

Table S1. General characteristics of the population from the middle basin of the Atrato river (Chocó-Colombia) (n= 446).

| Municipality | Weight (kg) | Intake (days/week) | | WCHA | | | | GP | | | |
|------------------|-------------|--------------------|------------|----------|------------|-------------|-------------------|----------|------------|-------------|-------------------|
| | | Fish | Vegetables | n (male) | n (female) | Age (years) | Range Age (years) | n (male) | n (female) | Age (years) | Range Age (years) |
| Medio Atrato | 69.8 ± 16.0 | 3.2±0.6 | 4.0±1.4 | 11 | 74 | 30.99±11.5 | 15.19-49.78 | 74 | 49 | 50.20±17.3 | 18.01-88-36 |
| Bojayá | 72.6 ± 15.5 | 3.1±1.0 | 2.9±2.0 | 4 | 62 | 30.1±10.2 | 15.04-49.95 | 73 | 26 | 48.7±15.3 | 18.56-80.39 |
| Vigía del fuerte | 71.3 ± 13.2 | 3.3±0.6 | 3.2±2.3 | 10 | 83 | 30.57±10.7 | 15.36-48.21 | 89 | 46 | 62.34±9.9 | 18.25-82.05 |
| Murindó | 68.1 ± 14.4 | 4.0±1.1 | 3.3±1.9 | 5 | 72 | 31.8±11.1 | 15.19-49.09 | 64 | 34 | 52.8±17.1 | 18.70-88.81 |

GP: general population; WCHA: women of childbearing age.

Table S2. Concentrations of Hg, MeHg, As, Pb, and Cd ($\mu\text{g kg}^{-1}$ ww) in fish of the Atrato region.

| Scientific name(n) | Common name | Habitat | Hg | %MeHg | Pb | Cd | As | Fish length |
|--------------------------------------|------------------|---------|--------------|-----------|------------|----------|------------|-------------|
| Medio Atrato | | | | | | | | |
| <i>Hoplias malabaricus</i> (17) | Quicharo | p | 468.53±344.6 | 93.88±2.9 | 23.25±11.4 | 1.06±0.8 | 32.60±19.3 | 29.66±4.4 |
| <i>Trachelyopterus fisheri</i> (5) | Caga | p | 401.95±87.6 | 92.3±2.5 | 10.89±6.1 | 1.1±0.0 | 60.15±19.7 | 23.52±2.6 |
| <i>Pseudopimelodus schultzi</i> (13) | Bagre | c | 442.0±1096.8 | 95.2±1.8 | 13.6±7.1 | 1.1±0.5 | 17.2±8.0 | 51.6±6.8 |
| <i>Ctenolucius beani</i> (5) | Agujeta | c | 349.7±103.0 | 92.0±2.8 | 4.3±6.6 | 1.1±0.5 | 41.7±28.4 | 27.7±3.9 |
| <i>Caquetaia umbrifera</i> (17) | Mojarra negra | c | 123.4±56.3 | 90.3±3.1 | 16.0±6.2 | 1.1±0.9 | 46.12±18.1 | 22.4±3.6 |
| <i>Sternopygus aequilabiatus</i> (6) | Beringo | c | 168.2±632.4 | 88.6±3.0 | 6.7±15.1 | 1.1±2.7 | 60.1±9.1 | 38.9±13.2 |
| <i>Rhamdia quelen</i> (21) | Barbudo | oc | 165.8±235.2 | 93.5±3.2 | 16.6±9.4 | 1.1±2.3 | 18.3±25.2 | 21.4±2.7 |
| <i>Astyanax fasciatus</i> (31) | Sardina | oc | 212.8±133.9 | 92.5±3.5 | 4.3±3.7 | 1.1±0.5 | 46.9±25.9 | 10.6±3.5 |
| <i>Andinoacara pulcher</i> (23) | Cocoa o Cocobolo | opv | 144.5±54.7 | 87.2±3.1 | 17.6±8.2 | 1.1±0.6 | 14.3±9.0 | 11.5±2.2 |
| <i>Leporinus muyscorum</i> (10) | Denton o liseta | o | 109.1±32.4 | 92.7±2.7 | 14.1±28.6 | 1.1±0.9 | 41.3±24.3 | 31.0±2.4 |
| <i>Prochilodus magdalenae</i> (12) | Bocachico | d | 77.0±20.5 | 92.7±3.9 | 9.3±3.8 | 1.1±0.9 | 39.4±11.0 | 31.7±4.4 |
| <i>Hypostomus hondae</i> (24) | Guacuco | d | 140.5±43.9 | 81.4±4.8 | 22.5±10.5 | 1.1±0.6 | 134.2±61.0 | 21.2±5.1 |
| Bojayá | | | | | | | | |
| <i>Hoplias malabaricus</i> (11) | Quicharo | p | 486.0±139.2 | 82.0±3.3 | 25.6±54.1 | 1.1±2.3 | 18.6±10.5 | 31.7±2.9 |
| <i>Ctenolucius beani</i> (5) | Agujeta | c | 1008.0±552.7 | 92.1±2.8 | 4.3±5.1 | 1.1±0.0 | 7.8±4.6 | 28.4±4.2 |

| | | | | | | | | |
|---------------------------------------|----------------------------|-----|-------------|-----------|-------------|----------|-------------|-----------|
| <i>Prochilodus magdalenae</i> (10) | Bocachico | d | 136.3±43.6 | 88.1±6.2 | 17.8±11.0 | 1.1±2.3 | 16.0±22.7 | 25.7±1.7 |
| Vigía del Fuerte | | | | | | | | |
| <i>Ageneiosus pardalis</i> (6) | Doncella | P | 990.9±364.6 | 96.3±2.3 | 15.3±5.6 | 1.1±0.4 | 42.6±17.1 | 47.0±18.2 |
| <i>Hoplias malabaricus</i> (11) | Quicharo | p | 486.6±193.6 | 77.1±2.7 | 4.3±11.8 | 1.1±2.6 | 11.9±95.6 | 33.0±3.5 |
| <i>Trachelyopterus fisheri</i> (n=3) | Caga | p | 754.2±331.6 | 93.4±4.8 | 4.3±7.3 | 1.0±0.0 | 2.7±1.6 | 24.2±3.2 |
| <i>Pseudopimelodus schultzi</i> (6) | Bagre | p | 560.5±222.7 | 75.9±3.5 | 16.4±1.0 | 1.1±2.4 | 12.1±71.1 | 48.0±7.7 |
| <i>Ctenolucius beani</i> (4) | Agujeta | c | 480.3±81.8 | 93.3±3.2 | 7.3±6.0 | 1.1±0.0 | 12.5±27.8 | 27.0±5.5 |
| <i>Sternopygus aequilabiatus</i> (16) | Beringo | c | 745.3±243.6 | 90.8±2.5 | 4.3±18.1 | 1.1±2.3 | 11.0±19.0 | 60.5±11.7 |
| <i>Cynopotamus atratoensis</i> (2) | Boquiancha | c | 729.6±105.7 | 89.5±7.9 | 4.3±0.0 | 1.1±0.0 | 12.5±2.1 | 14.5±3.5 |
| <i>Geophagus pellegrini</i> (2) | Mojarra copetona | c | 262.5±310.3 | 83.3±0.7 | 42.9±54.6 | 1.1±0.0 | 187.2±164.8 | 22.5±0.7 |
| <i>Caquetaia kraussii</i> (10) | Mojarra amarilla o mojarra | oc | 419.9±166.4 | 82.3±1.1 | 4.3±21.5 | 1.1±2.3 | 20.1±29.3 | 20.6±2.0 |
| <i>Rhamdia quelen</i> (7) | Barbudo | oc | 424.7±183.9 | 91.0±7.9 | 4.3±3.4 | 1.1±2.3 | 50.0±2.0 | 25.9±4.4 |
| <i>Pimelodus sp</i> (6) | Gunguma | oc | 147.9±277.4 | 96.3±1.6 | 9.0±41.5 | 1.1±2.4 | 21.9±16.9 | 27.7±12.1 |
| <i>Andinoacara pulcher</i> (1) | Cocoa o Cocobolo | opv | 41.48 | 99.21 | 11.10 | LDM | 18.94 | 11.0 |
| <i>Leporinus muyscorum</i> (1) | denton o liseta | o | 96.64 | 87.33 | 40.26 | LDM | 58.17 | 27.5 |
| <i>Prochilodus magdalenae</i> (22) | Bocachico | d | 95.3±36.9 | 91.4±4.4 | 4.33±27.9 | 1.1±0.5 | 30.3±14.7 | 25.0±3.8 |
| <i>Hypostomus hondae</i> (10) | Guacuco | d | 41.5±32.5 | 88.0±16.3 | 4.33±4.7 | 1.1±0.4 | 33.1±27.6 | 20.9±6.2 |
| Murindó | | | | | | | | |
| <i>Ageneiosus pardalis</i> (22) | Doncella | p | 700.9±202.2 | 88.0±7.6 | 17.1±22.4 | 1.1±0.2 | 26.8±48.6 | 27.0±5.2 |
| <i>Hoplias malabaricus</i> (10) | Quicharo | p | 668.8±89.5 | 75.6±6.0 | 12.5±8.5 | 1.1±0.4 | 21.9±26.0 | 35.8±2.3 |
| <i>Trachelyopterus fisheri</i> (6) | Caga | p | 606.9±224.6 | 95.8±1.7 | 10.2±7.8 | 1.1±2.4 | 4.5±2.0 | 22.1±3.6 |
| <i>Pseudopimelodus schultzi</i> (1) | Bagre | p | 348.88 | 71.08 | LDM | LDM | 5.91 | 19 |
| <i>Ctenolucius beani</i> (1) | Agujeta | c | 961.51 | 96.06 | LDM | LDM | 19.03 | 30 |
| <i>Sternopygus aequilabiatus</i> (1) | Beringo | c | 657.13 | 71.98 | 15.362 | LDM | LDM | 67 |
| <i>Caquetaia kraussii</i> (10) | Mojarra amarilla o mojarra | oc | 511.8±231.5 | 94.4±2.4 | 22.3±14.3 | 1.1±2.3 | 10.0±8.9 | 20.7±3.3 |
| <i>Rhamdia quelen</i> (16) | Barbudo | oc | 542.6±186.6 | 85.3±9.6 | 18.5±29.5 | 1.1±0.3 | 20.6±208.9 | 27.0±1.1 |
| <i>Astyanax fasciatus</i> (7) | Sardina | oc | 84.8±116.2 | 92.9±2.6 | 12.1±155.6 | 1.1±0.7 | 13.9±7.9 | 8.4±2.0 |
| <i>Pimelodus punctatus</i> (2) | Charre | oc | 193.5±43.5 | 73.8±1.7 | 4.3±0 | 1.1±0.0 | 8.0±7.4 | 21.5±2.1 |
| <i>Pimelodella chagresi</i> (10) | Micudo | oc | 146.9±82.5 | 89.6±7.6 | 4.3±7.1 | 1.06±2.3 | 6.6±3.2 | 11.9±2.3 |
| <i>Andinoacara pulcher</i> (2) | Cocoa o Cocobolo | opv | 32.9±4.3 | 84.8±3.4 | 136.6±187.1 | 1.1±0.0 | 7.8±7.1 | 7.85±8.7 |
| <i>Leporinus muyscorum</i> (3) | Dentón o Liseta | o | 44.5±22.7 | 87.0±5.2 | 103.9±1.0 | 1.1±0.0 | 28.8±26.3 | 25.4±1.4 |
| <i>Prochilodus magdalenae</i> (26) | Bocachico | d | 134.4±45.9 | 91.6±4.1 | 21.3±34.7 | 1.1±0.4 | 24.5±26.5 | 24.5±2.8 |

| | | | | | | | | |
|------------------------------|---------|---|-----------|----------|----------|---------|-----------|----------|
| <i>Hypostomus hondae</i> (6) | Guacuco | d | 45.6±15.9 | 86.2±3.2 | 12.0±7.3 | 1.1±2.4 | 86.3±56.1 | 24.5±3.6 |
|------------------------------|---------|---|-----------|----------|----------|---------|-----------|----------|

* Habits: P: piscivore, C: carnivore, OC: omnivore with a carnivorous tendency, OPV: omnivore with a preference for fish and plant material, O: omnivore, D: detritivore; (Nd) concentrations not determined, the concentrations in ($\mu\text{g kg}^{-1}$) are established with the median, the mean and the respective standard deviation for each species of fish in the middle basin of the Atrato River. LDM is the detection limit of the concentrations of each metal (Pb: 4.33, As: 2.71, Cd: 1.06). The order of the municipalities is from upstream to downstream in the Atrato River.

Table S3. Concentrations of heavy metals (mg/kg) and consumption (days/week) of fruits and vegetables in the middle basin of the Atrato river.

| Vegetable species | Common Name | Consumption (days/week) | Food consumption (g/kg) | Heavy metals concentrations | | | |
|-------------------------------|---------------------------------|----------------------------|-------------------------------|-----------------------------|------------|------------|-------------|
| | | | | Hg | Pb | Cd | As |
| Medio Atrato | Fruits – tubers (14) | | | | | | |
| <i>Colocasia esculenta</i> | Achin | 2.6±1.4 | 572±10 | 2.62±0.3 | 28.34±0.9 | LDM | 9.51±1.5 |
| <i>Oryza sativa</i> | Rice | 6.3±1.6 | 125±5 | 12.02±2.2 | LDM | LDM | 28.75±5.3 |
| <i>Alibertia patinoi</i> | Borojó | 4.0±1.7 | 122.5±6 | 3.97±1.8 | LDM | LDM | 203.16±10.3 |
| <i>Musa × paradisiaca</i> | Plantain | 5.5±2.1 | 400±20 | 2.90±0.5 | LDM | LDM | 3.18±0.3 |
| <i>Musa balbisiana</i> | Banana | 4.5±2.1 | 640±30 | 1.34±0.1 | LDM | 9.88±2.3 | LDM |
| <i>Cocos nucifera</i> | Coconut | 4.2±2.6 | 645±25 | 12.39±3.3 | LDM | 2.89±0.3 | LDM |
| <i>Citrus aurantifolia</i> | Lemon | 5.8±1.8 | 135±5 | 0.39±0.03 | Nd | Nd | Nd |
| <i>Musa sp</i> | Papoche | 4.8±2.5 | 610±30 | 3.12±0.3 | 10.63 | LDM | 12.49±1.3 |
| <i>Musa sapientum</i> | Primitivo | 3.1±1.1 | 436±15 | 3.14±0.2 | LDM | LDM | 9.96±0.8 |
| <i>Solanum sessilliflorum</i> | Lulo | 4.0±0.0 | 300±13 | 3.27±0.5 | LDM | 8.10 | LDM |
| <i>Zea mays</i> | Corn | 4.3±1.5 | 200±18 | 3.91±0.9 | LDM | LDM | 38.16±2.3 |
| <i>Dioscorea trifida</i> | Yam | 2.4±0.8 | 495±32 | 2.88±0.3 | LDM | LDM | LDM |
| <i>Carica papaya</i> | Papaya | .6±1.1 | 300±22 | 4.16±0.4 | 8.13±0.8 | 3.36±0.3 | 7.97±0.5 |
| <i>Manihot esculenta</i> | Yucca | 3.3±1.7 | 420±20 | 2.06±0.1 | LDM | LDM | LDM |
| | Vegetables- Stem(4) | | | | | | |
| <i>Ocimum campechianum</i> | Basil | 3.0±1.3 | 140±10 | 23.42±5.3 | 63.10±10.3 | 11.01±2.3 | 110.41±20.3 |
| <i>Eryngium foetidum</i> | Cilantro | 5.6±1.4 | 50±5 | 21.11±4.3 | 39.11±6.3 | 9.98±3.3 | 76.12±20.3 |
| <i>Origanum vulgare</i> | Oregano | 0.9±1.0 | 30±2 | 42.94 | 66.71 | 25.34 | 146.72±25.3 |
| <i>Saccharum officinalis</i> | Cane | 4.3±2.5 | 462±16 | 2.38±0.4 | Nd | Nd | Nd |
| | Total(18) | 4.0±1.4 | | 8.2±10.9 | 16.2±21.5 | 5.3±6.5 | 41.2±61.2 |
| Bojayá | Fruits – tubers (9) | | | | | | |
| <i>Colocasia esculenta</i> | Achin | 2.4±0.9 | 572±10 | 1.87±0.1 | LDM | 50.92±10.3 | 29.38±9.3 |
| <i>Musa balbisiana</i> | Banana | 3.3±1.8 | 640±15 | 1.55±0.5 | LDM | 4.26±0.9 | LDM |
| <i>Manihot esculenta</i> | Yucca | 2.8±1.5 | 420±9 | 2.40±0.8 | LDM | 2.17±0.3 | 13.07±3.6 |
| <i>Musa × paradisiaca</i> | Plantain | 5.8±2.1 | 400±35 | 2.06±0.5 | LDM | 3.46±1.3 | 18.11±4.3 |
| <i>Citrus aurantifolia</i> | Lemon | 7.0±0.0 | 135±10 | 1.18±0.3 | LDM | 462.69 | 50.06±9.3 |
| <i>Musa sp</i> | Papoche | 3.7±1.5 | 610±26 | 2.71±0.6 | LDM | LDM | LDM |
| <i>Alibertia patinoi</i> | Borojo | 1.5±0.9 | 122.5±10 | 1.80±0.1 | LDM | LDM | 6.73±7.3 |
| <i>Solanum sessilliflorum</i> | Lulo | 1.2±1.0 | 300±29 | 2.65±0.3 | LDM | 8.22±2.3 | LDM |
| <i>Dunal</i> | | | | | | | |
| <i>Zingiber officinale</i> | Ginger | 1.3±1.0 | 33±2 | 9.01±2.3 | LDM | 12.63 | 50.54±7.3 |
| | Vegetables- Stem (7) | | | | | | |

| | | | | | | | |
|------------------------------------|-----------------------------|-----------|-------------|-----------|----------|------------|-------------|
| <i>Ocimum campechianum</i> | Basil | 4.3±1.2 | 140±10±20.2 | 9.99±1.9 | LDM | 11.39±2.3 | 391.75±30.8 |
| <i>Eryngium foetidum</i> | Cilantro | 5.2±1.7 | 50±3 | 16.3±8.3 | LDM | 57.84 | 74.36±9.3 |
| <i>Origanum vulgare</i> | Oregano | 1.6±1.0 | 30±1 | 10.75±4.3 | LDM | 32.99 | 70.00±4.3 |
| <i>Minthostachys mollis</i> | Poleo | 1.2±1.0 | 50±4 | 10.48±7.3 | Nd | Nd | Nd |
| <i>Basella rubra</i> var | Spinach | 0.3±0.6 | 60±10 | 15.31±4.3 | LDM | 14.78 | 27.33±9.3 |
| <i>Allium fistulosum</i> L | Chives | 3.6±1.3 | 0.85±0.4 | 6.73±2.3 | 9.99 | 23.06 | 60.54±10.6 |
| <i>Saccharum officinalis</i> | Cane | 0.03±0.01 | 462±35 | 2.34±0.7 | Nd | Nd | Nd |
| | Total(16) | 2.9±2.0 | | 6.1±5.1 | 4.7±1.5 | 49.0±120.4 | 57.1±99.6 |
| Vigia del fuerte | Fruits – tubers (9) | | | | | | |
| <i>Colocasia esculenta</i> | Achin | 2.4±0.9 | 572±18 | 2.46±0.3 | Nd | Nd | Nd |
| <i>Oryza sativa</i> | Rice | 6.7±1.3 | 125±10 | 1.51±0.1 | LDM | LDM | 32.54±10.0 |
| <i>Citrus aurantifolia</i> | Lemon | 4.3±2.5 | 135±8 | 0.29±0.2 | Nd | Nd | Nd |
| <i>Musa balbisiana</i> | Banana | 3.9±2.5 | 640±30 | 1.68±0.4 | LDM | LDM | LDM |
| <i>Zea mays</i> | Corn | 2.7±1.5 | 200±20 | 1.95±0.3 | LDM | LDM | 26.75±9.5 |
| <i>Musa</i> sp | Papoché | 3.6±2.8 | 610±35 | 1.70±0.2 | LDM | LDM | 12.55±2.5 |
| <i>Musa × paradisiaca</i> | Plantain | 6.3±1.9 | 400±23 | 2.19±0.3 | LDM | LDM | 38.45±8.9 |
| <i>Manihot esculenta</i> | Yucca | 2.7±1.5 | 420±16 | 3.30±0.5 | LDM | 5.65±2.3 | 28.95±9.3 |
| <i>Solanum sessiliflorum</i> Dunal | Lulo | 4.5±3.5 | 300±19 | 1.87±0.2 | 7.07±1.3 | 4.82±1.3 | 16.66±7.9 |
| | Vegetables- Stem (7) | | | | | | |
| <i>Ocimum campechianum</i> | Basil | 5.8±1.2 | 140±10 | 15.02±4.9 | LDM | 12.65±1.3 | 101.54±20.8 |
| <i>Eryngium foetidum</i> | Cilantro | 6.4±0.5 | 50±3 | 9.58±2.3 | LDM | 6.73 | 75.35±10.3 |
| <i>Origanum vulgare</i> | Oregano | 0.03±0.01 | 30±2 | 17.35±3.3 | 15.32 | 12.45 | 121.60±10.9 |
| <i>Ocimum basilicum</i> L | White basil | 2.7±1.1 | 140±6 | 7.85 | 21.50 | LDM | 89.54±10.9 |
| <i>Minthostachys mollis</i> | Poleo | 0.04±0.01 | 50±2 | 9.85 | Nd | Nd | Nd |
| <i>Basella rubra</i> var | Spinach | 0.04±0.02 | 60±9 | 11.05 | 4.33 | LDM | 14.75±4.3 |
| <i>Saccharum officinalis</i> | Cane | 0.05±0.01 | 462±25 | 2.20±0.8 | Nd | Nd | Nd |
| | Total(16) | 3.2±2.3 | | 5.6±5.4 | 6.9±5.6 | 4.1±4.4 | 46.8±39.6 |
| Murindó | Fruits – tubers (8) | | | | | | |
| <i>Colocasia esculenta</i> | Achin | 2.4±0.9 | 572±17 | 3.82±0.9 | LDM | 16.54±0.9 | 29.93±5.3 |
| <i>Musa balbisiana</i> | Banana | 4.6±2.2 | 640±10 | 7.33±1.3 | LDM | LDM | 6.89±1.3 |
| <i>Musa sapientum</i> | Primitivo | 5.6±2.0 | 436±10 | 4.54±1.8 | LDM | LDM | 9.78±0.9 |
| <i>Musa × paradisiaca</i> | Plantain | 6.5±1.3 | 400±25 | 2.84±0.3 | LDM | 1.94±0.3 | 39.41±9.3 |
| <i>Manihot esculenta</i> | Yucca | 2.8±1.6 | 420±22 | 3.99±0.9 | LDM | 35.79±12.3 | 19.84±4.3 |
| <i>Citrus aurantifolia</i> | Lemon | 4.7±1.0 | 135±10 | 0.30±0.3 | Nd | Nd | Nd |
| <i>Alibertia patinói</i> | Borojo | 2.8±1.0 | 122.5±11 | 2.04±0.8 | LDM | 3.46±0.9 | 6.61±1.2 |
| <i>Zea mays</i> | Corn | 0.04±0.01 | 200±10 | 2.38±0.9 | LDM | 1.62±0.3 | 26.43±5.3 |
| | Vegetables- Stem (6) | | | | | | |
| <i>Eryngium foetidum</i> | Cilantro | 4.1±1.5 | 50±6 | 9.87±0.8 | LDM | 2.80±0.4 | 77.94±10.5 |
| <i>Ocimum basilicum</i> L | White basil | 3.8±1.2 | 140±14 | 6.96±0.3 | LDM | Nd | Nd |
| <i>Minthostachys mollis</i> | Poleo | 0.9±1.0 | 50±10 | 19.26±3.3 | LDM | LDM | 352.82±10.9 |
| <i>Ocimum tenuiflorum</i> | Purple basil | 4.0±1.0 | 140±15 | 10.03±1.3 | LDM | LDM | Nd |
| <i>Allium fistulosum</i> L | Chives | 4.1±1.2 | 0.85±0.6 | 6.67±0.3 | LDM | LDM | 38.72±9.3 |
| <i>Saccharum officinalis</i> | Cane | 0.03±0.01 | 462±18 | 1.32±0.4 | Nd | Nd | Nd |
| | Total (14) | 3.3±1.9 | | 5.8±4.9 | 4.3±0.0 | 6.1±10.8 | 60.84±107.8 |

The quantifications of the mean concentrations were carried out using the average and the standard deviation is taken for the plants for each municipality of the middle basin of the Atrato river,

established for the not obtained concentrations. Nd: concentrations not determined; LDM: is the detection limit of the concentrations of each metal.

Table S4. Estimation of the potential risk to the population from fish consumption in the Atrato river basin.

| Fish species | THg | MeHg | %MeHg | FIR | IR | EWI | GP | | | WCHA | | Pi ^b | Pi ^c |
|----------------------------------|---------|--------|-------|-----|--------|-------|------------------|---------|-------|------------------|---------|-----------------|-----------------|
| | | | | | | | MeHg permissible | MFW | EWI | MeHg permissible | MFW | | |
| Medio Atrato | | | | | | | | | | | | | |
| <i>Hoplias malabaricus</i> | 468.54 | 432.99 | 93.50 | 3.0 | 768 | 4.38 | 283.54 | 502.92 | 4.74 | 291.95 | 517.85 | 0.86 | 2.16 |
| <i>Trachelyopterus fisheri</i> | 412.38 | 395.16 | 91.29 | 2.3 | 588.8 | 3.33 | 239.07 | 564.83 | 3.32 | 380.81 | 567.62 | 0.79 | 1.97 |
| <i>Pseudopimelodus schultzi</i> | 442.02 | 423.65 | 95.14 | 3.0 | 768 | 4.38 | 283.54 | 514.01 | 4.66 | 291.95 | 529.27 | 0.84 | 2.11 |
| <i>Ctenolucius beani</i> | 373.50 | 341.20 | 91.39 | Nd | 998.4 | 5.0 | 218.10 | 638.22 | 4.86 | 224.58 | 657.17 | 0.68 | 1.70 |
| <i>Caquetaia umbrifera</i> | 109.44 | 99.46 | 90.88 | Nd | 588.8 | 0.86 | 369.83 | 2189.22 | 0.83 | 380.81 | 2254.43 | 0.19 | 0.49 |
| <i>Sternopygus aequilabiatus</i> | 168.24 | 148.43 | 88.23 | 2.6 | 665.6 | 1.45 | 327.16 | 1467.08 | 1.40 | 336.87 | 1510.63 | 0.29 | 0.74 |
| <i>Rhamdia quelen</i> | 165.76 | 143.46 | 93.92 | 3.2 | 819.2 | 1.72 | 265.82 | 1517.12 | 1.67 | 273.71 | 1562.99 | 0.28 | 0.71 |
| <i>Astyanax fasciatus</i> | 212.82 | 188.68 | 92.47 | 3.6 | 921.6 | 2.55 | 236.28 | 1154.12 | 2.48 | 243.29 | 1188.38 | 0.37 | 0.94 |
| <i>Andinoacara pulcher</i> | 142.26 | 117.79 | 87.47 | 3.0 | 768 | 1.32 | 283.54 | 1848.72 | 1.29 | 291.95 | 1903.60 | 0.23 | 0.58 |
| <i>Leporinus muyscorum</i> | 117.56 | 106.53 | 92.69 | 3.3 | 844.8 | 1.32 | 257.76 | 2044.17 | 1.28 | 265.41 | 2104.85 | 0.21 | 0.53 |
| <i>Prochilodus magdalenae</i> | 79.67 | 72.86 | 93.66 | 4.3 | 1100.8 | 1.17 | 197.81 | 2988.65 | 1.14 | 203.69 | 3077.37 | 0.14 | 0.36 |
| <i>Hypostomus hondae</i> | 132.85 | 101.89 | 82.30 | 4.3 | 1100.8 | 1.32 | 197.81 | 2137.21 | 1.60 | 203.69 | 2200.65 | 0.20 | 0.50 |
| Bojayá | | | | | | | | | | | | | |
| <i>Hoplias malabaricus</i> | 447.63 | 358.96 | 81.69 | 3.1 | 793.6 | 3.93 | 291.73 | 644.98 | 4.05 | 283.46 | 626.70 | 0.71 | 1.79 |
| <i>Ctenolucius beani</i> | 1007.98 | 963.72 | 92.28 | 2.0 | 512 | 6.81 | 452.18 | 240.23 | 7.01 | 439.37 | 233.42 | 1.92 | 4.81 |
| <i>Prochilodus magdalenae</i> | 142.04 | 126.37 | 87.98 | 4.1 | 1049.6 | 1.83 | 220.57 | 1832.05 | 4.88 | 214.32 | 1780.14 | 0.25 | 0.63 |
| Vigía del fuerte | | | | | | | | | | | | | |
| <i>Ageneiosus pardalis</i> | 1006.26 | 956.82 | 97.01 | 3.1 | 793.6 | 15.03 | 203.19 | 233.77 | 14.51 | 210.83 | 242.67 | 1.91 | 4.78 |
| <i>Hoplias malabaricus</i> | 471.62 | 374.22 | 75.77 | 3.3 | 844.8 | 4.52 | 264.77 | 597.71 | 4.75 | 274.84 | 620.45 | 0.75 | 1.87 |
| <i>Trachelyopterus fisheri</i> | 842.86 | 794.90 | 94.30 | 2.7 | 691.2 | 7.86 | 323.61 | 281.39 | 7.57 | 335.92 | 292.10 | 1.58 | 3.97 |
| <i>Pseudopimelodus schultzi</i> | 586.04 | 459.35 | 75.34 | 3.5 | 896 | 5.88 | 249.64 | 486.93 | 6.57 | 259.14 | 505.48 | 0.92 | 2.30 |
| <i>Ctenolucius beani</i> | 460.84 | 439.84 | 94.19 | 3.0 | 768 | 4.83 | 291.25 | 508.54 | 4.65 | 302.33 | 527.89 | 0.88 | 2.20 |
| <i>Sternopygus aequilabiatus</i> | 772.82 | 681.65 | 90.30 | 3.1 | 793.6 | 7.73 | 281.85 | 328.14 | 7.45 | 292.58 | 340.63 | 1.36 | 3.40 |

| | | | | | | | | | | | | | |
|----------------------------------|--------|---------------|-------|-----|---------------|-------------|--------|---------|-------------|---------------|---------------|------|-------------|
| <i>Cynopotamus atratoensis</i> | 729.60 | 648.91 | 89.51 | 2.0 | 512 | 4.75 | 436.87 | 344.69 | 4.57 | 453.50 | 357.81 | 1.30 | 3.24 |
| <i>Geophagus pellegrini</i> | 262.54 | 219.72 | 83.26 | 4.0 | 1024 | 3.21 | 218.43 | 1018.02 | 3.10 | 226.75 | 1056.7 6 | 0.44 | 1.09 |
| <i>Caquetaia kraussii</i> | 402.53 | 335.63 | 82.63 | 3.2 | 819.2 | 3.93 | 273.04 | 666.44 | 3.78 | 283.43 | 691.80 | 0.67 | 1.68 |
| <i>Rhamdia quelen</i> | 456.27 | 456.80 | 95.58 | 2.7 | 691.2 | 4.51 | 323.61 | 489.66 | 4.35 | 335.92 | 508.30 | 0.91 | 2.28 |
| <i>Pimelodus sp</i> | 147.92 | 143.87 | 95.99 | Nd | 691.2 | 1.42 | 323.61 | 1554.69 | 1.37 | 335.92 | 1613.8 6 | 0.29 | 0.71 |
| <i>Andinoacara pulcher</i> | 41.48 | 41.16 | 99.21 | 3.6 | 921.6 | 0.74 | 242.70 | 5434.69 | 0.52 | 291.94 | 5641.2 6 | 0.08 | 0.21 |
| <i>Leporinus muyscorum</i> | 96.64 | 84.40 | 87.33 | 4.0 | 1024 | 1.23 | 218.43 | 2650.19 | 1.19 | 226.75 | 2751.0 4 | 0.16 | 0.42 |
| <i>Prochilodus magdalenae</i> | 96.76 | 82.96 | 91.80 | 4.0 | 1024 | 1.21 | 218.43 | 2696.18 | 1.17 | 226.75 | 2798.7 9 | 0.16 | 0.41 |
| <i>Hypostomus hondae</i> | 29.91 | 25.73 | 87.97 | 3.3 | 844.8 | 0.31 | 264.77 | 8693.91 | 0.29 | 274.84 | 9024.7 5 | 0.05 | 0.12 |
| Murindó | | | | | | | | | | | | | |
| <i>Ageneiosus pardalis</i> | 700.89 | 589.08 | 88.60 | 4.3 | 1100.8 | 9.70 | 194.27 | 363.03 | 9.53 | 197.61 | 369.18 | 1.17 | 2.94 |
| <i>Hoplias malabaricus</i> | 689.33 | 485.71 | 77.94 | 4.4 | 1126.4 | 8.18 | 189.85 | 440.29 | 8.04 | 193.12 | 447.86 | 0.97 | 2.42 |
| <i>Trachelyopterus fisheri</i> | 711.74 | 673.38 | 96.05 | 2.0 | 512 | 5.15 | 417.68 | 317.58 | 5.07 | 424.87 | 523.05 | 1.34 | 3.36 |
| <i>Pseudopimelodus schultzi</i> | 348.88 | 248.00 | 71.08 | 6.2 | 1587.2 | 5.89 | 134.73 | 862.28 | 5.79 | 137.05 | 877.12 | 0.49 | 1.24 |
| <i>Ctenolucius beani</i> | 961.52 | 923.64 | 96.06 | 2.5 | 640 | 8.84 | 334.15 | 231.53 | 8.69 | 339.9 | 235.51 | 1.84 | 4.61 |
| <i>Sternopygus aequilabiatus</i> | 657.14 | 473.05 | 71.98 | 3.9 | 998.4 | 7.06 | 214.19 | 252.07 | 6.94 | 217.88 | 459.85 | 0.94 | 2.36 |
| <i>Caquetaia kraussii</i> | 506.85 | 471.97 | 93.84 | 3.6 | 921.6 | 6.50 | 232.04 | 453.10 | 6.39 | 236.04 | 460.90 | 0.94 | 2.35 |
| <i>Rhamdia quelen</i> | 524.42 | 458.17 | 84.08 | 4.9 | 1254.4 | 8.79 | 170.48 | 466.76 | 8.45 | 170.41 | 474.79 | 0.91 | 2.29 |
| <i>Astyanax fasciatus</i> | 84.78 | 78.04 | 93.46 | 4.1 | 1049.6 | 1.22 | 203.75 | 2740.48 | 1.20 | 207.25 | 2787.6 4 | 0.16 | 0.39 |
| <i>Pimelodus punctatus</i> | 193.48 | 142.42 | 73.80 | 2.5 | 640 | 1.36 | 334.15 | 1501.54 | 1.34 | 339.9 | 1527.3 8 | 0.28 | 0.71 |
| <i>Pimelodella chagresi</i> | 118.04 | 131.69 | 89.57 | 3.2 | 819.2 | 1.61 | 261.05 | 1623.92 | 1.58 | 265.54 | 1651.8 7 | 0.26 | 0.65 |
| <i>Andinoacara pulcher</i> | 32.9 | 27.97 | 84.83 | 3.5 | 896 | 0.37 | 238.67 | 7643.47 | 0.36 | 242.78 | 7775.0 0 | 0.05 | 0.13 |
| <i>Leporinus muyscorum</i> | 32.69 | 27.69 | 84.73 | 5.6 | 1433.6 | 0.59 | 149.17 | 7720.72 | 0.58 | 171.54 | 7853.5 8 | 0.05 | 0.13 |
| <i>Prochilodus magdalenae</i> | 124.69 | 113.50 | 91.29 | 4.8 | 1228.8 | 2.08 | 174.03 | 1884.15 | 2.05 | 177.03 | 1916.5 8 | 0.22 | 0.56 |
| <i>Hypostomus hondae</i> | 44.17 | 38.86 | 85.96 | 3.7 | 947.2 | 0.55 | 225.77 | 5502.29 | 0.54 | 229.66 | 5596.9 7 | 0.07 | 0.19 |

THg and MeHg (µg/kg) are mercury and methylmercury concentrations, FIR (g/day) is the food ingestion rate, IR (g/week) is the weekly intake of fish, EWI (µg/kg bw/week) is the Estimated Weekly Intake of MeHg, MeHg permissible is the permissible safety level (µg/kg), and MFW (g/week) is the estimated maximum amount of fish that can be weekly consumed per person. Pi: pollution index. The order of the municipalities is from upstream to downstream on the Atrato River. ^aFor calculation the PTWI 3.2 µg/kg bw/week for the adult population and 1.6 µg/kg bw/week for vulnerable population were used. ^bFor Pi calculation the threshold value of 500 µg/kg ww for adult populations was used. ^cFor Pi calculation the

threshold value of 200 µg/kg ww for vulnerable populations was used. The highlighted bold values are above those established in the case of MeHg concentrations, the weekly IR values that are above the MFW, and the Pi values that are in Pollution Degree 2, 3, and 4.

Table S5. Classification of pollution index of metals (Zhang et al., 2019)

| Grade | Individual factor contamination index criteria | |
|---------|--|--------------------|
| | Pollution index | Pollution degree |
| Grade 1 | $P_i \leq 1$ | Clean |
| Grade 2 | $1 < P_i \leq 2$ | Slight pollution |
| Grade 3 | $2 < P_i \leq 3$ | Moderate pollution |
| Grade 4 | $P_i > 3$ | Strong pollution |