Explanation of the downloadable graphic file (*.png, *.pdf)

- The name of the downloadable graphic files follows the pattern
  XX_YY_ZZ.

  Thereby stand:

  XX for the chemical symbol of the represented parameter in the periodic table of elements (or for an abbreviation for the corresponding parameter),

  YY for the sampling medium,

  sed: stream sediments,

  aqua: stream waters,

  ZZ for the calculation method used,

  AA_classes:
  - colour shaded contour map,
  - interpolation method Kriging,
  - legend with AA classes and variable colour gradient scale,

  original_classes:
  - colour shaded contour map,
  - interpolation method Kriging,
  - legend as in the 1985 paper edition,

  original_method:
  - map generated according to the calculation method described in the chapter “Presentation of results”,

  Points_AA_classes:
  - representation of the content at the sample point,
  - legend with AA classes and variable colour gradient scale (equivalent to that of the corresponding colour shaded contour map),

  Points_original_classes:
  - representation of the content at the sample point,
  - legend as in the 1985 paper edition.

- The scale of the full size maps is 1 : 2,000,000.

Explanation of the ESRI-Shapefiles

- All shapefiles belonging to one element or parameter are combined in one ZIP file.
- The naming of the shapefiles within the ZIP file follows the same pattern as the naming of the graphic files.
- The spatial resolution of the shapefiles with the feature type polygon (AA_classes, original_classes, original_method) is 1 : 2,000,000. The spatial resolution results from the sampling density of one sample per 3.5 km^2 on average. The shapefiles are not suitable for representation at larger scales (e.g. 1 : 100,000). The spatial resolution of the shapefiles with the feature type point is unlimited.
- The coordinate reference system of the shapefiles is EPSG:3035 (ESRI: ETRS_1989_LAEA). Further information can be found at https://epsg.io/3035.
- The attribute tables of the shapefiles with the feature type polygon include the fields GRIDCODE (format integer) and CLASSLIMIT (format string, length 75). The field GRIDCODE contains the (numeric) class number of the corresponding area; the field CLASSLIMIT contains the corresponding content interval.
- The attribute tables of the shapefiles with the feature type point include the following fields:

RW_GK	X-coordinate of the point in the system EPSG:31467 (https://epsg.io/31467),
HW_GK	Y-coordinate of the point in the system EPSG:31467 (https://epsg.io/31467),
RW_ETRS89	X-coordinate of the point in the system EPSG:3035 (https://epsg.io/3035),
HW_ETRS89	Y-coordinate of the point in the system EPSG:3035 (https://epsg.io/3035),
XX	content of the element or parameter XX measured in the sample,
CLASS_ORIG	the (numerical) class number of the class into which the value falls, related to the class division according to the 1985 paper edition,
LIMIT_ORIG	the content interval of the class in CLASS_ORIG,
CLASS_72	the (numerical) class number of the class into which the value falls, related to the class division with 72 classes and variable colour gradient scale,
LIMIT_72	the content interval of the class in CLASS_72.

Differences between the maps in the 1985 paper edition and the 2022 digital provision (maps according to the calculation method used in 1985):

The final 3x3 km grid used for the digital provision of the maps has the extension X: 4007500 - 4694500 and Y: 2663500 - 3590500 (related to the system EPSG:3035 (https://epsg.io/3035). This grid shows the best possible agreement between the digital maps produced using the technology described in the printed edition and the printed maps. The geochemical distribution patterns are mapped consistently in the digital and printed maps. Despite a large number of time-consuming tests, a number of differences in the occupancy of individual grid cells between the digital and printed maps could not be avoided. The grid variant used offers an optimal fit e.g. for the region around the city of Kiel as well as some exposed individual pixels (differing significantly in content) in the area east of Munich. There is also a good match in the entire area. The reasons for the deviations are as follows:

- The location of the zero point of the 3x3 km grid used for the maps in the printed edition can no longer be determined.
- The exact procedure for calculating the cell averages is not documented, only the general process flow.
- The coordinate system used for the maps in the printed version is not documented. For the digital maps EPSG:3035 (ETRS89 - extended/LAEA Europe, https://epsg.io/3035) was used, which guarantees an area-true representation with low distortion. Certain positional distortions and thus deviating allocation of the sample points to the grid cells compared to the coordinate system used in the printed copy are therefore almost unavoidable.
- In the printed edition, there are slight positional deviations (approx. 500 - 1000 m) between the maps of the various elements, the cause of which can no longer be determined. If these shifts are the result of different zero point positions of the underlying grids, this would also result in a deviation between the digital and printed version.
- The class division of the maps in the printed edition is not clearly documented. It is questionable whether the class boundaries are to be read inclusive or exclusive of the minimum and maximum values. Apparently, however, the classes are to be interpreted exclusive of the minimum values and inclusive of the maximum values of the content ranges. This is suggested by comparative observations, especially for cadmium in stream sediments. Correctly, therefore, the lowest class must not be designated < minimum value but <= minimum value. This was done consistently in the digital provision of the maps. The top class is then actually > maximum value as indicated. All other classes are designated as lower limit - upper limit, as in the printed copy, and are to be read as lower limit < value <= upper limit. For some elements, e.g. W, the class limit was obviously treated exclusively for the lowest class in the paper edition.
- In some cases, occupied grid cells are shown in the printed maps at positions where no sample points are documented in the database, but in other places there are no occupied grid cells where sample points are available in the database. Whether this is due to coordinate deviations between the data used to calculate the printed maps and the coordinates in the database can no longer be verified. The distortions resulting from the coordinate transformation can be ruled out as the only cause at some of the locations checked in southern Germany, since the positional differences are too large.