Agreement on the Conservation of Albatrosses and Petrels

Eighth Meeting of the Seabird Bycatch Working Group

Wellington, New Zealand, 4 – 6 September 2017

New Zealand's Integrated Electronic Monitoring and Reporting System for Commercial Fisheries

J. P. Pierre (MPI)

SUMMARY

The New Zealand Government is developing a new commercial fisheries reporting and monitoring system comprising:

a. Electronic fisheries catch and effort reporting by fishers,

b. Automated position reporting from fishing operations, and,

c. Electronic monitoring using cameras on fishing vessels.

The purpose of the new system is to provide verifiable, accurate, integrated and timely data on commercial fishing activity to inform decisions of fisheries managers in Government and industry. Electronic catch and effort reporting will be phased in from 1 October 2017 – 1 April 2018, with electronic monitoring introduced from 1 October 2018 – 1 April 2020.

The new system will provide an unprecedented understanding of the extent of seabird bycatch in New Zealand commercial fisheries, and significantly improved information to support the characterisation of bycatch risks.

Over time, the larger and more robust information base emerging from the new reporting and monitoring system will enable better decision-making and more targeted management actions relating to seabird interactions with commercial fisheries.

1. REPORTING AND MONITORING IN NEW ZEALAND COMMERCIAL FISHERIES

1.1. Current state

In New Zealand, commercial fisheries management is based on information including:

1. Fisher self-reports on catch and fishing effort,
2. Information collected by government fisheries observers,
3. Position information automatically reported by Vessel Monitoring Systems (VMS) installed on some vessels, and,
4. Information produced from research programmes including those operated by the fishing industry, research providers, and universities.

While these components together comprise a large body of information, more comprehensive, finer scale, more timely, and verified information on fishing activities will provide for better fisheries management. For example, under the current regime, commercial fishery catch and fishing effort reporting is conducted primarily using a paper-based system from which data may not be available to end-users for three months or more after fishing events occur. Further, under the current system, around 17% of paper forms carry detectable errors that must be corrected (MPI 2016a).

Verification of fisher-reported information is another challenge. To date, the placement of government fisheries observers on commercial fishing vessels is the main method by which information self-reported by fishers can be verified in New Zealand. Fisheries observers monitor ~8 – 100% of fishing effort occurring in larger scale, offshore fisheries, and < 5% of fishing effort in inshore fisheries (MPI 2016a).

Amongst other knowledge gaps, the unknown accuracy of catch and effort reporting by fishers, and constraints on levels of observer monitoring, have resulted in variable levels of understanding of the nature and extent of seabird interactions amongst commercial fisheries. Broadly, where observer coverage has been higher over time, interactions between seabirds and fisheries are better understood. Where observer coverage levels have been low or non-existent, interactions are generally poorly known. Further, even when information is sufficient to estimate bycatch rates and risks to seabird populations, these may be associated with significant uncertainty (MPI 2016b)[1].

1.2. Development and implementation of electronic reporting and monitoring

The Integrated Electronic Monitoring and Reporting System (IEMRS) concept was developed to address issues with the current reporting and monitoring framework that underpins commercial fisheries management in New Zealand. The purpose of IEMRS is to provide verifiable, accurate, integrated and timely data on commercial fishing activity to inform decisions of fisheries managers in Government and industry (MPI 2016a). IEMRS comprises

[1] https://psc.dragonfly.co.nz/

three components that will be supported by the integration of data within New Zealand's Ministry for Primary Industries. The components of IEMRS are:

1. Electronic commercial fisheries catch and effort reporting by fishers,
2. Automated geospatial position reporting from commercial fishing operations, and,
3. Electronic monitoring using cameras on commercial fishing vessels.

The New Zealand government has implemented new regulations to underpin IEMRS (New Zealand Government 2017a, 2017b, 2017c). These regulations apply from 1 October 2017, as follows:

1. Electronic fisheries catch and effort reporting

   The transition to mandatory electronic catch and effort reporting starts with larger trawl vessels ($\geq$ 28 m in length) from 1 October 2017. All commercial fishing operators will be required to report catch and effort information electronically from 1 April 2018.

2. Automated geospatial position reporting

   Automated position reporting requirements come into force similarly, with larger trawl vessels ($\geq$ 28 m in length) required to comply from 1 October 2017[2]. All other commercial fishing operators are required to adopt automated position reporting from 1 April 2018.

3. Electronic monitoring using cameras on fishing vessels.

   Electronic monitoring (EM) using on-vessel cameras will apply from 1 October 2018, and will be implemented using a phased approach across fishing methods and vessels of different sizes (Table 1). Implementation phasing was developed based on a broad consideration of sustainability risks (for fish stocks comprising commercial catch, bycatch, and protected species including seabirds), compliance risks (e.g. misreporting), and potential challenges with technology adoption. Vessels used solely for hand-gathering and diving are currently exempt, because monitoring objectives are unlikely to be met effectively using EM. However, policy provisions are in place for these vessels to be brought under EM in future, if considered appropriate given monitoring objectives.

For electronic reporting and geospatial position reporting, adoption of the new requirements by industry will be facilitated using an assisted compliance approach, focused on education and building understanding of the new requirements amongst the commercial sector.

The technical details for the new reporting and monitoring system are articulated as standards and specifications. These standards and specifications are contained in tertiary legislation and are able to be updated as requirements change and technology develops over time. Standards and specifications include system security specifications, required frequency and timing of reporting geospatial positions, definitions of data fields comprising electronic reports, camera

[2] Note that these vessels already carry Vessel Monitoring Systems, as required under pre-existing regulations.

views that are required for EM, and other technical details. The intent of implementing a standards-based approach is to enable industry innovation and the development of value-added approaches that still comply with the Government's new reporting and monitoring requirements.

Table 1. The phase-in of electronic monitoring across New Zealand commercial fishing vessels.

Date	Fishing method	Vessel length
1 October 2018	Surface longlining	Any length
	Trawling	< 28 m
1 February 2019	Bottom longlining	≥ 7 m
	Danish seining	Any length
	Purse seining	Any length
	Set netting	≥ 7 m
1 July 2019	Potting	Any length
	Trawling	≥ 28 m
1 October 2019	Dredging	Any length
	Trolling	Any length
1 April 2020	Bottom longlining	< 7 m
	Set netting	< 7 m
	Any other fishing method except hand-gathering and diving	Any length

2. IMPLICATIONS FOR THE MANAGEMENT OF ACAP-LISTED SEABIRDS

2.1. Bycatch risk, estimation and management

For ACAP-listed seabirds, a key outcome from IEMRS will be an unprecedented understanding of the extent of seabird bycatch, and significantly improved information enabling characterisation of bycatch risks (e.g. resulting from finer scale reporting of fishing effort, and EM imagery showing the implementation of regulated and non-regulated bycatch mitigation measures).

Over time, the larger and more robust information base emerging from the new reporting and monitoring system will enable better decision-making and more targeted management actions relating to seabird interactions with commercial fisheries.

3. NEXT STEPS

New Zealand's Ministry for Primary Industries is currently working with the commercial fishing sector on the implementation of electronic fisheries catch and effort reporting and automated geospatial position reporting. This includes concluding formal consultation and finalising standards and specifications for these reporting requirements[3].

Formal consultation will be initiated on standards and specifications for electronic monitoring later in 2017, focusing on technical requirements for EM systems.

In parallel, Government will continue to develop infrastructure to support and enable the new system, including data management, resourcing and staff.

[3] http://www.mpi.govt.nz/news-and-resources/consultations/draft-circulars-on-digital-monitoring-of-commercial-fishing/

4. REFERENCES

MPI. 2016a. Future of Our Fisheries Volume III: Integrated Electronic Monitoring and Reporting System. Consultation Document 2016. Ministry for Primary Industries, Wellington. Available at: https://mpi.govt.nz/document-vault/14668 [Accessed: 31/07/17]

MPI. 2016b. Aquatic Environment and Biodiversity Annual Review. Ministry for Primary Industries, Wellington. Available at: https://www.mpi.govt.nz/document-vault/16339 [Accessed: 31/07/17]

New Zealand Government. 2017a. Fisheries (Reporting) Regulations 2017. Available at: http://www.legislation.govt.nz/regulation/public/2017/0154/latest/DLM7324101.html?src=qs. [Accessed: 31/07/17]

New Zealand Government. 2017b. Fisheries (Geospatial Position Reporting) Regulations 2017. Available at: http://www.legislation.govt.nz/regulation/public/2017/0155/latest/DLM7330540.html?src=qs [Accessed: 31/07/17]

New Zealand Government. 2017c. Fisheries (Electronic Monitoring on Vessels) Regulations 2017. Available at: http://www.legislation.govt.nz/regulation/public/2017/0156/latest/DLM7329212.html?src=qs [Accessed: 31/07/17]