Peer reviewed – replace with numbered system.

There is increasing scientific literature to design and support the implementation of the river restoration process goal of Stage Zero. Cluer and Thorne (2014) first coined the term Stage Zero for the preliminary natural step in the Stream Evolution Model. it has become apparent that previous channel change models started from an apparent “natural” state of rivers in fact the degraded result of consistent anthropogenic influence (Walter and Merritts, 2008; Major, 2008). As well as being a more natural state at some sites, Cluer and Thorne also stipulated that by providing multiple degrees of freedom for vegetation, water, and sediment that stage Zero reaches would also provide the greatest ecosystem benefits. Improvements in stream connectivity, wetland habitat and its simultaneous conception from academic and industry sources have led to different stage 0, Valley Floor Resetting, Flood Plain reconnection and similar schemes being implemented across the Northern Hemisphere in a variety of different streams visible under the case studies resources page.

<IMAGE STG 0>

While Cluer and Thorne named this topic, the increasing number of names for the target of anastomosing streams and the methods by which they can be achieved represents the confluence of many different research tracks on the same ideas. This includes wetland beaver meadows which use beavers as the practitioner to create multithread streams and channels which may have been the most common cause of these anastomosing streams.

As will become apparent whilst viewing the resources provided and considering other Stage Zero streams, it is not applicable everywhere. Many of the original **UPTAKERS**  will argue that there are multiple situations and scales with which stage zero can be used where it might otherwise be dismissed, but they will also be the first to admit that it is not suitable in every environment. In fact as a process based goal it is reliant on the river beading system which is conceptual integral to the study of rivers in that there are transport and depositional reaches. As such stage zero should only be implemented where there is a clear valley confinement above and below the project. This can be seen in the Geomorphic grade line technique created by paul powers which allows for a scientific method of defining the gradient when resetting a whole flood plain.

The benefits of producing a stage zero stream in the correct place are apparent from a variety of different literature sources. Some looking at the benefits of reconnecting a flood plain. Others focus more on the benefits directly for fisheries where the results appear to be speaking for themselves with increases in fish hatcheries due to the slower flow and greater nutrients. Natural flood management techniques is also a large study area which to some extent is included in stage zero and needs to be taken account of, with the alternating side that it needs to be watched for the risk of aligning flood peaks further downstream.

Something about the increasing need to bring scientists, practitioners and the public together and the various topics about this