

“Prawns & Shrimps”

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There is no universally agreed definition as to what constitutes a “prawn” or a “shrimp” and both terms are frequently used interchangeably to describe the same species. Although size is often used as distinguishing criterion, it has no biological or taxonomic significance.

The Decapod Order of Crustacea (which are characterised by having 10 feet) comprise the shrimps, prawns, lobsters, crayfish and crabs. Although the classification of the Decapod Order is still unsettled, it may be divided broadly into two Sub-orders; the Natantia (“prawns & shrimps”) and the Reptantia (lobsters, crayfish & crabs). The Natantia are characterised by their ability to “swim” while the Reptantia tend to be more “sedentary”. Three main groups (or Infra-orders) are recognised within the Natantia: Penaeidae, Caridae and Stenopodidae. About 2000 species of natantian decapods have been described to date and 83% (1650) of these are carideans.

The Dublin Bay or Norwegian Proawn (Nephrops Novegicus), which supports a very important commercial fishery in Ireland, is neither a “prawn” nor a “shrimp” in terms of zoological classification. Indeed, N. Norvegicus belongs to



Figure 1. Common Prawn (*Palaemon serratus*) Photo: Declan MacGabhann

*a completely separate Sub-order (reptantia) of Crustacea, and is therefore more closely related to the European Lobster (*Homarus Gammarus*) and the common Spiny Lobster or Crawfish (*Palinurus elephas*).*

According to FAO data (www.fao.com), at least 80 species and/or species groups of natantian “prawns & shrimps” are currently exploited worldwide. During 2008, the top ten species accounted for 87.4% (6.34 million tonnes) of global production (Table 1), with the

Whiteleg Shrimp *Penaeus vannamei* accounting for 31.2% (2.26 million tonnes).

While quantitative species-specific import data is lacking, most of the “prawns & shrimps” currently consumed in Ireland are probably produced in aquaculture farms located in tropical and sub-tropical regions of the world. e.g. Whiteleg Shrimp *Penaeus vannamei*, Giant Tiger Prawn *Penaeus monodon* and Giant River Prawn *Macrobrachium rosenbergii*. Several species appear to be marketed under the same generic

trade names and without specialised taxonomic training and/or DNA analysis, species identification can be problematic.

Although about 45 species of “prawns and shrimps” are known to occur in Irish coastal waters, only one of these is commercially targeted: Common Prawn *Palaemon serratus* (Figure 1). However, small quantities of the Common (Brown) Shrimp *Crangon crangon*, and Rockpool Prawn *Palaemon elegans*, are also taken in this seasonal pot fishery. Shrimp fishing mainly occurs along the south, south-west and west coast, but is particularly concentrated in Cos Waterford, Cork, Kerry and Galway and 90% of the catch is taken during the autumn and winter months.

Common Prawn (*Palaemon Serratus*)

Although the potential of the fishery was recognised during the late 1950s, exploitation did not begin until the mid-1970s (Figure 2). Landings gradually increased up until the late 1980s, increased dramatically during the 1990s and peaked at 551 tonnes during 1999. Since then, catches have declined significantly over the last decade (181 tonnes in 2008).

Under current legislation, the shrimp fishery is closed annually from 1st May to 1st August [S.I. 235 of 2006 Shrimp (Fisheries Management and Conservation) Regulation 2006]. However, some authors have recommended

Table 1. Global production of top ten Natantian Decapod Crustaceans (“Prawn & Shrimps”) during 2008				
Common Name	Species & FAO Code	Trade Names	Tonnes	%
Whiteleg shrimp	<i>Penaeus vannamei</i>	Freshwater King Prawns	2260503	31.2
Giant tiger prawn	<i>Penaeus monodon</i>	Black Tiger Prawns	965981	13.3
Natantian decapods nei	Natantia	“Prawns & Shrimps”	758788	10.5
Akiami paste shrimp	<i>Acetes japonicus</i>	Shrimp Paste	558224	7.7
Northern prawn	<i>Pandalus borealis</i>	Cold Water Prawns	383649	5.3
<i>Penaeus shrimps nei</i>	<i>Penaeus spp</i>	Warm Water Prawns	352112	4.9
Oriental river prawn	<i>Macrobrachium nipponense</i>	Freshwater King Prawns	346423	4.8
Southern rough shrimp	<i>Trachypenaeus curvirostris</i>	Cocktail or White Shrimp	314984	4.3
Giant river prawn	<i>Macrobrachium rosenbergii</i>	Freshwater King Prawns	214442	3.0
Banana prawn	<i>Penaeus merguensis</i>	Warm Water Prawns	185606	2.6
Totals			6340712	87.4

Shrimps' In Irish Waters

Quigley

Southern Region, Howth, Co Dublin

additional management measures for the sustainable exploitation of this fishery e.g. annual close season from the end of January to the beginning of September, a cap on pot numbers and an increase in pot mesh size.

The Japanese or Kuruma Prawn *Marsupenaeus (Penaeus) japonicus* (Figure 3) is endemic and commercially important in the Indo-West Pacific, from the Red Sea, East and South East Africa to Korea, Japan and the Malay Archipelago as well as Fiji. The species is thought to have invaded the eastern Mediterranean through the Suez Canal during the 1920s, and since then has spread successively along the Levantine coast (Egypt, Israel, Lebanon, Syria and Turkey) to Rhodes (Greece) and Cyprus. Indeed, it has been suggested that the Kuruma invader has been gradually displacing the native Caramote Prawn (*Penaeus kerathurus*) in many parts of the eastern Mediterranean.

The Kuruma Prawn was farmed experimentally at the MAFF Laboratory in Conwy, Caernarvonshire, North Wales, during the 1970s and up until 1980. During the 1980s, the species was introduced for experimental aquaculture purposes to a number of European countries, including; Italy, France, Spain and Portugal, and is now successfully cultivated in the Central and Western Mediterranean and Biscay Region.

During 2007, two specimens of Kuruma Prawns were captured for the first time in Irish waters. The first was captured on 25th January by Skipper Tadhg O'Regan, from Glandore, Co Cork on board the

MFV "Coral Strand" at a depth of c40m off Galley Head, Co Cork. The second was captured on 14th April by Skipper Gerard Foley, from Ballyhack, Co Wexford, on board the MFV "Random Harvest III" at a depth of c60m on the Smalls Bank off Milford Haven, Pembrokeshire, South West Wales. The latter specimen represents a northward extension of c120km for the species' previously known distribution in the North East Atlantic. Both specimens were donated to the Natural History Museum in Dublin.

Since 1989, at least seven specimens of Kuruma Prawn have been captured by UK trawlers in the western approaches of the English Channel. It has been suggested that the recent UK and Irish specimens may have escaped from extant French aquaculture units. The species is currently farmed semi-extensively

in coastal lagoons in the Marennes-Oleron area, near La Rochelle, and marginally near Gerande, in Southern Brittany. Kuruma Prawn larvae are also produced in hatcheries located in the Gironde Estuary. Although all of the specimens captured in UK and Irish waters to date have been adults, there is currently no evidence to suggest that the species supports a self-sustaining population at the northern limits of its distribution.

The main area of distribution of the Giant Red Shrimp *Aristaeomorpha foliacea* (Figure 4) in the North East Atlantic extends from the coasts of Morocco and South-Western Sahara into the Mediterranean Sea. The species is also found in the Western Atlantic from Massachusetts southwards to the Gulf of Mexico and the Caribbean. However, landings are never large and the species would appear to be very restricted, even within its natural range. The species is generally found in deep water from 250 to 1300m on muddy bottoms, and prefers water temperatures of around 13.50C. The species is highly prized for its culinary qualities, particularly in Mediterranean regions.

Giant Red Shrimp (*Aristaeomorpha foliacea*)

During 1994, two specimens of Giant Red Shrimp were captured in Irish waters. The first was captured on 29th May by Skipper Philip Nedelec, from Pont-L'Abée, North West France on board the MFV "Ar Vag II", while trawling at a depth of c1000m in the South Porcupine

Basin. The second was taken in September at a depth of c200-300m West of Slyne Head, Co Galway by Skipper Michael Flannery, from Dingle on board the MFV "Shannon". Both specimens were donated to the Natural History Museum in Dublin.

It is possible that small, isolated populations of Giant Red Shrimp may exist at the northern extremities of their range off the west coast of Ireland. In 1973, a single specimen of Giant Red Shrimp was taken by MAFF SW of Tory Island at a depth of 800-840m and in May 2002, a specimen was found on the Pier at Burtonport, Co Donegal. During October/November 2005 and May/June 2006 a total of 150kg of Giant Red Shrimp was captured by Skipper Michael Flannery, from Dingle, on board the MFV "Emerald Dawn" while deep-water trawling (>1000m) off the Porcupine Bank.

Other Deep-Water Shrimps

Small quantities of other commercially valuable shrimp species were also taken by the Emerald Dawn from the Porcupine Bank during 2005-06: Whip Shrimp (*Dichlopandalus bonnierii*), Pink Glass Shrimp (*Pasiphaea multidentata*), Crimson Shrimp (*Pasiphaea tarda*) and Scarlet Sergestid Shrimp (*Sergestes robusta*). The latter deep-water shrimps had previously been recorded during exploratory fishing off the south-west coast during the late 19th century and more recently off north and west Scotland during July/August 2001.

Figure 2. Annual production of *Palaemon serratus* in Irish waters (1974-2008)

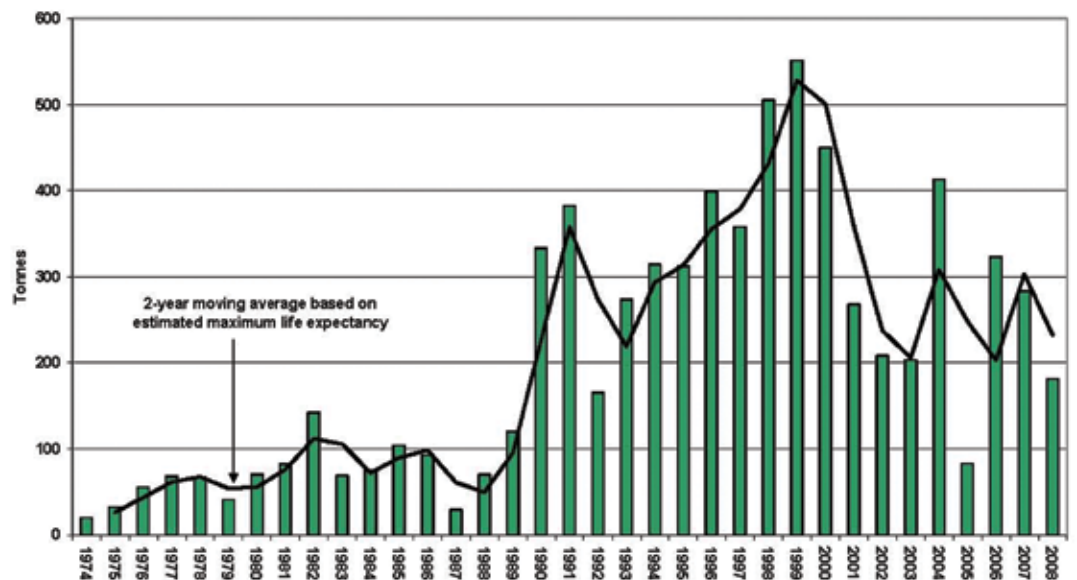


Figure 4. Giant Red Shrimp (*Aristaeomorpha foliacea*). Photo: John Rafferty