

Annex F

Proponents' response to Panel request for information on trackline designs and realised tracklines for JARPN II by year and season

DESIGN OF TRACK LINES IN JARPN II SURVEYS

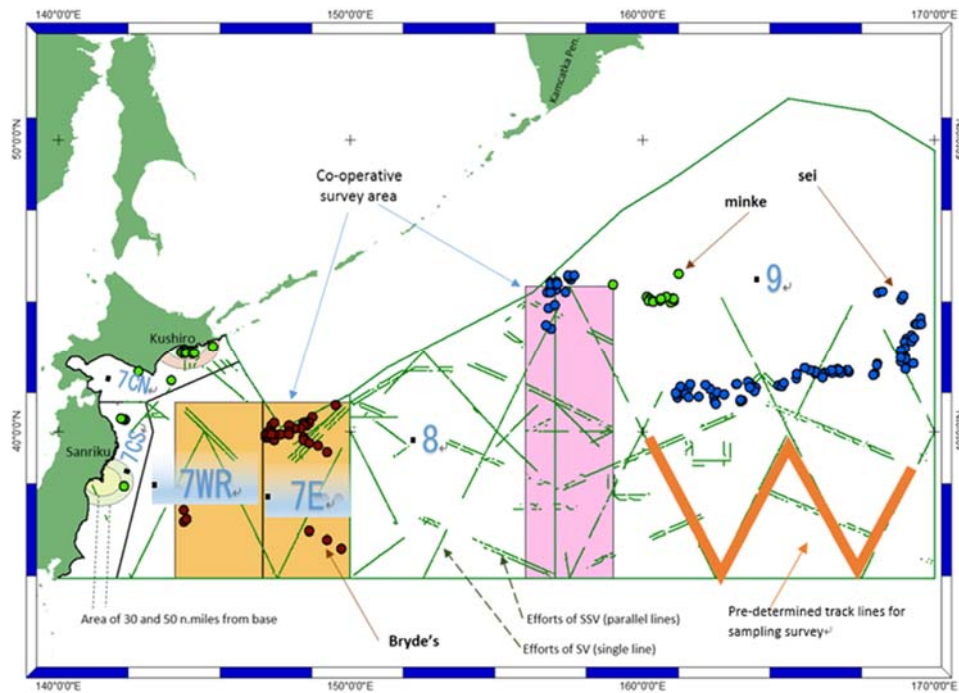


Fig. 1. Overview of the survey design under the JARPNII. There are several surveys components under the JARPNII: dedicated sighting survey; whales sampling surveys (coastal and offshore); concurrent whale/prey surveys in offshore areas; and prey surveys in coastal areas (see details of each survey below*). In the figure, pre-determined track lines for whale sampling surveys in the offshore component are shown in orange; on effort track lines of dedicated sighting (single line) and whale sampling (parallel lines) surveys in green. Concurrent whale/prey surveys are shown by color squares. Only the research areas are shown for Sanriku and Kushiro.

Dedicated sighting survey

Sighting surveys were conducted following the IWC survey guidelines. Zig-zag-shaped track lines were set in the research area independently from the whale sampling surveys. The whole research area was covered in early (April to June) and late (July to September).

Whale sampling survey (offshore component)

The survey order of sub-area/strata was decided based on seasonal distribution of whales and logistics, and zigzag-shaped track lines were set in the research area, reflecting the available information such as surface temperature. The track line consisted of one main and two parallel courses established seven n.miles apart from the main course. The Special Monitoring Survey (SMS) was conducted in areas where the density of targeted whale species were expected to be high. Track lines in the SMS were designed independently from the original track lines. The track lines of SMS consisted of one main and two parallel courses established seven n. miles apart from the main course. Design of track lines were determined by the cruise leader on the research base vessel.

Concurrent whale/prey surveys (offshore component)

For these surveys meso-scale research areas were defined in some years considering physical environmental information such as surface temperature. Zigzag-shaped track lines were set in the research area and both whale sampling vessels and prey survey vessels conducted surveys along the same track lines within a week. Prey survey vessel conducted quantitative echo-sounder, net sampling and oceanographic surveys.

Whale sampling survey (coastal component)

The predetermined course (direction from the port) at an angle of regular intervals (usually 10-15 degree intervals) were set up, and allocated to each research vessel. The vessels continued to search along the course until common minke whales were sighted, or until they reached 30 n. miles from the port. After 30 n. miles, the vessels changed the course freely within a 50 n. miles radius from the port. The predetermined course is changed every day to cover broad areas. When whales were caught, the vessels returned to the port to transport the animal to the research land station. After landing the whale, the vessel re-departed to the research area.

Prey survey (coastal component off Sanriku)

Since 2005, the prey survey area was divided into ten blocks (A, B, C, D, E, F, G, H, I, and J) based on bottom depth (20, 40, 100, and 200m), and prefectural boundaries (boundary between Miyagi and Fukushima Prefectures). Because of logistical constraint, the number of blocks changed in each year. In 2008 and 2009, six blocks (B, C, E, D, E and F) were surveyed. Saw tooth type zigzag lines were used in each survey. The survey was conducted during the daytime from an hour after sunrise to an hour before sunset. The research vessel used was a trawler-type vessel. The prey species were investigated using a quantitative echo sounder (EK 500; Simrad, Norway) and net sampling. Prey surveys were conducted during the survey period of whale sampling survey and independently from the whale sampling surveys.

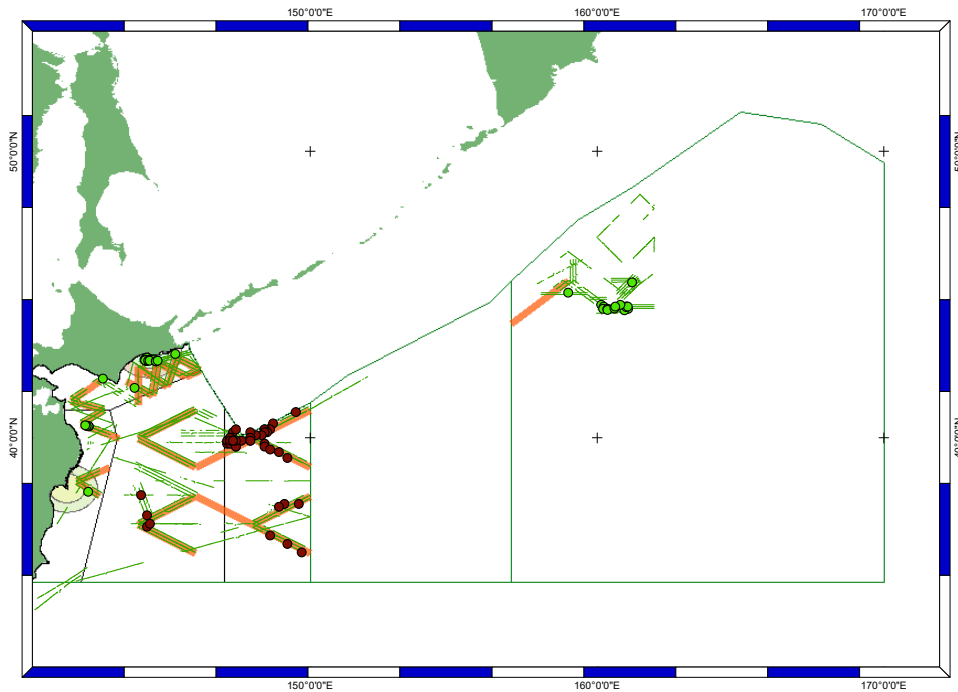


Figure 2. 2000 JARPNII in late season (July, August, September and October)

The survey in 2000 was conducted only in late season.

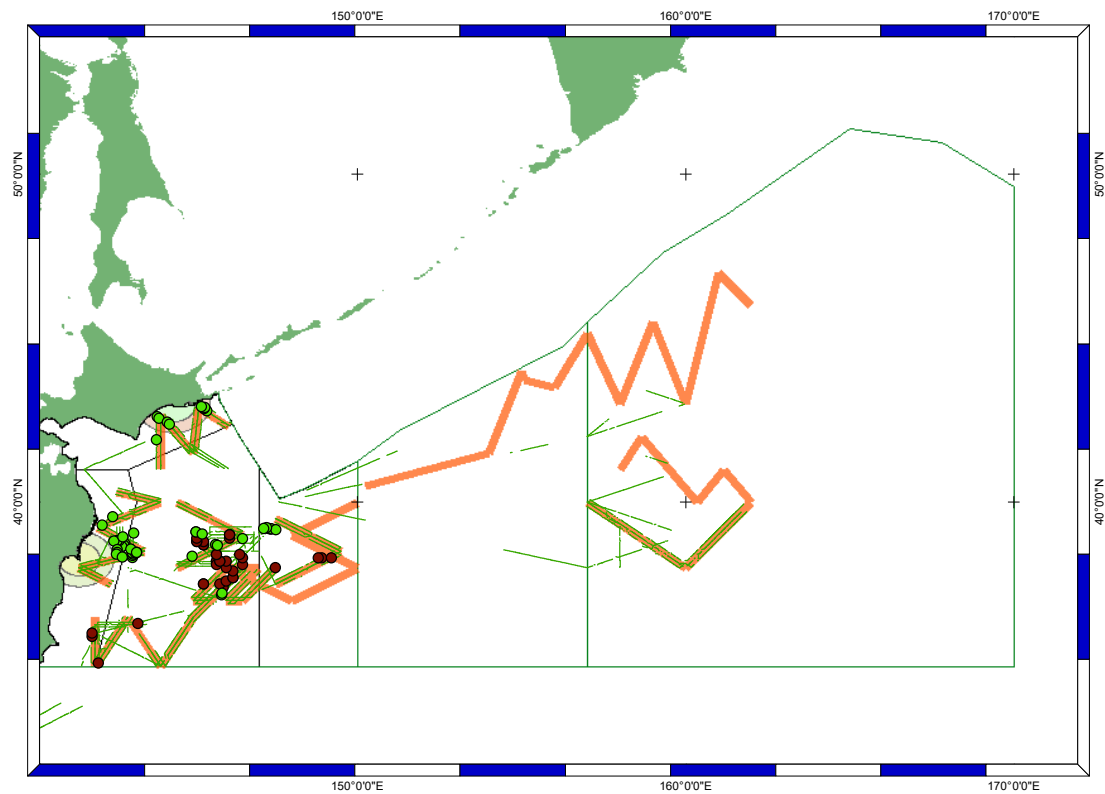


Figure 3. 2001 JARPNII in early season (April, May and June).

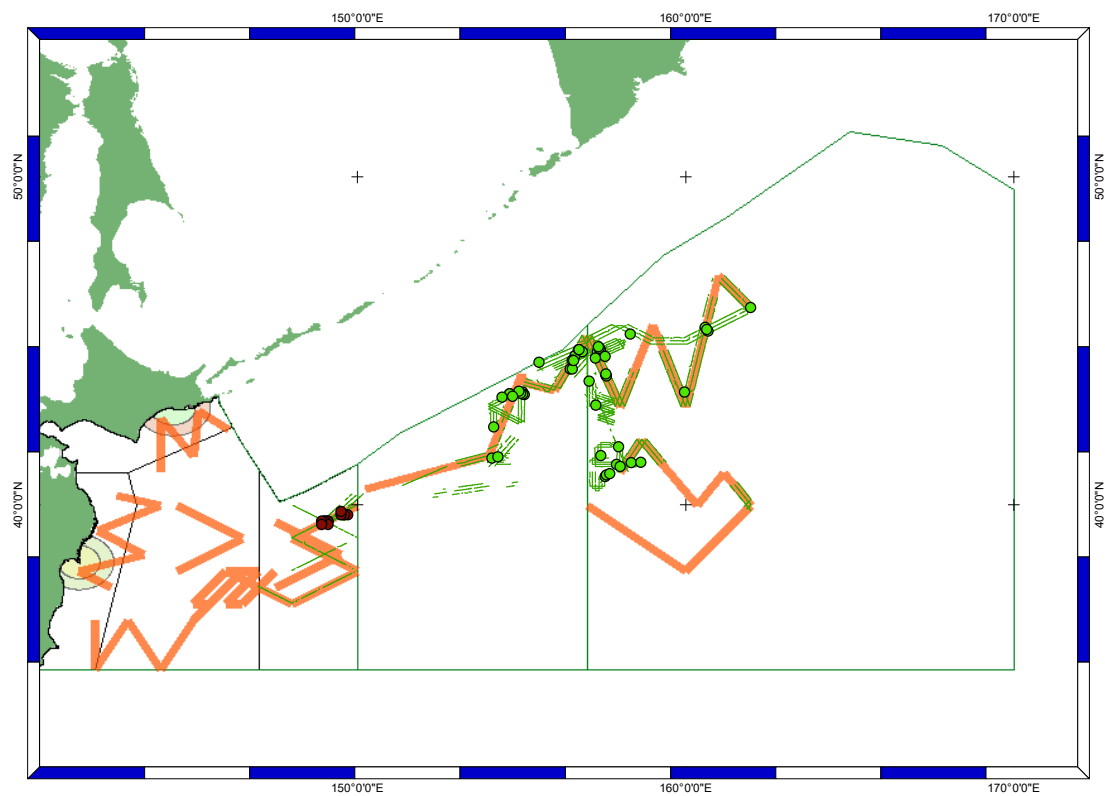


Figure 4. 2001 JARPNII in late season (July, August, September and October).

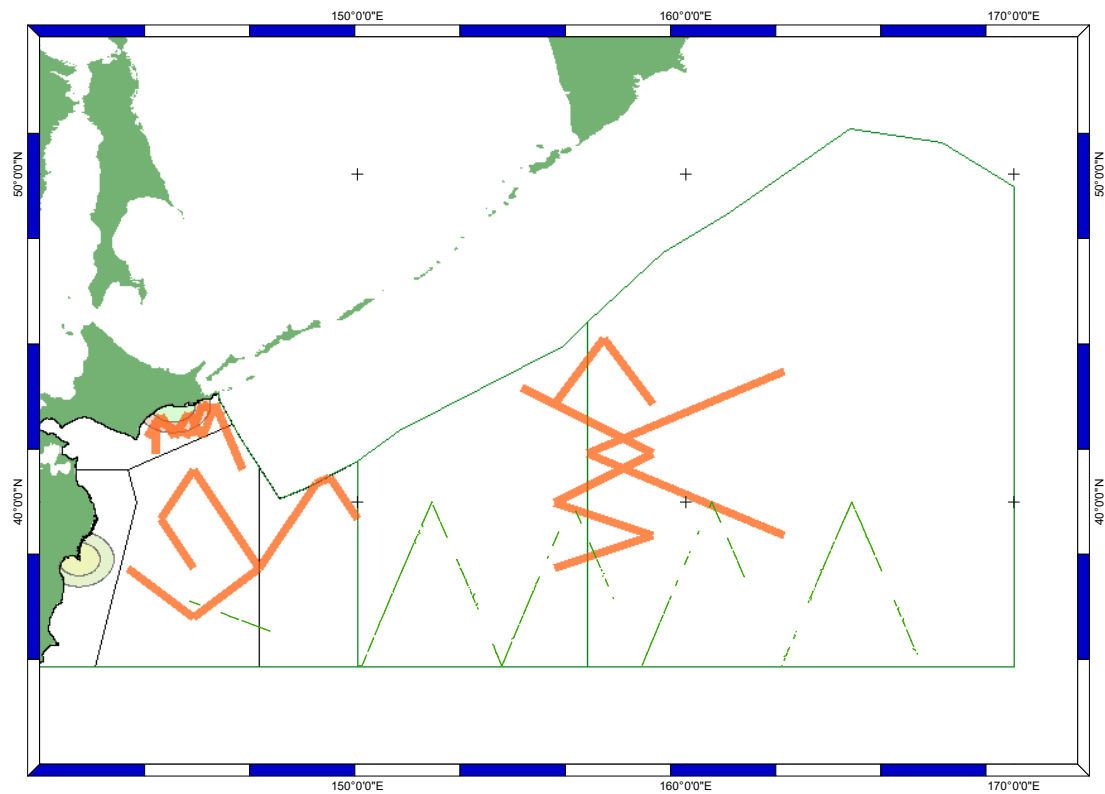


Figure 5. 2002 JARPNII in early season (April, May and June).

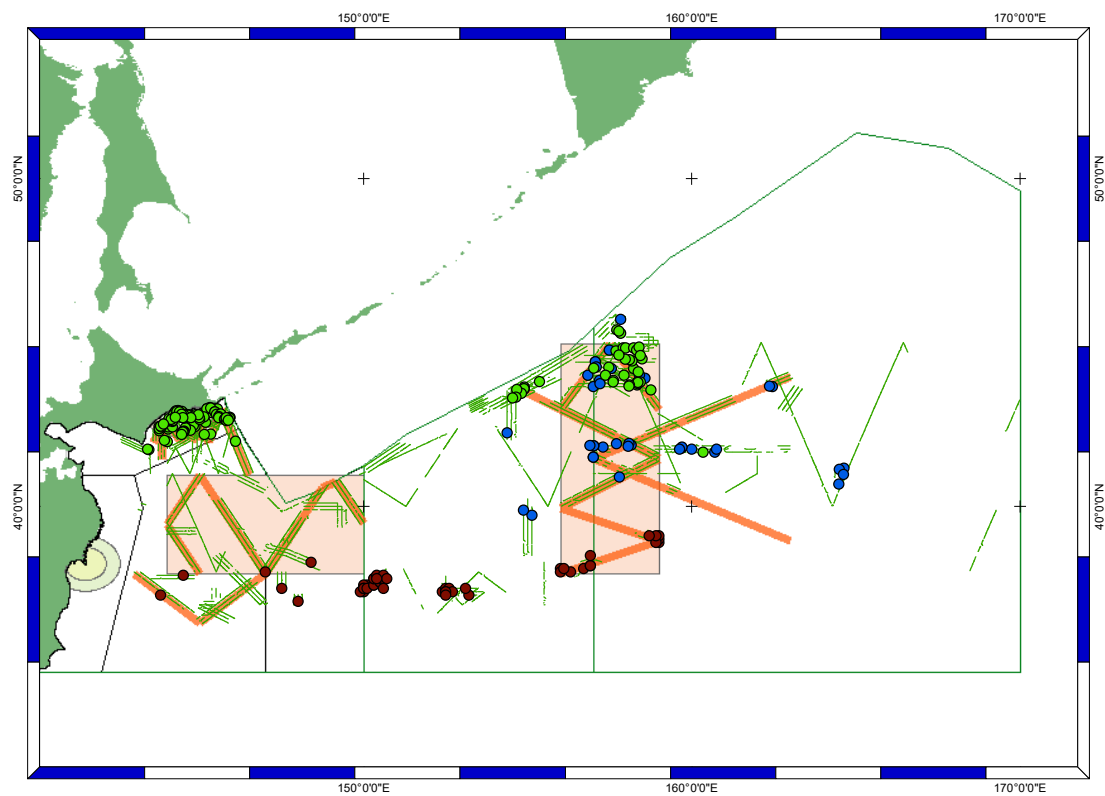


Figure 6. 2002 JARPNII in late season (July, August, September and October).

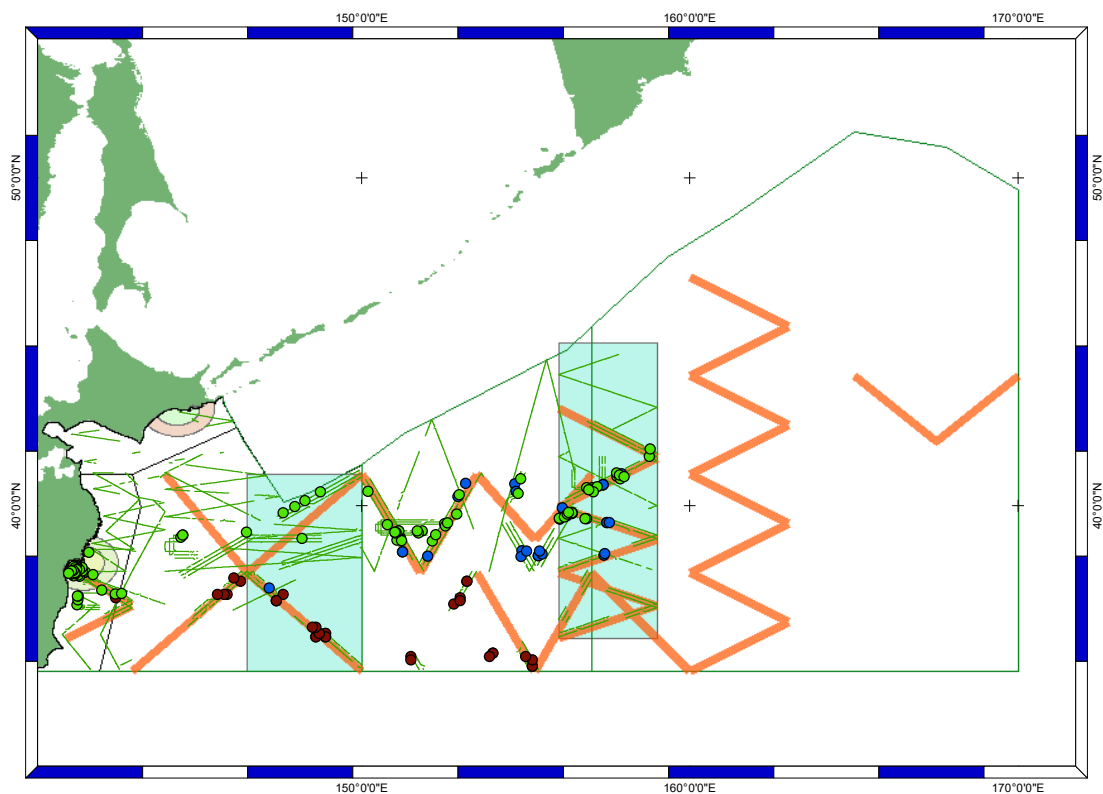


Figure 7. 2003 JARPNII in early season (April, May and June).

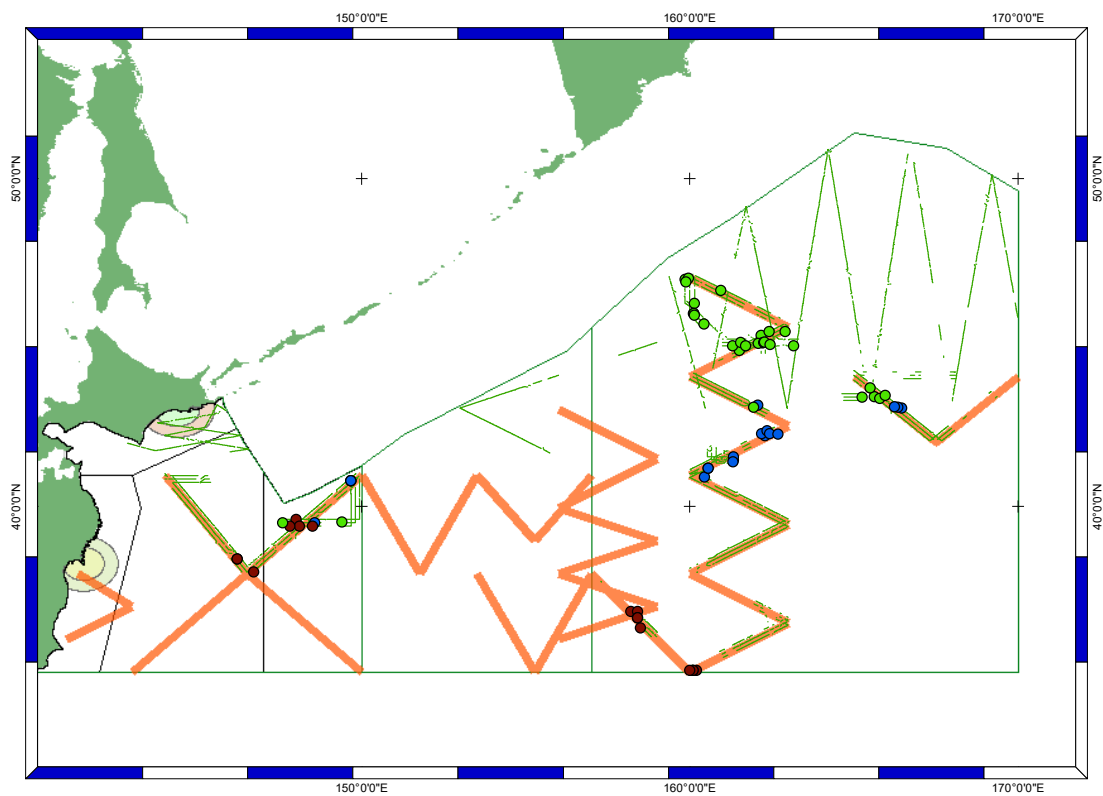


Figure 8. 2003 JARPNII in late season (July, August, September and October).

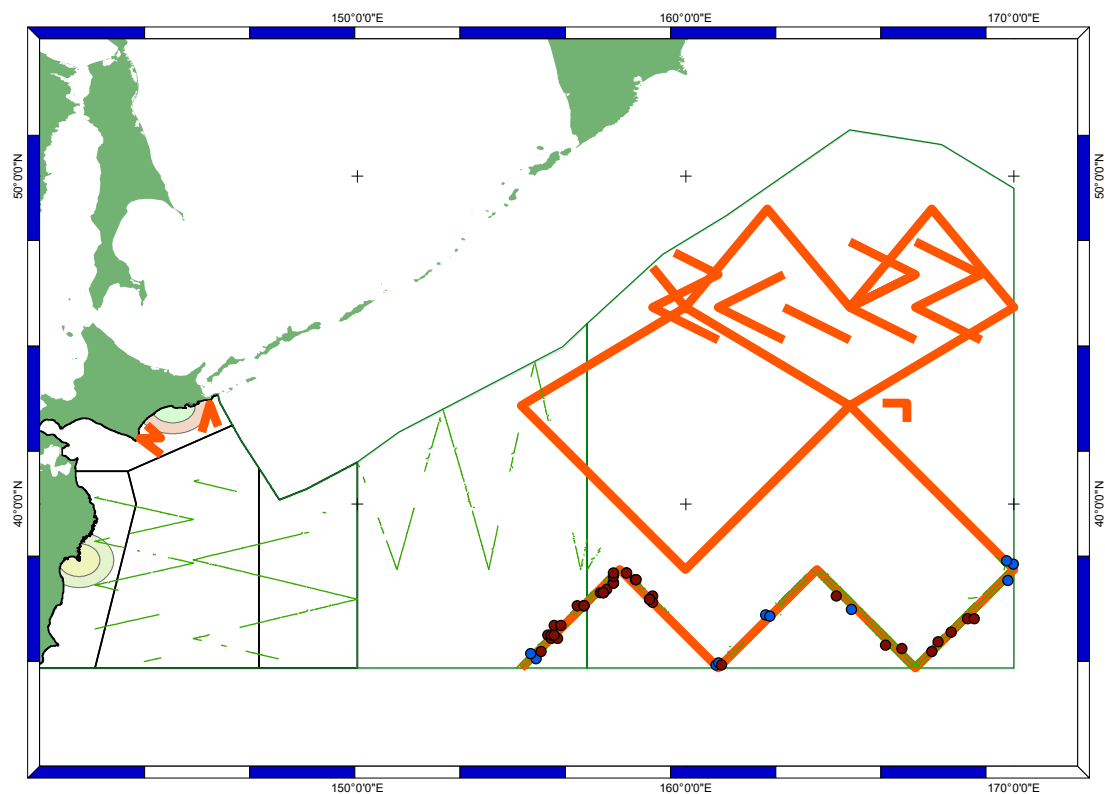


Figure 9. 2004 JARPNII in early season (April, May and June).

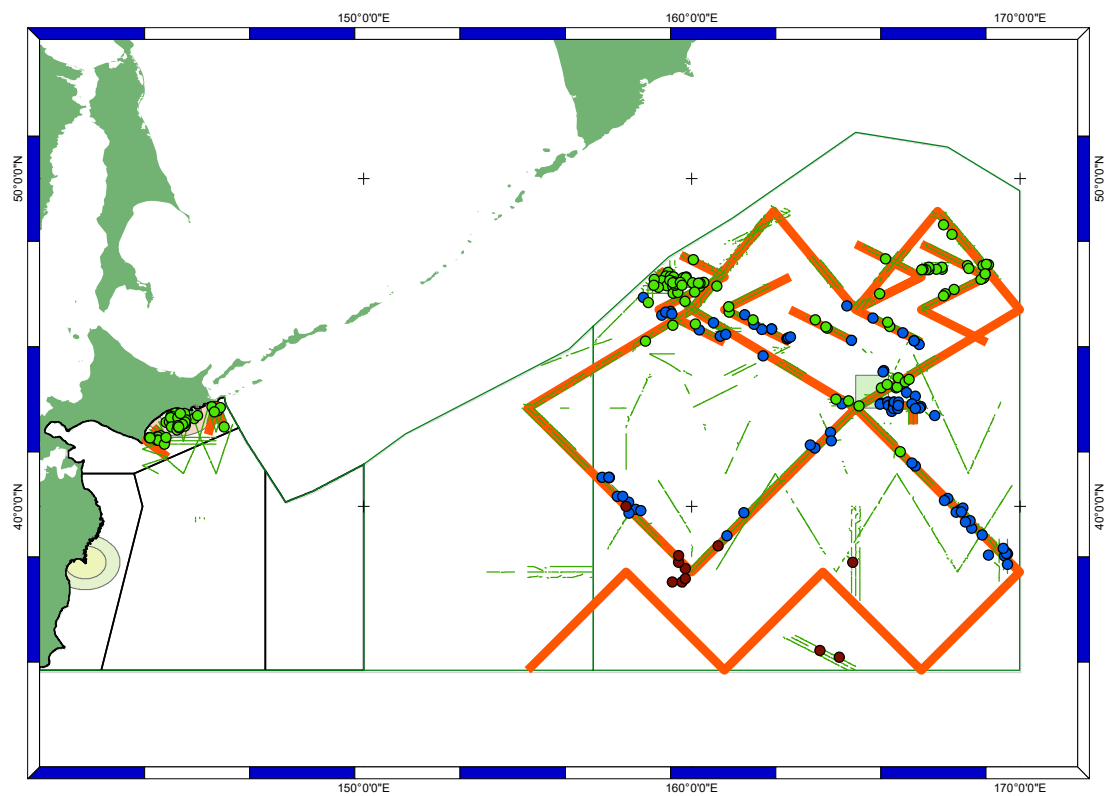


Figure 10. 2004 JARPNII in late season (July, August, September and October).

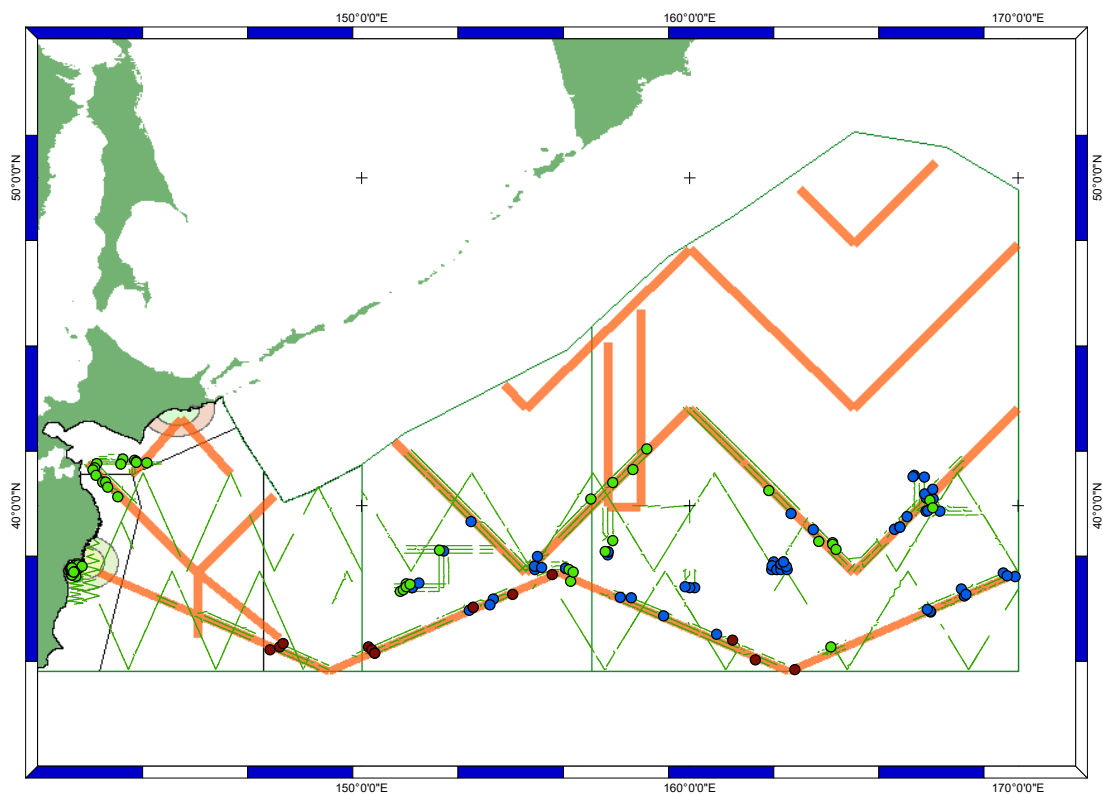


Figure 11. 2005 JARPNII in early season (April, May and June).

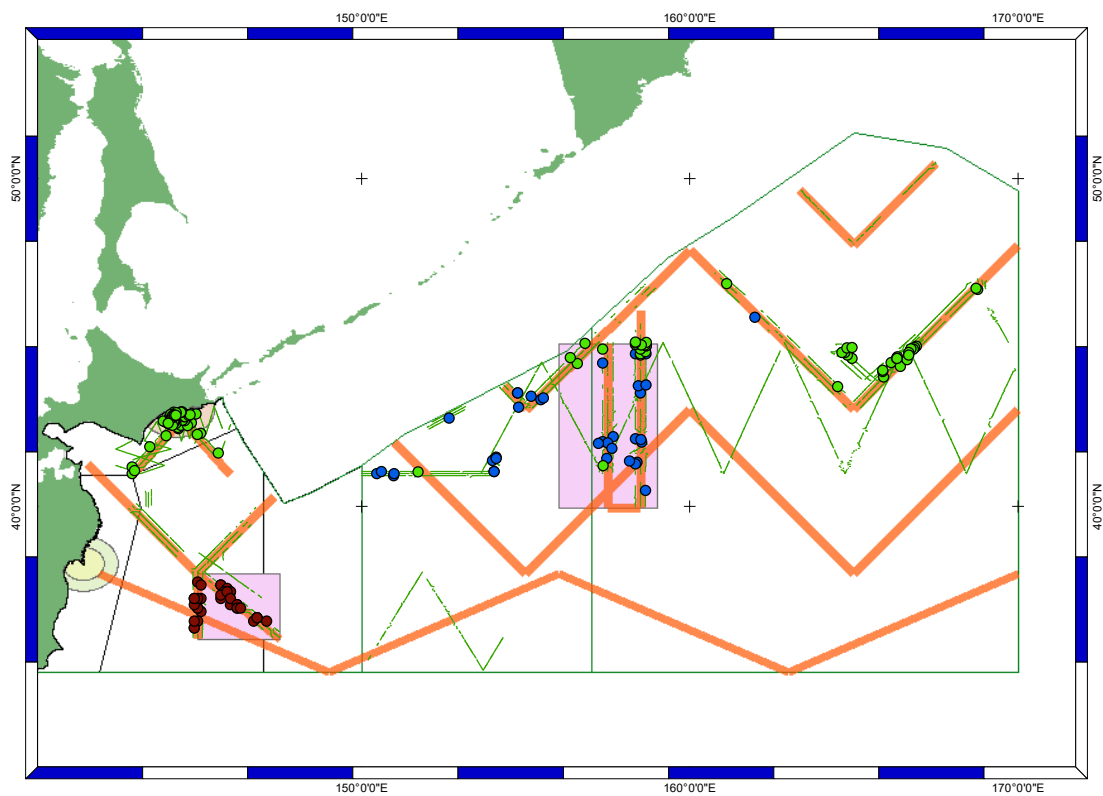


Figure 12. 2005 JARPNII in late season (July, August, September and October)

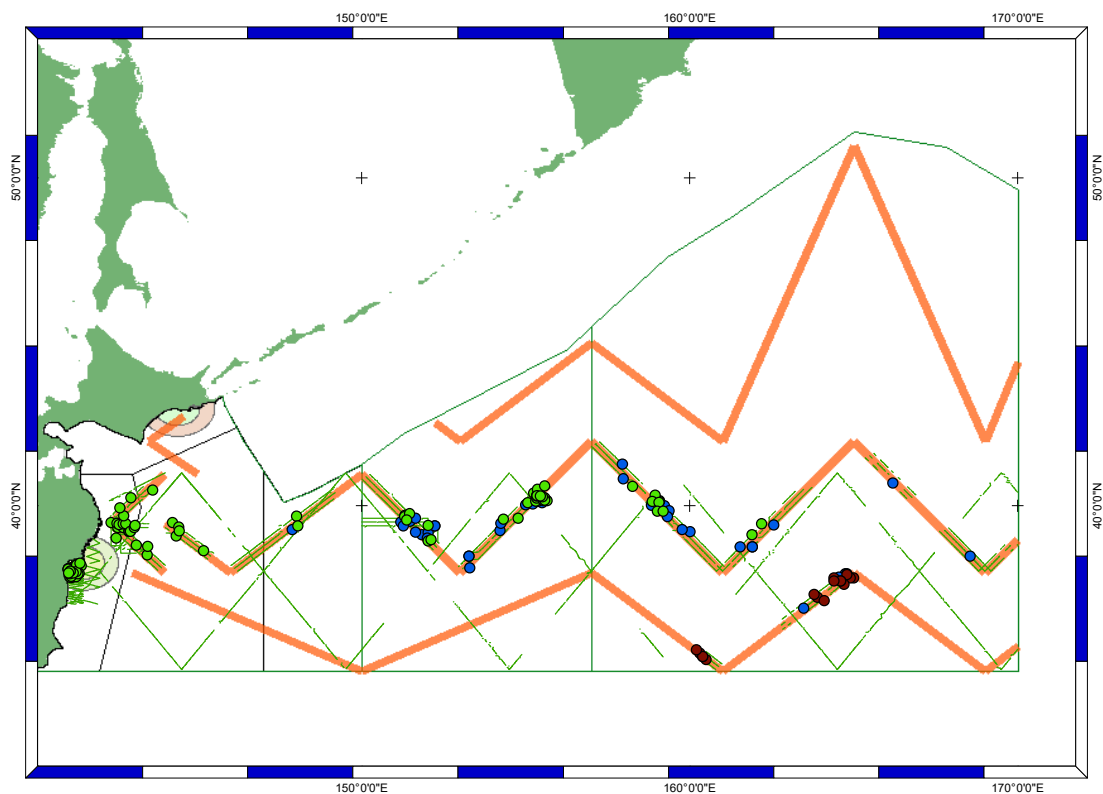


Figure 13. 2006 JARPNII in early season (April, May and June).

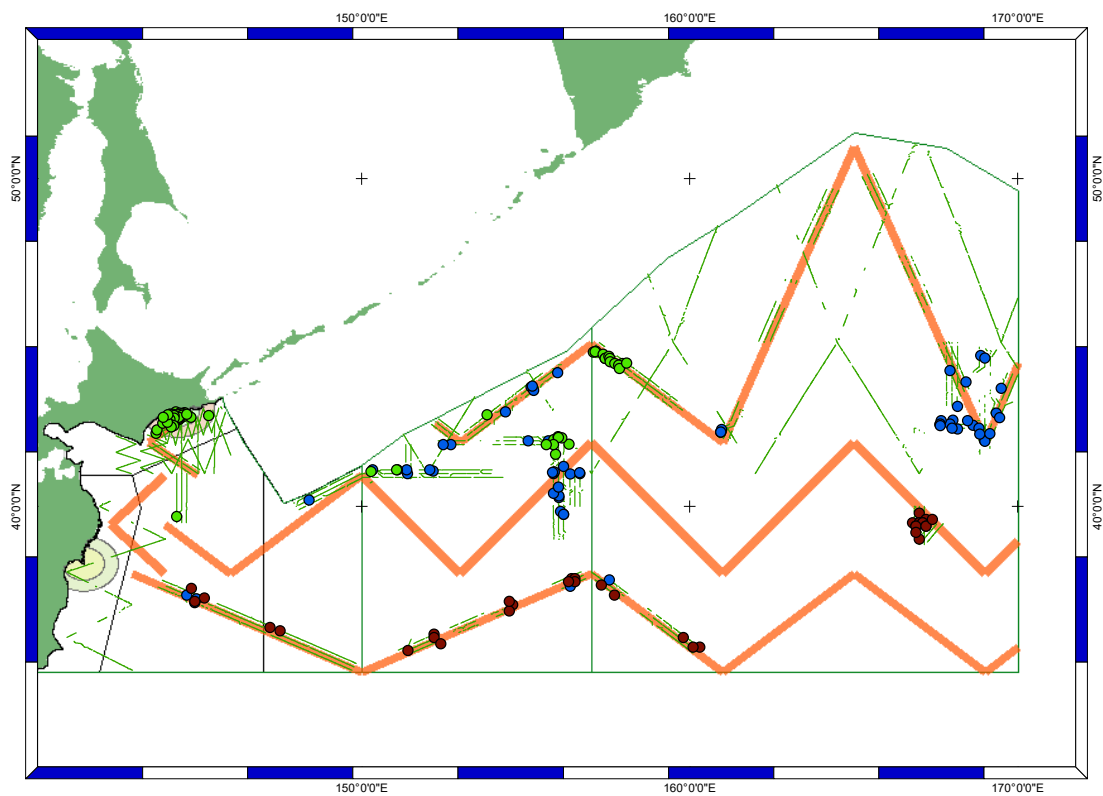


Figure 14. 2006 JARPNII in late season (July, August, September and October)

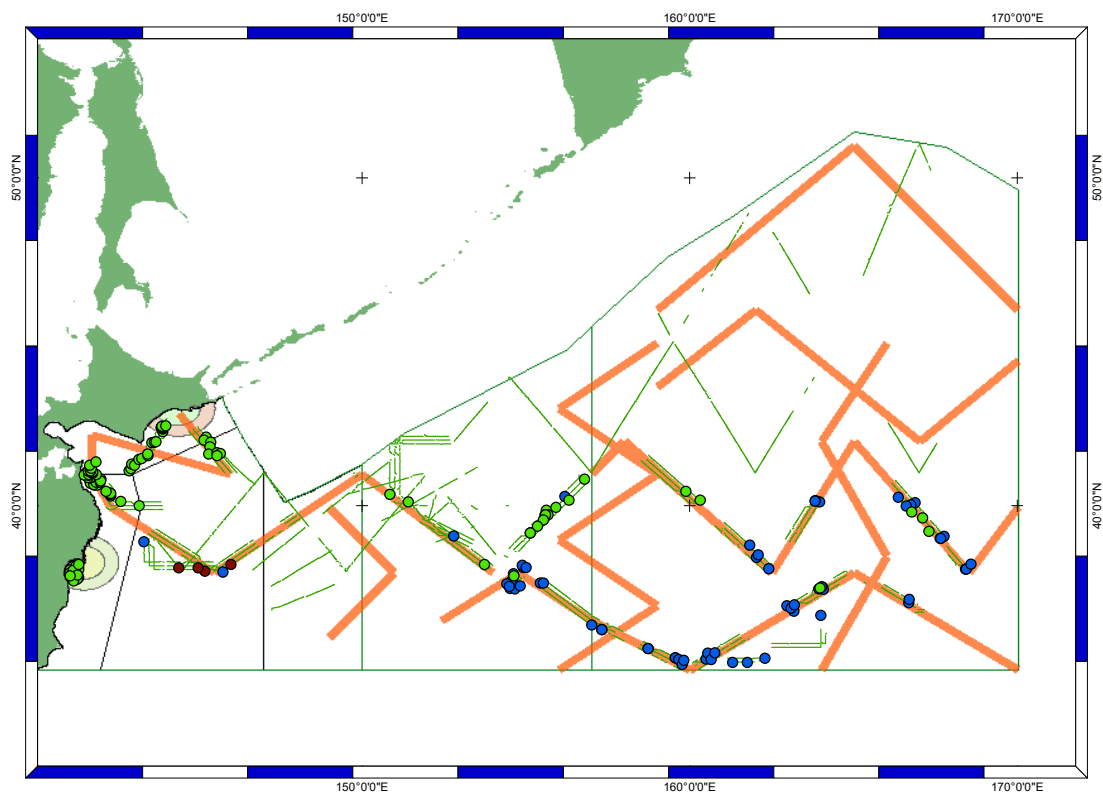


Figure 15. 2007 JARPNII in early season (April, May and June)

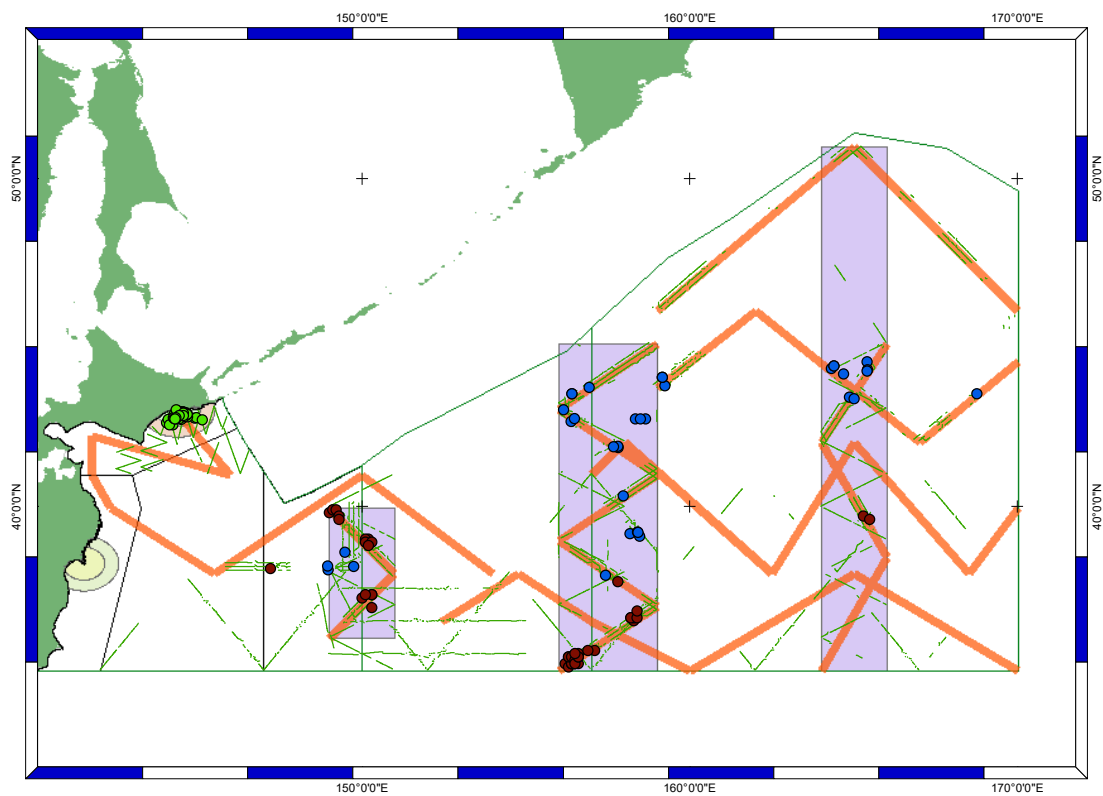


Figure 16. 2007 JARPNII in late season (July, August, September and October)

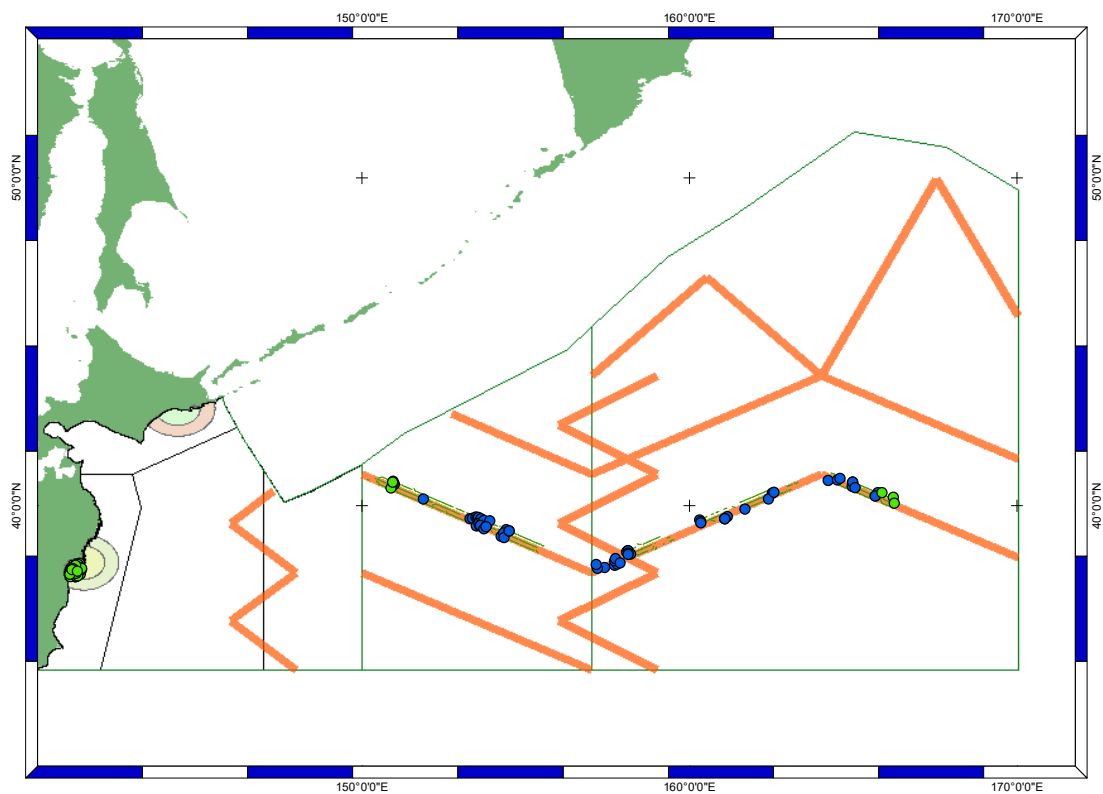


Figure 17. 2008 JARPNII in early season (April, May and June)

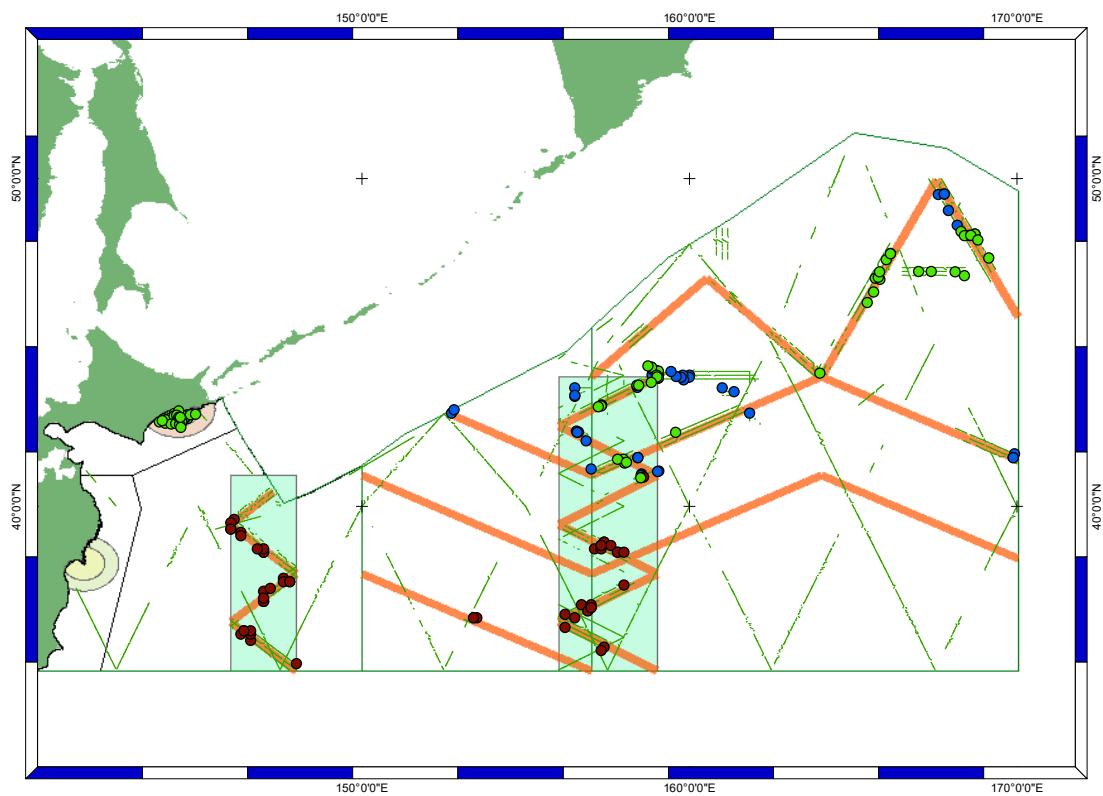


Figure 18. 2008 JARPNII in late season (July, August, September and October)

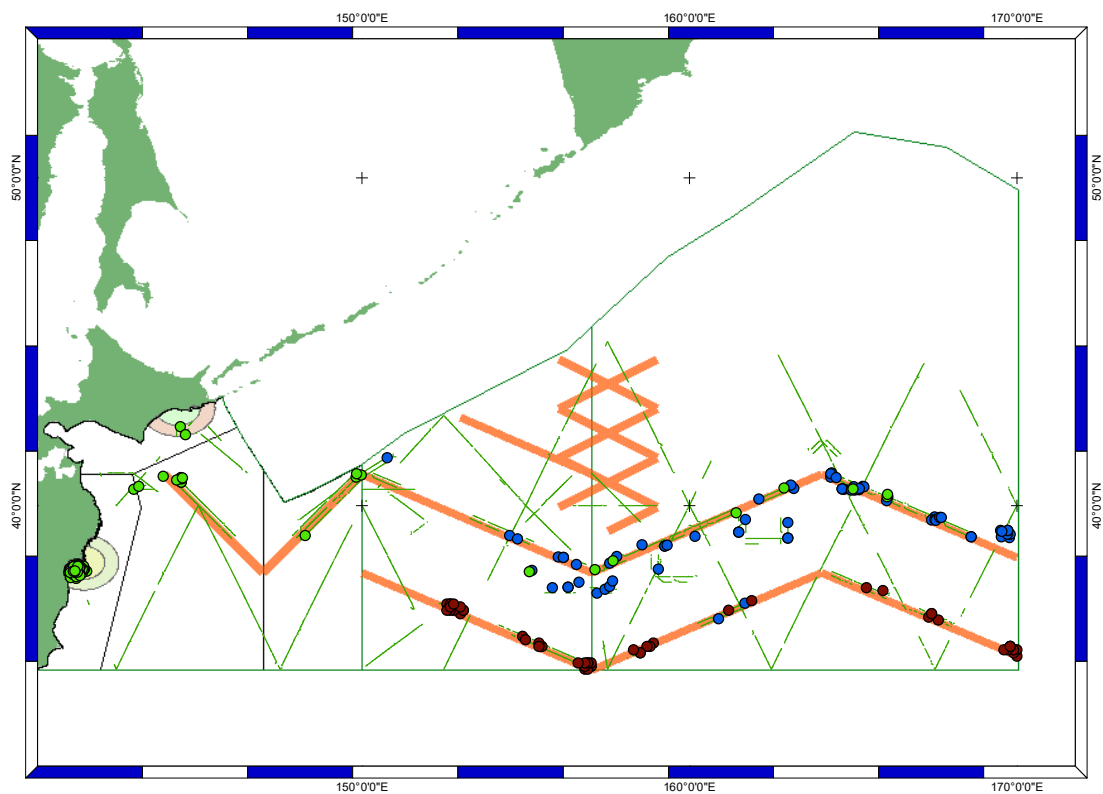


Figure 19. 2009 JARPNII in early season (April, May and June)

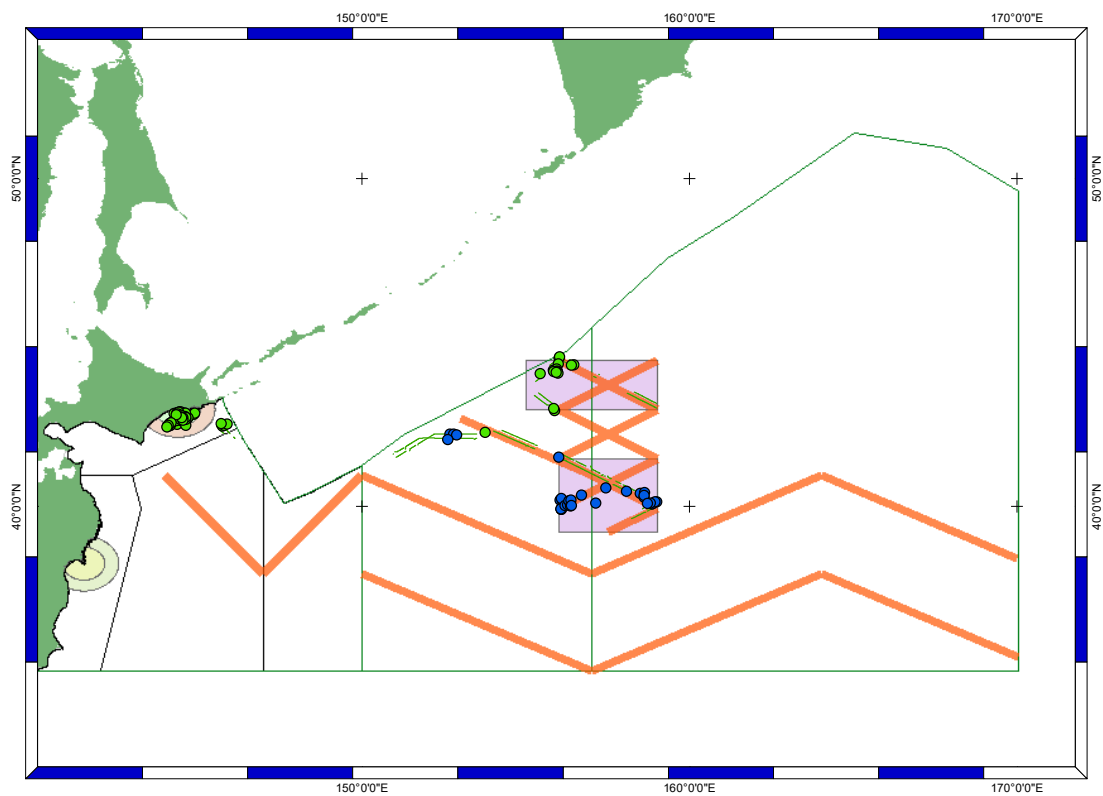


Figure 20. 2009 JARPNII in late season (July, August, September and October)

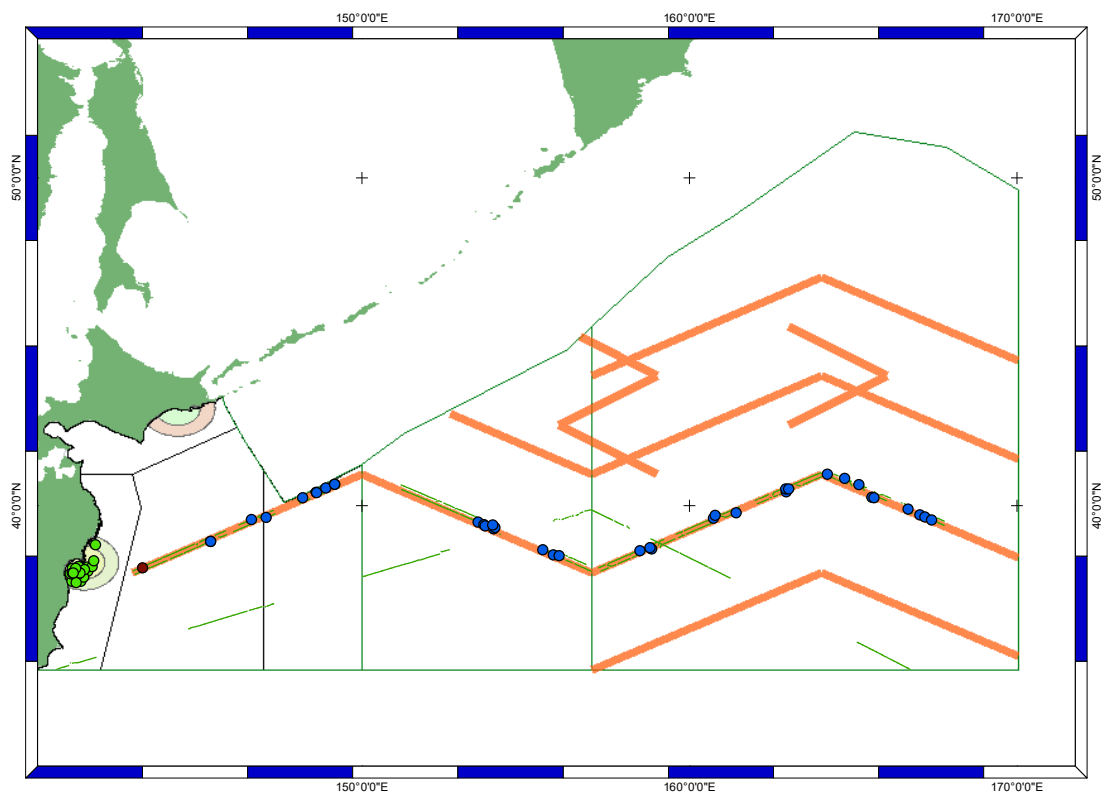


Figure 21. 2010 JARPNII in early season (April, May and June)

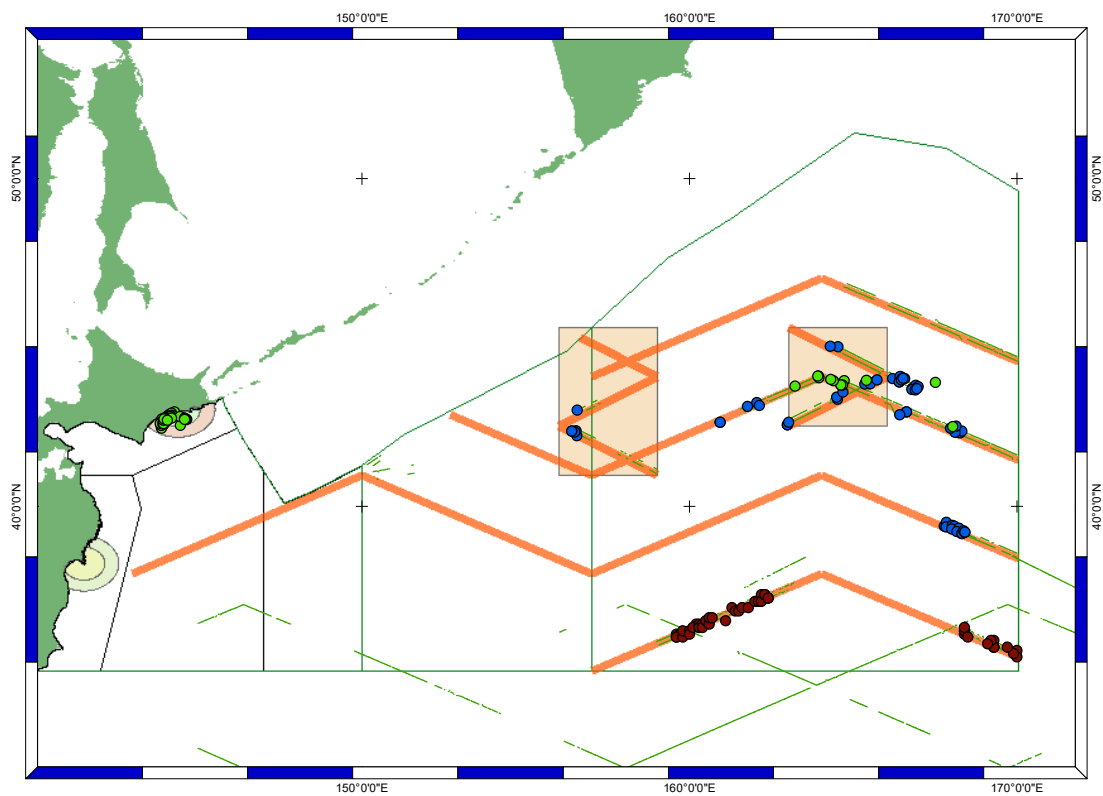


Figure 22. 2010 JARPNII in late season (July, August, September and October)

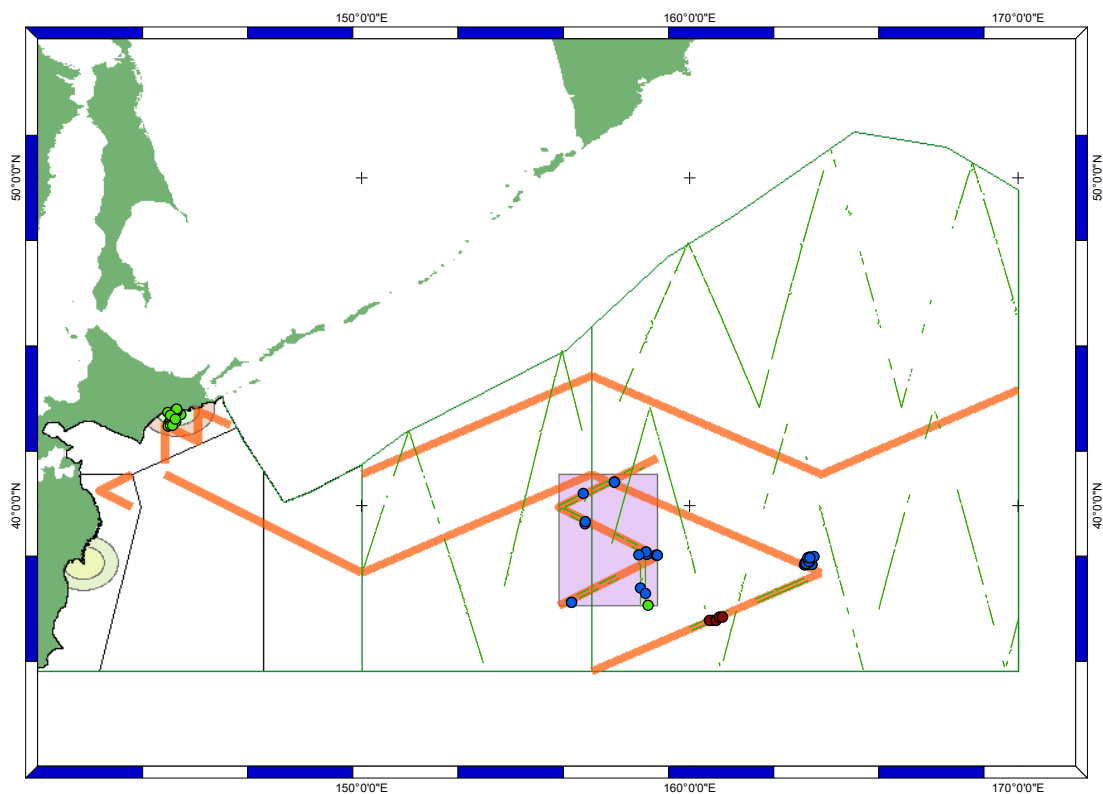


Figure 23. 2011 JARPNII in early season (April, May and June)

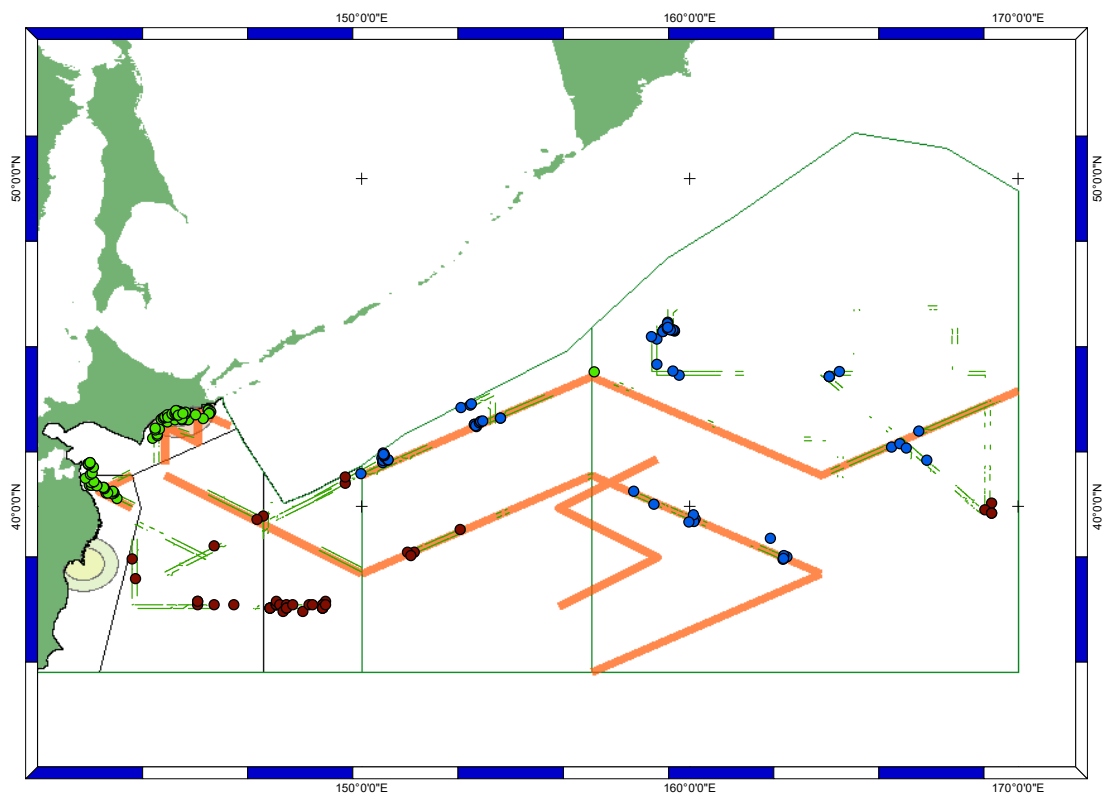


Figure 24. 2011 JARPNII in late season (July, August, September and October)

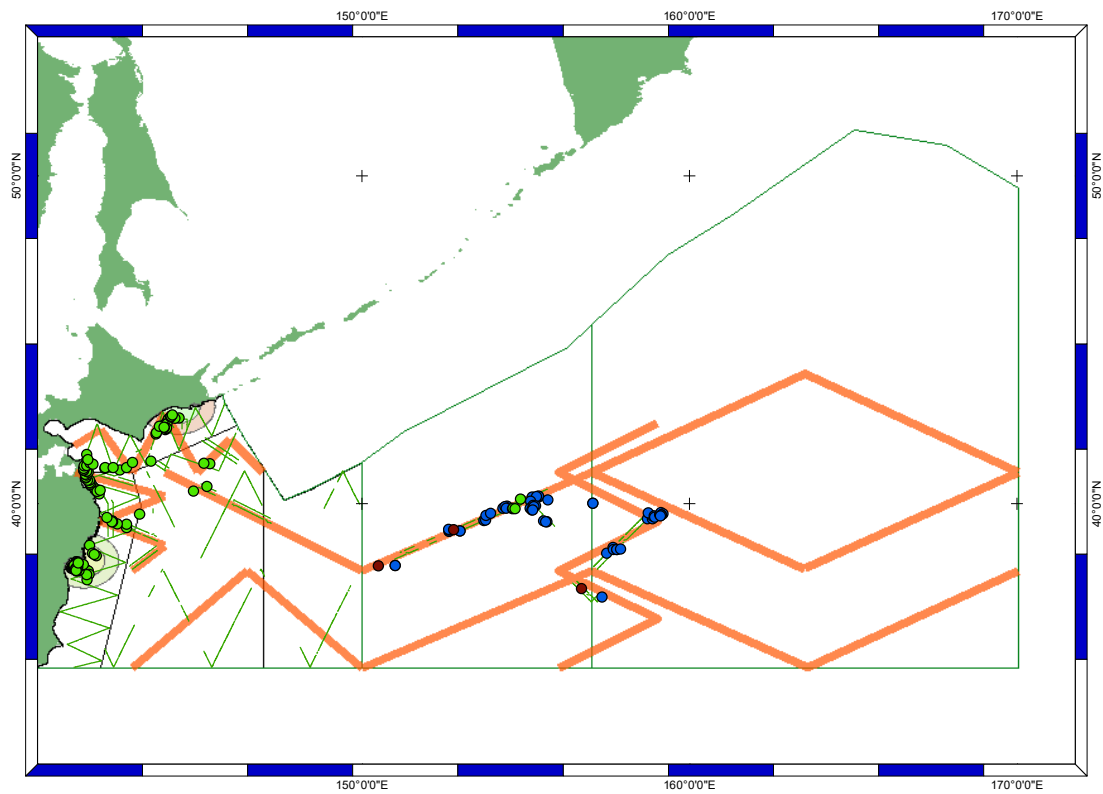


Figure 25. 2012 JARPNII in early season (April, May and June).

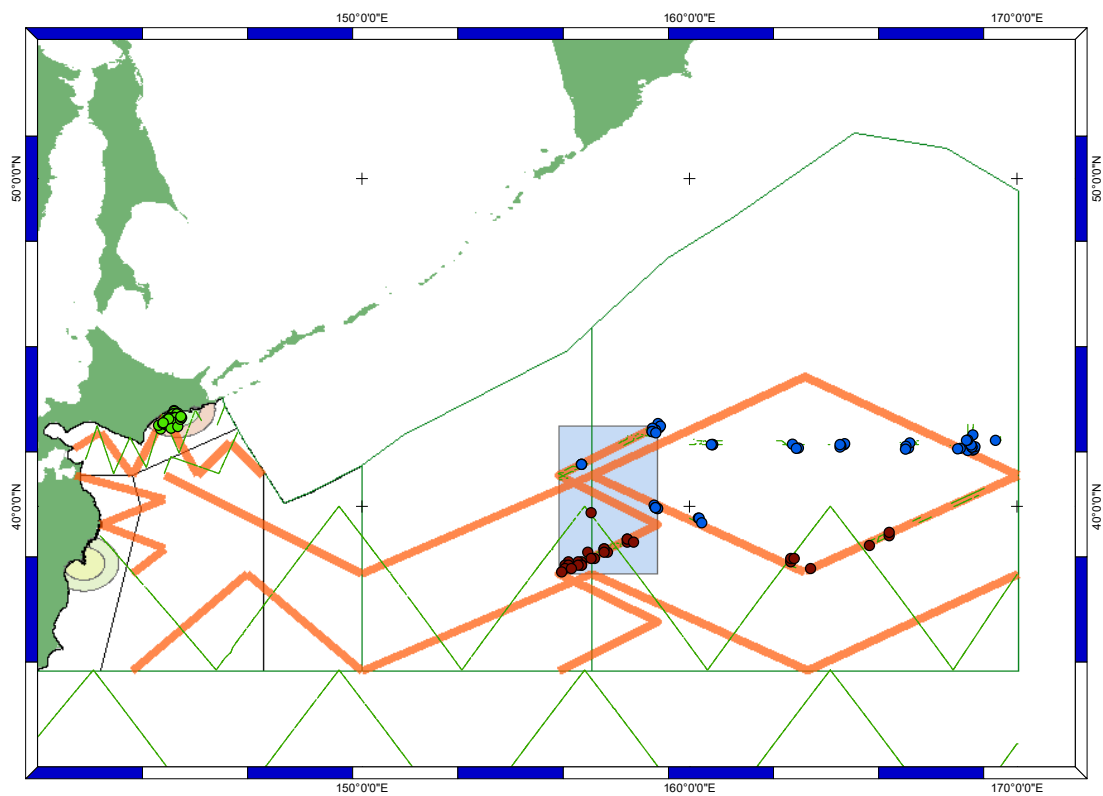


Figure 26. 2012 JARPNII in late season (July, August, September and October).

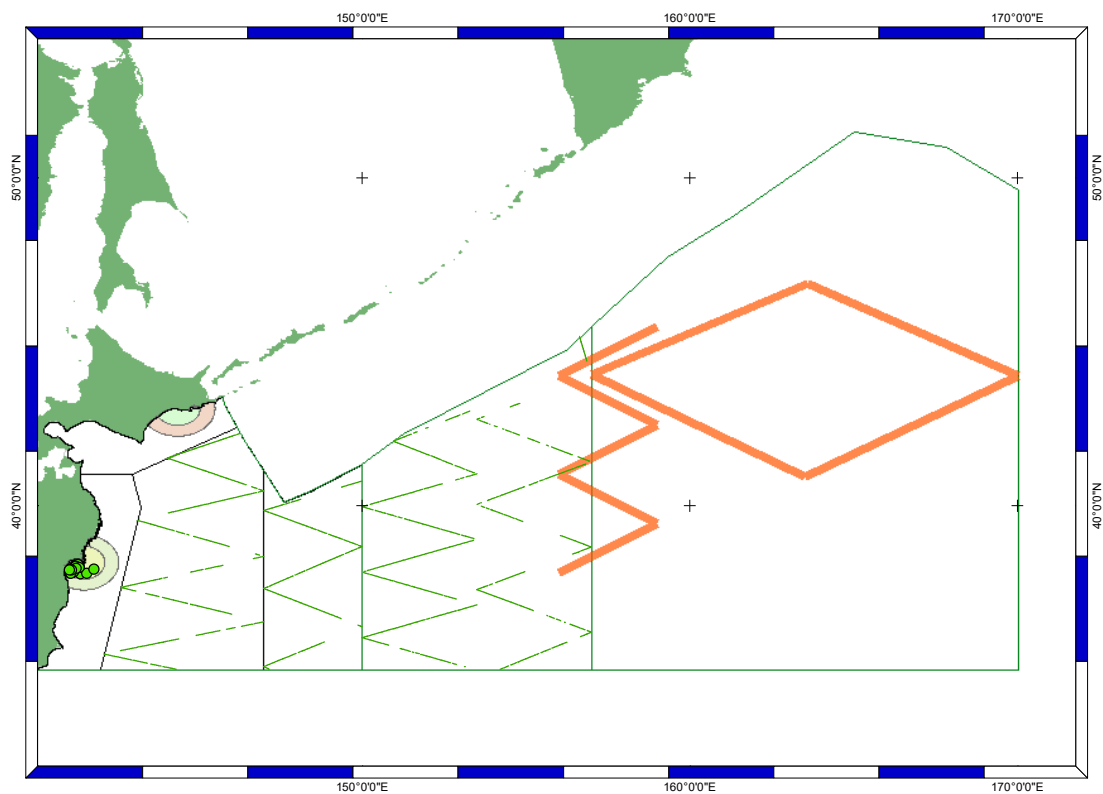


Figure 27. 2013 JARPNII in early season (April, May and June).

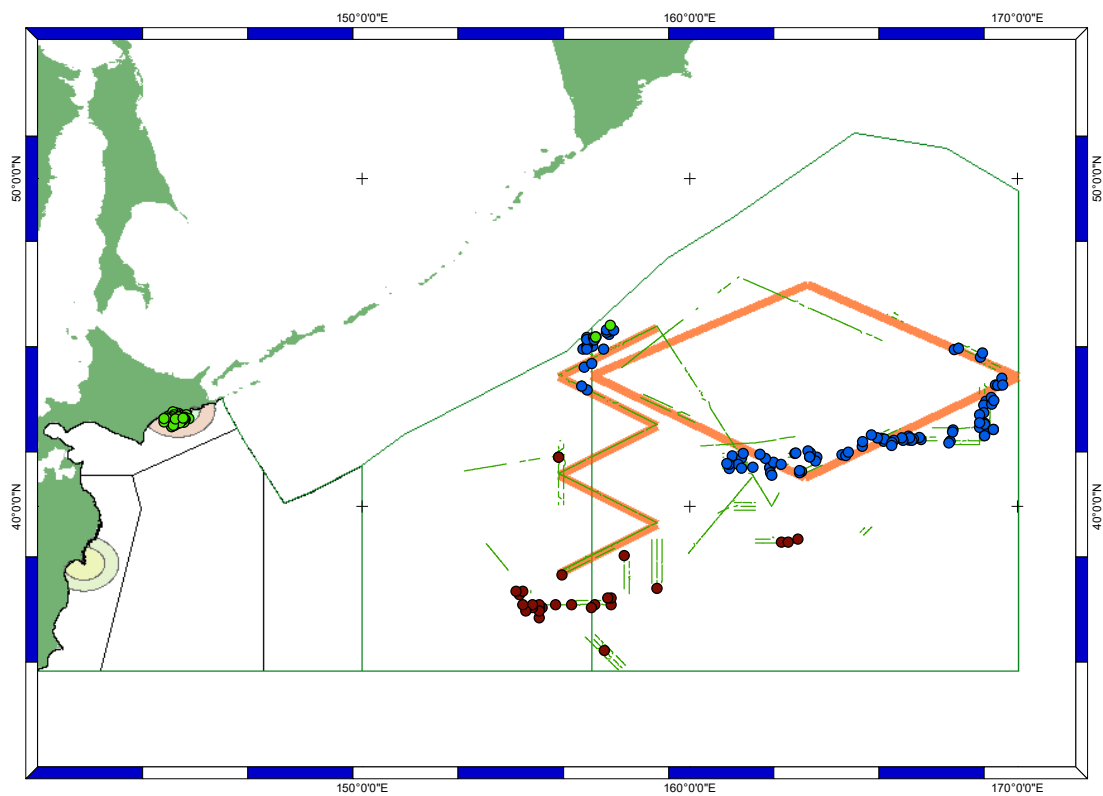


Figure 28. 2013 JARPNII in late season (July, August, September and October).