Contaminant Exposure And Effects-Terrestrial Vertebrates Database: Pacific Coast Patterns

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INTRODUCTION AND METHODS

The Contaminant Exposure And Effects-Terrestrial Vertebrates database (CEE-TV) is sponsored by the Biomonitoring of Environmental Status and Trends program (BEST) as part of its efforts to systematically evaluate the impact of contaminants on terrestrial ecosystems across the United States. The CEE-TV database includes data on contaminant exposure and effects on terrestrial vertebrates, with a focus on California, Oregon, and Washington coasts.

The database includes records from a variety of sources, including published literature, review of existing databases, and by solicitation of unpublished reports from conservation agencies, government agencies, and private organizations. The database is accessible through the Internet (http://www.pwrc.usgs.gov/ceetv).

In 2001, 2,784 CEE-TV records for California, Oregon, and Washington were added to the Atlantic and Gulf Coast CEE-TV database. These records provide a comprehensive overview of contaminant exposure and effects on terrestrial vertebrates along the Pacific coast. The database can be queried easily using taxonomic, temporal, geographic, and contaminant search categories.

OVERVIEW OF PACIFIC CEE-TV RECORDS

Spatial Distribution

The majority of CEE-TV records are from California, with the highest density of records in coastal areas. Records are also present in Oregon and Washington, but with lower density. The database includes records from a variety of ecosystems, including coastal wetlands, estuaries, and tidelands.

Phylogenetic Diversity

Approximately 2/3 of Pacific CEE-TV records are for birds, 1/3 are for mammals, and 3% are for reptiles and amphibians. CEE-TV data are available for a variety of taxonomic groups, including birds, mammals, and reptiles.

Mammal and Bird Orders Represented in Pacific CEE-TV

- Mammals
  - Rodents (Rodentia)
  - Bovidae (Artiodactyla)
  - Carnivora
- Birds
  - Anseriformes
  - Gaviiformes
  - Podicipediformes
  - Pelecaniformes
  - Strigiformes

Contaminants & Biomarkers

The majority of contaminant data focus on organochlorines, DDT, and PCBs. Other contaminants, such as metals and elements, are also represented in the database. Biomarkers, such as cholinesterase, are also included.

Focus on Matrix: Organochlorines in Bird Eggs

- Dieldrin and Dicofol in Bird Eggs on the Pacific Coast
- Total DDT in Bird Eggs on the Pacific Coast
- Total PCBs in Bird Eggs on the Pacific Coast

Focus on Species: Organochlorines in Sea Otters (Enhydra lutris)

- BTEX (benzene, toluene, ethylbenzene, and xylene) concentrations in liver, kidney, and brain tissues
- Hexachlorobenzene and Dieldrin levels in liver, kidney, and brain tissues
- Total organochlorines in liver, kidney, and brain tissues

CONCLUSION

- A total of 2,784 CEE-TV records for California, Oregon, and Washington were added to the Atlantic and Gulf Coast CEE-TV database in July 2001.
- Similar trends are observed for CEE-TV records for California, Oregon, and Washington when compared to CEE-TV records for the Atlantic and Gulf Coasts.
- The CEE-TV database provides a valuable tool for evaluating the impact of contaminants on terrestrial vertebrates along the Pacific coast.

We need your help! Please send us contaminant exposure and effects data for inclusion in the database!