

# Migration zwischen ArcGIS und QGIS

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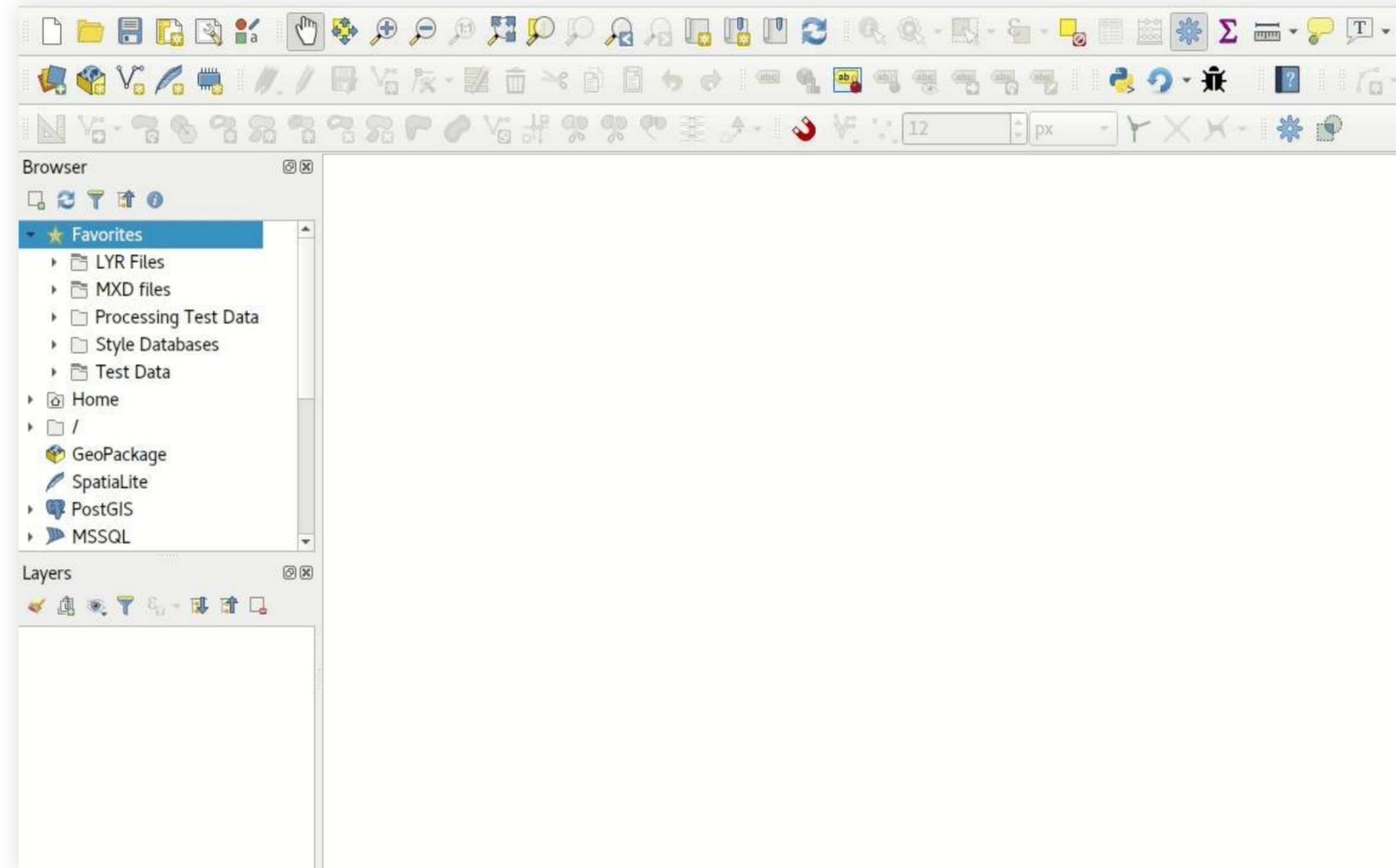
- Übersicht der verschiedenen Tools
- Der MapQonverter unter der Lupe
- QGIS-Projekte in ArcMap importieren



## Slyr - North Road

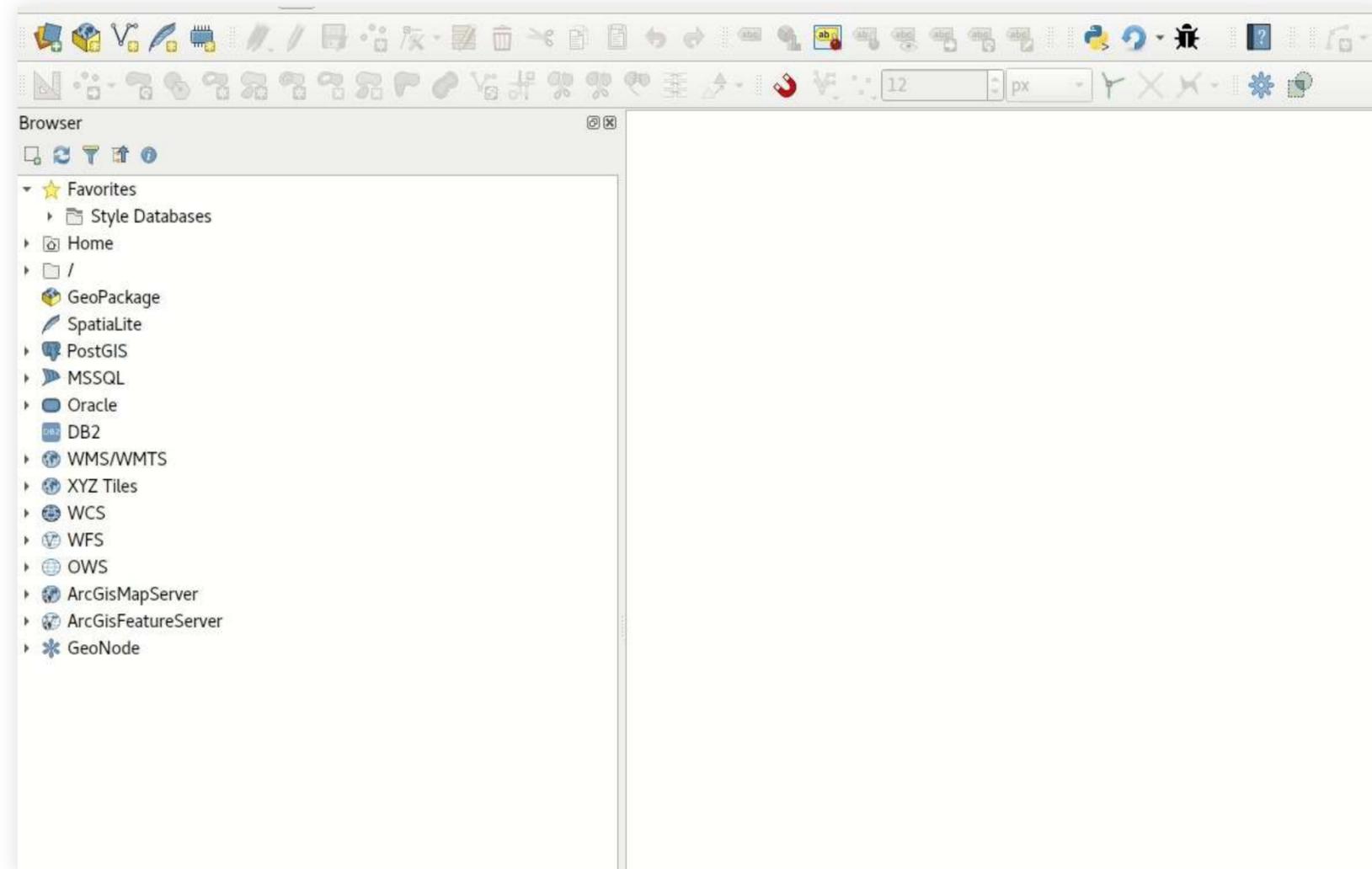
- QGIS-Plugin
- Drag-and-Drop-Import
- Reverse-Engineering der Binärdateien
- Noch in der Finanzierungsphase
- **Community-Edition** unterstützt den Import von Style-Dateien

## Drag-And-Drop MXD-Files in QGIS



von <https://north-road.com/slyr/>

## Drag-And-Drop Style-Files in QGIS



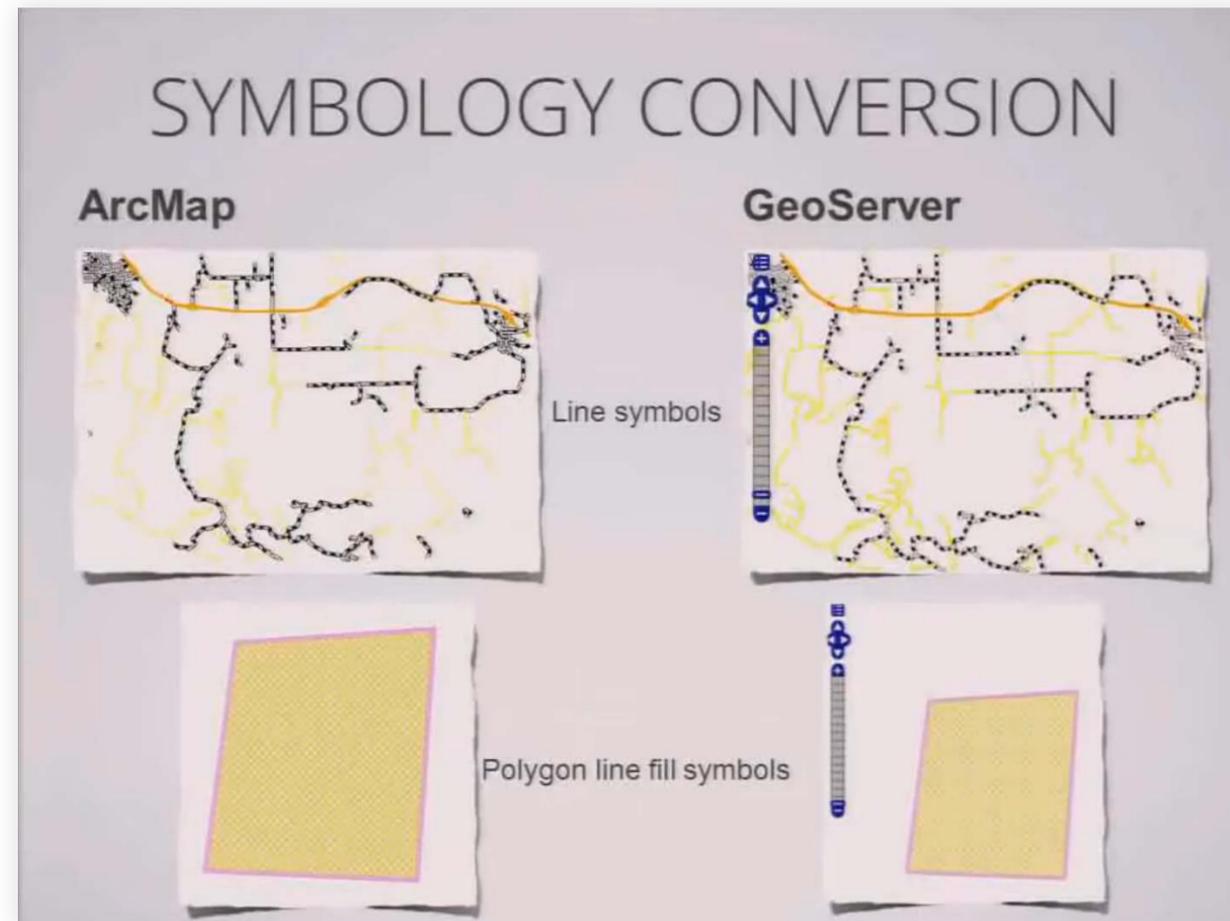
von <https://north-road.com/slyr/>



## Bridge - GeoCat

- ArcMap-Plugin
- Export als Web-Service
- Macht Projekt nutzbar für beispielsweise GeoServer
- 3-Trial-Version [verfügbar](#)

## Symbol Vergleich ArcMap / GeoServer



von [GeoCat Bridge - Publish From ArcGIS Desktop Into FOSS4G - 2013](#)

# Umwandlung Marker

The screenshot shows a documentation page for GeoCat Bridge. On the left is a navigation sidebar with a table of contents. The main content area is titled '13. Esri® Default Marker Symbols Mapping' and contains two tables mapping original Esri font symbols to mapped font symbol codes.

**BRIDGE ONE CLICK DATA PUBLISHING**  
3.0

Search docs

- 1. Introduction
- 2. Background and Requirements
- 3. Installation
- 4. Initial Configuration
- 5. Publish Layers
- 6. Configuration of the Extension
- 7. Server Connections
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- 10. ArcGIS® Renderers and Symbols Supported
- 11. Supported Styles
- 12. GeoServer Setup
- 13. Esri® Default Marker Symbols Mapping**
- 14. Bridge Behaviour
- 15. Bridge Command Line Interface (CLI)

Docs > GeoCat Bridge > 13. Esri® Default Marker Symbols Mapping

### 13. Esri® Default Marker Symbols Mapping

*Esri® Default Marker Symbols Mapping (part 1)*

Original font symbol (Esri® Default Marker)	Mapped font symbolCode
● Code: U+0021	● Wingdings, Code: U+006C
■ Code: U+0022	■ Wingdings, Code: U+006E
○ Code: U+0028	○ Wingdings, Code: U+00A1
□ Code: U+0029	□ Wingdings, Code: U+006F
⊙ Code: U+002E	⊙ Wingdings 2, Code: U+009D
⊚ Code: U+0035	⊚ Wingdings 2, Code: U+009D
⊛ Code: U+0048	⊛ Wingdings 2, Code: U+009D
▣ Code: U+002F	▣ Wingdings 2, Code: U+00A7
▤ Code: U+0036	▤ Wingdings 2, Code: U+00A7
▥ Code: U+004A	▥ Wingdings 2, Code: U+00A7
▲ Code: U+0023	▲ Wingdings 3, Code: U+0070
▴ Code: U+002A	▴ Wingdings 3, Code: U+0072

*Esri® Default Marker Symbols Mapping (part 2)*

Original font symbol (Esri® Default Marker)	Mapped font symbolCode
☆ Code: U+005F	☆ Wingdings, Code: U+00AB
★ Code: U+002E	★ Wingdings, Code: U+00AB
● Code: U+00C7	● Wingdings, Code: U+006C
● Code: U+00AC	● Wingdings, Code: U+006C
● Code: U+00B7	● Wingdings, Code: U+006C
● Code: U+00C4	● Wingdings, Code: U+006C

von GeoCat Bridge Documentation



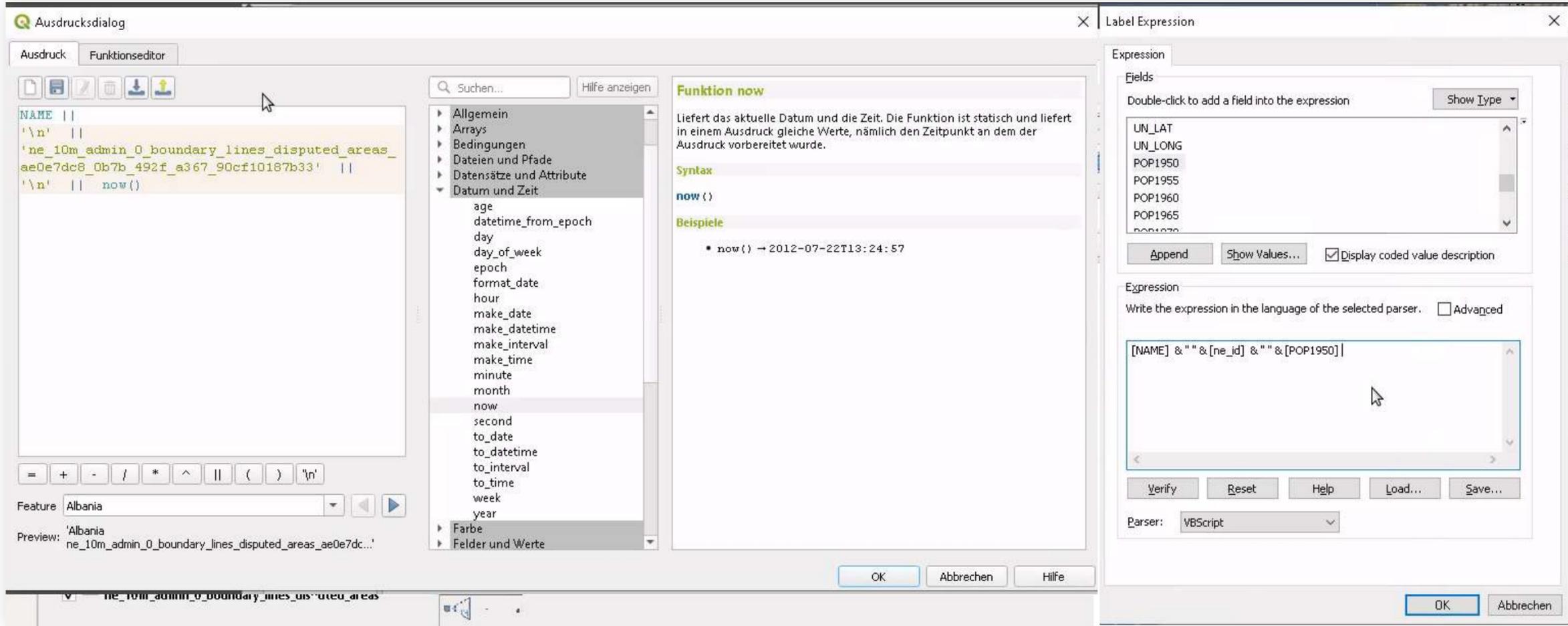
## MapQonverter - WhereGroup

- ArcMap-Toolbox
- Export als QGIS-XML
- Zukünftig Import von QGIS-Projekten
- Python-basiertes Auslesen der ArcObjects und Schreiben in XML
- Verfügbar auf [Github](#)

## Hindernisse beim Export

- Unterschiede im Funktionsumfang
- Geschützte Esri-Fonts beherbergen die meisten Icons
- Query-Editoren unterscheiden sich

# Query-Editoren im Vergleich



## MapQonverter

- Inspiriert von einem Script von Allan Maungu 2011
- Unterstützte nur Vector-Layer in einer festen Standard-Farbe

ArcPy unterstützt das Auslesen der Symbologie folgender Renderer:

- Graduated Color Renderer
- Graduated Symbol Renderer
- Unique Values Renderer
- Raster Classified Renderer

## ArcPy unterstützt das Auslesen der Symbologie folgender Renderer:

- Graduated Color Renderer
- Graduated Symbol Renderer
- Unique Values Renderer
- Raster Classified Renderer
  
- Simple Renderer?

## ArcPy unterstützt das Auslesen der Symbologie folgender Renderer:

- Graduated Color Renderer
- Graduated Symbol Renderer
- Unique Values Renderer
- Raster Classified Renderer
  
- Simple Renderer?
  
- Wird nicht unterstützt

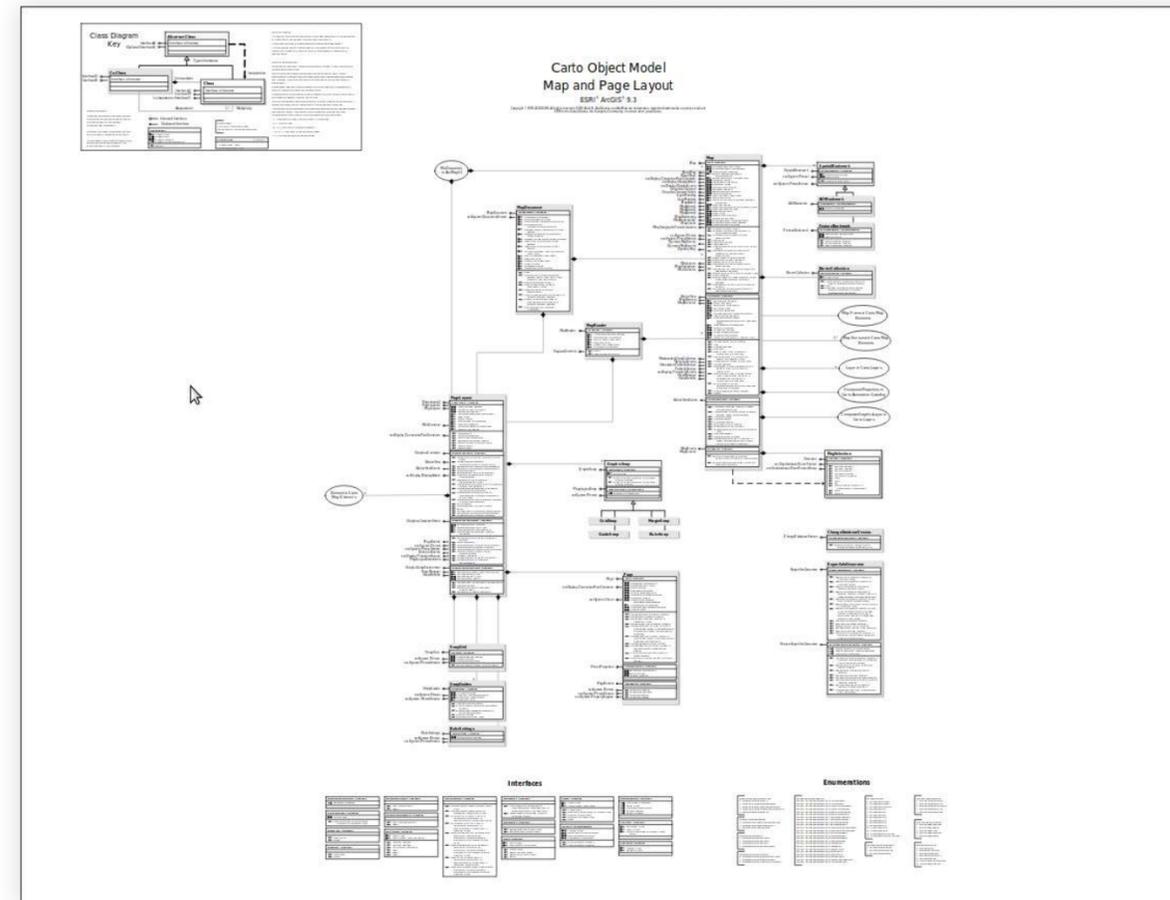
# Comtypes

- Python-Bibliothek
- Zugriff auf COM-Komponenten  
(Component Object Model)
- DLL/OLB-Dateien → ArcObjects



## ...34 Bibliotheken:

esriCarto.dll  
esriFramework.dll  
esriGeometry.dll  
esriDisplay.dll  
... und so weiter





## Vom FeatureLayer zur zugehörigen Farbe:

```
featureLayer = change_interface(arcLayer, mC.IFeatureLayer)
```

```
geoFeatureLayer = change_interface(featureLayer, mC.IGeoFeatureLayer)
```

```
renderer = geoFeatureLayer.Renderer
```

```
feature = featureLayer.FeatureClass.GetFeature(i)
```

```
symbol = renderer.SymbolByFeature(feature)
```

```
markerSymbol = change_interface(symbol, mD.ISimpleMarkerSymbol)
```

```
color = markerSymbol.Color.RGB
```

## Beim Erstellen der QGIS-XML an der richtigen Stelle einfügen:

```
<renderer-v2 enableorderby="0" symbollevels="0" type="singleSymbol" forceraster="0">
  <symbols>
    <symbol force_rhr="0" clip_to_extent="1" type="marker" name="0" alpha="1">
      <layer locked="0" pass="0" class="SimpleMarker" enabled="1">
        <prop v="0" k="angle"/>
        <prop v="190,207,80,255" k="color"/>
        <prop v="1" k="horizontal_anchor_point"/>
        <prop v="bevel" k="joinstyle"/>
        <prop v="circle" k="name"/>
        <prop v="0,0" k="offset"/>
        <prop v="3x:0,0,0,0,0,0" k="offset_map_unit_scale"/>
        <prop v="MM" k="offset_unit"/>
        <prop v="35,35,35,255" k="outline_color"/>
        <prop v="solid" k="outline_style"/>
        <prop v="0" k="outline_width"/>
        <prop v="3x:0,0,0,0,0,0" k="outline_width_map_unit_scale"/>
        <prop v="MM" k="outline_width_unit"/>
        <prop v="diameter" k="scale_method"/>
        <prop v="2" k="size"/>
        <prop v="3x:0,0,0,0,0,0" k="size_map_unit_scale"/>
        <prop v="MM" k="size_unit"/>
        <prop v="1" k="vertical_anchor_point"/>
        <data_defined_properties>
          <Option type="Map">
            <Option value="" type="QString" name="name"/>
            <Option name="properties"/>
            <Option value="collection" type="QString" name="type"/>
          </Option>
        </data_defined_properties>
      </layer>
    </symbol>
  </symbols>
</rotation/>
```



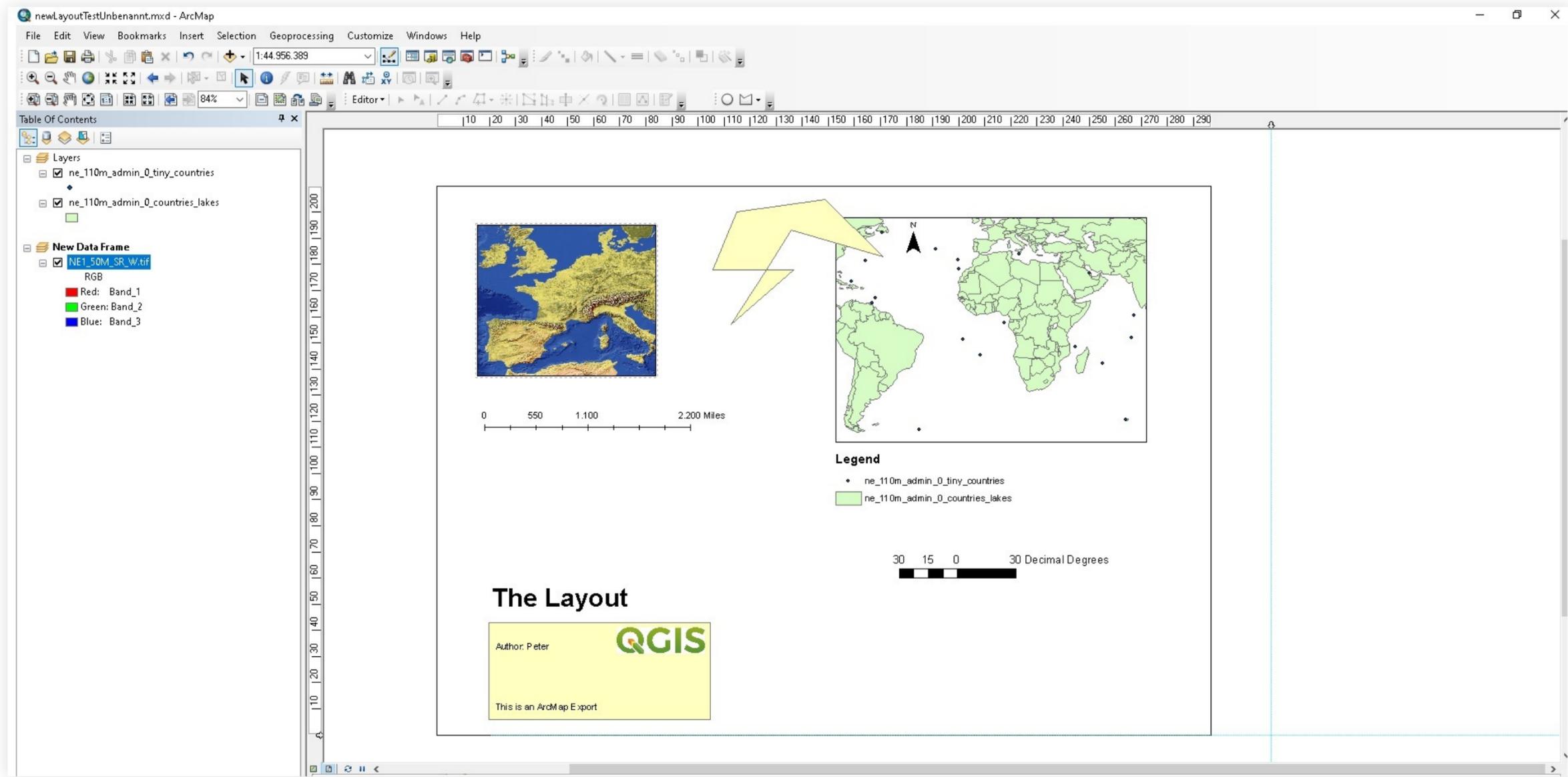


## Neuerungen

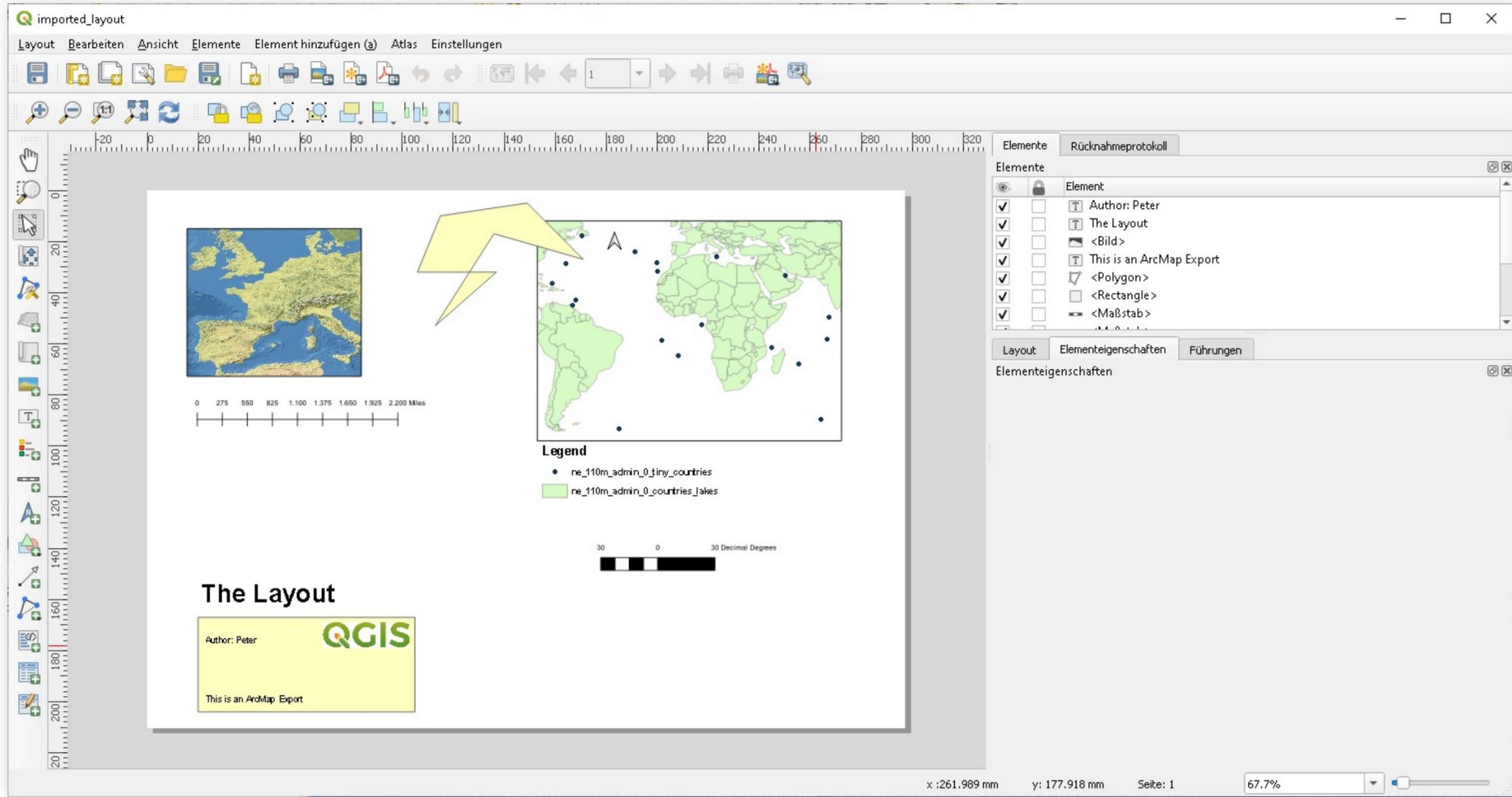
- Layout Export
- Dataframe Support als Kartenthemen (Sichtbarkeitsvoreinstellungen)
- Export von Style-Dateien
- Verschiedene Renderer und Styles (Match to Symbol in a Style, Singleband-Pseudocolor-Renderer, ...)

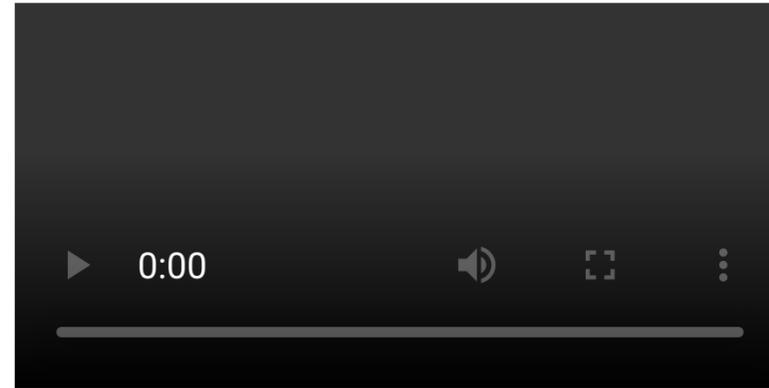
# Layout Export

## ArcMap Layout



# QGIS-Layout





# Style-Gallery Export

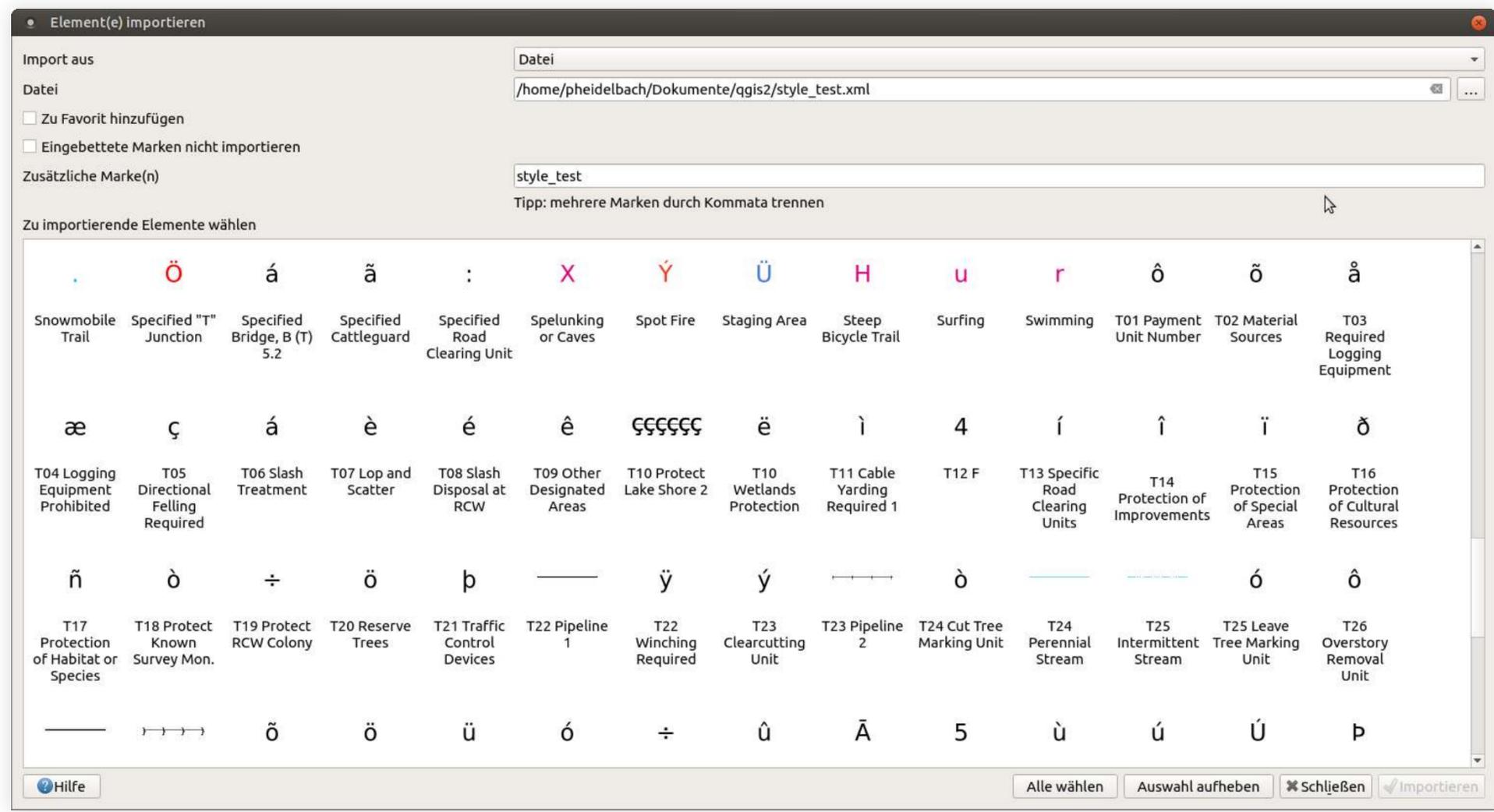
Unterstützt werden:

- Marker
- Fills
- Lines
- Gradienten
- Textformatierungen
- Labels

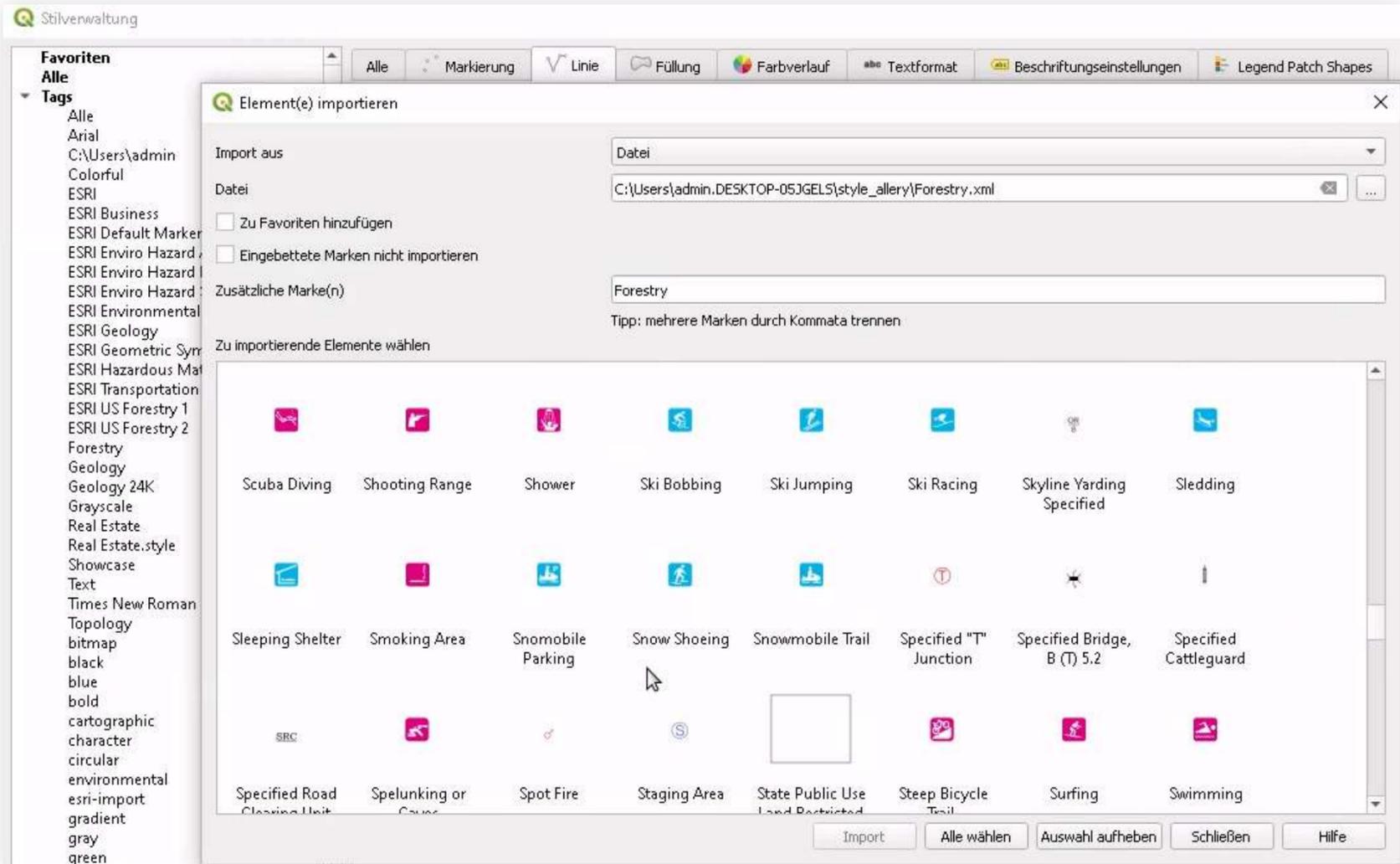
Noch kein Export von Bild-basierten Symbolen

Labels nur als Line-Callout

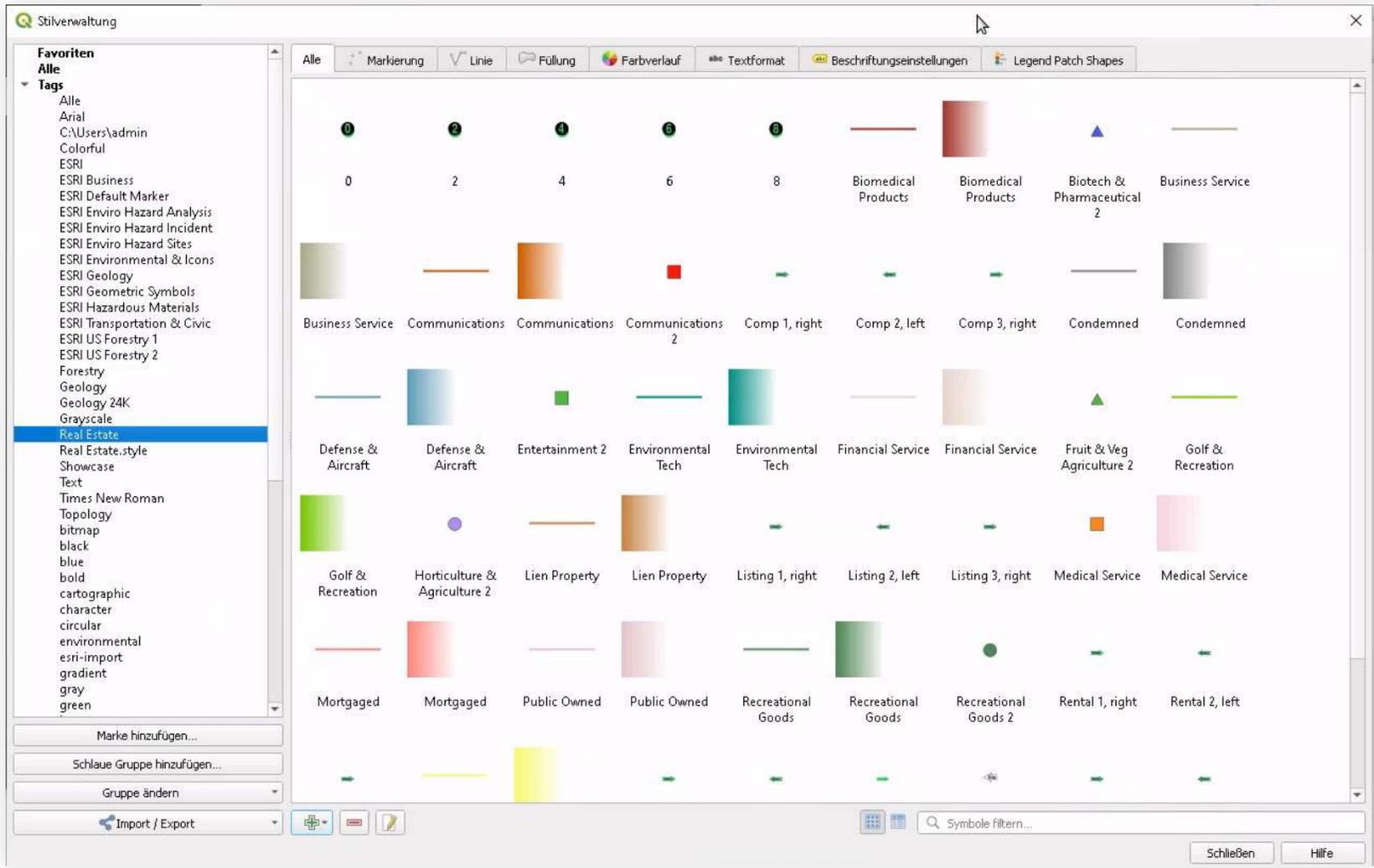
# Export ohne Esri-Fonts



# Export mit Esri-Fonts



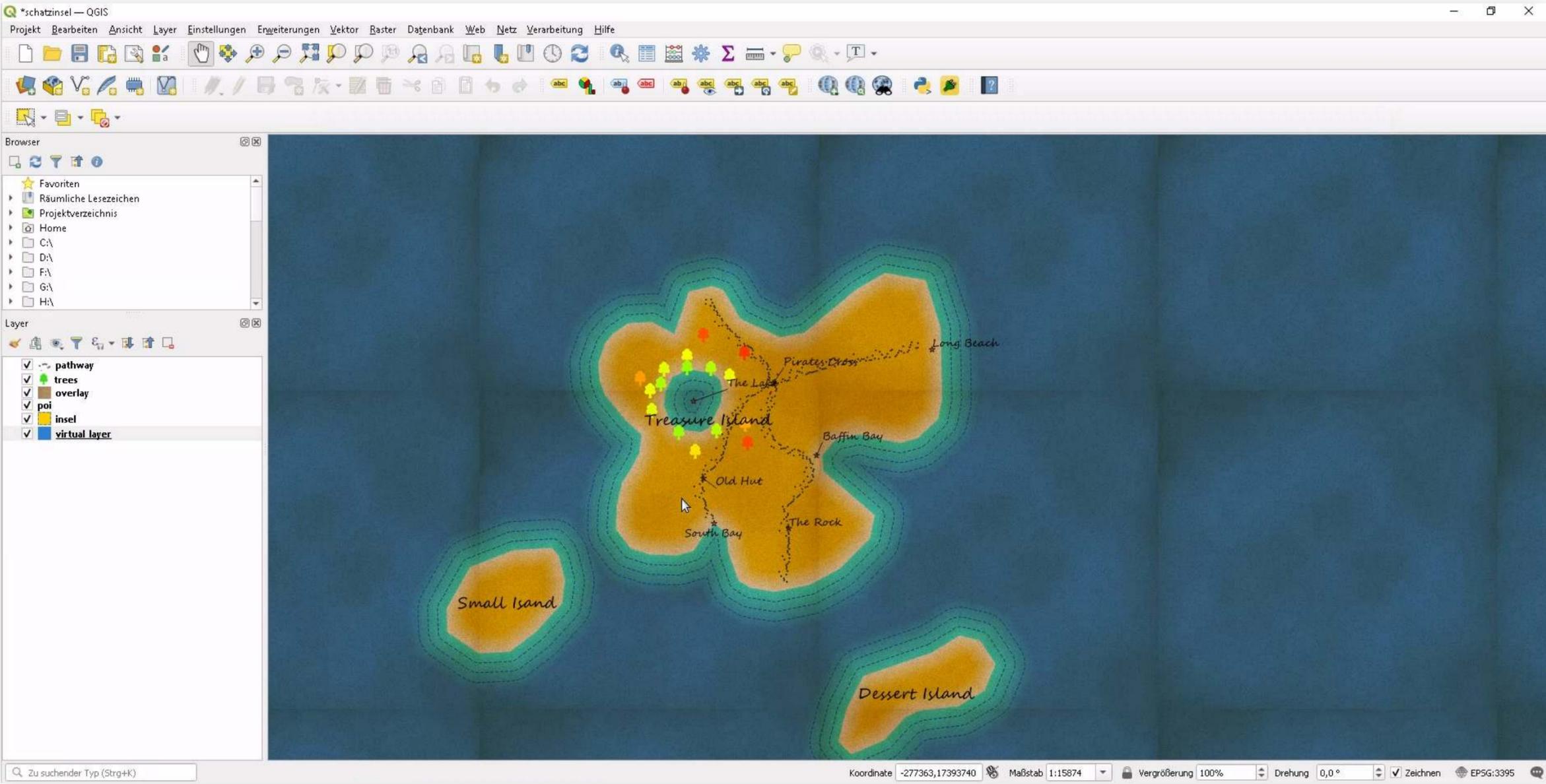
# Esri-Styles in der QGIS Stilverwaltung



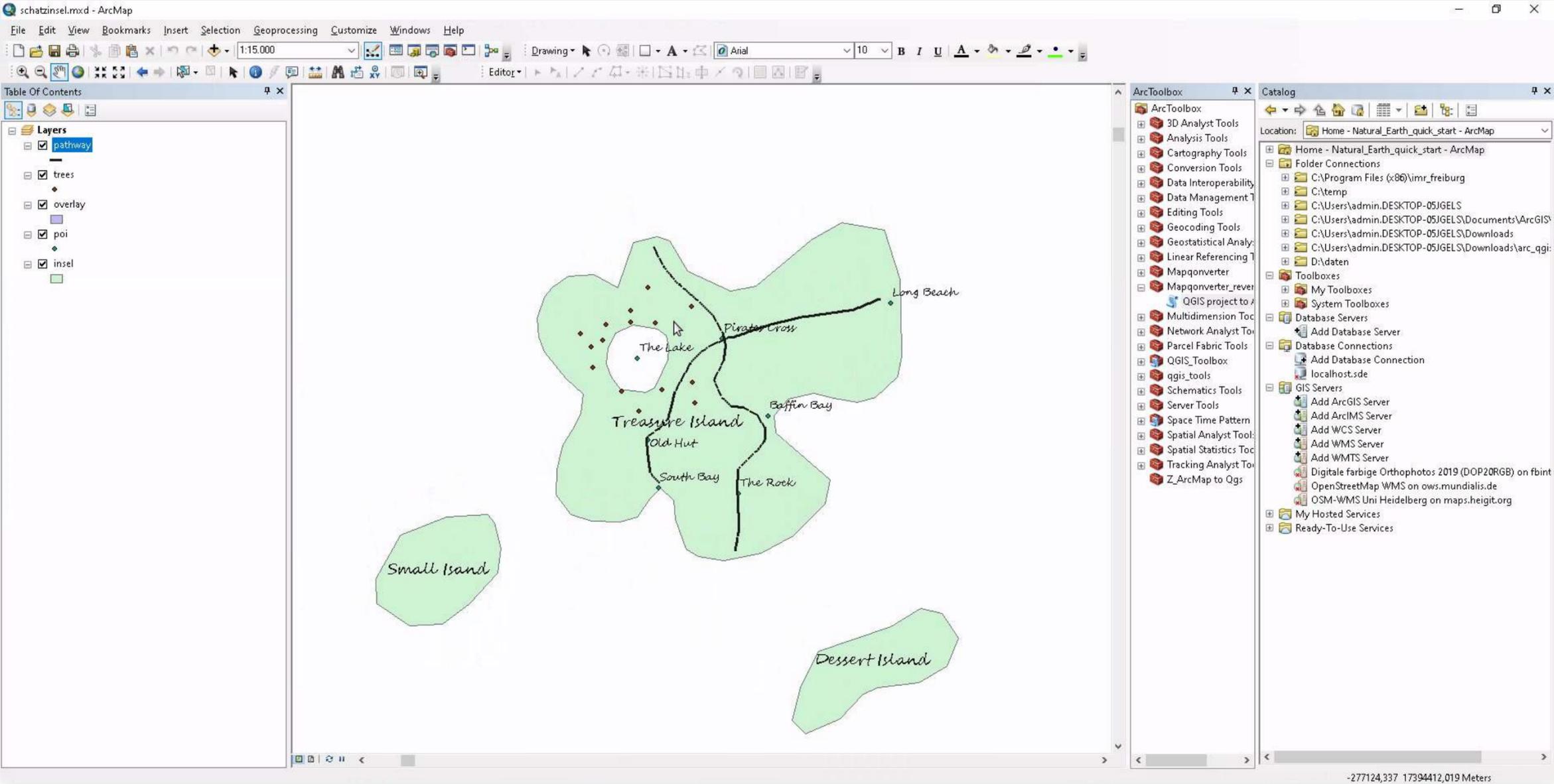
# QGIS Import



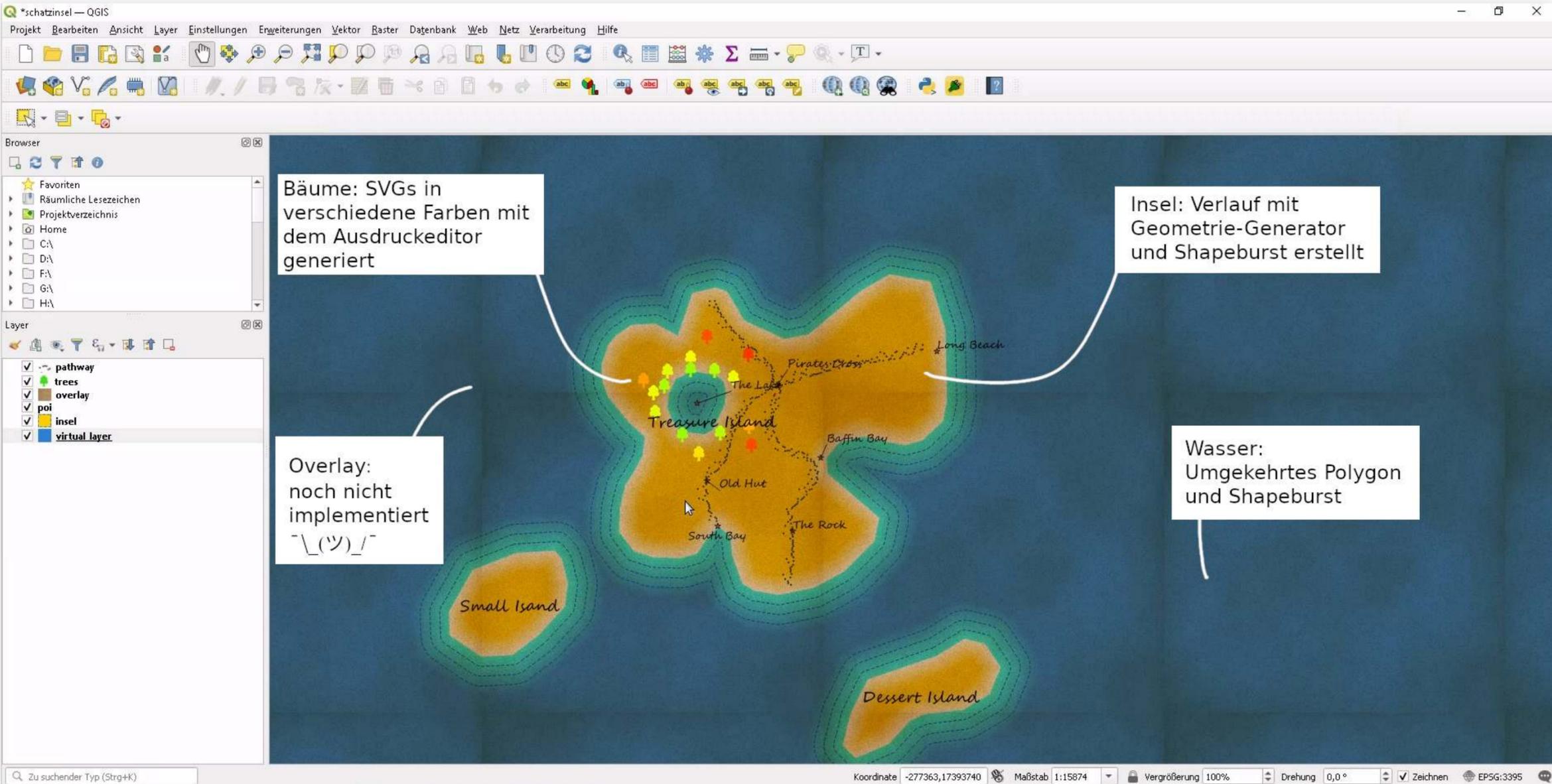
QGIS-Schatzkarte =)



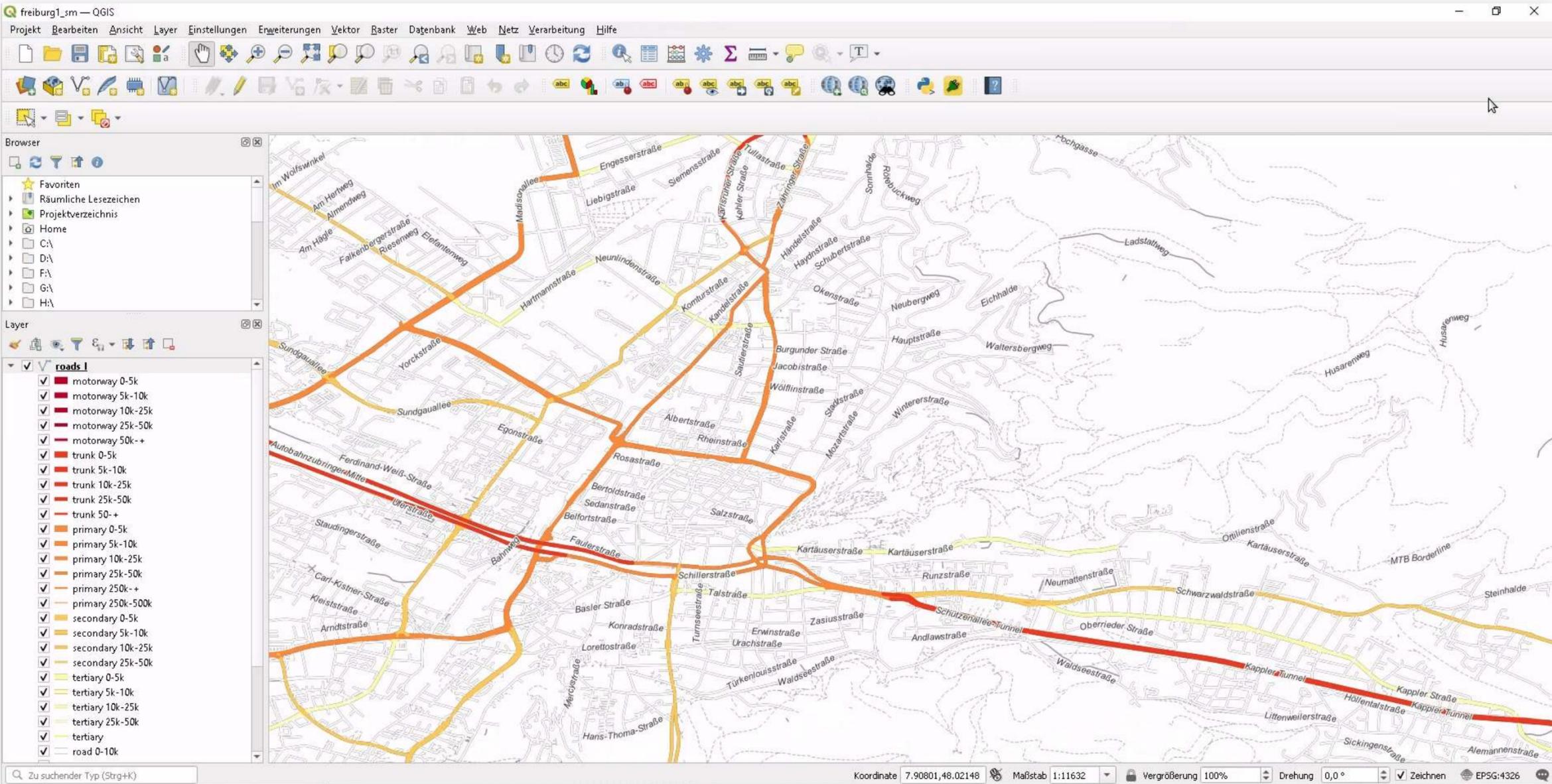
# ArcMap-Schatzkarte =(



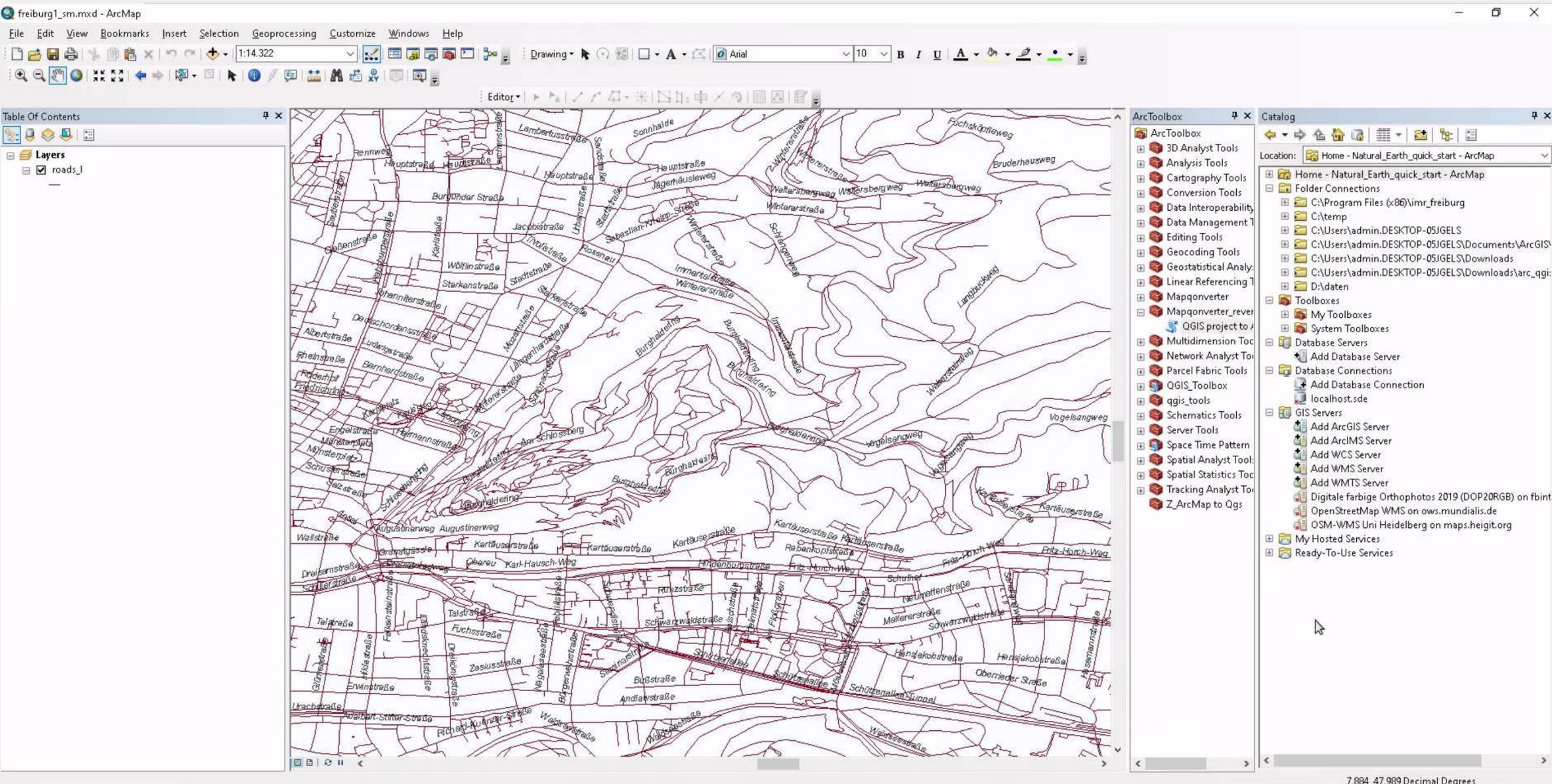
# Problemquellen



### QGIS-Freiburger Straßennetz =)



# ArcMap-Freiburger Straßennetz =



# Regelbasierter Renderer

The screenshot displays the QGIS interface with the 'Layer Properties' dialog for the 'roads\_l' layer. The 'Symbolisierung' tab is active, showing a 'Regelbasierend' (Rule-based) renderer. The dialog is divided into three main sections:

- Left Panel:** A list of road classes with checkboxes and color swatches. The classes include 'motorway 0-5k', 'motorway 5k-10k', 'motorway 10k-25k', 'motorway 25k-50k', 'motorway 50k-+', 'trunk 0-5k', 'trunk 5k-10k', 'trunk 10k-25k', 'trunk 25k-50k', 'trunk 50-+', 'primary 0-5k', 'primary 5k-10k', 'primary 10k-25k', 'primary 25k-50k', 'primary 250k-+', 'primary 250k-500k', 'secondary 0-5k', 'secondary 5k-10k', 'secondary 10k-25k', 'secondary 25k-50k', and 'tertiary 0-5k'.
- Central Table:** A table defining rules for each class. Each rule consists of a checked checkbox, a color swatch, a label, an expression, and a scale range. The 'Regel' column contains expressions like 'fclass IN ('motorway')' or 'fclass IN ('trunk','motorway\_link')'. The 'Min. Scale' and 'Max. Scale' columns indicate the scale ranges for each rule.
- Bottom Section:** The 'Layerdarstellung' (Layer Rendering) section, which includes a 'Stil' dropdown menu and buttons for 'OK', 'Abbrechen', 'Anwenden', and 'Hilfe'.

The background shows a map of Freiburg, Germany, with various road types rendered according to the rules. The status bar at the bottom indicates the current coordinates (7.7919, 48.0060), scale (1:23264), and zoom level (100%).

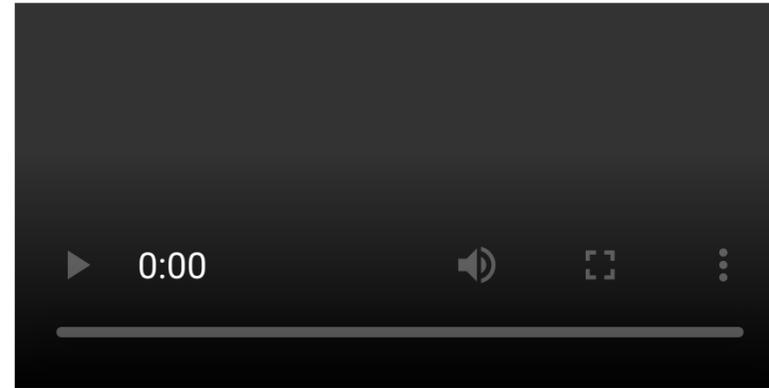
# The ScaleDependentRenderer

"The ScaleDependentRenderer is not available using the ArcGIS interface. To use this renderer you must use code to build and assign the renderer to a layer."



## Hindernisse beim Import

- Komplexes Rendering
  - Rule-Based-Rendering
  - Geometriegenerator
  - Sunburst Effekt, Mischmodi
- Bestimmte Daten können nicht importiert werden (SVG)
- Query-Editoren unterscheiden sich





Es gibt eine Reihe von Möglichkeiten, Daten zwischen ArcMap und QGIS auszutauschen

Der Anwendungsfall legt verschiedene Lösungen nahe:

- SLYR -> Zum Nutzen von ArcMap Projekte in QGIS
- Bridge -> Zum Bereitstellen von ArcMap Projekten als Web-Service
- MapQonverter -> Zum Transfer von Projekten zwischen ArcMap und QGIS

Danke

**Vielen Dank fürs Zuhören!**

Peter Heidelberg  
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