

Update on the Pre-Production Plastic Pellet Control Program





Recent Legislation / Background

■ AB 258 - CA Water Code 13367

- Applies to facilities in California that manufacture, handle, or transport preproduction plastics.
- Discharge of preproduction plastics is determined by the California Legislature to be a threat to the state's marine environment.
- Potential sources of preproduction plastics in the environment are manufacturers, transporters, warehouseers, processors, and recyclers.

■ January 2009 - Kickoff of our Plastics Program

California Water Board Activities to Address Plastics

- **Consumer Sources of Plastic Debris**
 - Total Maximum Daily Loads (TMDLs)
 - Municipal Storm Water Permits
- **Industrial Sources of Plastic Debris**
 - Preproduction Plastic Debris Program
 - Industrial Storm Water Permits

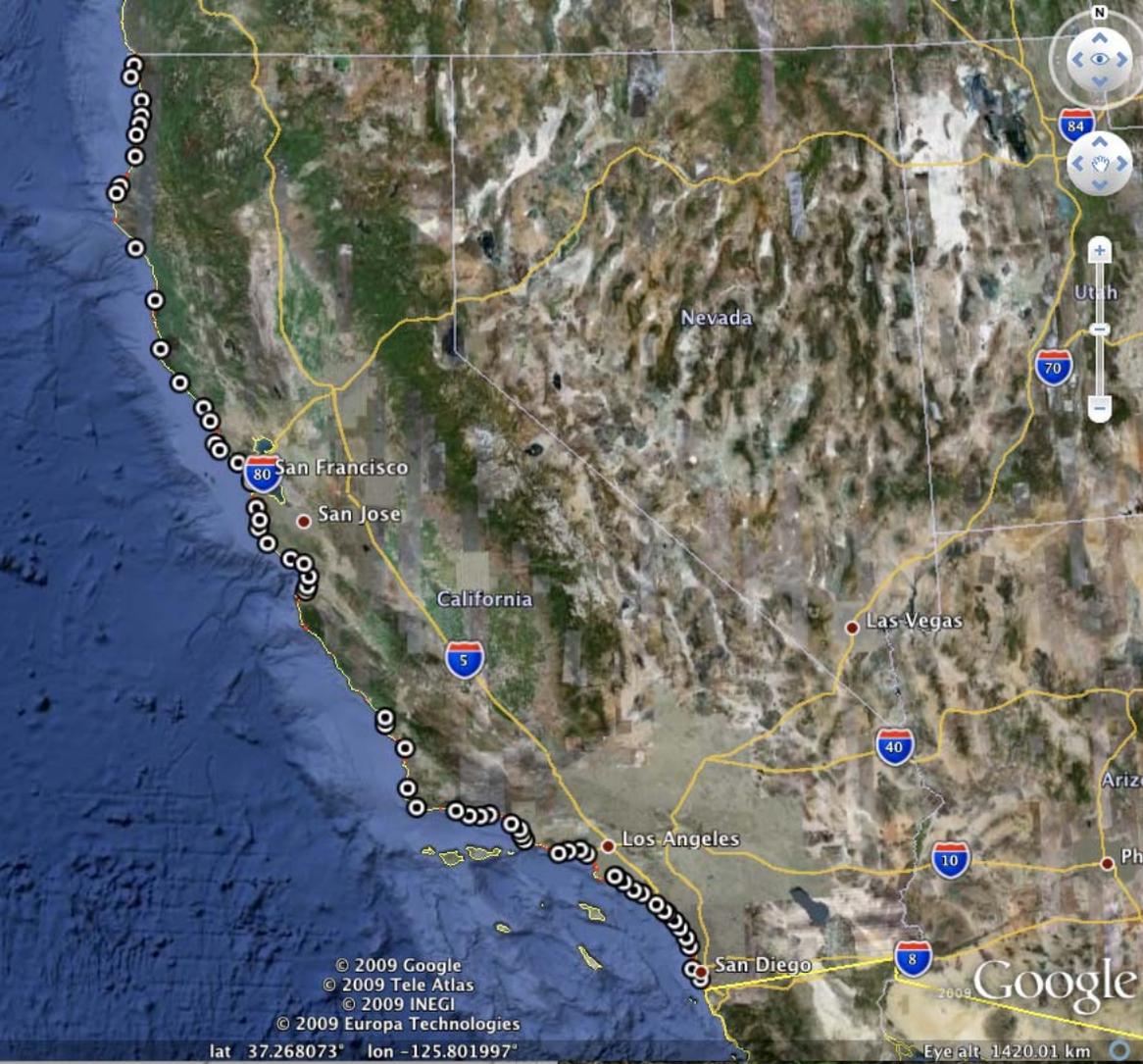
Plastics Program Staff

- **Greg Gearheart:** Industrial Unit Chief
- **Dominic Gregorio:** Ocean Unit Chief
- **Emily Siegel:** Scientist, Ocean Unit
- **Dylan Seidner:** Scientist, Industrial Unit
- **Chris Haynes:** Engineer, Industrial Unit

2009 Baseline Pellet Project

- **Why:** The State Water Resources Control Board (SWRCB) and the Regional Water Quality Control Boards are required by AB 258 (2007) to implement a program for the control of discharges of preproduction plastic pellets from point and nonpoint sources.
- **Problem:** Knowledge of the distribution and amount of plastic pellets on beaches in California is limited but crucial to implementing a plan to control and reduce the discharges of plastic pellets.
- **Goal:** Conduct a baseline study to determine the distribution and amounts of plastic pellets on beaches throughout California.

Open Coastal Samples Only



Field Sampling



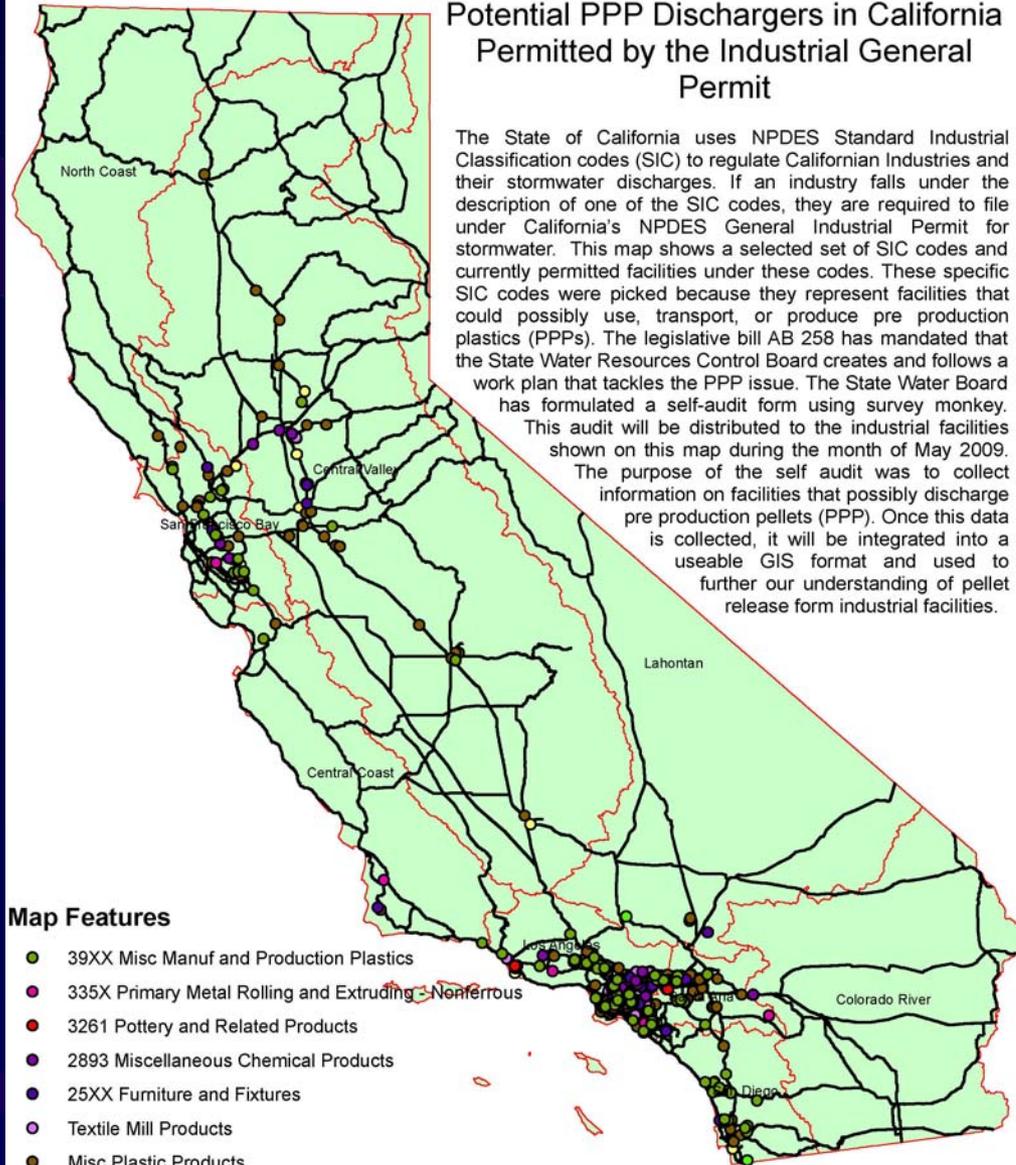
First Year Statewide Draft Pellets Results

Total Amount of Pellets at California Beaches:	118,705,732
Weighted Mean (per m²) :	3.76

➤ The amount of pellets and trash in this study, while significant, were relatively less compared to the amounts recorded for the 1998 Orange County study; this most likely reflected the smaller sample sizes in high pellet/trash areas and the inclusion of sample sites in low pellet/trash areas.

Potential PPP Dischargers in California Permitted by the Industrial General Permit

The State of California uses NPDES Standard Industrial Classification codes (SIC) to regulate Californian Industries and their stormwater discharges. If an industry falls under the description of one of the SIC codes, they are required to file under California's NPDES General Industrial Permit for stormwater. This map shows a selected set of SIC codes and currently permitted facilities under these codes. These specific SIC codes were picked because they represent facilities that could possibly use, transport, or produce pre production plastics (PPPs). The legislative bill AB 258 has mandated that the State Water Resources Control Board creates and follows a work plan that tackles the PPP issue. The State Water Board has formulated a self-audit form using survey monkey. This audit will be distributed to the industrial facilities shown on this map during the month of May 2009. The purpose of the self audit was to collect information on facilities that possibly discharge pre production pellets (PPP). Once this data is collected, it will be integrated into a useable GIS format and used to further our understanding of pellet release form industrial facilities.



Map Features

- 39XX Misc Manuf and Production Plastics
- 335X Primary Metal Rolling and Extruding - Nonferrous
- 3261 Pottery and Related Products
- 2893 Miscellaneous Chemical Products
- 25XX Furniture and Fixtures
- Textile Mill Products
- Misc Plastic Products
- Gaskets, Packing, Sealing Devices, Rubber and Plastic Hose
- Synthetic and Plastic Materials
- WBGIS.Transportation_Highways
- ▭ WBGIS.Regional_Board_Boundaries

Pellets: First Year Draft Results by Region

RWQCB	Total Density (m⁻²)	% of Total
Los Angeles (4)	287	63
Santa Ana (8)	137	30
San Diego (9)	17	4
San Francisco (2)	9	2
North Coast (1)	1	<1
Total	451	100

* Zero pellets recovered in Central Coast (RWQCB 3); however other studies have identified pellets at Monterey Bay Beaches

	Total Density (m⁻²)	Est. Number of Pellets
North-Central Regions	10	83,653
Southern Regions	442	118,622,079

Pellets: First Year Draft Results by County

County	Total Density (m⁻²)	% of Total
Los Angeles	281	62
Orange	137	30
San Diego	17	4
San Francisco	9	2
Ventura	6	1
Sonoma	1	<1
Total	451	100

Trash: Rapid Debris Assessment

- Transect from wrack line to first barrier
- Field data entry sheet with standardized categories

Trash: Statewide Draft Results by Category

Category	Total Count (Est. for CA)	Avg/m ²
Foamed Plastics	350,846	9.5
Plastics	331,641	9.0
Organics/Vegetation	50,827	1.3
Paper	19,692	0.5
Glass	7,376	0.2
Other	6,397	0.2
Land Use Materials*	6,253	0.2
Rubber	4,451	0.1
Metals	2,419	0.1
Total Debris	779,902	

* e.g. lumber. concrete

Trash: Statewide Draft Results by Region

Region	Estimated Number
San Diego	210,589
Los Angeles	200,899
Santa Ana	167,508
San Francisco	80,156
Central Coast	47,502
North Coast	22,420

Conclusions of First Year Baseline Pellet Study

- First state-wide study of it's kind revealed:
 - Distribution of plastic pellets along California beaches corresponds with locations of plastic facilities
 - Trash more ubiquitous throughout the state, though appears to correspond with regional population densities

Next Step for Pellet Monitoring

- **Near Term: Initiate focused monitoring at areas determined to have high concentrations of plastic pellets:**
 - Southern CA
 - SF Bay Area
 - Bay was under-represented in statewide work to date
- **Longer Term: Recommendation to repeat:**
 - Focused monitoring to understand the effectiveness of regulatory actions
 - Statewide monitoring to understand trends



What are preproduction plastic pellets?

- Preproduction plastic pellets are small (1-5mm) pellet shaped pieces of plastic that are melted or molded to create most common plastic goods such as food and beverage containers, bags, shrink wrap, and toys
 - On average, 1 pound of preproduction plastic contains approximately 22,000 pellets.
 - A 1992 study by the EPA estimated 60 billion pounds of plastic resin is produced in the US per year



Why focus on pellets?

- Pellets are released from an identifiable source (plastic industrial sites)
- Reasons for release are easily correctable
 - Usually result from poor pellet handling or housekeeping practices



Preproduction Plastic Debris Program

■ Outreach & Education

- Web page with program information and links to educational resources
- Fliers and educational materials for zero pellet loss programs distributed to regional board staff and facilities
- Creation of a stakeholder work group comprised of storm water professionals, plastic industry representatives, and environmental organizations
- Informational presentations created and given to MS4 inspectors, water interest groups and schools



Preproduction Plastic Debris Program

■ Compliance Self-Audit for Enrolled Plastics Facilities

- In 2009 the State Water Board staff developed an online compliance self-audit for plastic facilities enrolled in the Industrial General Permit (IGP, State Water Board Order No. 97-03-DWQ)
- The goal of this project was to characterize enrolled facilities in terms of types of debris and products, transport and shipping of these materials, and common BMP and storm water (SW) management practices in place.
- Results should help to focus State Water Board and MS4 SW inspection efforts, help to ID potential non-filers, and guide program efforts.



Compliance Self-Audit Responses

- Of the 438 returned audits, 235 (54%) were involved with preproduction plastic
- 87% of responses indicated they were a facility that consumed and processed preproduction plastics
 - Others produced, transported or recycled these products
- The most commonly consumed format was a plastic pellet (41%), followed by plastic powders (17%)
- Respondents used a total of 2.4 billion pounds of preproduction plastics per year, an average of 10.2 million pounds per facility
- 87% were unfamiliar with industry sponsored zero pellet loss efforts



Preproduction Plastic Debris Program

■ Identification of Major Sources

- Transportation – railroad, truck and cargo ships
- Manufacturing – consumers of pellets

■ Inspections and Enforcement

- Inspections – over 60 facility inspections since January 2009
- Enforcement - we have issued over 10 NOVs, 2 CAOs and hundreds of staff enforcement letters for facilities failing to comply



Current Enforcement Initiative – Bag/Film

- Focus on Bag/Film Manufacturers
 - They represent a large amount of all pellets consumed
 - They tend to have no food/medical standards to protect with final product – i.e., tend to be more messy
 - They move around quite easily and a large number of them are nonfilers
- 428 bag/film facilities statewide
- Ranked using facility size, rail access and proximity to receiving water factors
- Inspected 100% of top rank (34 facilities)
- Enforcement follow-up on 100% of the noncompliant facilities



Enforcement Activities

■ Northern CA Taskforce

- Office of Enforcement, Region 2, SW, Fish and Game
- Three Plastic Bag and Film Manufacture and one Bumper manufacture
- Issued NOV's and CAO's requiring Permit Coverage, On site cleanup and cleanup of Oyster Bay
- Likely ACL

■ Southern CA Taskforce

- Office of Enforcement, Regions 4, 8, and 9, and SW
- 4 facilities each in Regions 4 and 8 and possibly 1 in Region 9
- Investigations on going to support possible CAO's and other enforcement



