Let’s unpack this a bit.

The aspatial retention netdown approach focuses on practice, captures all forms of retention and is driven by field data collected over the past decade, while the traditional TSR approach (the one you’re following I think) is a riparian retention model for the landbase that focuses on legislated minimums and is GIS driven utilizing some classification models.

Both processes have advantages, limitations and risks

**Aspatial Retention OAF**

The aspatial retention oaf is the median (or geometric mean) stand level retention for the TSA derived from the FREP stand level biodiversity database adjusted for nonTHLB overlap. The estimate includes all forms of retention (riparian and non-riparian) and is applied as a % reduction to every hectare during the THLB netdown process.

Assumptions:

* Spatial variation in retention levels can be generalized across the landbase without undue risk to yield estimation
* the THLB is fully realized operationally
* the SLB sample adequately reflects the population in a statistically robust manner
* the variation in yield between strata (riparian and non-riparian) is similar and/or moderated though averaging

Advantages:

* Statistically robust empirical reflection of current practice
* District driven data collection, rigorous QA applied, builds on local knowledge and expertise
* Easily replicable, transparent, annually updated, easy to apply in netdown and assess trends in practice

Limitations/Risk:

* If there is a regional selection bias in block layout (avoidance) and the THLB is not fully realized operationally then the oaf could underestimate the contribution of riparian retention and over-estimate net yield.
* Generalizing when there are systematic differences in yield between strata could lead to an over-estimation in total yield. The risk increases with increasing riparian representation across the landscape.

**Riparian Model**

The traditional riparian modelling approach includes developing a stream classification/buffering algorithm applied to a vector stream network derived from a digital terrain model of the unit. Depending upon the model used and netdown approach employed, the derived network is either rasterized to a specified resolution with the network represented as a proportion excluded from of the resulting THLB, or in a vector environment, the resulting polygonised network is removed directly from the THLB.

Assumptions:

* The stream network generated from the DEM is an adequate reflection of the condition on the ground
* The stream classification algorithm reasonably approximates the condition on the ground

Advantages:

* Spatially explicit, reflects the legislated condition on the ground
* Readily mappable for review and third party use, resulting network transparent

Limitation/Risks

* Model depends on the DEM derived network adequately representing condition on ground, specifically first and second order streams. In low relief areas operational testing has found significant proportion of network misclassified as streams (actually ncd or topographic depressions). This coupled with an assumption that any reach < 20% gradient (before a barrier) is fish bearing and therefore requires buffering risks significantly overestimating retention and underestimating net yield.
* Model depends on a buffering regime based on network classification driven by stream width and assumptions related to fish presence/absence (primarily slope driven). Both elements can be highly subjective and when combined with the previous limitation can lead to significant error propagation, overestimating retention levels and underestimating net yield.

Both approaches have risk due to issues of uncertainty. Applying the aspatial approach generally risks overestimating net yield (underestimating retention) while applying the riparian approach generally risks underestimating net yield (overestimating retention).

In my opinion the magnitude to the consequence of misclassifying DEM derived stream network (particularly if you are buffering first order streams) is far greater than applying the aspatial oaf based on sampled practice. I wouldn’t undertake it without substantial QA with a known set of classified streams.