SHORT NOTE

MINIMAL AND MAXIMAL SIZE OF EEL.

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ABSTRACT

At the occasion of the catch of a giant eel in the Netherlands, it was realized extreme sizes listed in literature are quite arbitrary chosen. A first attempt to derive true values was undertaken. Minimal and maximal values for length, weight and condition are listed for glass eels, yellow eels and (male and female) silver eels.

Key-words : *Anguilla anguilla*, giants, extremes.

TAILLE MINIMALE ET MAXIMALE DE L'ANGUILLE.

RÉSUMÉ

À l'occasion de la capture d'une anguille gigantesque aux Pays-Bas, on a conscience que les tailles extrêmes données dans la littérature scientifique sont assez arbitraires. Pour cette raison, nous avons cherché les extrêmes véritables. Les valeurs minimales et maximales de la taille, du poids et de la condition des civelles, des anguilles jaunes et des anguilles argentées (mâles et femelles) sont répertoriées dans un tableau.

Mots-clés : *Anguilla anguilla*, géants, extrêmes.

What is the maximum size of an eel ? This question came to the fore on 4 September 1996 when a 133 cm long eel (*Anguilla anguilla* L.) was landed by the skipper of the vessel VD119 fishing on lake IJsselmeer (52°25'10"N 5°09'40"E). We tried to find records of eels of extreme sizes in the literature, but we could not find reliable figures at all. Identification keys do list maximum sizes (WHEELER, 1978, 100 cm ; POLL, 1947, 150 cm ; MUUS and DAHLSTRÖM, 1978, 150 cm), but do not reveal their sources. The maximums listed are rounded values, which does not contribute to their credibility.

Finding extreme sizes is primarily to be expected when large numbers of eels are being explicitly inspected for their size. At our institute, databases are maintained of long running data series on the eel stock of lake IJsselmeer (the Netherlands). These series date back from incidental records in the middle of this century and are continuously extended by measurements on approximately 1 500 glass eels, 15 000 yellow eels and

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1 000 silver eels each year. Extremes of length, weight and condition factor (Fulton index) were selected from our databases (Table I) and were presented during the meeting of the Working Party on Eel of the European Inland Fisheries Advisory Committee in September 1996 in IJmuiden, the Netherlands.

Table I

Extremes of size measurements on eels. N = number of eels measured. *Figures in italics* do not relate to the total number of animals measured. These animals were selected at forehand because of their extreme size.

Source : databases at the Netherlands Institute for Fisheries Research, unless otherwise stated. The status as silver eel is based on external, phenomenological characteristics ; the sex of silver eels is determined by macroscopic morphological characteristics of the gonads.

Tableau I

Extrêmes des mesures de la taille chez les anguilles. N = nombre d'anguilles mesurées. *Les données en italique* ne se rapportent pas au nombre total d'anguilles mesurées. Ces animaux ont été sélectionnés préalablement en raison de leur taille extrême.

Source : bases de données de l'Institut Néerlandais de la Recherche en Pêcherie, sauf indication contraire. Le statut en tant qu'anguille argentée est basé sur les caractéristiques phénoménologiques externes ; le sexe des anguilles argentées est déterminé par les caractéristiques morphologiques macroscopiques des gonades.

dimension	units	minimum	maximum
glass eel	N = 68 461		
length	cm	5.4	9.2
yellow eel	N = 624 017		
length	cm	6.9	133
weight	gr	0.31	*6599*
condition	gr @ cm = gr/cm^3	*25 @ 42 = 0.337*	*6599 @ 133 = 2.805*
age	years		*> 85*†

† Source = SVÄRDSON, 1949

silver eel m	N = 96 525		
length	cm	21.2	44.4
weight	gr	21	148
condition	gr @ cm = gr/cm^3	45 @ 42.7 = 0.578	118 @ 35.2 = 2.706
silver eel f	N = 96 525		
length	cm	26.4	101
weight	gr	31	2137
condition	gr @ cm = gr/cm^3	47 @ 36.2 = 0.991	1646 @ 80.8 = 3.120

A valuable second source of information on extreme sizes might be expected when large numbers of people are involved in the search, thereby increasing the number of eels being inspected implicitly. Fishermen bringing in fish because of exceptional sizes are a prominent source of extreme measurements, but anglers do even compete for the top record. We tried to bring this type of information together at the international level, in presenting our results at the Working Party meeting, but our request did not yield any new records. Therefore, we speculate our records to be the true extremes. It will be evident that, if the publication of the figures in this short communication elicits documented cases of more extreme observations, the authors would appreciate to be informed. Further details of the listed extremes can be obtained from the authors.

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