North Pacific Fisheries Commission

Species Summary for Neon Flying Squid

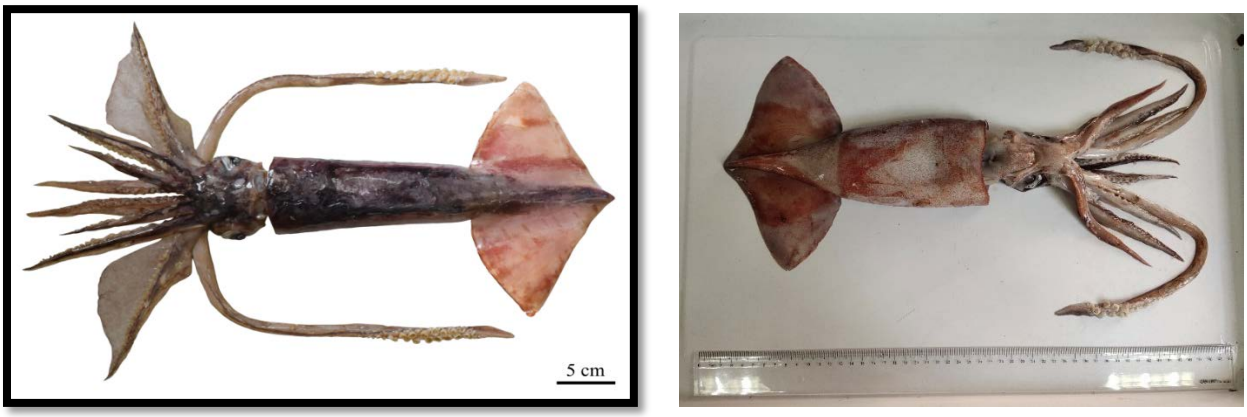

Figure 1. The pictures of neon flying squid

Neon Flying Squid (*Ommastrephes bartramii*)

Common names:

柔鱼 [rou yu] (Chinese); neon flying squid (English); アカイカ [akaika] (Japanese); 빨강오징어 [ppalgangojingeo] (Korean); Кальмар Бартрама [kalmar bartrama] (Russian); 赤魷 [chi-you] (Chinese Taipei).

Other common names: Red flying squid; Webbed flying squid; Red ocean squid (https://www.sealifebase.ca/comnames/CommonNamesList.php?ID=58132&GenusName=Ommastrephes&SpeciesName=bartramii&StockCode=3971)

Management

Active management measures

The following NPFC conservation and management measure (CMM) pertains to this species:

CMM 2025-11 For Japanese Sardine, Neon Flying Squid and Japanese Flying Squid

Available from https://www.npfc.int/active-conservation-and-management-measures.

Management summary

Does not specify catch limits.

Members of the Commission and CNCPs with substantial harvest of neon flying squid in the Convention Area shall refrain from expansion, in the Convention Area, of the number of fishing vessels authorized to fish such species from the historical existing level.

Members of the Commission and CNCPs without substantial harvest of the neon flying squid in the Convention Area are encouraged to refrain from expansion, in the Convention Area, of the number

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of fishing vessels entitled to fly their flags and authorized to fish for such species from the historical existing level.

Members of the Commission participating in fishing for the neon flying squid in areas under their jurisdiction adjacent to the Convention Area are requested to take compatible measures.

Table1. Management Summary

Convention/Management Principle	Status	Comment/Consideration
Biological reference point(s)		Not established.
Stock status		Status determination criteria not established.
Catch or effort limits		Recommended effort limits.
Harvest control rule		Not established.
Other		

Stock assessment

No unified stock assessment has been conducted by NPFC for the species.

Some members have conducted stock assessment or related studies for neon flying squid based on the information only from their own fisheries or surveys (Ichii et al. 2006; Chen, 2010; Cao et al. 2014).

Data

Survey

Japan conducted drift net survey in summer from 1999-2024 and jigging survey in winter from 2018-2024. Russia conducted upper epipelagic surveys from 1984-1992 and from 1999-2019 (see details in Table 2). China conducted squid jigging survey in summer from 2021-2024.

Fishery

Neon flying squid was harvested by China, Japan, Korea, Russia, Chinese Taipei and Vanuatu. Fishing methods included jigging, drift net, dip net and set net.

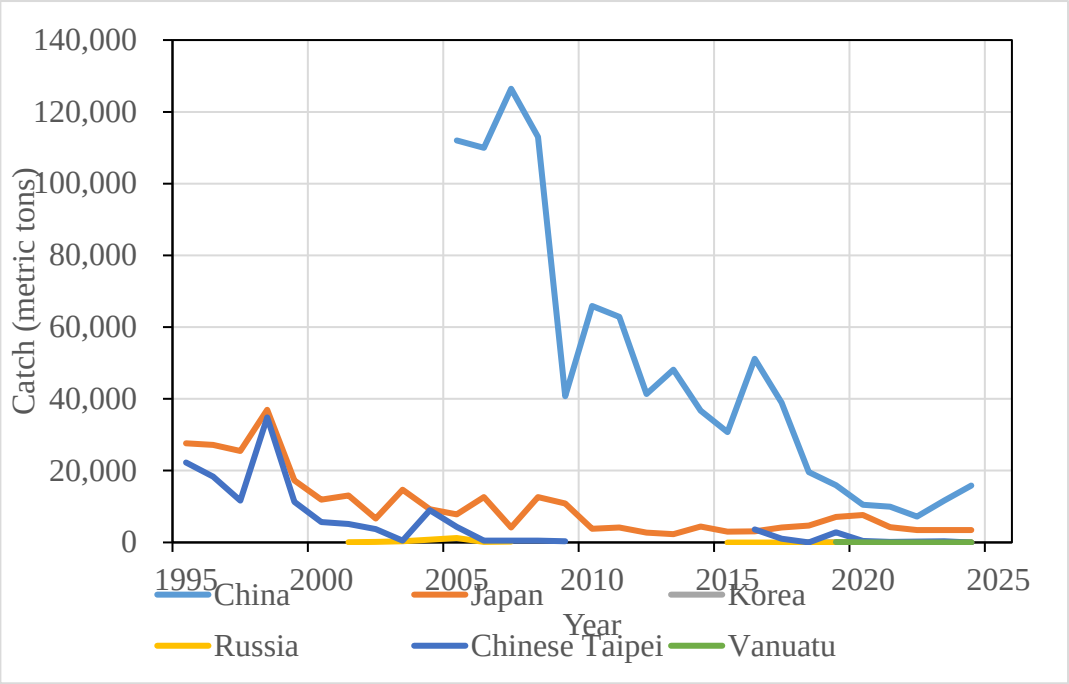

Figure 2. The historical catch of neon flying squid reported by members.

Data availability

Table 2. Data availability from Members regarding neon flying squid

Category and data sources	Description	Years with available data	Average sample size/ year or data coverage	Potential issues to be reviewed
CHINA				
Catch statistics				
Squid-jigging fisheries	Official statistics, reports from annual report	Official statistics: 2005-2024 Fishery data before 2005 (need to be confirmed)	Coverage = 100%	The neon flying squid catches are obtained from the fisheries logbook data provided by the fisheries company
Size composition data				

Length measurements	Sampling from commercial squid-jigging fishing vessels	2010-2018 Data before 2005 (need to be confirmed)	800-1000 fish/year	May lack representativeness
Aging	Sampling from commercial squid-jigging fishing vessels	2010-2016 Data before 2005 (need to be confirmed)	80-200 fish/year	May lack representativeness
Abundance indices (commercial)				
Squid-jigging fisheries	Squid-jigging logbook	1995-2022 Fishery data before 2005 (need to be confirmed)	Coverage= 100%	

Category and data sources	**Description**	**Years with available data**	**Average sample size/ year or data coverage**	**Potential issues to be reviewed**
JAPAN				
Catch statistics				
Jigging fishery	Logbook	1995-2024	Coverage=100%	
Size composition data				
Length and weight measurements	Drift net survey (Summer)	1999-2024	500-600 squid/year	
	Jigging survey (Winter)	2018-2024	300-400 squid/year	
Abundance indices (survey)				

Summer survey on abundance of the autumn and winter-spring cohorts	Drift net survey CPUE for each cohort (individuals/panel)	1999-2024	20-30 stations/year	Small samples of male and matured female for the autumn cohort
Winter survey on abundance of the winter-spring cohort	Jigging survey CPUE (individuals/line)	2018-2024	12-16 stations/year	
Abundance indices (commercial)				
Jigging fishery	Logbook Standardized CPUE of the winter-spring cohort	1995-2023	Coverage=100%	Standardize CPUE for the autumn cohort

Category and data sources	**Description**	**Years with available data**	**Average sample size/ year or data coverage**	**Potential issues to be reviewed**
KOREA				
Catch statistics				
Jigging	Official statistics, reports from fisheries	2017, 2019 and 2021-2024	Coverage =100%	
Size composition data				
Length measurements	Measured by observers while onboard	2017, 2021, 2022	1000 squid/year	Measurement details to be reviewed
Abundance indices (commercial)				
Jigging	Logbook data available	2017, 2021, 2022	30-40 stations/year	Data coverage details to be reviewed

Category and data sources	**Description**	**Years with available data**	**Average sample size/year or data coverage**	**Potential issues to be reviewed**

RUSSIA				
Catch statistics				
Drift net fishery	Official statistics, reports from fisheries associations	Official statistics: 1982-1990, 1999-2007, 2011 1985-1998, 2008-2010 and 2012-2020 (no data available); publications: 1972-2012	Coverage 1982-1984 ?%, 1999-2007, 2011 =100%	Data coverage details to be reviewed
Size composition data				
Length measurements	Sampling from commercial fishing vessels. Sampling during research surveys.	1999-2007, 2011 2012-2019	100-4,000 squids /year (ca. 50 measurements per sampling)	Data coverage details to be reviewed
Abundance indices (survey)				
Summer-autumn surveys to assess pelagic squid abundance	Upper epipelagic surveys	1984-1992, 1999-2019 (August-November)	60-80 stations/year 60-80 stations/year	Changes in abundance and migration patterns; development survey protocol and conduct standardization

Category and data sources	Description	Years with available data	Average sample size/ year or data coverage	Potential issues to be reviewed
CHINESE TAIPEI				
Catch statistics				

Dip net fishery Set net	Fishing gear used in different periods: 1977-1979: jigging 1980-1983: jigging and gillnet 1984-1992: gillnet 1993 till now: jigging	Data from 1977-1996 was provided by Taiwan Squid Fishery Association, data from 1997-2017 was based on logbook, and data from 2018-2024 was the statistics on landings. (No fishery: 2010, 2012-2015)	Coverage =100%	
Size composition data				
Length measurements	Sampling from a research survey (1997). Sampling from commercial fishing vessels.	1997; 1998-2003	200-300 squids /year	Data coverage details to be reviewed
Abundance indices (commercial)				
Squid-jigging fisheries	Squid-jigging logbook	2001-2023 (No fishery: 2010, 2012-2015)	Data Coverage 2001-2016 = 87.3% Data Coverage 2017-2023 =100%	Will conduct standardization

Category and data sources	Description	Years with available data	Average sample size/ year or data coverage	Potential issues to be reviewed
VANUATU				
Catch statistics				

Squid jigging fishery	from logbook	2019, 2021-2023	logbook from 2013 to now, coverage 100%	Vanuatu has authorized 4 vessels to conduct Pacific saury and squid jigging fishery in NPFC Convention Area. These vessels can target both neon flying squid and Pacific saury, and mainly target Pacific saury.

Biological Information

Distribution and migration

Neon flying squid is an oceanic squid distributed in temperate and subtropical waters of the Pacific, Indian and Atlantic Oceans. The North Pacific population occurs mainly between 20◦ and 50◦N, and comprises two cohorts: a fall cohort with a hatching period from September to February and a winter–spring cohort with a hatching period mainly from January to May, but extending to August. Neon flying squid makes an annual round-trip migration between its subtropical spawning grounds and its northern feeding grounds near the Subarctic Boundary.

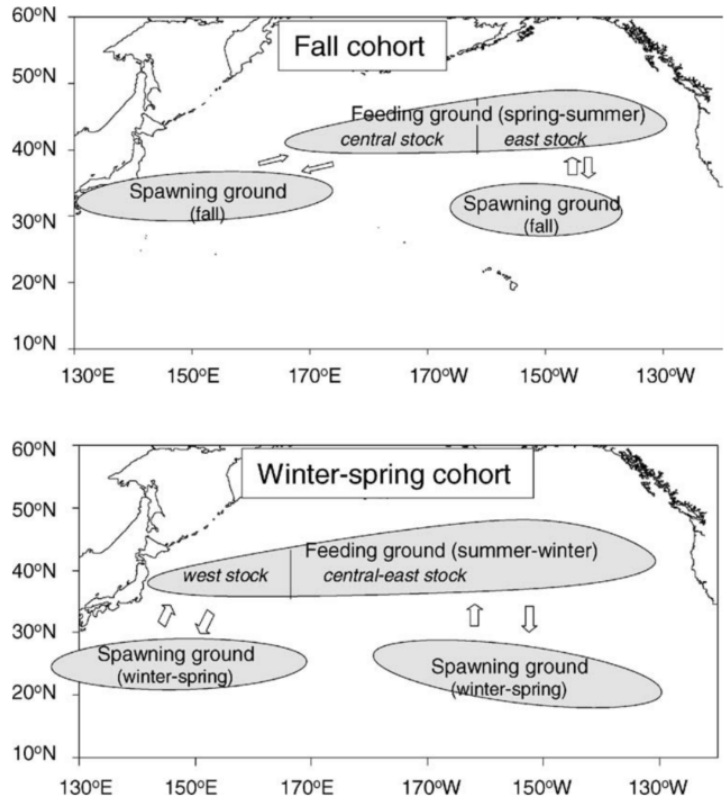

Figure 3. Migration patterns of the fall and winter–spring cohorts of neon flying squid in the North Pacific.

Life history

Growth is exponential during the first 30 days after hatching and then becomes more or less linear. It is suggested that this shift in growth accompanies a change in the feeding behavior that is thought to occur once the fused tentacles, which form a proboscis in the hatchlings, separate and become functional.

Neon flying squid at 7-10 months of age and has an estimated 1-year life span. Size at maturity is about 30–33 cm ML in males and 40–55 cm ML in females. The maximum ML is around 45 cm in males and 60 cm in females.

During its northward migration and at the feeding grounds in the central North Pacific, neon flying squid feeds mainly on fishes, squids and crustaceans. Many marine mammals feed on neon flying squid. It is an important prey of northern fur seals in the central North Pacific, and a minor prey of short-beaked common dolphins (Bower and Ichii 2005).

Literature cited

John R. Bower; Taro Ichii. The red flying squid (*Ommastrephes bartramii*): A review of recent research and the fishery in Japan. 2005. Fisheries Research.

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