With permission from the Ornamental Aquatic Trade Association (OATA), Pet Industry Joint Advisory Council (PIJAC) and the Pet Leadership Council (PLC) has converted the Wild Caught Ornamental Fish Report to represent statistics from the United States.

Wild Caught Ornamental Fish – The trade, The Benefits, The Facts
References and annotations by page

Contents

Welcome

UN Development Goals
With particular reference to the following:

Goal 1. End poverty in all its forms everywhere

Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation (as applies to technology transfer)

Goal 10. Reduce inequality within and among countries

> **Goal 10b.** Encourage official development assistance and financial flows, including foreign direct investment, to States where the need is greatest, in particular least developed countries, African countries, small island developing States and landlocked developing countries, in accordance with their national plans and programs

Goal 13. Take urgent action to combat climate change and its impacts (by helping maintain rainforests which in turn act as carbon sinks)

Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development

> **Goal 14.7.** By 2030, increase the economic benefits to small island developing States and least developed countries from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism
>
> **Goal 14.b.** Provide access for small-scale artisanal fishers to marine resources and markets

Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

> **Goal 15.8.** By 2020, introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems and control or eradicate the priority species
>
> **Goal 15.a.** Mobilize and significantly increase financial resources from all sources to conserve and sustainably use biodiversity and ecosystems

Goal 17.11 Significantly increase the exports of developing countries, in particular with a view to doubling the least developed countries' share of global exports by 2020
http://www.un.org/sustainabledevelopment/sustainable-development-goals/

Wild caught fish: key facts

* Consolidation of key points from the report *

Trade not Aid

Watson, I. & Roberts, D. 2015. Annex E: The ornamental fish trade and livelihoods – The Rio Negro fishery (pg. 78, Table E5); Value chains and the ornamental fish industry (pg. 89, Table E9) in The Benefits of Wild Caught Ornamental Aquatic Organisms. Durrell Institute of Conservation and Ecology (DICE). University of Kent. UK. 175pp.

The trade benefits

* Industry informed experience *

Wild caught ornamental fish – An A-Z of global trade

Watson, I. & Roberts, D. 2015. Annex B: Industry Statistics (pg. 26) in The Benefits of Wild Caught Ornamental Aquatic Organisms. Durrell Institute of Conservation and Ecology (DICE). University of Kent. UK. 175pp.

Note: Countries listed as exporters to the UK are based on UK (HM Customs) data, EU (Eurostat) trade statistics, and informed industry experience.

UNDP. 2015. Human Development Report: Work for Human Development. (Statistical tables 1 and 2; pgs 208-212). New York, USA. Available at http://hdr.undp.org/en

UN-DESA. Least Developed Countries: Country Resolutions and Reports. http://www.un.org/en/development/desa/policy/cdp/ldc2/ldc_countries.shtml (accessed 22/04/16)

UN-OHRLLS. 2011. Small Island Developing States. Small Islands Big(ger) Stakes (pg.2) 28pp. http://unohrlls.org/custom-content/uploads/2013/08/SIDS-Small-Islands-Bigger-Stakes.pdf

How are fish caught?

Watson, I. & Roberts, D. 2015. Annex F (pg 101): Fishing methods used in the wild caught ornamental trade in The Benefits of Wild Caught Ornamental Aquatic Organisms. Durrell Institute of Conservation and Ecology (DICE). University of Kent. UK. 175pp.

From the wild to a UK home aquarium – The Fish's Journey

* Based on the above reference and industry informed experience *

Did you know?

Box 1.
Aquatic animal health directive 2006/88
http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32006L0088&from=EN

The Aquatic Animal Health (England and Wales) Regulations 2009
http://www.legislation.gov.uk/uksi/2009/463/pdfs/uksi_20090463_en.pdf

Commission Regulation (EU) No 346/2010
http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32010R0346&from=EN

CITES Import/ Export permits https://cites.org/eng/resources/faq.php#permit

CITES Imports (EU) - The Differences between EU and CITES Provisions in a Nutshell
http://ec.europa.eu/environment/cites/pdf/differences_b_eu_and_cites.pdf

Endangered species: imports and exports and commercial use (UK)
https://www.gov.uk/guidance/cites-imports-and-exports

Box 2.
IATA Live Animal Regulations. Container requirements 51 and 52 (fish); 56 (live corals) and 57 (other invertebrates).

Box 3.
Based on an industry informed experience, and information supplied by Segrest Farms

Box 4.
If you have acquired an undesirable aquatic plant or fish species for your aquarium or water garden, it is important not to release these plants or animals into the environment.
"Habitattitude | Protect Our Environment | Do Not Release Fish and Aquatic Plants." Habitattitude (TM). N.p., n.d. Web. 08 Mar. 2017. http://www.habitattitude.net/

U.S. Fish and Wildlife Service, Jenny Ericson, Michael Lusk. "U.S. Fish & Wildlife Service." Invasives Species - U.S. Fish and Wildlife Service. N.p., n.d. Web. 08 Mar. 2017. https://www.fws.gov/invasives/

How fish are protected by regulations

Country of Origin

Watson, I. & Roberts, D. 2015. Annex C (pg 35): A review of legislation on the ornamental fish trade in The Benefits of Wild Caught Ornamental Aquatic Organisms. Durrell Institute of Conservation and Ecology (DICE). University of Kent. UK. 175pp.

Did you know?

Box 1.
"Lacey Act." Official Web Page of the U S Fish and Wildlife Service. N.p., n.d. Web. 08 Mar. 2017. https://www.fws.gov/international/laws-treaties-agreements/us-conservation-laws/lacey-act.html

Box 2.
Watson, I. & Roberts, D. 2015. Annex C: A review of legislation on the ornamental fish trade – Maldives legislation (pg. 40) in The Benefits of Wild Caught Ornamental Aquatic Organisms. Durrell Institute of Conservation and Ecology (DICE). University of Kent. UK. 175pp

Watson, I. & Roberts, D. 2015. Annex K: The ornamental trade in perspective (Table K.1, pg168) in The Benefits of Wild Caught Ornamental Aquatic Organisms. Durrell Institute of Conservation and Ecology (DICE). University of Kent. UK. 175pp

Saleem, M, & Islam, F. 2008 Management of the aquarium fishery in the Republic of the Maldives. Proceedings of the 11th International Coral Reef Symposium, Ft. Lauderdale, Florida, 7-11 July 2008 session no. 22: 1038-1042.

Box 3.
Service, U.s. Fish & Wildlife. Understanding CITES (n.d.): n. pag. U.S. Fish & Wildlife Service. US Fish and Wildlife, 01 Apr. 2014. Web. 8 Mar. 2017. https://www.fws.gov/international/pdf/factsheet-cites-appendix-ii-2014.pdf

In the air

IATA Live Animal Regulations.
EC Regulation 1/2005. Annex 1. Chapter II (paragraph 4.1) and Annex VI – International standards for containers, pens or stalls appropriate for transporting live animals by air (as an example of IATA Live Animal Regulations in domestic law)
http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32005R0001&from=en

On arrival into the US

CITES Import/ Export permits https://cites.org/eng/resources/faq.php#permit

Boyd, Claude E. "Better Management Practices in International Aquaculture." Environmental Best Management Practices for Aquaculture (n.d.): 73-90. Florida Department of Agriculture and Consumer Services. Florida Department of Agriculture and Consumer Services, 01 Nov. 2016. Web. 07 Mar. 2017.
http://www.freshfromflorida.com/content/download/64045/1520653/BMP_RULE_AND_MANUAL_FINAL.pdf

"Invasive Species: Major Laws and the Role of Selected Federal Agencies." (n.d.): n. pag. The National Agricultural Law Center. The National Agricultural Law Center, 24 Oct. 2013. Web. 6 Mar. 2017.
http://nationalaglawcenter.org/wp-content/uploads/assets/crs/R43258.pdf

What if my shipment is in transit through the United States?
Shipments that are in transit through the United States and remain under Customs bond do not have to be declared to us. Your in-transit shipment, however, must comply with foreign wildlife laws, and live wildlife must be transported humanely.

Service, U.S. Fish and Wildlife. "Office of Law Enforcement - Importing and Exporting Your Commercial Wildlife Shipment." Official Web Page of the U S Fish and Wildlife Service. U S Fish and Wildlife Service, n.d. Web. 08 Mar. 2017.
https://www.fws.gov/le/commercial-wildlife-shipment.html

In the industry

CONSERVATION PRIORITY SPECIES AT RISK LIST. N.p.: The Aquarium Hobby CARES Preservation Program, 03 Feb. 2016. PDF.

Did you know?

* Based on industry informed experience *

What would collectors do if they couldn't catch wild fish?

FUNDAMAZONIA. 2015. The Benefits of Wild Caught Ornamental Aquatic Organisms in The Pacaya Samiria National Reserve, Peru. 20pp.

LINI. 2015. A Survey of Marine Ornamental Fishers' Livelihoods in North Bali. 23pp.

Fishing for food

Watson, I. & Roberts, D. 2015. Annex E: The ornamental fish trade and livelihoods – Comparison with the food fish trade (pg. 97) in The Benefits of Wild Caught Ornamental Aquatic Organisms. Durrell Institute of Conservation and Ecology (DICE). University of Kent. UK. 175pp

Logging, ranching, tourism and coral mining

Watson, I. & Roberts, D. 2015. Annex I (pg 120): Threats to the wild caught ornamental fish trade in The Benefits of Wild Caught Ornamental Aquatic Organisms. Durrell Institute of Con servation and Ecology (DICE). University of Kent. UK. 175pp

Watson, I. & Roberts, D. 2015. Annex K (pg 154): The ornamental trade in perspective in The Benefits of Wild Caught Ornamental Aquatic Organisms. Durrell Institute of Conservation and Ecology (DICE). University of Kent. UK. 175pp

Project Piaba http://projectpiaba.org/

Tourism with a sting in the tail

Watson, I. & Roberts, D. 2015. Annex I: Threats to the wild caught ornamental fish trade – Tourism (pgs. 123-124) in The Benefits of Wild Caught Ornamental Aquatic Organisms. Durrell Institute of Conservation and Ecology (DICE). University of Kent. UK. 175pp
Góes de Araújo, M.L., Charvet-Almeida, P., Pinto Almeida, M., and H. Pereira. 2004. Fresh

water stingrays (Potamotrygonidae): status, conservation and management challenges. Information paper for the 20th CITES Animals Committee meeting (AC20 Inf. 8). Johannesburg (South Africa), 29 March-2 April 2004. 6pp. https://www.cites.org/sites/default/files/common/com/ac/20/E20-inf-08.pdf (accessed 20/04/16)

Carbon Locking and Climate Change

"Sources of Greenhouse Gas Emissions." EPA. Environmental Protection Agency, 14 Feb. 2017. Web. 08 Mar. 2017. https://www.epa.gov/ghgemissions/sources-greenhouse-gas-emissions

Mitchell A.W., Secoy, K, and N. Mardas. 2007. Forests First in the Fight Against Climate Change. Global Canopy Programme.

8 key benefits of wild caught fish

Watson, I. & Roberts, D. 2015. The Benefits of Wild Caught Ornamental Aquatic Organisms. Durrell Institute of Conservation and Ecology (DICE). University of Kent. UK. 175pp

Wabnitz, C., Taylor, M., Green, E., and Razak, T. 2003. From Ocean to Aquarium. UNEP-WC MC, Cambridge, UK. http://www.unep.org/pdf/from_ocean_to_aquarium_report.pdf (accessed 25/04/16).

Case study: Peru

FUNDAMAZONIA. 2015. The Benefits of Wild Caught Ornamental Aquatic Organisms in The Pacaya Samiria National Reserve, Peru. 20pp.
Video of fish collectors in Peru https://www.youtube.com/watch?v=Bvv951YwTFw

Case study: Bali

LINI. 2015. A Survey of Marine Ornamental Fishers' Livelihoods in North Bali. 23pp.
Video on the Ornamental fish collectors in Les Village, Bali
https://www.youtube.com/watch?v=HDxKefqcC3w&feature=youtu.be

Case Study Brazil: Celebration and Conservation

"With the recent decline in the ornamental fishing trade, families were gradually abandoning the community and moving to land areas where other economic activities are possible. Therefore, in these new areas, a considerable portion of upland forest was removed to accommodate plantations of cassava, maize, and other crops." (pg. 420)

"The decline in ornamental fishery is believed to have had a negative impact on regional forest conservation" (pg. 420)

"The Imazon Deforestation Alert System detected a deforestation area of 838 km2 in August and September 2014, in Amazonia, which represents an increase of 191 % in relation to 288 km2 of August–September 2013 (pg. 421) (http://imazon.org.br/publicacoes/deforestation-report-for-the-brazilian-amazon-august-2014-sad/?lang=en)."

Alho, C. J. ., R.E. Reis and Aquino, P. P.U. 2015. Amazonian freshwater habitats experiencing environmental and socioeconomic threats affecting subsistence fisheries. Ambio 44(5): 412-425. DOI 10.1007/s13280-014-0610-z. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4510326/ (accessed 22/04/16).

Project Piaba http://projectpiaba.org/

Video on Project Piaba: For Ornamental Fish https://vimeo.com/124670986

Some facts about the global ornamental fish industry (marine)

Note: extent of collecting areas for marine ornamental fish is based on FAO export data and informed industry experience. See also pages 4 and 5: Wild caught ornamental fish – An A-Z of global trade

Species resilience

Cooney, R., Kasterine, A., MacMillan, D., Milledge, S., Nossal, K., Roe, D. and S.,'t Sas-Rolfes, M. (2015). The trade in wildlife: a framework to improve biodiversity and livelihood outcomes. Chapter 3.1.1 Species Factors- Resilience to Harvest. Pg. 8. International Trade Centre, Geneva, Switzerland. https://www.cbd.int/financial/monterreytradetech/iucn-wildtrade.pdf (accessed 21/04/16).

Watson, I. & Roberts, D. 2015. Annex K: The ornamental trade in perspective – Ornamental fisheries and their impact. Table K1. Data on the ability of reef species to withstand fishing pressure and adapt to aquarium life (pgs 168-170) in The Benefits of Wild Caught Ornamental Aquatic Organisms. Durrell Institute of Conservation and Ecology (DICE). University of Kent. UK. 175pp

Australian Institute of Marine Science. About Corals – Distribution and Reproduction Fact Sheets. http://coral.aims.gov.au/info/about.jsp (accessed 22/04/16).

UNEP-WCMC (2004) Review of marine ornamental species. UNEP-WCMC, Cambridge, United Kingdom. 109pp.

NOAA/ NMFS. August 24, 2015. Endangered and Threatened Wildlife and Plants; Notice of 12-month Finding on a Petition to List the Orange Clownfish as Threatened or Endangered Under the Endangered Species Act. Federal Register Vol. 80, No. 163. Pp 51235 – 51246. http://1.usa.gov/1rsZP2p

Global catch

Watson, I. & Roberts, D. 2015. Annex B: Industry Statistics (pg. 26) in The Benefits of Wild Caught Ornamental Aquatic Organisms. Durrell Institute of Conservation and Ecology (DICE). University of Kent. UK. 175pp.

Fish discarded

FAO. 2015. FAO Global production database updated to 2013 – Summary information. 5pp. http://www.fao.org/3/a-i4883e.pdf (accessed 22/04/16)

Kelleher, K. 2005. Discards in the world's marine fisheries. An update. FAO Fisheries Technical Paper. No. 470. Rome, FAO. 131p. http://www.fao.org/docrep/008/y5936e/y5936e09.htm#bm09.1 (accessed 22/04/16)

Davies, R.W.D., S.J. Cripps, A. Nickson and G. Porter. 2009. Defining and estimating global marine fisheries bycatch. doi:10.1016/j.marpol.2009.01.003. http://assets.wwf.org.uk/downloads/bycatch_paper.pdf (accessed 22/04/16).

Note: Kelleher (2005) estimates 8% of global catch is bycatch. Davies, et. al. (2009) estimate 40.4% is bycatch. Based on FAO global marine capture figures for 2013, this is between 7 and 33 million tonnes of bycatch.

Also related: "No-one wants to see perfectly edible fish being thrown back into the sea dead," (comment on discard ban in North Sea by Scots Minister Richard Lochhead) http://www.north-star-news.co.uk/News/Fish-discard-ban-will-benefit-industry-Lochhead-31122015.htm

Sold alive in the aquarium trade

Wabnitz, C., Taylor, M., Green, E., and Razak, T. 2003. From Ocean to Aquarium. UNEP-WCMC, Cambridge, UK.

Note: Wabnitz, et. al. 2003 estimate 20 – 24 million marine fish in the global ornamental trade. The average marine ornamental fish is c. 3 g (average from industry experience and companies' import records). Therefore, the estimated weight of marine ornamental fish is c. 70 tons.

Did you know? Tropical prawn trawlers

Hill, B.J. and Wassenberg, T. J. 2000. The probable fate of discards from prawn trawlers fishing near coral reefs: A study in the northern Great Barrier Reef, Australia. Fisheries Re search 48(3): 277-286. http://www.sciencedirect.com/science/article/pii/S0165783600001855 (accessed 25/04/16).

Clucas, I. 1997. Chapter 9: Discards and bycatch in shrimp trawl fisheries (Table 11) in A Study of the options for utilization of bycatch and discards from marine capture fisheries. FAO Fisheries circular No. 928 FIIU/C928. http://www.fao.org/docrep/w6602e/w6602e09.htm#a (accessed 25/04/16).

Why aren't more marine fish captive reared?

Pelagic spawners are generally more difficult to spawn and rear larvae.

"The second way to assess that the export of aquarium fish to the U.S. comes from a small numbers of individuals representing many species is that overall, for these data, there are 5,647 unique species-country combinations of exports. Only 710 of the species-country combinations (12.6%) exceed 1,000 individuals per species, indicating that the trade consists primarily of low-volume species." (pg. 5)

Note that it may never be commercially feasible to create hatcheries to raise small numbers of many species.

From:
Rhyne A.L., Tlusty M.F., Schofield P.J., Kaufman L, Morris J.A. Jr, and Bruckner A.W. 2012 Revealing the Appetite of the Marine Aquarium Fish Trade: The Volume and Biodiversity of Fish Imported into the United States (page 5).
PLoS ONE 7(5): e35808. doi:10.1371/journal.pone.0035808
http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0035808 (accessed 25/04/16)

Some facts about the global ornamental fish industry (freshwater)

Note: The percent of marine and freshwater species that are captive bred is based on industry experience.

Annual global catch of freshwater fish

FAO. 2015. FAO Global production database updated to 2013 – Summary information. 5pp.
http://www.fao.org/3/a-i4883e.pdf (accessed 22/04/16)

Fish caught for food in Amazonas

Ministério da Pesca e Aquicultura (MPA Brasil). Coordenação-Geral de Monitoramento e Informações Pesqueiras. Produção nacional de pescados em 2011 (Tabela 4, página 21) in Boletim estatístico da pesca e aquicultura 2011. 60 pp.
http://www.mpa.gov.br/files/docs/Boletim_MPA_2011_pub.pdf (accessed 25/04/16)

Ministério da Pesca e Aquicultura (MPA Brasil). Coordenação-Geral de Monitoramento e Informações Pesqueiras. Fevereiro 2012. Produção nacional de pescados em 2010 (Tabela 4, página 19) in Boletim estatístico da pesca e aquicultura 2010. 128 pp.
http://www.mpa.gov.br/files/docs/Informacoes_e_Estatisticas/Boletim%20Estat%C3%ADstico%20MPA%202010.pdf (accessed 25/04/16)

Ministério da Pesca e Aquicultura (MPA Brasil). Coordenação-Geral de Monitoramento e Informações Pesqueiras. Produção nacional de pescados em 2008 -2009 (Tabela 4, página 14) in Boletim estatístico da pesca e aquicultura 2008 – 2009. 99pp.
http://www.mpa.gov.br/files/docs/Publicidade/anu%C3%A1rio%20da%20pesca%20completo2.pdf (accessed 25/04/16).

Note: The three references above show the volume of fish caught for food in the state of Amazonas as follows:

Year	Landing
2011	63,743
2010	70,896
2009	71,109
2008	70,684
2007	60,306

Alive & Kicking:

Kottelat, M, & Whitten, T (1996) Freshwater Biodiversity in Asia with Special Reference to Fish (pg. 27). World Bank Technical Paper No. 343. World Bank, Washington DC, USA. 87pp http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/1996/09/01/000009265_3970128131744/Rendered/PDF/multi_page.pdf (accessed 25/04/16)

Catch cardinals or release carbon

Total ornamental fish exported from Brazil (http://aliceweb.desenvolvimento.gov.br/ (accessed 25/04/16)). Note that approximately 70% of the number of fish exported corresponds to cardinal tetras.

Year	# of Fish exported (million)	Value (USD Million)
2000	56.6	3.24
2005	31.7	4.4
2010	14.2	6.8
2011	10.4	7.3
2012	6.9	9.3
2013	7.8	10.5
2014	6.4	13.8

"To compare the local inspection to satellite images, it was confirmed that the forests of the mid Negro region are still very well preserved and, only recently, with the sharp decline in ornamental fishery, have areas begun to open up for subsistence agriculture."

"The decline in ornamental fishery is believed to have had a negative impact on regional forest conservation."

Alho, C. J. ., R.E. Reis and Aquino, P. P.U. 2015. Amazonian freshwater habitats experiencing environmental and socioeconomic threats affecting subsistence fisheries. Ambio 44(5): 412-425. DOI 10.1007/s13280-014-0610-z. http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4510326/ (accessed 25/04/16).

The US industry in context

Fish landings in the US (2015)

"*In 2015, U.S. commercial fishermen landed 9.7 billion pounds of seafood valued at $5.2 billion."*

"Recreational anglers took 61 million trips and caught 351 million fish in 2015. Of the total number of fish caught, 57% fish were released alive. The estimated total weight of landed catch (151 million fish) was 188 million pounds. Striped bass remains the top catch among saltwater anglers, with more than 17.1 million pounds (1.3 million fish) caught in 2015."

"Fisheries of the United States, 2015." A Statistical Snapshot of 2015 Fish Landings 36.3, Supplement (1921): 20-55. NOAA Office of Science and Technology. NOAA, 2015. Web. 01 Mar. 2017. https://www.st.nmfs.noaa.gov/Assets/commercial/fus/fus15/documents/FUS2015%20Fact%20Sheet.pdf

"United Nations Statistics Division - Commodity Trade Statistics Database (COMTRADE)." United Nations. United Nations, n.d. Web. 09 Mar. 2017. https://comtrade.un.org/db/ce/ceSnapshot.aspx?px=H1&cc=030110

Oliver, Kelsey. Pet Stores in the US. Rep. no. 45391. N.p.: IBISWorld, 2016. Print.
Key Statistics Snapshot Business: 13,557 (pg 3)
Industry Data 2016 Employment: 124,505 (pg 29)

Pg 17; #7 What types of companion animals and/or fish did you your store carry?

Pg 19; About the Survey; Statistical data for the 2016-2017 Pet Adge Retailer Report was compiled by Best Companies Group. Pet Age sent emails from November 4 to November 18 to more than 11,000 retail owners and managers from the Pet Age subscriber list to complete the internet-based questionnaire. The Pet Age Retailers Survey was sponsored by PetEdge(Beverly, Massachusetts).

Wepner, Alexander. "2016-17 Retailer Report." Pet Age 01 Jan. 2017: 13-23. Print

The Fishkeepers

Households and Fish Kept
"Pet Industry Market Size & Ownership Statistics." Pet Industry Market Size & Ownership Statistics. American Pet Products Association (APPA), n.d. Web. 09 Mar. 2017.

Fishkeepers Spend; * Based on informed industry opinion *

Did You Know? Pets are good for our health

Clower, Terry L., PhD, and Tonya T. Neaves, PhD. The Health Care Cost Savings of Pet Ownership (2015): n. pag. HABRI. Human Animal Bond Research Institute, Dec. 2015. Web. 6 Mar. 2017.

Knowing your ornamental fish

* Based on informed industry opinion *

Cost of setting up a marine aquarium

* Based on informed industry experience *

The use of chemicals

Bruckner, A.W. and G. Roberts (editors). 2008. Proceedings of the International Cyanide Detection Testing Workshop. NOAA Technical Memorandum NMFS-OPR-40, Silver Spring, MD 164 pp. http://www.nmfs.noaa.gov/pr/pdfs/nmfsopr40.pdf (accessed 06/05/16)

"Lacey Act." Official Web Page of the U S Fish and Wildlife Service. N.p., n.d. Web. 08 Mar. 2017. https://www.fws.gov/international/laws-treaties-agreements/us-conservation-laws/lacey-act.html

Fish welfare and mortality

"Most companies surveyed reported pre-shipment mortality rates of about 1-2 per cent, and there is no reason to doubt this figure. Fishes which die usually do so as a result of improper decompression or abuse from other fishes, factors which are well-controlled by most. Included within these reported mortality figures are fishes which are released back to the ocean be cause they are not suitable for exportation."

From:
Pyle, R (1993) Marine aquarium fish. Unattributed report downloaded at http://www.spc.int/digitallibrary/doc/fame/reports/pyle_93_marineaquariumfishes.pdf

Note: the above reference demonstrates that best practice achieving low mortalities has been in place for decades.

Wabnitz, C, & Nahacky, T (2014) Rapid aquarium fish stock assessment and evaluation of industry best practices in Kosrae, Federated States of Micronesia. Noumea, New Caledonia: Secretariat of the Pacific Community. 24pp. http://bit.ly/1SYuTjy (accessed 04/05/16)

From Hansard records Thursday March 30, 2006. Vol. No. 680. Part No. 130:.

Baroness Miller of Chilthorne Domer asked Her Majesty's Government:

Whether they have made an assessment of the percentage of wild-caught fish imported into the United Kingdom as pets which die before they are sold.

The Parliamentary Under-Secretary of State, Department for Environment, Food and Rural Affairs (Lord Bach): Most wild-caught fish imported into the UK as pets are tropical species. No specific assessment has been made of mortalities on arrival or of mortalities between arrival and point of sale. However, all commercial consignments of live fish imported directly to the UK from third countries must be routed through a border inspection post and all consignments are subject to a programme of targeted inspection. Evidence from this inspection programme suggests that mortalities account for approximately 1 per cent of consignments of live fish.
http://www.publications.parliament.uk/pa/ld200506/ldhansrd/vo060330/text/60330w04.htm
(Accessed 22/04/2016)

Welfare in the aquarium

OATA's "How to" guides and videos and care sheets for fish, aquatic reptiles, aquatic invertebrates and plants http://www.ornamentalfish.org/fish-keeper/useful-information

OATA's code of conduct for businesses http://bit.ly/1Ycns9T