

出國報告(出國類別：國際會議)

出席區域性日本鰻會議

(Regional Workshop on Japanese eel)

服務機關：行政院農業委員會漁業署

姓名職稱：陳汾蘭 副組長等

派赴國家：日本東京

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摘 要

東亞地區以日本鰻 (*A. japonica*) 為主要養殖鰻種，但是鰻魚目前尚無法進行商業化人工繁殖，仍須依靠捕撈天然鰻苗放養，近年由於河川棲地破壞、過度捕撈及氣候變遷等因素影響，東亞地區無論是鰻苗還是河川中成鰻數量，均出現了急劇減少的現象。爰自2012年起，臺灣、日本、中國大陸(後韓國亦加入)等經濟體於APEC架構下進行鰻魚資源養護與管理合作，推動及落實鰻魚產業自主管理；另各方於2015年-2018決議賡續推動鰻魚資源養護與管理措施，並確認未來將以科學為基礎，作為導入資源養護管理之根據。

各國為展現對於日本鰻資源養護與管理之重視，並因應 CITES 第 18 次締約國大會聯合行動措施，爰日方邀集各國產官學代表召開「區域性日本鰻會議」，討論東亞地區日本鰻資源養護與管理等現況。本次會議計有我國、日本及南韓三方代表出席（中國大陸、菲律賓缺席），我國由本署陳汾蘭副組長擔任團長率本署同仁及產、學代表與會，會議內容摘述如下：

- 一、審視CITES第30次動物委員會會議結果。
- 二、分享日本鰻生物學及資源保護現況。
- 三、報告目前鰻魚捕撈量、養殖產量、消費及貿易現況。
- 四、報告對日本鰻資源養護與管理採行之措施。
- 五、對日本鰻和其他鰻種資源養護與管理之國際合作與非正式諮商會議之建議。

本次會議共識決議摘述如下：

- 一、應推動日本鰻棲息地及洄游鰻魚的保護。
- 二、日本鰻資源評估及科學數據收集應由各資源使用國家共同合作進行。
- 三、為了能夠永續利用日本鰻資源，應採取進一步之養護管理措施。
- 四、各國應對於其資源養護管理及其他必要措施進行檢討。

關鍵詞：區域性日本鰻會議(Regional Workshop on Japanese eel) 、鰻魚資源
養護與管理措施(conservation and management measures of Japanese eel)

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壹、目的

近幾年來東亞各國鰻苗捕獲量頻創新低，引發相關國際組織關切，國際自然保育聯盟（International Union for Conservation of Nature and Natural Resources，以下簡稱：IUCN）已在2014年6月12日正式公佈將日本鰻列入IUCN紅皮書(Red List)之瀕危(Endangered (EN) A2bc)等級，另瀕危野生動植物種國際貿易公約，又名華盛頓公約(Convention on International Trade in Endangered Species of Wild Fauna and Flora，以下簡稱CITES)，已於2016年的第17屆締約國大會通過，將加強調查鰻魚資源量及貿易情形，並可能於明2019年5月CITES第18屆的締約國大會提議，將日本鰻列入CITES附錄進行貿易管制。

有鑑於國際對於鰻苗資源管理日益重視，而臺灣、日本及中國大陸、韓國為西太平洋鰻苗資源之主要利用國家，爰自2012年起業於亞太經濟合作（Asia-Pacific Economic Cooperation，APEC）架構下共同進行鰻魚資源養護與管理合作事宜，包括進行鰻魚（苗）漁獲與養殖狀況、生態與資源等資訊搜集及科學研究分享，以及強化資源管理(包括可追溯性之要求)等資訊交流，並各自訂定管理規範或尋求合作管理之模式，以期日本鰻資源之永續利用。

各國為展現對日本鰻資源保護之重視及減少資訊落差，以及未來將以科學根據為基礎導入資源管理措施，作為東亞各國今後合作的方向，為此，召開本次「區域性日本鰻會議」，廣邀CITES專家、各國科學家、鰻魚業者及相關利益關係團體進行討論，提出相關鰻魚資源養護及管理之建議供各國政策方向擬訂參考。

貳、會議過程及結果

「區域性日本鰻會議」於本(2018)年9月20日至21日假日本東京三會堂石垣紀念廳舉行，計有我國、日本及南韓三方產官學代表(中國大陸及菲律賓缺席)、非政府組織世界自然基金會(World Wildlife Fund, WWF)及國際野生動物貿易研究組織(The wildlife trade monitoring network, TRAFFIC)日本辦公室人員出席，我國由本署陳汾蘭副組長率本署同仁(蘇柏維技士、漁政組陳彥義技士)、對外漁業合作發展協會(傅家驥組長)、台灣區鰻魚發展基金會(蔡秋棠董事長、汪介甫執行長)及學者(台灣大學韓玉山教授)等人員出席(詳細出席人員名單如附件1)。

9月19日班機抵達東京後隨即赴台北駐日經濟文化代表處召開團務會議，對於次日會議進行團員意見溝通、整合及確認；會議當日會後進行第二次團務會議，就當日會議內容再次進行討論及研商隔日會議之應對。

會議由日本岩手縣立大學教授YOSHIO KANEKO教授代表地主國歡迎各經濟體與會並擔任主席，討論情形摘述如下(議程如附件2)：

一、審視 CITES 第 30 次動物委員會會議結果：

主要討論有關鰻鱺屬物種貿易相關議題，日本鰻並未成為主要議題，而以「其他類鰻種」進行綜合討論，並針對國際貿易部分提出以下建議：

- (一)實施保護和管理措施並訂定相關法規，確保鰻鱺屬物種採捕及國際貿易上之永續。
- (二)與鰻鱺屬分布之國家間進行交流與管理合作，提升對生物學之瞭解，發展聯合合作方案，分享相關知識和經驗。
- (三)對於相關資訊缺乏地區，建立長期監測計畫並建立豐度指標。
- (四)強化國際間貿易資訊申報及資訊可追溯性。

(五)制定合適之鰻魚管理方式，加強在國際間及相關利益團體之合作。

(六)相關管理措施之推動情況另於動物委員會第 31 及 32 次會議報告。

二、日本鰻之生物保育現況：

由各方與會之科學家代表提供日本鰻生物學及族群狀態相關科學數據，包含監測計畫、棲息地復育活動等內容。本次會議共有 5 位科學家(日方 3 位、韓國及我國各 1 位)進行簡報，內容簡述如下：

(一) KAZUKI YOKOUCHI 教授(日本)：

根據日本捕撈資料顯示，本年度鰻苗洄游高峰期有向後延遲的情況，推測可能與本年產卵場溫度較往年高或是產卵場偏離洄游路徑有關；此外，過度捕撈或是環境因素的改變，可能造成本年鰻苗補充量的減少及存活率下降。

(二) HIROSHI HAKOYAMA 教授(日本)：

日本早期(1920~1940 年)鰻魚資源量較為穩定，若以當時數據所建構模型推估放養標準，日本最適放養量區間在 1.56 公噸~15.7 公噸之間(中位數 6.3 公噸)；目前日本鰻狀況雖不致滅絕，惟為使資源能夠永續利用避免資源枯竭，建議應限縮放養量及訂定管理機制。

(三) KATSUMI TSUKAMOTO 教授(日本)：

目前日本鰻生活史已大致了解，根據比對分析結果顯示，日本鰻皆屬於同一族群，且無論從何處最後都會回到相同的產卵場；另對於棲地利用主要分成三種，分別為河川、河口及海洋，其中河川僅佔約 16%，其餘以河口及海洋為主，且緯度越高分布差異越明顯。鰻魚資源量之減少可能受過漁、棲地破壞(水壩、水泥堤岸)、汙染、疾病或環境變遷等因素影響，並提出改善建議方式如

下：

1. 捕撈期縮短 5-30 天。
2. 進行河川棲地保護。
3. 於河川建構洄游通道，並使用永續捕撈漁法。
4. 增加成鰻放流量及保護成鰻。

(四) Park Hee bon 教授(韓國)：

近年對於日本鰻研究較少，僅就內陸水域資源進行相關研究，近兩年(2014~2016 年)針對向漁民蒐集之數據分析結果顯示，資源量呈現下降趨勢，與我國及日本之研究情況相似。國會目前尚通過養殖法令，目前係透過捕撈期限限制以及限制捕撈 15 公分至 45 公分成鰻方式管理。(另據悉韓方似有鰻魚進口需檢附衛生證明之情事，經會外交流韓方表示，本年實施之衛生證明係為了避免國外物種傳染疫病，目的在於保護所有魚類，並非僅針對鰻魚)

(五) 韓玉山教授(我國)：

針對我國鰻魚資源現況及研究進行說明，並提出資源保育措施建議，日方部分學者表達支持看法，建議事項簡述如下：

1. 利用放流人工養成之鰻魚增加成鰻資源量。
2. 禁止捕撈成鰻，保護成鰻資源成本效益較佳。
3. 需同時限制鰻苗捕撈期及捕撈量，以增加溯河及成鰻補充量。

三、有關鰻魚之捕撈量、養殖產量、消費及貿易現況：

(一) 有關鰻魚之捕撈、放養、消費及貿易等資訊，各國分別就相關數據及法規進行報告(如附件 3)。

(二) 日方說明應增加鰻魚貿易資訊之可追蹤性及科學數據分享，我方認可資訊追溯之重要性，並表示先前各國即已討論此一議題，若沒有其他國家支持下，要強化可追蹤性或建立機制相當困難，我國同意應進行科學合作及數據分享；韓方表示對於貿易之追

蹤有其困難，日後將針對這部分進行強化；Traffic 代表重申動物委員會決議，樂見各國進行資訊分享及加強貿易之追蹤，惟強調應持續須加強對於相關鰻魚貿易資訊透明化。

(三) 日本養鰻產業代表說明鰻魚資源量確實有逐年下降之趨勢，未來情況勢必更加嚴峻，另提出相關看法及因應措施，簡述如下：

1. 在四國之共識及科學數據背景支持下，願意配合削減放養量配額。
2. 逐步推動鰻魚養殖業者將育成體型由原來每尾 200 克提高到每尾 400 克，惟仍需時間處理加工技術問題(骨頭及魚刺較多)及檢視餐廳及消費市場接受度。
3. 尚無證據指出鰻魚資源量減少僅受捕撈影響，其他相關環境因子等因素都可能造成資源量變動，建議優先進行環境棲地保護。

四、經與會者討論後，會議共識之建議如下(如附件 4)：

(一) 影響鰻魚資源量之因素包括海洋環境變遷、棲地破壞、過漁等，東亞四國之有關當局應採取下列措施：

1. 提倡棲地保育以及野生銀鰻的保護。
2. 合作進行資源量評估，包括建立生物豐度指標、蒐集分享相關科學數據資訊。
3. 注意到此次會議所提出之科學分析結果指出，有必要採取進一步的養護與管理行動，以永續利用日本鰻資源。

(二) 儘管日本鰻相較其他 16 種鰻鱺屬物種研究最為完整，惟仍存有資訊落差，爰應鼓勵例如保育以及漁業科學之進一步研究。

(三) 除了促進科學研究外，應在評估措施之優先順序後，實施可實行的養護和管理措施。

(四) 根據前述建議，明年 3 月舉行之第 12 次非正式會議應考量適當之養護管理措施。而為了措施執行的有效性，必須要所有有關當局的投入與合作。

- (五) 應定期召開科學會議，以根據最新及最佳可得之科學數據調整相關管理措施。
- (六) 為了促進相關統計資料及科學數據之準確性，以及改善鰻魚資源永續利用及合法貿易，鼓勵各國有關當局改善鰻魚貿易之可追溯性，並收集與分享鰻魚生產數據及國內消費情況。

參、心得及建議

- 一、第17次CITES締約國大會雖未將鰻鱺屬物種列入附錄進行貿易管理，但仍決議調查鰻鱺屬物種的資源及貿易情形，並有可能於2019年的第18次締約國大會討論是否將鰻鱺屬物種列入附錄；截至目前為止尚未有最後定案(2018年12月24日為提案登錄附錄二之截止日)，爰我國應持續與東亞各國進行鰻魚資源的養護與管理國際合作事宜。
- 二、因應我國參與鰻魚資源養護與管理國際合作，建議仍應持續推動鰻魚捕撈、放養管理等措施；另由於CITES及IUCN等國際組織已關注到東亞地區有鰻苗非法貿易問題，將再次協調關務署、海巡署、法務部調查局等相關單位加強走私查緝。
- 三、持續對於日本鰻生物學進行研究，建立長期資源評估及管理機制，並加強國內河川棲地及成鰻資源保護。

肆、會議照片



圖一、本署代表團於9月19日在台北駐日經濟文化代表處進行會前會議。



圖二、「區域性日本鰻魚會議」各國代表於9月21日會後合影。

伍、會議文件及參考資料

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Regional Workshop on Japanese Eel

ANNOTATED AGENDA

(provisional)

September 20, Thursday

Registration (9:30-10:00)

1. Opening of the meeting (10:00-10:15)
 - Appointment of Chairperson
 - Background and objectives of this workshop
2. Adoption of Agenda (10:15-10:20)
3. The outcome of the 30th meeting of CITES Animal Committee (10:20-11:00)

Participants are expected to review the study by the Zoological Society on London (ZSL) on “Status of non-CITES listed anguillid eels”, which was presented to the 30th meeting of CITES Animal Committee in accordance with the Decision 17.186 adopted at CITES-CoP17. Participants are also expected to discuss the outcome of the 30th meeting of CITES Animal Committee, especially its recommendations on trade in non-CITES *Anguilla spp.*

4. Biology and conservation status of Japanese eel (11:00-12:30, 14:00-17:00)

Each Participant is expected to present scientific data/information on biology as well as population status of Japanese eel, including monitoring program, habitat restoration activity or development of abundance indices. Participants are also expected to discuss i) scientific data/information gaps and possible recommendations, and, where possible, ii) conservation and management advice for sustainable use of Japanese eel, which would be scientific basis for

the discussion of possible science-based conservation and management measures of Japanese eel under the Agenda item 6.

September 21, Friday

5. Status of harvest, aquaculture production, consumption and trade (9:30-10:30)

Each Participant is expected to present its domestic status of harvest, aquaculture production, consumption and trade on Japanese eel and other *Anguilla* spp. utilizing, if appropriate, “Statistics about catch and input of glass eels and trade of any states of eels” attached to “Joint Press Release on Eels” or a response to the questionnaires developed by the CITES Secretariat distributed through Notification No. 2018/018. Participants are also expected to discuss data/information gap and possible recommendations.

6. Conservation and management measures of Japanese eel (10:30-11:30)

Each Participant is expected to present its conservation and management measures of eels, utilizing, if appropriate, “Summary Table of Conservation and Management Measures for Eels” attached to “Joint Press Release on Eels”. Participants are also expected to discuss possible science-based conservation and management measures of Japanese eel.

7. Recommendations to “Informal Consultation on International Cooperation for Conservation and Management of Japanese Eel Stock and Other Relevant Eel Species” (11:30-12:30)
8. Other matters (12:30-12:40)
9. Closing of the meeting (12:40)

Terms of Reference for a Regional Workshop on Japanese eel

1. Objectives

To conduct comprehensive review of data and information of science, trade and management about Japanese eel and provide recommendations on science-based management of Japanese eel to “the Informal Consultation on International Cooperation for Conservation and Management of Japanese Eel Stock and Other Relevant Eel Species”.

2. Time and venue

20-21 September 2018 in Tokyo, Japan

3. Participants

Scientists, managers, or industries from Japan, People’s Republic of China, Republic of Korea, Chinese Taipei, Philippines
CITES Secretariat, and other relevant stakeholders as appropriate

4. Provisional agenda

i. Science

- Results of the 30th meeting of Animal Committee including the report of independent consultant

- Biology

- Population status

- Scientific advice

✓ Scientific data needs

✓ Management advice

ii. Trade

- Review of trade data

- Room for improvement

iii. Management

- Review of current management measures

- Additional measures based on scientific advice

iv. Recommendation to “the Informal Consultation on International Cooperation for Conservation and Management of Japanese Eel Stock and Other Relevant Eel Species”

Recommendation of the Regional Workshop on Japanese eel

1. Recognizing that major factors for the decline of Japanese eel stock include oceanographic change, habitat loss/modification and over-exploitation, relevant authorities within the range area of the species (hereinafter referred to as “Authorities”) should;
 - Promote conservation of habitats of the species as well as the protection of wild silver eels.
 - Cooperate to conduct stock assessment of the species, including developing abundance indices, and to this end, collect and share relevant scientific data and knowledge; and,
 - Note the outcomes of scientific analyses presented to the Workshop that further actions on conservation and management of the species would be necessary for the sustainable use of its resource.
2. While the species would be the best studied for several aspects among 16 species within the family of Anguillidae, information gaps still remain and further research and studies, such as conservation and fisheries science, are encouraged.
3. Besides promoting scientific research and studies, practical conservation and management measures should be implemented after evaluating their priorities.
4. Based on the recommendations above, appropriate conservation and management measures of the species should be considered at the 12th Meeting of the Informal Consultation on International Cooperation for Conservation and Management of Japanese Eel Stock and Other Relevant Eel Species to be held next March. In doing so, it should also be emphasized that the involvement and cooperation of all of the Authorities is indispensable for effective implementations of measures.
5. Scientific meetings should regularly be held, so that adaptive measures are taken based on the latest and best-available scientific knowledge and data.
6. To facilitate the verification of statistical or scientific data and to improve sustainability and legality of the trade of the species, Authorities are encouraged to improve traceability of the species in trade as well as collect and share relevant data and information on production by species and domestic consumption of *Anguilla* spp.

Data Format for Eel (Chinese Taipei)

Data on Catch of Japanese Eel

Item	Unit	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Catch of glass eel	tons	1.80	0.74	2.04	1.91	0.96	8.25	1.1	3.06	4.5	1.1
Fishing effort on glass eel	number of fishing vessels	-	-	-	-	213	232	250	245	251	272
Catch of wild adult eel		-	-	-	-	-	-	-	-		

Input of glass eel into aquaculture ponds

Species	Unit	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
<i>Anguilla japonica</i>	tons	25.0	13.1	3.8	2.2	1.5	12.5	2.8	3.6	7.3	0.2
other eels	tons	-	-	-	5.5	10.0	1.5	0.2	0.08	0.1	0.01
Total	tons	25.0	13.1	3.8	7.7	11.5	14.0	3.0	3.7	7.4	0.2

Other data on aquaculture

Item	Unit	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Scale of aquaculture industry	hectares of aquaculture area	1,823	1,714	814	449	305	456	391	392	510	

Notes:

1. The statistic period of the data related to glass eel (catch of glass eel, fishing effort of glass eel and input of glass eel into aquaculture ponds) should be the fishing season of glass eel ("20XX-XX+1" means the input season which starts from 1st November, 20XX to 31st October, 20XX+1.), while that for other data should be the calendar year.

2. When data is not available, "-" should be entered. When data is identified as zero, "0" should be entered.

3. Unit for catch of glass eel, catch of adult eel, input of glass eel into aquaculture ponds and aquaculture production should be weight (kilograms or metric tons) as far as possible.

4. Unit for fishing effort on glass eel and scale of aquaculture industry can be chosen by each Economy, taking into account availability of information. Examples of unit for fishing effort may include the number of licenses, the number of fishermen or the number of fishing vessels. Unit for scale of aquaculture industry may include the number of aquaculture operator or the dimensions of aquaculture ponds.

5. When there is no available statistics for catch of wild adult eel, research activities which could indicate the trend of the wild adult eel stock should be considered as an alternative.

6. The data of input of glass eel into aquaculture ponds and aquaculture production should be entered by species (*japonica*, *rostrata*, *bicolor*, etc) as far as possible. When it is not possible to provide species-specific data, enter the data in the box of "Total".

*1 The catch of glass eel 2017-2018 season is preliminary data from 1st November to 30th March.

*2 The input of glass eel into aquaculture ponds 2017-2018 season is preliminary data from 1st November to 10th May

Export of adult eel and eel products

Species	Type/Size	Unit	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<i>Anguilla japonica</i>	:live eel	:tons	5,486	8,979	4,997	1,363	867	892	2,845	2,544	2,030	
	:prepared eel	:tons	1,015	1,706	803	303	155	137	487	207	135	
	:roasted eel	:tons	205	780	330	68	21	17	75	23	0	
<i>Anguilla marmorata</i>	:live eel	:tons	0	29	283	95	16	0	14	0	18	
<i>Anguilla australis</i>	:live eel	:tons	0	0	0	0	0	0	0	0		
other eels	:live eel	:tons	0	0.38	0	0	2	20	0	0		

Export of glass/juvenile eel

Species	Type/Size	Unit	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
<i>Anguilla japonica</i>	:glass eel	:tons	0	0	0	0.9	0.1	0.2	0	0.00	0	
	:eel fry	:tons	0	0	0	0.4	0.02	0.01	0	0.10	0	
	:young eel	:tons	0	0	0	0.04	2.08	0	0	0.00	0	

Import of adult eel and eel products

Species	Type/Size	Unit	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
<i>Anguilla japonica</i>	:live eel	:tons	0.8	3.1	0.8	0.3	0	0	0	0		
	:prepared eel	:tons	0	0	0	0	0	0.003	0.018	0.147	6.5	
	:roasted eel	:tons	0	0	0	0	0	0	0	0		
<i>Anguilla marmorata</i>	:live eel	:tons	0	5.2	11.6	10.7	7.7	4.2	0.8	0.628	3.3	
<i>Anguilla australis</i>	:live eel	:tons	13.5	18.1	12.9	0	0	0	0.4	0		
other eels	:live eel	:tons	1.3	0.2	0	0	0	24.1	3.3	0		

Import of glass/juvenile eel

Species	Type/Size	Unit	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
<i>Anguilla japonica</i>	:glass eel	:tons	2.9	0.1	0.4	1.3	0.7	2.0	0.6	0.40	0.7	
	:eel fry	:tons	6.8	1.0	0.8	0.5	0.7	4.3	0.1	0.80	2	
	:young eel	:tons	63.5	24.0	29.6	6.1	2.9	34.1	21.2	20.10	33	

Notes:

1. The statistical period of the data of export and import of glass/juvenile eel should be the fishing season of glass eel, while that for other data should be the calendar year.
2. When data is not available, "-" should be entered. When data is identified as zero, "0" should be entered.
3. Unit should be weight (kilograms or metric tons) as far as possible.
4. Examples of type/size of export and import of adult eel and eel product may include live eel, frozen eel, chilled eel or broiled eel.
5. Examples of type/size of export and import of glass/juvenile eel may include glass eel, elver, eel fry or juvenile eel. The classification of concrete size (e.g. less than 15cm, 501-5000pcs/kg, etc) can also be entered.
6. The data should be entered by species (*japonica*, *rostrata*, *bicolor*, etc) as far as possible. When it is not possible to provide species-specific data, enter the data in the box of "Total".

Data Sources and/or Methods to collect or estimate the data

Item	Data Sources and/or Methods to collect or estimate the data
Catch of glass eel	<p>The data of catch of glass eel originates from the Taiwan Fisheries Statistical Yearbook. The local governments collect the data through regional fisherman's associations and report to Fisheries Agency seasonally. If there is any unreasonable point found, Fisheries Agency will request the local governments recheck and reconfirm. Besides, Japanese eel is the majority of species (<i>Anguilla</i> spp) but it may possibly cover a little of other eel species.</p> <p>The original unit for catch of glass eel is PCs and it has been conversed to weight by the rate of 5,000 PCs/ Kg. Besides, the fishing periods year has been adopted from 2011.Hence, it might be difficult to retrace the original condition, so only reasonable data are provided. The data of 2013 is estimated number, which could be adjusted after confirmed.</p>
Fishing effort on glass eel	The number of fishing vessel, which is authorized to catch fish fry, including glass eel.
Catch of adult eel	-
Input of glass eel into aquaculture ponds	The data of Japanese eel and other eel are compiled by Taiwan eel farming industry development foundation based on the reports from its member on input.
Scale of aquaculture industry	The scale of aquaculture is measured by aquaculture area (hectare). The data of aquaculture area originate from the Taiwan Fisheries Statistical Yearbook. The local governments collect the data through the oral questionnaire surveyed by the offices of village, town, or district, and report to Fisheries Agency seasonally. If there is any unreasonable point found, Fisheries Agency will request the local governments recheck and reconfirm. The data of 2013 is estimated number, which could be adjusted after confirmed.
Export of adult eel and eel product	The data of exportation is derived from the statistic of Customs Administration, Ministry of Finance. The CCC(Import and Export Commodity Classification of the Republic of China) code are 3019210101(Live Japanese eel), 16041910112(Prepared eel), 16041910130(Roasted eel), 03019210904(<i>Anguilla marmorata</i>), 03019929407(<i>Anguilla australis</i>) and 03019210209(<i>Anguilla</i> spp.). Besides, since 2013, the CCC code of Prepared eel has been changed as 16041700116 and Roasted eel as 16041700125.
Export of juvenile eel	The data of exportation is derived from the statistic of Customs Administration, Ministry of Finance. The CCC(Import and Export Commodity Classification of the Republic of China) code are 3019220109[Glass eel (over 5,000 pcs per Kg)], 3019220207[Eel fry (501-5,000 pcs per Kg)] and 3019220305[Young eel (11-500 pcs per Kg)].
Import of adult eel and eel product	The data of importation is derived from the statistic of Customs Administration, Ministry of Finance. The CCC(Import and Export Commodity Classification of the Republic of China) code are 3019210101(Live Japanese eel), 16041910112(Prepared eel), 16041910130(Roasted eel), 03019210904(<i>Anguilla marmorata</i>), 03019929407(<i>Anguilla australis</i>) and 03019210209(<i>Anguilla</i> spp.). Besides, since 2013, the CCC code of Prepared eel has been changed as 16041700116 and Roasted eel as 16041700125.
Import of juvenile eel	The data of importation is derived from the statistic of Customs Administration, Ministry of Finance. The CCC(Import and Export Commodity Classification of the Republic of China) code are 3019220109[Glass eel (over 5,000 pcs per Kg)], 3019220207[Eel fry (501-5,000 pcs per Kg)] and 3019220305[Young eel (11-500 pcs per Kg)].

Data Format for Eel (Japan)

Data on Catch of Japanese Eel

Item	Unit	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
Catch of glass eel	:tons	24.7	9.2	9.5	9.0	5.2	17.4	15.3	13.6	15.5	8.8(*1)
Fishing effort on glass eel	:number of licences	6,810	6,723	6,619	6,669	6,781	6,617	4,698	4,398	4,790	5,874(*2)
Item	Unit	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Catch of wild adult eel	:tons	263	245	229	165	135	112	70	71	-	-

Input of glass eel into aquaculture ponds

Species	Unit	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18(*3)
japonica	:tons	28.9	19.9	21.8	15.9	12.6	27.1	18.3	19.7	19.6	14.0
Other eel	:tons	0.1	0.03	0.01	0.4	1.3	3.5	0.0	0.2	0.1	0.03
Total	:tons	29.0	19.9	21.8	16.3	13.9	30.6	18.3	19.8	19.7	14.0

Other data on aquaculture

Item	Unit	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Scale of aquaculture industry	:number of aquaculture operators	-	-	-	-	384	-	515	514	491	496

Notes:

- The statistic period of the data related to glass eel (catch of glass eel, fishing effort of glass eel and input of glass eel into aquaculture ponds) should be the fishing season of glass eel ("20XX-XX+1" means the input season which starts from 1st November, 20XX to 31st October, 20XX+1.), while that for other data should be the calendar year.
 - When data is not available, "-" should be entered. When data is identified as zero, "0" should be entered.
 - Unit for catch of glass eel, catch of adult eel, input of glass eel into aquaculture ponds and aquaculture production should be weight (kilograms or metric tons) as far as possible.
 - Unit for fishing effort on glass eel and scale of aquaculture industry can be chosen by each Economy, taking into account availability of information. Examples of unit for fishing effort may include the number of licenses, the number of fishermen or the number of fishing vessels. Unit for scale of aquaculture industry may include the number of aquaculture operator or the dimensions of aquaculture ponds.
 - When there is no available statistics for catch of wild adult eel, research activities which could indicate the trend of the wild adult eel stock should be considered as an alternative.
 - The data of input of glass eel into aquaculture ponds and aquaculture production should be entered by species (japonica, rostrata, bicolor, etc) as far as possible. When it is not possible to provide species-specific data, enter the data in the box of "Total".
- *1 The data of catch of glass eel 2017-2018 season is from 1st November to 30th April.
 *2 The data of number of licences 2017-2018 season is approximate numeric value.
 *3 The data of input of glass eel into aquaculture ponds 2017-2018 season is from 1st November to 30th April.

Export of adult eel and eel products

Species	Type/Size	Unit	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018(*1)
japonica	:live eel	:tons	71.2	27.7	36.5	10.4	2.2	38.8	20.7	25.8	33.1	0.0
	:broiled eel	:tons	-	-	-	21.2	30.0	30.9	38.9	45.2	66.6	6.8
Total		:tons	71.2	27.7	36.5	31.6	32.1	69.6	59.6	71.0	99.7	6.8

Export of glass/juvenile eel

Species	Type/Size	Unit	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18
japonica	:juvenile eel	:tons	17.8	4.6	9.6	5.7	1.6	6.7	1.3	0.4	0.9	-
	:juvenile eel	:number of fish	2,891,536	1,175,730	0	133,668	0	3,573,540	526,977	1,634,988	2,447,269	-

Import of adult eel and eel products

Species	Type/Size	Unit	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018(*2)
	:live eel	:tons	12,085.5	14,840.8	9,657.6	4,677.6	4,789.2	4,781.1	7,066.7	7,276.1	6,815.7	2,165.8
	:broiled eel	:tons	34,100.3	38,230.8	24,403.2	14,983.3	13,468.5	15,432.7	24,089.4	24,193.2	25,477.8	5,507.4
Total		:tons	46,185.8	53,071.6	34,060.8	19,660.9	18,257.7	20,213.7	31,156.1	31,469.3	32,293.5	7,673.2

Import of glass/juvenile eel

Species	Type/Size	Unit	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18(*3)
	:glass eel	:tons	5.6	11.1	13.1	9.2	10.7	12.5	3.6	7.6	4.8	5.3

Notes:

1. The statistical period of the data of export and import of glass/juvenile eel should be the fishing season of glass eel, while that for other data should be the calendar year.
 2. When data is not available, "-" should be entered. When data is identified as zero, "0" should be entered.
 3. Unit should be weight (kilograms or metric tons) as far as possible.
 4. Examples of type/size of export and import of adult eel and eel product may include live eel, frozen eel, chilled eel or broiled eel.
 5. Examples of type/size of export and import of glass/juvenile eel may include glass eel, elver, eel fry or juvenile eel. The classification of concrete size (e.g. less than 15cm, 501-5000pcs/kg, etc) can also be entered.
 6. The data should be entered by species (japonica, rostrata, bicolor, etc) as far as possible. When it is not possible to provide species-specific data, enter the data in the box of "Total".
- *1 The data of export of adult eel and eel products 2018 is from 1st January to 31st Mar.
 *2 The data of import of adult eel and eel products 2018 is from 1st January to 31st Mar.
 *3 The data of import of glass/juvenile eel 2017-2018 season is from 1st November to 31st Mar.

Data Sources and/or Methods to collect or estimate the data

Item	Data Sources and/or Methods to collect or estimate the data
Catch of glass eel	The data is estimated in every fishing period (from Decembrt of previous year to April) by deducting the amount of import of glass eels (calculated from the Trade Statistics every fishing period) from the amount of input of glass eels into aquaculture ponds which is compiled by national organizations of eel-farming operators as mentioned above.
Fishing effort on glass eel	The index of fishing effort on glass eels is the total number of licenses submitted by each Prefecture which has the mandate to issue licenses.
Catch of adult eel	The data is from "Annual Statistics on Fisheries and Aquaculture Production" compiled and published by the Ministry of Agriculture, Forestry and Fisheries. The data contained in this statistics are derived from questionnaires on catch and aquaculture production sent to fisheries cooperatives covering main rivers and lakes as well as aquaculture operators all around the country.
Input of glass eel into aquaculture ponds	The data of Japanese eel (<i>Anguilla japonica</i>) is compiled by national organizations of eel-farming operators based on the reports from its members on input. The data of <i>Anguilla</i> except Japanese eel is based on the reports from eel-farming operators. The data are collected every fishing period (from November to next October).
Scale of aquaculture industry	The index of scale of aquaculture industry is the number of aquaculture operators. The data for 2013 is from "Census of Fisheries" published by the Ministry of Agriculture, Forestry and Fisheries every five years. The data for 2015-2018 is the total number of eel-farming operators who are granted licenses issued by the Ministry of Agriculture, Forestry and Fisheries under the licensing system in accordance with the Inland Water Fishery Promotion Act, which entered into force in June 2015.
Export of adult eel and eel product	The data is from "Trade Statistics" compiled and published by the Ministry of finance. The Statistic codes are 03.01.92.000 (live fish - Eels (<i>Anguilla</i> spp.)) and 1604.17.000 (prepared or preserved fish, caviar and caviar substitutes prepared from fish eggs - eels). The amount of broiled eel is calculated as whole body of fish, dividing the amount of products by 0.6.
Export of juvenile eel	The data is from the reports submitted by exporters on either number or weight of juvenile eels actually exported.
Import of adult eel and eel product	The data is from "Trade Statistics" compiled and published by the Ministry of finance. The Statistic codes are 03.01.92.200 (live fish - Eels (<i>Anguilla</i> spp.) - other) and 1604.17.000 (prepared or preserved fish, caviar and caviar substitutes prepared from fish eggs - eels). The amount of broiled eel is calculated as whole body of fish, dividing the amount of products by 0.6.
Import of juvenile eel	The data is from "Trade Statistics" compiled and published by the Ministry of finance. The Statistic code is 03.01.92.100 (live fish - Eels (<i>Anguilla</i> spp.) - fry for fish culture).

Data Format for Eel (Korea)

Data on Catch of Japanese Eel

Item	Unit	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18.4
Catch of glass eel	tons	17.1	2.4	2.5	1.5	1.0	5.5	4.7	1.8	2.7	0.9
Fishing effort on glass eel	-	-	-	-	-	-	-	-	-	-	-
Item	Unit	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018.3
Catch of wild adult eel	tons	145	119	72	106	69	85	80	68	48	1

Input of glass eel into aquaculture ponds

Species	Unit	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18.4
Anguilla japonica	:	22.0	10.6	9.5	3.6	3.0	13.9	7.4	9.3	10.6	4.6
Other eel	:	1.5	1.5	1.6	5.9	13.2	2.9	5.1	3.7	0.6	3.3
Total	tons	23.5	12.1	11.1	9.5	16.2	16.8	12.5	13.0	11.2	7.9

Other data on aquaculture

Item	Unit	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Scale of aquaculture industry	number of aquaculture operators	508	521	523	524	532	536	564	542	555	

Notes:

1. The statistic period of the data related to glass eel (catch of glass eel, fishing effort of glass eel and input of glass eel into aquaculture ponds) should be the fishing season of glass eel ("20XX-XX+1" means the input season which starts from 1st November, 20XX to 31st October, 20XX+1.), while that for other data should be the calendar year.
2. When data is not available, "-" should be entered. When data is identified as zero, "0" should be entered.
3. Unit for catch of glass eel, catch of adult eel, input of glass eel into aquaculture ponds and aquaculture production should be weight (kilograms or metric tons) as far as possible.
4. Unit for fishing effort on glass eel and scale of aquaculture industry can be chosen by each Economy, taking into account availability of information. Examples of unit for fishing effort may include the number of licenses, the number of fishermen or the number of fishing vessels. Unit for scale of aquaculture industry may include the number of aquaculture operator or the dimensions of aquaculture ponds.
5. When there is no available statistics for catch of wild adult eel, research activities which could indicate the trend of the wild adult eel stock should be considered as an alternative.
6. The data of input of glass eel into aquaculture ponds and aquaculture production should be entered by species (japonica, rostrata, bicolor, etc) as far as possible. When it is not possible to provide species-specific data, enter the data in the box of "Total".

Export of adult eel and eel products

Species	Type/Size	Unit	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018.4
Anguilla sp	Total	tons	28.8	0.5	67.6	91.2	9.6	0.4	2.9	5.4	47.7	3.1
	live		4.5	0.2	28.6	79.9	2.3	0.1	0.4	0.0	19.4	2.5
	freeze		24.1	0.1	39.0	11.1	0.0	0.0	0.1	2.1	23.8	0.0
	other		0.2	0.2	0.0	0.1	7.3	0.3	2.4	3.3	4.5	0.6

Export of glass/juvenile eel

Species	Type/Size	Unit	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18.4
Anguilla sp	live/grass eel	tons	0.3	0.3	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0

Import of adult eel and eel products

Species	Type/Size	Unit	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018.4
Anguilla sp	Total	tons	287.9	3,235.4	666.9	234.0	946.9	1,466.8	1,009.2	988.4	1,366.6	255.2
	Live		148.8	3,026.1	481.8	137.7	837.0	1,358.8	799.2	615.9	740.6	0.5
	freeze		5.3	1.2	22.5	26.9	43.2	38.3	26.1	63.7	42.1	25.5
	cold storage		0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0
	broiled		133.8	208.1	162.6	69.2	66.7	69.6	183.9	308.8	583.9	229.2

Import of glass/juvenile eel

Species	Type/Size	Unit	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18.4
Anguilla sp	live/grass eel	tons	6.9	10.2	8.7	9.0	15.2	10.3	7.8	11.1	8.5	7.0

Notes:

1. The statistical period of the data of export and import of glass/juvenile eel should be the fishing season of glass eel ("20XX-XX+1" means the input season which starts from 1st Nonemver, 20XX to 31st October, 20XX+1.), while that for other data should be the calendar year.

1. The statistical period of the data of export and import of glass/juvenile eel should be the fishing season of glass eel, while that for other data should be the calendar year.

2. When data is not available, "-" should be entered. When data is identified as zero, "0" should be entered.

3. Unit should be weight (kilograms or metric tons) as far as possible.

4. Examples of type/size of export and import of adult eel and eel product may include live eel, frozen eel, chilled eel or broiled eel.

5. Examples of type/size of export and import of glass/juvenile eel may include glass eel, elver, eel fry or juvenile eel. The classification of concrete size (e.g. less than 15cm, 501-5000pcs/kg, etc) can also be entered.

6. The data should be entered by species (japonica, rostrata, bicolor, etc) as far as possible. When it is not possible to provide species-specific data, enter the data in the box of "Total".

Data Sources and/or Methods to collect or estimate the data

Item	Data Sources and/or Methods to collect or estimate the data
Catch of glass eel	The data is from Fresh Water Eel Culture Fisheries Cooperative.
Fishing effort on glass eel	-
Catch of adult eel	The data is from "Data of Fisheries information Service" compiled and published by Ministry of Oceans and Fisheries.
Input of glass eel into aquaculture ponds	The data is from Fresh Water Eel Culture Fisheries Cooperative.
Scale of aquaculture industry	The data is from Fresh Water Eel Culture Fisheries Cooperative.
Export of adult eel and eel product	The data is from "Data of Trade Statistics" compiled and published by Korea customs service.
Export of juvenile eel	The data is from "Data of Trade Statistics" compiled and published by Korea customs service.
Import of adult eel and eel product	The data is from "Data of Trade Statistics" compiled and published by Korea customs service.
Import of juvenile eel	The data is from "Data of Trade Statistics" compiled and published by Korea customs service.

Summary Table of Conservation and Management Measures for Eels (Chinese Taipei)

Eel aquaculture		Description
Condition of eel aquaculture business	none (license required)	
Ground for license, etc. ※	Legislation/Other scheme	Name of Legislation/other scheme requiring licenses: Regulations for Input Management of Eel Aquaculture Establishment date or estimated date to be established: November 14, 2014
Management body	Council of Agriculture	
Contents of management measures		
① Upper limit for number of licenses	Central/By local authority/None	License holders: company/facility/others (Eel farms) Total number of Licenses issued: 448 licenses in 2016-2017
② Upper limit for scale of facilities	Yes/No	Description of regulation:
③ Upper limit for input of <i>Anguilla japonica</i>	Central/By local authority/By individual/None	
④ Upper limit for input of other eels	Central/By local authority/By individual/None	
⑤ Size limit for input glass eels	Central/By local authority/None	Description of regulation:
⑥ Time closure of glass eels input	Central/By local authority/None	Description of regulation:
⑦ Other regulation	Central/By local authority/None	Description of regulation:
⑧ Body to manage and monitor input of glass eels	Fisheries Agency/ Local authority/Taiwan Eel Farming Industry Development Foundation/Local eel farmer cooperative	Monitoring measure: The eel farmer should report the input amount of eel within 10 days after inputting eel.
⑨ Body to manage and monitor production amount	Fisheries Agency/ Local authority/Taiwan Eel Farming Industry Development Foundation/Local eel farmer cooperative	Monitoring measure: The eel farmer's production should not exceed the input amount.
⑩ Penalty	Yes/No	Penalty for aquaculture operation without licenses: A fine of between NTD\$ 30,000 and NTD\$ 150,000. Penalty for excess of input limit: A fine of between NTD\$ 30,000 and NTD\$ 150,000.
Voluntary measures by industry		

Glass eel fishery		Description
Condition of glass eel fishery	(none) license required	
Ground for license, etc. ※	(Legislation) / Other scheme	Name of Legislation/other scheme requiring licenses: Regulations on the Restricted Fishing Seasons for Elvers/ Directions of the coastal Elvers Fishing Establishment date or estimated date to be established: September 9, 2013/ November 27, 2013
Management body	Council of Agriculture	
Contents of management measures		License holders: individual/association/others () Total number of licenses issued: Number of fishers:
① Upper limit for number of licenses	Central/By local authority/(none)	Description of regulation:
② Regulation on fishing gear	Yes/(No)	Description of regulation:
③ Upper limit for catch	Central/By local authority/By individual/None	Description of limit:
④ Size limit	Central/By local authority/None	Description of limit:
⑤ Time closure of glass eel catch	(Central) / By local authority/None	Description of regulation: Between April 1 and October 31 in 2018; Between March 1 and October 31 in other years.
⑥ Body to manage and monitor catch amount	By local authority and local fishermen's association	Monitoring measures: The glass eel fishermen are advised to report the catch amount to local fishermen's association.
⑦ Penalty	(Yes) / No	Penalty for fishing operation in time closure: A fine of between NTD\$ 30,000 and NTD\$ 150,000.
Voluntary measures by industry		

※ Attach the legal text, if there is an English version.

Summary Table of Conservation and Management Measures for Eels (Japan)

Name of Party: Japan

Eel aquaculture		Description
Condition of eel aquaculture business	none (license required)	
Ground for license, etc. ※	Legislation/Other scheme	Name of Legislation/other scheme requiring licenses: Inland Water Fishery Promotion Act Establishment date: June 27, 2014
Management body	Fisheries Agency	
Contents of management measures		
① Upper limit for number of licenses	Central/By local authority/None	License holders: company (facility)/others () Total number of Licenses issued: 525 (November 2017 – October 2018, as of November 1, 2017)
② Upper limit for scale of facilities	Yes/No	Description of regulation: total area of aquaculture ponds in each license holder
③ Upper limit for input of <i>Anguilla japonica</i>	Central/By local authority/By individual/None	The quota for individual farmers are set within the total upper limit. Total upper limit for <i>A. japonica</i> is set at 21.7 tons.
④ Upper limit for input of other eels	Central/By local authority/By individual/None	The quota is set for individual farmers within the total upper limit. Total upper limit for eels other than <i>A. japonica</i> is set at 3.5 tons.
⑤ Size limit for input glass eels	Central/By local authority/None	Description of regulation:
⑥ Time closure of glass eels input	Central/By local authority/None	Description of regulation:
⑦ Other regulation	Central/By local authority/None	Description of regulation: - When farmers sell their farmed eels to other farmers' aquaculture operation, sellers shall provide the document about trade record to buyers. - In case farmers conduct aquaculture operation of eels other than <i>A. japonica</i> , they are prohibited to release the eels to the waters outside of their facility. The farmers shall take necessary measure to prevent their escape.
⑧ Body to manage and monitor input of glass eels	Fisheries Agency	Monitoring measure: Farmers report their input amount to the Fisheries Agency every month.
⑨ Body to manage and monitor production amount	Fisheries Agency	Monitoring measure: Farmers report their production amount to the Fisheries Agency every month.
⑩ Penalty	Yes/No	Penalty for aquaculture operation without licenses: Less than 3 years of imprisonment or a penalty of less than 2 million yen
Voluntary measures by industry		

Glass eel fishery		Description
Condition of glass eel fishery	none license required	
Ground for license, etc. ※	Legislation Other scheme	Name of Legislation/other scheme requiring licenses: Prefectural Fisheries Coordination Regulation based on the Fisheries Act and the Act on the Protection of Fisheries Resources
Management body	Local authority	
Contents of management measures		License holders: individual association / others () Total number of licenses issued: 5,874 Number of fishers: 18,524 (2017-2018 fishing season)
① Upper limit for number of licenses	Central By local authority / None	Description of regulation: License holders are limited to Fisheries Associations, members of Fisheries Associations, eel farmers and so on
② Regulation on fishing gear	Yes / No	Description of regulation: Regulations on fishing gears are introduced in each Prefectures.
③ Upper limit for catch	Central By local authority By individual / None	Description of limit: Catch quota is set based on historical catch amount, area of aquaculture pond and so on.
④ Size limit	Central By local authority / None	Description of limit: Size limit is introduced in each Prefectures.
⑤ Time closure of glass eel catch	Central By local authority / None	Description of regulation: In many fishing grounds, fishing is allowed from December to April in the following year.
⑥ Body to manage and monitor catch amount	Local authority	Monitoring measures: Fishers shall report data to the local authority and local authorities may report data to the Fisheries Agency.
⑦ Penalty	Yes / No	Penalty for fishing operation without licenses: Less than 6 months of imprisonment or a penalty of less than 100,000 yen
Voluntary measures by industry		

※ Attach the legal text, if there is an English version.

Adult eel fishery		Description
Condition of adult eel fishery	none/ license required	
Ground for license, etc. ※	Legislation /Other scheme	Name of Legislation/other scheme requiring licenses: Prefectural Fisheries Coordination Regulation and other regulations based on the Fisheries Act and the Act on the Protection of Fisheries Resources
Management body	Local authority	
Contents of management measures	Yes /No	License holder: individual /association/others() Total number of licenses issued: Number of fishers:
① Upper limit for number of licenses	Central/By local authority/ None	Description of regulation:
② Regulation on fishing gear	Yes /No	Description of regulation: Regulations on fishing gears are introduced in each Prefectures.
③ Upper limit for catch	Central/By local authority/By individual/ None	Description of limit:
④ Size limit	Central/ By local authority /None	Description of limit: Size limit is introduced in each Prefectures. Lower size limit is 20cm - 30cm in most regions.
⑤ Time closure of glass eel catch	Central/ By local authority /None	Description of regulation: Time closure is introduced in each Prefectures, mainly from October to March when eels migrate from river to sea for spawning.
⑥ Body to manage and monitor catch amount		Monitoring measures:
⑦ Penalty	Yes /No	Penalty: Less than 6 months of imprisonment or a penalty of less than 100,000 yen for violation of Regional Fisheries Coordination Regulation. Less than 1 year of imprisonment or a penalty of less than 500,000 yen for violation of Instruction by Fisheries Adjustment Commission.
Voluntary measures by industry		

※ Attach the legal text, if there is an English version.

Summary Table of Conservation and Management Measures for Eels (Korea)

Eel aquaculture		Description
Condition of eel aquaculture business	none /license required	Reporting required (Inland Water Fishery Act), introduction of an approval system under Aquaculture Industry Development Act is in progress(submitted to the National Assembly on 28 Dec 2016)
Ground for license, etc. ※	Legislation /Other scheme	Name of Legislation/other scheme requiring licenses: Inland Water Fishery Act Establishment date or estimated date to be established: Inland Water Fishery Act was founded in 2000. Inland Water Fisheries Development Promotion Act(9 Jul 1976): license → Inland Water Fishery Act(29 Jul 2000): reporting
Management body	System management: Inland Fishery Industry Team, Aquaculture Industry Division, Ministry of oceans and Fisheries	Acceptance of a report: Local authority
Contents of management measures		
① Upper limit for number of licenses	Central/By local authority/ None	License holders: company/facility/ others (Individual) Total number of reports: 555
② Upper limit for scale of facilities	Yes/ No	Description of regulation:
③ Upper limit for input of <i>Anguilla japonica</i>	Central/By local authority/ By individual /None	Fresh Water Eel Culture Fisheries Cooperative composed of eel farmers self-regulates the input: Upper limit for <i>A. japonica</i> input is set at 11.1 tons.
④ Upper limit for input of other eels	Central/By local authority/ By individual /None	Fresh Water Eel Culture Fisheries Cooperative composed of eel farmers self-regulates the input: Upper limit for input of eels other than <i>A. japonica</i> is set at 13.2 tons in total.
⑤ Size limit for input glass eels	Central /By local authority/None	Description of regulation: Fisheries Resource Management Act article 35, Enforcement Decree article 18, Enforcement Regulation article 17 / a glass eel to weigh below 0.3 grams
⑥ Time closure of glass eels input	Central/By local authority/ None	Description of regulation:
⑦ Other regulation	Central/By local authority/ None	Description of regulation:
⑧ Body to manage and monitor input of glass eels	Fresh Water Eel Culture Cooperatives	Monitoring measure: Fresh Water Eel Culture Fisheries Cooperative investigate by farm
⑨ Body to manage and monitor production amount	Fresh Water Eel Culture Cooperatives	Monitoring measure: legislation to be enacted through amendment of "Fishery products distribution management and support Act" (2 Dec 2016) and Enforcement regulations (Jun 2017) to distribute eels at designated locations
⑩ Penalty	Yes /No	Penalty for aquaculture operation without reporting: penalty of maximum 5 million won Penalty for excess of input limit: None If not distributed at the designated place: imprisonment of 2 years or less or fine of 20 million won or less
Voluntary measures by industry		Compliance with the "Joint Statement" agreed in 2014

Glass eel fishery		Description
Condition of glass eel fishery	none <input checked="" type="radio"/> license required	Approval required/ Inland Water Fishery Act, Fisheries Act
Ground for license, etc. ※	<input checked="" type="radio"/> Legislation/Other scheme	Name of Legislation/other scheme requiring licenses: Fisheries Act Article 41.3 (glass eel stow-net fishery), Inland Water Fishery Act Article 9(Inland Water seed harvest approval) Establishment date or estimated date to be established: Fisheries Act enforced 23 Apr 2010, Inland Water Fishery Act enforced 29 Jul 2000 (approval required since Inland Water Fisheries Development Promotion Act(09 Jul 1976))
Management body	System Management: Inland Fishery Industry Team, Aquaculture Industry Division, Ministry of oceans and Fisheries	Approval: Local authority
Contents of management measures		License holder: <input checked="" type="radio"/> individual/association/others() Total number of licenses issued: Number of approval: 585(the total number including not only glass eel but all other seed capture)
① Upper limit for number of licenses	Central/By local authority/ <input checked="" type="radio"/> None	Description of regulation:
② Regulation on fishing gear	<input checked="" type="radio"/> Yes/ <input type="radio"/> No	Description of regulation: glass eel stow-net fishery(Enforcement Decree of the Fisheries Act Article 26)
③ Upper limit for catch	Central/By local authority/By individual/ <input checked="" type="radio"/> None	Description of limit:
④ Size limit	Central/By local authority/ <input checked="" type="radio"/> None	Description of limit:
⑤ Time closure of glass eel catch	Central/By local authority/ <input checked="" type="radio"/> None	Description of regulation:
⑥ Body to manage and monitor catch amount	Central and local authority	Monitoring measures: controlling unauthorized captures of glass eels
⑦ Penalty	<input checked="" type="radio"/> Yes/ <input type="radio"/> No	Penalty for fishing operation without licenses: Less than 1 years of imprisonment or a penalty of less than 10 million won
Voluntary measures by industry		

※ Attach the legal text, if there is an English version.

Adult eel fishery		Description
Condition of adult eel fishery	none/ <u>license required</u>	Approval required
Ground for license, etc. ※	<u>Legislation</u> /Other scheme	Name of Legislation/other scheme requiring licenses: Inland Water Fishery Act Article 9 Establishment date or estimated date to be established: Inland Water Fishery Act(29 Jul 2000)
Management body	System Management: Inland Fishery Industry Team, Aquaculture Industry Division, Ministry of oceans and	Approval: Local authority
Contents of management measures		License holders: <u>individual</u> /association/others() Total number of licenses issued: Number of fishers: Approval is issued not by fish species but by type of fishing gears, thus, the exact number cannot be confirmed.
① Upper limit for number of licenses	Central/By local authority/ <u>None</u>	Description of regulation:
② Regulation on fishing gear	<u>Yes</u> /No	Description of regulation: pound net, longline, fish trap
③ Upper limit for catch	Central/By local authority/By individual/ <u>None</u>	Description of limit:
④ Size limit	<u>Central</u> /By local authority/None	Description of limit: 15cm~45cm
⑤ Time closure of glass eel catch	<u>Central</u> /By local authority/None	Description of regulation: six months closure(1 October ~ 31 March)
⑥ Body to manage and monitor catch amount	Central and local authority	Monitoring measures: controlling unauthorized captures of adult eels
⑦ Penalty	<u>Yes</u> /No	Penalty for fishing operation without licenses: Less than 1 years of imprisonment or a penalty of less than 10 million won
Voluntary measures by industry		

※ Attach the legal text, if there is an English version.

ニホンウナギに係る地域ワークショップの結果について

日本種鰻の相關區域研討會結果

平成 30 年 9 月 21 日 水産庁

2018 年 9 月 21 日 水産廳

平成 30 年 9 月 20 日（木曜日）から 21 日（金曜日）まで、東京都内において、ニホンウナギに係る地域ワークショップが開催され、ニホンウナギに係る科学的データ・情報のレビュー等を行うとともに、今後どのような科学調査を実施すべきか等について、科学的な観点から議論が行われました。

1. 地域ワークショップとは

ニホンウナギは、マリアナ海溝周辺海域で生まれた後、我が国を含む東アジア沿岸域に回遊し、その稚魚（シラスウナギ）は主に養殖用種苗として利用されています。このため、本資源の持続可能な利用のためにはニホンウナギの漁獲や養殖等を行う関係国・地域が協力していく必要があります、これらの関係国・地域間では、平成 24 年 9 月から「ウナギの国際的資源保護・管理に係る非公式協議」が開催され、議論が重ねられてきました。平成 26 年 9 月の第 7 回協議では、日本、中国、韓国及びチャイニーズ・タイペイの 4 者の水産当局間で、(1)養殖池への種苗の池入れ量制限、(2)保存管理措置の適切な実施を確保するための養鰻管理団体の設立、(3)法的拘束力のある枠組み設立の可能性の検討等を内容とした共同声明の発出に至り、これまで協議を継続しているところです。

平成 30 年 6 月 7 日から 8 日にかけて開催された第 11 回非公式協議では、科学的根拠に基づく資源管理措置の導入に向けて今後協力を行うことを確認するとともに、そのための会合を早期に開催する方向で調整することとなりました。今回のワークショップは、このことに基づいて開催されたものであり、関係国・地域の科学者等が参加してニホンウナギに係る科学的データ・情報のレビュー等を行うとともに、その結果を踏まえて、今後どのような科学調査を実施すべきか等について、科学的な観点から議論を行いました。

2. 開催日程

日 程：平成30年9月20日（木曜日）10時00分～17時00分

平成30年9月21日（金曜日）9時30分～13時00分

会 場：石垣記念ホール 所在地：東京都港区赤坂 1-9-13

3. 出席国・地域

日本、韓国、チャイニーズ・タイペイ

我が国からは、魚谷 敏紀（うおや としのり）生態系保全室長ほか、水産庁、国立研究開発法人水産研究・教育機構、関係業界等の関係者が出席

4. 結果概要

ニホンウナギに係る科学的データ・情報についてレビューを行った結果、以下の内容について確認しました。

- ・ニホンウナギの生息環境保全及び下りウナギの保護を推進すべき
- ・ニホンウナギの資源評価及びそのための科学データの収集及び共有に、関係国・地域が協力して取り組むべき
- ・ニホンウナギの持続的利用のためには、更なる保存管理措置が必要との分析に留意すべき
- ・上記内容を踏まえて、次回の非公式協議で、ニホンウナギの生息国・地域全体で、資源管理措置やその他必要な措置を検討すべき

ニホンウナギ規制強化で一致 日韓台の専門家会議 水産庁発表

は9月21日、絶滅危惧種に指定されているニホンウナギの資源管理について日本や韓国、台湾の専門家らによる会議を開き、持続的な利用のために規制の強化が必要との認識で一致したと発表した。会議は20日、21日の2日間、研究者ら約40人が出席し東京都内で開かれた。関係国・地域がニホンウナギの生息数などに関するデータ収集で協力していく必要性も確認した。フィリピンも参加予定だったが、台風による交通機関の混乱などで欠席した。水産庁はこの結果を踏まえ、来年3月に関係国・地域による国際会合を開いて具体策を議論したいとする。

ニホンウナギの資源管理を巡っては日本と中国、韓国、台湾が2014年、養殖池に入れる稚魚（シラスウナギ）の量を2割減らす規制に合意。それ以降、日本の年間上限は21.7トンが続いている。ただ、2014年に合意した国際的な規制の枠組みに入っている中国は、この会議を欠席した。実効性のある規制を打ち出せるかは中国の対応が焦点になる。

ニホンウナギの専門家会合 中国が欠席

日本と韓国、台湾は20、21の両日、絶滅の恐れのあるニホンウナギの科学的な資源評価について話し合う会合を開いた。来年3月に日本で開かれる中国も含めた4カ国・地域による非公式協議に「さらなる保存管理措置が必要」などと提言することを確認した。

科学者が研究成果を持ち寄る初めての会合だったが、中国は欠席した。理由は明かされていない。非公式協議のオブザーバーであるフィリピンも大型台風の影響で参加を見合わせた。ニホンウナギの資源管理をめぐるっては、規制に消極的な中国が不在のまま議論が進んでおり、話し合いの場に呼び戻すことが急務となっている。

ニホンウナギの生態は未解明の部分が多く、資源評価が難しい。次回非公式協議では、稚魚の「シラスウナギ」を養殖に回す上限数量の引き下げなどが話し合われる可能性もありそうだ。