# SF Dry Dock Oil Spill Incident

| | |
|---|---|
| ■ LOCATION | Pier 70, SFDD |
| ■ DATE | 28 October 1996 |
| ■ VOL. SPILLED | 2200 bbls (92,400 gals)<br>(>1000 bbls, 42,000 gals) |
| ■ VOL. RECOVERED | ?? |
| ■ PRODUCT TYPE | IFO 180 |
| – General Chemistry | heavy bunker |
| – General Toxicity | similar to crude oils |
| – Environmental Fate | lighter components move into water & air; heavier components very persistent |

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(7)

# Samples Collected

| | |
|---|---|
| ■ TOTAL SAMPLES COLLECTED<br>(includes biotic & abiotic samples) | 519 |
| ■ TOTAL SAMPLES ANALYZED<br>(document extreme reaches of spill) | 52 |
| ■ SAMPLES CONSISTENT WITH SOURCE | 33 |
| ■ SAMPLES SIMILAR TO SOURCE | 1 |
| ■ SAMPLES NOT CONSISTENT<br>(8 are feathers from outside bay) | 10 |
| ■ SAMPLES WITH NON-DETECTS | 7 |
| ■ SAMPLES WITH OIL IN LOW AMOUNT<br>(not enough for fingerprinting) | 1 |

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# Habitat Oiling

| | Miles | Acres | Degree |
|---|---|---|---|
| ■ **SANDY BEACHES** (50m) | **56** | **1124** | **VL-H** |
| | | 720 | VL |
| | | 311 | L |
| | | 21 | M |
| | | 72 | H |
| ■ **ROCKY INTERTIDAL** (30m) | **33** | **395** | **VL-H** |
| | | 254 | VL |
| | | 130 | L |
| | | 6 | M |
| | | 5 | H |
| ■ **MUDFLATS** (50m) | **18** | **360** | **VL-M** |
| | | 357 | VL |
| | | 3 | M |
| ■ **ARTIFICIAL** (3m) (not including SF waterfront) | **31** | **36** | **VL-L** |
| | | 32 | VL |
| | | 4 | L |

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# Contamination of Spawning Habitat at SF Waterfront

- **Total Spawning Habitat in SF Bay** — 1,830 acres
  (spawning areas monitored by CDFG in 1996-1997 season)
- **Total Spawning Habitat at Waterfront** — 300 acres
  (based on average depth of 6.7 m & known surface area of pilings)
- **Waterfront spawning area oiled** (1 m band) — 45 acres
  (=15% of waterfront habitat oiled)
  (>2% of SF Bay spawning areas monitored by CDFG)
- **Total Herring eggs in SF Bay** — $2.96 \times 10^{12}$
  (=15% of waterfront habitat oiled)
  (>2% of SF Bay spawning areas monitored by CDFG)
- **Total Herring eggs in oiled band** — $2.47 \times 10^{11}$
  (=8% of total eggs monitored in SF Bay)
- **Ratio of Herring egg production** — 15:1
  (SF waterfront piling habitat compared to eelgrass habitat)

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# Fish Injury Conclusions

- **Persistent oiling has decreased habitat quality.** (Other factors: predation, salinity, & creosote)
- **Injuries include contaminated food & loss of herring embryo viability.** (Valdez studies)
- **Multi-year injury.** (Kocan, 1996)
- **Impacts to herring based on direct contact of eggs & embryos with persistent oil.**
- **Quantification of injury by degree of habitat oiling & egg counts.**
- **Eelgrass restoration projects can be scaled to loss of piling habitat using egg production & other ecological services.**

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# Major Waterbird Groups Impacted

- Gulls & Terns
- Shorebirds
- Loons & Grebes
- Cormorants
- Pelicans
- Waterfowl
- Alcids

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# Observations of Live Oiled Birds

| | One Day | Cumulative |
|---|---|---|
| ■ Inside S.F. Bay | 302 | 554 |
| ■ Outer Coast | 961 | 5015 |

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# Oiled Waterbirds Processed During Spill Response

| | Total |
|---|---|
| ■ ALIVE | |
| – Died in captivity | 23 |
| – Released | 34* |
| ■ DEAD | |
| – Carcasses in storage | 200 (approx) |

* Includes 15 California brown pelicans, a state & federally listed endangered species.

Note: High mortality in Pelican telemetry study.

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# Estimated Direct Mortality of Waterbirds

## 534 Birds

- Estimate is based on adjustments for carcass loss due to scavenging, burying, removal, & unsearched sites

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# Total Waterbirds Impacted by the Oil Spill Incident at SFDD

## 2,000 to 6,000 Birds

- Based on observations from land, air, & water
- Supported by analysis of historical bird records
- Injury to 4,000 birds used for settlement purposes

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# Restoration Based Settlement of Cape Mohican Oil Spill NRDA

| | |
|---|---|
| Sandy and Rocky Beach Habitat: | $500,000 |
| Wetland Habitat: | $400,000 |
| Bird Restoration Projects: | $800,000 |
| Fisheries and Water Quality Projects: | $425,000 |
| Recreational Use Enhancement: | $1,030,000 |
| Planning ,Implementation, and Oversight: | $470,000 |
| TOTAL: | $3,625,000 |