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**High Exposures of PCDDs, PCDFs and Dioxin-like PCBs in Livers of Birds from Japan.** Senthil Kumar, K.\*, Iseki N., Masunaga, S., Hayama, S., Nakanishi, J. Graduate School of Environment and Information Sciences, Yokohama National University, Tokiwadai, Hodogaya-ku, Yokohama, Japan, Division of Wild Animal Medicine, Nippon Veterinary & Animal Science University, Kyonan-cho, Musashino, Tokyo, Japan. Concentrations of 2378-substituted polychlorinated dibenzo-*p*-dioxins, polychlorinated dibenzofurans and non- and mono-*ortho*-chlorine substituted dioxin-like PCBs were measured in livers of 17 bird species of Japan. Livers of granivores contained relatively low concentrations of PCDD/DFs (80-660 pg/g) followed in increasing order by omnivores (2300-8000 pg/g), piscivores (61-12000 pg/g) and predators (480-490000 pg/g), on a fat wt. Especially, one species of predatory bird contained elevated concentrations of PCDDs, PCDFs and dioxin-like PCBs, and the measured concentration is one of highest reported to date. Homologue and congener patterns of PCDDs and PCDFs varied among species. Concentrations of dioxin-like PCBs were in the order of granivores (32-83 ng/g) < predators [excluding mountain hawk eagle](32-2500 ng/g) < piscivore (61-12000 ng/g) < omnivores (1800-67000 ng/g), on a fat weight basis. Mountain hawk eagle contained the highest concentration of dioxin-like PCBs (55,000 ng/g fat wt.). 2378- Tetrachlorodibenzo-*p*-dioxin (TCDD) equivalents (TEQs) ranged from 53-450000 pg/g fat wt. 23478-PeCDD/PeCDF, 2378-TCDD/TCDF and IUPAC 126 and 77 were major contributors of TEQs in birds. To our knowledge, this is the first study of PCDD/DFs and dioxin-like PCBs in liver of several species of Japanese birds.