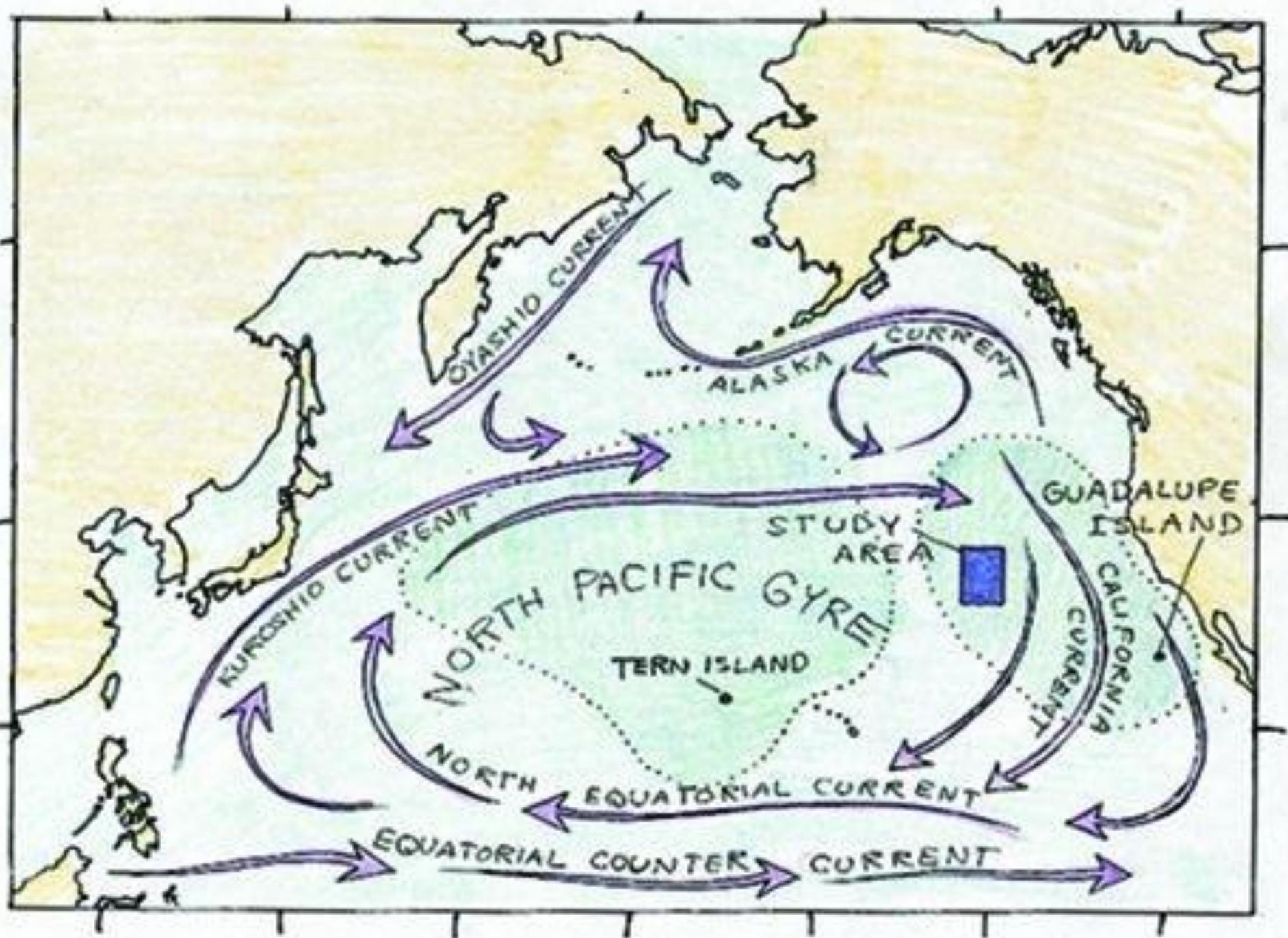


Where is All This Trash Coming From?

Land-based Sources of Marine Debris



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Marine Debris – What is it?

- Marine debris is defined as any persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment or the Great Lakes.
- Debris is everywhere – found around every major body of water on the planet, and below water as well.
- Marine Debris is a global pollution problem that impacts human health and safety, endangers wildlife and aquatic habitats, and costs local & national economies millions in wasted resources and lost revenues.

Marine Debris Sources

- Storm water discharges
- Combined sewer overflows
- Beach visitors
- Ships and other vessels
- Solid waste disposal and landfills materials such as garbage and medical waste
- Offshore oil platforms
- Industrial activities
- Illegal dumping or littering

Approximately 20% comes from ocean-based sources:

- Commercial fishing vessels
- Cargo ships (discharge of containers and garbage)
- Pleasure cruise ships







Approximately 80% comes from land-based sources:

- Litter (pedestrians, motorists, beach visitors)
- Industrial discharges (pellets and powders)
- Garbage management (containers, trucks, landfills)



Los Angeles River



Los Angeles River



Ballona Creek









Plastic Debris Impacts All Levels of the Marine Ecosystem







100% of Laysan Albatross Impacted (NOAA)



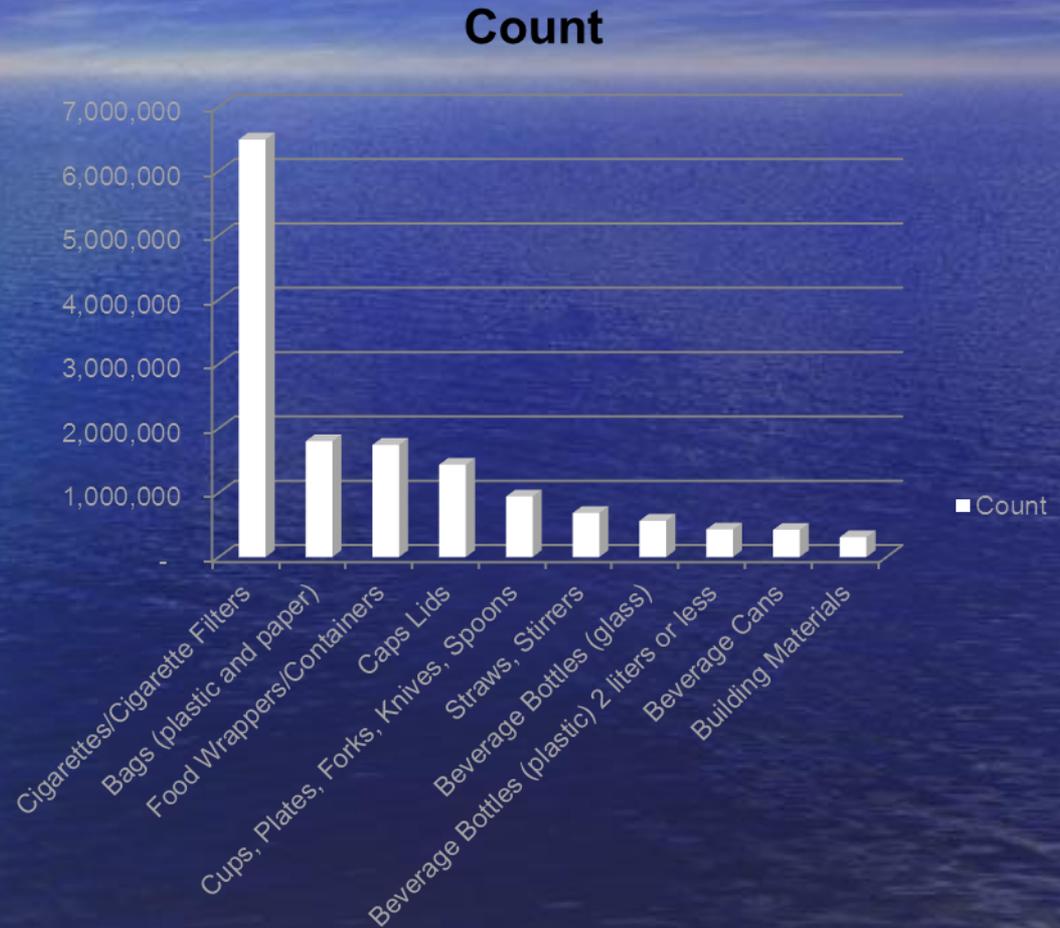


Economic Impact

- Asia-Pacific Economic Cooperation released a report valuing different marine debris abatement measures:
 - Loss of tourism from littered beaches in APEC region: \$622 million/year
 - Damage to Fishing Industry: \$364 million/year
 - Damage to Shipping Industry: \$279 million/year
 - Total cost of marine debris on APEC Region: \$1.265 billion/year
- * APEC Region has \$207 billion marine economy; California has \$46 billion marine economy.

CCD Data 1989-2012

<u>Top Ten 1989-2012</u>	<u>Count</u>	<u>Percentage</u>
Cigarettes/ Cigarette Filters	6,489,979	39.4%
Bags (plastic and paper)	1,801,430	10.9%
Food Wrappers/ Containers	1,743,634	10.6%
Caps and Lids	1,435,417	8.70%
Cups, Plates, Forks, Knives, Spoons	941,094	5.71%
Straws, Stirrers	684,445	4.15%
Beverage Bottles (glass)	564,135	3.42%
Beverage Bottles (plastic) 2 liters or less	428,286	2.60%
Beverage Cans	421,646	2.56%
Building Materials	308,618	1.87%

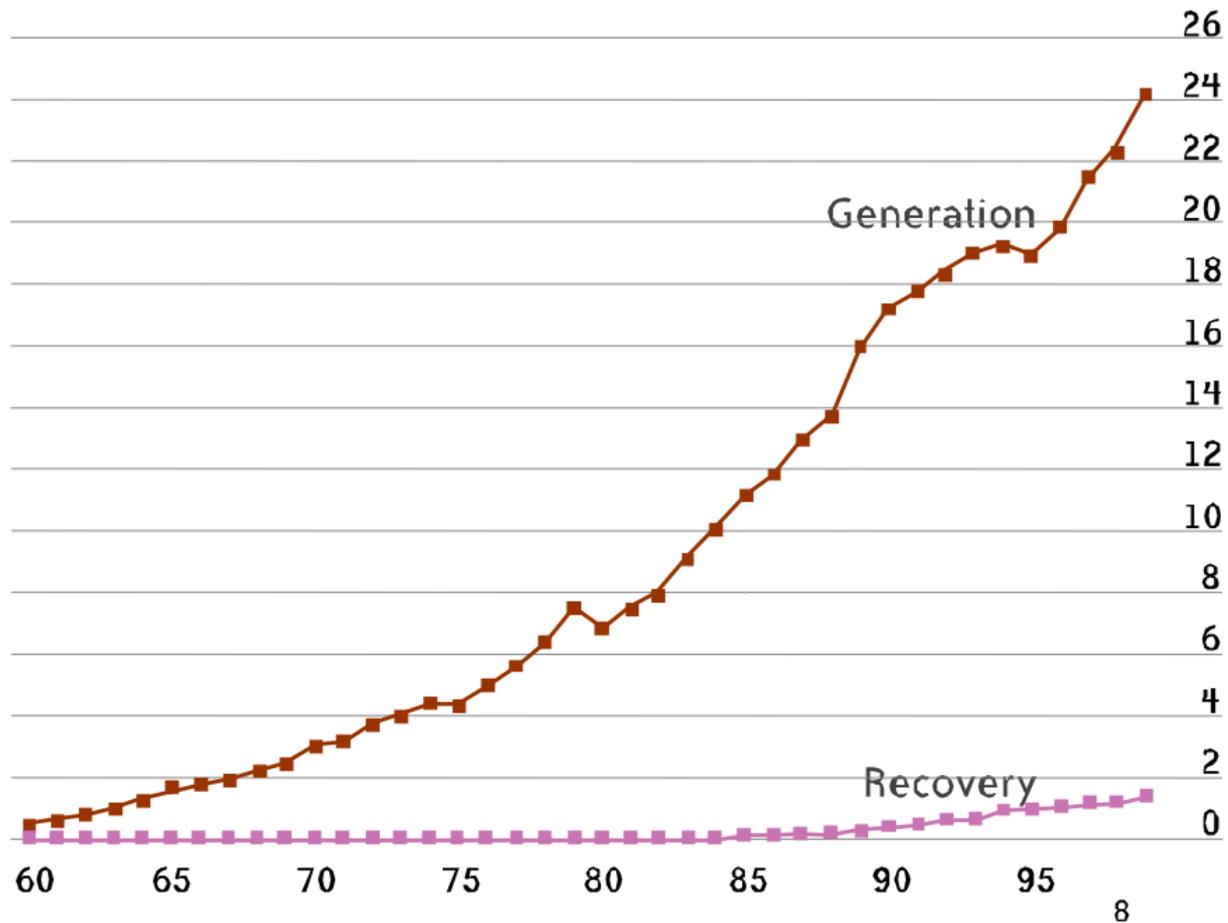


Local Initiatives

- Plastic bag bans or fees since 2006/2007
- Smoke free beach initiatives being implemented in cities up and down coast since 2005
- Polystyrene bans since 2006
- Stormwater regulations (TMDLs) in place and forcing the use of more effective trash collection devices in cities
- “Don’t Trash California” and “Erase the Waste” education campaigns

Recovery of Plastics in CA

Plastic waste generation versus recovery (recycling)- CIWMB
Million Tons per Year



Source: .

California's Plan

In 2008, the California Ocean Protection Council approved a strategy and implementation plan for addressing marine debris:

3 main elements of the strategy:

1. Implement system of Extended Producer Responsibility for packaging waste in California.
2. Ban specific items that are highly likely to become marine debris where alternatives are readily available.
3. Place a fee on other items that are likely to become marine debris but where a ban isn't feasible.



Photo Credit: 5 Gyres Institute



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