	5	8	7	8	2	2	1	2	3677
BOP	22	26	17	4	2	2	4	7	7	3	2	1	1	1	2309
Canterbury	8	29	22	10	5	2	3	6	7	4	1	1	1	1	1486
Gisborne	13	24	23	12	5	2	4	4	4	4	2	2	1	1	654
HawkesBay	5	29	29	12	2	2	1	4	6	4	2	1	0	1	645
ManawatuWanganui	5	20	32	13	4	4	2	3	6	3	3	2	1	1	542
Marlborough	17	20	38	9	4	2	4	2	0	4	0	0	0	0	81
Nelson	0	0	15	26	11	15	4	15	0	4	11	0	0	0	27
Northland	8	21	26	9	2	3	3	8	9	6	2	1	0	1	682
Otago	5	26	25	19	5	4	2	3	5	2	1	1	0	1	623
Southland	0	0	17	30	22	16	5	2	2	0	0	1	0	3	86
Taranaki	10	26	23	12	5	4	3	3	4	4	3	2	0	1	839
Waikato	13	32	20	7	4	2	2	4	5	4	2	1	1	1	1464
Wellington	14	34	23	9	2	2	2	4	3	3	1	1	1	1	1154
WestCoast	0	11	29	17	11	5	15	3	3	8	0	0	0	0	66
All SLSNZ	12	27	21	9	4	3	3	6	6	5	2	1	1	1	14335

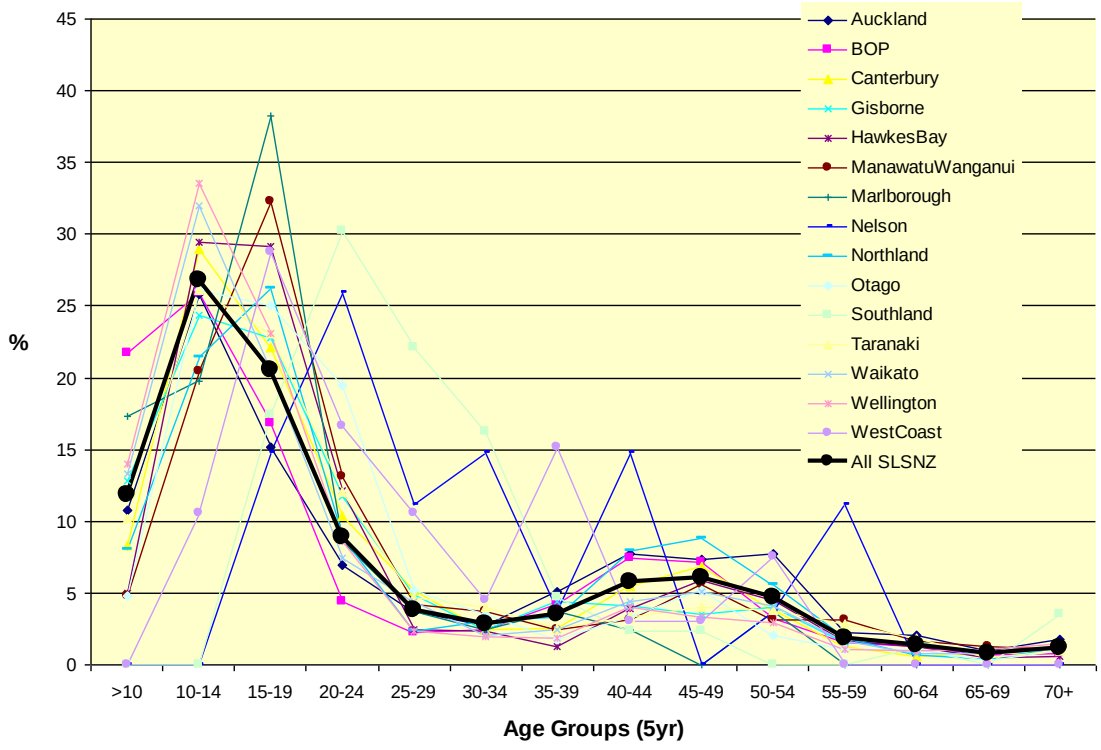


Figure 3-8. Surf LS Age Groups (5yr) by Regions

3.4.3. Surf LS Age Groups (5yr) by Surf LS Old Regions

The same pattern is repeated for Surf LS Old Regions (Table 3-10 & Figure 3-9). Hawke's Bay, Western Districts and Otago seem to retain young members a little longer.

Table 3-10. Age Groups (5yr) by old Surf LS Regions

	<10	10-14	15-19	20-24	25-29	30-34y	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	n=
Bay of Plenty	19	29	17	5	3	2	4	6	6	3	2	1	1	1	3587
Canterbury	8	27	23	11	5	3	3	5	6	4	1	1	1	1	1660
Gisborne	13	24	23	12	5	2	4	4	4	4	2	2	1	1	654
Hawkes Bay	5	29	29	12	2	2	1	4	6	4	2	1	0	1	645
Northern	10	25	18	7	4	3	5	8	8	7	2	2	1	2	4545
Otago	4	23	24	21	7	5	2	3	5	2	1	1	0	1	709
Taranaki	10	26	23	12	5	4	3	3	4	4	3	2	0	1	839
Wellington	14	34	23	9	2	2	2	4	3	3	1	1	1	1	1154
Western Districts	5	20	32	13	4	4	2	3	6	3	3	2	1	1	542
Tasman	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Al SLSNZ	12	27	21	9	4	3	3	6	6	5	2	1	1	1	14335

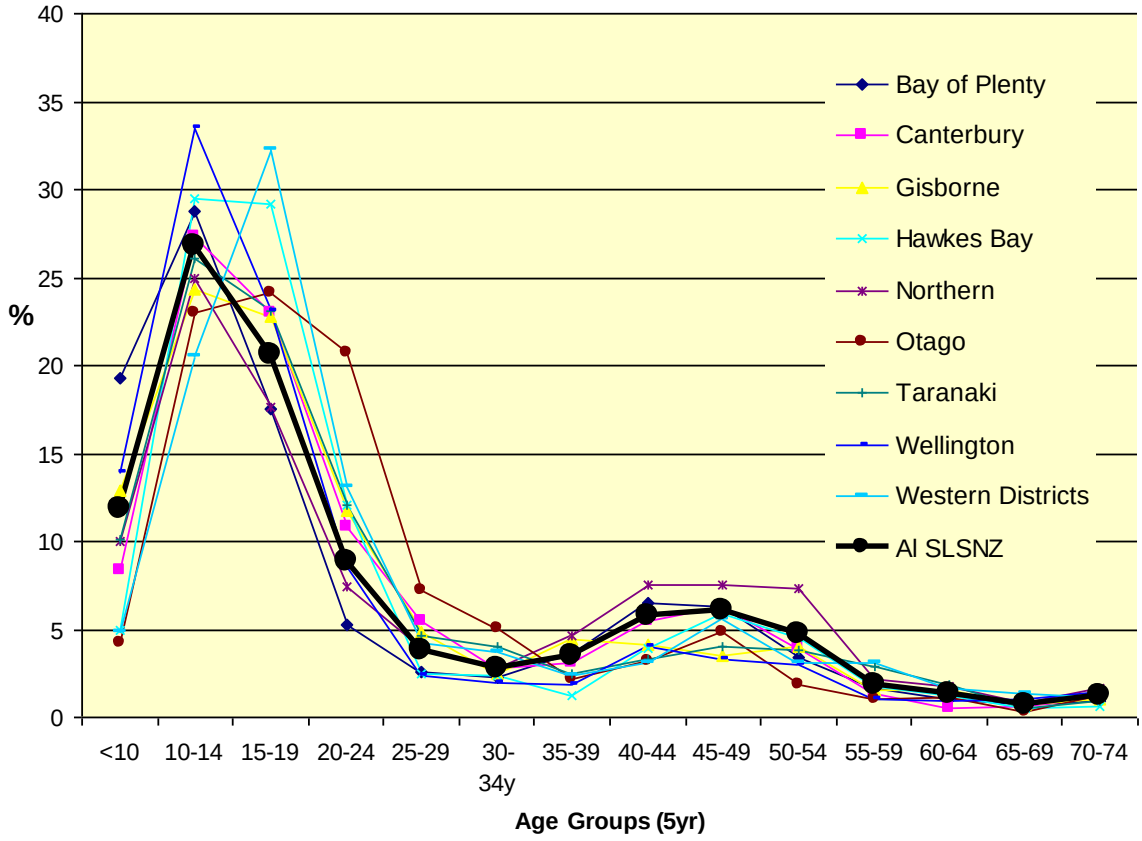


Figure 3-9. Age Groups (5yr) by old Surf LS Regions

3.4.4. Surf LS Age Groups (5yr) by Surf LS New Regions

This profile reflects previously demonstrated patterns even more clearly (Table 3-11 & Figure 3-10), with a very clear youth peak and mid-life secondary peak.

Table 3-11. Age Groups (5yr) by new Surf LS Regions

	<10	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70+	n=
Central	10	29	26	11	3	3	2	4	4	4	2	1	1	1	3180
Eastern	18	28	18	6	3	2	4	6	6	4	2	1	1	1	4241
Northern	10	25	18	7	4	3	5	8	8	7	2	2	1	2	4545
Southern	7	26	23	14	6	3	3	5	6	3	1	1	1	1	2369
All SLSNZ	12	27	21	9	4	3	3	6	6	5	2	1	1	1	14335

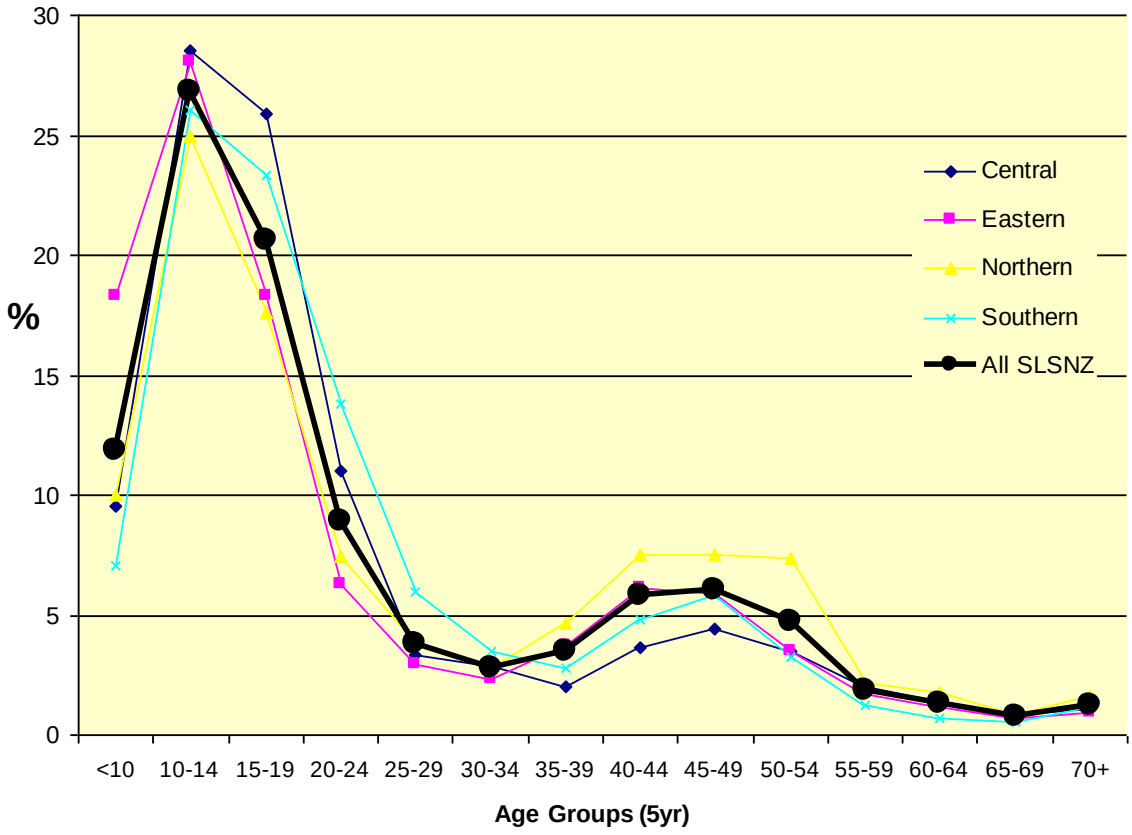


Figure 3-10. Age Groups (15yr) by new Surf LS Regions

3.4.5. Surf LS member – Median age by Surf LS Region (new)

Median ages are similar for all regions, ranging from 19 (Northern) to 15 years (Eastern, Table 3-12 & Figure 3-11). All Medians ages are less than corresponding Mean ages, indicating the skew in age distributions (towards youth).

Table 3-12. Surf LS Median Age by Surf LS Region

	Mean	Median	n=
Northern	27	19	4545
Eastern	22	15	4241
Central	22	17	3180
Southern	23	18	2369
All SLSNZ	24	17	14335

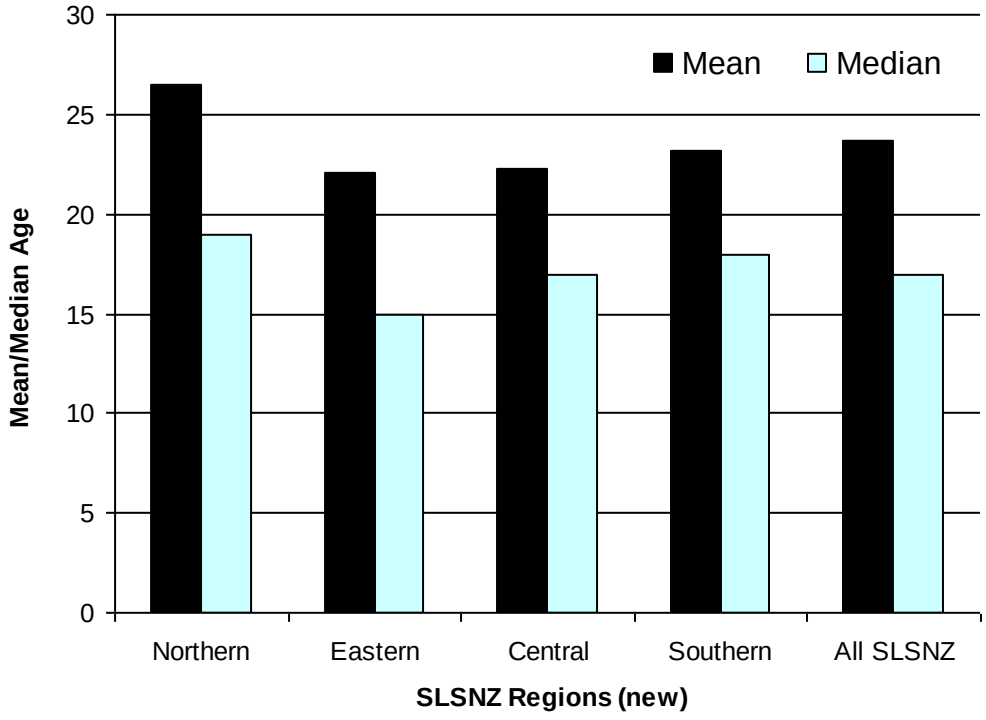


Figure 3-11. Surf LS Median/Median Age by Surf LS Region (new)

3.4.6. Surf LS member – Median age by NZ Region

Surf LS member Median ages appear relatively consistent across NZ regions, with some minor exceptions (the West Coast, Southland and Nelson have higher median ages - Table 3-13 & Figure 3-12). There is no data for Tasman as there are no surf clubs in this region.

Mean ages are presented in Table 3-14 & Figure 3-13.

Table 3-13. Surf LS Median Age by NZ Region

	Median	n=
Tasman	0	0
Wellington	15	1154
Waikato	15	1464
BOP	15	2309
Marlborough	16	81
Gisborne	17	654
Hawkes Bay	17	645
Taranaki	17	839
Canterbury	17	1486
All SLSNZ	17	14335
Otago	18	623
ManawatuWanganui	18	542
Northland	18	682
Auckland	19	3677
West Coast	22	66
Southland	25	86
Nelson	29	27

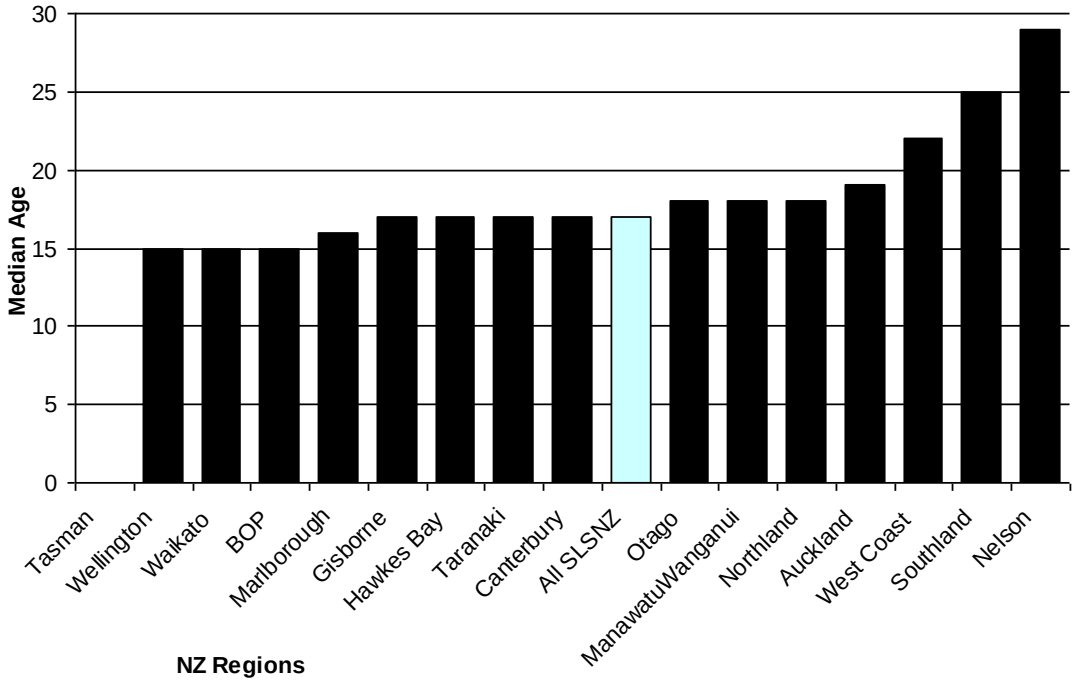


Figure 3-12. Surf LS Median Age by NZ Region

3.4.7. Surf LS member – Mean age by NZ Region (RA)

Table 3-14. Surf LS member – Mean age by NZ Region (RA)

	Mean	n=
Tasman	0	0
Marlborough	18	81
Wellington	21	1154
Waikato	22	1464
BOP	22	2309
Otago	22	623
Gisborne	23	654
Hawkes Bay	23	645
Taranaki	23	839
Canterbury	23	1486
All SLSNZ	24	14335
Manawatu Wanganui	24	542
Northland	26	682
West Coast	26	66
Auckland	27	3677
Southland	28	86
Nelson	32	27

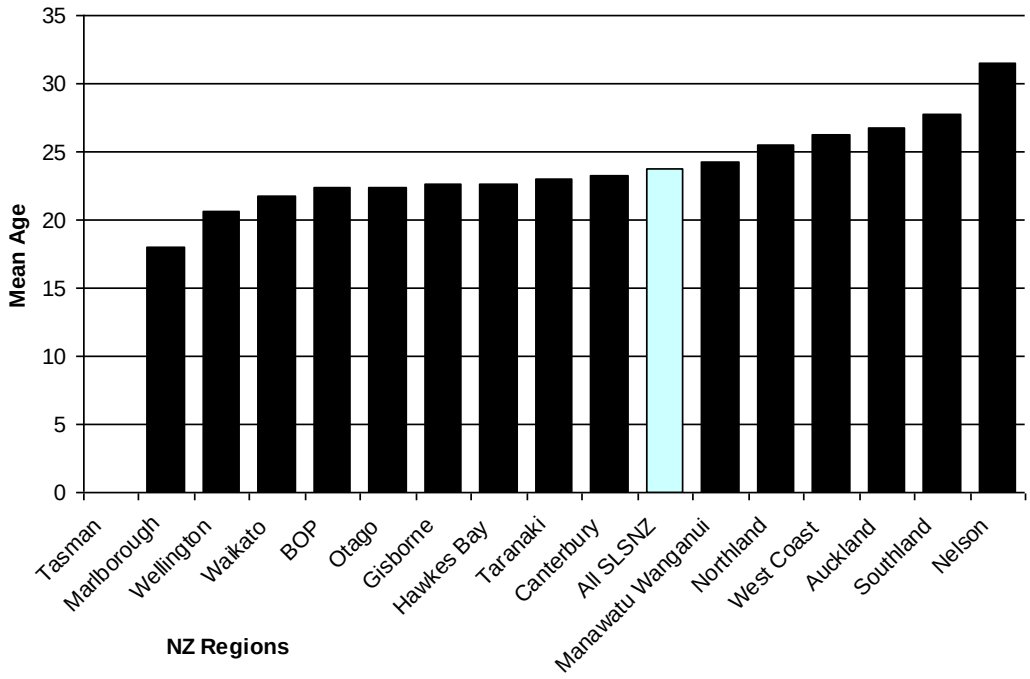


Figure 3-13. Surf LS member – Mean age by NZ Region

3.5. Surf LS members - Work Status

The charts and tables below are based on a subset of Surf LS members, with only 3811 of members (Table 3-15) who yielded occupation-related details (26% of all members). This means data here is indicative only. Of these 3811, 1496 (37%) were in paid employment with defined occupation types (Figure 3-14).

The data (along with occupation) are useful indicators of membership capabilities which relate to the potential of existing volunteers. 63% of Surf LS members do not participate in paid labour force (vs. 33% for whole NZ population). See overleaf for non-work status types.

Table 3-15. Surf LS Members - Work Status

	SLSNZ %	NZ %
Employed Full/Part	37	62
Not in the Labour Force	63	33
Unknown	0	3
n=	3811	100

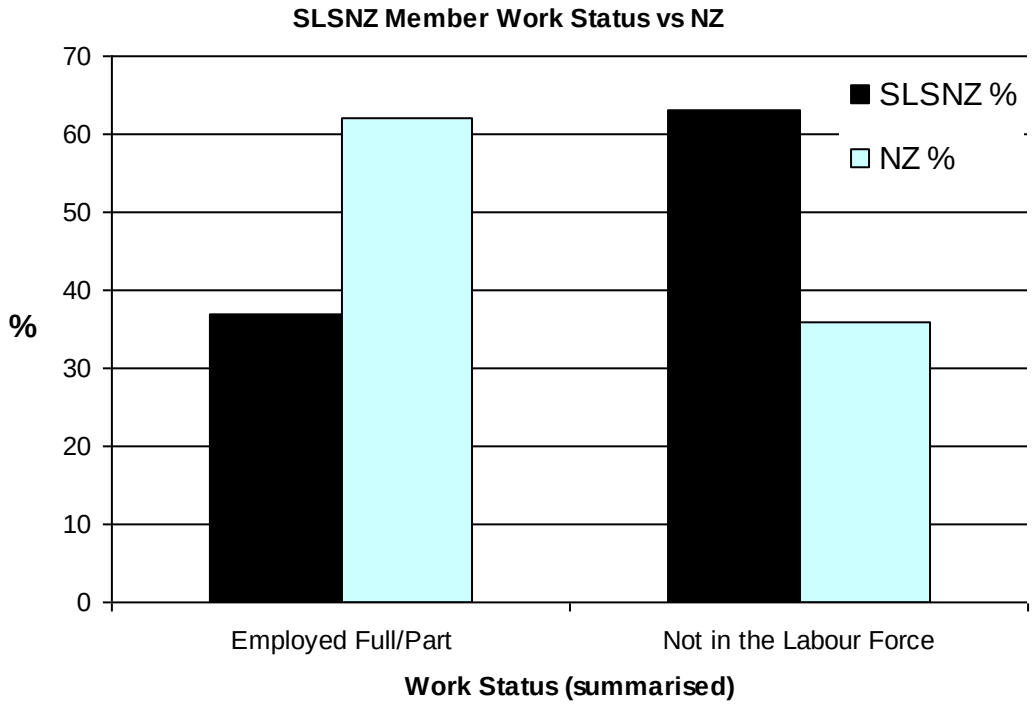


Figure 3-14. Surf LS Members - Work Status

3.6. Surf LS members - Work Status Type

37% of Surf LS members are in paid work, and a further 59% are students. There are small numbers of retired, parent or very young children (Table 3-16 & Figure 3-15).

Table 3-16. Surf LS Members - Work Status Type

		Surf members	Surf member %
Student		2232	59
Full Time		1423	37
Retired		79	2
Home		39	1
Child		34	1
Part Time		4	0
	n=	3811	100

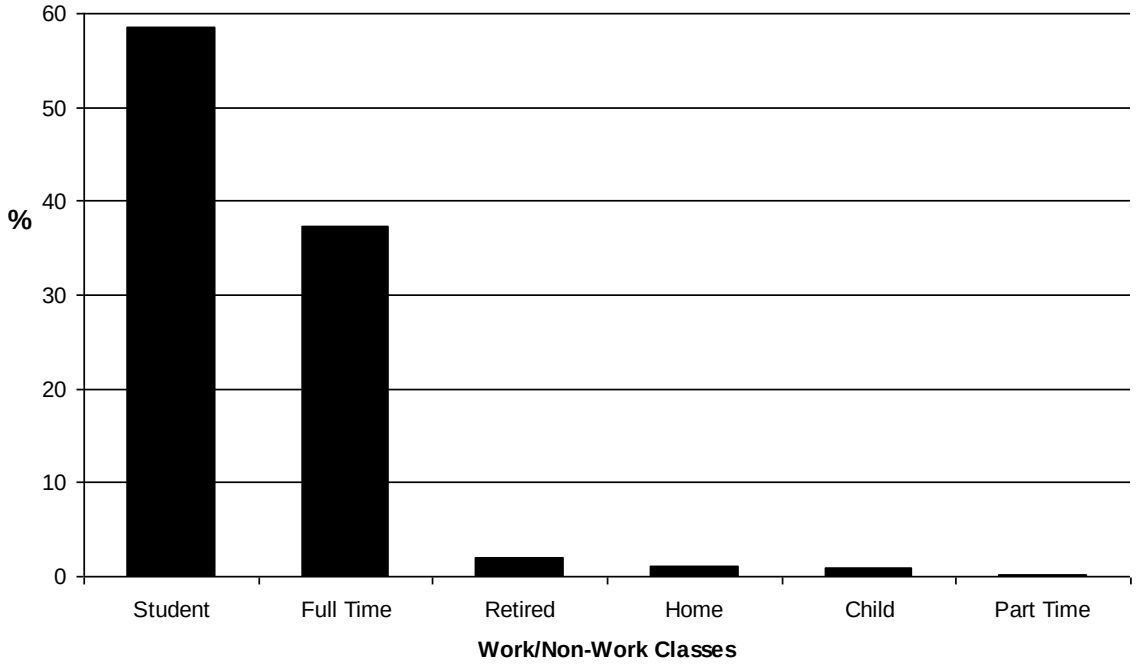


Figure 3-15. Surf LS Members - Work Status Type

3.7. Surf LS members - Occupation Type

Compared to the NZ population, members are over-represented among 'Technician/Trade' (24% Surf LS vs. 12% NZ) and 'Professional' (23% vs. 19%) occupation types (Table 3-17 & Figure 3-16). There is an under-representation of machinery Operators/Drivers (1% vs. 6%), Labourers (3% vs. 11%), Sales (6% vs. 9%) and Clerical/Administration (7% vs. 12%) occupation types.

Table 3-17. Surf LS members - Occupation Type vs. NZ

	Surf members	Surf member %	NZ Population %
Technician/Trade	378	25	12
Professional	343	23	19
Managers	232	16	17
Community/Personal Service	170	11	8
Other	109	7	6
Clerical/Administration	102	7	12
Sales	93	6	9
Labourers	52	3	11
Machinery Operaters/Drivers	17	1	6
n=	1496	100	100

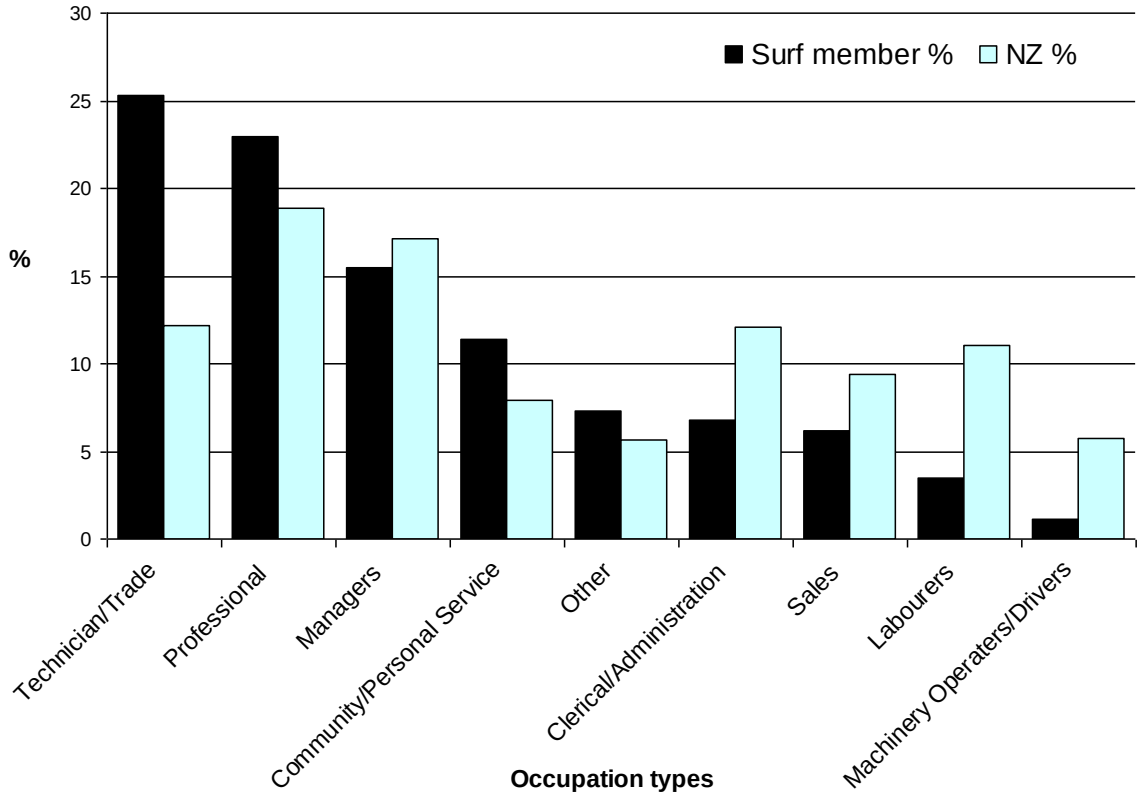


Figure 3-16. Surf LS members - Occupation Type vs. NZ

3.8. Areas of Interest

Membership data included optional fields for members indicated Areas of Interest (multiple areas of interest are available for each individual member – and many selected multiple options). These are voluntary entries of interest so do not represent a comprehensive picture of actual voluntary roles in Surf LS.

According to these indicative figures, the largest area of interest is Junior Surf (52%), followed by Patrolling (23% - Table 3-18).

Table 3-18. Indicative Areas of Interest

Activity Type	Patrolling	PowerCraft	Coaching	Officials	Sport	JuniorSurf	Total members
Number interested	3480	1512	1174	572	3260	7822	15003
%	23	10	8	4	22	52	

4. Coastguard Profile

4.1. Data Source

Data for tables and charts were sourced from an edited summary subset of the Coastguard NZ membership database. The database used for these analyses was edited by having all variables removed that were in any way related to individual member names or contact details. As a result no individual member could ever be identified from these data. This was all done by Coastguard NZ as a strict condition of use prior to sending the summarised data to the researchers. Any final presentation of summary material derived from this dataset is subject to approval by Coastguard NZ before any dissemination beyond the core research team would take place.

The final database subset comprised 2110 records, and included data related to members':

- gender
- date-of-birth
- general home area (not address)
- Coastguard unit
- Coastguard region
- type of Coastguard interest (e.g. boat, aircraft, or operational communications).

From these data sources were estimated member age-group and summarised home area variables. The 'home area' variables generated included members' respective Regional Authority area and Territorial Authority Area. These were generated in summary form to enable high-level comparisons with general population data using corresponding data and spatial units from Statistics NZ.

Some data records did not include information for all the variables listed on the membership form. Requests for age and gender data have only recently been included in membership forms, and as a result the data for these variables is incomplete overall. There are 1210 records with age and gender data (approx 60%).

4.2. Coastguard Member Distribution – Coastguard Regions

Coastguard member levels in Coastguard Regions vary in proportion to their corresponding regional populations. Coastguard numbers are proportional to overall population numbers in Northern Coastguard Region (Table 4-1 & Figure 4-1). There is an under-representation in Central Region (15% vs. 23% NZ population), and to a lesser extent in Southern Region (17% vs. 21%). Coastguard members are relatively over-represented relative to population in Eastern Region (25% vs. 13% NZ).

Table 4-1. Coastguard Member Distribution vs. NZ across Coastguard Regions

Coastguard Region	freq	Coastguard %	NZ %
Northen	901	43	43
Eastern	528	25	13
Central	327	15	23
Southern	354	17	21
	n=2110	*100*	*100*

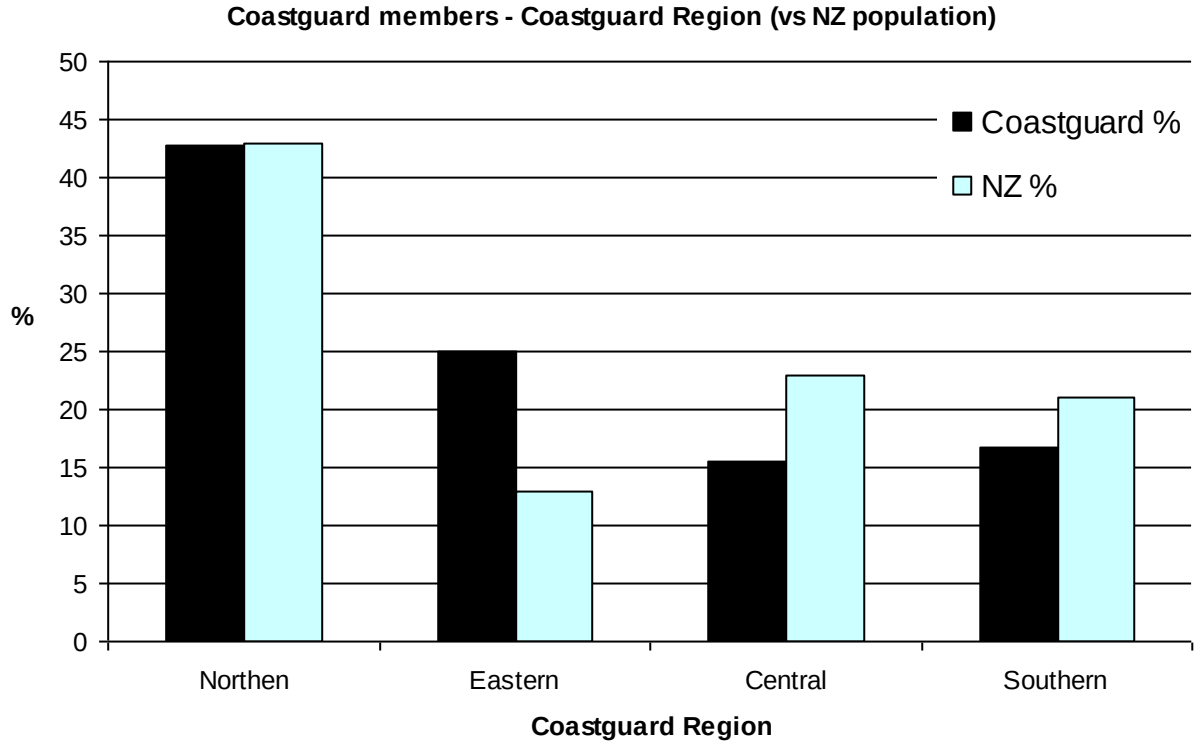


Figure 4-1. Coastguard Member Distribution - % vs. NZ % across Coastguard Regions

4.2.1. Coastguard Member Distribution – NZ Regions

A similar pattern is evident in respect of Coastguard membership levels using NZ regional authority boundaries (Table 4-2). Membership is relatively over-represented in Northland (11% vs. 4% NZ) and Bay of Plenty (10% vs. 6%, Figure 4-2). There is an under-representation in Canterbury (8% vs. 13%), Wellington (8% vs. 11%) and Manawatu-Wanganui Regions (2% vs. 6%), and to lesser extent in Auckland Region (28% vs. 32%).

Table 4-2. Coastguard Members by NZ Regions VS NZ Region Populations

NZ Region	freq	Coastguard %	NZ%
Auckland	583	28	32
Waikato	258	12	10
Northland	241	11	4
Bay of Plenty	211	10	6
Canterbury	164	8	13
Wellington	164	8	11
Otago	92	4	5
Hawkes Bay	78	4	4
Southland	64	3	2
Gisborne	59	3	1
Manawatu-Wanganui	50	2	6
Taranaki	50	2	3
West Coast	38	2	1
Marlborough	31	1	1
Nelson	25	1	1
Tasman	2	0	1
	n=2110	*100*	

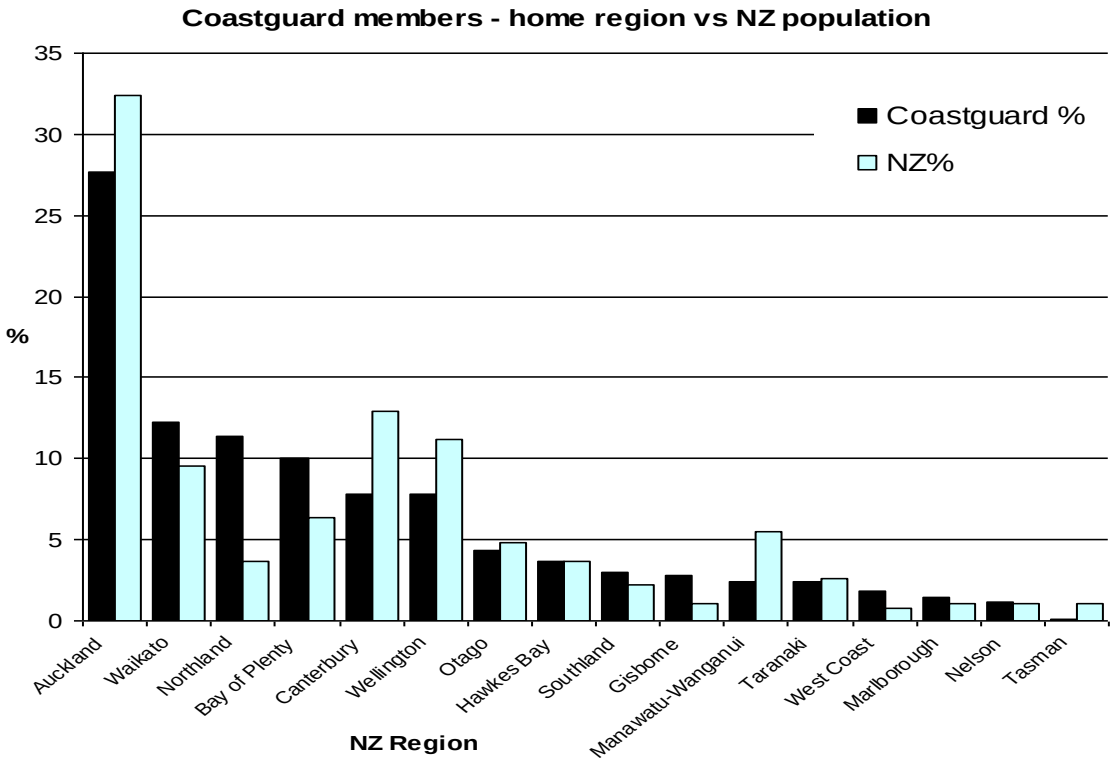


Figure 4-2. Coastguard Members by NZ Regions VS NZ Region Populations

4.3. Coastguard members - Gender

Overall, 15% of Coastguard members are females (Table 4-3). The gender balance shows little variation across Coastguard regions (Table 4-3), and also NZ regions (with exception of regions with smaller membership such as Tasman (2 members, 50%F), West Coast (31 members, 23%F), and Nelson (11 members, 50%F, Table 4-4).

4.3.1. Gender by region

Table 4-3. Coastguard Gender by Coastguard Regions

	Female	Male	n=
Central	14	86	161
Eastern	16	84	417
Northen	15	85	465
Southern	14	86	313
All Coastguard	15	85	1356

Table 4-4. Coastguard Gender by NZ Regions

	Female %	Male %	*n=*
Auckland	14	86	*281*
Bay of Plenty	19	81	*163*
Canterbury	17	83	*148*
Gisborne	6	94	*51*
Hawkes Bay	13	87	*69*
Manawatu-Wanganui	12	88	*26*
Marlborough	5	95	*19*
Nelson	27	73	*11*
Northland	18	82	*163*
Otago	8	92	*85*
Southland	12	88	*50*
Taranaki	12	88	*25*
Tasman	50	50	*2*
Waikato	17	83	*156*
Wellington	16	84	*76*
West Coast	23	77	*31*
All Coastguard	15	85	*1356*

4.3.2. Gender by age-group – 5yr

The proportion of female Coastguard members is higher in younger age categories. Numeric levels are relatively low in the younger age groups (Table 4-5 & Figure 4-3; caution is required for any interpretation, although the overall pattern is consistent in general - 15%F). Patterns are similar for 10 yr categories (Table 4-7 & Figure 4-4).

Table 4-5. Gender by Age (5yr) – frequency counts

	Under 20	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	Over 70	All
Female	11	13	5	7	19	15	16	8	9	12	6	4	125
Male	25	40	44	41	71	85	103	79	92	68	46	49	743
All	36	53	49	48	90	100	119	87	101	80	52	53	868

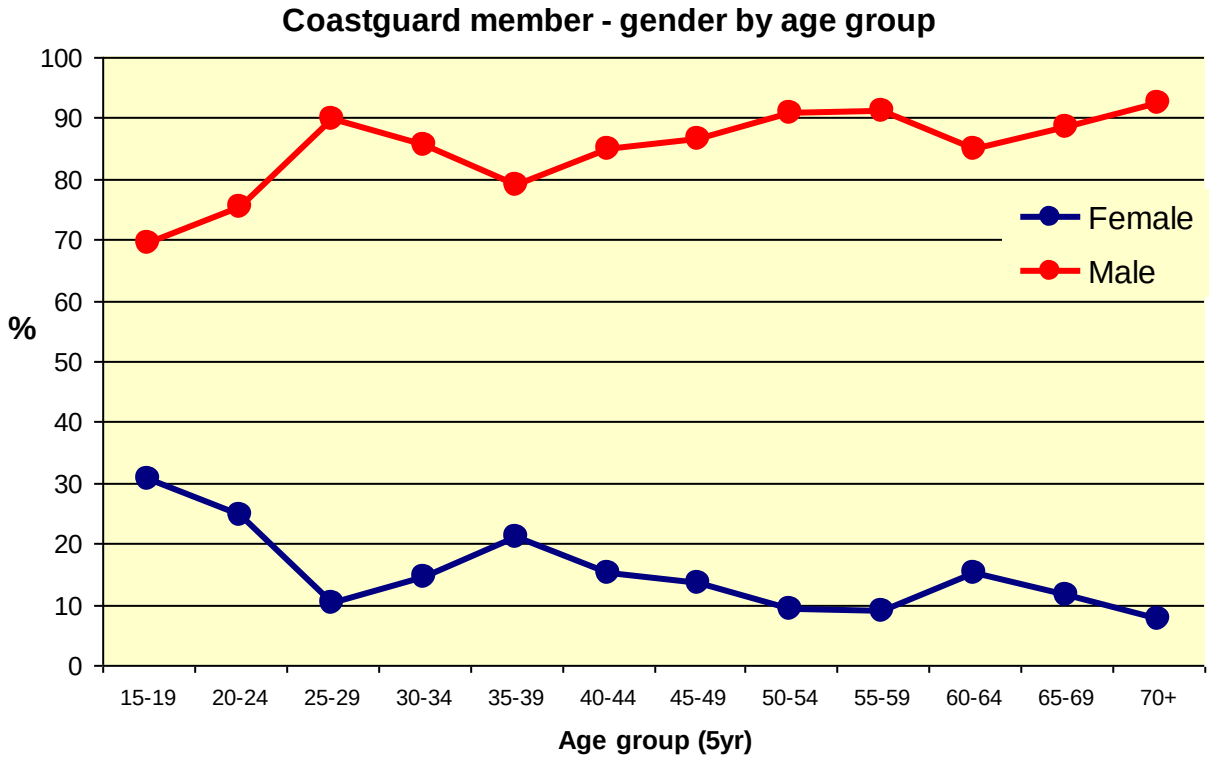


Figure 4-3. Gender by Age (5yr)

4.3.3. Gender by age-group – 10yr

Table 4-6. Gender by Age (10yr) - frequency distribution

	Under 20	20-29	30-39	40-49	50-59	60-69	Over 70
Female	11	18	26	31	17	18	4
Male	25	84	112	188	171	114	49
All	36	102	138	219	188	132	53

Table 4-7. Gender by Age (10yr) – %

	Under 20	20-29	30-39	40-49	50-59	60-69	Over 70
Female	31	18	19	14	9	14	8
Male	69	82	81	86	91	86	92
n=	36	102	138	219	188	132	53

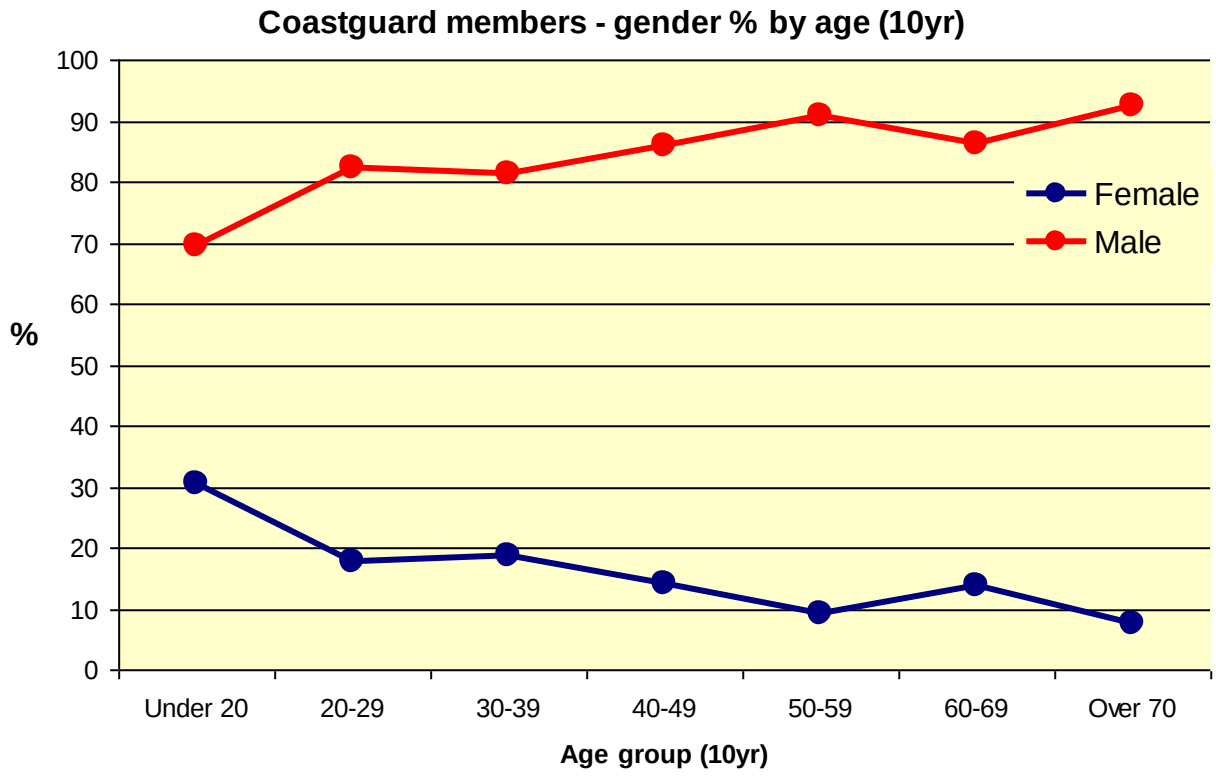


Figure 4-4. Gender by Age (10yr)

4.4. Coastguard members – Age

Coastguard groups are over-represented in the middle-age groups (Table 4-9 & Figure 4-5). The distinctive peak in these age groups is shown also in the LandSAR profile (Section 2), which is thought to relate to lifecycle stage, experience and capability.

There is relatively little variation in age profiles by Coastguard region (Figure 4-6).

Table 4-8. Age Groups (5yr) – frequency distribution
(n=1210)

	Under 10	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	Over 70
All Coastguard		2	44	65	62	73	138	145	166	128	137	114	66	70

Table 4-9. Age Groups (5yr) – % distribution
(n=1210)

	Under 10	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	Over 70
All Coastguard		0	4	5	5	6	11	12	14	11	11	9	5	6
All NZ	14	8	7	7	6	7	7	8	7	6	6	4	4	9

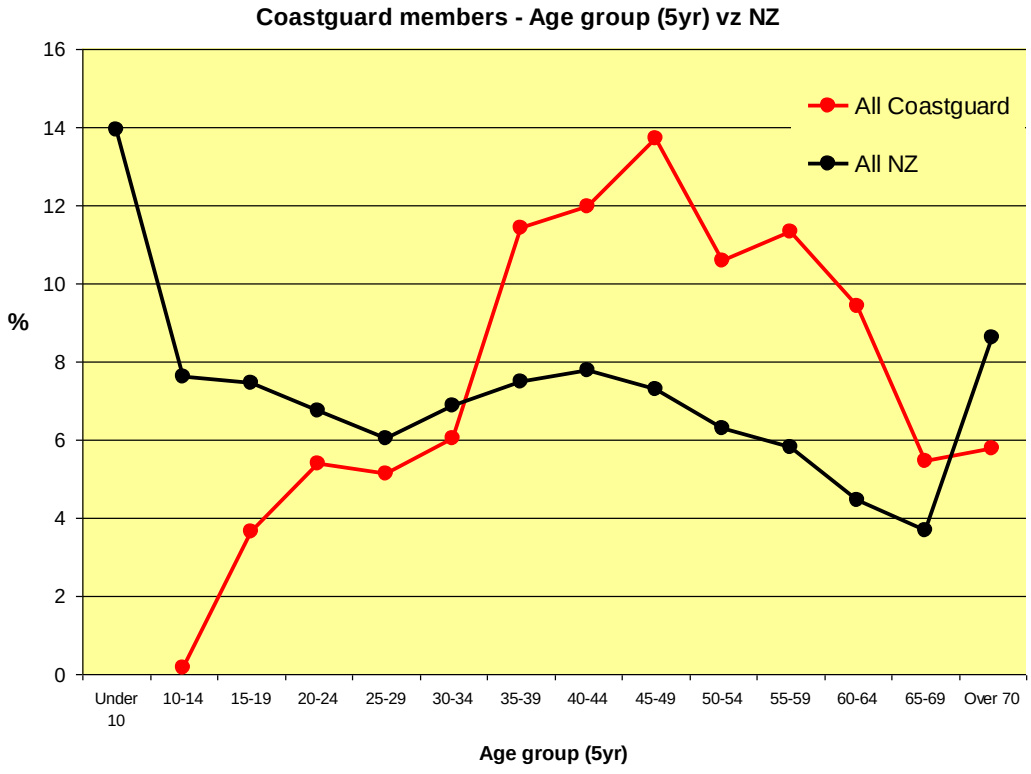


Figure 4-5. Age Groups (5yr) – Coastguard vs. NZ

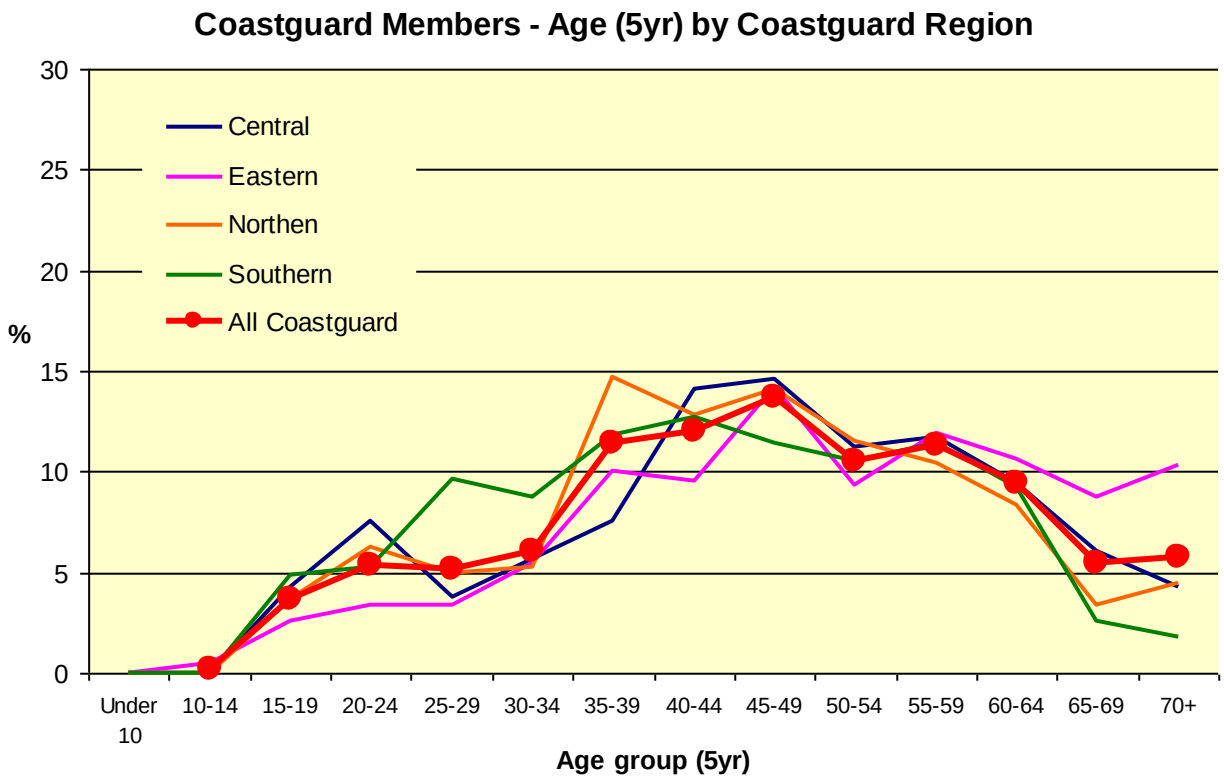


Figure 4-6. Age Groups (5yr) by Coastguard Region

4.5. Coastguard capability

Data presented here provide an indicative view of Coastguard capacity. It is based on very limited information included in the material received for this study.

Table 4-10. Coastguard volunteer and vessel numbers

Coastguard Region	Coastguard volunteers	Coastguard Units	CRVs (Vessels)	People:vessel ratio
Northern	901	24	76	12
Eastern	528	17	24	22
Central	327	12	14	23
Southern	354	15	26	14
	2110	68	140	15

Coastguard member interest type

The vast majority of volunteers (90%) are involved with boats and their crewing (Table 4-11), with smaller proportions involved with air patrol (9%) and operational communications roles (2%).

Table 4-11. Coastguard volunteer main interest areas

	%	Freq
Aircraft	9	182
Boat	90	1892
Operational - Comms	2	36
Total		2110

4.5.1. Coastguard volunteer interest area by Age

The data are presented here for exploratory purposes. While data are presented for operational-communications, it should be noted that numbers for this group are very small (therefore any interpretation here is limited). Results for Boat and aircraft volunteers are more reliable given higher response numbers, but these too are affected by the lower age/gender data proportions (particularly in the younger and older age groups).

There is a marked peak for aircraft volunteers in 50-59 group (Figure 4-7). The boat volunteers show a more regular bell shaped age profile.

Table 4-12. Coastguard volunteer main interest areas by Age group (10 yr)

	Aircraft	Boat	Operational - Comms	Age group %	*Age group n=*
Under 20	0	4	13	4	*46*
20-29	11	10	13	10	*127*
30-39	18	17	38	17	*211*
40-49	16	27	13	26	*311*
50-59	32	21	25	22	*265*
60-69	13	15	0	15	*180*
Over 70	10	6	0	6	*70*
n=	82	1120	8	1210	*1210*

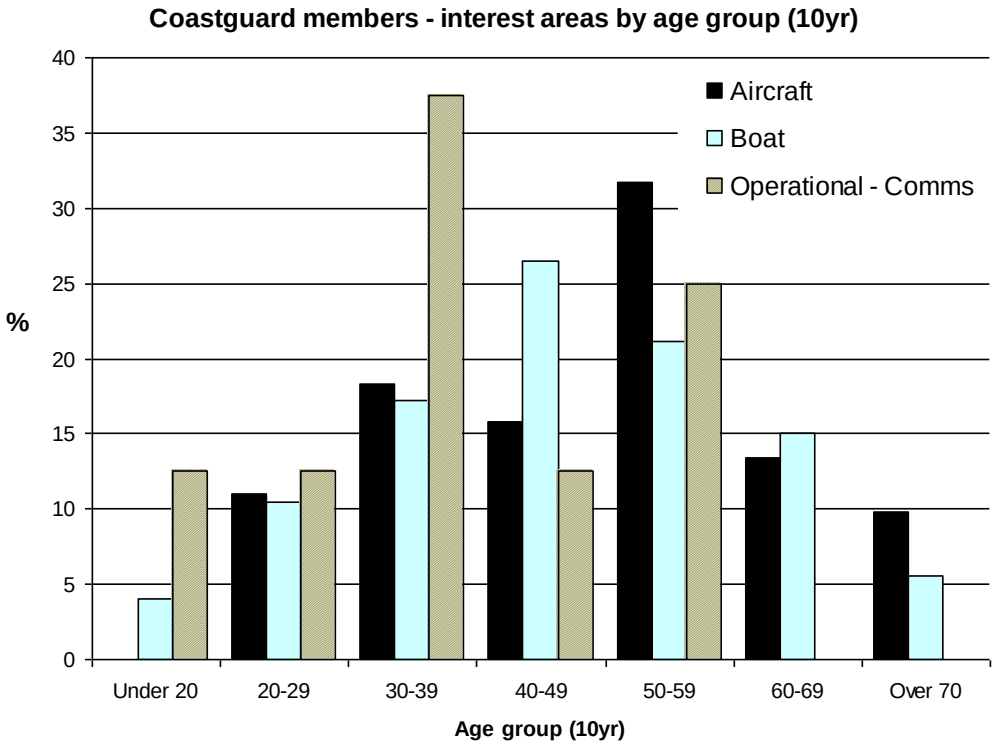


Figure 4-7. Coastguard volunteer main interest areas by Age group (10 yr)

4.5.2. Coastguard volunteer interest area by Region (Coastguard)

There is only minor variation in the distribution of interest groups regionally (by Coastguard region - Table 4-13). Only Northern Region has Operational-communications volunteers identified according to data received. The proportion of Aircraft is lower in the Eastern Region (5% vs. 9% all Coastguard). Data are also presented by areas of interest (Table 4-14).

Table 4-13. Coastguard volunteer main interest areas by Coastguard Region - %
(Read rows across)

	Aircraft	Boat	Operational - Comms	n=
Central	12	88		327
Eastern	5	95	0	528
Northern	8	88	4	901
Southern	12	88	0	354
All Coastguard	9	90	2	2110

Table 4-14. Coastguard volunteer main interest areas by Coastguard Region - %
(Read columns down)

	Aircraft	Boat	Operational - Comms	All Coastguard
Central	21	15	0	15
Eastern	13	27	0	25
Northern	42	42	100	43
Southern	24	16	0	17
n=	182	1892	36	2110

Table 4-15. Initial Summary Information sheet sent from Coastguard NZ

Coastguard Volunteer Profile			
	People	**Units**	
SAR ACTIVE VOLUNTEERS	**2234**	**68**	
Volunteers by Coastguard Region	**People**	**Units**	**CRVs**
Northern Region	1002	24	76
Eastern Region	503	17	24
Central Region	362	12	14
Southern Region	367	15	26
Volunteer Profile Male/Female		**% of total recorded**	
Male Volunteers recorded	912	85%	
Female Volunteers recorded	158	15%	
Recorded	1070		
Gender Not Recorded*	1165		
Volunteer Age Profile		**% of total recorded**	
Over 60 years old (242)	242	20%	
50 - 60 years old (281)	281	23%	
40 - 50 years old (294)	294	24%	
30 - 40 years old (237)	237	19%	
20 - 30 years old (129)	129	10%	
less than 20 years old (49)	49	4%	
Age Recorded	1232		
Age not recorded (1002)*	1002		
* Prior to 2008 and the introduction of the new National Database Gender and Date of Birth were not recorded consistently. The new system will provide greater accuracy as records are updated			

The information provided in this document is confidential and can only be distributed or used with written permission from Coastguard New Zealand.

5. AREC Volunteer Profile

5.1. Data Source

Data for tables and charts were sourced from a primary data collected for this project. Suitable profile data for AREC members was not available in a form that could be used for the project, so a brief online profile survey of AREC members was conducted. It was administered through AREC on behalf of the project to the 259 AREC members with active email addresses (total membership 1262). Response to closing date was 132, representing 51% of the sampled email group.

Question topics addressed:

- Gender
- Age group
- Home location
- Years experience with AREC
- Type of Volunteer Involvement with AREC
- Training Needs and preferred topics
- Technical/Equipment Needs
- Opinions on future changes and trends that may affect AREC roles

The project wishes to acknowledge the contributions of John Yaldwyn and Jeff Sayer at AREC for their assistance in survey preparation and dissemination.

5.2. Age groups

AREC members have a distinctly aged profile compared to the NZ population (Table 5-1 & Figure 5-1) and other SAR sector volunteer groups (refer Figure 1.3 in Section 1.3). Almost three-quarters are aged 40-64 (74%, Table 5-2).

Table 5-1. AREC Members - Age groups vs. NZ

	AREC	AREC %	NZ %
0-9	0	0	14
10-19	0	0	15
20-29	0	0	13
30-39	8	6	14
40-49	19	15	15
50-59	24	19	12
60-69	46	37	8
70+	28	22	9
n=	125		

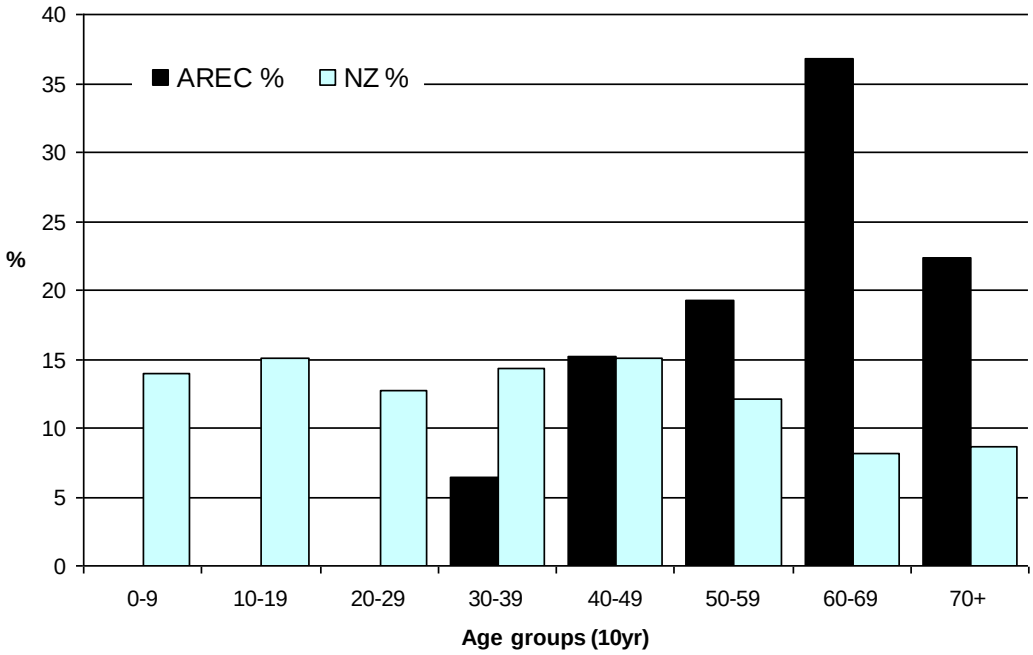


Figure 5-1. AREC Members - Age groups vs. NZ

Table 5-2. AREC members – Age Group (4yr) for projection comparisons

	AREC members	AREC member %
0-14	0	0
15-39	8	6
40-64	93	74
65+	24	19
n=	125	

5.3. AREC members – Gender

AREC members are mostly male (94%, Table 5-3).

Table 5-3. AREC member - Gender

	AREC members	AREC member %	NZ population %
Female	7	6	51
Male	118	94	49
n=	125		

5.4. AREC Members – Distribution

AREC members appear spread across NZ approximately in proportion to NZ population (Table 5-4), with the exception of an under-representation in Auckland (26% vs. 32%NZ).

Table 5-4. AREC Members – home location vs. NZ Regions

	AREC members	AREC member %	NZ population %
Auckland	26	21	32
Canterbury	19	15	13
Waikato	13	10	10
BOP	11	9	6
Hawkes Bay	9	7	4
Wellington	9	7	11
Northland	8	6	4
Otago	8	6	5
Marlborough	7	6	1
ManawatuWanganui	4	3	6
Nelson	4	3	1
Southland	2	2	2
West Coast	2	2	1
Gisborne	1	1	1
Taranaki	1	1	3
Tasman	1	1	1
n=	125		

5.5. AREC Members – voluntary roles

5.5.1. AREC members – Types of voluntary roles

Members were asked to indicate their type of voluntary involvement by ticking appropriate category boxes. The cumulative % results are summarised in the table below. They are indicative responses and do not describe specific roles or positions.

All indicated they had radio communications roles (100%, Table 5-5). 33% indicated they had some roles in AREC administration support. Some also had roles in managing and coordinating AREC functions (19%). A small proportion (4%) indicated they gave forms of specialist technical support.

Table 5-5. AREC members – voluntary roles

	AREC members	AREC member %
Radio Communications	125	100
Administration Support	41	33
Management/Co-ordination	13	10
Technical support	5	4
Other	4	3
n=	125	n/a

5.5.2. AREC members – Years of AREC Involvement

AREC members were asked to indicate the number of years of experience they had with these AREC roles. Overall on average, members had around 21 years of AREC experience (mean = 20.6 yrs, median 17.0 yrs). This long duration of experience reflects the older age-profile of this group. There is a relatively large proportion with more than 40 years of experience (Figure 5-2).

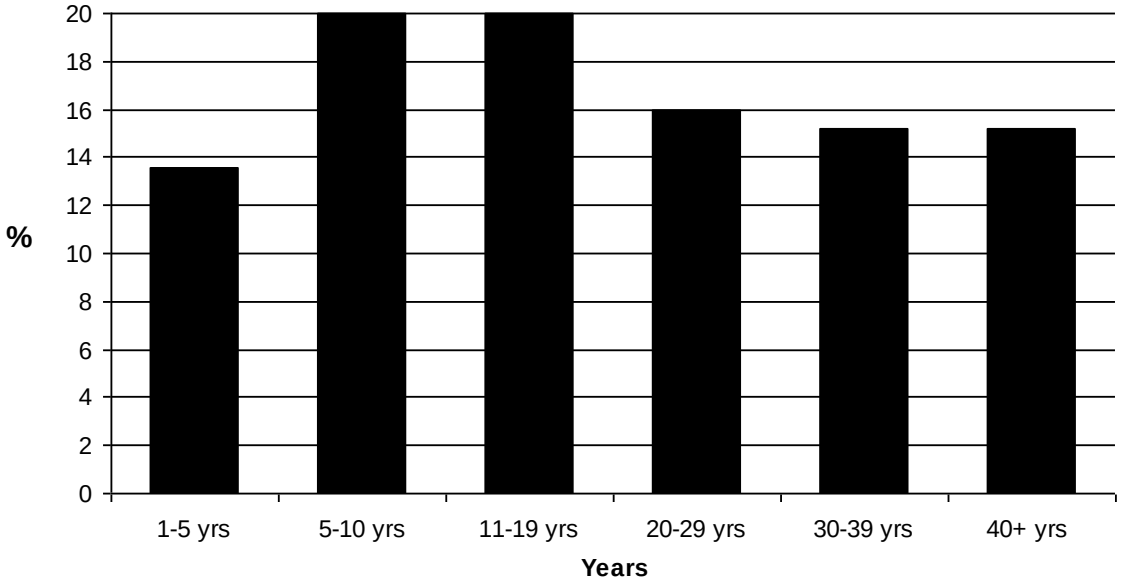


Figure 5-2. AREC Members – Years of AREC experience

5.6. AREC members - Future Needs

Given the opportunity of a small direct survey, members were asked in separate questions if they had any training and/or technical/equipment needs, and if yes then what those needs might be. They were then asked if they were aware of any coming changes or trends that would affect future AREC functions and if yes then what those changes were.

These were very brief and simplified questions in the context of a low impact online survey and should be considered only as useful for scoping purposes. No detailed analysis has been undertaken other than an overall scoping summary, and detailed material was provided to AREC for its own purposes. A brief summary of responses is provided below.

Training

- Overall, 46% of those responding (n=61) indicated they had training needs.
- A wide range of diverse needs were expressed, although more common themes related to dealing with new technology, SAR operational procedure and systems, and having updates.

Equipment

- Overall, 36% of those responding (n=47) indicated they had technical/equipment needs.
- A wide range of diverse needs were expressed, although more common themes related to improved transceivers, HF radio capacity, and to new GPS, computer and digital hardware.

Future Changes

- Overall, 61% of AREC members (n=79) felt there were future changes and trends that could affect the future.
- The issues most highlighted related to:
    - impacts of new technology
    - changing radio-communications roles
    - an aging AREC group

6. SARINZ Trainees Profile

6.1. Data Source

Data for tables and charts were sourced from an edited summary subset of the SARINZ training database for 2008-09. The database used for these analyses was edited by having all variables removed that were in any way related to individual member names or contact details. As a result no individual member could ever be identified from these data.

The final database subset used for the analyses comprised 5111 records, and included data related to member gender, date-of-birth, general home area (not address), SAR group and region (if applicable). From these data sources were estimated trainee age-group and summarised home area variables. The 'home area' variables generated included trainee's respective Regional Authority area, Territorial Authority Area, and SAR region (if applicable). These were generated in summary form to enable comparisons with general population data using corresponding data and spatial units from Statistics NZ.

Limitations:

Some data records did not include information for all the variables. As a result while there are 5111 individual records for trainees overall, only 3106 (61%) of these records allow home area to be estimated, and only 1477 (29%) allow age-group to determined. While not complete, those available are sufficient to give a good overall indication of age and general home area. The limitation created occurs when smaller subsets are being defined and compared.

The SARINZ Trainees were mostly LANDSAR members, although a variety of trainees from other SAR-sector groups were represented in lower numbers[3]. This is demonstrated in subsequent charts.

Main Information Areas:

- SARINZ Trainee distribution across NZ (vs. NZ Pop% & vs. LandSAR member %)
- SARINZ trainee age and gender relative to LandSAR Regions and NZ Regions

[3] Not all trainees were directly LandSAR members, with some members of AREC, Police, DOC, UrbanSAR, CaveSAR and Alpine Cliff Rescue. There were also others in inter-related sectors such as Civil Defence, DOC, Red Cross, St John's, Ski Areas staff, Scouts NZ and others. This information was not recorded and/or entered consistently in the original database so it is not possible to summarise trainees according to their source group.

6.2. SARINZ Trainees Distribution

6.2.1. Trainees by LandSAR Regions (vs. NZ Population)

Northern region is highly under-represented in terms of trainees (12%) relative to its regional population (37%), whereas Tasman (17% vs. 4%) and Southern (16% vs. 7%) regions are over-represented (Table 6-1 & Figure 6-1).

Table 6-1. SARINZ Trainees by LandSAR Region – vs. corresponding NZ Population

LandSAR Region	Trainees	Trainee %	NZ Pop	NZ Pop %
Midland	623	20	654,280	15
Tasman	539	17	171,870	4
Southern	503	16	298,120	7
Canterbury	487	16	547,400	13
Central	477	15	811,370	19
Northern	365	12	1,587,030	37
Eastern	100	3	198,480	5
n=	3094	100	4,268,550	100

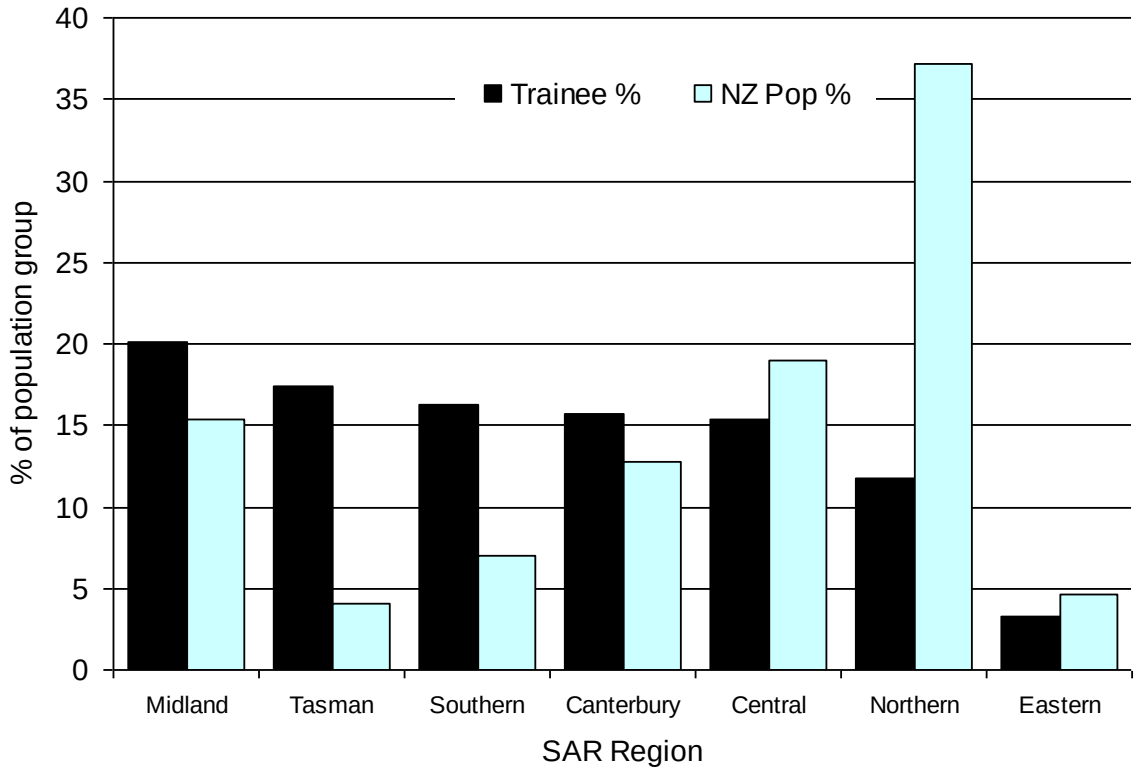


Figure 6-1. SARINZ Trainees by LandSAR Region – vs. corresponding NZ Population

6.2.2. Trainees by LandSAR Regions (vs. LandSAR members)

Northern Region trainees (4% vs. 12% LandSAR members) - and to a lesser extent Midland (16% vs. 20%) and Canterbury Regions (13% vs. 16%) - are under-represented among SARINZ trainees relative to LandSAR membership levels (Table 6-2 & Figure 6-2). Conversely, Central (22% vs. 15%) and Southern (22% vs. 16%) regions are over-represented.

Table 6-2. SARINZ Trainees by LandSAR Region – vs. corresponding LandSAR member%

	SARINZ Trainees	SARINZ Trainee %	LandSAR Members	LandSAR Member %
Eastern	71	3	100	3
Northern	117	4	365	12
Canterbury	374	13	487	16
Midland	461	16	623	20
Tasman	513	18	539	17
Central	629	22	477	15
Southern	640	23	503	16
n=	2805	100	3094	100

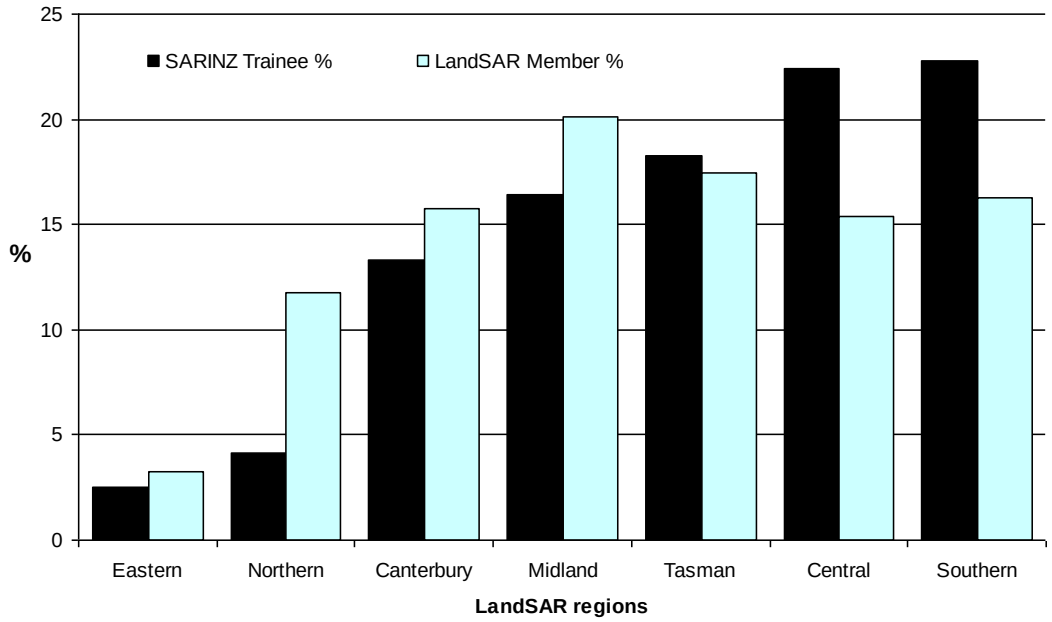


Figure 6-2. SARINZ Trainees by LandSAR Region – vs. corresponding LandSAR member%

6.2.3. Trainees by NZ Regions (vs. NZ Population)

Regions for whom SARINZ trainees are underrepresented against their regional population levels include Auckland (8% vs. 32%) and to a lesser extent Wellington (7% vs. 11%) and Hawke's Bay (2% vs. 4% - Table 6-3 & Figure 6-3). Those regions overrepresented include Otago (12% vs. 5%) and West Coast (9% vs. 1%).

Table 6-3. SARINZ Trainees by NZ Region – vs. NZ Pop % DONALD DUCK

	SARINZ Trainees	SARINZ Trainee %	NZ Population %
Canterbury	513	17	13
Waikato	408	13	10
Otago	375	12	5
West Coast	267	9	1
Auckland	242	8	32
Wellington	222	7	11
ManawatuWanganui	192	6	6
BOP	190	6	6
Northland	129	4	4
Nelson	105	3	1
Southland	103	3	2
Tasman	102	3	1
Taranaki	74	2	3
Hawkes Bay	63	2	4
Marlborough	59	2	1
Gisborne	36	1	1
n=	3083		

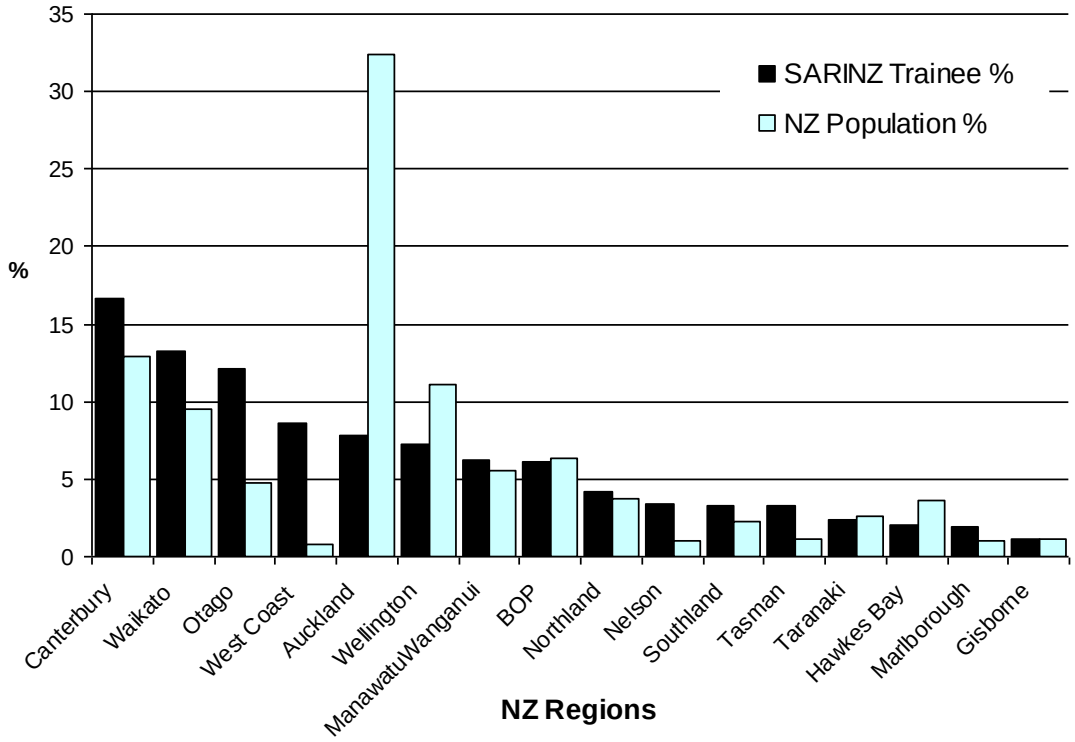


Figure 6-3. SARINZ Trainees by NZ Region – vs. NZ Pop %

6.3. SARINZ Trainees - Gender

Males are overrepresented in SARINZ trainees (76%) relative to the NZ population (49%, Table 6-4 & Figure 6-4).

Table 6-4. SARINZ Trainees – gender (vs. NZ %)

	SARINZ Trainees	SARINZ Trainee %	NZ Population %
Male	3862	76	49
Female	1248	24	51
n=	5110		

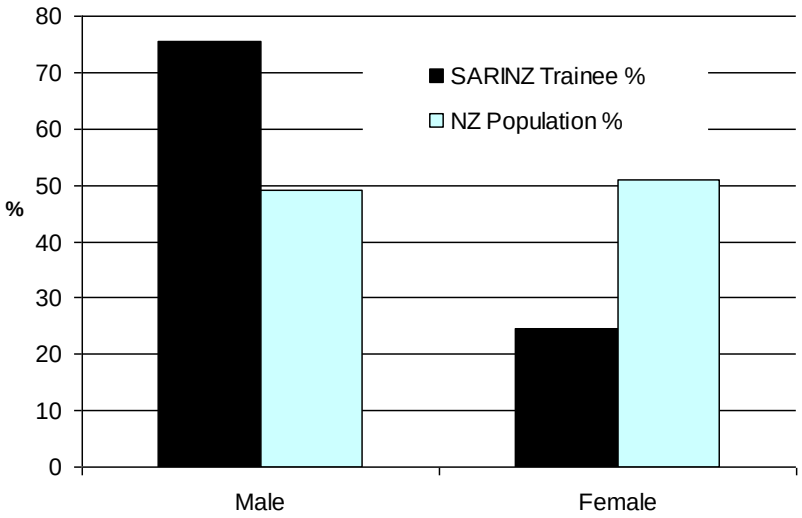


Figure 6-4. SARINZ Trainees – gender (vs. NZ %)

6.3.1. Trainee Gender by LandSAR Regions

There is only minor variation in gender profiles by region for SARINZ trainees (ranging from 80% male in Midland to 71% in Northern Region, Table 6-5 & Figure 6-5).

Table 6-5. Trainee Gender by LandSAR Regions

	% Female	% Male	n=
Midland	20	80	473
Central	21	79	465
Eastern	21	79	100
Southern	25	75	603
Canterbury	25	75	356
Tasman	26	74	493
Northern	29	71	531
All Trainees	24	76	3021

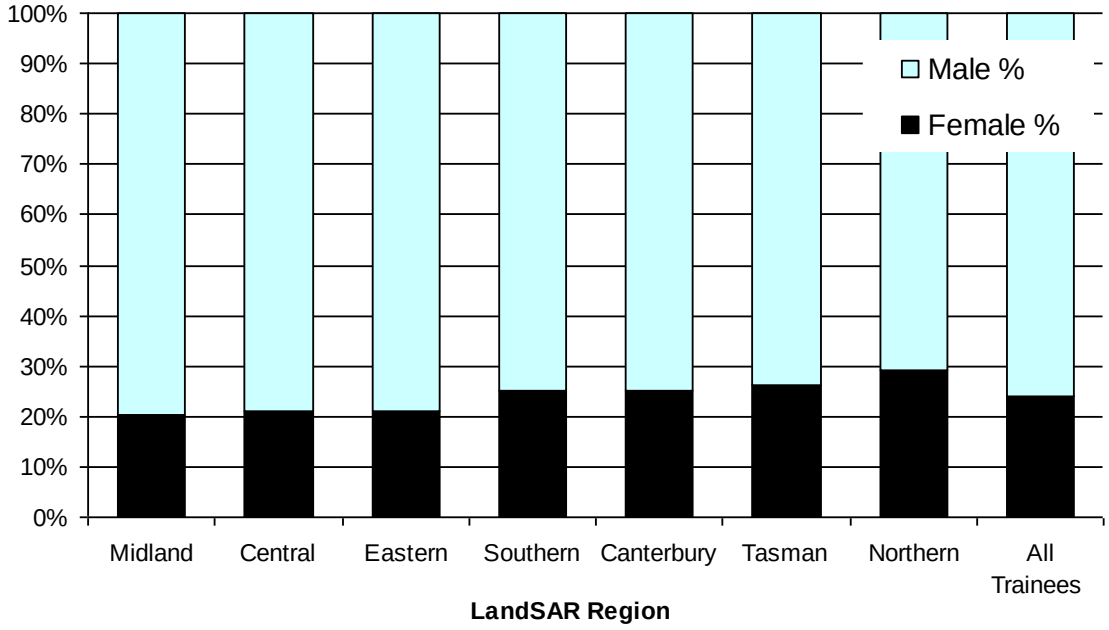


Figure 6-5. Trainee Gender by LandSAR Regions

6.3.2. Trainee Gender by NZ Regions

Whereas, gender profiles generated using the NZ regions shows up notable variations, with Auckland having the most diversity (31% female) along with Northland, West Coast and Marlborough (29% female each - Table 6-6 & Figure 6-6). Gisborne has the lowest diversity (8% female - although this could be a function of the limited size of this dataset), alongside Bay of Plenty (17%) and Manawatu-Wanganui (18%).

Table 6-6. Trainee Gender by NZ Regions

NZ Region	Female %	Male %	n=
Gisborne	8	92	36
BOP	17	83	190
Manawatu Wanganui	18	82	192
Tasman	21	79	102
Waikato	21	79	408
Taranaki	23	77	74
Southland	23	77	103
Canterbury	24	76	513
Hawkes Bay	24	76	63
Nelson	24	76	105
Wellington	25	75	222
Otago	28	72	375
Marlborough	29	71	59
West Coast	29	71	267
Northland	29	71	129
Auckland	31	69	242
All SARINZ Trainees	24	76	5110

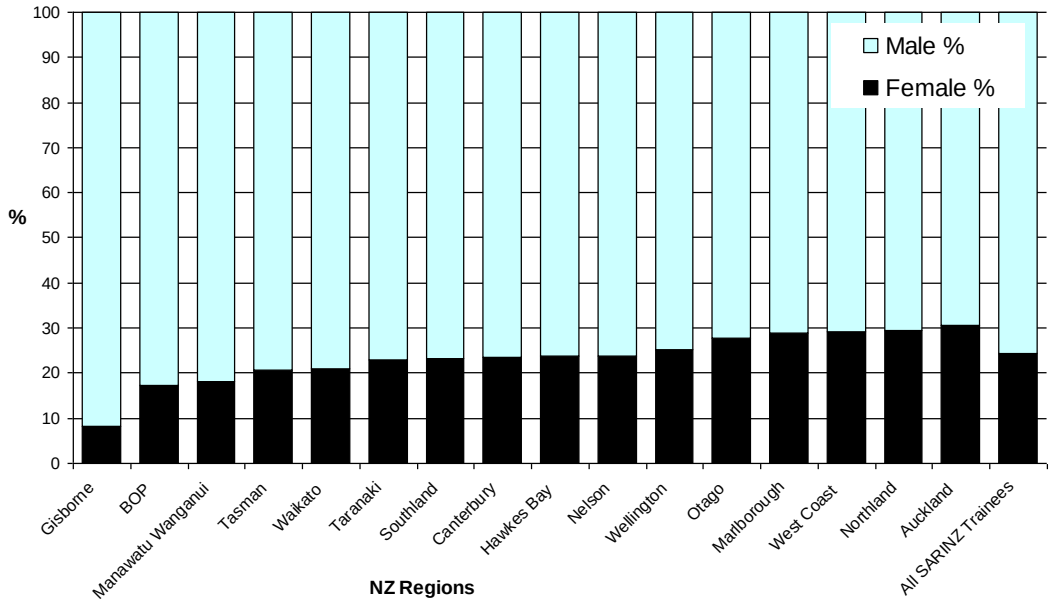


Figure 6-6. Trainee Gender by NZ Regions

6.4. SARINZ Trainee – Age

The SARINZ trainee age shows an over-representation in the 30-49 yr age groups (Table 6-7 & Figure 6-7). It also shows an absence of the youngest age groups (perhaps indicating an opportunity for development of programmes targeting this level).

Table 6-7. SARINZ Trainees – Age groups vs. NZ Pop

	SARINZ Trainees	SARINZ Trainee %	NZ Population %
<10	0	0	14
10-14	1	0	8
15-19	118	8	7
20-24	111	8	7
25-29	126	9	6
30-34	165	11	7
35-39	197	13	7
40-44	197	13	8
45-49	187	13	7
50-54	161	11	6
55-59	103	7	6
60-64	66	4	4
65-60	29	2	4
70+	15	1	9
n=	1476		

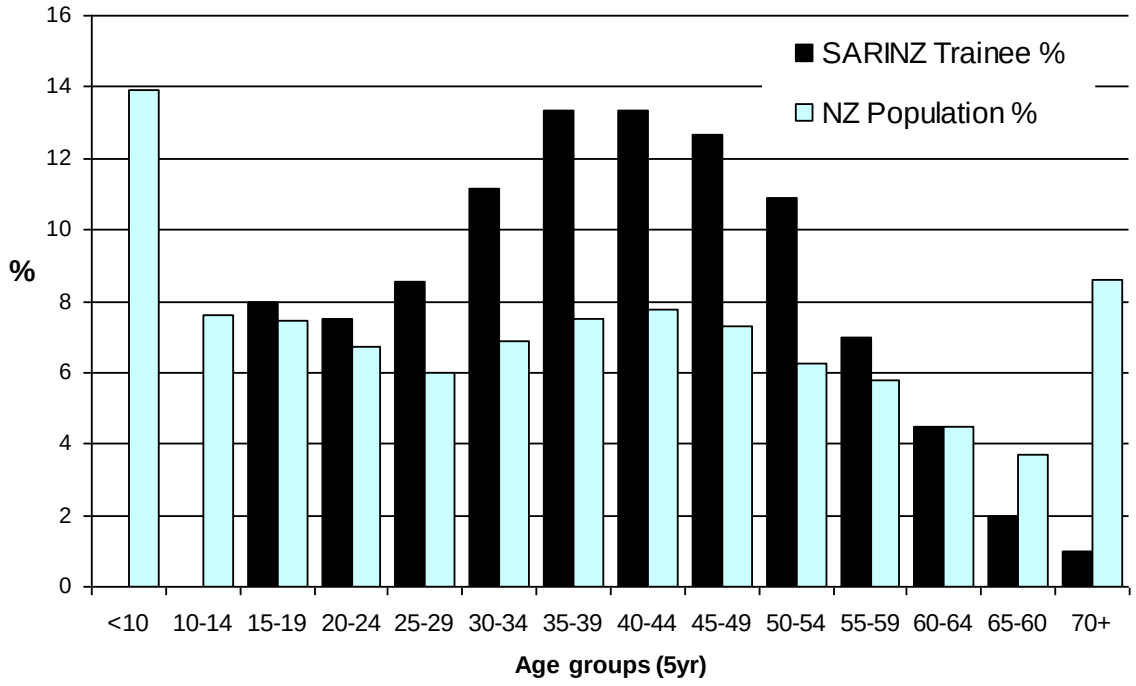


Figure 6-7. SARINZ Trainees – Age groups vs. NZ Pop

6.4.1. SARINZ Trainee – Mean and Median Ages by LandSAR Region

The age profile for SAR regions shows only limited variation (Table 6-8). Eastern Region has highest mean and median, however this region has low numbers (n=39).

Table 6-8. SARINZ Trainees – Mean and Median Ages by LandSAR Region

	Mean Age	Median Age	*n*=
Midland	37	39	*259*
Southern	39	38	*232*
Northern	39	40	*213*
Canterbury	40	41	*223*
Tasman	41	40	*268*
Central	41	40	*167*
Eastern	45	47	*61*
All Trainees	40	40	*1496*

6.4.2. SARINZ Trainee – Mean and Median Ages by NZ Region

There is greater degree of variation in SARINZ trainees using NZ Region profiles. The gap between the highest (median = 53yrs) and lowest (median = 33yrs) is considerable (Table 6-9).

Table 6-9. SARINZ Trainees – Mean and Median Age by NZ Region

	Mean	Median	*n*=
Southland	35	33	*35*
West Coast	36	34	*132*
Waikato	37	36	*187*
Auckland	38	39	*128*
Taranaki	38	42	*9*
BOP	38	42	*63*
Canterbury	40	40	*246*
Wellington	41	39	*94*
Otago	41	40	*187*
Gisborne	41	40	*19*
Northland	41	42	*96*
Manawatu Wanganui	42	40	*78*
Nelson	43	45	*58*
Tasman	44	45	*57*
Marlborough	47	49	*29*
Hawkes Bay	51	53	*32*
All Trainees	40	40	*1476*

6.4.3. Trainee Age-group (5yr) by LandSAR Region

Regions follow what appears to be a general age-group pattern, with some variations evident (e.g., Midland (15-19yr – 22%) and Southern (35-39yr – 23%) show extreme peaks - Table 6-10 & Figure 6-8). Midland's peak may reflect influence of Hamilton YouthSAR.

Table 6-10. Trainee Age-group (5yr) by LandSAR Region

	Canterbury	Central	Eastern	Midland	Northern	Southern	Tasman	All SARINZ Trainees
10-14	0	0	2	0	0	0	0	0
15-19	4	4	7	22	7	3	7	8
20-24	10	3	5	7	10	8	7	8
25-29	9	10	8	9	8	8	8	9
30-34	12	16	3	6	9	16	12	11
35-39	10	14	8	8	15	23	12	13
40-44	14	14	10	15	19	10	9	13
45-49	13	11	18	13	12	12	13	13
50-54	10	17	11	8	8	9	13	11
55-59	9	5	15	4	7	5	10	7
60-64	5	6	2	4	4	4	4	4
65-60	2	1	7	4	1	0	2	2
70 plus	0	0	5	2	1	0	2	1
n=	*223*	*167*	*61*	*259*	*213*	*232*	*268*	*1476*

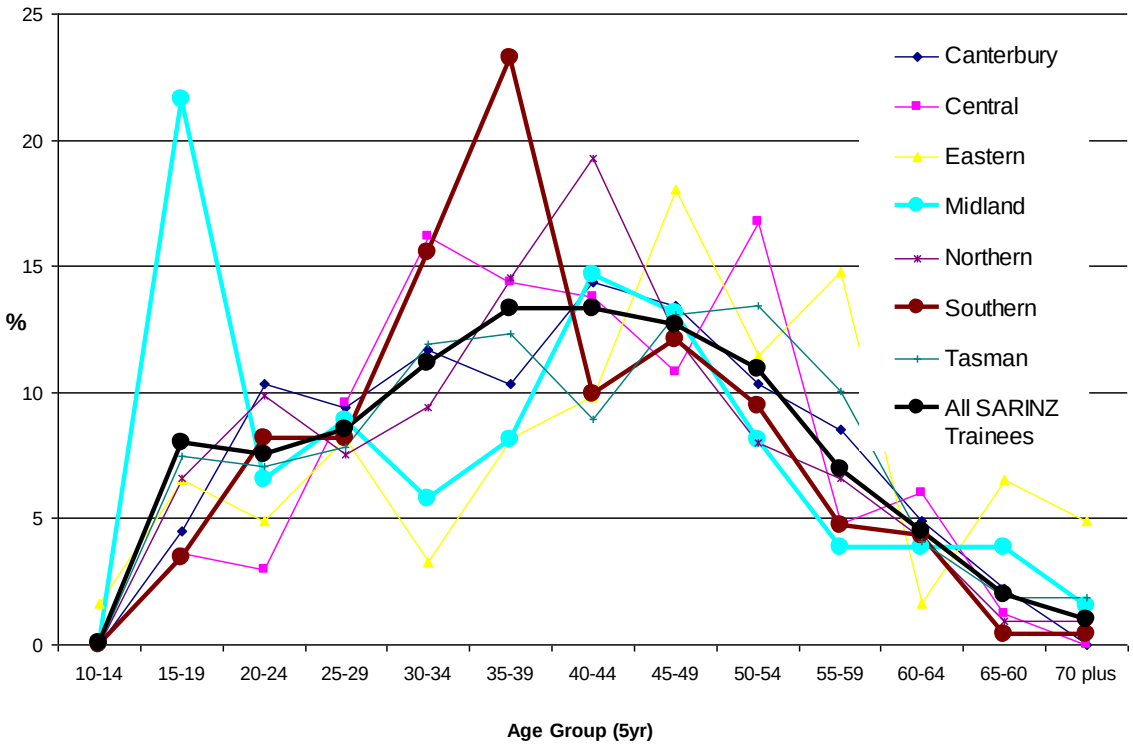


Figure 6-8. Trainee Age-group (5yr) by LandSAR Region

6.4.4. Trainee Age-group (10yr) by LandSAR Region

Similar, but more robust patterns are evident using 10year age categories. The main variations are evident with peaks in the 15-19yr group for Midland (22%) and in the 30-39yr group with Southern (39%), Northland and Tasman regions (both 24% - Table 6-11 & Figure 6-9).

Table 6-11. Trainee Age-group (10yr) by LandSAR Region

	Canterbury	Central	Eastern	Midland	Northern	Southern	Tasman	All SARINZ Trainees
10-19	4	4	8	22	7	3	7	8
20-29	20	13	13	15	17	16	15	16
30-39	22	31	11	14	24	39	24	25
40-49	28	25	28	28	31	22	22	26
50-59	19	22	26	12	15	14	24	18
60-69	7	7	8	8	5	5	6	6
70+	0	0	5	2	1	0	2	1
n=	223	167	61	259	213	232	268	1476

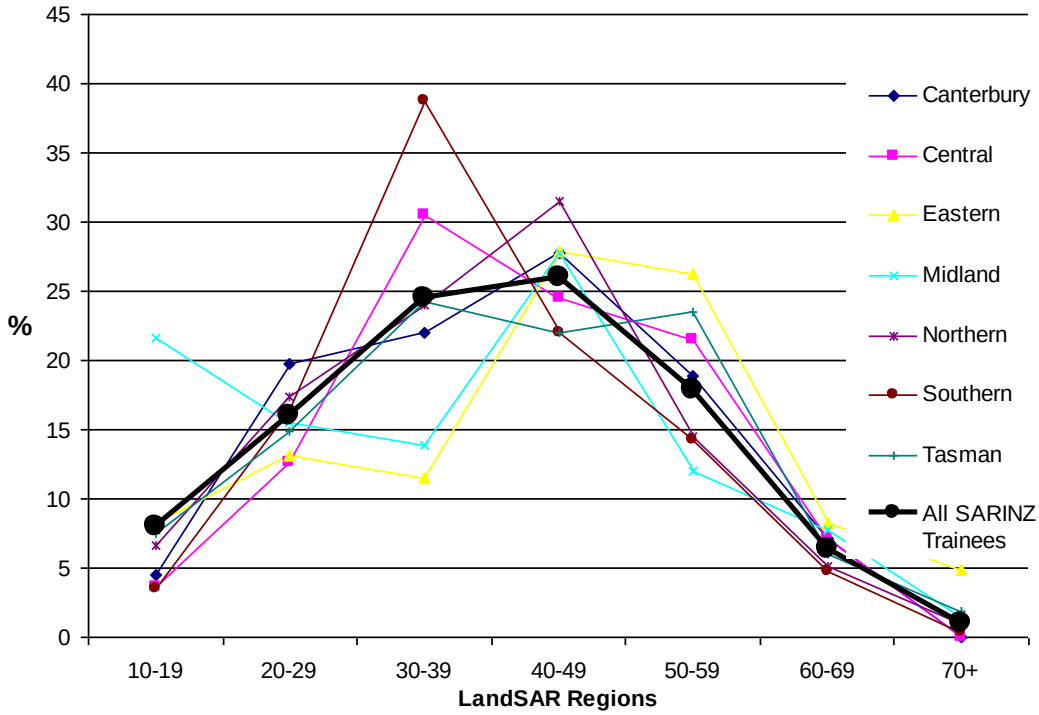


Figure 6-9. Trainee Age-group (10yr) by LandSAR Region

6.4.5. Trainee Age-group (5yr) by NZ Region

The 5yr regional age profiles show a noisier pattern (therefore the graph is omitted). The peak observed in Midland in the 15-19 yr category is reflected in Table 6-12 with high proportions within this age group for both Bay of Plenty (29%) and Waikato (20%) regions.

Table 6-12. Trainee Age-group (5yr) by LandSAR Region

	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-60	70 +	n=
Auckland	0	11	11	10	9	10	21	11	5	6	4	0	2	128
BOP	0	29	2	0	8	8	11	14	17	5	2	3	2	63
Canterbury	0	3	10	11	14	11	15	13	10	7	5	2	0	246
Gisborne	0	0	5	16	11	16	11	21	11	5	0	0	5	19
Hawkes Bay	0	6	3	0	3	6	9	16	9	22	6	13	6	32
Manawatu Wanganui	0	1	4	10	14	17	15	9	17	6	5	1	0	78
Marlborough	0	3	0	10	10	0	10	17	17	21	3	0	7	29
Nelson	0	9	3	0	7	19	7	21	19	9	3	3	0	58
Northland	0	3	6	4	9	18	20	17	11	7	3	1	0	96
Otago	0	5	6	3	13	22	10	15	12	6	5	1	1	187
Southland	0	6	17	14	14	23	6	3	9	6	3	0	0	35
Taranaki	0	11	11	0	0	11	33	33	0	0	0	0	0	9
Tasman	0	9	2	0	11	16	9	23	11	11	5	4	2	57
Waikato	1	20	9	11	5	9	14	12	5	4	5	5	2	187
Wellington	0	3	2	14	18	14	12	9	17	3	7	1	0	94
West Coast	0	7	14	17	16	11	9	4	10	8	2	1	1	132
All Trainees	0	8	8	9	11	13	13	13	11	7	4	2	1	1450

6.4.6. Trainee Age-group (10yr) by NZ Region

The patterns here too are not easily discernable (and therefore have not been graphed). Southland has high representation in the 20-39 age groups, and lower in 40s (Table 6-13).

Table 6-13. Trainee Age-group (10yr) by LandSAR Region

	10-19y	20-29y	30-39y	40-49y	50-59y	60-69y	70-79y	n=
Auckland	11	21	19	32	12	4	2	128
BOP	29	2	16	25	22	5	2	63
Canterbury	3	21	25	28	17	7	0	246
Gisborne	0	21	26	32	16	0	5	19
Hawkes Bay	6	3	9	25	31	19	6	32
ManawatuWanganui	1	14	31	24	23	6	0	78
Marlborough	3	10	10	28	38	3	7	29
Nelson	9	3	26	28	28	7	0	58
Northland	3	10	27	36	19	4	0	96
Otago	5	10	35	25	18	6	1	187
Southland	6	31	37	9	14	3	0	35
Taranaki	11	11	11	67	0	0	0	9
Tasman	9	2	26	32	21	9	2	57
Waikato	21	19	13	27	9	10	2	187
Wellington	3	16	32	20	20	9	0	94
West Coast	7	32	27	13	18	3	1	132
All Trainees	8	16	25	26	18	6	1	1450

6.5. SARINZ Trainee – SAR Organisation Sources

Most trainees are from LandSAR; however there is a broad range of other participant groups (Table 6-14 & Table 6-15). Note that 'LandSAR' includes Cave, Alpine Cliff Rescue, YouthSAR.

A detailed specific list of source groups is presented (Table 6-16). In terms of specific sources, there is a wide range of groups involved, with little dominance from any one specific area. Wellington LandSAR is the largest (51); NZ Police (combined) second (42), then Christchurch SAR (31). Note Hamilton YouthSAR features (21). There is also a Tauranga YouthSAR but they are not specifically identified here.

Table 6-14. Source SAR Organisations for SARINZ Trainees - summary

Organisation	Trainee Numbers	Trainee %	Notes
LandSAR	494	81	Includes 26 Cave (4%), 21 Alpine Cliff Rescue (3%) and 21 YouthSAR (3%)
Police	42	7	
Other Emergency Service	27	4	Includes Civil Defence, Red Cross, St Johns
Other	18	3	Includes Ski staff, Guides, Scouts NZ, Mountain Safety Council
DOC	13	2	
UrbanSAR	13	2	
	607	100	

Table 6-15. Source SAR Organisations for SARINZ Trainees

	Trainee Numbers	Trainee %
LandSAR	426	70
Police	42	7
Other Emergency Service	27	4
LandSAR (Cave)	26	4
LandSAR (ACR)	21	3
LandSAR (Youth)	21	3
Other	8	2
DOC	13	2
UrbanSAR	13	2
	607	100

Table 6-16. Source SAR Organisations for SARINZ Trainees - specific

	Total
Alpine Guides Limited	1
AREC	3
Arthurs Pass LandSAR	6
Auckland LandSAR	2
Auckland LandSAR (Cave)	3
Catlins LandSAR	14
Central Otago LandSAR	1
Christchurch LandSAR	31
Christchurch LandSAR (Cave)	14
Civil Defence Christchurch	7
Clutha District LandSAR	3
DOC Canterbury	7
DOC Nelson/Marlborough	4
DOC Otago	2
Dunedin LandSAR	5
Ellsmere LandSAR	2
Far North LandSAR	17
Gisborne LandSAR	10
Golden Bay LandSAR	15
Greymouth LandSAR	5
Hamilton LandSAR	19
Hamilton YSAR	21
Hanmer Springs LandSAR	2
Hokitika LandSAR	4
Horowhenua LandSAR	2
Karamea LandSAR	1
Kuaotuna LandSAR	8
Marlborough LandSAR	11
Methven LandSAR	11
Mountain Safety Council	4
Murchison LandSAR	2
Nelson LandSAR	16
Nelson LandSAR (Cave)	1
North Otago LandSAR	11
Northland LandSAR	2
NZ Defence Force	4
Oxford LandSAR	5
Palmerston North LandSAR	10
Police	42
Rakaia LandSAR	2
Red Cross	10
Reefton LandSAR	2
Ruapehu LandSAR	2
Scouts NZ	3
Ski Area Mt Hutt	1
Ski Area Rainbow	1
South Canterbury LandSAR	8
South Canterbury LandSAR	3
South Canterbury LandSAR (Cave)	1
South Westland LandSAR	25
Southland LandSAR	17
St Johns Nelson/Marlborough	4
Stewart Island LandSAR	15
Taihape LandSAR	1
Tairua/Pauanui LandSAR	11
Taranaki LandSAR	3
Taranaki LandSAr (ACR)	1
Tararua LandSAR	4
Tasman LandSAR	3
Taupo LandSAR	8
Tauranga LandSAR	6
Thames LandSAR	5
Turangi LandSAR	10
UrbanSAR Nelson	13
Wairarapa SAR	5
Waitomo LandSAR	2
Waitomo LandSAR (Cave)	6
Waitomo SAR	2
Wakatipu LandSAR	15
Wanaka LandSAR	12
Wanganui LandSAR	4
Wellington LandSAR	51
West Coast Rescue Helicopter (Grey)	2
Westport LandSAR	15
Whakatane LandSAR	1
Unknown (TWRU)	5
	607

Tables

Table of Figures