

Figure 6. LabelPro settings for the Natural Earth layers.

The **MAP_SCALE** attribute contains the map scale, e.g., 15,000,000. When we have multiple instances of the same feature we use the **MAP_SCALE** to select the best scale the feature is represented on and remove the other duplicates.

Where multiple cities or towns have the same name, such as Richmond (Australia: Tasmania, Victoria, New South Wales, Queensland and South Australia; New Zealand; United States: Utah, Virginia), we need to differentiate these by specifying the country followed by the state or province. The **adm0name** (country) and **adm1name** (state) are pulled from the Natural Earth data to facilitate this.

With our text data structures in place and the data imported and styled in the AI document, we can now label the map using MAPublisher's LabelPro extension (Figure 6). LabelPro is a rule-based auto-labelling engine that can quickly and easily place labels on the map using the attribute information in the data. Setting up the rules for each

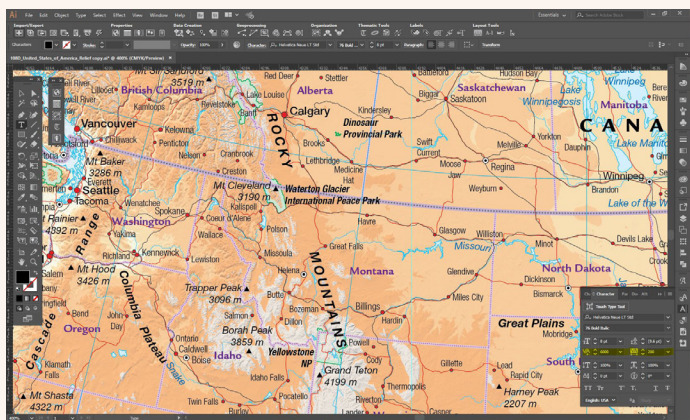


Figure 8. Good tracking and kerning settings for labels (in this case **ROCKY MOUNTAINS**) ensures clean indexes.

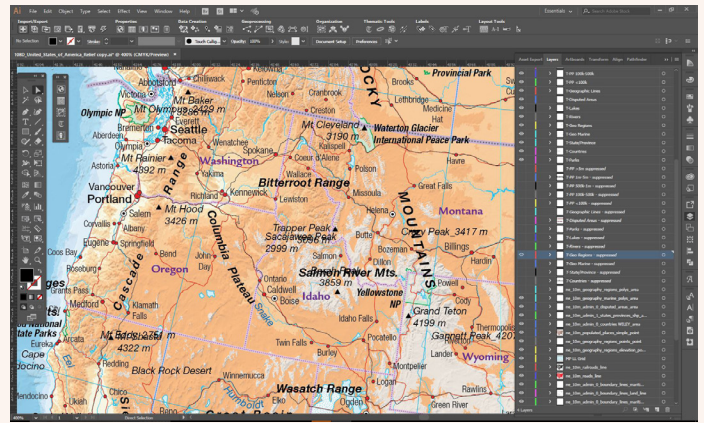


Figure 7. Suppression layer displayed for geographic areas.

layer can be time consuming; however it is still faster and more accurate than labelling the map by hand.

During the auto-labelling process any labels that can't be placed are placed on suppression layers (Figure 7). These suppression layers need to have the same data structure as your other text layers. During the map clean-up process, some labels may need to be repositioned, deleted, or added. Rather than delete a label we move this label to its corresponding suppression layer. Likewise, if a label needs to be added, we take the label from the suppression layer and place it on the visible label layer. In this way attribute information is retained for all labels.

During this labelling process, because we have our pre-defined attributes in the text layers, all the data from those matching fields will be added to our labels. From our list above, **the featurecla, type, latitude, longitude, adm0name, adm1name, pop_max, and sortname** columns will be populated with data (where the data exist).

An important consideration in map labelling is the tracking and kerning of labels. Large area features, such as deserts, ranges, and oceans will often have their tracking (space between characters) increased so that the label can spread across or along the feature. Kerning adjustments alter the space between two individual characters. To further spread out multi-word labels, we increase the kerning between the last letter of a word and the space before the next word, rather than add spaces (Figure 8). In this way the label string is fit for use in the gazetteer index.

Label positions are indexed using an alphanumeric reference. The alpha references run from left to right, whilst the numeric references run from bottom to top on the left