

# California Driftnet Fishery:

The True Costs of a 20th Century Fishery in the 21st Century



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## *Sea Turtle Impacts*

Turtle Island Restoration Network  
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[SeaTurtles.Org](http://SeaTurtles.Org)  
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# ABOUT TURTLE ISLAND



Turtle Island Restoration Network is a leading advocate for the world's oceans and marine wildlife.

Our work is based on science, fueled by people who care, and effective at catalyzing long-lasting positive change that protects the likes of green sea turtles, whale sharks, and coho salmon.

By working with people and communities, we preserve and restore critical habitats like the redwood forested creek banks of California to the full-of-marine-life waters of the Galapagos Islands.

We accomplish our mission through grassroots empowerment, consumer action, strategic litigation, hands-on restoration, environmental education, and by promoting sustainable local, national, and international marine policies.

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## Terminology

*The driftnets in use in the California swordfish fishery are referred to as “drift gill nets” in state and federal technical regulatory documents. In this report, we use the term “driftnet” for these same nets.*

# TABLE OF CONTENTS

Introduction **p. 1**

Endangered Sea Turtles **p. 2**

Leatherback Sea Turtles **p. 3**

Loggerhead Sea Turtles **p. 4**

The Deadly Impact of the California Driftnet Fishery  
on Sea Turtles **p. 5**

The Pacific Leatherback Conservation Area **p. 6-7**

The Pacific Loggerhead Conservation Area **p. 8**

Recommendations **p. 9**

Endnotes **p. 10**

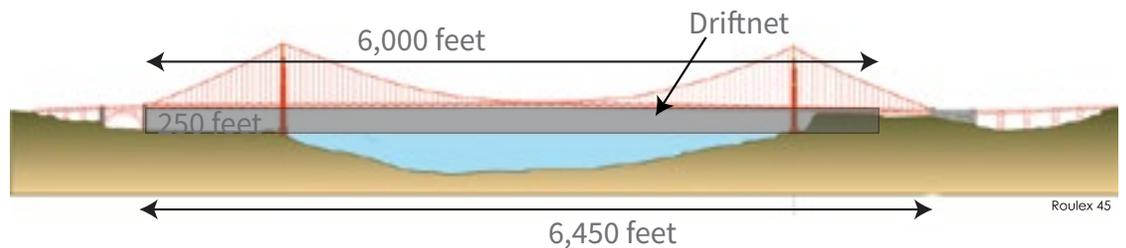




## INTRODUCTION

As scientists warn that our ocean ecosystems are on the verge of collapse, leaders are taking action to rein in the world's worst industrial fisheries.

Astonishingly, one of those worst offenders is California's driftnet fishery (also known as the CA Drift Gillnet fishery). Currently, the fishery consists of a small fleet of roughly 20 active boats that set unattended nets the size of the Golden Gate Bridge to drift through our oceans.



While this fishery primarily targets swordfish and shark, these nets entangle everything in their mile-wide path, resulting in high levels of bycatch.

Over the past ten years, hundreds of air-breathing whales, dolphins, and sea turtles have drowned, while thousands of sharks (that depend on constant movement to force air through their gills) have suffocated.

## ENDANGERED SEA TURTLES

Sea turtles are among the most ancient of living species, having evolved during the age of the dinosaurs some 110 million years ago. Today, seven species survive. All sea turtles found in U.S. waters are listed as 'endangered' or 'threatened' under the U.S. Endangered Species Act. Importantly, the two main species killed by the driftnet fishery – the Pacific Loggerhead and the Leatherback – are both endangered and in imminent peril of extinction.

Sea turtles reach a large size as adults, making them immune to most natural predators and allowing females to produce thousands of young over their long reproductive lives, despite the fact that relatively few will survive to adulthood. This successful evolutionary strategy has worked for millions of years, but is now being short-circuited when adult sea turtles are killed in industrial fishing gear. Sea turtles are now endangered worldwide.



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## *Leatherback Sea Turtles*

*(Dermochelys coriacea)*

IUCN and ESA Critically Endangered

Leatherback sea turtles are the largest sea turtle and largest living reptile in the world, with adult males and females reaching lengths of nine feet - head to tail - and weighing up to 2,000 pounds.

Leatherbacks are the most wide-ranging of all sea turtles due to adaptations that allow them to survive in colder water temperatures, and have been sighted from Alaska to Chile. They are the deepest diving turtle and have been recorded diving in excess of 3,900 feet.

The California coast is a hotspot of leatherback abundance,<sup>1</sup> as adults travel here from Indonesia to feed on the abundance of jellyfish found offshore before returning to Asia to lay eggs.<sup>2</sup>

Sadly, the Pacific leatherback sea turtle is currently on the verge of extinction. The primary cause is adult mortality in fishing gear, resulting in dramatic population declines of more than 95 percent.<sup>3</sup> Consequently, the Pacific leatherback is listed as 'Endangered' under the U.S. Endangered Species Act, Appendix I of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), Appendices I and II of the Convention for the Conservation of Migratory Species of Wild Animals (CMS), among others. The IUCN lists the Eastern Pacific population as 'Critically Endangered,' its highest rating short of 'Extinct in the Wild.'

Without serious efforts to reverse current fishery practices that drastically reduce adult mortality, scientists calculate the species in the Pacific will be extirpated by 2030.<sup>4,5,6,7</sup> Scientists estimate that the adult population, around 1,400, can sustain no more than one death every six years from all sources if it is to recover at an acceptable pace.<sup>8,9</sup>



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## *Loggerhead Sea Turtles*

(*Caretta caretta*)

IUCN Endangered

Loggerheads were named for their relatively large heads, which support powerful jaws and enable them to feed on hard-shelled prey. A unique characteristic of loggerheads is callus-like traction scales beneath their flippers that allow them to “walk” on the ocean floor.

Northern Pacific loggerheads are endangered as a result of the threats they face as they migrate over 7,000 miles between their nesting beaches in Japan and foraging areas off the coast of Baja California.<sup>10</sup> Their population growth rates are low, and extinction risk is commensurately high.



Loggerhead nesting populations have declined by at least 80-86 percent since the 1980s, due to death from interactions with industrial fishing.<sup>11</sup> The North Pacific population that occurs off the California coast appears to be declining and there is a substantial likelihood that the population will decline past the possibility of recovery within coming decades, without drastic reductions in fishing mortality and threats to nesting habitat in Japan.<sup>12</sup> Consequently, the Pacific loggerhead’s status was changed from ‘Threatened’ to ‘Endangered’ under the Endangered Species Act in 2011.<sup>13</sup> The species is listed on the CITES Appendix I, and CMS Appendices I and II. The IUCN Red List lists the loggerhead as ‘vulnerable.’





## *The Deadly Impact of the California Driftnet Fishery on Sea Turtles*



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Sea turtles are air-breathing animals. Endangered sea turtles, entangled in the nearly invisible monofilament line of mile-wide driftnets, drown when they are unable to surface to breathe. Even if sea turtles escape entanglement, they can die after being forcibly submerged. Between 1990 and 2000, the California driftnet fishery killed an estimated 137 sea turtles.<sup>14</sup>

## *Limited Time and Area Closures are Not Enough to Reverse Sea Turtle Extinction Trends*

Among the many fishery management tools available, one of the most effective is known as “a time and area closure.” This type of management measure closes a pre-defined area of the ocean to fishing for a specified time period. On the Pacific coast of California, two time and area closures are in place to protect leatherback and loggerhead sea turtles.

But, even these effective management measures are not enough to reduce sea turtle mortality to the point to where we are not reversing extinction trajectories. Only a phase out of the California driftnet fishery will protect endangered leatherbacks and loggerheads in the long term.

## *The Pacific Leatherback Conservation Area*

Successful litigation by Turtle Island against the driftnet fishery by environmentalists led to a regulatory scheme in 2001 that included a time and area closure known as ‘the Pacific Leatherback Conservation Area’ or PLCA.<sup>15</sup> The PLCA is a 250,000-square mile area off the California coast that is closed during the months of August to November when leatherbacks are present.<sup>16</sup> While this closure has reduced mortality, the ongoing mortality levels are still not low enough to allow the timely recovery of the leatherback population.<sup>17</sup>

Prior to the PLCA, the driftnet fishery killed an estimated 109 Pacific leatherback turtles between 1990 and 2000, and caught and released many more injured.<sup>18</sup> With the PLCA, the California driftnet fishery captured an estimated 12 leatherbacks in the past decade.

It is important to note that there are no estimates of how many additional leatherbacks were killed and injured by “ghost” driftnets, nets that are lost at sea but continue to entangle turtles.<sup>18</sup>

Even though leatherback mortality is still too high, the fishery industry continues to lobby for reductions in the size and length of the closure, threatening even more leatherback deaths.

Recently, the Pacific Fisheries Management Council approved an Exempt Fishing Permit to reintroduce driftnets into the PLCA as an “experimental” measure, even though managers have data demonstrating the high levels of bycatch associated with these nets from prior to 2001. Since the basic nature of driftnet gear is essentially unchanged from that time, such a move would potentially result in a dramatic increase in Pacific leatherback take by the fishery. This permit, if approved by the National Marine Fisheries Service (NMFS), is likely to result in additional expensive litigation, which may single-handedly exceed the low economic value of this fishery.





In 2015, the Pacific Fisheries Management Council recommended additional controls called “hard caps.”<sup>19</sup> A “hard cap” means that when a certain number of protected species are caught that the fishery would automatically be closed for the rest of the season. The “hard caps” recommended by the PFMC would close the fishery for the rest of any two year period when two leatherbacks are caught by the California driftnet fishery during that period.

Unfortunately, as of January 2016, this cap has not yet been codified in law. Further, the number of leatherbacks caught to reach the proposed “hard cap” is six times higher than the number necessary for recovery of the species according to a study authored by National Marine Fisheries Service staff.<sup>20</sup> Additionally, the creation of “hard caps” requires a high level of observer coverage to determine whether turtles have been entangled, an expensive management cost that by itself exceeds the value of the fish caught by the fishery.

The California driftnet fishery is not the only California fishery to kill leatherbacks, which means the death of a turtle from another fishery can trigger the single mortality rule. The Dungeness crab fishery killed a leatherback sea turtle in 2015.<sup>21</sup> The crab fishery has two elements, a recreational and commercial fishery whose combined economic value averages \$30 million a year, and more than \$90 million in 2012, making it roughly 40 times more valuable than the CA driftnet fishery.<sup>22</sup> Based on this single mortality, no additional mortalities should be allowed by any other fishery, including the California driftnet fishery, before 2023.<sup>23</sup>

**Table 1. Turtle Bycatch in the California Driftnet Fishery before & since the creation of the Pacific Leatherback Conservation Area (PLCA). Data compiled from Shore 2013.**

Species	Estimated Deaths Before PLCA 1990-2000 (15% Avg. Observer Coverage)	Estimated Deaths After PLCA 2001-2010 (20% Avg. Observer Coverage)
Leatherback Sea Turtle	109	13
Loggerhead Sea Turtle	16	5
Sea Turtle Unidentified	5	0
Green Sea Turtle	7	0

## *The Pacific Loggerhead Conservation Area*

California driftnet fishery bycatch remains among the ongoing threats to loggerhead sea turtles. The threat is graver during El Niño and other warm water events when the turtles move north to feed. With climate change, the threat from the driftnet fishery has climbed sharply.

Under a management scheme called the Pacific Loggerhead Conservation Area, the driftnet fishery is closed between July 1 and August 31 in years when El Niño conditions bring warm waters to Southern California and with it sharp increases in the number of loggerheads.<sup>24</sup>

Even with the loggerhead closure, an estimated five loggerheads have still been caught in the past decade.

While this scheme made more sense based on past data, today with the El Niño of 2015-2016 showing unprecedented strength with climate change, large aggregations of loggerheads have been seen off the Southern California Coast well into October.<sup>25</sup> This places large numbers of loggerheads at mortal risk because the management rules based on past data are no longer adequate.

The new data on the distribution of loggerheads in Southern California in 2015 is likely to lead to more expensive management schemes to reduce loggerhead mortality, or if no action is taken, possibly more expensive litigation.





## RECOMMENDATIONS

- 1. California Must Phase Out the Use of Driftnets Immediately**  
Provide Funding for a Fishery Transition Plan
- 2. Employ Only Highly Selective Gear in the Swordfish Fishery**  
Transition Away from Harvest of Mercury-laden Fish
- 3. Keep Protected Areas Closed**  
Expand Marine Protected Areas (MPAs) to Better Protect Ocean Biodiversity



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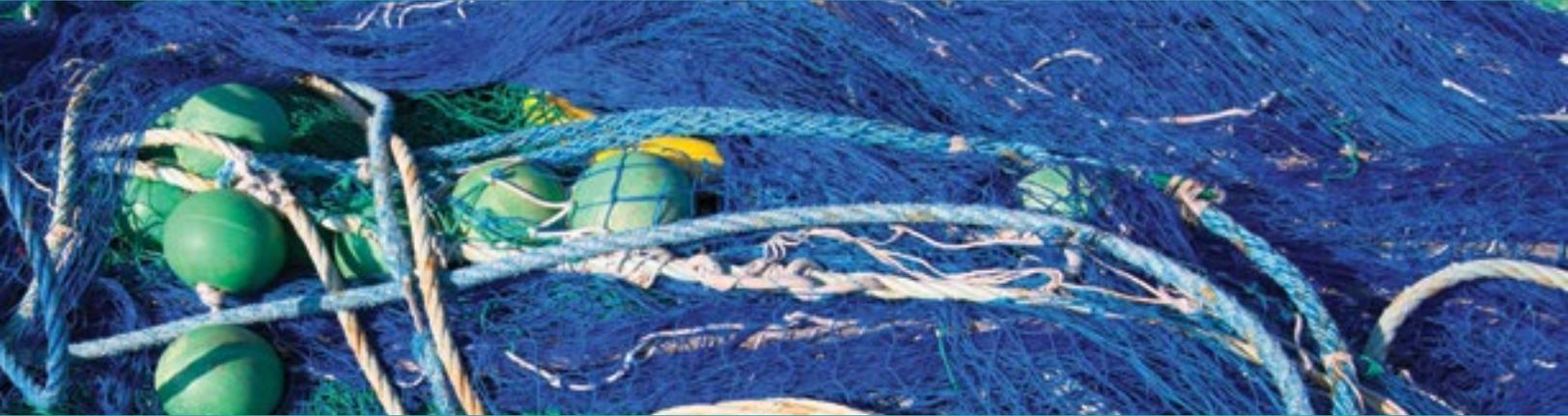


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