

CHAPTER 16: COST ESTIMATES FOR MONITORING

Perry Gayaldo, NOAA Restoration Center¹

INTRODUCTION

These cost estimates are presented to aid in the development of monitoring plans. Where applicable, three grades of personnel (labor categories) are identified (e.g., junior, mid-level, senior). In the cases where three grades are not specified, the grades either indicate junior/non-junior or an ungraded category with a single rate. Cost estimates are for 2003-04, and include salary and benefits for the labor categories. It is expected that these examples will vary by region and demand.

Example costs were identified from a variety of sources, including fee schedules from private firms, public documentation, and academic communities. Citable references include:

U.S. Department of Labor (Bureau of Labor Statistics). 2004. Occupational Outlook Handbook, 2004-05.

Commission on Professionals in Science and Technology. 2003. Salaries of Scientists, Engineers, and Technicians; A Summary of Salary Surveys. 12th Ed. Eds: E. L. Babco and N. E. Bell. July 2003.

Watson Wyatt Data Services. 2004. Geographic Report on Professional Personnel Compensation. 2004-05 Edition. Rochelle Park, NJ.

Abbott, Langer & Associates, Inc. 2003. Compensation of Life Scientists in the United States of America. 2003 Edition. Crete, IL

¹1305 East West Highway, Silver Spring, MD 20910.

Supplies/Services	Price	Per Unit
Equipment		
Submersible Data Sonde	\$900 – \$1250	Month
GPS (handheld)	\$100 - \$150	Day
GPS (station)	\$6000	Month
Doppler Recording Current Meter	\$75	Day
Propellor Reading Current Meter	\$420	Day
REMOTS Sediment Profiling Camera	\$570	Day
Modular Azimuth Position System	\$2000 - \$2500	Month
Fish Trawler with gear (300 ft.)	\$1380 - \$4000	Day
Boat Trailer	\$50 - \$110	Day
Pickup Truck/Van	\$50 - \$70	Day
Sub-Bottom Profiler / Side-Scan Sonar	\$540 - \$700	Day
GIS Digitizing System	\$210	Day
Large Research Vessel (70-100 ft.)	\$2400 - \$2800	Day
Sampling Barge w/ Heavy Duty Winch	\$300 - \$650	Day
Gill Nets (50m)	\$50	Day
Clam Dredge	\$30	Day
Oyster Dredge	\$20	Day
Benthic Box Core Sampler	\$35	Day
Benthic Van Veen Sampler	\$10	Day
Benthic Smith-McIntyre Sampler	\$80	Day
Biological Sieves (0.5 – 2.0 mm)	\$10	Day
Electrofishing (backpack)	\$60-\$100	Day
Electrofishing (boat)	\$250-\$300	Day
Underwater Video Camera (with cable and light)	\$75	Day
Digital Video Camera	\$200	Day
Field Laptop Computer	\$50-\$75	Day
Portable Turbidimeter	\$10-\$20	Day
Portable Spectrophotometer (and water quality reagents)	\$15-\$30	Day
Salinometer / Refractometer	\$15	Day
D.O. Meter	\$25	Day
SUV (for equipment and personnel)	\$60	Day
Canoe (minimum 12 ft.)	\$35	Day
Electric Outboard Engine (for canoe or inflatable)	\$15	Day
4-man Inflatable Boat (with gas-powered outboard motor)	\$65	Day
8-man Inflatable Boat (with gas-powered outboard motor and trailer)	\$115	Day
Otter Trawl Net (net, bridle, and doors; 24 ft. minimum)	\$35 - \$50	Day
Plankton Net (1 m mouth diameter)	\$35 - \$50	Day
Microwave Positioning System	\$250 - \$300	Day
Computerized Navigation System	\$210	Day
Digital Fathometer System (with CTD profiler)	\$420 - \$500	Day
Ocean Research Vessel (98 ft.)	\$3700 - \$4500 + fuel	24 Hours
Ocean Research Vessel (55 ft.)	\$1300 - \$2000	10 Hours
Research Vessel/Work Boat (24 ft.)	\$700 - \$1000	10 Hours
Research Vessel/Work Boat (16 ft.)	\$200 - \$500	8 Hours
Crane, Work Boat and 2 crew	\$250	Hour
Side-scan Sonar (dual frequency)	\$375 - \$450	Day
Side-scan Sonar / Magnetometer / Sub-bottom Profiler	\$1350 - \$1500 + \$840 mobil.	Day

Supplies/Services	Price	Per Unit
Services		
Image Analysis System	\$160 \$200	Hour
Offshore Benthic Box Core Sample Analysis (0.25 m ³ , 0.5 mm sieve)	\$1600	Each
Inshore Benthic Box Core Sample Analysis (0.25 m ³ , 0.5 mm sieve)	\$830	Each
Benthic Van Veen Grab Sample Analysis (0.04 m ³ , 0.5 mm sieve)	\$380	Each
Benthic Smith-McIntyre Grab Sample Analysis (0.1 m ³ , 0.5 mm sieve)	\$690	Each
Gill Net Fish Catch Analysis (50 m, variable mesh size)	\$200 - \$300	6-hour deploy
Otter Trawl Fish Catch Analysis	\$620-\$800	30-minutes
Travel Per Diem	\$100 - \$200	Day
Labor Category		
	(junior/mid/senior)	
Marine Ecologist	\$46 / \$71 / \$121	Hour
Aquatic Ecologist	\$46 / \$71 / \$121	Hour
Marine Benthic Ecologist	\$50 / \$60 / \$121	Hour
Wetland Ecologist	\$45 / \$85 / \$105	Hour
Coastal Dune Ecologist	\$45 / \$85 / \$105	Hour
Ornithologist	\$50	Hour
Invertebrate Zoologist	\$45 / \$60 / \$105	Hour
Toxicologist	\$40 / \$75 / \$125	Hour
Sedimentologist	\$65 / \$70 / \$95	Hour
Physical Oceanographer	\$60 / \$70 / \$100	Hour
Chemical Oceanographer	\$60 / \$75 / \$100	Hour
Biochemist	\$60 / \$75 / \$100	Hour
Botanist	\$55 / \$60 / \$100	Hour
Limnologist	\$50 / \$60 / \$75	Hour
Ichthyologist	\$50 / \$60 / \$75	Hour
Mammalogist	\$45 / \$65 / \$75	Hour
Wildlife Biologist	\$40 / \$45 / \$50	Hour
Fishery Biologist	\$50 / \$60 / \$75	Hour
Chemist	\$55 / \$75	Hour
Landscape Architect	\$60 / \$70 / \$85	Hour
Geographer	\$55 / \$65 / \$90	Hour
Land Use Planner	\$60 / \$100	Hour
Human Dimensions Consultant	\$50 / \$125	Hour
Planktonist	\$55 / \$60 / \$100	Hour
Hydrologist	\$55/ \$65 / \$90	Hour
Diving (S.C.U.B.A.) Biologist	\$35 / \$45	Hour
Boat Operator	\$50	Hour
Chemical Technician	\$45 / \$65 / \$85	Hour
Biological Technician	\$32 / \$42	Hour
GIS Specialist	\$40 / \$60 / \$80	Hour
Statistician	\$35 / \$55 / \$70	Hour

