

# Citizen engagement through shoreline cleanup litter data: British Columbia case study

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# B.C. Shoreline Litter Outline:

How this project began

Science of marine debris

Educational outreach

Recommendations





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# First Shoreline Cleanup

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# Great Canadian Shoreline Cleanup (GCSC)



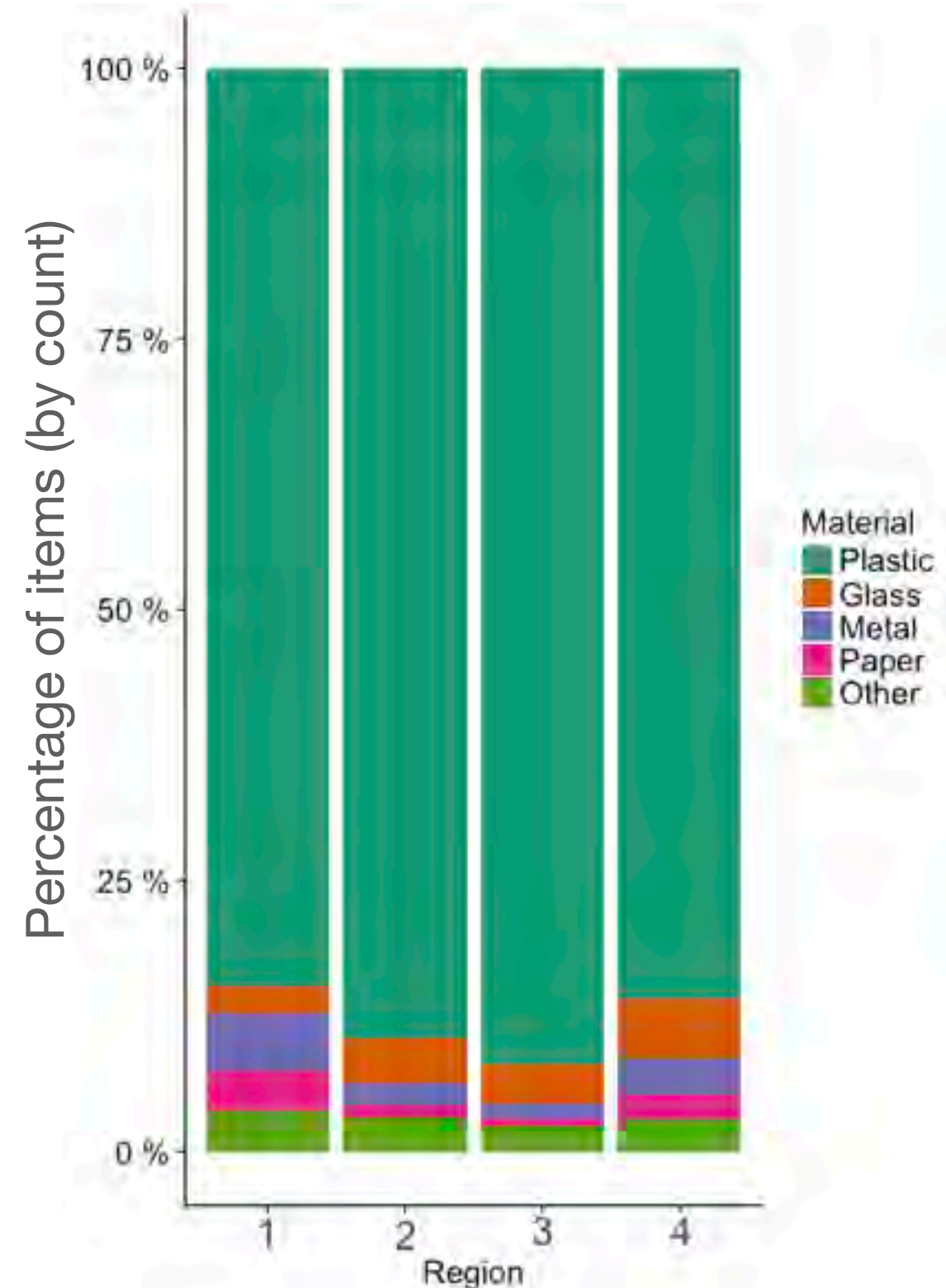


# B.C. Study Regions

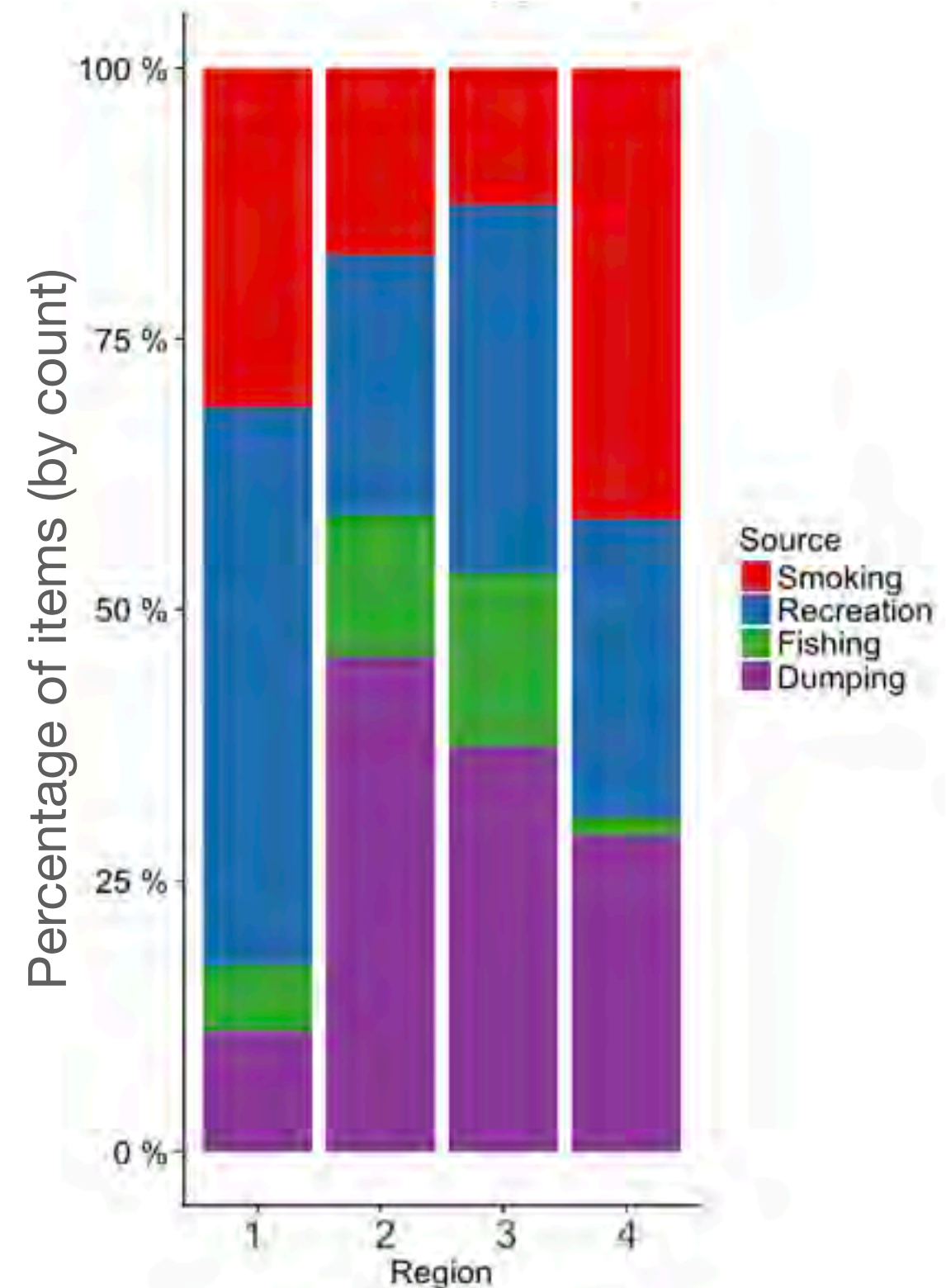




# Material of B.C. Litter

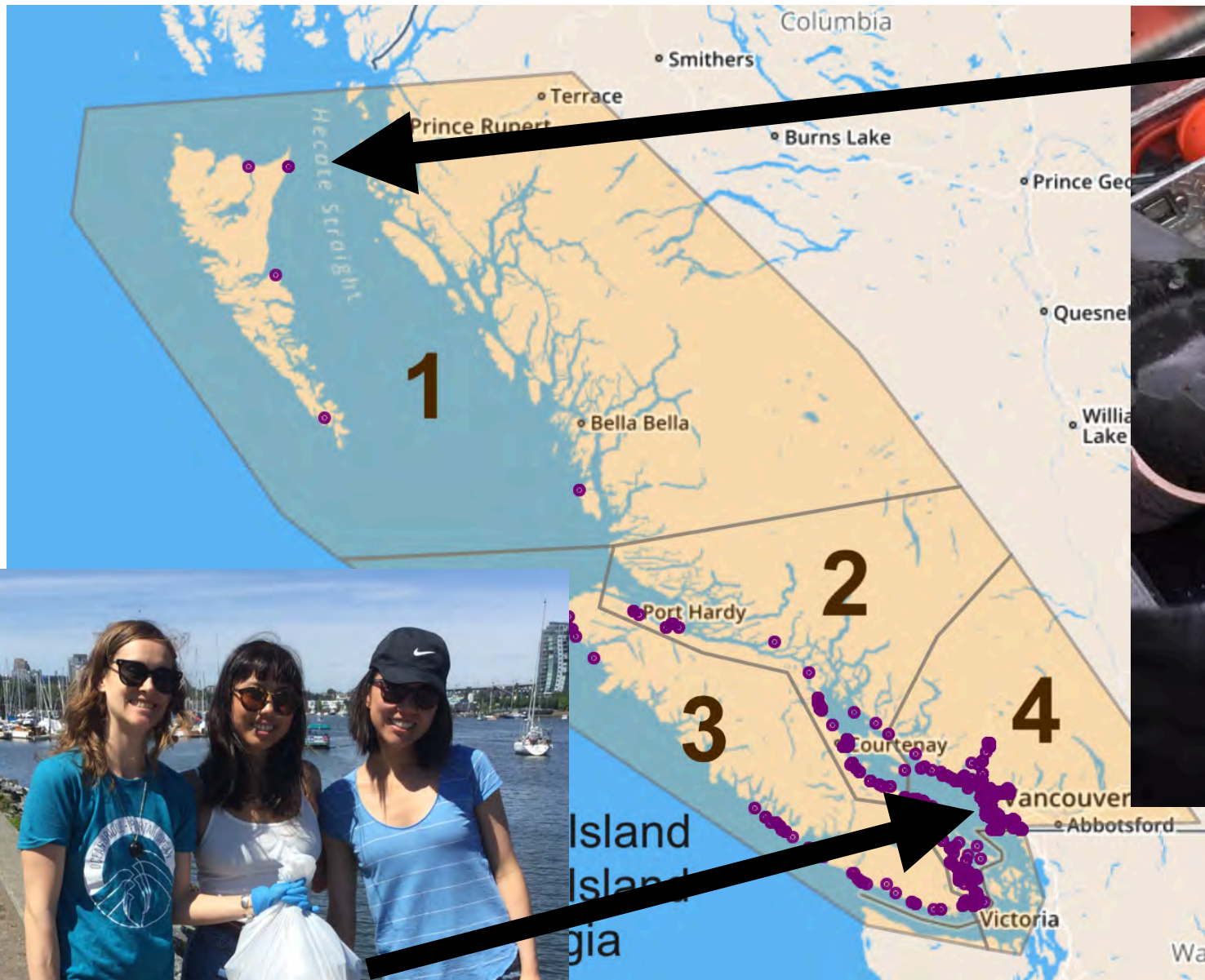


# Source of B.C. Litter





# More Litter in Remote Areas





# Scientists: Research Note

Regions had unique characteristics; there was **no change over time**

Marine Pollution Bulletin 135 (2018) 411–417



Contents lists available at [ScienceDirect](#)

Marine Pollution Bulletin

journal homepage: [www.elsevier.com/locate/marpolbul](http://www.elsevier.com/locate/marpolbul)



Towards cleaner shores: Assessing the Great Canadian Shoreline Cleanup's most recent data on volunteer engagement and litter removal along the coast of British Columbia, Canada



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## ARTICLE INFO

### Keywords:

Great Canadian Shoreline Cleanup  
British Columbia  
Coastal trash  
Plastics  
Litter diversity  
Ocean citizenship

## ABSTRACT

This paper analyzes voluntary cleanups organized by the Great Canadian Shoreline Cleanup (GCSC) along the coast of British Columbia (2013–2016). Cleanup performance indicators, litter composition and diversity were compared between years and across areas (i.e., North Coast of British Columbia, Inner Coast of Vancouver Island, West Coast of Vancouver Island, and Southern Strait of Georgia). Significant differences in parameters were found between areas but not across time. Spatial variation in trash composition and diversity was mostly related to source of litter. Trash yield per kilometre of shoreline was higher in isolated areas and in areas with exposed shorelines. The majority of recovered litter items were composed of plastic. Local actions, complementary to the GCSC, such as banning single-use, non-biodegradable takeout containers on beaches, implementing trash buy-back programs, and modifying waste management and recycling regulations, are proposed as mechanisms for strengthening the prevention and mitigation of coastal pollution in British Columbia.



# Students: Interactive App

<http://35.182.174.44:3838/LegacyApp/>

Towards Cleaner Shores   Interactive map   Comparisons

**Litter Explorer**

Region or District?  
Region

Select Years  
2013 2016

Remove Litter Items to Simulate Prevention

Choose Regions

- Inner Coast Vancouver Island
- North Coast B.C.
- Southern Strait of Georgia
- West Coast Vancouver Island

**Litter Results**

Source of Litter (by count)

Source	Count
Smoking	~400,000
Recreation	~200,000
Fishing	~50,000
Dumping	~100,000
Hygiene	~50,000

Material of Litter (by count)

Material	Count
Plastic	~900,000
Glass	~50,000
Metal	~20,000
Paper	~10,000
Cloth	~10,000
Rubber	~10,000
Other	~10,000

**Summary**

Summary	Results
Total Cleanups	1,055
Kilograms collected	98,521
Kilometers cleaned	2,155
Total Volunteers	25,203

Data provided by The Great Canadian Shoreline Cleanup; App created by Fladmark, V., Konecny, C. and De la Puente, S.



# Students: Interactive App

Towards Cleaner Shores

Interactive map

Comparisons

Select Years



Region or District?

Region

Choose Region

Southern Strait of Georgia

Remove Litter Items to Simulate Prevention

<http://35.182.174.44:3838/LegacyApp/>

Region or District?

District

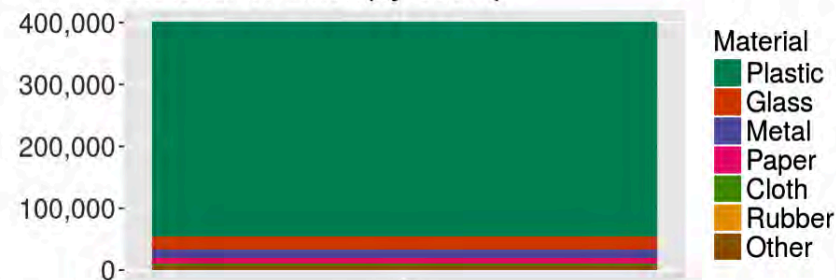
Choose District

Vancouver-Point Grey

Source of Litter (by count)



Material of Litter (by count)



Summary

Results

Total Cleanups	1,026
Kilograms collected	50,414
Kilometers cleaned	1,870
Total Volunteers	24,566

Source of Litter (by count)



Material of Litter (by count)



Summary

Results

Total Cleanups	111
Kilograms collected	3,461
Kilometers cleaned	184
Total Volunteers	2,604



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# Citizens: News Articles

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## News

STRAIGHT TALK »

### Smokers outed: cigarette waste accounts for 50 percent of trash on southern B.C. shorelines

by Martin Dunphy on August 2nd, 2018 at 5:27 PM

f t 3



GETTY

Researchers at UBC have determined that garbage from cigarette smokers is responsible for half the trash that coats shorelines in B.C.'s southern Strait of Georgia.

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### Cigarettes make up half of litter on local shorelines: UBC study



#### Smoking ban failing to keep beaches clean



Smoking has been banned at Vancouver beaches for the past eight years, but a new study from UBC indicates the message still may not be getting through.

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# Citizens: Social Media



OCTOBER 19, 2018 / VANESSA FLADMARK | [LEAVE A COMMENT](#)

## Shoreline Litter: The Plastic That Binds Scientific and Coastal Communities

Raised amongst the wilderness of Haida Gwaii, I was taught to respect the environment with every breathe I take and I learned our people came from the ocean and we owe our lives to it. Nowadays, living in the big city of Vancouver, it's hard for me to see carelessly discarded litter. Since I tried to not think about this



## Ocean Bridge Diaries: Vanessa Fladmark

T'aalan Stl'ang: The beach that has everything



Ocean Bridge participant Hannah Kosick holds colourful microplastics picked up on T'aalan Stl'ang. (Photo: Conner McDowell)

By [Vanessa Fladmark](#)

August 7, 2018



# Youth: Casual Conversation





# Kids: AquaVan





# Recommendations



Bring your own bag



Carry a reusable water bottle



Don't litter cigarettes



Pack your lunch in reusable containers



Say no to plastic straws & cutlery



# Recommendations

- What is most effective for the audience? **Connections!**
- Utilize **different tools** for each aspect of your science
- Ground your science in reality and **share experiences**







<http://35.182.174.44:3838/LegacyApp/>



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