**NEAP Freshwater realm. Vector layer.**

Input layers: Geofabric 3.3, Episodic Arid Rivers mask, Valley Bottom Flatness Index (mrVBF)

F1.1 Permanent upland streams, F1.2 Permanent lowland rivers, F1.4 Seasonal upland streams, F1.5 Seasonal lowland rivers

All rivers/creeks from Geofabric 3.3 outside the Episodic Arid Rivers mask. Categorise rivers/creeks as permanent or seasonal based on Geofabric 3.3, and then further categorise them as upland or lowland based on the Stein index.

F1.3 Freeze-thaw rivers and streams

*From DK: The upper Snowy River and its tributaries on the Kosc plateau are freeze-thaw* streams. TBC.

F1.6 Episodic Arid Rivers

All rivers/creeks from Geofabric 3.3 in the YES Water Regions (see attached ‘Rainfall\_sta\_byWaterRegion/xlsx’ file). Rule based on expert advice (Richard Kingsford) is mean annual rainfall < 450mm and mean annual rainfall variability > 0.75; plus the Avon and Geraldton Water Regions, which don’t quite fit these criteria. Main drainage of the Lower Murray to be classified as permanent.

**This layer is also to used as a mask for separating other functional groups (F1.1, F1.2, F1.3, F1.4, F2.3, F2.7, F2.8)**

F1.7 Large lowland rivers

Not to be reported. None present in Australia.

F2.8 Artesian springs and oases

All springs in Geofabric 3.3.

F2.9 Geothermal pools and wetlands

Not to be reported. None present in Australia.

**NEAP Freshwater realm. Raster layer.**

Input layers: Geofabric 3.3, Episodic Arid Rivers mask, NVIS 6.0, ALUM.

F2.1 Large permanent freshwater lakes

From Geofabric 3.3: Lake Albert, Lake Alexandrina, Lake Victoria (43,633,416) and Lake Menindee.

*The Cooyong in South Australia – classify Cooyong as F2.1 then the Cooyong estuarine section will be reclassified as estuarine/ICOLL later by the OzEstuaries100K layer.*

F2.2 Small permanent freshwater lakes

All small (not F2.1) permanent lakes from Geofabric 3.3 that are not saline (i.e. they are outside the Episodic Arid Region mask).

F2.3 Seasonal freshwater lakes

Non-permanent lakes from Geofabric 3.3 that are not saline (i.e. they are outside the Episodic Arid Region mask).

F2.4 Freeze-thaw freshwater lakes

Australian Alps: Blue lake, Lale Albina, Club Lake and Cootapatamba Lake.

F2.5 Ephemeral freshwater lakes

Not to be reported unless names supplied by experts (e.g. Lake Woods NT). Ephemeral lakes will otherwise be classified as saline.

F2.6 Permanent salt and soda lakes

Probably not reported. Salt lakes are represented in NVIS but are likely to be ephemeral.

F2.7 Ephemeral salt lakes

Some salt lakes will be derived from NVIS. In addition, all small (not F2.1) seasonal lakes from Geofabric 3.3 that are saline (i.e. they are inside the Episodic Arid Region mask).

F2.10 Subglacial lakes

Not to be reported. None present in Australia.

F3.1 Large reservoirs

From ALUM v8 or Land cover, if available. See crosswalk.

F3.2 Constructed lacustrine wetlands

Not to be reported. Currently unrepresented in datasets.

F3.3 Rice paddies

From ALUM v8 or Land cover, if available. See crosswalk.

F3.4 Freshwater aquafarms

From ALUM v8 or Land cover, if available. See crosswalk.

F3.5 Canals, ditches and drains

From ALUM v8 or Land cover, if available. See crosswalk.