High-Quality Map of Rivers and Observation Wells in Kushtia

Step 1: Install and import required libraries

```
!pip install geopandas matplotlib contextily shapely
!pip install matplotlib-scalebar

import geopandas as gpd
import matplotlib.pyplot as plt
from shapely.geometry import Point
from matplotlib_scalebar.scalebar import ScaleBar
import zipfile, os
```

```
Requirement already satisfied: geopandas in /usr/local/lib/python3.12/dist-packa
Requirement already satisfied: matplotlib in /usr/local/lib/python3.12/dist-pack
Collecting contextily
  Downloading contextily-1.6.2-py3-none-any.whl.metadata (2.9 kB)
Requirement already satisfied: shapely in /usr/local/lib/python3.12/dist-package
Requirement already satisfied: numpy>=1.24 in /usr/local/lib/python3.12/dist-pac
Requirement already satisfied: pyogrio>=0.7.2 in /usr/local/lib/python3.12/dist-
Requirement already satisfied: packaging in /usr/local/lib/python3.12/dist-packa
Requirement already satisfied: pandas>=2.0.0 in /usr/local/lib/python3.12/dist-p
Requirement already satisfied: pyproj>=3.5.0 in /usr/local/lib/python3.12/dist-p
Requirement already satisfied: contourpy>=1.0.1 in /usr/local/lib/python3.12/dis
Requirement already satisfied: cycler>=0.10 in /usr/local/lib/python3.12/dist-pa
Requirement already satisfied: fonttools>=4.22.0 in /usr/local/lib/python3.12/di
Requirement already satisfied: kiwisolver>=1.3.1 in /usr/local/lib/python3.12/di
Requirement already satisfied: pillow>=8 in /usr/local/lib/python3.12/dist-packa
Requirement already satisfied: pyparsing>=2.3.1 in /usr/local/lib/python3.12/dis
Requirement already satisfied: python-dateutil>=2.7 in /usr/local/lib/python3.12
Requirement already satisfied: geopy in /usr/local/lib/python3.12/dist-packages
Collecting mercantile (from contextily)
  Downloading mercantile-1.2.1-py3-none-any.whl.metadata (4.8 kB)
Collecting rasterio (from contextily)
  Downloading rasterio-1.4.3-cp312-cp312-manylinux_2_17_x86_64.manylinux2014_x86
Requirement already satisfied: requests in /usr/local/lib/python3.12/dist-packag
Requirement already satisfied: joblib in /usr/local/lib/python3.12/dist-packages
Requirement already satisfied: xyzservices in /usr/local/lib/python3.12/dist-pac
Requirement already satisfied: pytz>=2020.1 in /usr/local/lib/python3.12/dist-pa
Requirement already satisfied: tzdata>=2022.7 in /usr/local/lib/python3.12/dist-
Requirement already satisfied: certifi in /usr/local/lib/python3.12/dist-package
Requirement already satisfied: six>=1.5 in /usr/local/lib/python3.12/dist-packag
Requirement already satisfied: geographiclib<3,>=1.52 in /usr/local/lib/python3.
Requirement already satisfied: click>=3.0 in /usr/local/lib/python3.12/dist-pack
Collecting affine (from rasterio->contextily)
```

```
  Downloading affine-2.4.0-py3-none-any.whl.metadata (4.0 kB)
Requirement already satisfied: attrs in /usr/local/lib/python3.12/dist-packages
Collecting cligj>=0.5 (from rasterio->contextily)
  Downloading cligj-0.7.2-py3-none-any.whl.metadata (5.0 kB)
Collecting click-plugins (from rasterio->contextily)
  Downloading click_plugins-1.1.1.2-py2.py3-none-any.whl.metadata (6.5 kB)
Requirement already satisfied: charset_normalizer<4,>=2 in /usr/local/lib/python
Requirement already satisfied: idna<4,>=2.5 in /usr/local/lib/python3.12/dist-pa
Requirement already satisfied: urllib3<3,>=1.21.1 in /usr/local/lib/python3.12/d
Downloading contextily-1.6.2-py3-none-any.whl (17 kB)
Downloading mercantile-1.2.1-py3-none-any.whl (14 kB)
Downloading rasterio-1.4.3-cp312-cp312-manylinux_2_17_x86_64.manylinux2014_x86_6
   ━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━━ 22.3/22.3 MB 111.0 MB/s eta 0:00:00
Downloading cligj-0.7.2-py3-none-any.whl (7.1 kB)
Downloading affine-2.4.0-py3-none-any.whl (15 kB)
Downloading click_plugins-1.1.1.2-py2.py3-none-any.whl (11 kB)
Installing collected packages: mercantile, cligj, click-plugins, affine, rasteri
Successfully installed affine-2.4.0 click-plugins-1.1.1.2 cligj-0.7.2 contextily
Collecting matplotlib-scalebar
  Downloading matplotlib_scalebar-0.9.0-py3-none-any.whl.metadata (18 kB)
Requirement already satisfied: matplotlib in /usr/local/lib/python3.12/dist-pack
Requirement already satisfied: contourpy>=1.0.1 in /usr/local/lib/python3.12/dis
Requirement already satisfied: cycler>=0.10 in /usr/local/lib/python3.12/dist-pa
Requirement already satisfied: fonttools>=4.22.0 in /usr/local/lib/python3.12/di
Requirement already satisfied: kiwisolver>=1.3.1 in /usr/local/lib/python3.12/di
Requirement already satisfied: numpy>=1.23 in /usr/local/lib/python3.12/dist-pac
```

Step 2: Mount Google Drive

```
from google.colab import drive
drive.mount('/content/drive')
```

```
Mounted at /content/drive
```

Step 3: Unzip and load data

```
data_path = "/content/drive/My Drive/Data For Analysis"

# --- District shapefile unzip ---
with zipfile.ZipFile(os.path.join(data_path, "gadm41_BGD_2.json.zip"), 'r') as
    zip_ref.extractall("/content/districts")

districts = gpd.read_file("/content/districts/gadm41_BGD_2.json")

# --- Rivers shapefile unzip ---
with zipfile.ZipFile(os.path.join(data_path, "bgd_hyd_rivers_lged.zip"), 'r') a
    zip_ref.extractall("/content/rivers")
```

```
rivers = gpd.read_file("/content/rivers/bgd_hyd_rivers_lged.shp")

# --- Wells CSV load ---
import pandas as pd
wells_df = pd.read_csv(os.path.join(data_path, "kushtia_wells.csv"))
wells_gdf = gpd.GeoDataFrame(wells_df, geometry=gpd.points_from_xy(wells_df.Lon
```

Step 4: Filter only Kushtia district and rivers

```
# Kushtia district polygon
kushtia = districts[districts['NAME_2'] == 'Kushtia']

# Clip rivers to Kushtia boundary
rivers_kushtia = gpd.clip(rivers, kushtia)

# Clip wells inside Kushtia
wells_kushtia = gpd.clip(wells_gdf, kushtia)
```

Step 5: Draw the map (Auto Save in Drive, TIFF, SVG, PDF, EPS)

```
import geopandas as gpd
import matplotlib.pyplot as plt
from shapely.geometry import Point
from matplotlib_scalebar.scalebar import ScaleBar
import zipfile, os
import pandas as pd
from google.colab import drive

# ---------------- Mount Google Drive ----------------
drive.mount('/content/drive')

# Change this path to "Data For Analysis" folder
save_path = "/content/drive/My Drive/Data For Analysis"
os.makedirs(save_path, exist_ok=True)

# ---------------- CRS: Project to UTM (EPSG:32646) ----------------
kushtia_utm = kushtia.to_crs(epsg=32646)
rivers_kushtia_utm = rivers_kushtia.to_crs(epsg=32646)
wells_kushtia_utm = wells_kushtia.to_crs(epsg=32646)

# Font setup
plt.rcParams["font.family"] = "Times New Roman"
```

```
fig, ax = plt.subplots(figsize=(8, 8))

# ---------------- Plot Layers ----------------
kushtia_utm.boundary.plot(ax=ax, color="black", linewidth=1.2, label="District
rivers_kushtia_utm.plot(ax=ax, color="#1f78b4", linewidth=1.0, label="Major Riv
wells_kushtia_utm.plot(ax=ax, color="#e31a1c", markersize=35, marker="o", label

# ---------------- Legend ----------------
legend = ax.legend(
    loc="upper right",
    bbox_to_anchor=(0.98, 0.85),
    frameon=True,
    fontsize=9,
    title="Map Elements",
    title_fontsize=10
)
legend.get_frame().set_edgecolor("black")
legend.get_frame().set_alpha(0.8)

# ---------------- Scale bar ----------------
scalebar = ScaleBar(
    dx=1,
    units="m",
    dimension="si-length",
    location="lower left",
    scale_loc="bottom",
    box_alpha=0.9,
    frameon=True
)
ax.add_artist(scalebar)

# ---------------- North arrow ----------------
x, y, arrow_length = 0.95, 0.98, 0.08
ax.annotate(
    'N', xy=(x, y), xytext=(x, y - arrow_length),
    arrowprops=dict(facecolor='black', width=4, headwidth=12),
    ha='center', va='center', fontsize=12, xycoords=ax.transAxes
)

# Clean axis
ax.set_axis_off()

# ---------------- Save in multiple formats ----------------
raster_path = os.path.join(save_path, "kushtia_map_publication.tif")
vector_svg = os.path.join(save_path, "kushtia_map_publication.svg")
vector_pdf = os.path.join(save_path, "kushtia_map_publication.pdf")
vector_eps = os.path.join(save_path, "kushtia_map_publication.eps")

plt.savefig(raster_path, dpi=600, bbox_inches="tight")   # High-resolution rast
plt.savefig(vector_svg, dpi=600, bbox_inches="tight")    # Vector (SVG)
plt.savefig(vector_pdf, dpi=600, bbox_inches="tight")    # Vector (PDF)
plt.savefig(vector_eps, dpi=600, bbox_inches="tight")    # Vector (EPS)

plt.show()

print("✅ Maps saved in:", save_path)
```

```
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
Drive already mounted at /content/drive; to attempt to forcibly remount, call dr
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
```

```
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
```

```
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
```

```
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
```

```
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
```

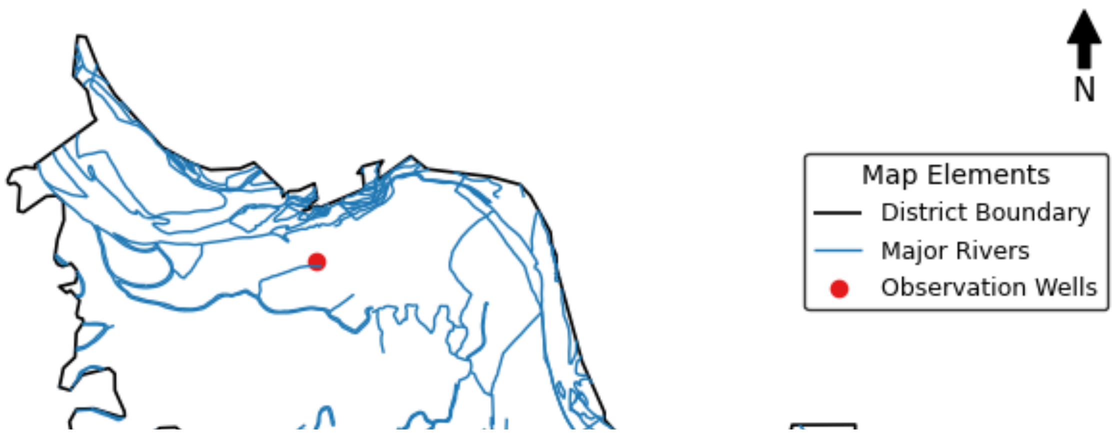
```
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
```

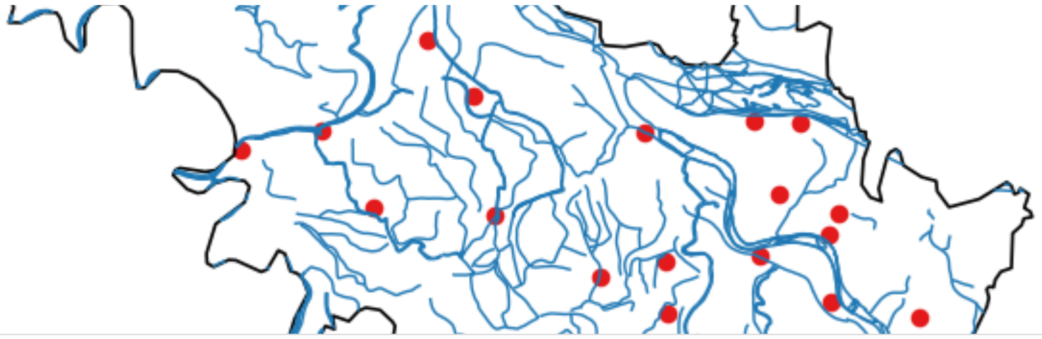
```
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
```

```
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.backends.backend_ps:The PostScript backend does not support t
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
```

```
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
```

```
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
WARNING:matplotlib.font_manager:findfont: Font family 'Times New Roman' not foun
```





Start coding or generate with AI.