

2.9 Sperm whales (*Physeter macrocephalus*)

Sperm whales are large toothed whales that dive to great depths to forage. They feed mainly on squids, but are also known to take demersal fish. Dives can last for over an hour and be deeper than 1000 m, during which animals rely heavily on acoustic senses to navigate and communicate. Sperm whales in the New Zealand region were heavily targeted by whaling vessels in the 19th and 20th centuries, including a fishery in the Cook Strait region (Gaskin 1968, Gaskin & Cawthorn 1967). Sperm whales are currently listed as Vulnerable by the IUCN. Sperm whales are typically found in areas where the continental shelf drops off dramatically (Shirihai 2002) as these tend to be productive foraging habitats for target prey items such as squid.

Sperm whale sightings within the study region were generally recorded in offshore, deep water (Figure 2-21) and all 11 sightings were made during summer months (Dec, Jan, Feb; Table 2-1). This seasonal trend corresponds to findings by Gaskin (1968) that found a peak in sperm whale sightings in the Cook Strait region between December and April. It is likely that sperm whales use this region for foraging habitat during summer months. One sperm whale sighting occurred within the OMV area of interest. Potential impacts from OMV operations to sperm whales include acoustic and physical disturbance with subsequent displacement from important habitats.

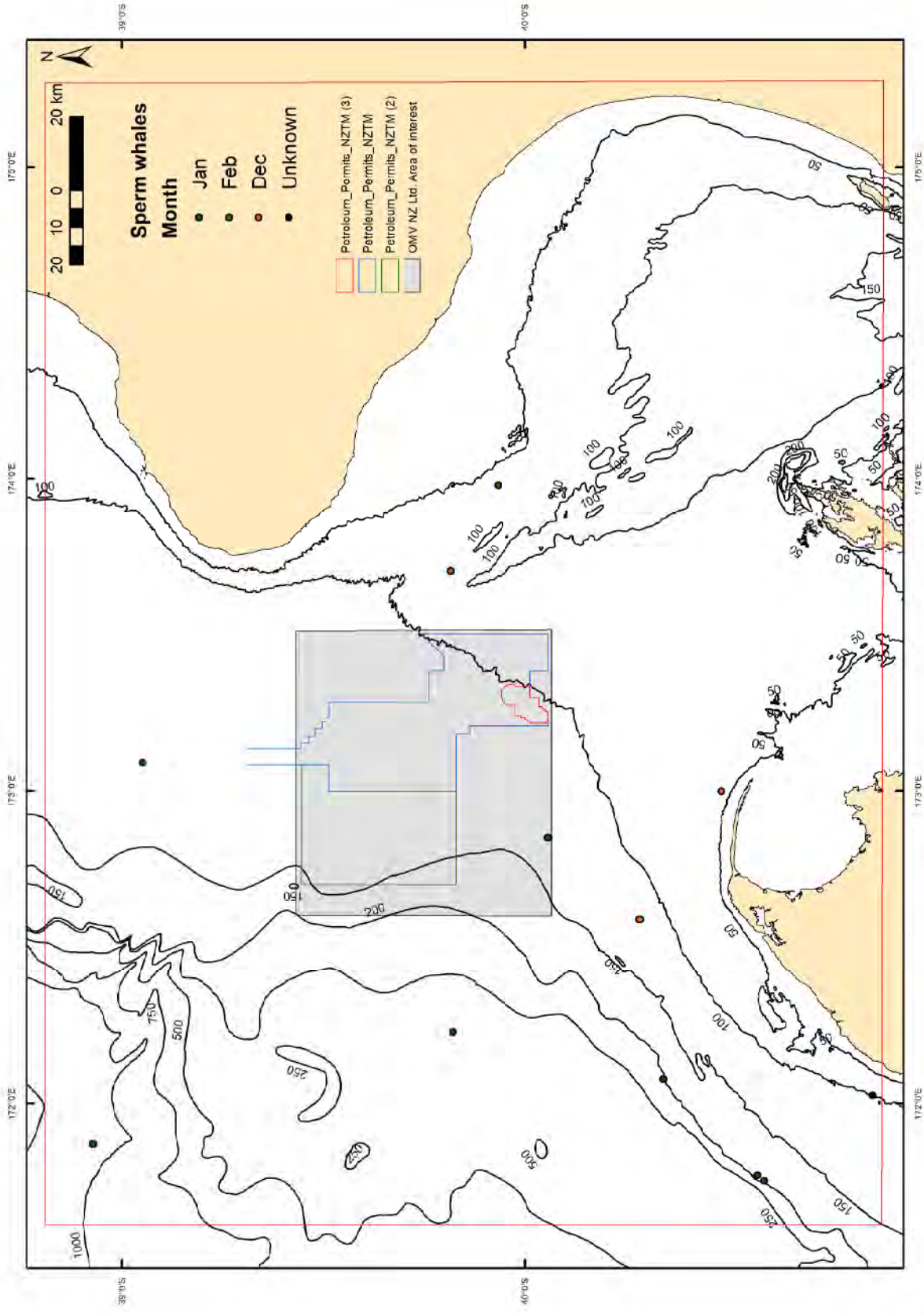


Figure 2-21: Sightings of sperm whales within the study region colour coded by month. OMV NZ Ltd. permit regions demarcated. Black lines indicate 50 m bathymetry isobaths. The red box is the boundary of the study region.

2.10 Bottlenose dolphins (*Tursiops truncatus*)

Bottlenose dolphins are regarded as range restricted in New Zealand. In New Zealand three main coastal populations exist: around 450 individuals live in the Bay of Islands area, ranging from Doubtless Bay in Northland to Tauranga (Constantine et al. 2003); around 63 live in Doubtful Sound, Fiordland (Brager & Schneider 1998); and another group range from the Marlborough Sounds to Westport. These dolphins represent the 'coastal' population of bottlenose dolphins, as opposed to a sub-species called offshore bottlenose dolphins that tend to travel more widely and in larger groups.

Most of the bottlenose dolphins sightings within the study region were made within the Marlborough Sounds region (Figure 2-22); these are likely coastal bottlenose dolphins. The two offshore sightings had larger group sizes (>50 individuals) and were likely offshore bottlenose dolphins. No evidence of a seasonal trend in sightings is evident (Table 2-1). No sighting of a bottlenose dolphin has been recorded in the OMV area of interest. Any sighting of a bottlenose dolphin in the OMV area of interest would likely be of the offshore subspecies. Potential impacts from OMV operations to bottlenose dolphins include acoustic and physical disturbance with subsequent displacement from important habitats.

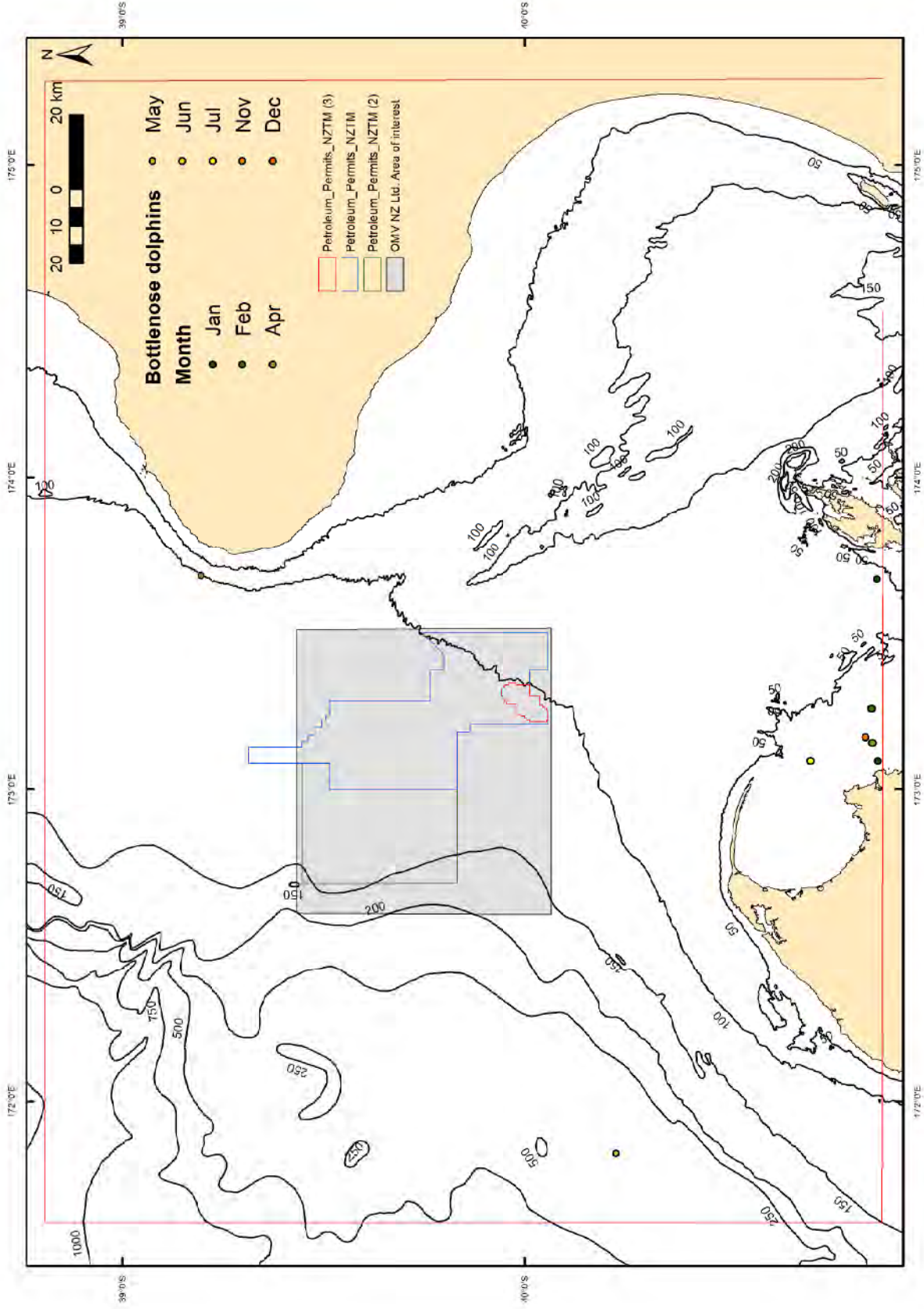


Figure 2-22: Sightings of bottlenose dolphins within the study region colour coded by month. OMV NZ Ltd. permit regions demarcated. Black lines indicate 50 m bathymetry isobaths. The red box is the boundary of the study region.

2.11 Southern right whales (*Eubalaena australis*)

Southern right whales in the New Zealand are considered nationally endangered due mainly to whaling that reduced the population from about 17,000 animals to just 908 today (Carroll et al. 2011, Suisted & Neale 2004). Southern right whales follow traditional annual migration routes between summer feeding areas and their northerly breeding grounds. While on breeding grounds and while migrating, right whales are frequently found in sheltered coastal waters close to shore to breed, nurse calves, and avoid predators. During the breeding season in winter months, they are mostly found in the waters around the sub-Antarctic Auckland and Campbell Islands but there are occasional sightings around mainland New Zealand, which may represent an expansion or re-colonization of breeding grounds.

Nine sightings of southern right whales have been recorded within the study region (Figure 2-23), with all but one sighting occurring during the winter months of July to October (Table 2-1). This seasonal trend depicts the migration cycle of southern right whales, with the winter sightings reflecting animals on breeding or calving grounds. Likewise, all but one sighting is very coastal; this is typical of southern right whales with a habitat use pattern at this life history stage to be in protected waters with the least threat of predation from predators such as killer whales and sharks. One of these sightings recorded 5 individuals 'moving about in shallows' on the west side of Kapiti Island during the summer of 2002. This sighting likely represents a surface active group (SAG) of right whales. The one offshore sighting of a southern right whale occurred within the OMV area of interest during October 2003, and indicates that these animals can use a variety of habitats as they migrate between regions.

Potential impacts from OMV operations are acoustic and physical disturbance with subsequent displacement from foraging areas, and ship strikes of individuals by transiting vessels. Southern right whales are particular prone to ship strikes as they do not respond quickly to vessel noise or presence (Kemper et al. 2008).

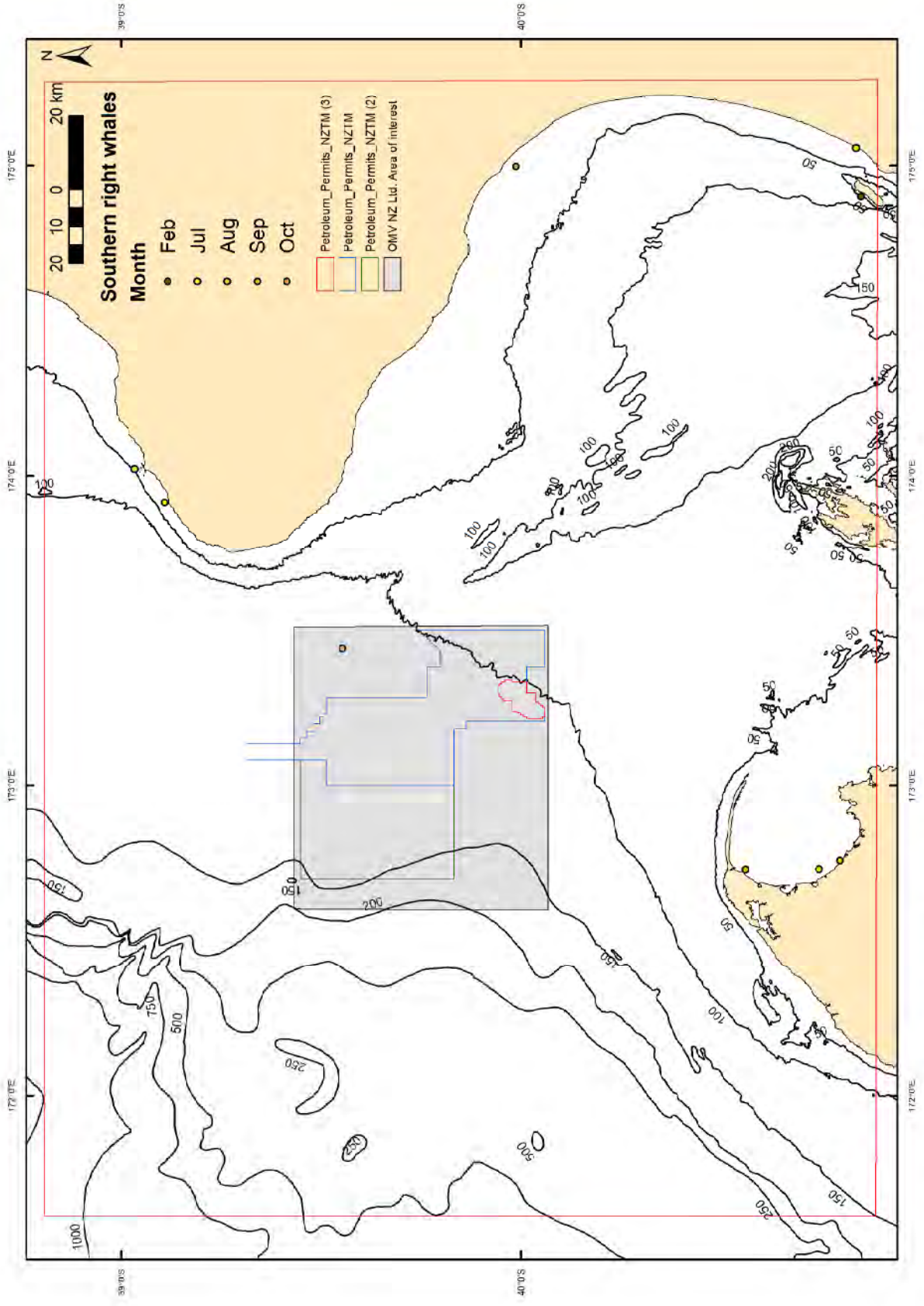


Figure 2-23: Sightings of southern right whales within the study region colour coded by month. OMV NZ Ltd. permit regions demarcated. Black lines indicate 50 m bathymetry isobaths. The red box is the boundary of the study region.

2.12 Other baleen whales

Other baleen whales sighted in the study region in small numbers include Bryde's whale (*Balaenoptera edeni*; n=3), fin whales (*Balaenoptera physalus*; n=5), minke whales (*Balaenoptera bonaerensis* n=5), and sei whales (*Balaenoptera borealis*; n=3).

The Bryde's whale is a nationally critical threatened species and considered to have a restricted range to the Hauraki Gulf area (Suisted & Neale 2004). The Bryde's whale prefers tropical or warm-temperate waters (above 20°C) and feeds on larger plankton and pelagic schooling fish (Shirihai 2002). Fin whales perform long seasonal migrations and are typically found in deep offshore waters (Shirihai 2002). Sei whales typically favour deep waters and are rare near coasts, but likely migrate past New Zealand as they travel south to Antarctic summer feeding grounds and return north to warmer breeding waters in winter (Shirihai 2002). It is possible that fin and sei whales use this area as a foraging ground similar to the behaviour and habitat use patterns of blue whales (see Section 2.6). The diets of fin and sei whales do overlap with blue whales as they are also known to include euphausiids. Both the fin and sei whale are listed as Endangered under the IUCN Redlist. Minke whales are considered Data Deficient by the IUCN, and little is known about their distributions patterns outside of summer months when they are typically in Antarctic waters foraging on krill.

All but one sighting of fin, sei and Bryde's whales were recorded during summer months (Nov, Dec, Jan, Feb; Table 2-1) possibly reflecting seasonal use of the area, but this trend could also be caused by observational bias. Due to the limited number of sightings for each species the seasonal trend is inconclusive. In contrast, only one Minke whale sighting occurred during summer, which reflects their migration pattern to Antarctic waters during summer. The majority of sightings of baleen whales were made in offshore areas, including four sightings within the OMV area of interest and three more within close proximity to the area of interest (Figure 2-24). The mean depth of these sightings was 132 m, with a minimum of 65 m and a maximum of 344 m.

Potential impacts from OMV operations to these baleen whales are acoustic and physical disturbance with subsequent displacement from foraging areas, and ship strikes of individuals by transiting vessels.

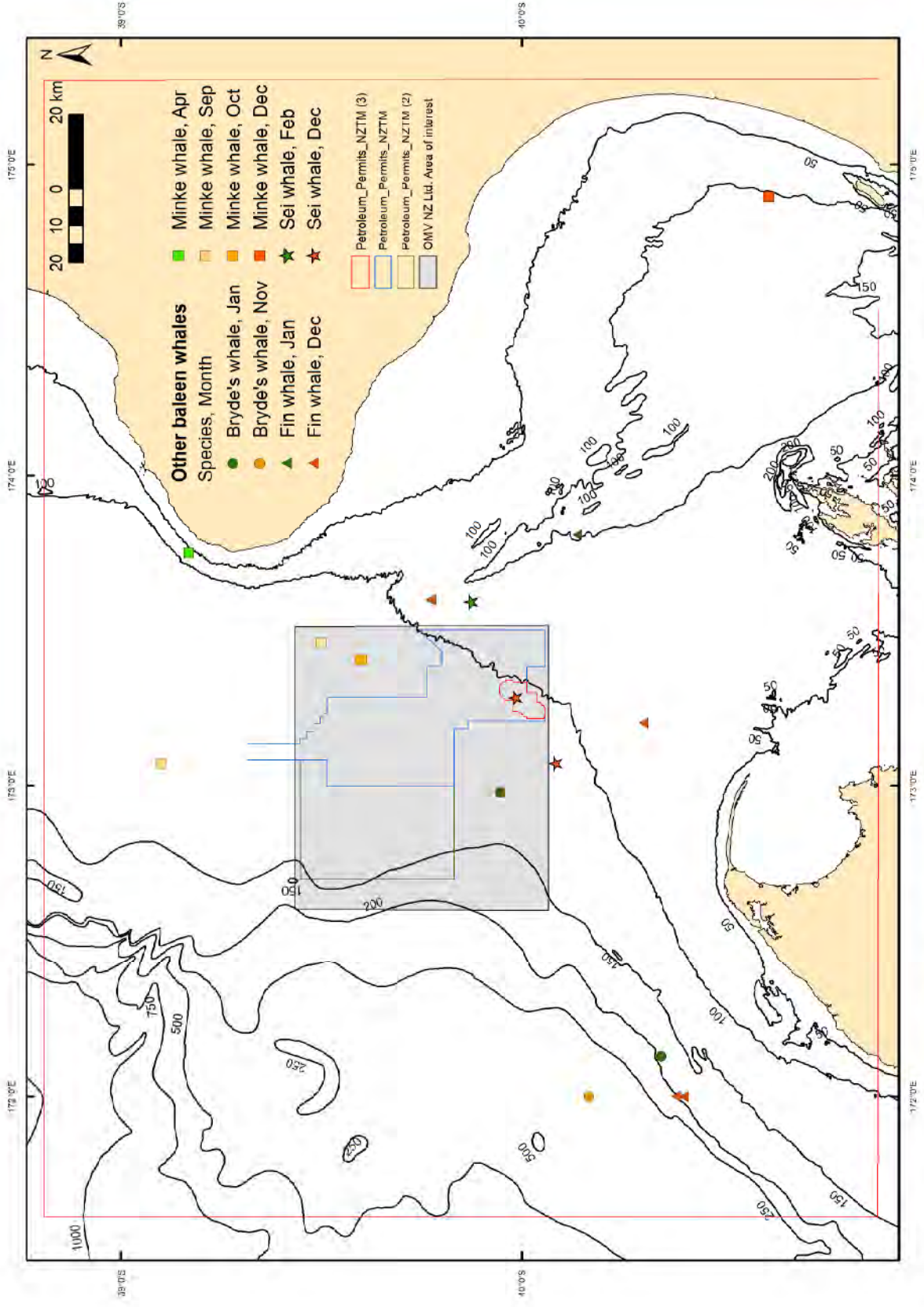


Figure 2-24: Sightings of other baleen whales within the study region colour and symbolized by species and month. OMV NZ Ltd. permit regions demarcated. Black lines indicate 50 m bathymetry isobaths. The red box is the boundary of the study region.

3 Summary

While the marine mammal sightings data presented here must be interpreted with caution as the distribution of sampling effort is unknown (presence only), it appears OMV NZ Ltd operations in the area may impact some marine mammal species that use the habitat. The degree of these impacts is difficult to predict and will vary by species, time of year and operation.

Five endangered species occur with some regularity in the study region: Hector's/Maui's dolphins, humpback whales, blue whales, killer whales and southern right whales. The population levels of Hector's/Maui's dolphins, humpback whales, blue whales, and southern right whales were once high but have been exploited (hunted) or incidentally removed (fisheries by-catch or habitat loss) leading to reduced population sizes under threat of extinction (regionally or globally). The number of killer whales in the New Zealand population is low (perhaps naturally due to carrying capacity limits). Therefore, necessary precautions must be taken to avoid impacting these individuals or their habitat. The ecological function and purpose of this region for these species remains poorly understood, yet it is likely that the area is an important foraging ground for blue whales. Hector's/Maui's dolphins and southern right whales are generally more coastally distributed (away from the OMV area of interest). It is likely that humpback whales migrate through the region so precautions may be needed as certain times of years to avoid displacement of migratory animals. The habitat use patterns of killer whales in the region are difficult to discern but appear irregular.

3.1 Research recommendations

A systematic survey for marine mammals in this region, particularly for blue whales, would profoundly advance our understanding of their habitat use and distribution patterns. Ideally these surveys should be conducted to capture seasonal variation in distribution across the available habitats. These survey data could be analysed in combination with oceanographic and biological data (satellite and model derived) to better understand the relationship between species distribution patterns and the environment in which they breed, feed and/or migrate.

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