# Cape Rodney to Okakari Point Marine Reserve and Tawharanui Marine Park Lobster Monitoring Programme: 2009 Survey

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# Cape Rodney to Okakari Point Marine Reserve and Tawharanui Marine Park Lobster Monitoring Programme: May 2009 Survey

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**SUMMARY**

In 2009, spiny lobster (*Jasus edwardsii*) population abundance and size was assessed within Cape Rodney to Okakari Point Marine Reserve (CROP), Tawharanui Marine Park (TMP) and unprotected control sites (NR). This survey was the first for TMP under the current programme and the seventh for CROP and NR.

Lobster abundance was highest in TMP (19.9 lobsters per $500m^2$ (+/- 2.6 SE)) followed by CROP (13.4 lobsters per $500m^2$ (+/- 2.8 SE)), and levels within these protected areas were substantially higher than NR (1.9 lobsters per $500m^2$ (+/- 0.43 SE)). Statistical analysis suggested that 2009 levels in TMP and CROP were 7.7 ($CI_{95\%}$ = 2.9, 20.9) and 5.5 ($CI_{95\%}$ = 2.0, 17.9) times higher than for the NR sample population. Mean lobster size, based on carapace length, was similar between TMP and CROP, being approximately 105 mm, compared to 85 mm for NR.

Using the relative difference in lobster abundance between reserve and non-reserve areas and assuming that: 1) lobster populations of the unprotected sites surveyed are representative of the general Leigh coastline; and, 2) habitat within the reserve is representative of the wider area, then the 5 km long Cape Rodney to Okakari Point Marine Reserve in 2009 contains the equivalent number of lobsters from approximately 35 km of fished coastline, whereas levels within the 3.5 km long Tawharanui Marine Park are equivalent to approximately 40 km of fished coastline.

Temporal trends for CROP indicate that *J. edwardsii* abundance has remained constant between 2006 and 2009, yet still remains 2.5 times lower than 1995 levels. Present-day abundance levels are being maintained largely through recruitment and high numbers of sublegal lobsters, as legal-sized lobsters declined in abundance between 2006 and 2009. Patterns of this nature suggest that recovery of the reserve population is most-probably being affected by fishing that routinely occurs around the reserve boundary.

The consistently low abundance and smaller size of lobsters at unprotected (NR) sites surveyed reflects sustained fishing pressure in the Leigh area. This is particularly evident in the progressive decline of legal-sized lobsters since 2000 at the majority of non-reserve sites sampled. It is unlikely that lobster abundance will increase markedly in fished areas in the near future unless fishing effort is reduced, or recruitment increases markedly.

**Keywords:** CROP Marine Reserve, rock lobster, *Jasus edwardsii*, abundance.

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# 1 INTRODUCTION

The spiny rock lobster (*Jasus edwardsii*) is an ideal species to use in exploring and promoting the benefits of marine reserves as *Jasus edwardsii* responds positively to protection in New Zealand (Cole *et al.* 1990, MacDiarmid and Breen 1993, Kelly *et al.* 2000, Davidson *et al.* 2002, Shears *et al*. 2006). *Jasus edwardsii* have significant cultural and economic value, giving them wide public appeal and are conspicuous and important components of subtidal rocky reefs. *Jasus edwardsii* are considered to be high level predators that consume a wide variety of prey including echinoids, molluscs, bivalves and crustaceans, and in turn are prey for a suite of species including octopus and a variety of fish (Andrew and MacDiarmid 1999). Evidence also suggests that predation by *J. edwardsii* may play a major role in structuring subtidal reef communities (Babcock *et al.* 1999, Shears and Babcock 2002, Shears and Babcock 2003).

The Cape Rodney to Okakari Point (CROP) Marine Reserve (commonly known as the Leigh Marine Reserve) is New Zealand's oldest and eminent marine reserve. Prior to 2000, the only information on the state of the CROP Marine Reserve lobster population was obtained from *ad hoc* surveys conducted to examine specific research questions (Cole *et al*. 1990, MacDiarmid 1991, MacDiarmid and Breen 1993, Kelly *et al*. 2000, Shane Kelly unpublished data). These surveys occurred infrequently and could not be used as a reliable means of monitoring the reserve lobster population. The Department of Conservation therefore established a formal monitoring programme for *J. edwardsii* in May 2000. The Cape Rodney to Okakari Point Marine Reserve Lobster Monitoring Programme provides the department with information on the current status of the protected lobster population, monitors trends in population parameters through time and is capable of alerting reserve managers to potential problems with the lobster population.

Between 1995 and the inception of the monitoring programme in 2000, *Jasus edwardsii* abundance within CROP and the adjacent Leigh coastline declined from approximately 40 lobsters per 500 $m^2$ to around 10 lobsters per 500 $m^2$ and by 2001 were approximately 5 lobsters per 500 $m^2$. Subsequent surveys between 2000 and 2006 have quantified the modest recovery of *J. edwardsii* relative to unprotected sites (Haggitt and Mead 2006). This report details the results of the seventh lobster survey of the CROP Marine Reserve and unprotected control sites under this programme. It also marks the formal addition of Tawharanui Marine Park (TMP), located approximately 12 km south of CROP, into the programme. The methods used in the survey were standardised with those developed during previous surveys of the CROP Marine Reserve and at least 4 other protected areas, to allow broader scale generalisations about the effects of protection on lobster populations.

The principle objectives of the Lobster Monitoring Programme are to:

- Determine the current population status of *Jasus edwardsii* within CROP and TMP;

- Compare lobster size and abundance within CROP and TMP with equivalent unprotected control sites (NR);

- Compare trends in CROP Marine Reserve and unprotected control sites lobster populations through time.

## 2 METHODS

The 2009 survey of *Jasus edwardsii* within Cape Rodney to Okakari Point Marine Reserve, Tawharanui Marine Park and the non-reserve survey area was undertaken between 15 April and 21 May 2009. The methods used in the Lobster Monitoring Programme were developed during previous lobster surveys of at least four New Zealand marine protected areas (Cathedral Cove, Tuhua, Tawharanui Marine Park, and Te Angiangi).

Previously, lobster surveys of the CROP Marine Reserve have been carried out in 1995 and from 2000 to 2006. The 1995 survey included, 2 shallow (0 - 10 m) and 2 deep (>10 - 20 m) sites within the marine reserve, and 2 shallow and 2 deep unprotected control sites. Since 2000, an extra deep and shallow site has been surveyed inside and outside the marine reserve (Fig. 2.1). A total of three shallow and three deep sites in the reserve and control areas was considered the minimum required to meet the objectives of the program. It was chosen because previous surveys (Shane Kelly unpublished data) indicated that:

- The design had sufficient power to detect differences between reserve and non-reserve locations and would provide reliable estimates of lobster population parameters.
- The design was consistent with previous surveys and therefore allowed direct comparisons to be made with a historic data set.
- An ongoing monitoring program is more likely to be maintained if costs are minimised.

A recommendation of previous lobster surveys has been to increase monitoring to incorporate Tawharanui Marine Park (TMP) into the sampling programme, given its similar size and proximity to CROP. While TMP lobster abundance has been surveyed previously (Kelly 1999, Shears *et al*. 2006), the 2009 survey is the first formal survey to use a comparable sampling design to that of CROP, i.e., a total of three shallow and three deep sites within TMP were surveyed (Fig 2.1).

In order to eliminate seasonal effects and allow direct comparisons between other surveys, monitoring is conducted in May, which coincides with *Jasus edwardsii's* mating season. Several criteria were used in initial site selection for CROP, TMP and NR:

- Sites within each reserve were randomly selected from five potential shallow and deep sites;
- The control sites (NR) were haphazardly selected from a number of possible sites in the area. Selection occurred prior to the survey with no knowledge of lobster abundance or population structure in the areas concerned;
- A maximum depth limit of 20 m was set to ensure repetitive, multi-day diving could be conducted safely;
- The sites contained reefs with suitable shelters for lobsters.

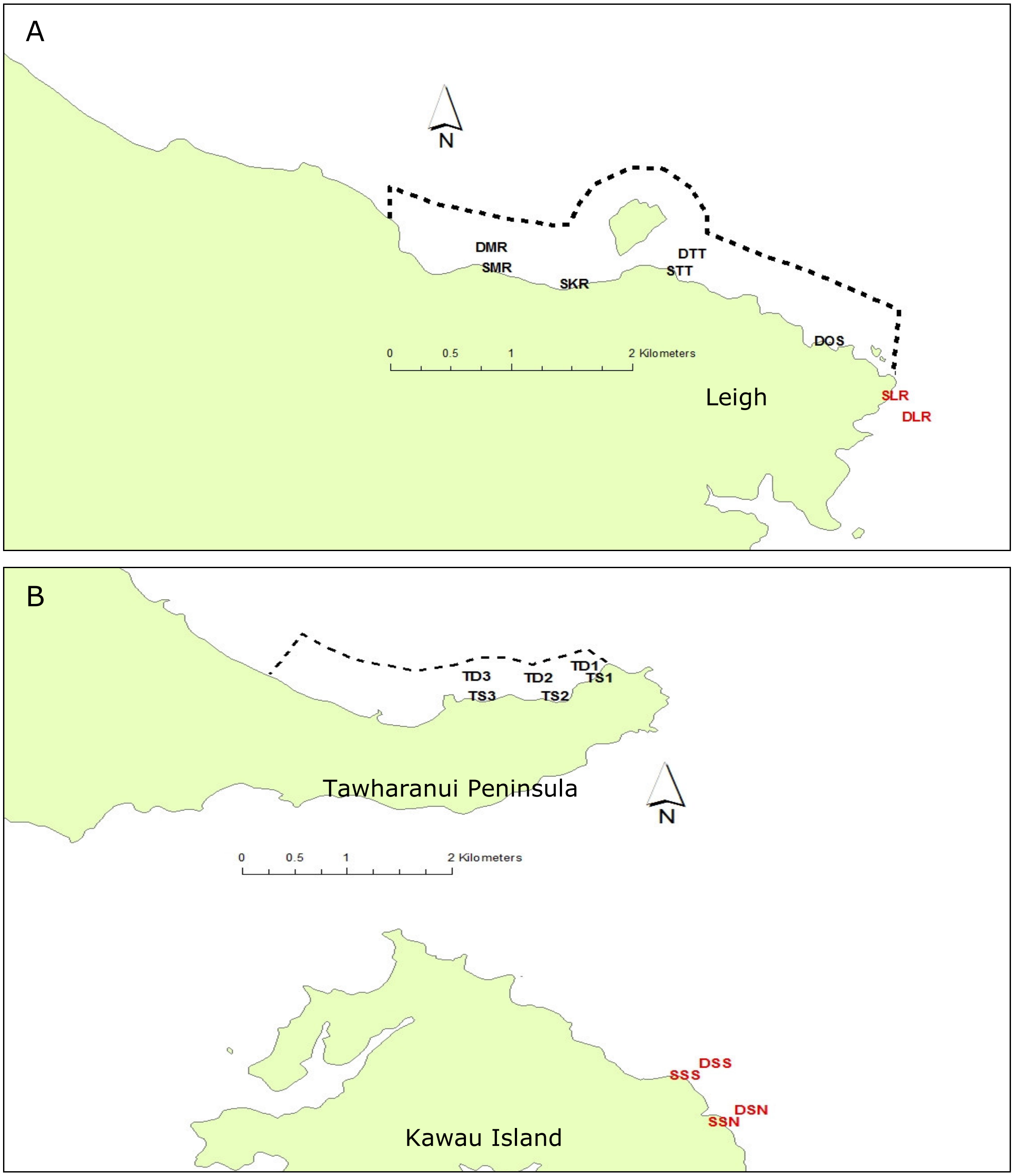


**Figure 2.1.** Map of the protected (black) and unprotected (red) sites included in the survey. Dashed lines denote approximate reserve boundaries for Cape Rodney to Okakari Point Marine Reserve (CROP - Map A) and Tawharanui Marine Park (TMP - Map B). Site abbreviations are as follows: DMR – Deep Martins Reef, SMR – Shallow Martins Reef, SKR – Shallow Knot Rock, STT – Shallow Table Top, DTT – Deep Table Top, DOS – Deep One Spot, SLR – Shallow Leigh Reef, DLR – Deep Leigh Reef, TD1 – Tawharanui Deep 1, TS1 – Tawharanui Shallow 1, TD2 – Tawharanui Deep 2, TS2 – Tawharanui Shallow 2, TD3 – Tawharanui Deep 3, TS3 – Tawharanui Shallow3 , SSN – Shallow Slater North, DSN – Deep Slater North, SSS – Shallow Slater South, DSS – Deep Slater South.

### Abundance and size

Within all sites, five 50 m x 10 m haphazardly placed transects were sampled. Haphazard sampling was used to ensure inter-annual samples were independent, allow data to be analysed with ANOVA techniques (which require independent samples), and provide an unbiased representation of lobster abundance at each site (see Creese and Kingsford 1998).

The size and where possible, sex of lobsters within each transect were determined by visual estimation. The choice of the 50 m x 10 m transect and replication level were based on a pilot study conducted by MacDiarmid (1991) who compared the precision of 3 different transect sizes, 10 m x 10 m (n = 20), 25 m x 10 m (n = 8) and 50 m x 10 m (n = 4), each covering a total area of 2000 $m^2$. All transects provided a similar level of precision. Fifty by ten meter transects (500 $m^2$) were chosen for this programme because they permitted at least one transect to be completed per dive in areas of high lobster abundance, and they limited the number of zero counts in areas of low lobster abundance. However, the replication level was increased from four (MacDiarmid 1991) to five transects per site, covering a total area of 2500 $m^2$.

Sex was determined using the dimorphic characteristics of male and female lobsters. Torches were used to aid in the sexing of lobsters and to ensure that lobsters in deep holes were not missed. All divers were required to estimate carapace length to within an average of 10 mm. This level of accuracy was achieved through a series of calibration dives where the size of individual lobsters was estimated, after which each lobster was caught by hand and measured with vernier callipers to obtain a true length measurement (Fig. 2.2). An analysis of covariance (ANCOVA) could not detect any significant difference between the size estimation ability of the three censors used in the survey, i.e., the slope was not significantly different from 1 ($P = 0.599$) and the $y$ intercept did not differ significantly from 0. In northern New Zealand, the minimum legal size limit for *J. edwardsii* occurs between 95 mm and 100 mm C.L. For the purpose of this report lobsters ≥ 95 mm were therefore considered to be legal and thus susceptible to fishing.

### Data analysis

Abundance and size data are presented graphically. To investigate statistical differences in lobster counts in 2009 between the three areas surveyed – CROP, TMP and NR – data were analysed with a repeated measures generalised linear mixed model (McCullagh and Nelder 1989) using the SAS macro GLIMMIX (Littell *et al.* 1996). The model was back-fitted to a Poisson distribution with a log-link function. The dispersion parameter Scale=Deviance was employed to account for any overdispersion in the dataset. Fixed factors in the analysis were Area (CROP, TMP and NR) and Depth (shallow, deep), whereas the factor Site(Area) was treated as a random effect. Ratios of density (plus 95% confidence limits) were calculated between significant levels to provide an estimate of the size of main effects. Note that confidence limits are asymmetrical as they are calculated on the log-scale.

Size data among CROP, TMP and NR for the 2009 survey were analysed with a One-way ANOVA (SAS 1999). Where significant differences were detected a Tukey-Kramer multiple comparison test (Zar 1999) was employed to further examine differences among means.

To test for differences in lobster counts for the long-term dataset (2000-2009 – excluding TMP), data were analysed with a repeated measures generalised linear mixed model, again using the SAS macro GLIMMIX (Littell *et al.* 1996). The model was back-fitted to a Poisson distribution and an autoregressive error structure [AR(1)] was used to account for repeated measures, as measurements were likely to be most similar between sampling dates closer in time and because variances between sampling dates were heterogeneous. Fixed factors in the analysis were Status (CROP and NR), Depth (shallow, deep) and Year (2000-2009), whereas the factor Site(Status×Year) was treated as a random effect.

**Cohabitation**

In order to assess the degree of lobster cohabitation with CROP, TMP and NR, the number of lobsters within individual dens/shelters along individual transects was also recorded.

**Urchin tests**

*Jasus edwardsii* is a significant predator of the urchin *Evechinus chloroticus* (Shears and Babcock 2002). In order to assess lobster predation on urchins, urchin tests with distinct fractures attributable to lobster predation that occurred next to lobsters or within lobster holes along each transect were counted and if possible sized (+/- 1mm).

**Habitats**

To document habitat types among survey areas the percent cover occurrence of broad habitat types according to Shears *et al.* (2004) was recorded for each transect. To assess the variability in habitats among areas (CROP, TMP and NR) and depth strata surveyed, non-metric MDS analysis based on forth-root transformed data and a Bray Curtis similarity matrix was undertaken using PRIMER-E v6 (Clarke and Warwick 2001).

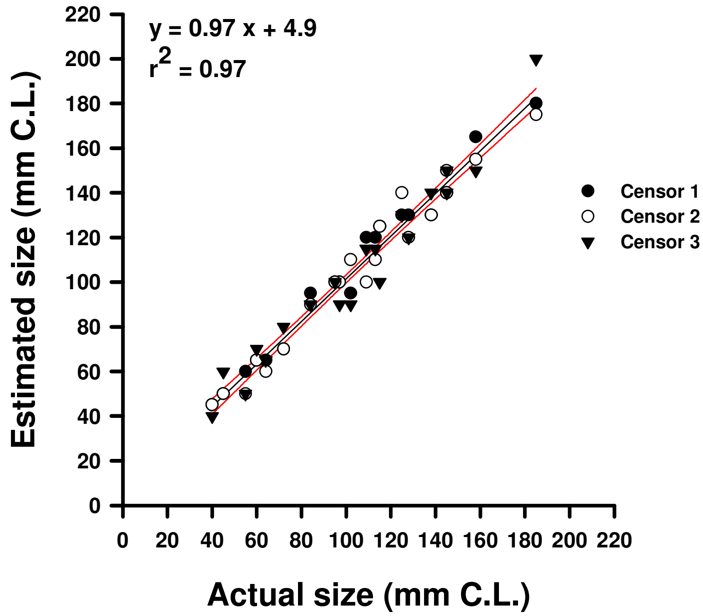


**Figure 2.2.** Size calibration data from the three censors conducting the 2009 survey of CROP, TMP and NR. Size estimates were made without handling individual lobsters. Actual sizes were determined by capturing the lobsters and measuring carapace length (C.L.) with vernier calipers after the size estimates were made. The least squares regression line for the pooled estimates (± 95% confidence intervals *in red*) is also given.

# 3 RESULTS

## *Jasus edwardsii* abundance

In 2009, mean lobster abundance (pooled across depths and sites) within CROP, TMP and the non-reserve area surveyed (NR) were 13.4 lobsters per 500m$^2$ (+/- 2.8 SE), 19.9 lobsters per 500m$^2$ (+/- 2.6 SE), and 1.9 lobsters per 500m$^2$ (+/- 0.43 SE) respectively (Fig. 3.1). Within CROP, abundance levels were slightly lower than that of the last formal survey in 2006, suggesting that lobster abundance has remained constant within the reserve over the last 5 years (Fig. 3.1). Non-reserve lobster abundance was slightly higher in 2009 than in 2006, although levels still remain very low, i.e., < 2 lobsters per 500m$^2$. Both CROP and NR lobster populations are still remain less than half that of 1995 levels.

Analysis of 2009 abundance for CROP, TMP, and NR indicated a statistically significant difference among Areas (CROP, TMP, and NR), although the factor Depth was not statistically significant (Table 3.1). The random effect in the model Site(Depth×Area) was also statistically significant, reflecting the high variability in lobster abundance among sites across depths within CROP, TMP and NR. Estimates of effect sizes among areas, based on relative odds ratios, indicated that 2009 abundance levels within CROP were 5.48 (2.0, 14.9 (95% CL)) times higher than non-reserve levels, whereas lobster abundance within TMP was 7.73 (2.8, 20.9 (95% CL)) times higher than non-reserve levels.

As evident in previous surveys, *Jasus edwardsii* abundance was highly variable among sites and between depths surveyed, with shallow-water sites within CROP generally having higher lobster abundance than deep-water sites (Fig. 3.2). *Jasus edwardsii* maintained highest densities at STT (44.8 lobsters 500 m$^{-2}$ ± 6.3 (SE)) and SMR (15.2 lobsters 500 m$^{-2}$ ± 5.0 (SE)), but were markedly reduced at SKR relative to 2006 levels. Of the deep-water sites surveyed, DMR and DTT had similar abundance levels to 2006 whereas at OOS, the site closest to the southern reserve boundary, abundance in 2009 had declined from 2006 levels (Fig. 3.2). Conversely, abundance patterns at non-reserve sites surveyed have generally remained unchanged since 2000, with only marginal increases in abundance in 2009 occurring at ISN, OSS, OSN, and LR relative to the 2006 survey (Fig. 3.2).

Shallow-water sites within TMP had higher lobster abundance than deep-water sites surveyed (Fig. 3.2). Highest densities occurred at S2 – 40.4 lobsters 500 m$^{-2}$ ± 7.1 (SE), and S3 – 22.0 lobsters 500 m$^{-2}$ ± 4.9 (SE)) and large aggregations were often encountered at these sites (see below).

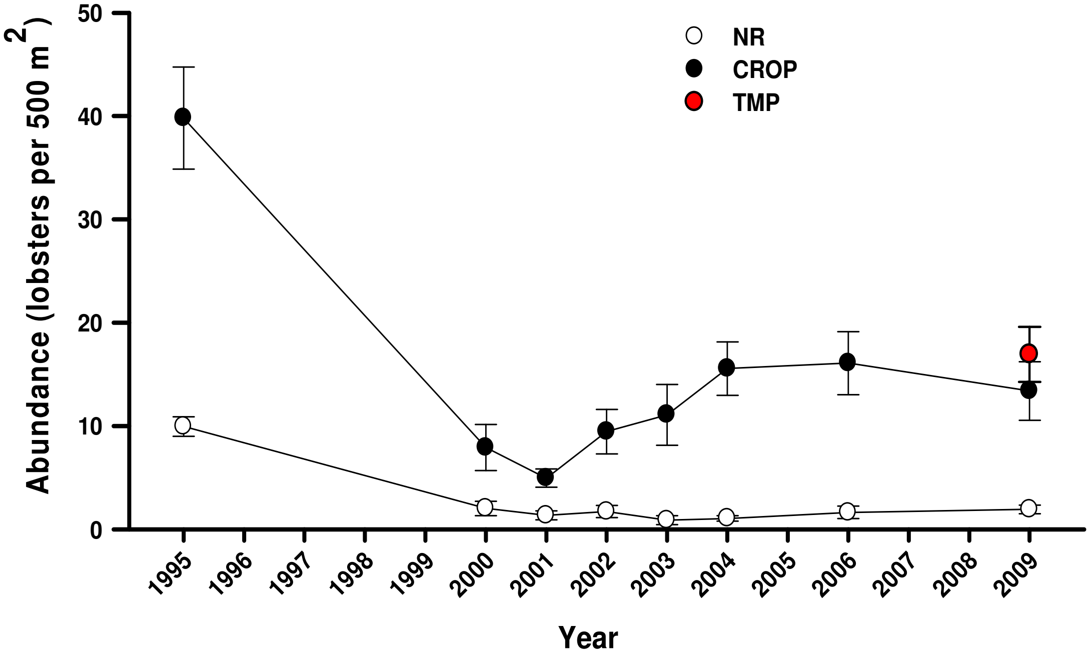


**Figure 3.1.** Mean abundance of *Jasus edwardsii* (± SE) pooled from sites inside Cape Rodney to Okakari Point (CROP) Marine Reserve Marine Reserve and non-reserve control (NR) areas between 1995 and 2009 and for Tawharanui Marine Park (TMP) in 2009.

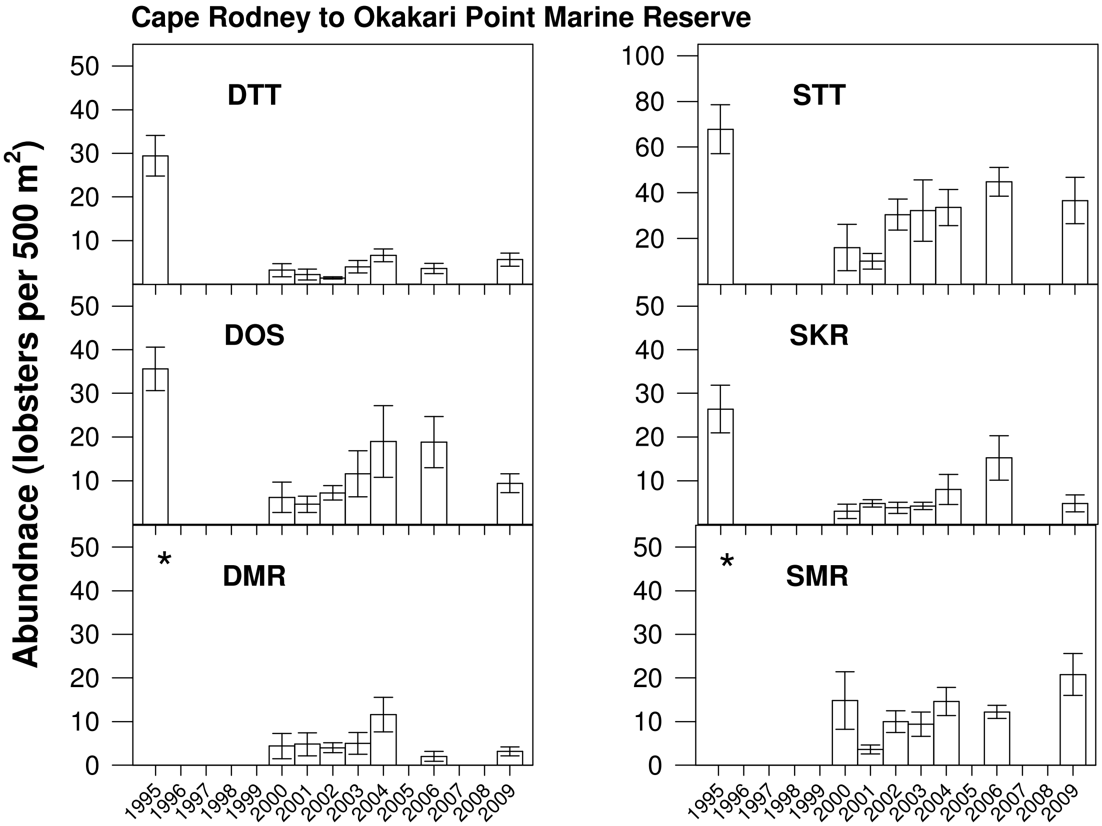


**Figure 3.2.** Mean abundance of *Jasus edwardsii* (± SE) recorded during lobster surveys of the Cape Rodney to Okakari Point (CROP) Marine Reserve between 1995 and 2009. Sites marked with * were not surveyed in 1995. Refer to Figure 2.1 for the location of each site. DTT – Deep Table Top, DOS – Deep One Spot, DMR – Deep Martins Reef, STT – Shallow Table Top, SKR – Shallow Knot Rock, SMR – Shallow Martins Reef.

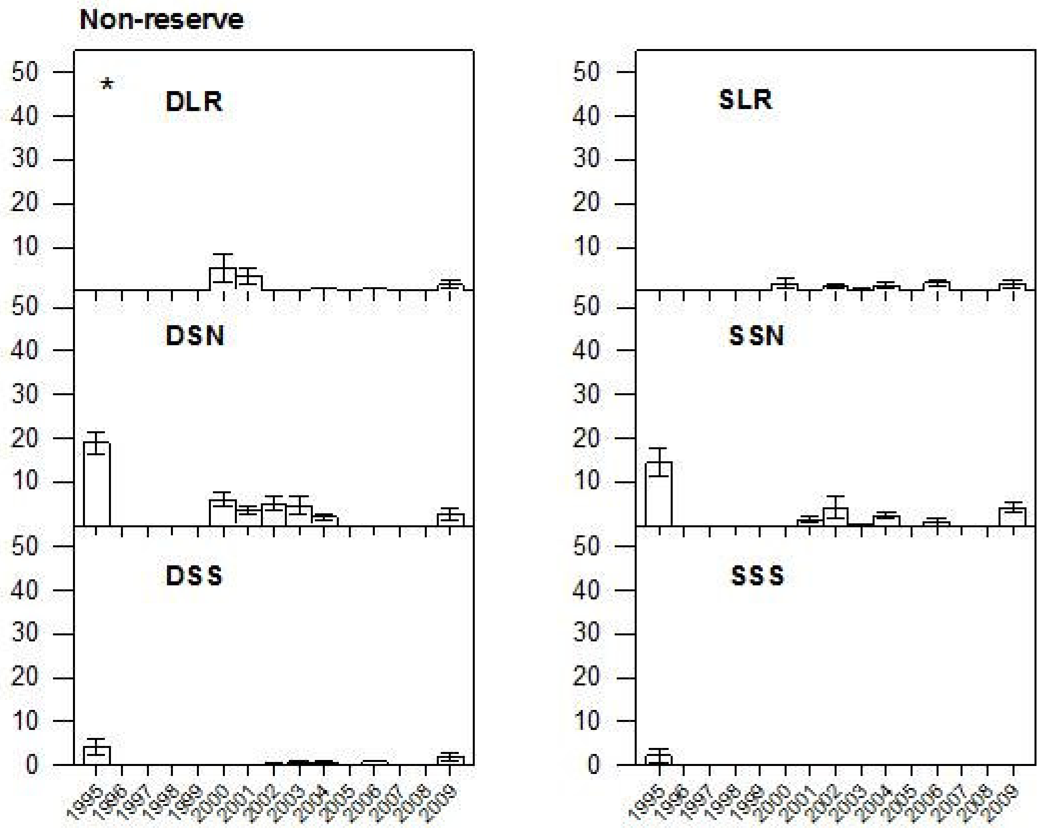


**Figure 3.2** ***Continued.*** Mean abundance of *Jasus edwardsii* (± SE) recorded during lobster surveys of non-reserve sites between 1995 and 2009. Sites marked with * were not surveyed in 1995. Refer to Figure 2.1 for the location of each site. DLR – Deep Leigh Reef, DSN – Deep Slater North, DSS – Deep Slater South, SLR – Shallow Leigh Reef, SSN – Shallow Slater North, SSS – Shallow Slater South.

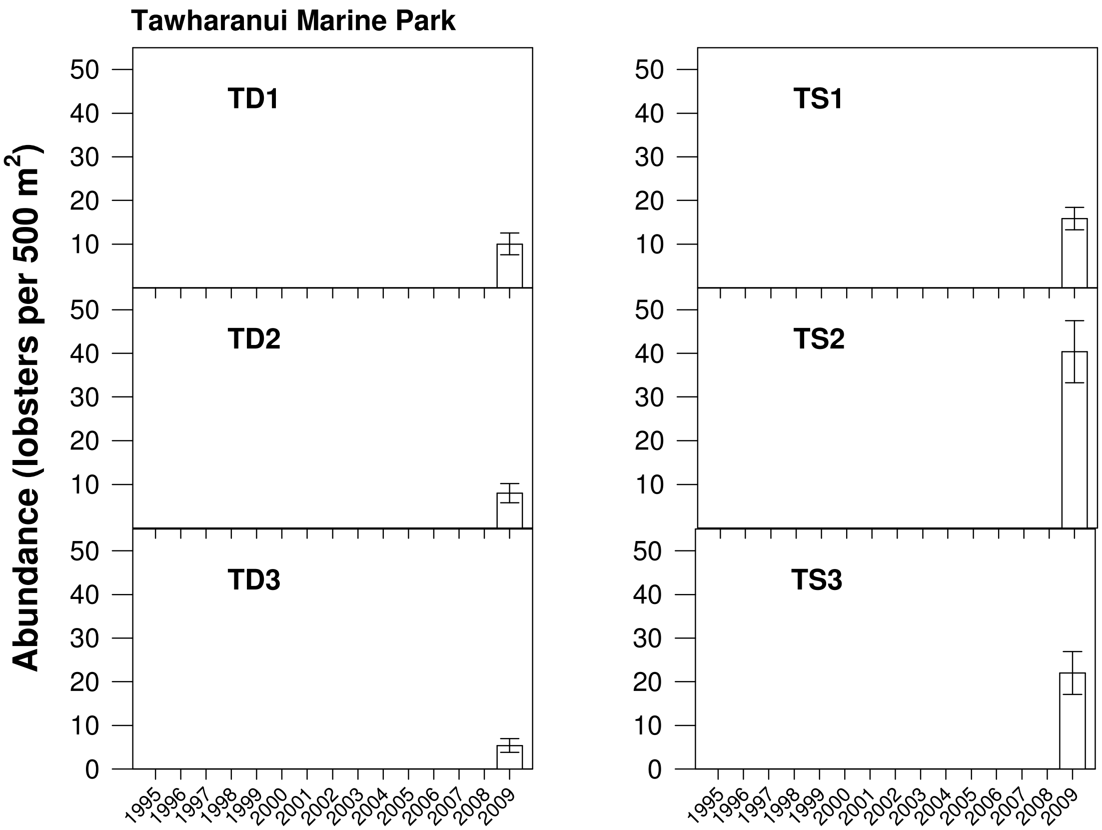


**Figure 3.2** ***Continued*****.** Mean abundance of *Jasus edwardsii* (+ SE) recorded during the 2009 lobster surveys of Tawharanui Marine Park (TMP). Refer to Figure 2.1 for the location of each site. TD1 – Tawharanui Deep 1, TD2 – Tawharanui Deep 2, TD3 – Tawharanui Deep 3, TS1 – Tawharanui Shallow 1, TS2 – Tawharanui Shallow 2, TS3 – Tawharanui Shallow 3.

Statistical analysis of the historical dataset (2000-2009; which excludes TMP) using mixed model analysis indicated statistically significant differences in lobster abundance between CROP and NR (Status). The factors Year and Depth were not statistically significant (Table 3.2). There was however a statistically significant Depth × Status interaction, which we interpret as being the result of lobster numbers changing at different rates among depths between reserve and non-reserve sample populations. The random effect in the model Site(Status×Year×Depth) was also statistically significant, again reflecting the high variability in lobster abundance among sites and between depths across reserve and non-reserve areas through time (refer to Fig. 3.2). The estimate of the effect size between CROP and NR indicates that abundance levels (for the temporal dataset) within CROP are on average 14.4 (7.75, 27.48 (95% CL)) fold greater than the non-reserve area sampled.

**Table 3.1.** Results from mixed model analysis for lobster abundance within CROP, TMP and NR areas in 2009. Model back-fitted by removing non-significant interaction terms. Significance: *p < 0.05, **p < 0.01, ***p < 0.001.

| | Fixed effects | | | Covariance parameter estimates |
|---|---|---|---|---|
| *Jasus edwardsii* | Area $F_{2,\,14} = 0.8.73$** | Depth $F_{1,\,14} = 0.82$ | Area × Depth $F_{1,\,15} = 0.4$ | Site(Area×Depth) 2.16* |

**Table 3.2.** Results from mixed model analysis for lobster abundance within CROP, and NR areas between 2000 and 2009. Model back-fitted by removing non-significant interaction terms. Significance: *p < 0.05, **p < 0.01, ***p < 0.001.

| | Fixed effects | | | | Covariance parameter estimates | |
|---|---|---|---|---|---|---|
| *Jasus edwardsii* | Status | Year | Depth | Status× Depth | Site (Status × Year × Depth) | **AR(1)** |
| | $F_{1,\,74} = 0.8.73$*** | $F_{6,\,74} = 0.84$ | $F_{1,\,74} = 0.12$ | $F_{1,\,74} = 10.38$* | 3.3** | 2* |

### ***Jasus edwardsii* size**

The abundances of legal and sublegal lobster have also fluctuated among years within CROP and NR (Fig. 3.3). Following the substantial decline between 1995 and 2000 (reflected in both the protected and non-protected sample populations), increases in the reserve population have been the product of recruitment, on-growth of recruits, and retention of adults >95 mm. While recruitment has also been a feature of the non-reserve sample population, data suggest that subsequent on-growth into the adult population has been minimal.

The reduction in mean lobster abundance within CROP between 2006 and 2009 has resulted from a decline in legal-sized lobster, reflected in density plots (Fig. 3.3), size frequency distribution plots (Fig. 3.4) and size plots (Fig. 3.5). Present-day CROP abundance levels (Fig. 3.3) are likely to have been maintained largely through recruitment events evident in consistently high numbers of sublegal lobsters < 95mm and in 2009 sublegal density was the highest recorded since formal sampling was initiated in 2000. The lower abundance of legal-sized lobsters in the 2009 survey relative to previous years, coupled with the fact that mean abundance levels remains less than half that of 1995 levels, suggests that activities such as fishing may be influencing adult abundance within CROP.

In 2009, the mean size of lobsters was ~ 23 mm greater inside TMP, and ~ 20 mm greater inside CROP than NR (Fig.3.6) and these differences were statistically significant ($F_{2,897} = 9.33$, $P < 0.001$ – One-Way ANOVA) (Fig. 3.4). Consequently, the mean size of 101.5 mm ± 3.9 (95% CI) for lobster within CROP in 2009 is the lowest recorded for the sampling programme. *A posteriori* analysis with a SNK test indicated that lobster size was, not statistically different between CROP and TMP, but both CROP and TMP were statistically different from NR.

The sex ratio of lobsters within the reserve population remains broadly consistent with previous surveys (Fig. 3.6), For CROP, male and female lobsters occur in similar proportions with a slight bias towards females. Similarly, male and female lobsters occur in similar proportion within TMP, with a marginal bias towards males. For NR, the population remains slightly biased towards males being similar to 2004 and 2006 sex ratios. Unfortunately due to the difficulty in accurately sexing small lobsters < 80 mm C.L., that are routinely surveyed in all sample populations, the biological significance of these patterns should be interpreted caution.

### *Jasus edwardsii* cohabitation

*Jasus edwardsii* were encountered in varying cohabitation densities along individual transects within CROP, TMP, and NR ranging from solitary individuals to larger dens. Irrespective of the areas surveyed (CROP, TMP, NR) the majority of *J. edwardsii* encountered were solitary or occurred in small clusters, i.e., 2-4 individuals (Fig. 3.7). Larger nests (> 10 individuals) were only encountered within the two marine protected areas, indicative of a more-complex social structure. Larger cohabitation densities within CROP and TMP relative to NR are unlikely to be due to habitat variability, among the areas surveyed, primarily as the majority of sites surveyed afforded suitable habitat for *J. edwardsii* (see Section below).

### Urchin tests

Urchin tests attributable to lobster predation were encountered within CROP at sites SMR (5 tests) and STT (7 tests), and within TMP at sites S2 (2 tests) and S3 (7 tests). Sizes ranged from between 60 mm to 100 mm.

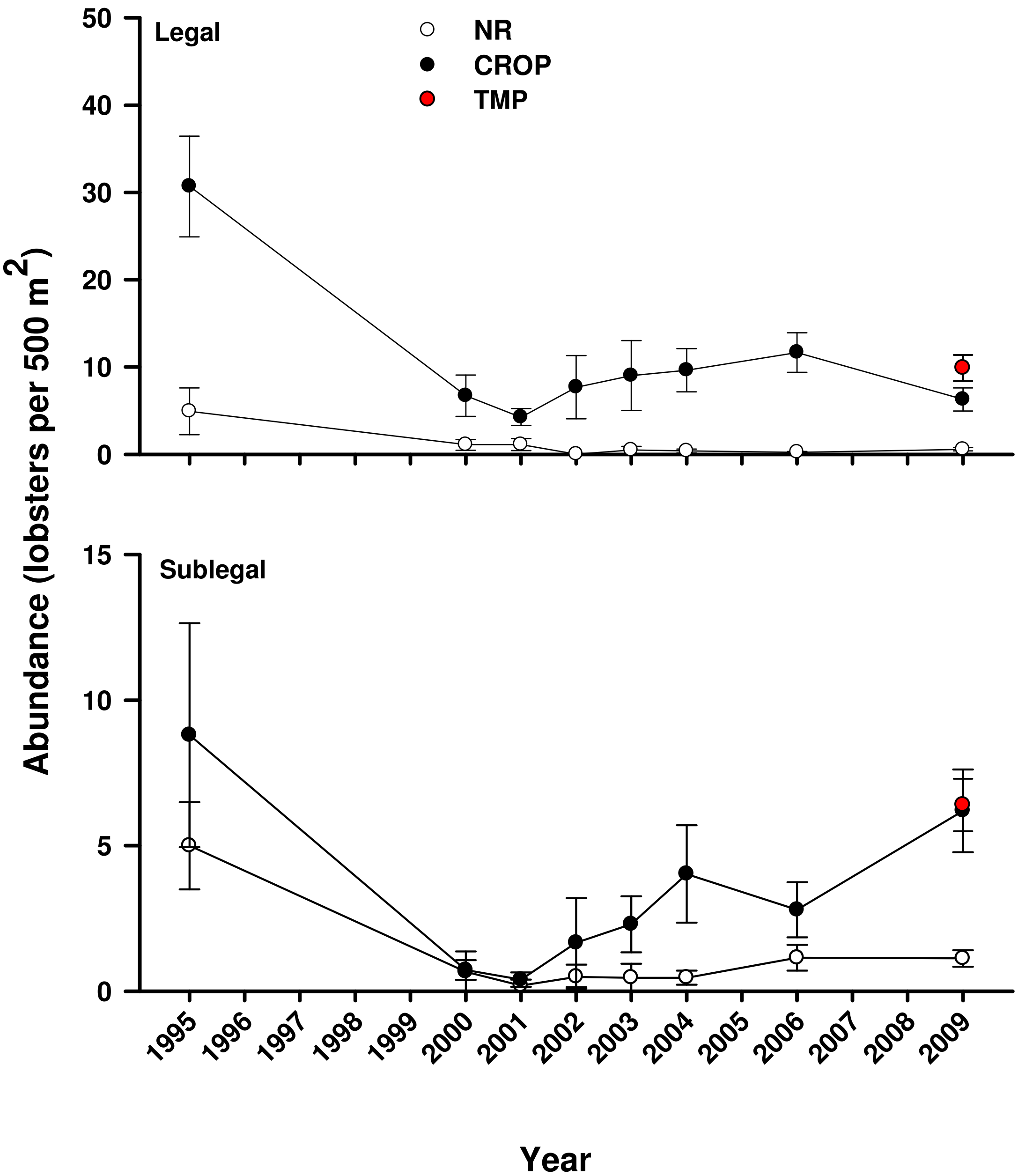


**Figure 3.3.** Mean abundance (± SE) of legal (carapace length ≥ 95 mm) and sublegal (carapace length < 95 mm) *Jasus edwardsii* within the Cape Rodney to Okakari Point Marine Reserve and non-reserve control sites between 1995 and 2009 for TMP in 2009.

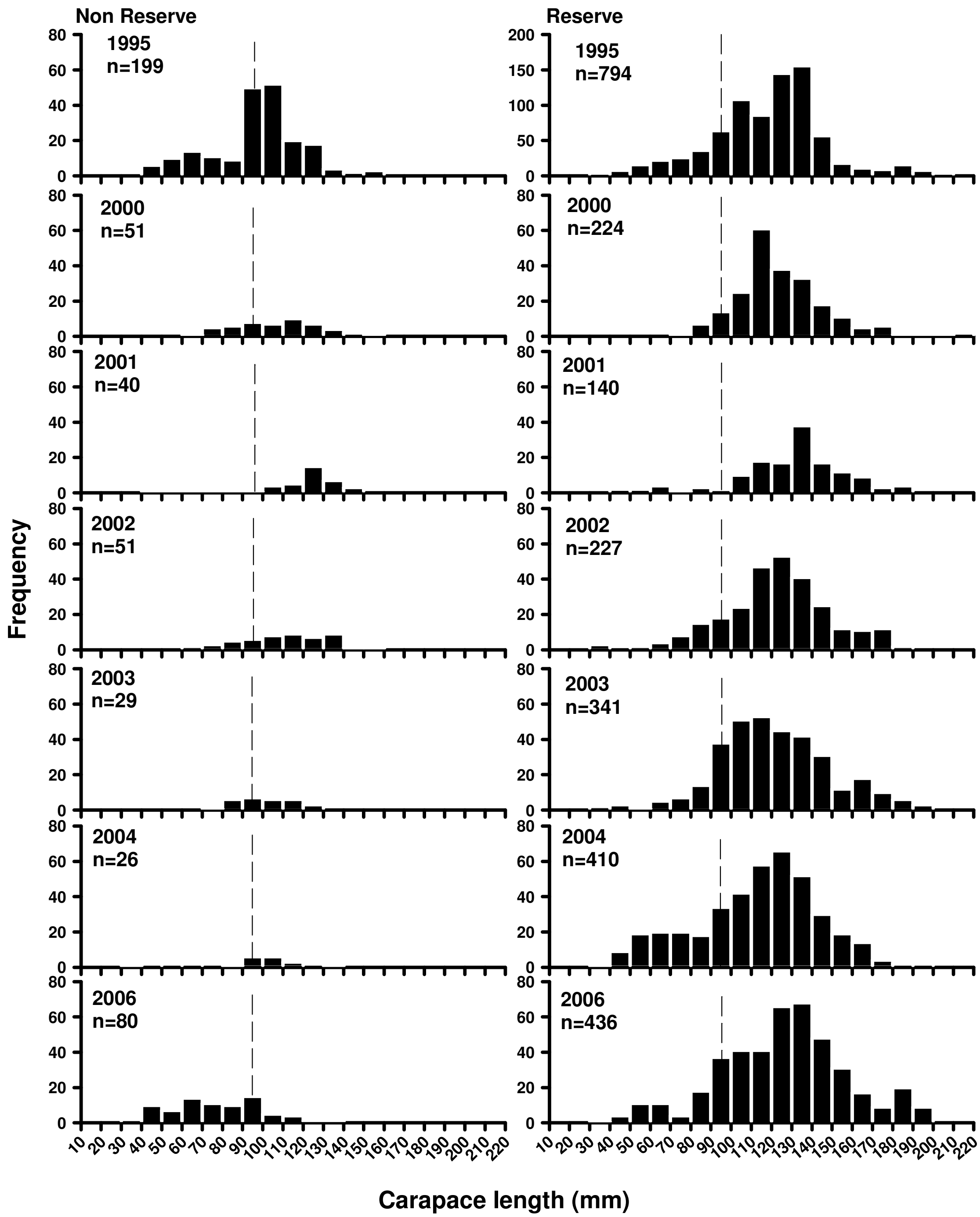


**Figure 3.4.** Size frequency histograms of *Jasus edwardsii* from the Cape Rodney to Okakari Point Marine Reserve and non-reserve control areas from 2000 to 2006. The dashed line denotes the division between legal and sublegal lobsters. Note: non-reserve sites in 2006 include three additional shallow and deep-water sites.

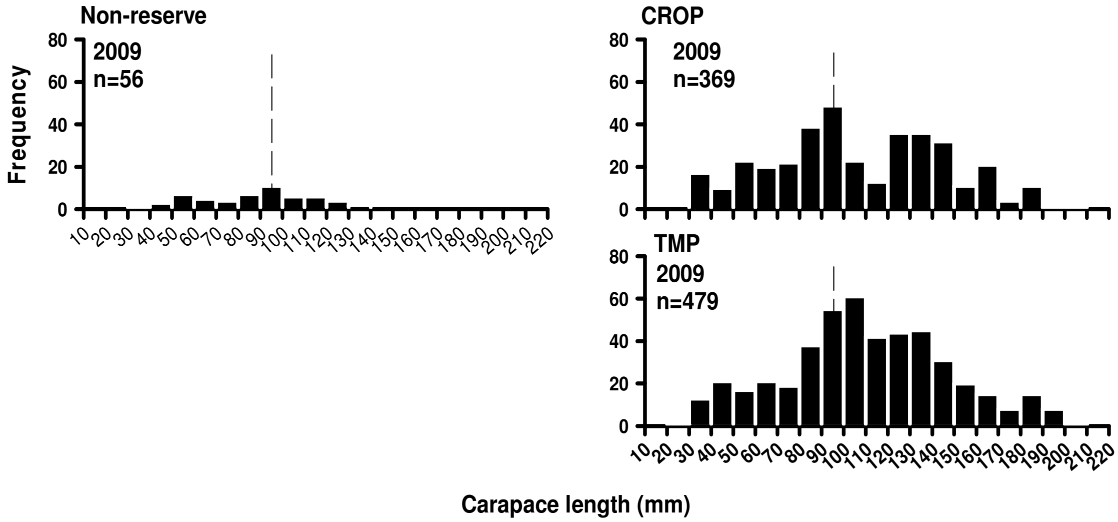


**Figure 3.4** ***Continued.*** Size frequency histograms of *Jasus edwardsii* from the Cape Rodney to Okakari Point Marine Reserve and non-reserve control area and Tawharanui Marine Park in 2009. The dashed line denotes the division between legal and sublegal lobsters.

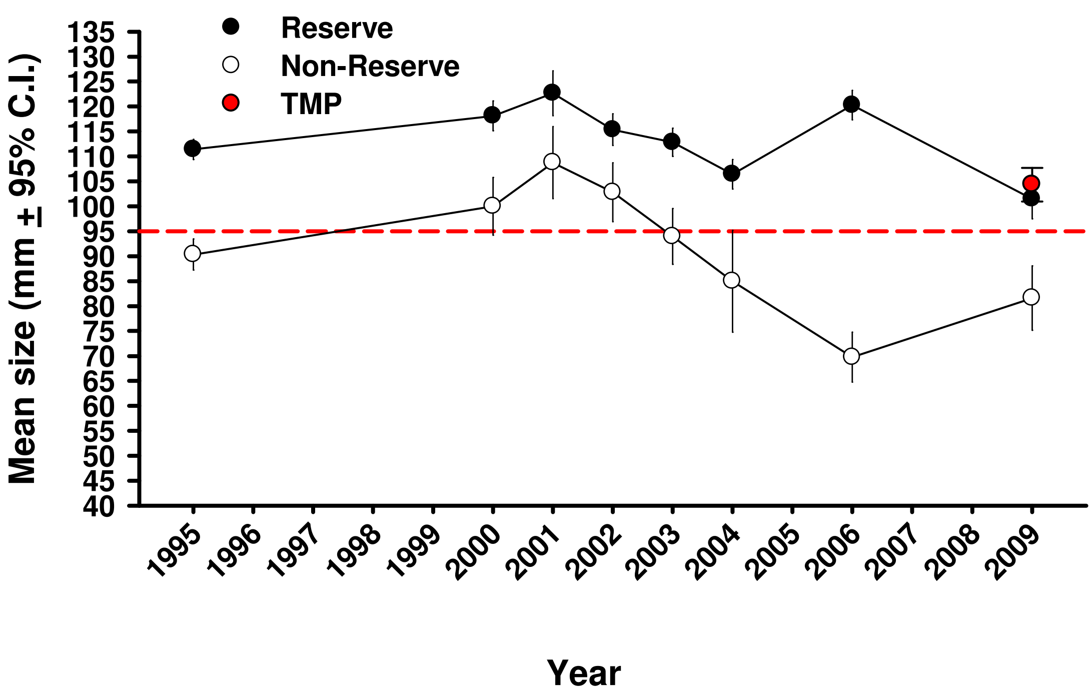


**Figure 3.5.** Changes in the mean size of *Jasus edwardsii* (± 95 % C.I.) within the Cape Rodney to Okakari Point Marine Reserve and non-reserve control sites between 1995 and 2009 and for TMP in 2009.

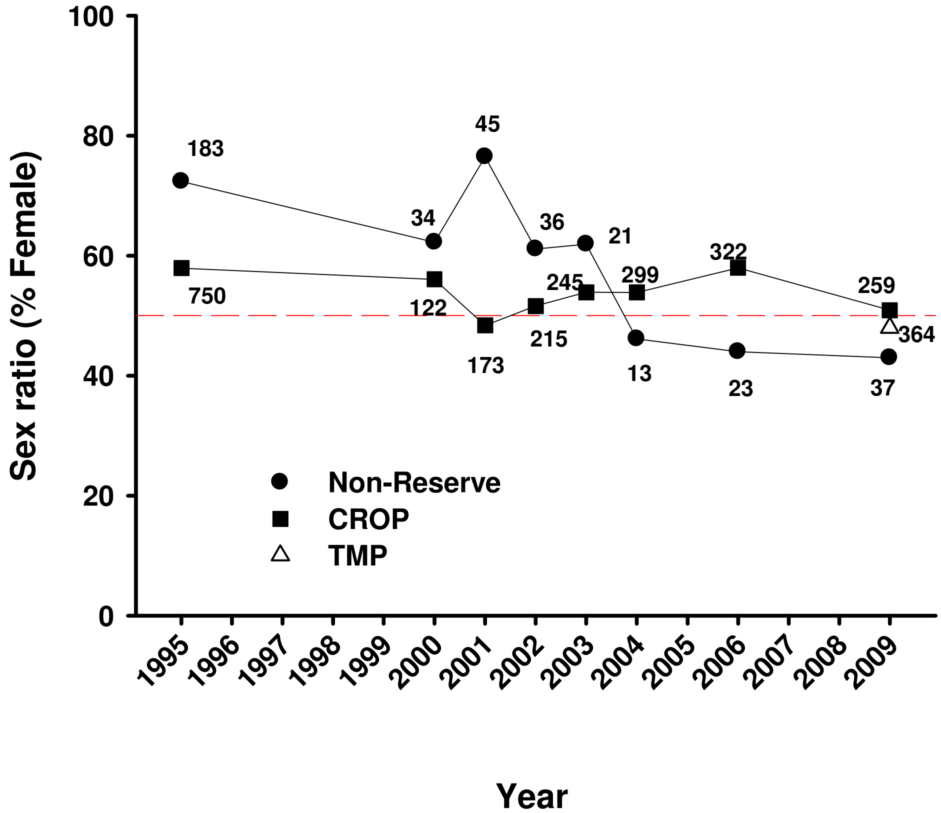


**Figure 3.6.** Sex ratios (% female) of lobsters within the Cape Rodney to Okakari Point Marine Reserve and non-reserve control sites between 1995 and 2009 and for TMP in 2009. Sample sizes for the estimates are given.

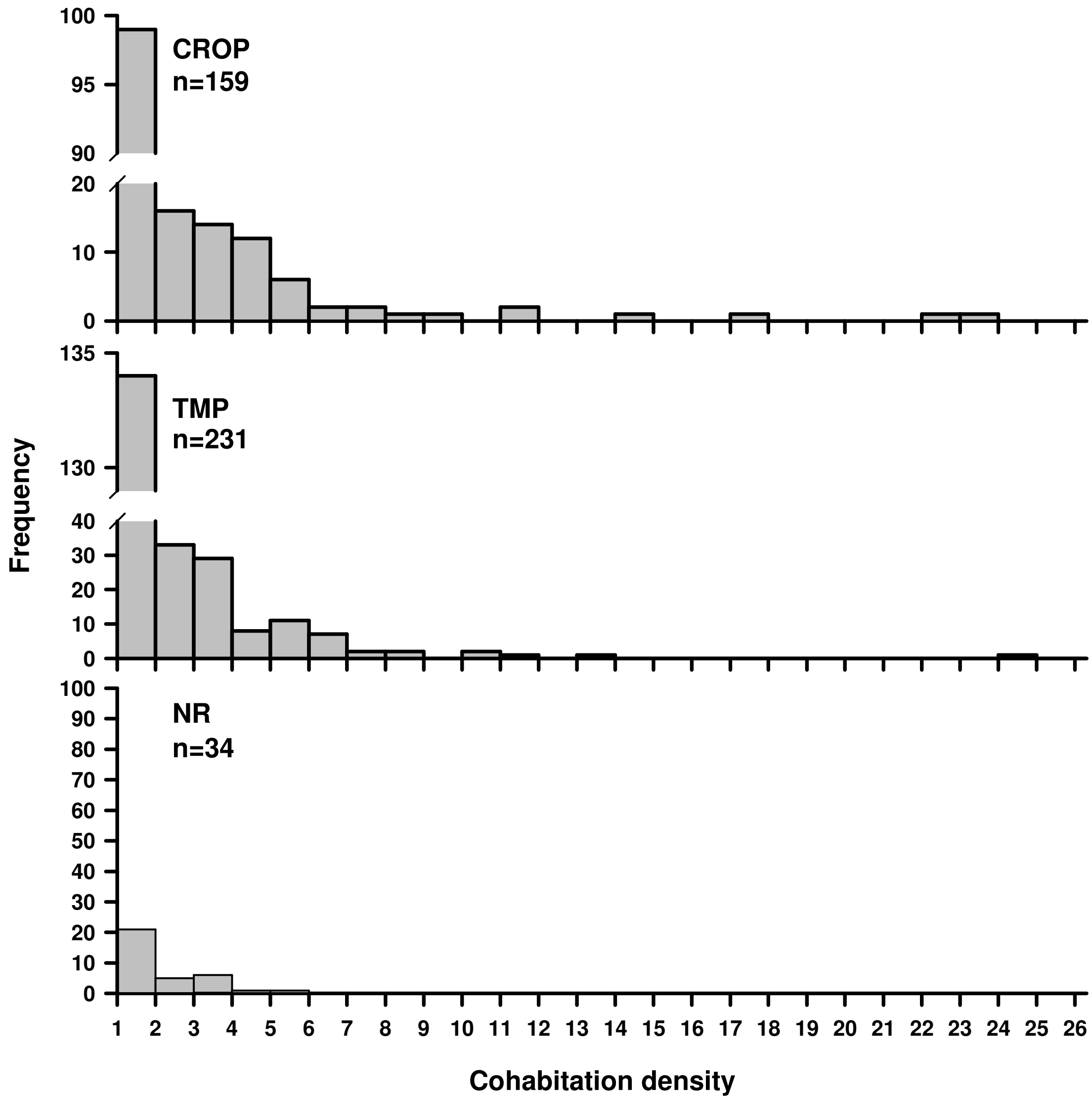


**Figure 3.7**. Frequency of cohabitation for CROP, TMP and NR in 2009. Data are pooled for individual transects (n=30 per Area).

## Habitats

All monitoring sites contained rocky substratum that could afford shelter to lobsters and ranged from boulder reef complexes, to sandstone and greywacke reef platforms typified by ledges and deep undercuts. A total of seven habitat types according to Shears *et al*. (2005) were encountered across sites surveyed (see Appendix 1) and included: shallow *Carpophyllum* habitat; mixed algal habitat; urchin barrens habitat; *Carpophyllum flexuosum* habitat; *Ecklonia radiata* habitat, cobbles habitat, and sponge flats habitat. MDS ordinations for habitat percentages for the area surveyed (CROP, TMP and NR) and depth (Shallow and Deep) are presented in Fig's 3.8, 3.9 and site characteristics and habitat percentages are presented in Appendix 1. At the 50 % resemblance level, there was no obvious habitat pattern unique to a particular area *per se* (Fig's 3.8 & 3.9), there was however a clear pattern in relation to depth consistent across sites surveyed and irrespective of area. Deep-water sites surveyed were clustered in a tight group to the right of the ordination and shallow-water sites to the left of the ordination. Deep-water sites were almost exclusively dominated by dense monospecific stands of *Ecklonia radiata* and small patches of sponge flats. Site DTT was an outlier to other deep-water sites surveyed, being typified by low to moderate *Ecklonia radiata* cover and large areas of sponge flats.

The wider dispersion (or higher dissimilarity) of the shallow-water sites is likely due to high habitat variability associated with shallow-water habitats. Shallow reefal habitat within CROP and TMP was generally comprised of mixed algal habitat, patchy monospecific *Ecklonia radiata* stands, and small patches of barrens habitat. Within non-reserve sites sampled, shallow reef habitats were comprised of habitat mosaics alternating between urchin barrens and mixed algae and non-reserve sites SLR and SSS clustered to the top left of ordination (Fig. 3.9) differed from other shallow-water sites due to large expanses of urchin barrens habitat (refer to Appendix 1). This pattern corresponds to measured habitat-related differences in shallow-water locations (3-8 m depth) between reserve and non-reserve areas in north-eastern New Zealand (see Shears and Babcock 2003).

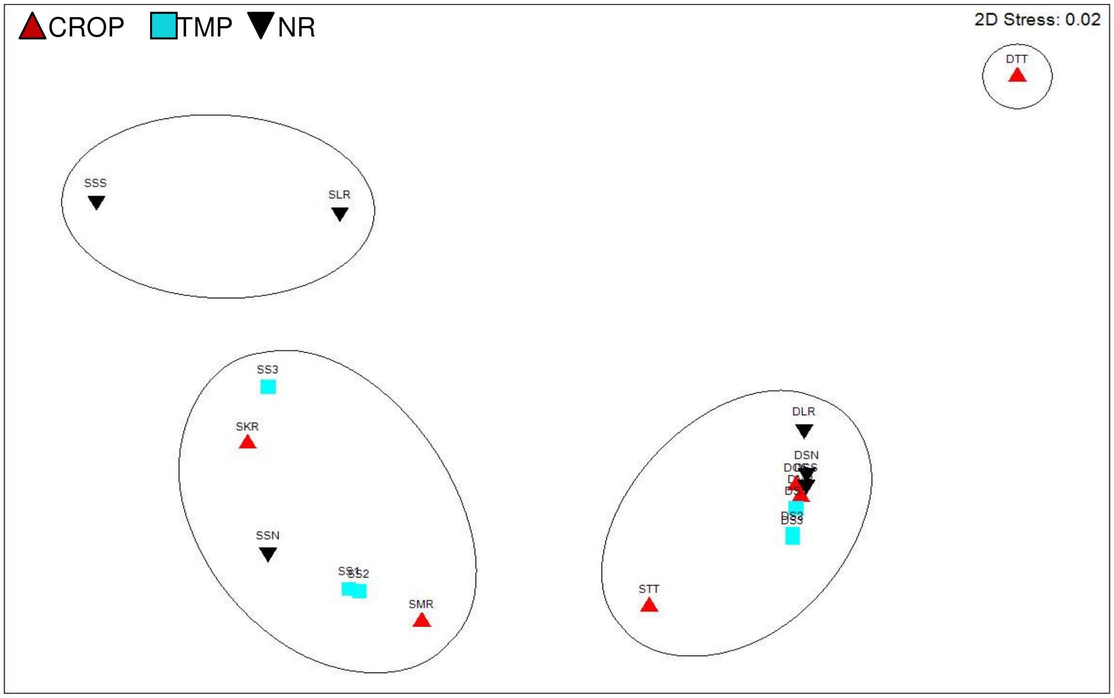


**Figure 3.8.** MDS ordination (50% resemblance level) based on the percent cover of habitats across sites for survey area  Cape Rodney to Okakari Point Marine Reserve (CROP), Tawharanui Marine Park (TMP), and Non-reserve (NR)  for the 2009 survey.

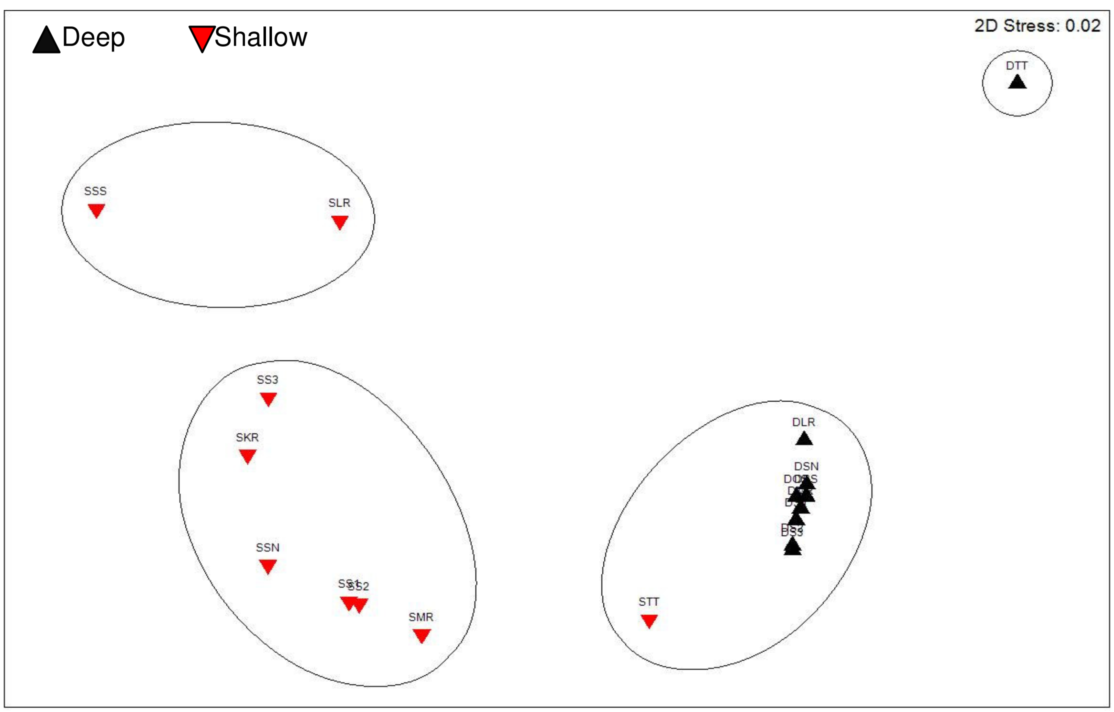


**Figure 3.9.** MDS ordination (50% resemblance level) based on the percent cover of habitats across sites for depth  Deep > 10 m MLWS, Shallow < 10m MLWS  for the 2009 survey.

# 4 DISCUSSION

The 2009 lobster survey marks the seventh lobster survey of the Cape Rodney to Okakari Point (CROP) Marine Reserve and associated non-reserve area (NR) since the inception of the programme in 2000, and the first formal survey of Tawharanui Marine Park (TMP) under this programme. Between 2000 and 2006 within CROP there was a relatively steady increase in lobster abundance since the large decline between 1995 and 2000 (Fig. 3.1), largely driven by recruitment, subsequent on-growth of recruits and the retention of adult lobsters. The current survey suggests that population abundance within CROP has remained stable since 2006. However, given that adult lobster abundance has declined between 2006 and 2009, the mean abundance of 13.4 lobsters per $500m^2$ (+/- 2.8) in 2009 within CROP is largely being maintained by on-going recruitment and high abundances of sublegal lobsters.

Considering that 2009 abundance levels remain well under half that of 1995 levels this is of concern, and suggests that fishing along the boundary of the reserve appears to be exerting a strong influence on maximum abundance within it. Due to seasonal offshore movements of *J. edwardsii* associated with moulting, reproduction, and feeding, the reserve population is vulnerable to fishing at various times of the year (Kelly 2001) and may in turn be influencing the recovery rate of the reserve population. In past years we have suggested that reduced abundances of large lobsters (> 170mm C.L.) within the reserve population may be related to fishing activity concentrated at the reserve boundary and/or in areas where *J. edwardsii* aggregate (see Kelly and MacDiarmid 2003). Determining whether these changes are in fact due to fishing activity is fraught with uncertainty as it requires up to date information on movement rates relative to reserve boundaries, and measurements of fishing pressure (Davidson *et al.* 2002).

The consistently higher abundance of sublegal lobsters censused within CROP between 2002 and 2009 and TMP in 2009 relative to NR suggests is an interesting finding of the monitoring, and implies that protection afforded by MPAs is important for all *J. edwardsii* life history stages following settlement. There are a range of possible explanations for the consistently higher densities of sublegal lobsters in MPAs including reduced handling mortality; i.e., sublegal *J. edwardsii* in the fishery are handled more frequently and suffer higher mortality rates as a consequence (Freeman and MacDiarmid 2009)),; higher recruitment of pueruli; and/or, attraction of sublegal-sized animals to high abundances of lobsters or to larger animals, which may result in migration of small animals into MPAs (Childress and Hermkind 1997, Debbie Freeman personal communication in 2009).

For the current survey, Tawharanui Marine Park was characterised by a higher mean density of legal-sized lobsters than CROP, although sublegal lobsters occurred at a similar density. While it is not possible to comment on temporal trends within TMP, incorporating this marine park into the lobster programme is an excellent directive, as it improves the design of the programme by replicating the protection effect. Presently it is unknown if lobsters within TMP move beyond the reserve boundary as has been identified for CROP (Kelly and MacDiarmid 2003). For *Jasus edwardsii* Freeman

(2008) suggests that where reserve boundaries intersect continuous reef habitat, emigration beyond the reserve boundary is likely to occur. Applying this inference to TMP, emigration is most-likely to occur beyond the reserve boundary particularly in the western region, where rocky reef habitat extends well beyond the reserve boundary (personal observation in 2009).

Present-day densities of legal and sublegal lobsters within TMP are substantially lower than those presented for this area in 2005 by Shears *et al*. (2006). In that study, the abundance of legal and sublegal lobsters was approximately 30 per $500m^2$ and 10 per $500m^2$, respectively. The main reason for the difference in abundance levels between Shears *et al*. 2006 and this study is due to different sampling methodologies, i.e., Shears *et al*. (2006) sampled 5 individual transects in total, whereas 30 sites are surveyed under the current programme to ensure within-site replication. Unfortunately, due to this disparity results among the two studies are largely incomparable.

Despite what can only be considered as limited recovery of the CROP lobster population between 2000 and 2009, analysis suggests that present-day levels within CROP are 5.5 times higher than in the non-reserve area and within TMP there are 7.7 times more lobster than in the non-reserve area. Using these relative differences in lobster abundance between protected and unprotected areas and assuming lobster populations of the unprotected sites surveyed are representative of the general Leigh coastline, and habitat within the reserve is representative of the wider area, (which the habitat survey suggests), then the CROP contains the equivalent number of lobsters from 35 km of fished coastline and TMP contains the equivalent number of lobsters from 40 km of fished coastline. This difference clearly illustrates the effectiveness of reserve protection, but it is also raises management concerns because the temptation to poach lobsters from the reserve is likely to increase, as the disparity between reserve and non-reserve populations continues.

The present survey was the first year in which the extent of lobster cohabitation was recorded. Not surprisingly, highest cohabitation occurred within CROP and TMP however, solitary lobsters were encountered more-frequently than cohabitating lobsters. This pattern was consistent across all areas surveyed and consistent with the study of MacDiarmid (1994), which demonstrated that the proportion of cohabitation in *J. edwardsii* is lower in autumn and winter, coinciding with the peak of mating. MacDiarmid (1994) further suggests that variable/patchy rates of cohabitation and dispersion within sites may directly relate to variable rates of predation in accordance with the level of dispersion. At several of the shallow-water reserve sites surveyed with high lobster abundance (3 within CROP, 2 within TMP), urchin tests attributable to lobster predation were evident. Habitat change within north-eastern New Zealand marine reserves has been attributed, in part, to rock lobster predation as experimentally evaluated by Shears and Babcock (2002). Within CROP reserve there has been a substantial decline in *Evechinus chloroticus* and an increase in *Ecklonia radiata* and fucalean algae in shallow depths since 1994 (Shears and Babcock 2003). Shallow-water sites within TMP were similar to that of CROP, characterised by dense mixed algal habitat and patchy urchin-grazed barrens. At this stage it is unclear how sustained low urchin densities may influence lobster abundance within CROP and/or whether lobsters are resource limited.

Undertaking formal biological monitoring of CROP reserve and TMP, in tandem with lobster surveys would be worthwhile to assess habitat changes relative to lobster abundance through space and time and to begin to explore questions such as resource availability and utilisation. An assessment of current fishing pressure on CROP and TMP boundaries and the wider Leigh coastline would also be of value, to further assesses its influence on these protected lobster populations.

## 5 RECOMMENDATIONS

Monitoring of the CROP Marine Reserve, TMP should continue over consecutive years to:

- ~~1)~~ Determine the natural variability in the resident lobster population;
- ~~2)~~ Detect shifts in the size and abundance that cannot be attributed to natural variability;
- ~~3)~~ Determine recovery dynamics and the frequency of recruitment pulses within sample populations.
- Enable comparisons between two nearby MPAs with similar habitat structure.

The methodologies used in the Lobster Monitoring Programme are allowing the objectives of the programme to be met and should be retained in future surveys to ensure consistency and permit direct comparisons with other studies.

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## APPENDIX 1

**Table A1.** Site coordinates and habitat descriptions based within CROP reserve, TMP and non-reserve sites sampled.

### Cape Rodney to Okakari Point Marine Reserve site characteristics

| Site | Depth | Habitat |
|---|---|---|
| Shallow Table Top Reef (STT)<br>Shallow *Carpophyllum* / *Ecklonia* forest habitat<br>E 2672533.1<br>N 6546363.6 | 2-5 m | Boulder complexes intermixed with patches of loose gravel. Mixed algal habitat comprised of *Carpophyllum maschalocarpum*, *Ecklonia radiata* and turfing reds including *Pterocladia* spp and *Osmundaria colensoi* < 3 m depth. *Ecklonia radiata* abundant > 5 m depth. Urchins generally restricted to crevices. Lobsters occur under boulders, in large dens and in the open, often in very shallow water. |
| Deep Table Top Reef (DTT)<br>*Ecklonia* forest habitat / Sponge flats<br>E 2673003.41<br>N 6546653.6 | 18-20 m | Low-lying platform reef characterised by deep undercut ledges. Reef interdispersed with sand-flats. Low density *Ecklonia radiata*, with sponges very common. Lobsters occur in small crevices, reef overhangs and in the open. |
| Shallow Martins Reef (SMR)<br>Mixed algae / *Ecklonia* forest habitat<br>E 2670828.3<br>N 6546514.7 | 3-8 m | Boulder habitat and platform reef intermixed with loose gravel patches. Generally mixed algal habitat comprised of *Carpophyllum maschalocarpum*, with *Ecklonia radiata* dominant > 5m depth. Lobsters occur under boulders and in reef crevices. |
| Deep Martins Reef (DMR)<br>*Ecklonia* forest habitat<br>E 2670954.3<br>N 6546678.5 | 15 m | Platform reef typified by deep cuts and ledges. Reef terminates in sand at about 15 m. Deep undercuts common on the reef sand interface. *Ecklonia radiata* and sponges abundant. Lobsters generally found under ledges, particularly around the reef-sand interface. |
| Shallow Knot Rock (SKR)<br>Shallow *Carpophyllum* / *Ecklonia* forest habitat<br>E 2671315.1<br>N 6546401.6 | 3-5 m | Platform reef typified by deep cuts and ledges. *Ecklonia radiata* forest common between 5–8 m, whereas mixed algae predominate on reef < 3 m depth. Sand flats common between reef platforms. Lobsters generally found under boulders, reef crevices and deep ledges. |
| Deep One-Spot Reef (DOS)<br>*Ecklonia* forest habitat<br>E 2673556.4<br>N 6546020.4 | 12-16 m | Boulder habitat and platform reef intermixed with loose gravel patches. *Ecklonia radiata* and sponges dominant. Lobsters occur under boulders and in reef crevices. |

### Tawharanui Marine Park site characteristics

| Site | Depth | Habitat |
|---|---|---|
| SS1 Shallow *Carpophyllum* / *Ecklonia* forest habitat and urchin barrens<br>E 2677443.7<br>N 6535898.2 | 2-6 m | Platform reef and boulder complexes i. Mixed algal habitat comprised of *Carpophyllum maschalocarpum*, *Ecklonia radiata* and turfing reds including *Pterocladia* spp and *Osmundaria colensoi* < 3 m depth. Barrens habitat patchy and *Ecklonia radiata* abundant > 5 m depth. Lobsters occur under boulders, in large dens and in the open, often in very shallow water. |
| DS1 *Ecklonia* forest habitat / Sponge flats<br>E 2677304.7<br>N 6536073.7 | 12-15 m | Low-lying platform reef characterised by deep undercut ledges. High density *Ecklonia radiata*, with sponges common. Lobsters occur in small crevices, reef overhangs and in the open. |
| SS2 Shallow *Carpophyllum* / *Ecklonia* forest habitat and urchin barrens<br>E 2676896.8<br>N 6535560.0 | 2-8 m | Platform reef and boulder complexes i. Mixed algal habitat comprised of *Carpophyllum maschalocarpum*, *Ecklonia radiata* and turfing reds including *Pterocladia* spp and *Osmundaria colensoi* < 3 m depth. Barrens habitat patchy and *Ecklonia radiata* abundant > 5 m depth. Lobsters occur under boulders, in large dens and in the open, often in very shallow water. |
| DS2 *Ecklonia* forest habitat<br>E 2676769.3<br>N 6535925.5 | 12-15 m | Platform reef characterised by deep undercut ledges. High density *Ecklonia radiata*, with sponges common. Lobsters occur in small crevices, reef overhangs and in the open. |
| SS3 Shallow *Carpophyllum* / *Ecklonia* forest habitat and urchin barrens<br>E 2676299.6<br>N 6535574.8 | 3-6 m | Platform reef and boulder complexes i. Mixed algal habitat comprised of *Carpophyllum maschalocarpum*, *Ecklonia radiata* and turfing reds including *Pterocladia* spp and *Osmundaria colensoi* < 3 m depth. Barrens habitat patchy and *Ecklonia radiata* abundant > 5 m depth. Lobsters occur under boulders, in large dens and in the open, often in very shallow water. |
| DS3 *Ecklonia* forest habitat<br>E 2676291.1<br>N 6535802.2 | 12-16 m | Platform and boulder reef. High density *Ecklonia radiata*, with sponges common. Lobsters occur in small crevices, reef overhangs and in the open. |

### Non-reserve site characteristics

| Site | Depth | Habitat |
|---|---|---|
| Shallow Leigh Reef (SLR)<br>Urchin barrens / *Ecklonia* forest habitat<br>E 2674112.9<br>N 6544885.5 | 5-8 m | Mix of boulders and greywacke platform reef with deep ledges. Extensive urchin barrens between 3–5 m give way to *mixed* algal habitat and *Carpophyllum flexuosum* habitat at depths > 5 m. Lobsters occur in reef crevices and reef overhangs among *Ecklonia* forest. |
| Deep Leigh Reef (DLR)<br>*Ecklonia* forest habitat<br>E 2674902.6<br>N 6544197.3 | 15-18 m | Extensive platform reef and boulder areas terminate in sand at ~ 20 m depth. *Ecklonia radiata* extensive on reef surfaces. Lobsters occur in small dens and reef overhangs. |
| Shallow Slater North (SSN)<br>*Ecklonia* forest habitat<br>E 2678314.6<br>N 6530967.6 | 5-8 m | Boulder complexes intermixed with patches of loose gravel. Algal habitat predominantly comprised of *Carpophyllum maschalocarpum* and *Ecklonia radiata*. Lobsters occur under boulders and in reef crevices. |
| Deep Slater North (DSN)<br>*Ecklonia* forest habitat<br>E 2678597.8<br>N 6531046.2 | 15-20 m | Boulder reef terminating in sand at ~ 18 m depth. *Ecklonia radiata* abundant throughout. |
| Shallow Slater South (SSS)<br>Urchin barrens<br>E 2678697.3<br>N 6530441.3 | 3-8 m | Mix of small boulders and greywacke platform reef. Extensive urchin barrens between 3–5 m, with mixed algal habitat dominant on boulder tops. |
| Deep Slater South (DSS)<br>*Ecklonia* forest habitat<br>E 2678854.5<br>N 6530519.9 | 15-20 m | Boulder reef terminating in sand at ~ 18 m depth. *Ecklonia radiata* abundant throughout. Lobsters occur under boulders and in reef crevices. |

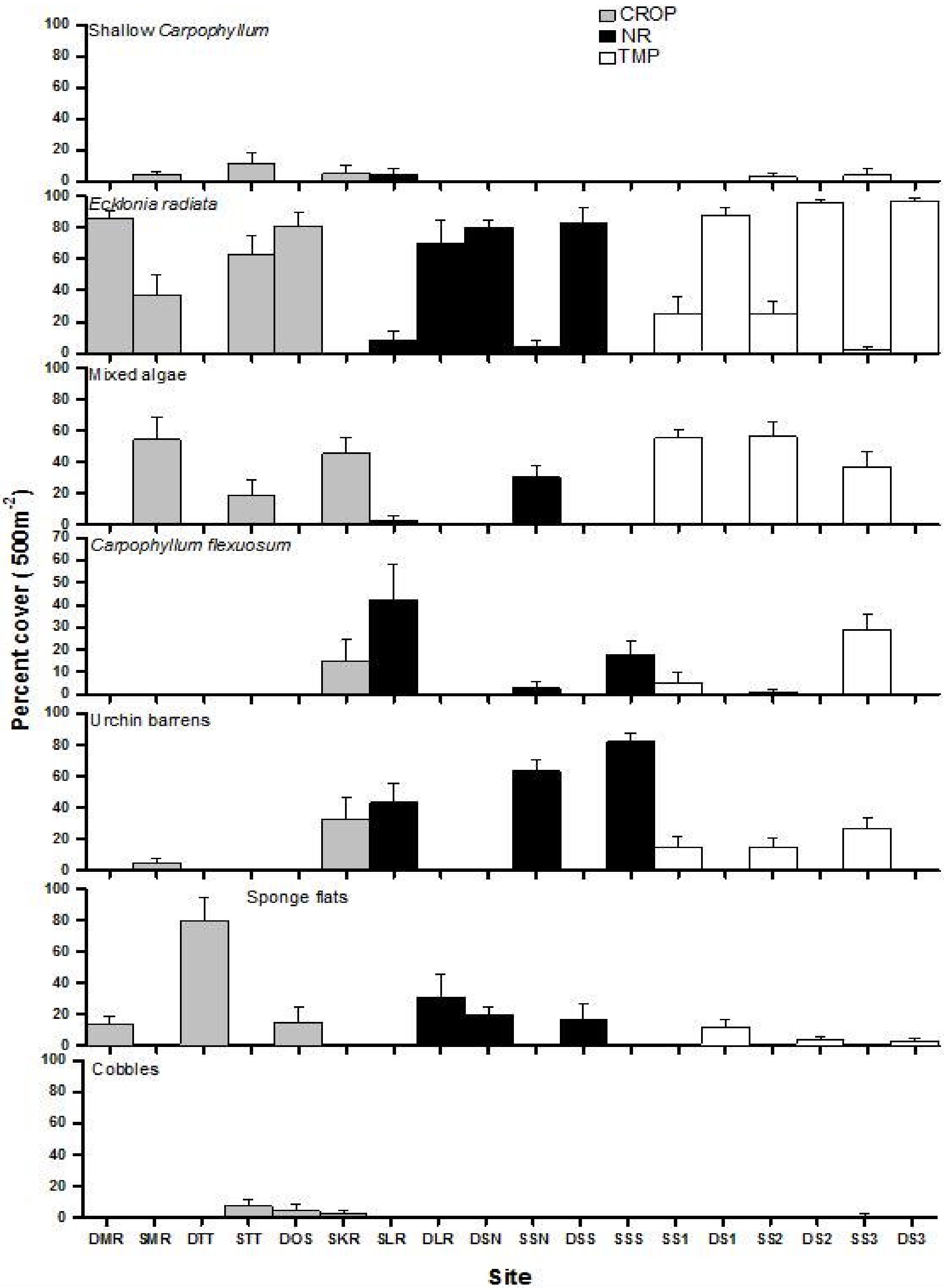


**Figure A1.** Mean percent cover of main habitats (see Shears *et al*. 2005 for habitat descriptions) across lobster transects for CROP, TMP and NR in 2009.

## APPENDIX 2

2009 Lobster data

| Site | Transect | Size | Sex |
|---|---|---|---|
| DMR | 1 | 30 | U |
| DMR | 1 | 130 | M |
| DMR | 1 | 80 | F |
| DMR | 2 | 160 | M |
| DMR | 2 | 120 | F |
| DMR | 2 | 140 | F |
| DMR | 3 | 40 | U |
| DMR | 3 | 120 | M |
| DMR | 3 | 140 | M |
| DMR | 3 | 130 | F |
| DMR | 3 | 160 | M |
| DMR | 3 | 180 | M |
| DMR | 3 | 140 | M |
| DMR | 4 | 120 | F |
| DMR | 4 | 140 | M |
| DMR | 5 | 70 | M |
| SMR | 1 | 160 | M |
| SMR | 1 | 140 | F |
| SMR | 1 | 180 | M |
| SMR | 1 | 180 | M |
| SMR | 1 | 120 | F |
| SMR | 1 | 100 | F |
| SMR | 1 | 90 | F |
| SMR | 2 | 140 | M |
| SMR | 2 | 150 | M |
| SMR | 2 | U | U |
| SMR | 2 | U | U |
| SMR | 2 | 80 | M |
| SMR | 2 | 140 | M |
| SMR | 2 | 120 | F |
| SMR | 2 | 160 | M |
| SMR | 2 | 125 | F |
| SMR | 2 | 120 | F |
| SMR | 2 | 140 | M |
| SMR | 2 | 170 | M |
| SMR | 2 | 80 | U |
| SMR | 2 | U | U |
| SMR | 2 | U | U |
| SMR | 2 | U | U |
| SMR | 2 | 100 | F |
| SMR | 2 | 120 | F |
| SMR | 2 | 125 | F |
| SMR | 2 | 120 | F |
| SMR | 2 | 140 | M |
| SMR | 2 | 100 | |
| SMR | 2 | 120 | |
| SMR | 2 | 140 | |
| SMR | 2 | U | U |
| SMR | 2 | U | U |
| SMR | 2 | U | U |
| SMR | 3 | 160 | M |
| SMR | 3 | 180 | M |
| SMR | 3 | 60 | F |
| SMR | 3 | 90 | M |
| SMR | 3 | 80 | F |
| SMR | 3 | U | U |
| SMR | 3 | U | U |
| SMR | 3 | 160 | M |
| SMR | 3 | 140 | M |
| SMR | 3 | 90 | M |
| SMR | 3 | 110 | M |
| SMR | 3 | 170 | M |
| SMR | 4 | 70 | F |

| Site | Transect | Size | Sex |
|---|---|---|---|
| TD1 | 1 | 120 | M |
| TD1 | 1 | 140 | M |
| TD1 | 1 | 95 | F |
| TD1 | 1 | 100 | M |
| TD1 | 1 | 120 | M |
| TD1 | 1 | U | U |
| TD1 | 1 | 90 | F |
| TD1 | 1 | 110 | M |
| TD1 | 1 | 100 | F |
| TD1 | 1 | 95 | F |
| TD1 | 1 | 140 | M |
| TD1 | 1 | 90 | M |
| TD1 | 1 | 30 | U |
| TD1 | 1 | 70 | F |
| TD1 | 2 | 120 | F |
| TD1 | 2 | 190 | M |
| TD1 | 2 | U | U |
| TD1 | 2 | U | U |
| TD1 | 2 | 80 | U |
| TD1 | 2 | 120 | F |
| TD1 | 2 | 140 | F |
| TD1 | 2 | 80 | F |
| TD1 | 2 | U | U |
| TD1 | 2 | 125 | F |
| TD1 | 2 | 180 | M |
| TD1 | 2 | 150 | M |
| TD1 | 2 | U | U |
| TD1 | 2 | U | U |
| TD1 | 2 | U | U |
| TD1 | 3 | 160 | M |
| TD1 | 4 | 110 | M |
| TD1 | 4 | 130 | M |
| TD1 | 4 | 120 | F |
| TD1 | 4 | 95 | U |
| TD1 | 4 | 90 | U |
| TD1 | 4 | 90 | U |
| TD1 | 4 | 95 | F |
| TD1 | 4 | 95 | F |
| TD1 | 4 | 80 | U |
| TD1 | 4 | 70 | U |
| TD1 | 4 | 40 | U |
| TD1 | 5 | 140 | M |
| TD1 | 5 | 125 | F |
| TD1 | 5 | 170 | M |
| TD1 | 5 | 110 | M |
| TD1 | 5 | 110 | M |
| TD1 | 5 | 130 | F |
| TD1 | 5 | 160 | M |
| TD1 | 5 | U | U |
| TD1 | 5 | U | U |
| TS1 | 1 | 120 | M |
| TS1 | 1 | 95 | F |
| TS1 | 1 | 150 | M |
| TS1 | 1 | 60 | M |
| TS1 | 1 | 130 | F |
| TS1 | 1 | 30 | U |
| TS1 | 1 | 50 | U |
| TS1 | 1 | 125 | F |
| TS1 | 1 | 160 | M |
| TS1 | 1 | 130 | F |
| TS1 | 1 | 135 | M |
| TS1 | 1 | 150 | M |
| TS1 | 1 | U | U |

| Site | Transect | Size | Sex |
|---|---|---|---|
| DLR | 1 | | |
| DLR | 2 | 110 | M |
| DLR | 2 | 80 | F |
| DLR | 2 | 80 | U |
| DLR | 3 | | |
| DLR | 4 | | |
| DLR | 5 | 95 | U |
| DLR | 5 | 90 | U |
| DLR | 5 | 85 | U |
| DLR | 5 | 115 | U |
| SLR | 1 | | |
| SLR | 2 | | |
| SLR | 3 | | |
| SLR | 4 | 75 | M |
| SLR | 4 | 90 | F |
| SLR | 4 | 100 | F |
| SLR | 4 | 95 | F |
| SLR | 5 | 50 | U |
| SLR | 5 | 50 | U |
| SLR | 5 | 60 | U |
| SLR | 5 | 90 | U |
| SSD | 1 | 40 | U |
| SSD | 1 | 90 | M |
| SSD | 1 | 80 | F |
| SSD | 2 | | |
| SSD | 3 | | |
| SSD | 4 | 105 | M |
| SSD | 4 | 70 | U |
| SSD | 4 | 80 | U |
| SSD | 5 | 90 | M |
| SSD | 5 | 90 | M |
| SSD | 5 | 80 | M |
| SSD | 5 | U | U |
| SSS | 1 | | |
| SSS | 2 | | |
| SSS | 3 | | |
| SSS | 4 | | |
| SSS | 5 | | |
| SND | 1 | 90 | M |
| SND | 1 | 95 | F |
| SND | 1 | 60 | M |
| SND | 2 | 50 | U |
| SND | 2 | 100 | F |
| SND | 3 | | |
| SND | 4 | | |
| SND | 5 | 80 | F |
| SND | 5 | 60 | F |
| SND | 5 | 70 | F |
| SND | 5 | 100 | M |
| SND | 5 | 120 | M |
| SND | 5 | 40 | U |
| SND | 5 | 50 | U |
| SND | 5 | U | U |

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|---|---|---|---|---|---|---|---|---|
| SMR | 4 | 80 | F | TS1 | 1 | U | U | |
| SMR | 4 | 90 | M | TS1 | 1 | U | U | |
| SMR | 4 | 60 | F | TS1 | 1 | 140 | M | |
| SMR | 4 | 80 | F | TS1 | 2 | 160 | M | |
| SMR | 4 | 130 | M | TS1 | 2 | 95 | M | |
| SMR | 4 | 50 | F | TS1 | 2 | 140 | M | |
| SMR | 4 | 50 | U | TS1 | 2 | 50 | U | |
| SMR | 4 | 60 | U | TS1 | 2 | 60 | U | |
| SMR | 4 | 80 | F | TS1 | 2 | 60 | U | |
| SMR | 4 | 110 | M | TS1 | 2 | 50 | U | |
| SMR | 4 | 40 | F | TS1 | 3 | 125 | F | |
| SMR | 4 | 90 | M | TS1 | 3 | 140 | M | |
| SMR | 4 | 150 | M | TS1 | 3 | 120 | F | |
| SMR | 4 | 80 | F | TS1 | 3 | 110 | F | |
| SMR | 4 | 90 | F | TS1 | 3 | U | U | |
| SMR | 4 | 160 | M | TS1 | 3 | 110 | F | |
| SMR | 4 | 60 | F | TS1 | 3 | 100 | F | |
| SMR | 4 | 50 | F | TS1 | 3 | 90 | U | |
| SMR | 4 | 30 | U | TS1 | 3 | 80 | U | |
| SMR | 4 | 80 | U | TS1 | 3 | 80 | M | |
| SMR | 4 | 30 | U | TS1 | 3 | 85 | F | |
| SMR | 4 | 60 | U | TS1 | 3 | 180 | M | |
| SMR | 4 | 70 | F | TS1 | 3 | 140 | F | |
| SMR | 4 | 80 | F | TS1 | 3 | 120 | F | |
| SMR | 4 | 90 | M | TS1 | 3 | 90 | M | |
| SMR | 4 | 80 | F | TS1 | 3 | 100 | M | |
| SMR | 4 | 50 | F | TS1 | 3 | 80 | F | |
| SMR | 4 | 100 | U | TS1 | 3 | 95 | M | |
| SMR | 4 | 90 | F | TS1 | 3 | 70 | F | |
| SMR | 4 | 180 | M | TS1 | 3 | 60 | U | |
| SMR | 4 | 90 | F | TS1 | 3 | U | U | |
| SMR | 5 | 100 | M | TS1 | 3 | U | U | |
| SMR | 5 | 110 | M | TS1 | 3 | U | U | |
| SMR | 5 | 70 | U | TS1 | 4 | 100 | M | |
| SMR | 5 | 80 | U | TS1 | 4 | 50 | F | |
| SMR | 5 | 160 | M | TS1 | 4 | 150 | M | |
| SMR | 5 | 100 | M | TS1 | 4 | 100 | U | |
| SMR | 5 | 60 | U | TS1 | 4 | 100 | F | |
| SMR | 5 | 100 | M | TS1 | 4 | 85 | M | |
| SMR | 5 | 60 | F | TS1 | 4 | 110 | F | |
| SMR | 5 | 60 | F | TS1 | 4 | 90 | F | |
| SMR | 5 | 80 | F | TS1 | 4 | 75 | F | |
| SMR | 5 | 60 | U | TS1 | 4 | 150 | M | |
| SMR | 5 | 50 | U | TS1 | 4 | 95 | F | |
| SMR | 5 | 60 | U | TS1 | 4 | 70 | M | |
| SMR | 5 | 70 | U | TS1 | 4 | 70 | M | |
| SMR | 5 | 100 | U | TS1 | 4 | 80 | F | |
| SMR | 5 | 90 | F | TS1 | 4 | 120 | M | |
| SMR | 5 | 110 | M | TS1 | 4 | 130 | M | |
| SMR | 5 | 90 | F | TS1 | 5 | 70 | M | |
| SMR | 5 | 80 | U | TS1 | 5 | 100 | M | |
| SMR | 5 | 80 | U | TS1 | 5 | 75 | U | |
| SMR | 5 | 140 | M | TS1 | 5 | 90 | U | |
| SMR | 5 | 90 | U | TS1 | 5 | 85 | U | |
| SMR | 5 | 70 | U | TS1 | 5 | 80 | U | |
| SMR | 5 | 70 | U | TS1 | 5 | 40 | U | |
| SMR | 5 | 80 | U | TS1 | 5 | 130 | M | |
| SKR | 1 | 90 | F | TS1 | 5 | 90 | F | |
| SKR | 1 | 90 | M | TS1 | 5 | 180 | M | |
| SKR | 1 | 120 | F | TS1 | 5 | 160 | M | |
| SKR | 1 | 160 | M | TS1 | 5 | 125 | F | |
| SKR | 2 | | | TS1 | 5 | 115 | M | |
| SKR | 3 | 90 | M | TS1 | 5 | 90 | M | |
| SKR | 3 | 100 | F | TS1 | 5 | 40 | U | |
| SKR | 3 | 150 | M | TS1 | 5 | 40 | U | |
| SKR | 3 | 130 | F | TS1 | 5 | 50 | U | |
| SKR | 4 | 80 | M | TD2 | 1 | 110 | M | |
| SKR | 4 | 80 | U | TD2 | 1 | 170 | M | |
| SKR | 4 | 80 | U | TD2 | 1 | 110 | F | |
| SKR | 4 | 160 | M | TD2 | 1 | 80 | F | |

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|---|---|---|---|---|---|---|---|
| SKR | 4 | 110 | U | TD2 | 1 | 150 | M |
| SKR | 4 | 90 | U | TD2 | 2 | 115 | M |
| SKR | 4 | 90 | U | TD2 | 2 | 105 | F |
| SKR | 4 | 90 | U | TD2 | 2 | 140 | M |
| SKR | 4 | 90 | U | TD2 | 2 | 160 | M |
| SKR | 4 | 80 | F | TD2 | 2 | 130 | F |
| SKR | 4 | 120 | M | TD2 | 2 | 90 | U |
| SKR | 4 | 100 | M | TD2 | 2 | 50 | U |
| SKR | 5 | 140 | M | TD2 | 2 | 60 | U |
| SKR | 5 | 90 | U | TD2 | 2 | 85 | F |
| SKR | 5 | 110 | U | TD2 | 2 | 110 | F |
| SKR | 5 | 80 | F | TD2 | 2 | 90 | M |
| STT | 1 | 90 | F | TD2 | 2 | 85 | M |
| STT | 1 | 90 | F | TD2 | 2 | 100 | U |
| STT | 1 | 80 | U | TD2 | 2 | 110 | U |
| STT | 1 | 90 | U | TD2 | 2 | 170 | M |
| STT | 1 | 90 | F | TD2 | 3 | 95 | F |
| STT | 1 | 95 | F | TD2 | 3 | 80 | F |
| STT | 1 | 80 | F | TD2 | 4 | 130 | M |
| STT | 1 | 80 | U | TD2 | 4 | 140 | M |
| STT | 1 | 110 | U | TD2 | 4 | 180 | M |
| STT | 1 | 90 | F | TD2 | 4 | 95 | F |
| STT | 1 | 70 | F | TD2 | 4 | 90 | M |
| STT | 1 | 95 | F | TD2 | 4 | 100 | M |
| STT | 1 | 40 | F | TD2 | 4 | 30 | U |
| STT | 1 | 140 | M | TD2 | 4 | 30 | U |
| STT | 1 | 145 | M | TD2 | 4 | 40 | U |
| STT | 1 | 50 | U | TD2 | 4 | 150 | M |
| STT | 1 | 50 | U | TD2 | 5 | 130 | F |
| STT | 1 | 50 | U | TD2 | 5 | 125 | F |
| STT | 1 | 30 | U | TD2 | 5 | 180 | M |
| STT | 1 | 140 | U | TD2 | 5 | 120 | M |
| STT | 2 | 100 | F | TD2 | 5 | 90 | M |
| STT | 2 | 100 | M | TD2 | 5 | 90 | M |
| STT | 2 | 140 | M | TD2 | 5 | 100 | U |
| STT | 2 | 80 | F | TD2 | 5 | 90 | F |
| STT | 2 | 120 | U | TS2 | 1 | 120 | F |
| STT | 2 | 90 | U | TS2 | 1 | 110 | F |
| STT | 2 | 90 | U | TS2 | 1 | 190 | M |
| STT | 2 | 90 | U | TS2 | 1 | 160 | F |
| STT | 2 | 60 | U | TS2 | 1 | 160 | M |
| STT | 2 | 30 | U | TS2 | 1 | 170 | M |
| STT | 2 | 30 | U | TS2 | 1 | 150 | M |
| STT | 2 | 50 | U | TS2 | 1 | 120 | F |
| STT | 2 | 70 | U | TS2 | 1 | 170 | M |
| STT | 2 | 70 | U | TS2 | 1 | 175 | M |
| STT | 2 | 70 | M | TS2 | 1 | 130 | F |
| STT | 2 | 60 | F | TS2 | 1 | 145 | F |
| STT | 2 | 70 | F | TS2 | 1 | 120 | M |
| STT | 2 | 80 | M | TS2 | 1 | 140 | M |
| STT | 2 | 70 | F | TS2 | 1 | 120 | M |
| STT | 2 | 90 | F | TS2 | 1 | 125 | M |
| STT | 2 | 90 | F | TS2 | 1 | 80 | M |
| STT | 2 | 140 | M | TS2 | 1 | 95 | F |
| STT | 2 | 90 | F | TS2 | 1 | 100 | F |
| STT | 2 | 60 | M | TS2 | 1 | 90 | F |
| STT | 2 | 90 | F | TS2 | 1 | 70 | F |
| STT | 2 | 90 | M | TS2 | 1 | 50 | F |
| STT | 2 | 80 | M | TS2 | 1 | 30 | U |
| STT | 2 | 100 | M | TS2 | 1 | 60 | M |
| STT | 2 | 80 | F | TS2 | 1 | 145 | M |
| STT | 3 | 120 | M | TS2 | 1 | 70 | U |
| STT | 3 | 90 | U | TS2 | 1 | 60 | U |
| STT | 3 | 120 | U | TS2 | 1 | 140 | M |
| STT | 3 | 70 | F | TS2 | 1 | 190 | M |
| STT | 3 | 130 | M | TS2 | 2 | 130 | F |
| STT | 3 | 80 | F | TS2 | 2 | 100 | F |
| STT | 3 | 90 | F | TS2 | 2 | 130 | F |
| STT | 3 | 80 | F | TS2 | 2 | 120 | F |

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|---|---|---|---|---|---|---|---|---|
| STT | 3 | 70 | F | TS2 | 2 | 80 | F | |
| STT | 3 | 70 | F | TS2 | 2 | 95 | U | |
| STT | 3 | 100 | U | TS2 | 2 | 120 | U | |
| STT | 3 | 90 | U | TS2 | 2 | 110 | U | |
| STT | 3 | 120 | U | TS2 | 2 | 140 | M | |
| STT | 4 | 70 | F | TS2 | 2 | 130 | M | |
| STT | 4 | 140 | F | TS2 | 2 | 125 | F | |
| STT | 4 | 160 | M | TS2 | 2 | 175 | M | |
| STT | 4 | 140 | M | TS2 | 2 | 95 | F | |
| STT | 4 | U | U | TS2 | 2 | 120 | M | |
| STT | 4 | U | U | TS2 | 2 | U | U | |
| STT | 4 | U | U | TS2 | 2 | 140 | M | |
| STT | 4 | U | U | TS2 | 2 | 125 | F | |
| STT | 4 | U | U | TS2 | 2 | 115 | F | |
| STT | 4 | U | U | TS2 | 2 | 120 | F | |
| STT | 4 | 90 | F | TS2 | 2 | 150 | F | |
| STT | 4 | 80 | F | TS2 | 2 | 110 | M | |
| STT | 4 | 70 | F | TS2 | 2 | 180 | M | |
| STT | 4 | 60 | M | TS2 | 2 | 120 | F | |
| STT | 4 | 70 | F | TS2 | 2 | 125 | F | |
| STT | 4 | 120 | F | TS2 | 2 | 140 | F | |
| STT | 4 | 130 | F | TS2 | 2 | U | U | |
| STT | 4 | 130 | F | TS2 | 2 | U | U | |
| STT | 4 | 180 | M | TS2 | 2 | 30 | U | |
| STT | 4 | 150 | F | TS2 | 2 | 70 | F | |
| STT | 4 | 130 | M | TS2 | 2 | 185 | M | |
| STT | 4 | 160 | M | TS2 | 2 | 125 | F | |
| STT | 4 | 150 | F | TS2 | 2 | 115 | F | |
| STT | 4 | 130 | M | TS2 | 2 | 140 | F | |
| STT | 4 | 160 | M | TS2 | 2 | 130 | M | |
| STT | 4 | 180 | M | TS2 | 2 | 125 | F | |
| STT | 4 | 200 | M | TS2 | 2 | 110 | M | |
| STT | 4 | 140 | M | TS2 | 2 | 90 | F | |
| STT | 4 | 160 | M | TS2 | 2 | 60 | U | |
| STT | 4 | 130 | M | TS2 | 2 | 60 | U | |
| STT | 4 | 125 | F | TS2 | 2 | 70 | U | |
| STT | 4 | 120 | F | TS2 | 2 | 30 | U | |
| STT | 4 | 160 | M | TS2 | 2 | 30 | U | |
| STT | 4 | 120 | F | TS2 | 2 | 40 | U | |
| STT | 4 | 125 | M | TS2 | 2 | 40 | U | |
| STT | 4 | 30 | U | TS2 | 2 | 40 | U | |
| STT | 4 | 50 | U | TS2 | 2 | 90 | U | |
| STT | 4 | 30 | U | TS2 | 2 | U | U | |
| STT | 4 | 40 | U | TS2 | 2 | U | U | |
| STT | 4 | 30 | U | TS2 | 2 | U | U | |
| STT | 4 | 180 | M | TS2 | 2 | U | U | |
| STT | 4 | 130 | F | TS2 | 2 | U | U | |
| STT | 4 | 125 | F | TS2 | 2 | 150 | M | |
| STT | 4 | 140 | U | TS2 | 2 | 130 | F | |
| STT | 4 | 190 | M | TS2 | 2 | 180 | M | |
| STT | 4 | 90 | F | TS2 | 2 | 60 | U | |
| STT | 4 | 125 | U | TS2 | 2 | 80 | U | |
| STT | 4 | 180 | M | TS2 | 2 | 80 | U | |
| STT | 4 | 170 | M | TS2 | 2 | 50 | U | |
| STT | 4 | 70 | U | TS2 | 2 | 110 | U | |
| STT | 4 | 80 | U | TS2 | 2 | 100 | U | |
| STT | 4 | 80 | U | TS2 | 2 | U | U | |
| STT | 4 | 100 | U | TS2 | 2 | U | U | |
| STT | 4 | 120 | U | TS2 | 2 | U | U | |
| STT | 4 | 50 | U | TS2 | 2 | U | U | |
| STT | 4 | 60 | U | TS2 | 2 | 160 | M | |
| STT | 4 | 125 | U | TS2 | 2 | 90 | F | |
| STT | 5 | 130 | F | TS2 | 2 | 80 | M | |
| STT | 5 | | M | TS2 | 2 | 75 | U | |
| STT | 5 | | F | TS2 | 3 | 110 | M | |
| STT | 5 | 125 | F | TS2 | 3 | 95 | M | |
| STT | 5 | 140 | F | TS2 | 3 | 120 | M | |
| STT | 5 | 120 | F | TS2 | 3 | 130 | M | |
| STT | 5 | 120 | F | TS2 | 3 | 120 | F | |
| STT | 5 | 180 | M | TS2 | 3 | 90 | F | |

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|---|---|---|---|---|---|---|---|---|
| STT | 5 | 140 | M | TS2 | 3 | 160 | M | |
| STT | 5 | 125 | F | TS2 | 3 | 180 | M | |
| STT | 5 | 120 | F | TS2 | 3 | 60 | U | |
| STT | 5 | 160 | M | TS2 | 3 | 50 | U | |
| STT | 5 | U | U | TS2 | 3 | 60 | U | |
| STT | 5 | U | U | TS2 | 3 | 120 | F | |
| STT | 5 | U | U | TS2 | 3 | 105 | F | |
| STT | 5 | 150 | M | TS2 | 3 | 150 | M | |
| STT | 5 | 180 | M | TS2 | 3 | 140 | M | |
| STT | 5 | 30 | u | TS2 | 3 | 110 | F | |
| STT | 5 | 30 | u | TS2 | 3 | U | U | |
| STT | 5 | 30 | u | TS2 | 3 | U | U | |
| STT | 5 | 30 | u | TS2 | 3 | U | U | |
| STT | 5 | 30 | u | TS2 | 3 | 110 | U | |
| STT | 5 | 30 | u | TS2 | 3 | 95 | U | |
| STT | 5 | 50 | u | TS2 | 3 | 70 | F | |
| STT | 5 | 50 | u | TS2 | 3 | 80 | M | |
| STT | 5 | 50 | u | TS2 | 3 | 115 | M | |
| STT | 5 | 50 | u | TS2 | 3 | 110 | M | |
| STT | 5 | 50 | u | TS2 | 3 | 90 | F | |
| STT | 5 | 50 | u | TS2 | 3 | 70 | F | |
| STT | 5 | 50 | u | TS2 | 3 | 70 | M | |
| STT | 5 | 40 | u | TS2 | 3 | 115 | F | |
| STT | 5 | 40 | u | TS2 | 3 | 130 | M | |
| STT | 5 | 40 | u | TS2 | 3 | 170 | M | |
| STT | 5 | 40 | u | TS2 | 3 | 80 | U | |
| STT | 5 | 125 | F | TS2 | 4 | 70 | F | |
| STT | 5 | 120 | F | TS2 | 4 | 90 | F | |
| STT | 5 | 140 | F | TS2 | 4 | 90 | M | |
| STT | 5 | 125 | F | TS2 | 4 | 115 | M | |
| STT | 5 | 120 | F | TS2 | 4 | 95 | F | |
| STT | 5 | 120 | F | TS2 | 4 | 70 | U | |
| STT | 5 | 140 | F | TS2 | 4 | 175 | M | |
| STT | 5 | 160 | M | TS2 | 4 | 95 | U | |
| STT | 5 | 30 | u | TS2 | 4 | 80 | U | |
| STT | 5 | 30 | u | TS2 | 4 | 95 | M | |
| STT | 5 | 40 | u | TS2 | 4 | 100 | U | |
| STT | 5 | 50 | u | TS2 | 4 | 85 | F | |
| STT | 5 | 50 | u | TS2 | 4 | 95 | M | |
| STT | 5 | 50 | u | TS2 | 4 | 80 | U | |
| STT | 5 | U | U | TS2 | 4 | 95 | U | |
| STT | 5 | U | U | TS2 | 4 | 90 | M | |
| STT | 5 | U | U | TS2 | 4 | 80 | U | |
| STT | 5 | U | U | TS2 | 4 | 130 | M | |
| STT | 5 | U | U | TS2 | 4 | 110 | F | |
| STT | 5 | U | U | TS2 | 4 | 90 | F | |
| STT | 5 | U | U | TS2 | 4 | 95 | F | |
| STT | 5 | U | U | TS2 | 4 | 80 | M | |
| STT | 5 | U | U | TS2 | 4 | 135 | M | |
| STT | 5 | U | U | TS2 | 4 | 100 | M | |
| STT | 5 | U | U | TS2 | 4 | 95 | M | |
| STT | 5 | U | U | TS2 | 4 | 140 | M | |
| STT | 5 | 125 | M | TS2 | 4 | 165 | M | |
| STT | 5 | 120 | M | TS2 | 4 | 130 | F | |
| STT | 5 | 130 | F | TS2 | 4 | 120 | F | |
| STT | 5 | 125 | F | TS2 | 4 | 105 | F | |
| DTT | 1 | 140 | M | TS2 | 4 | U | U | |
| DTT | 2 | 150 | M | TS2 | 4 | 80 | U | |
| DTT | 2 | 90 | F | TS2 | 4 | 90 | U | |
| DTT | 2 | 120 | F | TS2 | 5 | 190 | M | |
| DTT | 2 | 115 | F | TS2 | 5 | 120 | F | |
| DTT | 2 | 90 | M | TS2 | 5 | 90 | F | |
| DTT | 2 | 160 | M | TS2 | 5 | 140 | M | |
| DTT | 2 | 125 | F | TS2 | 5 | 155 | M | |
| DTT | 3 | 140 | M | TS2 | 5 | 115 | F | |
| DTT | 3 | 125 | M | TS2 | 5 | 100 | F | |
| DTT | 3 | 90 | M | TS2 | 5 | 90 | F | |
| DTT | 3 | 80 | M | TS2 | 5 | 80 | M | |
| DTT | 4 | 160 | M | TS2 | 5 | 150 | M | |

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|---|---|---|---|
| DTT | 4 | 115 | F |
| DTT | 4 | 90 | U |
| DTT | 4 | 100 | U |
| DTT | 4 | 80 | U |
| DTT | 4 | 85 | M |
| DTT | 5 | 150 | M |
| DTT | 5 | 140 | M |
| DTT | 5 | 140 | M |
| DTT | 5 | 130 | F |
| DTT | 5 | 105 | U |
| DTT | 5 | 95 | M |
| DTT | 5 | 50 | U |
| DTT | 5 | 60 | U |
| DTT | 5 | 140 | M |
| DTT | 5 | 120 | M |
| OOS | 1 | 110 | M |
| OOS | 1 | 120 | F |
| OOS | 1 | 60 | U |
| OOS | 1 | 150 | M |
| OOS | 1 | 125 | F |
| OOS | 1 | 100 | F |
| OOS | 1 | 90 | M |
| OOS | 1 | 95 | M |
| OOS | 1 | 130 | F |
| OOS | 1 | 130 | M |
| OOS | 2 | 90 | F |
| OOS | 2 | 80 | F |
| OOS | 2 | 60 | M |
| OOS | 2 | 95 | M |
| OOS | 2 | 125 | F |
| OOS | 2 | 120 | F |
| OOS | 2 | 105 | F |
| OOS | 2 | 160 | M |
| OOS | 2 | 90 | F |
| OOS | 2 | 120 | U |
| OOS | 2 | 140 | U |
| OOS | 3 | 60 | U |
| OOS | 3 | 40 | U |
| OOS | 3 | 70 | U |
| OOS | 3 | 110 | M |
| OOS | 3 | 160 | M |
| OOS | 3 | 125 | F |
| OOS | 3 | 140 | M |
| OOS | 4 | 120 | M |
| OOS | 4 | 95 | F |
| OOS | 4 | 90 | F |
| OOS | 5 | 110 | M |
| OOS | 5 | 80 | F |
| OOS | 5 | 120 | F |
| OOS | 5 | 115 | F |
| OOS | 5 | 110 | F |
| OOS | 5 | 150 | M |
| OOS | 5 | 90 | M |
| OOS | 5 | 90 | M |
| OOS | 5 | 80 | F |
| OOS | 5 | 130 | M |
| OOS | 5 | 170 | M |
| OOS | 5 | 80 | F |
| OOS | 5 | 70 | M |
| OOS | 5 | 60 | U |
| OOS | 5 | 50 | U |
| OOS | 5 | 125 | M |
| TS2 | 5 | 180 | M |
| TS2 | 5 | 60 | U |
| TS2 | 5 | 70 | U |
| TS2 | 5 | 125 | M |
| TS2 | 5 | 110 | F |
| TS2 | 5 | 160 | M |
| TS2 | 5 | 90 | F |
| TS2 | 5 | 50 | U |
| TS2 | 5 | 50 | U |
| TS2 | 5 | 30 | U |
| TS2 | 5 | 40 | U |
| TS2 | 5 | 40 | U |
| TS2 | 5 | 30 | U |
| TS2 | 5 | 105 | F |
| TS2 | 5 | 100 | F |
| TS2 | 5 | 140 | M |
| TS2 | 5 | 140 | M |
| TS2 | 5 | 150 | F |
| TS2 | 5 | 130 | F |
| TS2 | 5 | 90 | F |
| TS2 | 5 | 80 | M |
| TS2 | 5 | 190 | M |
| TS2 | 5 | 60 | U |
| TS2 | 5 | 50 | U |
| TS2 | 5 | 75 | U |
| TS2 | 5 | 110 | M |
| TS2 | 5 | 100 | M |
| TS2 | 5 | 130 | F |
| TS2 | 5 | 135 | F |
| TS2 | 5 | 105 | F |
| TD3 | 1 | 140 | M |
| TD3 | 2 | 190 | M |
| TD3 | 2 | 140 | F |
| TD3 | 2 | 160 | M |
| TD3 | 2 | 140 | F |
| TD3 | 2 | 115 | F |
| TD3 | 2 | 90 | U |
| TD3 | 2 | 100 | M |
| TD3 | 2 | 180 | M |
| TD3 | 2 | 130 | F |
| TD3 | 3 | 110 | F |
| TD3 | 3 | 115 | F |
| TD3 | 3 | 190 | M |
| TD3 | 3 | 90 | F |
| TD3 | 3 | 80 | F |
| TD3 | 3 | 60 | F |
| TD3 | 3 | 145 | M |
| TD3 | 3 | 150 | M |
| TD3 | 4 | 110 | F |
| TD3 | 4 | 115 | F |
| TD3 | 4 | 95 | F |
| TD3 | 4 | 90 | M |
| TD3 | 4 | 40 | U |
| TD3 | 4 | 40 | U |
| TD3 | 4 | 160 | M |
| TD3 | 5 | 120 | M |
| TD3 | 5 | 150 | M |
| TS3 | 1 | 95 | F |
| TS3 | 1 | 80 | M |
| TS3 | 1 | U | U |
| TS3 | 1 | 80 | U |
| TS3 | 1 | 160 | M |
| TS3 | 1 | 130 | F |
| TS3 | 1 | 120 | M |
| TS3 | 1 | 110 | U |
| TS3 | 1 | 40 | U |
| TS3 | 1 | 30 | U |
| TS3 | 1 | 50 | U |
| TS3 | 1 | 50 | U |
| TS3 | 1 | 40 | U |

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|---|---|---|---|---|---|
| | TS3 | 1 | 150 | F | |
| | TS3 | 1 | 100 | F | |
| | TS3 | 1 | 90 | F | |
| | TS3 | 1 | 50 | U | |
| | TS3 | 1 | 40 | U | |
| | TS3 | 1 | 50 | U | |
| | TS3 | 1 | 140 | M | |
| | TS3 | 1 | 115 | F | |
| | TS3 | 1 | 100 | M | |
| | TS3 | 1 | 95 | F | |
| | TS3 | 1 | 90 | M | |
| | TS3 | 1 | 120 | F | |
| | TS3 | 1 | 105 | M | |
| | TS3 | 1 | 115 | M | |
| | TS3 | 1 | 100 | F | |
| | TS3 | 1 | 60 | F | |
| | TS3 | 2 | 95 | F | |
| | TS3 | 2 | 100 | M | |
| | TS3 | 2 | 90 | F | |
| | TS3 | 2 | 180 | M | |
| | TS3 | 2 | 130 | F | |
| | TS3 | 2 | 140 | F | |
| | TS3 | 2 | U | U | |
| | TS3 | 2 | U | U | |
| | TS3 | 2 | U | U | |
| | TS3 | 2 | 140 | M | |
| | TS3 | 2 | 125 | F | |
| | TS3 | 2 | U | U | |
| | TS3 | 2 | 130 | F | |
| | TS3 | 2 | U | U | |
| | TS3 | 2 | U | U | |
| | TS3 | 2 | U | U | |
| | TS3 | 2 | U | U | |
| | TS3 | 2 | 110 | F | |
| | TS3 | 2 | 105 | F | |
| | TS3 | 2 | 90 | F | |
| | TS3 | 2 | 90 | M | |
| | TS3 | 2 | 80 | M | |
| | TS3 | 2 | 95 | M | |
| | TS3 | 2 | U | U | |
| | TS3 | 2 | U | U | |
| | TS3 | 2 | U | U | |
| | TS3 | 2 | 120 | F | |
| | TS3 | 2 | 125 | F | |
| | TS3 | 2 | 90 | F | |
| | TS3 | 2 | 80 | F | |
| | TS3 | 2 | 50 | U | |
| | TS3 | 2 | 40 | U | |
| | TS3 | 2 | 40 | U | |
| | TS3 | 2 | 80 | F | |
| | TS3 | 2 | 60 | F | |
| | TS3 | 2 | 95 | M | |
| | TS3 | 2 | 105 | F | |
| | TS3 | 2 | 100 | F | |
| | TS3 | 2 | 90 | M | |
| | TS3 | 2 | 110 | M | |
| | TS3 | 2 | 60 | F | |
| | TS3 | 3 | 110 | F | |
| | TS3 | 3 | 100 | M | |
| | TS3 | 3 | 200 | M | |
| | TS3 | 3 | 115 | F | |
| | TS3 | 3 | 130 | F | |
| | TS3 | 3 | 140 | F | |
| | TS3 | 3 | 125 | F | |
| | TS3 | 3 | U | U | |
| | TS3 | 3 | U | U | |
| | TS3 | 3 | 110 | F | |
| | TS3 | 3 | 90 | F | |
| | TS3 | 3 | 85 | F | |

| | | | | | |
|---|---|---|---|---|---|
| | TS3 | 3 | 165 | M | |
| | TS3 | 3 | 130 | M | |
| | TS3 | 3 | 90 | F | |
| | TS3 | 3 | 95 | F | |
| | TS3 | 3 | 80 | M | |
| | TS3 | 3 | 80 | M | |
| | TS3 | 3 | 90 | F | |
| | TS3 | 3 | 110 | F | |
| | TS3 | 3 | 115 | F | |
| | TS3 | 3 | 150 | F | |
| | TS3 | 3 | 180 | M | |
| | TS3 | 3 | 125 | F | |
| | TS3 | 3 | 110 | M | |
| | TS3 | 3 | 90 | M | |
| | TS3 | 3 | 40 | U | |
| | TS3 | 3 | 30 | U | |
| | TS3 | 3 | U | U | |
| | TS3 | 3 | U | U | |
| | TS3 | 3 | U | U | |
| | TS3 | 3 | 125 | M | |
| | TS3 | 3 | 110 | M | |
| | TS3 | 3 | 90 | F | |
| | TS3 | 3 | 85 | F | |
| | TS3 | 3 | 70 | F | |
| | TS3 | 4 | 100 | M | |
| | TS3 | 4 | 100 | M | |
| | TS3 | 4 | 100 | M | |
| | TS3 | 4 | 80 | M | |
| | TS3 | 4 | 60 | M | |
| | TS3 | 4 | 60 | U | |
| | TS3 | 4 | 40 | U | |
| | TS3 | 4 | 70 | U | |
| | TS3 | 4 | 110 | M | |
| | TS3 | 4 | 90 | U | |
| | TS3 | 4 | 80 | M | |
| | TS3 | 4 | 70 | M | |
| | TS3 | 5 | 100 | M | |
| | TS3 | 5 | 120 | M | |
| | TS3 | 5 | 20 | U | |
| | TS3 | 5 | 100 | M | |
| | TS3 | 5 | 30 | U | |
| | TS3 | 5 | 40 | U | |
| | TS3 | 5 | 40 | U | |
| | TS3 | 5 | 60 | U | |