

**PRELIMINARY
COASTWATCH SURVEY
AUTUMN 2016
RESULTS
1st DRAFT**

**This is a draft of the Coastwatch Results 2016 and it is not a complete
version of the Report**

We apologize for possible mistakes or omissions

Surveyor Group Contact Names (where form stipulated that name could be published)

29 Killanin Cubs Group	Eilís Sheehy	NUIG Geography Society
Adam Butler	Eimear Manning	NUIG MSc Coastal and Marine
Adventure Tourism Management, ITTralee	Eiméar Savage	Environments
Aidan Faughey	Eleanor Carlton	Oisín Gavin
Aine Walsh	Elizabeth Donnelly	Olivia McCartan
Andrew Cox	Elizabeth O'Brien	Pat McMahon
Anna Aherne	Emer Mc Loughlin	Patrick Houlihan
Anne Laird	Emilie Massard	Paula Farrell
Annie Getchell	Eva Hennessy	Paul and Karin
Anthony Brogan	Foyle Ambassadors	Paul Dubsy
Anto Dillon	Frank O'Reilly	PCA
Ardmore Tidy Towns	Frederick Boal	Peta Taaffe
Ardscoil Ris	Frieda McGovern	Peter Craven
Barry Flynn	Geoffrey Jones	Peter Mellor
Ben O'Shea	Geoff Warke	Peter Pearson
Bernie Connolly	Gerry Moore	Polly Dolan
Billy Harty	Ger Scollard	Rasmus Sloth Pedersen
Breda Enright	Gina Kyriazopoulou	Regina Classen
Brenda Burke	Glenarm Wildlife Group	Richard Torney
Brenda Murphy	Gráinne Cronin O'Reilly	Robert Anthony
Brendan Allard	Harm Deenen	Rory Keatinge
Brendan Griffin	James Rainey	Roslyn Nicholson
Brendan O'Kane	Jayne, Marie, Anto	Ruairí Moore
Brian MacSuibhne	Jennifer Lynch	Ruth Ennis
Brían MacSuibhne	Jenny Suddaby	Sabine Springer
Carmel Mackey	Jill Crosher	Sally Hennessy
Cathal Divine	Jim Crowley	Sam
Cathal Diviney	Jim Hurley	Sara Dominguez
Catherine Seale	Joe Keatinge	Sarah Gavin
Cathleen Ní Chonghaile	John J	Scoil Ard Ris, CBS , Secondary School,*
Chelsie Shaff	John Johanson	*Transition Year Students
Christine Laughlin	Jonathan Mason	Scoil Chaitlin Naofa
Cian Gíll	Karen Dowling	Sea Life Bray
Ciara Conboy-Fischer	Karin Dubsy	Seal Rescue Ireland
Cilian Roden	Katharine Duff	Shay Daly
Claire Lewis	Kevin Lynch	Siobhan Tanner
Clare Murray	Kimberly Harris Group	Skerries Community College
Clashmore and Kinsalebeg Community Council	Leiden O'Donohue	S.N. na Naomh Uile an Cloigeann Stack
Cleas	Linda O'Dwyer	St Declan's National School
Cobh Tidy Towns	Love Your Lough	Stephane Merceron
Conor Brownlee	Maggie Gavin	Stephanie Linehan
Conor Mc Mahon	Maire O'Brien	Tara McMahon
Cora Harding	Marcus Duggan Vaughan	Tempe Pearson
Cordula Maguire	Margaret Somers	The Brodies
Darragh Oneill	Marta Brown	The Maguires
Dave Wall	Marta Cabello	The Robert's family
Declan Collins	Martha Keatinge	The Thompson family
Deirdre Ryan	Matthew Bolland	The Wendy House
Des Farrell	Michael Gavin	Training Event Cobh
Diane and	Michael Walsh	Trinity College Dublin, Zoology Department
Diane Orr	Mike McGovern	Trish O'Donohue
Dion Deacon	Mizen Scouts	Victor Fusco
D J Hemming	Moggy Somers	Wild Bunch
Donncha O Muirthile	Monika Wojcieszek	
Douglas Taylor	Newtown School 6th year	
Dublin City Council Biodiversity	Noirin Burke	
	NUI Galway	

EXECUTIVE SUMMARY COASTWATCH AUTUMN SURVEY 2016

Results for the island of Ireland Coastwatch 2016 shore survey are based on shore audits by ~ 2000 volunteers reporting on nearly 600 survey units (where 1 s.u. is ~ 500m shore length). After removal of inaccessible sites and duplicates, data from **519 distinct survey** units was analysed - 45 sites from NI and 474 from the Republic. This represents ~ 3.5% of our 7900 km of island of Ireland coast.

Survey Method: Volunteers from all walks of life chose and booked their survey areas online, or through regional coordinators. They carried out a snapshot audit of their s.u. from hinterland down to low water once between Sept 18th and Oct. 22nd, completing survey questions and water tests while on the shore. Support materials were available to download from the Coastwatch website including seashell, seaweed and jellyfish ID aids. Additionally a Coastwatch pilot micro litter app was introduced in autumn 2016 for download and surveyors were encouraged to check waste reception facilities if their chosen survey area contained a harbour. Results were returned online or by post for input, cleaning and analyses. Select results were mapped using GIS and more maps will be added in coming days. The preliminary results are to be presented for comment together with local case studies on Nov 23rd in Trinity College Dublin and also posted on the Coastwatch website. After further analyses and comments from surveyors a final edited report is due to be launched in late January. Late result returns may be added to the final report.

Results are presented in a draft report illustrated with maps and graphics, some comparing findings over several years.

BIODIVERSITY

The survey form contained general animal questions shared by all Coastwatch countries and more detailed extra questions for select biota prioritised for Ireland and the UK. In contrast to early surveys, where only litter data was considered reliable, now with government grant aided support materials and training, the number of surveyors attempting the extra nature questions has risen to 86% and quality of information when cross checked for verification is generally high.

Jellyfish were reported on 16% of survey sites. Additionally Portuguese men of war were mentioned as a species not seen here before in 11 sites. The 'jellyfish present' figure is higher than in other years and would be even higher if several stretches of booked sites were surveyed as planned. Calls from surveyors on several west cork, Kerry and Galway noted presence of Lion's mane and Mauve stinger jellyfish and Portuguese man of war occurrence as reason to post phone and then abandoned surveys, citing serious sting threat and school health and safety rules.

Other Animal in occurrence rank order:

Birds were the most widespread (78% of su) and numerous animals, with a count of 13 804 live birds. Forty seven **dead birds** were also recorded which is a slight increase over the previous year. Most were on the Meath and Fingal coast.

Shellfish were noted in 77% of shores, with empty shells on 73% of shores and live shellfish on 50%. The Coastwatch seashell poster for the Dublin area was printed by Dublin city council and made available and also downloaded by many surveyors and used to add species lists. After alerting surveyors to our special interest in the unusual blue-rayed limpet which lives only on a few seaweed species, a new blue rayed limpet site was reported from Dalkey, augmenting another recent record from Sandycove. Prior to that there was no Dublin area record. Live **native oysters** *Ostrea edulis* were found by one school group in Dublin Bay on an old oyster bed which was thought to contain no live stock. In Carlingford lough more such native oysters were found. Empty shell halves are still widespread as it once was a common shellfish. Today the range is restricted and sites are under threat. Surveyor photos and accounts for Carlingford show biodiversity hotspots with not only live native

oysters, but also areas teeming with tunicates, peacock worms, molluscs and seagrass with flocks of shorebirds feasting on them. On the downside surveyors noted further intensification of bottom mussel bottom aquaculture activity and associated seafloor damage and litter. This has become a priority issue to address.

Live fish were reported from 14% of survey sites and **dead fish** were recorded in 3% sites. In extra questions 11% of sites were thought to have juvenile fish or fish nursery function.

There were more large dead marine animals this year than usual. Sad headlines were:

The number of dead seals is higher than last year and live seals down. Seventy two **live seals** were recorded dotted around 35 sites and 9 dead ones found in 5 sites; one in Carn Annagh, Co Mayo contained 4 decomposing dead seals. One large dead seal in Donegal was found totally entangled in ropes.

Seven **live cetaceans** were spotted over 3 survey sites and 5 dead ones in 5 sites. One of these was 'smell spotted' on Shankhill beach. It was a large fin whale which had been swept up with many cuts and buried on the shore by Dun Laoghaire County council. Other dead animals included one dead Leather-backed turtle in Ferriters Cove, Co Kerry.

The 2016 survey included 35 sites where **Honeycomb worm Sabellaria reefs** were observed. This unusually high number is related to areas surveyed and better ID and search location training for surveyors. While surveyor photos showed some prime quality honeycomb reef, many photos showed green opportunistic algae overgrowing the reefs. These are sought to be a likely cause or at least contributing factor to reef deterioration locally. The large Waterford estuary reef was studied in more detail with publication planned. Biogenic reef is classed as priority habitat under the EU habitat directive and is vulnerable to trampling, bottom dredging, sediment changes and eutrophication.

WASTE AND LITTER

Waste and marine litter are an important section of the Coastwatch survey. Surveyors report from large down to micro level with some items counted, others just recorded as present or absent. Select items are seen as potential indicators for the new marine law (MSFD) Litter Descriptor.

Tyres were reported on 27% of the coast surveyed and are the most wide spread large litter type. The count of 978 tyres in 85 sites showed some large clusters associated with tyre traps to catch peeler crabs. Given that we have tyre collection and recycling legislation it is of concern that surveyors find new tyre clusters and - as just happened in Cork - concerted surveyor attempts to remove them were unsuccessful.

Landfill material are either from historic landfill sites being opened by the sea as in Bray and part of Ringsend dump Dublin, or more commonly associated with homemade erosion control and/or demolition waste disposal. The waste category was noted in 1 out of 5 sites. **Household furnishings** were reported in 13% s.u. which is a slight reduction, while dumped **household refuse in bags or sacks** reported from 10 % of surveyed areas, is more wide spread than in any other survey in the last 5 years. Matresses were noted by several surveyors as a particularly awkward item to deal with once dumped and wet.

Drinks containers remained the most widespread litter and were reported from 91.6% of survey sites. As in previous years **plastic drinks bottles** (the **8573** distributed over 83.7% of s.u.) topped the drink container litter, reflecting sales share. Counts tended to be higher on the SE coast. Surveyors also counted **3 996 cans** distributed over 73% of shores. This count is less accurate as can body metal dissolves quickly and grey metal pieces are easy to overlook. The 1168 **glass bottles** were distributed over 47.6% of sites. **Tetra pack** containers remain least frequent with 37% of sites reporting this litter. A new bottle lid count introduced in 2015 yielded 4507 lids dispersed over 51.6 % survey sites.

There were one or more **plastic shopping bags** recorded in 46% of survey units with most in urban areas. The count of 1118 bags represents an average of 1 bag per 200 meters of shore and is in keeping with the continued low Irish count attributed to the success of the plastic bag tax.

After plastic bottles and cans, the '**rope and string**' category was the most widespread litter type (68% of shores), followed by 'other plastics' (60%), bottle lids (52%), glass bottles (48%), textile and hard plastic containers (both in 47% of su) plastic bags, fishing/angling/aquaculture gear (40%) tetra packs (37%) and polystyrene object/pieces (37%). Sanitary waste was noted on 15% of su. And tar was least common found on 2% of su.

The biggest contribution to the fishing/angling/aquaculture gear were nets which were reported from 27% of sites. Aquaculture waste was reported from 13% and angling 12 %, while traps were noted in only 9% of surveyed sites. The lower trap yield this year was locally linked to the lack of storms to break pots loose.

Other litter of note mentioned most frequently were plastic sheets and wraps, balloons and cotton buds.

Micro litter: Surveyors reported seeing visible lines or patches of micro litter on 22% of shores. A new pilot micro litter app was designed and use invited. From the 69 results, 59 showed visible micro litter. Of those 59 more than half (54%) contained plastic filament, with polystyrene beads recorded in 42% and plastic flakes in 30.5%, glass in 27% and hard plastic pellets in 20%. The pilot app produced with free tools will now be improved upon, taking into account surveyor feedback. Micro litter reports will then be taken at any time of year, to improve source knowledge, pick up spills e.g. of raw plastic pellets and identify micro litter hot spots.

A separate Harbour survey was carried out for 25 survey units, covering 12 harbours. These examined both state of littering and waste reception facilities as required by EC Directive and national legislation.

WATER QUALITY

Sewage: 42% of waters in survey sites were sought to be reliably sewage free and 39% as rarely effected. Occasional sewage pollution was thought to be present in 13% of sites. In 4% it was considered frequent and 2% usual. Looking back over the last 5 years, 2015 was the odd one out due to significantly higher urban East coast site surveys which are still awaiting sewage treatment.

Stream water quality indicators: There were 487 inflows recorded a little less than the typical 1.2/su reflecting the dry weather which dominated in autumn 2016.

Bad and potentially bad signs: Discolor scum and froth were reported on 7% of inflows (as against 12% last year), a bad smell was noted for 6%. Dumped waste was recorded in 4% of inflows and visual signs of sewage or sewage fungus in 2%. Dead fish were seen in 3 sites (0.6%) and there were 2 cases of oil in inflows reported.

Good Signs: Animal life was reported from 7% and live fish in 4% of inflows.

Nitrate tests were carried out on 177 of the inflows. In 53% of inflows the nitrate levels were classed as unpolluted at time of survey as test strips did not change colour and in 21% there was only enrichment between 10 and 25mg/l. However 17% were over 25mg/l -NO₃ and 8 % breached the legal Nitrate 50mg/l NO₃ limit, with one record of 100mg/l or more. Bearing in mind that first detection by Merck field test method is 10 mg/l -NO₃ and only 'available' nitrates are detected, not nutrients already taken up by plants or other biota.

This result is much better than nutrient results in the last few years. As we have not yet mapped locations several factors may have combined to influence these results - a shift to low nutrient west coast surveys and the fine weather which in the past brought lower nutrient readings due to lack of storm water overflows and yard washings.

Apart from nutrients measured in inflows, green algae were checked and reported in question C. Green algae biomass is used as an official indicator of nutrient status of the receiving environment in bays and estuaries suitable for their growth.

Coastwatchers reported green algae patches and thin lines washed up just over half of the survey units (52 %) in keeping with previous few years, while large algal mats were recorded in 18.3% of shores, suggesting nutrient enrichment. Results need to be mapped to be better interpreted. Surveyors also noted extensive Ectocarpus carpets in Dublin Bay. This brown seaweed has a similar niche to the green Ulva seaweeds – fast growing fuelled by high nutrient levels, sunshine and warmth and breaking down to a mush carpet which covers the intertidal and may emit dangerous gases.

BACKGROUND INFORMATION AND SURVEYOR CONCERNS

Shore cleaning in the week before the survey was sought to have taken place on 7% shores, while more surveyors indicated that summer clean ups had been organised. Shore cleaning 'in the last week' has increased steadily from 1-2% in the 1990s, to 4% in 2012, up to 10% in 2015 where Dublin area surveys dominated. In areas like Ballymoney, Co. Wexford where daily cleaning started this summer the result shows a significant reduction in volume of beach litter recorded.

Surveyors who reported **threats to the shore** mentioned erosion most frequently. The threat of erosion was reported in 152 sites (29.1% of su) Hard erosion control measures were noticed in 223 sites. For the first time recreational abuse ranked second (12.4% of su), pushing water pollution into third place (9%). Flooding was considered a threat in 6.2% of shores. A mix of other threats included sea weed harvesting, aquaculture, planning issues and invasive alien species were recorded. The threat of construction in the coastal zone is still well down from peak Celtic tiger days.

Draft Report Nov 22nd 2016 for final edit and publication January 2017



Coastwatch

Further Information Coastwatch: Karin Dubsy Coordinator Mob 086 8111 684 email survey@coastwatch.org, and Angel Duarte Ángel Duarte Campos angel88dc@gmail.com

NI queries Dave Wall Ulster Wildlife Mob: 07739 700793

The autumn 2016 survey undertaken by Coastwatch volunteers around the island of Ireland finished on Oct 22nd. A month later, over 500 coastal site audits have been inputted and analysed to present preliminary marine litter, biodiversity and water quality findings. After surveyor feedback, cross checks and adding of some late survey forms, the final report will be published in early 2017. While extra information and some adjustments are to be expected in January, this November event provides an opportunity to flag key findings for use in current marine policy and law discussions, for surveyors to give feedback and to plan follow up action.

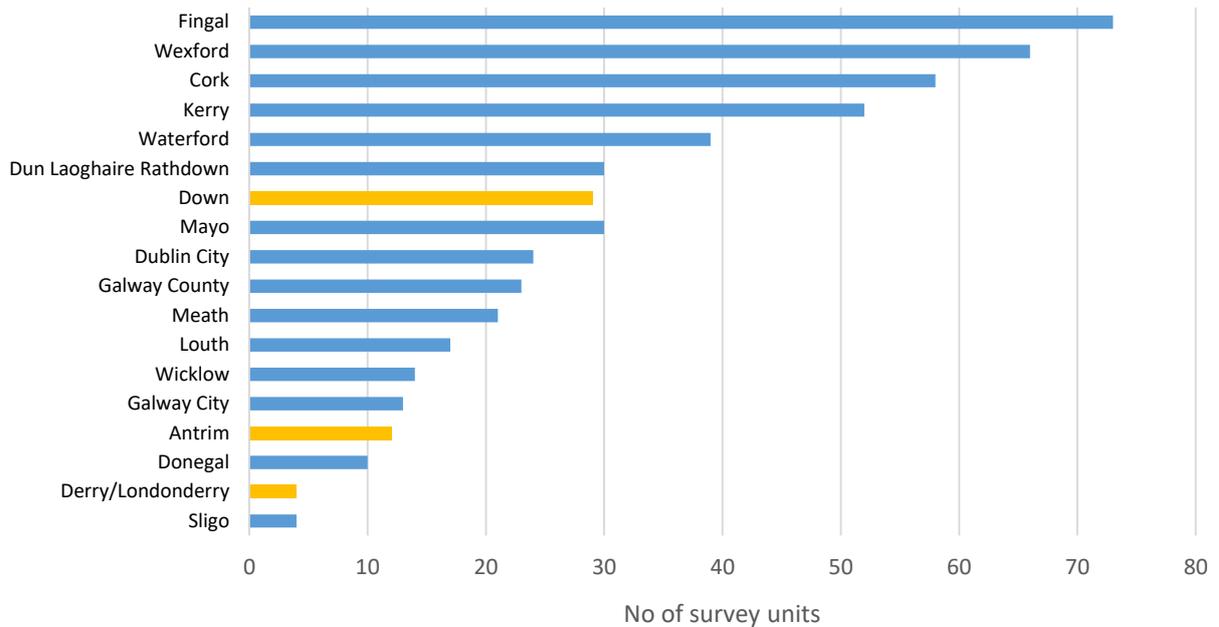
Coastwatch wishes to acknowledge the huge effort of regional coordinators, core team volunteers and especially the surveyors who again reported on the shores they zigzagged at low tide. Thank you to Trinity College Dublin for their support and hosting the first draft discussion. Our special gratitude to the Department of the Environment Water Section who grant aided core survey costs and enabled us to hold training sessions which continues to improve local biodiversity and water quality knowledge and survey data.

Coast Surveyed in 2016

Number of survey units

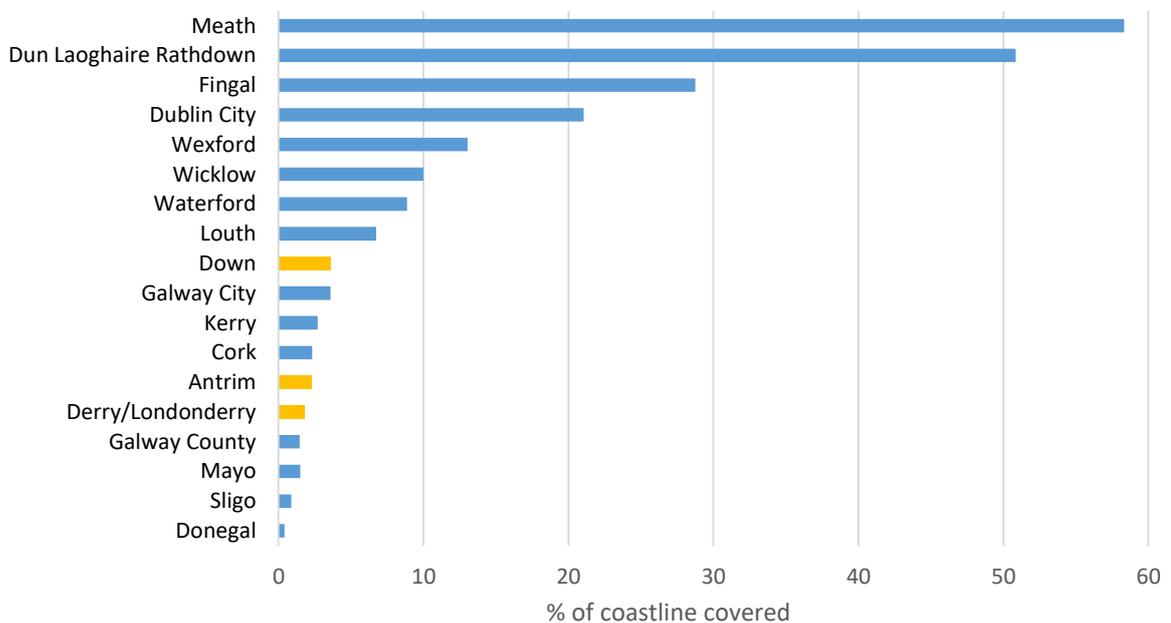
Total: 519 survey units **Northern Ireland:** 45 survey units **Rep. of Ireland:** 474 survey units

Duplicates: 18 survey units



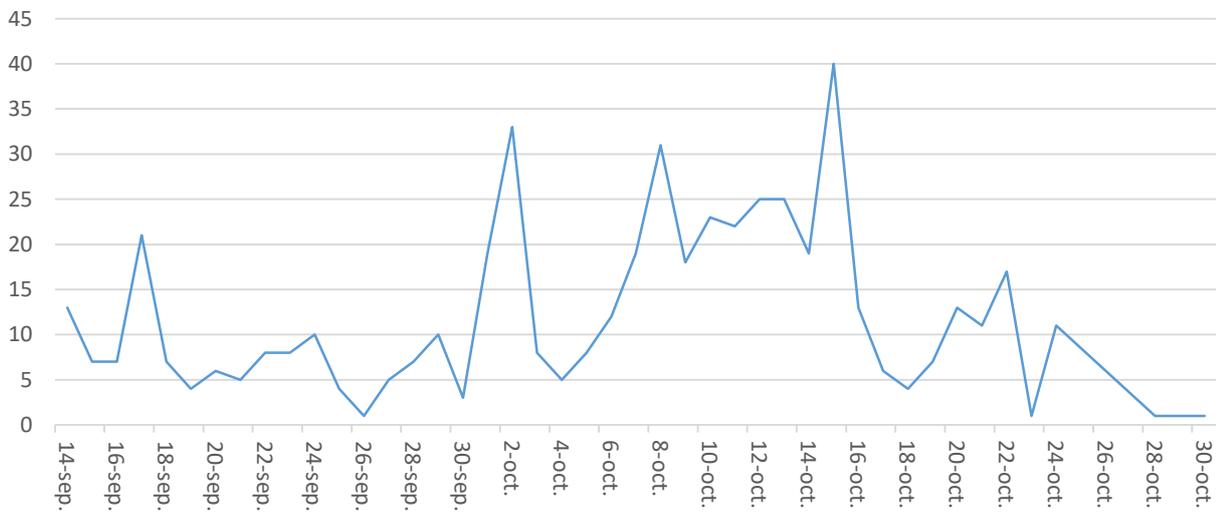
Percentage of coast covered

3,5% of the coast of the island of Ireland was covered in 2016

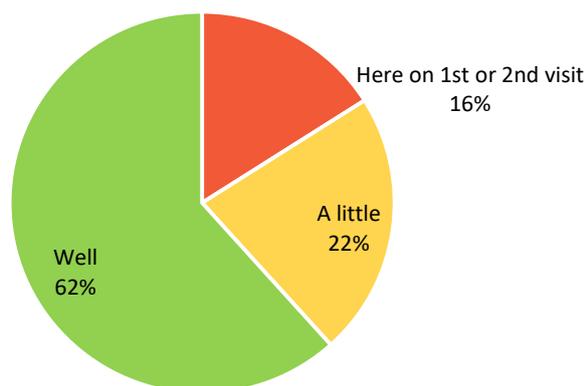


Other background information

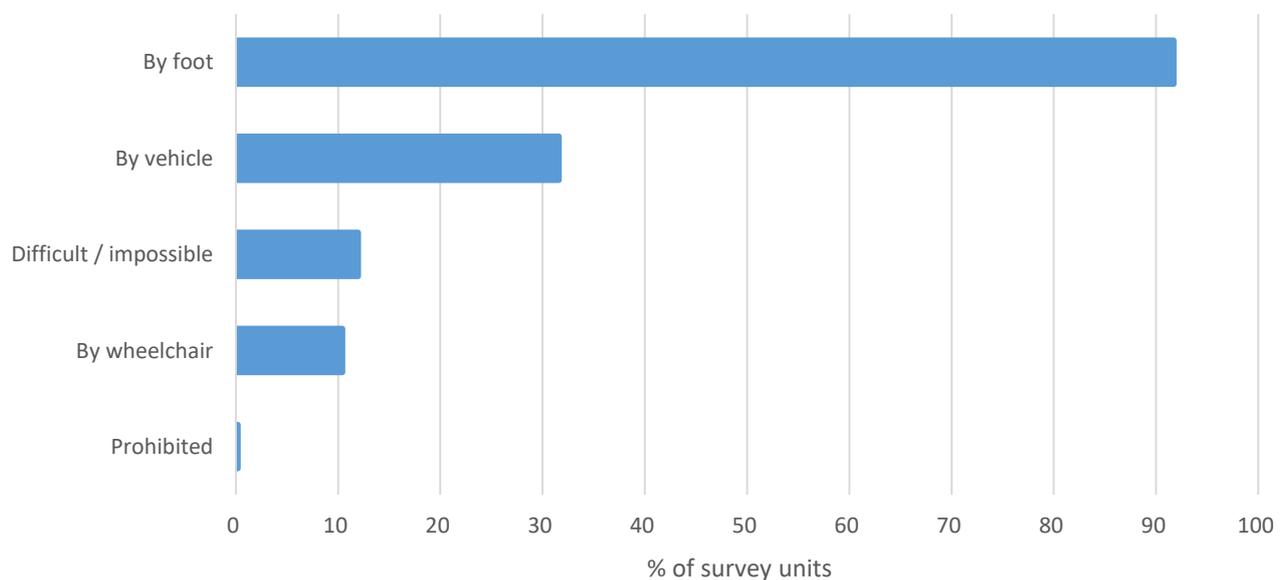
Date of the surveys



How well do you know this site?

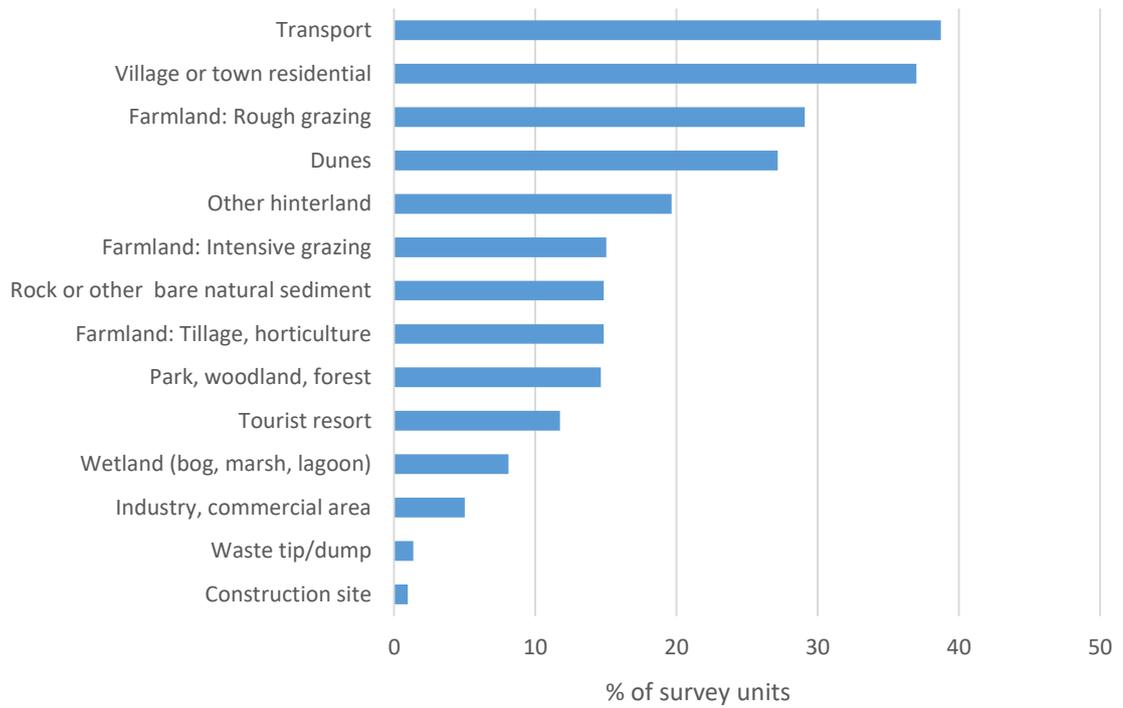


Is there direct access to your coastal unit directly from land?



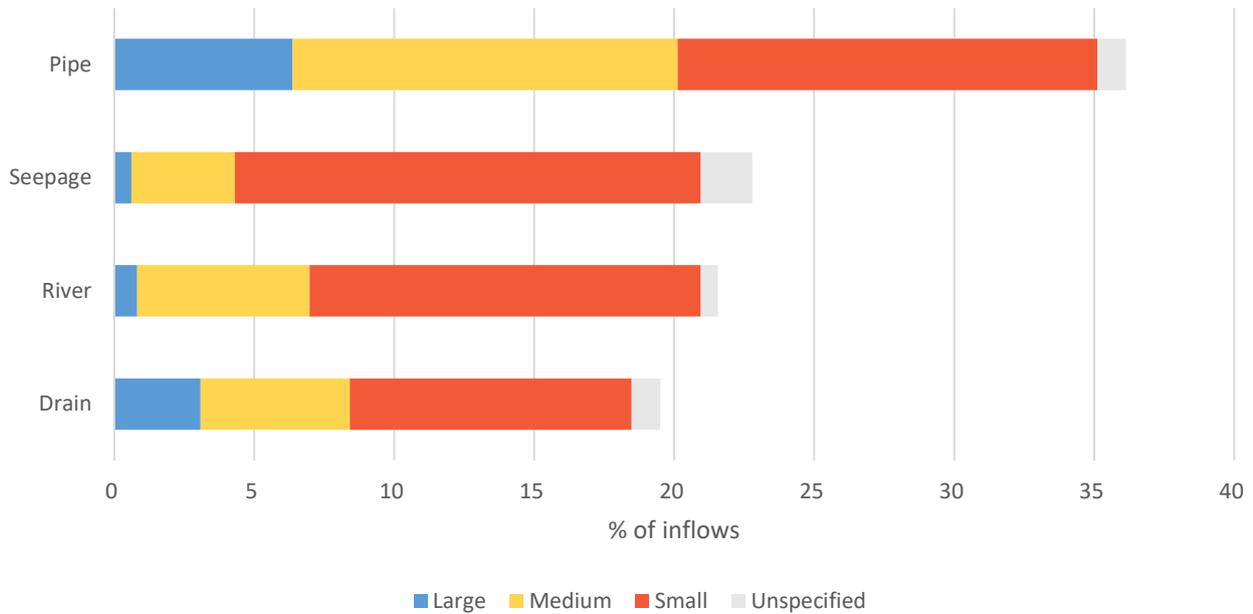
Land and inflows

What is the hinterland mainly devoted to?

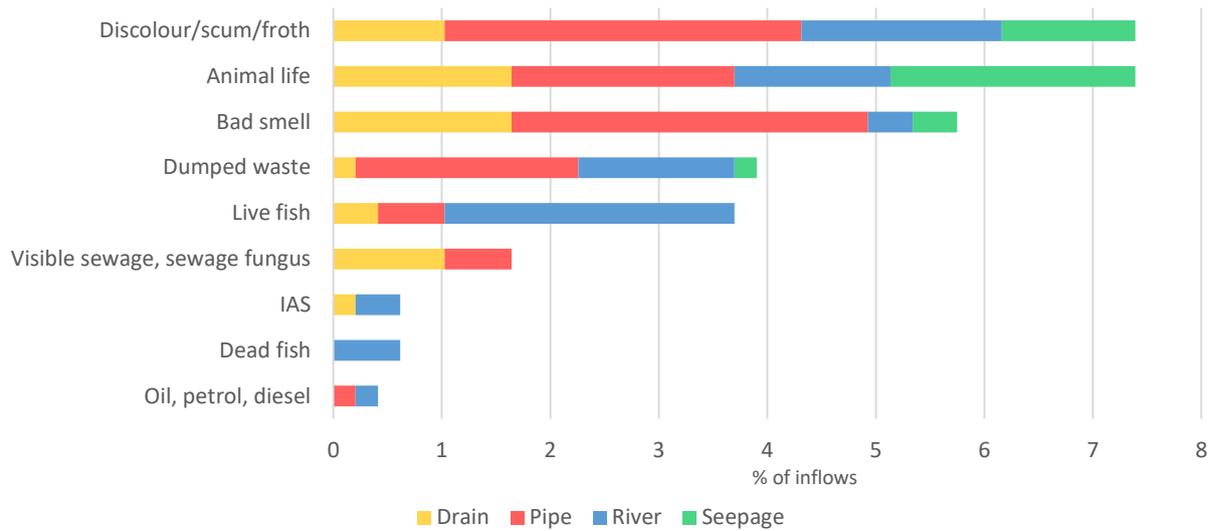


Inflows

A total of 487 inflows recorded

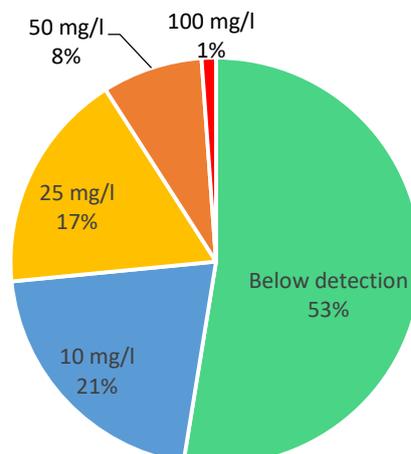
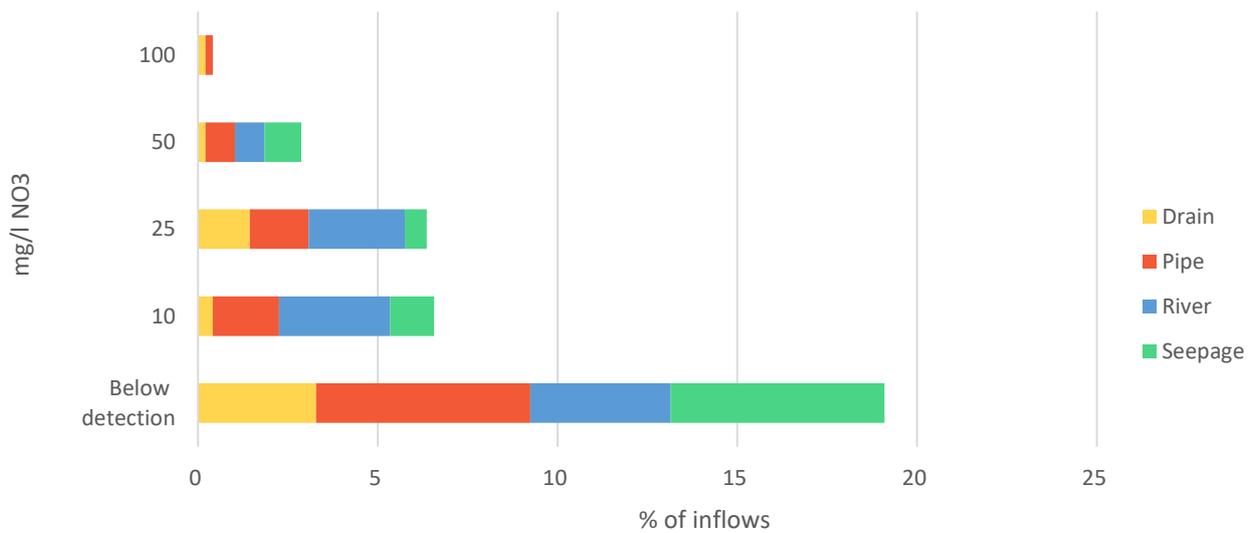


Quality indicators of inflows

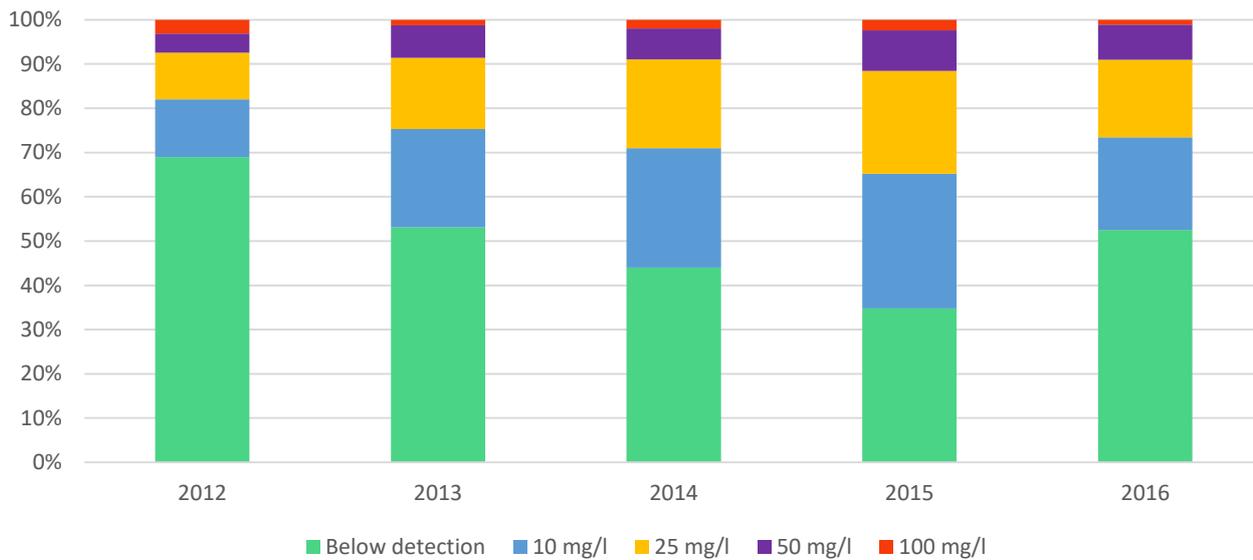


Nitrates

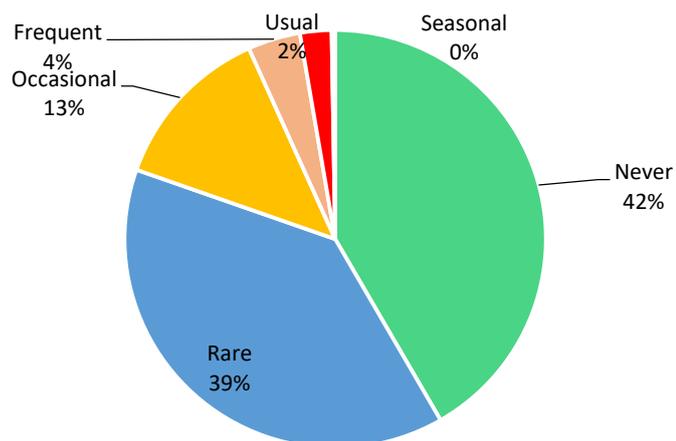
177 inflows tested for nitrate/nitrite



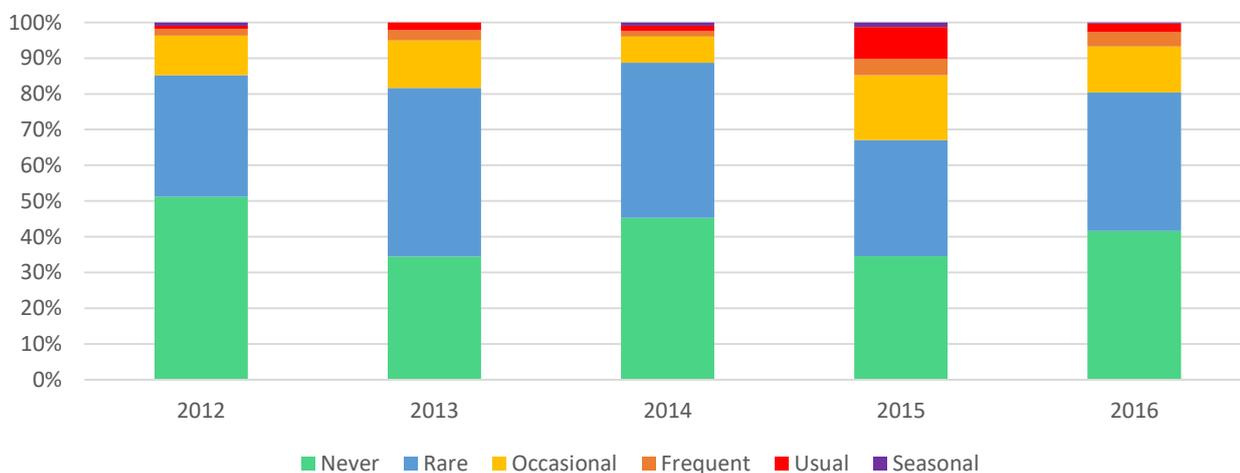
Nitrate levels since 2012



Frequency of sewage pollution incidents

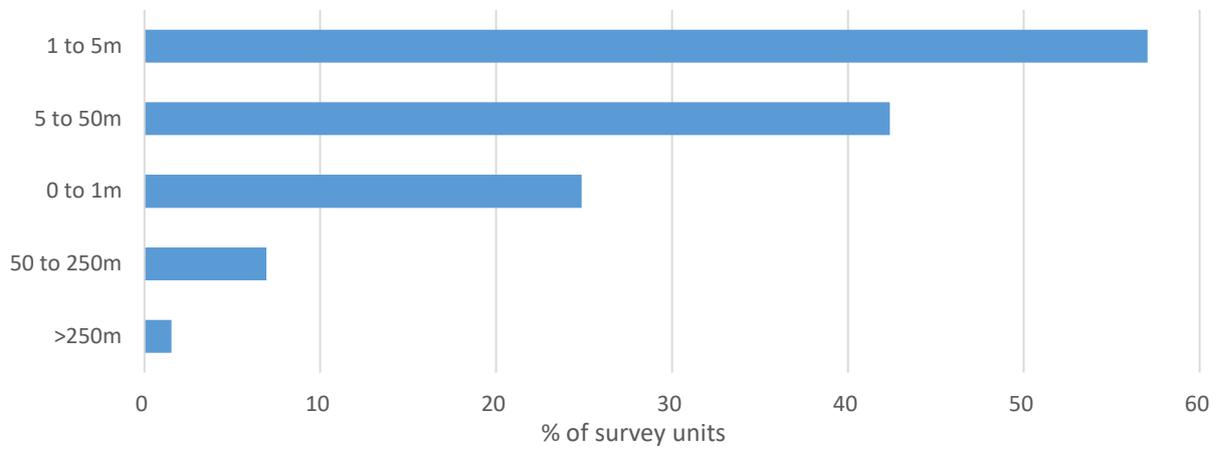


Data series since 2012

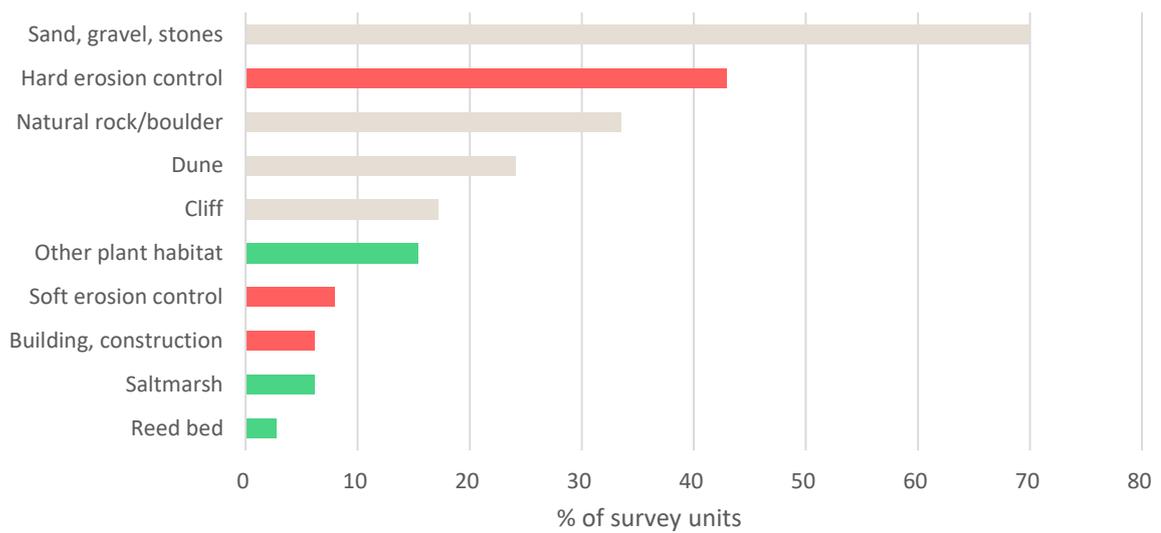


Splash zone

Width of the splash zone

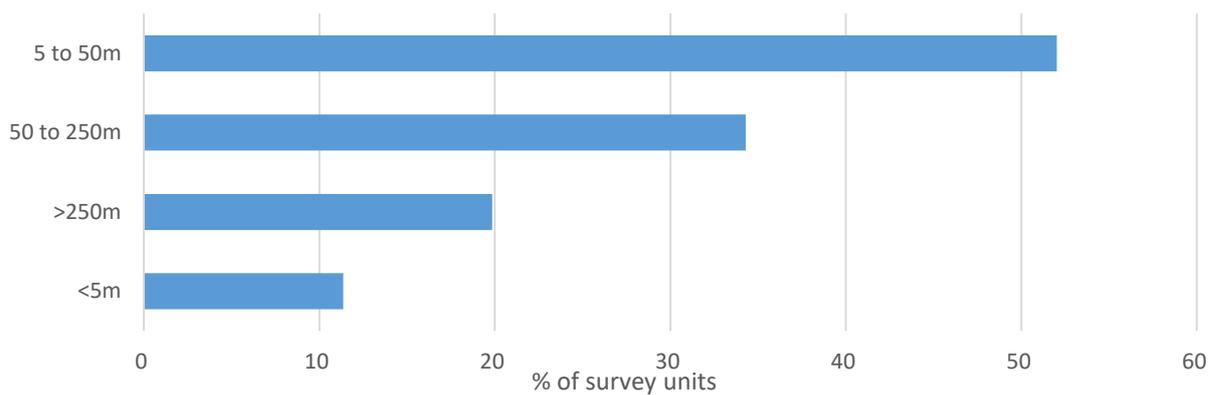


What is your splash zone covered in?

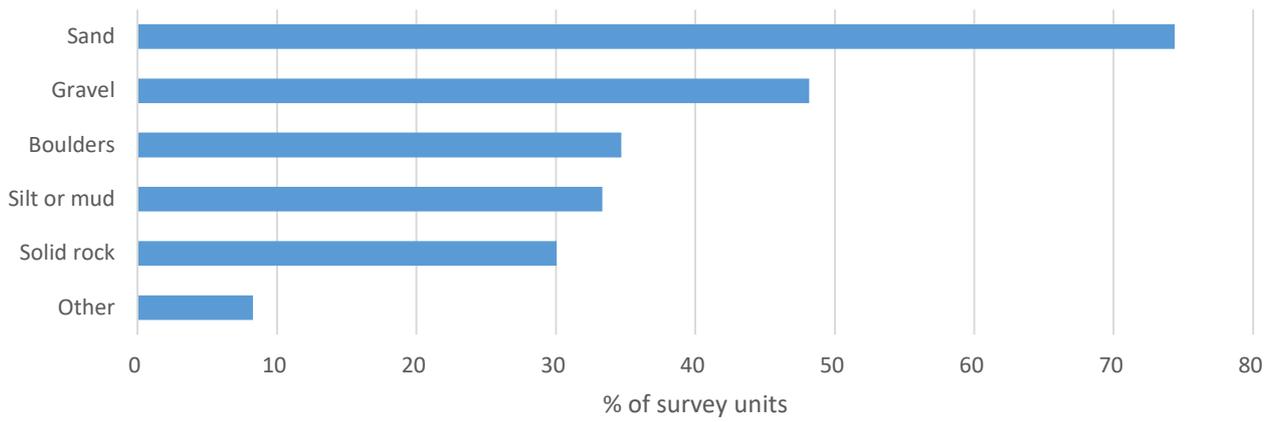


Intertidal

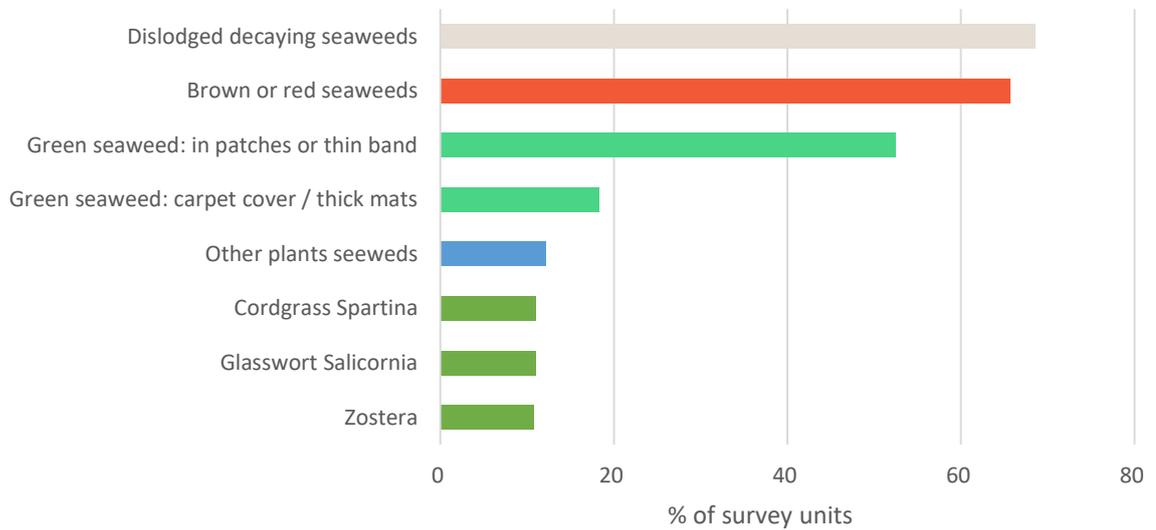
Width of the intertidal



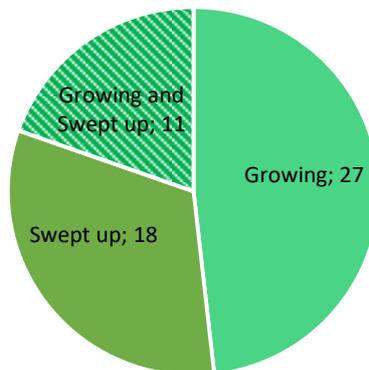
What is the intertidal surface composed of?



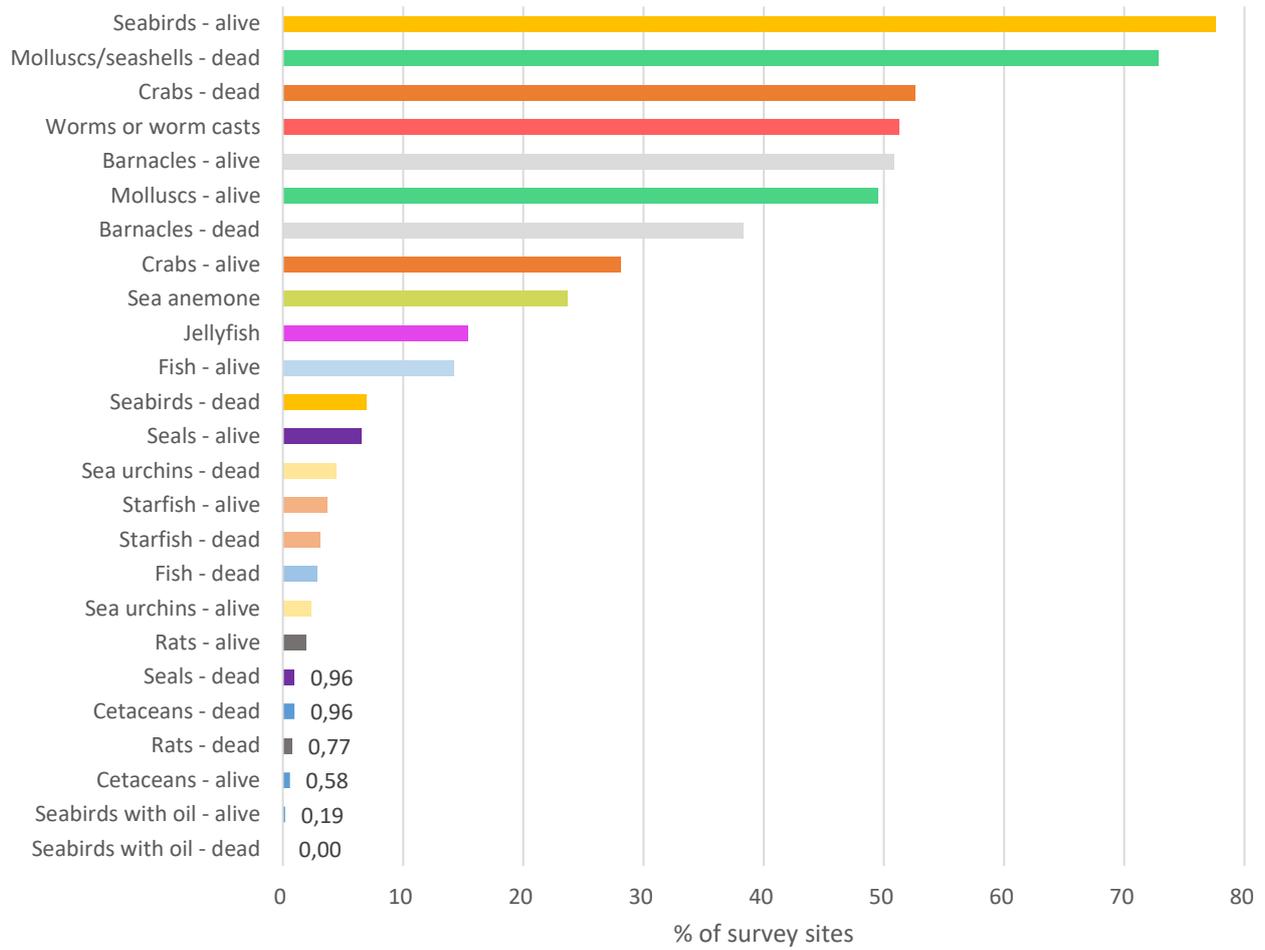
Plants and animal in the intertidal



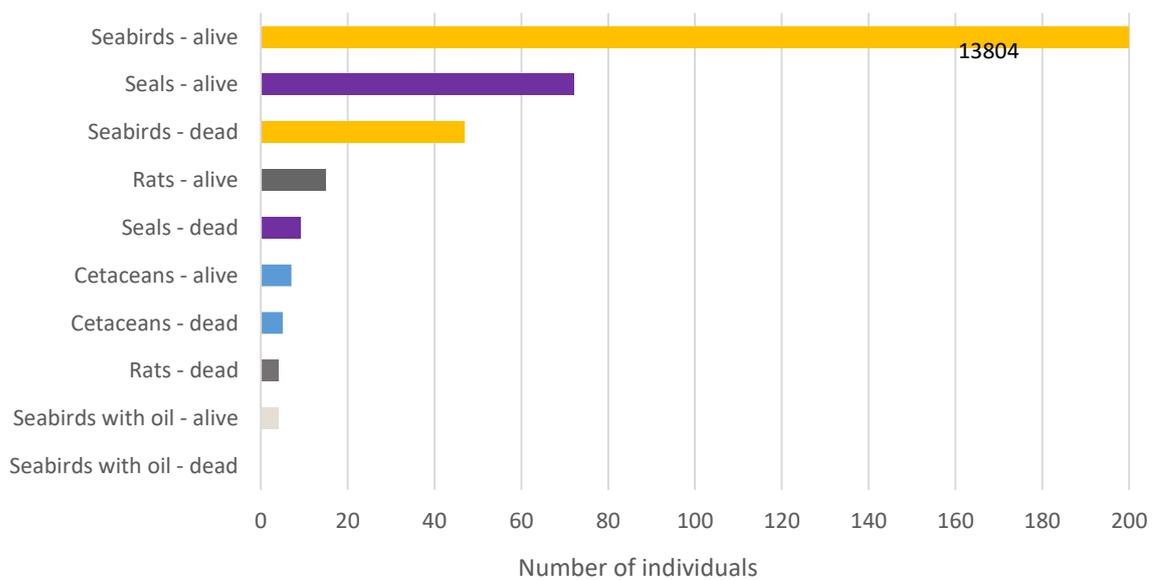
Seagrass Zostera



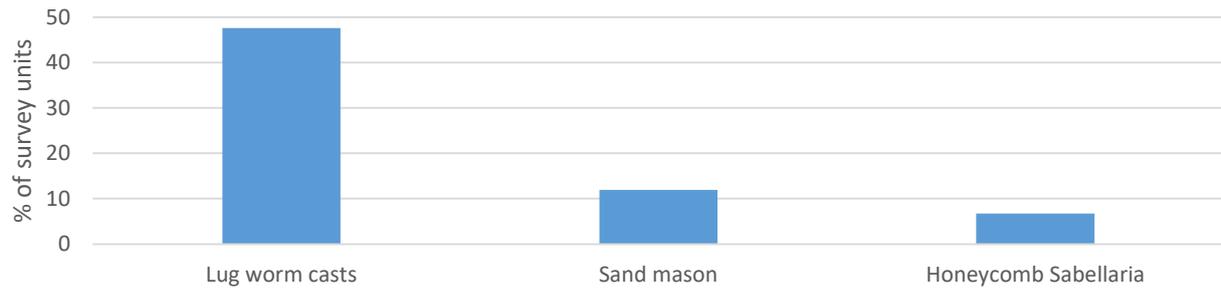
Animals



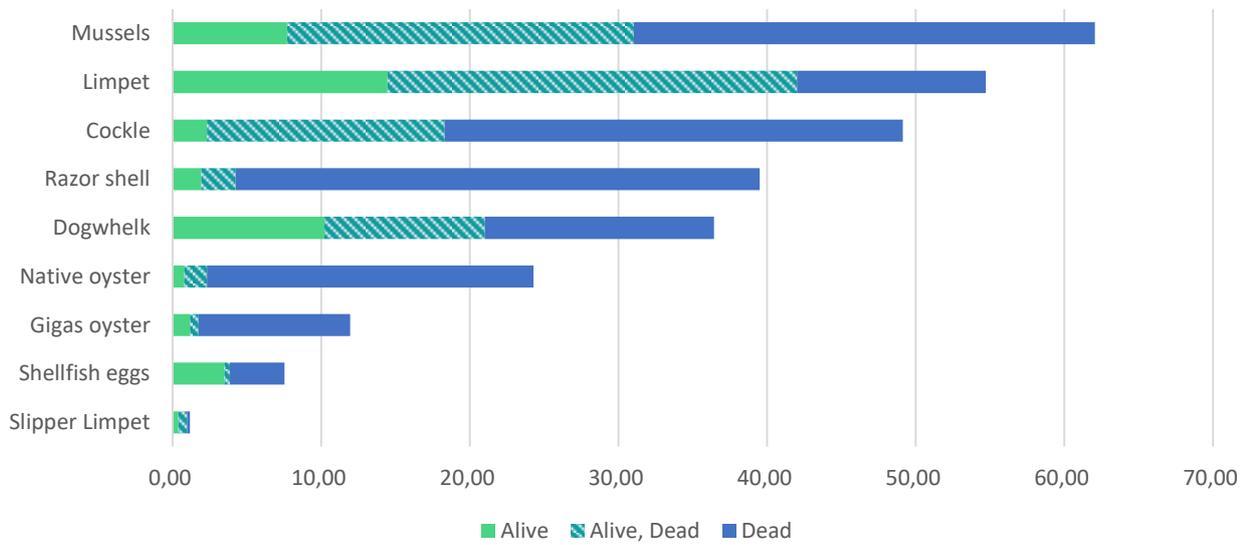
Animals counted



Worms (Extra Questions)



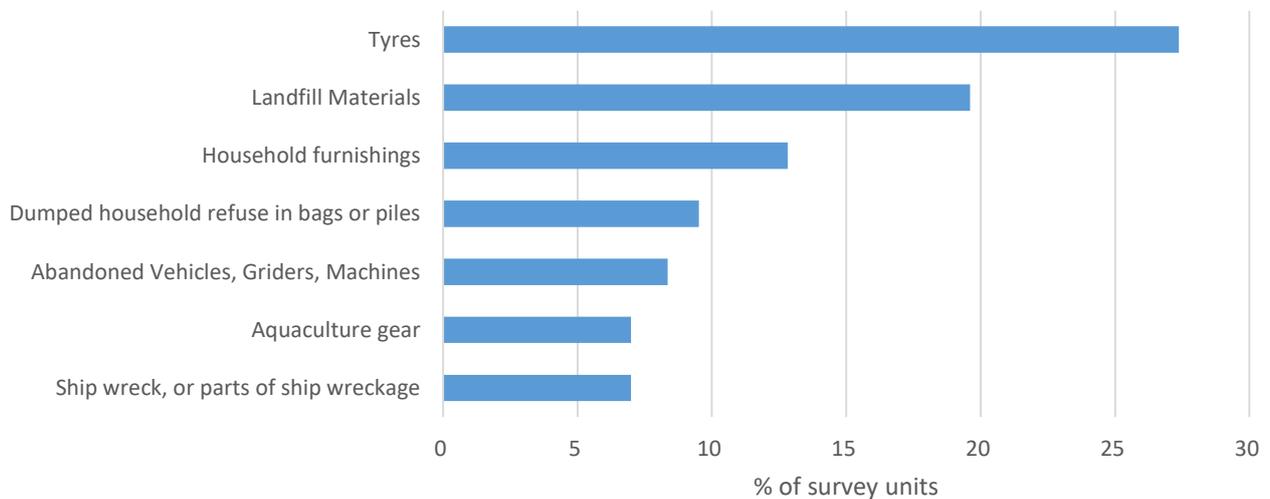
Molluscs



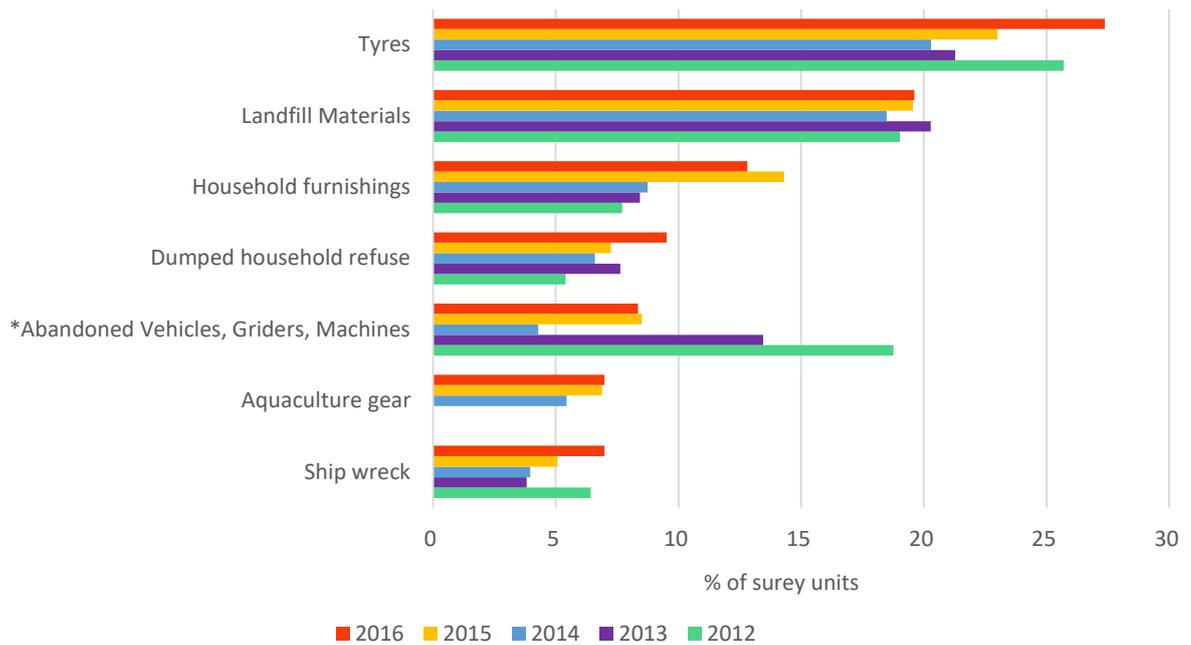
Litter

Large litter

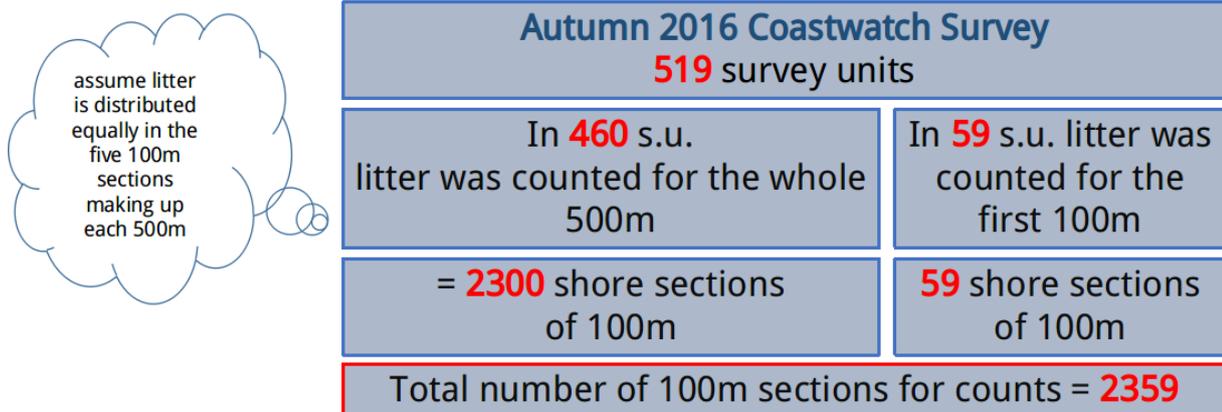
981 tyres counted



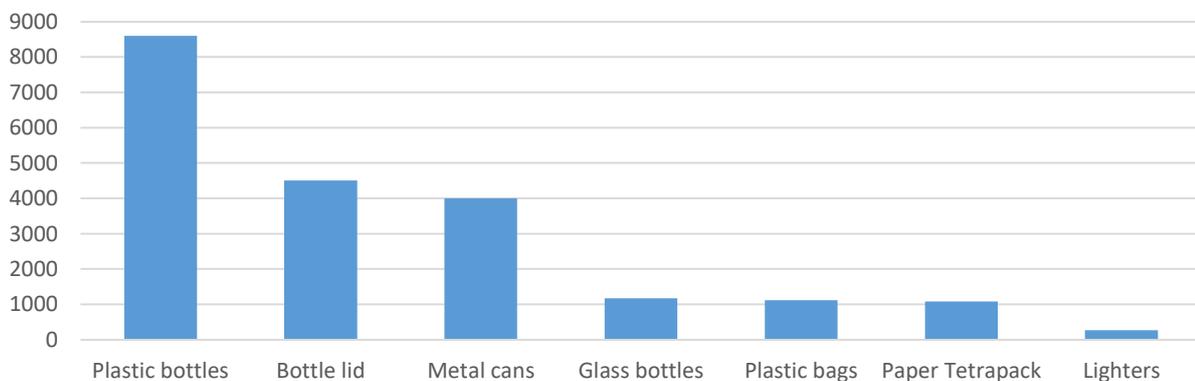
Large litter items since 2012



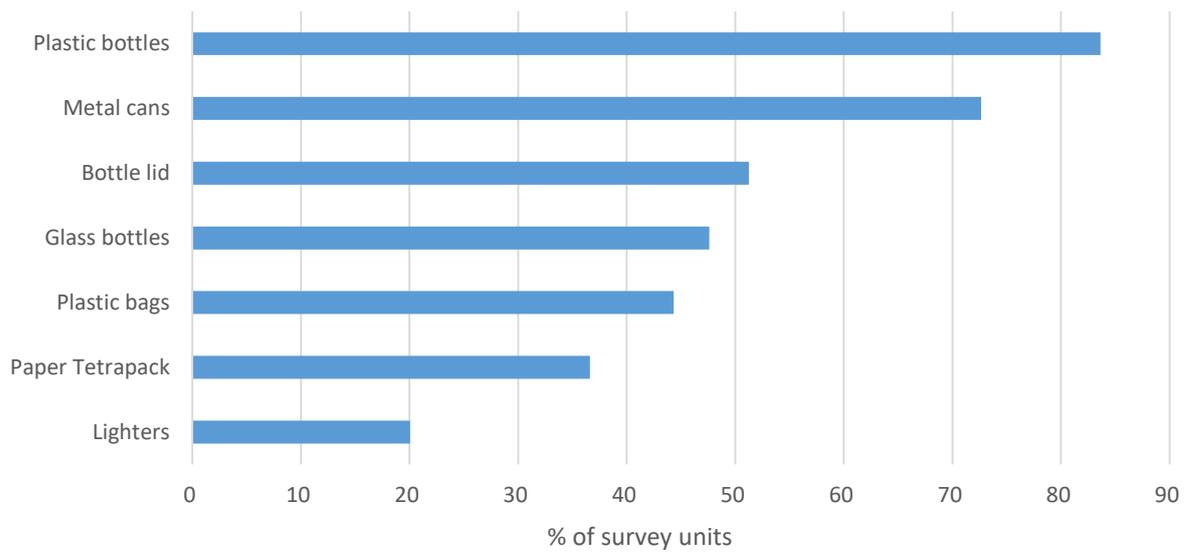
Litter counts



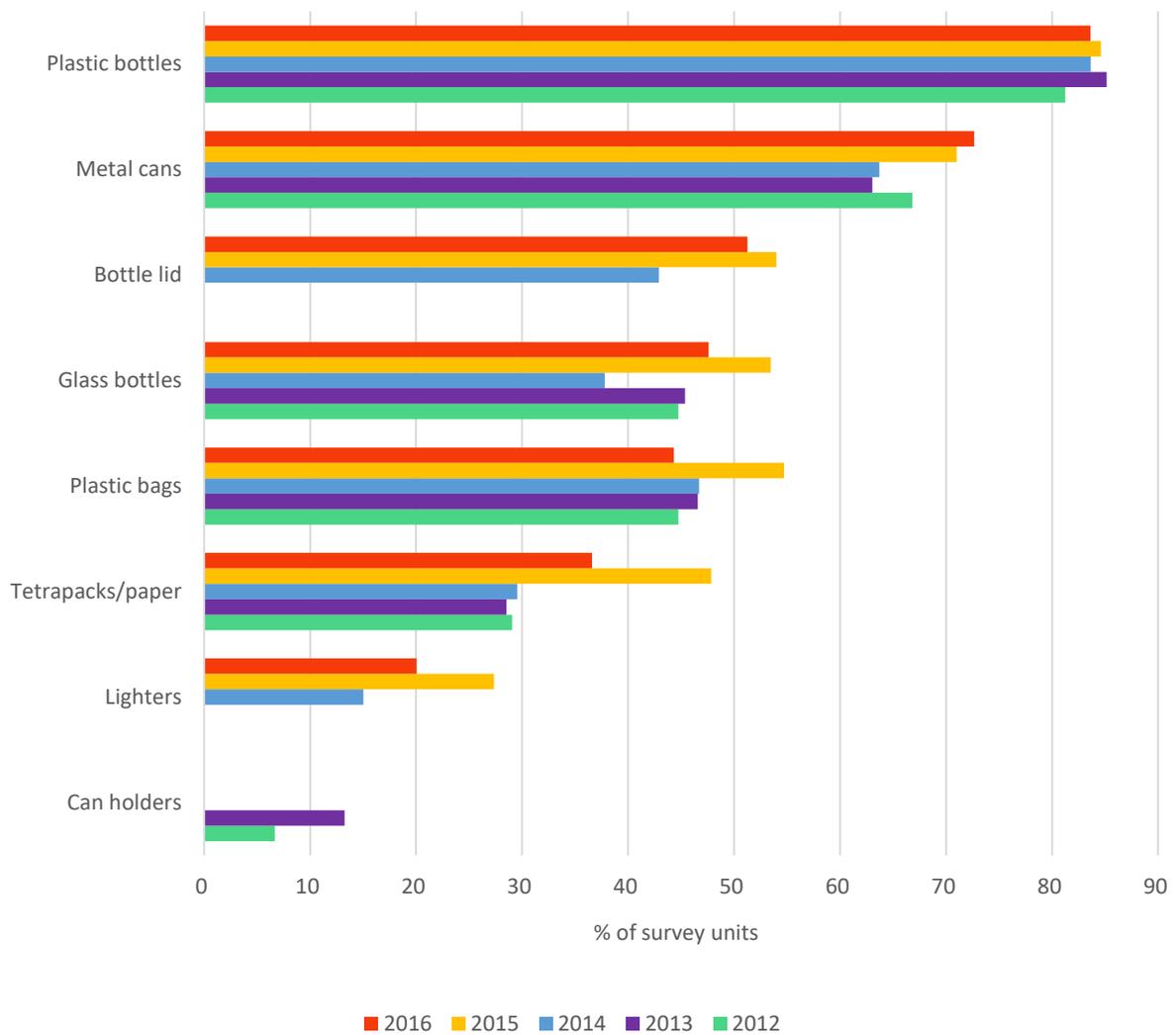
Total litter counts



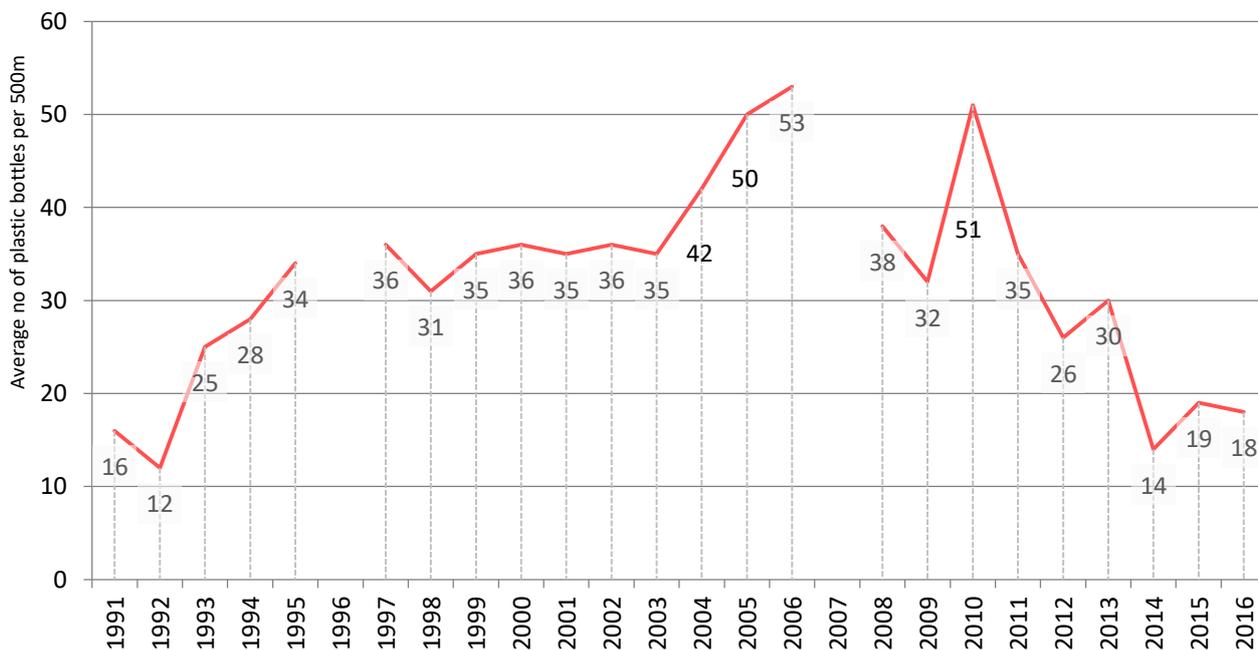
Distribution of counted litter items



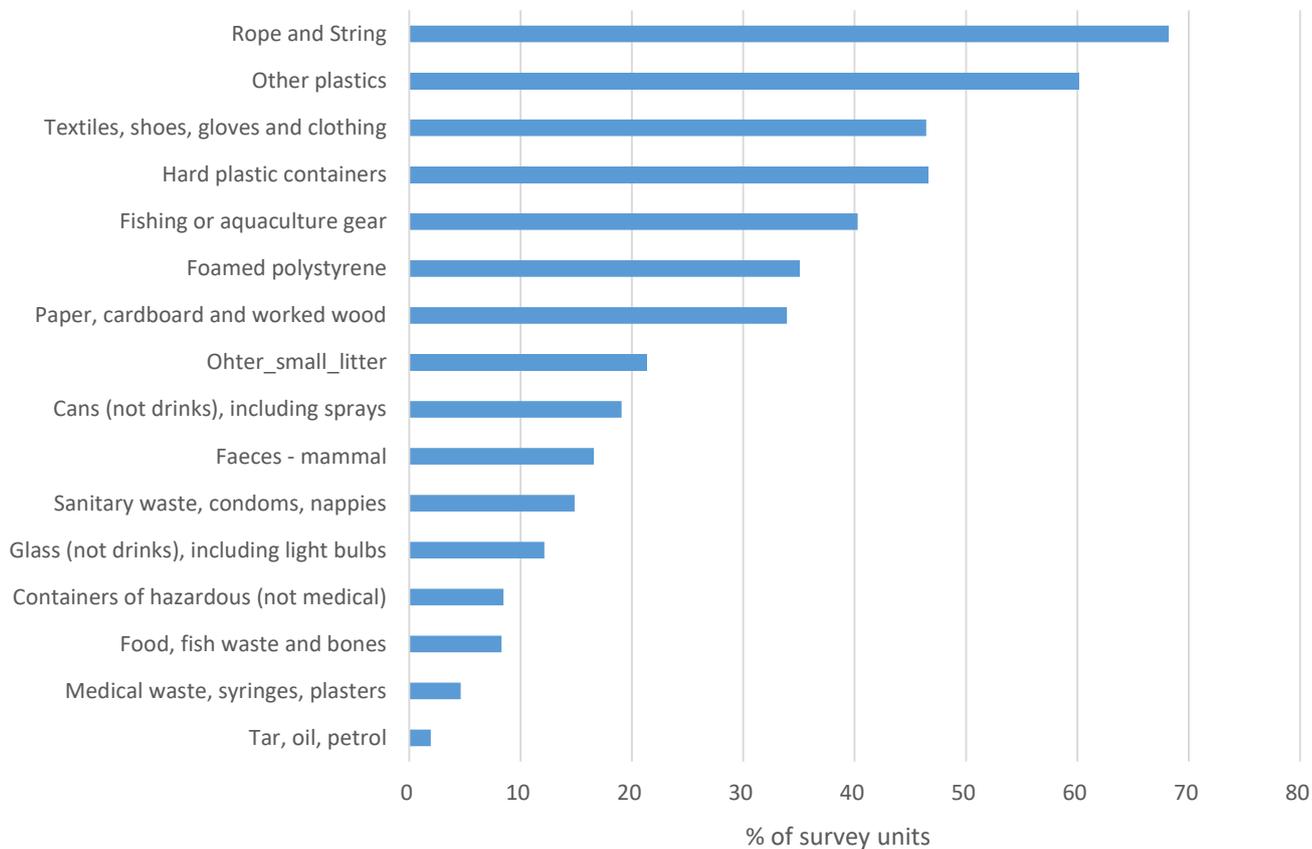
Counted litter items since 2012



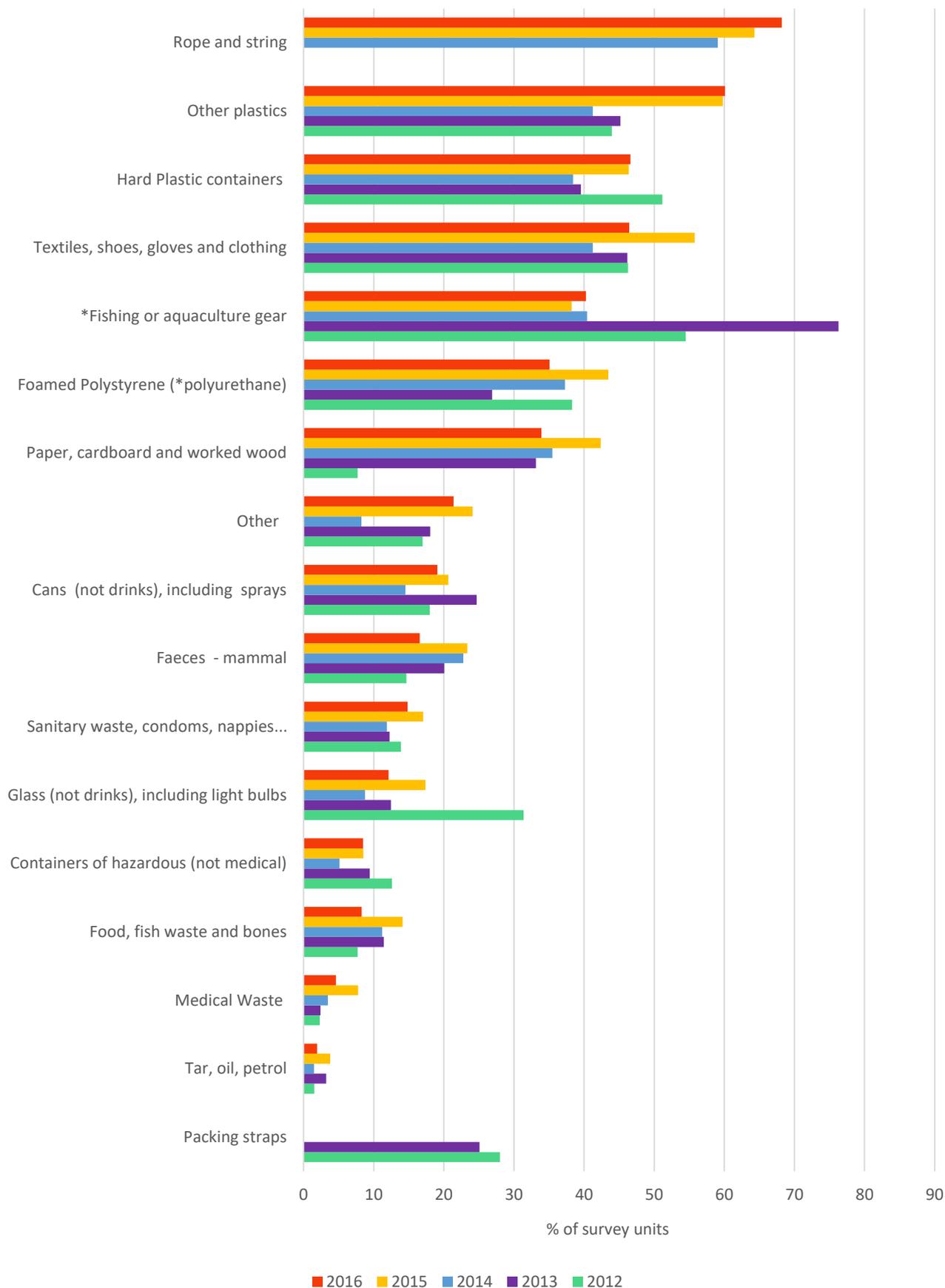
Plastic bottles over the years (average per 500m)



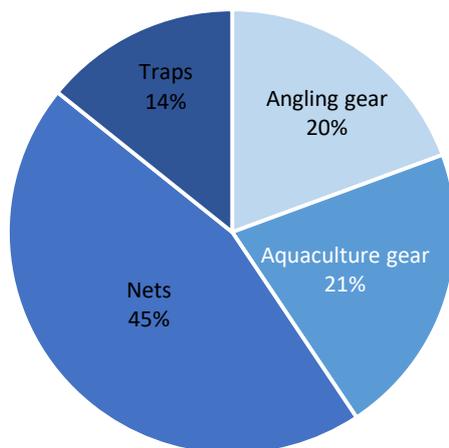
Other small litter



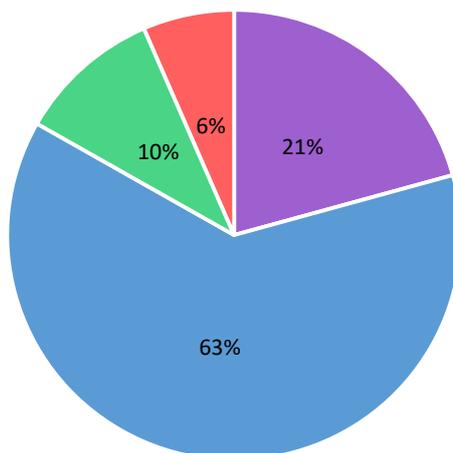
Other small litter since 2012



Fishing litter

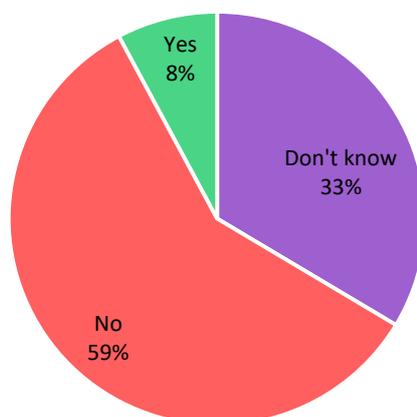


Has recent weather changed the appearance of your survey unit?



■ Don't know ■ No, recent weather is insignificant ■ Yes, looks cleaner than usual ■ Yes, looks worse than usual

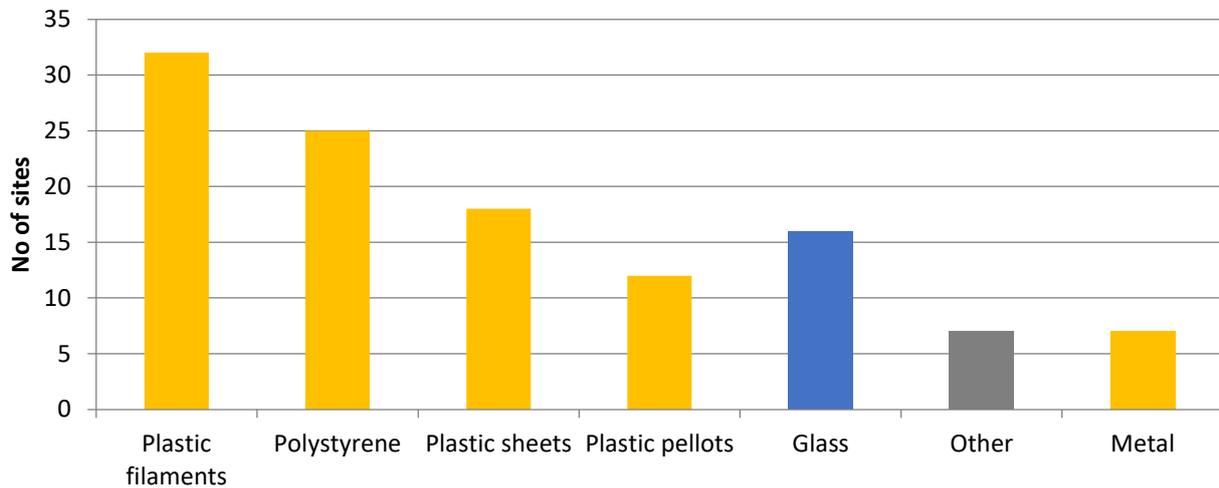
Has the shore been cleaned within the last week?



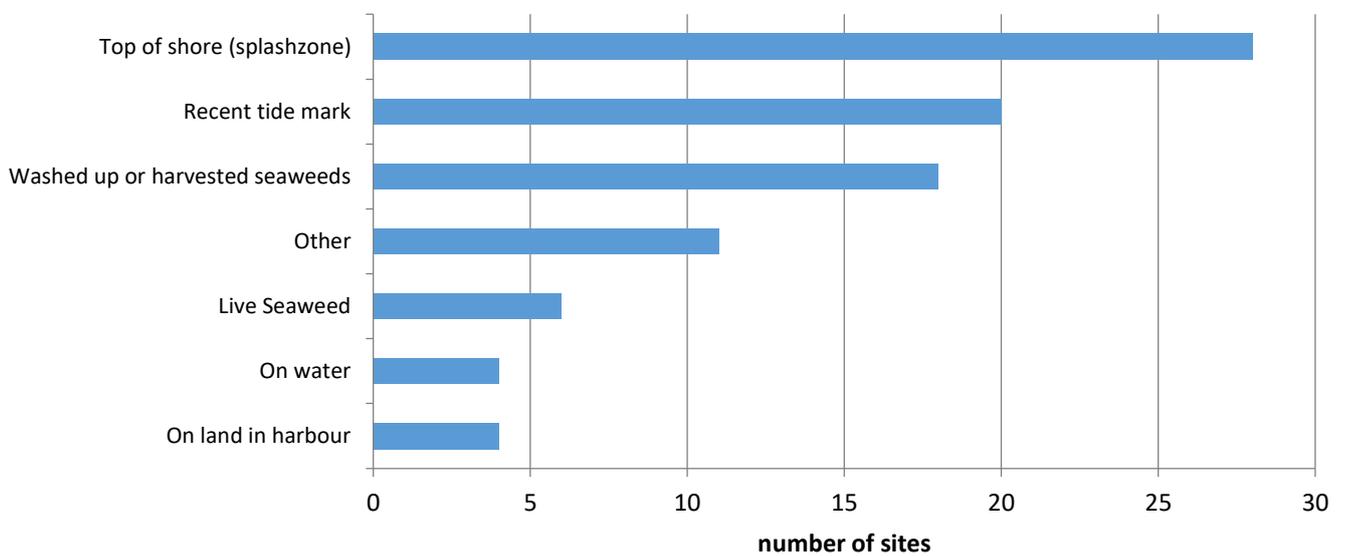
Microlitter app

The microlitter app was used in 69 locations. Of these 59 (90%) found micro-litter

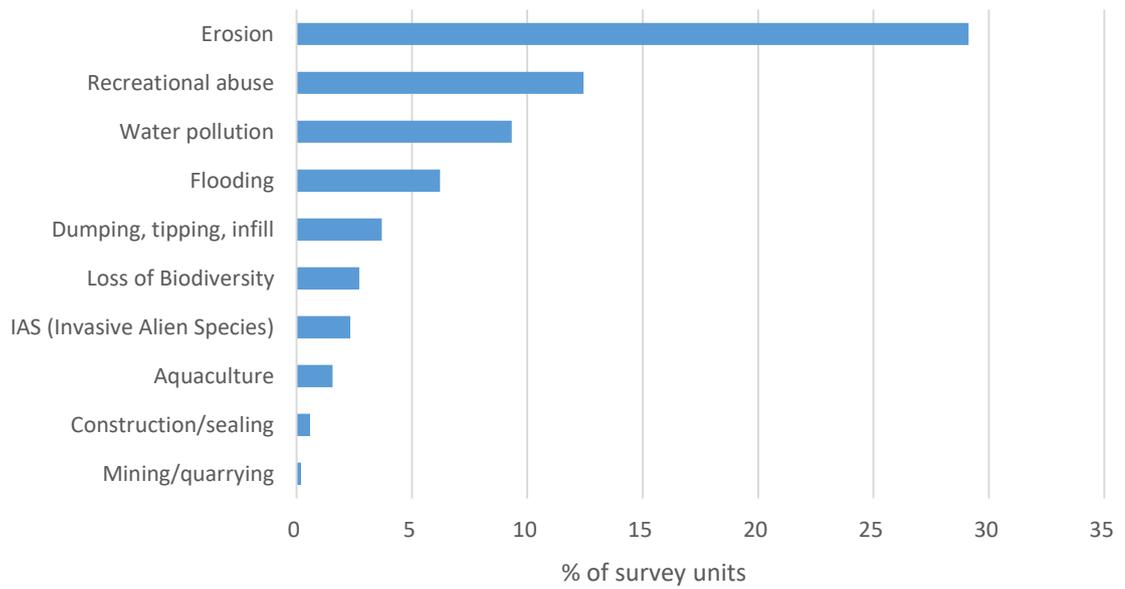
Types of microlitter



Where did you find microlitter?



Threats perceived by surveyors



Threats since 2012

