**Mercury contamination in fish and scalp hair of the fishing community along river Swat, Pakistan.**

Muhammad Aamir Munir1,Bushra Khan1\*, Ishaq Ahmed Mian2, Muhammad Rafiq3, Samreen Shahzadi4, Kashif Naeem4, Iqbal Ahmad5\*

1Department of Environmental Sciences, University of Peshawar, Peshawar, Pakistan

2Department of Soil and Environmental Sciences, The University of Agriculture, Peshawar, Pakistan.

3Department of Economics, Institute of Management Sciences, Peshawar, Pakistan.

4Central Analytical Facility Division, Pakistan Institute of Nuclear Science & Technology

5Department of Environmental Science, Gomal University, Dera Ismail Khan, Pakistan

**\*Corresponding Author:** [bushraasu@yahoo.com](mailto:bushraasu@yahoo.com);[iahmad@gu.edu.pk](mailto:iahmad@gu.edu.pk)

Table S1. Different fish types found in river Swat

|  |  |  |  |
| --- | --- | --- | --- |
| Upstream Fish | Carnivorous | **Biological Name** | **Local Name** |
| Salmo trutta fario | Brown Trout |
| Glyptosternon reticulatum | Chak-warh |
| Oncorhynchus mykiss | Rainbow Trout |
| Omnivorous | Triplophysa naziri | Bretai |
| Triplophysa choprai | Bretai |
| Schizothorax plagiostomus | Swati/Khwayak |
| Downstream Fish | Carnivorous | Mastacembelus armatus | Maar-mahay |
| Channa punctatus | Kategayy |
| Channa gachua | Kategayy |
| Glyptothorax punjabensis | Sulemani, Gulabay |
| Glyptothorax stocki | Sulemani, Gulabay |
| Glyptothorax naziri | Sulemani, Gulabay |
| Glyptothorax cavia | Sulemani, Gulabay |
| Omnivorous | Schizothorax plagiostomus | Swati |
| Tacoma labiatus | Chunrh |
| Garra gotyla | Tora Deqa |
| Crossocheilus diplochilus | Spena Deqa |
| Schistora alepidota | Bretaii, Hindu-mahay |
| Schistora naziri | Bretaii, Hindu-mahay |
| Schistora prashari | Bretaii, Hindu-mahay |
| Herbivorous | Puntius conchonius | Poplet |
| Puntius sophore | Poplet |
| Puntius chola | Poplet |
| Carassius auratus | China mahay |
| Cyprinus carpio | Gulfaam |

Source: Fisheries Department, Government of Khyber Pakhtunkhwa, Pakistan.

Table S-2. Hg accumulation in human scalp hair based on frequency of consuming fish in up and downstream areas.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Fish eating Frequency** | **Regression Model results for carnivorous fish (upstream)** | **Fish eating Frequency** | **Regression Model results for Omnivorous fish (upstream)** | **Fish eating Frequency** | **Regression Model results for Omnivorous fish (downstream)** |
| Daily Basis | 3,246\*\*\* | Daily Basis | 1,345 | Daily | 889.2 |
|  | (982.5) |  | (3,191) |  | (952.7) |
| 2-3 times/Week | 368.0\*\*\* | 2-3 times/Week | 1,981\* | 2-3 times/week | 2,605\*\*\* |
|  | (93.33) |  | (1,124) |  | (714.5) |
| Seasonally | 1,675 | Seasonally | 802.9 | Constant | 1,474\*\* |
|  | (1,079) |  | (1,699) |  | (713.6) |
| Constant | 515.4\*\*\* | Constant | 2,734\*\*\* | Observations | 77 |
|  | (85.17) |  | (672.8) | R-squared | 0.011 |
| Observations | 77 | Observations | 77 |  |  |
| R-squared | 0.123 | R-squared | 0.056 |  |  |

Table S-3. Variation of Hg accumulation in human scalp hair with food habits

|  |  |
| --- | --- |
|  |  |
| VARIABLES | Model |
|  |  |
| Dry fruits (Occasional) | -2,293 |
|  | (2,541) |
| Dry fruits (1-2 / month) | -5,347\* |
|  | (2,810) |
| Dry fruits (1-2 / week) | -5,077\* |
|  | (2,808) |
| Vegetables (Occasional) | -2,128 |
|  | (1,900) |
| Vegetables (1-2 / month) | 277.9 |
|  | (828.5) |
| Leafy vegetables (1-2 / month) | -1,802 |
|  | (1,158) |
| Citrus fruits (Occasional) | -1,562 |
|  | (4,718) |
| Citrus fruits (1-2 / month) | -1,980 |
|  | (5,375) |
| Citrus fruits (1-2 / week) | -3,810 |
|  | (4,445) |
| Constant | 8,943\*\* |
|  | (3,843) |
|  |  |
| Observations | 77 |
| R-squared | 0.287 |