Caught in the Middle:
The Story of Western and Central Pacific Bigeye Tuna

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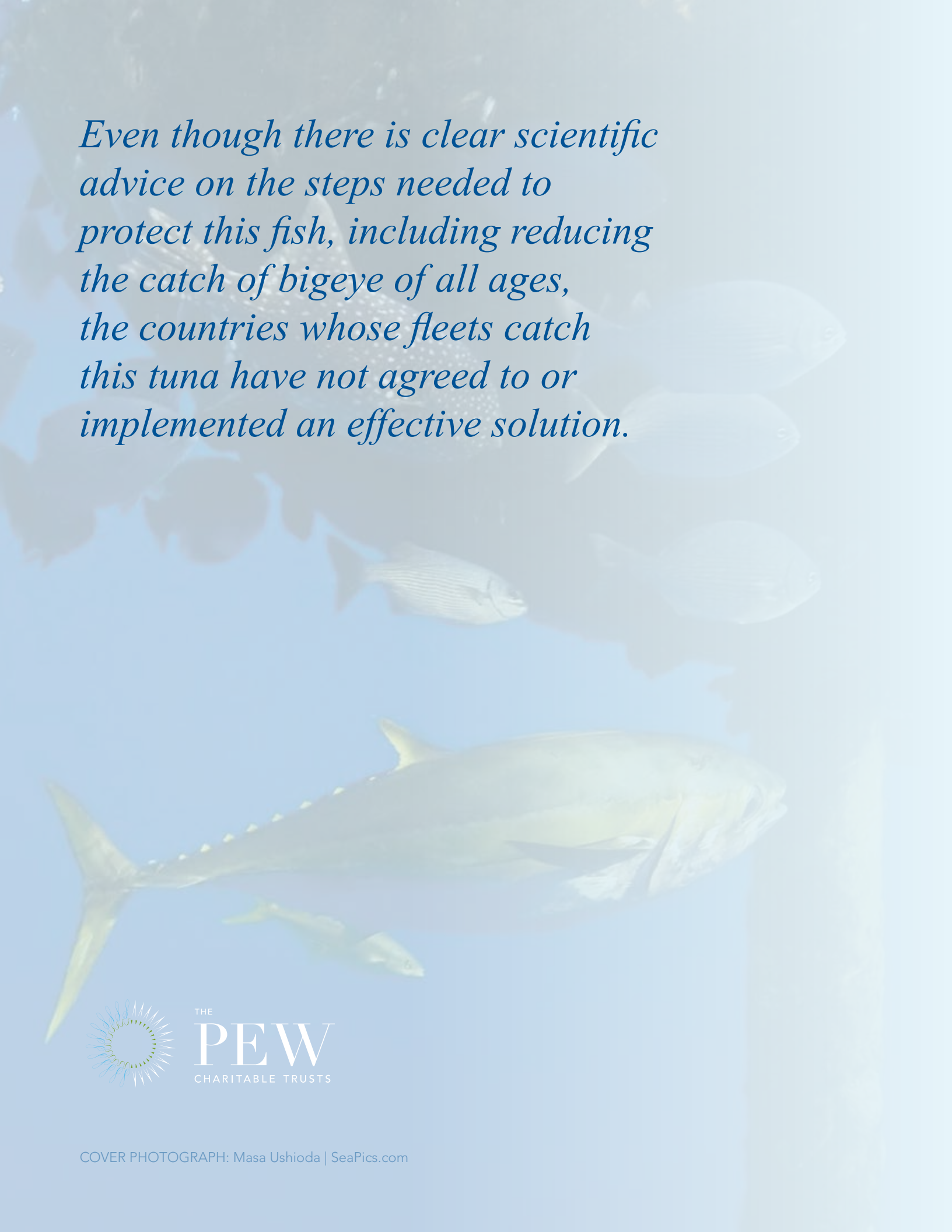

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Introduction

A conflict is brewing in the western and central Pacific Ocean, and bigeye tuna are caught in the middle. On one side, fishermen using longlines are targeting mature bigeye, the largest and most valuable by pound of the tropical tuna species.[i] On the other, vessels primarily fishing for skipjack tuna are bringing in thousands of tons of juvenile bigeye each year in large purse seine nets. Together, these two fisheries are catching too many bigeye tuna, threatening the future of this population.

Even though there is clear scientific advice on the steps needed to protect this fish, including reducing the catch of bigeye of all ages, the countries whose fleets catch this tuna have not agreed to or implemented an effective solution. As fishing pressures increase, it is more important than ever that they come together to end the destructive status quo.

The Biology of Bigeye Tuna

Bigeye tuna live in tropical and subtropical waters around the world. In the western Pacific, their range extends from Japan in the north to the east coast of Australia in the south and to Hawaii in the east.

Currently, they are managed as a separate stock from the bigeye found in the eastern Pacific, but there is evidence that the two populations may be interconnected.[1] Bigeye are one of the largest tuna species, growing to 2 meters (6 feet), weighing up to 210 kilograms (450 pounds), and living up to 14 years. They reach maturity around age 3. They spend their early years in large schools of similar-size fish near the surface, often congregating around objects floating in the water.[2]

Targeted From All Sides

Floating objects in the western and central Pacific have become a dangerous place for young bigeye in recent years. Other types of tuna, including skipjack, also gather around flotsam, and fishermen throughout the region have learned to exploit this natural schooling behavior. They deploy a type of fishing gear known as a fish aggregating device, or FAD, where fish and other species congregate. Fishermen return later and cast a large purse seine net to encircle the fish that gather beneath the FAD, hauling everything in the net onboard.

A large proportion of their catch is skipjack tuna, but many other species, including juvenile bigeye tuna, are captured as well. The use of FADs has exploded in the last four decades. The amount of bigeye caught this way has risen from negligible amounts in the 1970s to over 70,000 metric tons in 2011, **an increase of over 12,000 percent**.

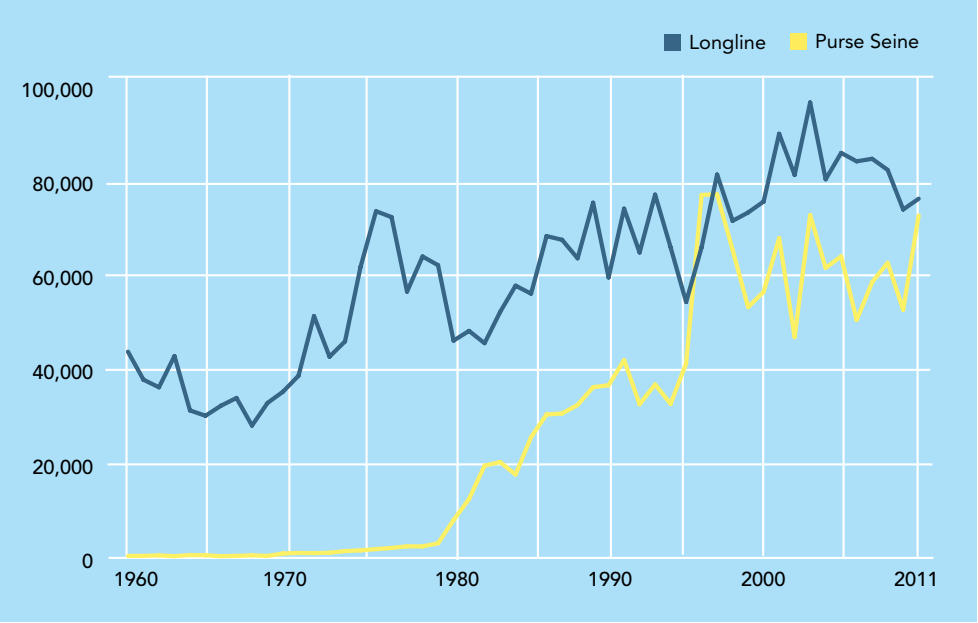

Figure 1: Bigeye Catch in the Western and Central Pacific—1960 to 2011 (in Metric Tons)
The catch of bigeye tuna in the western and central Pacific has more than doubled over the last 30 years, an increase driven primarily by the growing use of fish aggregating devices.

Larger, mature bigeye are directly targeted by a longline fishery in the western and central Pacific. Industrial longline vessels, often based in Asian ports,[3] deploy fishing lines that can stretch over 100 kilometers (60 miles) with thousands of baited hooks. Smaller longline vessels from Pacific island ports also catch adult bigeye

for the fresh sashimi market. Between the 1980s and early 2000s, longline catch of bigeye increased by about 50 percent. A recent estimate found that the tropical tuna fleet in this region deployed about 700 million longline hooks in 2010 and caught about 74,000 metric tons of bigeye.[4]

Increasing Catch Leads to a Declining Population

The catch of bigeye tuna in the western and central Pacific has more than doubled over the last 30 years, an increase driven primarily by the growing use of fish aggregating devices.[5] Now, about half of the bigeye by weight is caught by purse seine vessels using FADs. And most of these fish—around 85 percent—are small juveniles that have not yet reached reproductive maturity.[6]

The growing fishing pressure, particularly the increased catch of juveniles, has taken its toll on the bigeye tuna population in the western and central Pacific. A 2011 scientific assessment found that **the number of mature bigeye had dropped by 65 percent since commercial fishing began and that overfishing of the species continues.**[7] The assessment also determined that, although both the directed longline fishing and the catch in the FAD fishery had previously contributed to the decline of the population, the **increasing catch of juveniles in the FAD fishery now has a larger impact on the species**.

Fishing countries have attempted to reduce the catch of juvenile bigeye by instituting an annual three-month ban on setting nets around FADs in the western and central Pacific. However, fishermen have responded by increasing their use of FADs during the open season. The amount of bigeye caught by FADs reached a record high in 2011. A recent study by The Pew Charitable Trusts estimates that over 28,000 drifting FADs are now placed in the water each year in the western and central Pacific.[8]

A Need for Compromise

Bigeye tuna in these waters are managed by the Western and Central Pacific Fisheries Commission, or WCPFC, made up of 25 member governments involved in the region's tuna fisheries. The latest assessment by the Commission's science committee concluded that the total catch of bigeye tuna needs to be reduced by 30 percent from the levels seen between 2006 and 2009.[ii] The analysis also predicted that by reducing the use of FADs the catch of juveniles would decline and future populations would increase. That, then, would add to the amount of bigeye that

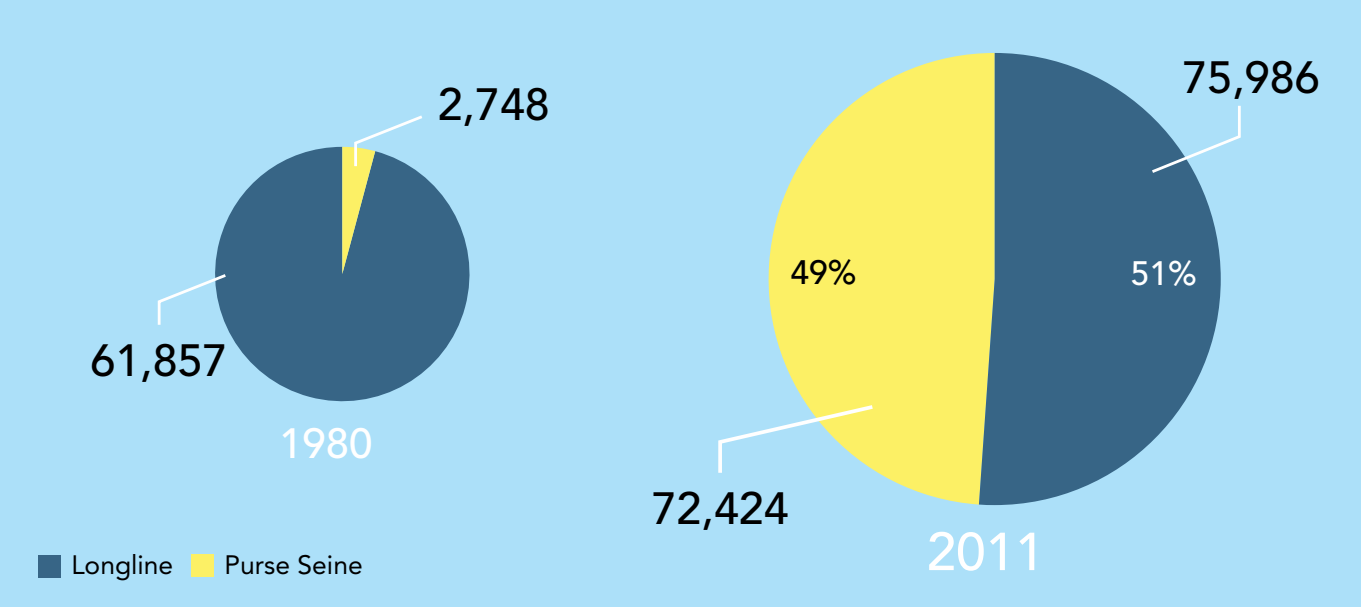

Figure 2: Bigeye Catch in the Western and Central Pacific by Gear Type in Metric Tons
Over the last 30 years, the number of bigeye caught in the western and central Pacific by purse seines has grown dramatically and now accounts for half of all bigeye catch.

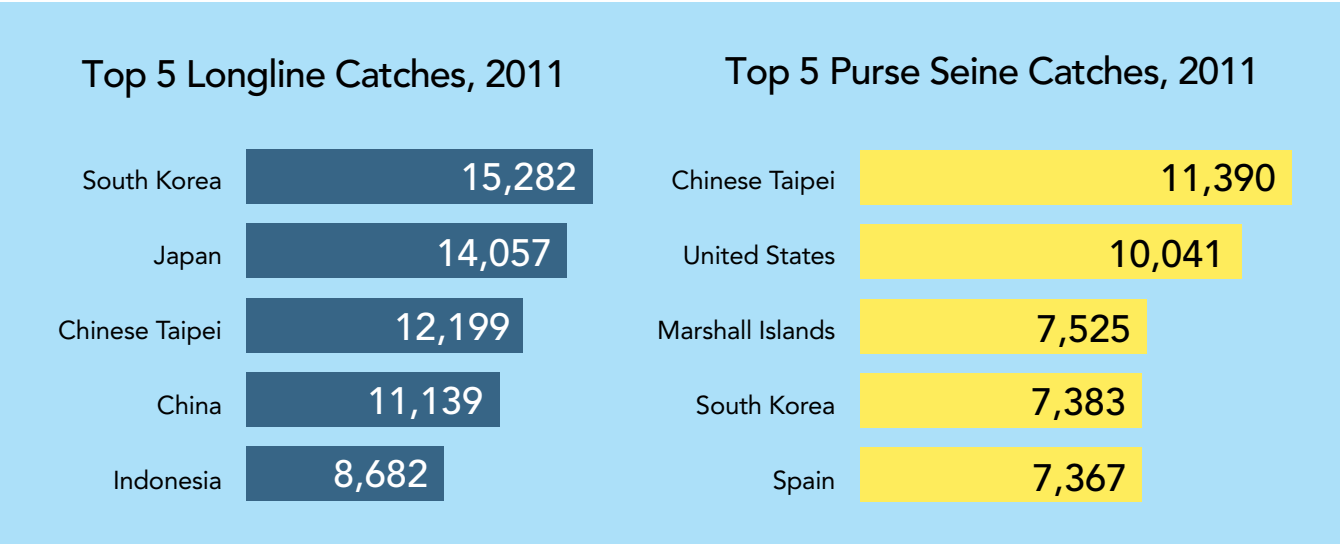

Figure 3: Bigeye Catch in the Western and Central Pacific by Country and Gear Type (in Metric Tons)

could be caught sustainably and raise the value of the directed fishery.[9]

Unfortunately, even with the clear scientific advice on measures that need to be taken, bigeye tuna remain stuck in the middle of the fight between fishermen who use FADs and those who employ longlines. To end the overfishing of bigeye tuna, both groups need to agree on ways to reduce the overall catch and, more specifically, the catch of juveniles.

To date, Commission members have been unable to agree on how to reduce the overall catch of bigeye and overfishing has persisted.

This contradicts both the recommendations of their scientific committee and the WCPFC's treaty mandate to responsibly manage species using the precautionary approach.

At the WCPFC's December 2013 meeting in Cairns, Australia, Commission members have a clear responsibility to make the right choice and end overfishing. They can continue to ignore the clear scientific recommendations and the situation will continue to deteriorate, or by acting responsibly and decisively, they can restore bigeye tuna stocks to sustainability.

It's Time to Choose

Continue the current destructive path, knowingly allowing the catch of large numbers of juvenile bigeye tuna and threatening the viability of this population:

- Fail to agree on a sustainable future
- Maintain current catch levels that allow overfishing

Implement sensible, science-based, precautionary measures that allow the bigeye population to recover and set the stage for higher yields in the future:

- Reduce the allowed catch of adult bigeye by longline vessels
- Reduce the number of juvenile bigeye caught by fish aggregating devices by limiting the number of FAD sets allowed

Endnotes

[i] Pacific bluefin is the most valuable tuna, per pound, in the Pacific Ocean, but is classified as a temperate species.

[ii] This would mean an annual catch limit of 109,393 metric tons, a reduction of 50,000 tons from the 2011 catch.

References

1 Nick Davies et al. 2011. *Stock Assessment of Bigeye Tuna in the Western and Central Pacific Ocean*. WCPFC Scientific Committee, SC7-SA-WP-02. http://www.wcpfc.int/doc/sa-wp-02/stock-assessment-bigeye-tuna-western-and-central-pacific-ocean.

2 Bruce Collette, et al. 2011. *Thunnus obesus*. IUCN Red List of Threatened Species. Version 2012.2. http://www.iucnredlist.org/details/full/21859/0.

3 Nick Davies. 2011. *Stock Assessment*.

4 S. Harley et al. 2011. *The Western and Central Pacific Tuna Fishery: 2010 Overview and Status of Stocks.* Tuna Fisheries Assessment Report 11. Secretariat of the Pacific Community. http://archives.pireport.org/archive/2012/January/tuna-fishery-assess-report-2010.pdf.

5 WCPFC. 2012. *Tuna Fishery Yearbook 2011*. Secretariat of the Pacific Community. http://www.wcpfc.int/system/files/taxonomy/term/572/YB2011-%28final%29.pdf.

6 Ibid.

7 Nick Davies. 2011. *Stock Assessment*.

8 Adam Baske et al. 2012. *Estimating the Use of Drifting Fish Aggregation Devices (FADs) Around the Globe*. Pew Environment Group. http://www.pewenvironment.org/uploadedFiles/FADReport_1212.pdf.

9 WCPFC Scientific Committee. 2012. *Commission for the Conservation and Management of Highly Migratory Fish Stocks in the Western and Central Pacific Ocean: Summary Report of the Eighth Regular Session*. http://www.wcpfc.int/system/files/documents/meetings/scientific-committee/8th-regular-session/summary-report/0SC8-Summary-Report-final-21Nov2011numbering-%28Para71%29-corrected-12Feb2012.pdf.

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