



Sweden

|   |                  |        |                        |   |                               |                                   |
|---|------------------|--------|------------------------|---|-------------------------------|-----------------------------------|
| Naturvardsverket (2009): Poland<br>5 municipalities, 2 ports                                      | NA, 2009€        | likely | Data contact           | tc=€570,000; 2011 value €5,346,207  |                               |                                   |
| Lane (2007): So. Africa<br>To remove litter from waste stream                                     | NA, 2007         | likely | NA                     | cost to remove litter from wastewater stream= R2bill/yr (\$279mill/yr) (2011: \$303mill/yr, €218mill/yr)  |                               |                                   |
| <u>Damage to Beach Use/Attendance:</u>  |                  |        |                        |   |                               |                                   |
| ERA (1979)<br>Beach closures, NY, NJ, USA<br>MD washups   | 1976\$           |        | 3 beaches<br>contacted | NY: Jones Beach, Robert Moses Beach: lost revenues= \$8.88mill/yr<br>NY: Smith Point Beach: lost revenues=\$734,100/yr<br>NJ: Seaside Heights, NJ lost revenues=\$332,100/yr, avoidance clean beach total= \$9,946,200/yr | €943,638/yr<br>€28.261mill/yr | \$1,312,869/yr<br>\$39.320mill/yr |
| NYDEC (1977), Swanson et al (1991)<br>Beach closures from floatable MD, trash<br>Washups, NY, USA | 1976\$           |        |                        |   |                               |                                   |
| NJDEP & USEPA (1987): NJ, USA<br>Beach cleaning   | 1987\$           |        | State data             | NJ beaches cleaned, 127mi, 25,000cu yd, \$3mill/yr<br>204km, \$14,706/km,   | €4.27mill/yr<br>€20,930/km    | \$5.9mill/yr<br>\$29,119/km       |
| Ofiara & Brown (1989,1999)<br>Beach closures, NJ, USA<br>MD washups & bacteria                    | 1988<br>(1987\$) |        | Data contact           | lost NEV: \$132-644mill, midpt=\$388mill<br>lost revenues: \$251-1227mill, midpt=\$739mill<br>Gross EV= \$383-1871mill  | €45-2662mill                  | \$758-3704mill                    |
| Kahn et al (1989), WMI(1989),<br>Swanson et al (1991)<br>Beach closures, NY & NJ, USA             | 1988<br>(1987\$) |        | Data contact           | lost NEV: \$447-1515mill, midpt=\$981mill<br>lost revenues: \$539-2165mill, midpt=\$1352mill<br>Gross EV= \$986-3689mill  | €403-5236mill                 | \$1952-7286mill                   |
| <u>Losses to Tourism:</u>   |                  |        |                        |   |                               |                                   |
| Balance et al (2000): S. Africa<br>from decrease in beach cleanliness                             | NA, 2000         | likely | NA                     | Decrease in beach cleanliness could decrease tourism revenue up to 52%  |                               |                                   |

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Mouat et al (2010): UK (Shetland Is Fisheries) 2008€  
Cost of MD removal fr nets, n=22

Survey

86% caught MD, 82% catch contaminated, 95% snag nets, 82% fouled prop  
alv=€17,219-19,165T49=

|  |                                |               |  |   |  |
|--|--------------------------------|---------------|--|---|--|
| Removal of floatables & MD in harbor   | Portugal (n=5)<br>Spain (n=21) |               | 20% cleanup floatables, 0-dredge, 69% fouled propellers, 20% blocked intakes<br>95% cleanup floatables, 0-dredge, 48% fouled propellers, 14% blocked intakes<br>Spain tc=€63,917.33/yr (tc split as follows 97.38% - harbors, 2.62% - marinas) |   |  |
| Kahn et al (1989), Swanson et al (1991)<br>Damage to vessels (Commercial, Pleasure)<br>NY, USA | 1988<br>(1987\$)               | Data contacts | MD floatables in NY Harbor   | Commer. Boats: added repair costs= \$500mill<br>Pleasure boats: lost NEV= \$26mill<br>Gross EV= \$526mill | €749mill \$1041mill  |
| <u>Rescues-Vessels Disabled from MD:</u>   |                                |               |  |   |  |
| Hall (2000): UK rescues  | 1998£                          | Log records   | 230rescues, ac=£4000/rescue, P=£506,000-1,334,000/yr   |   | €765,579-2,018,345/yr, €1.392mill/yr<br>\$1,065,566-2,809,221/yr, \$1.937mill/yr |
| Mouat et al (2010): UK rescues   | 2008€                          | Log records   | 286rescues from fouled prop in 2008, ac=€2902-7653/incident<br>N=286, P=€30,000-2,189,000/yr   |   | €688,293-1.815mill/yr, €1.252mill/yr<br>\$959,517-2.528mill/yr, \$1.743mill/yr   |
| Moore (2008): US rescues   | 2005                           | Log records   | 269rescues; 116 injuries, 15 deaths, \$3mill property damages  |   |  |
| <u>Damage to Coastal Agriculture:</u>  |                                |               |  |   |  |
| Hall (2000): UK (Shetland Is.)   | 1998£<br>n=30                  | Survey        | 96%MD in fences, 36% animals entangled in MD, 20% animals ingest-ill<br>ac=£400/croft, N=1500crofts, P=£600,000/yr<br>clear MD: 1440x £213/farm, animal entangle: 540x£10.5/farm, ill: 300x£30/farm (£321,390/yr)                              |   | €486,270/yr \$676,826/yr   |
| Mouat et al (2010): UK (Shetland Is)   | 2008€<br>n=31                  | Survey        | 71.4%MD in fences, 41.9% animals entangled in MD or ingest-ill<br>ac=€41.10/farm, N=25% of 1200crofts, P=€252,331/yr<br>clear MD: 1200x .714x €840/farm=€719,712/yr,<br>entangled 1200x .419x€7.663/farm=€8884/yr (TotalP=€                    |   |  |

Holyhead Harbour

cost of inaction=up to £6.876mill 10-yr period

Notes: Data contact refers to data obtained from authoritative agencies, USEPA, US Coast Guard, state/municipal/beach park data and/or representative-officials responsible.

Abbreviations where not obvious: MD=marine debris, mill.=million, bc=beach clean, ac=average cost, tc=total cost, P=projection, munic=municipality or local authority, avl=average loss per vessel, hbr=harbor, al=average loss, N=universe projections based on, Nbc=no. municipalities beach cleaned for projections, TotalP=total projection, midpt=midpoint, NEV=net economic value, EV=economic value. Totals may not add due to rounding. Mouat et al is abbreviated as KIMO in places for shorthand. One date appears if the study date and year of monetary value were the same, a monetary symbol appears after the date.

All conversions: 1987\$ to 2011\$: 1.9801 from US CPI-U, 1976\$ to 2011\$: 3.9532 using US CPI-U, 1998£ to 2011£: 1.3128 from UK CPI, 2011\$ to 2011€ .71876 exchange rate, 2011£ to 2011€ 1.1525 exchange rate, 2011£ to 2011\$: 1.6041 exchange rate, 2011€ to 2011\$: 1.3926 exchange rate, 1993\$ to 2011\$: 1.5567 from US CPI-U, 1998€ to 2011€ 0.8293 using historical inflation rates for €currency.