

#	Question	Answer	Answer Name
1	When is the next conference where we can expect TUFLOW representatives to attend or present?	We will be at the HWRS conference in Adelaide at the end of this year!	Emilie Nielsen
2	What are the main changes needed to use an existing flood model for water quality modelling?	Great question - Mitch will describe these needed changes today. Please let us know if you have further questions after Mitch runs through the main changes, but in short all that is needed is specification of pollutant generation or erosion rates across the domain using materials (in a similar manner to the way in which roughness is specified), and (optionally) the specification of treatment device configurations, if needed. The TUFLOW CATCH Manual also explains this a bit further. https://docs.tuflow.com/catch/manual/2026.0/	Michael Barry
3	Will the upcoming TUFLOW New Release Workshops include an online attendance option for people based outside Australia? Our colleagues are Japan/ Philippines based and would love to attend	Thanks - great to hear. There are no scheduled New Release Workshops outside Australia at present, but we are always happy to meet at other locations. If you share your details with us (support@tuflow.com or training@tuflow.com) we'll be very happy to chat further - thanks.	Michael Barry
4	eWater MUSIC is commonly used by our team with a TUFLOW flood model for water quality assessments. Can this step be avoided by modifying the existing TUFLOW model to simulate pollutant generation, transport and treatment directly?	Yes. Mitch is presenting the generation and transport aspects today. The Unified Stormwater Treatment Model (USTM) used in MUSIC (at this stage for wetlands) has been implemented in TUFLOW CATCH and I will be presenting it at the Hydrology and Water Resources Symposium this year in Adelaide. It will be available in the next release of TUFLOW. Great question.	Michael Barry
5	Why nitrogen? What other pollutants are possible to include?	Any pollutant can be simulated - the user just needs to specify accumulation or erosion rates. TUFLOW CATCH doesn't really mind which pollutants are used, as long as it has the accumulation/erosion/settling/infiltration parameterised, it takes care of the rest. If TUFLOW CATCH links to TUFLOW FV downstream with water quality turned on (an extension of what Mitch is showing today) then the pollutants simulated in the catchment need to match those expected by TUFLOW FV, but without TUFLOW FV any pollutant can be simulated. Great question, thanks.	Michael Barry
6	What additional TUFLOW licence type would be required to add catchment pollutant modelling to an existing TUFLOW flood model?	You would need to purchase a TUFLOW CATCH Module licence. Please refer to the TUFLOW Website for more details: https://tuflow.com/pricing/	Emilie Nielsen
7	What are the opportunities to validate the contaminant outcomes / volumes ?	Hi Anthony, the most reliable validation option is to compare the modelling results with observed contaminant concentrations and measured flow/volume data. You can also compare the results with another established model.	Shuang Gao
8	How effective is catchment pollutant modelling for demonstrating that a development meets council requirements for reducing nitrogen, phosphorus, suspended solids and other pollutants? Is there a case study to refer to?	Properly constructed catchment models are a robust way to understand how land use changes may impact pollutant dynamics. The key though is ensuring that such catchment models capture the dynamics of flow and pollutant export in a manner that reflects how these quantities move through the environment. The way that TUFLOW CATCH does this is by solving the equations of motion and solute transport to predict water depth, velocity and pollutants. It also liberates pollutants dynamically at their release point based on these hydraulics (washoff or shear methods). This provides a characterisation of the environment that reflects (of course, not exactly or perfectly - it is a model after all!) the reality of how processes work. TUFLOW CATCH does not make lumped hydrology or Event Mean Concentration style assumptions. A case study will be presented at the Engineers Australia Hydrology and Water Resources Symposium in Adelaide later this year.	Michael Barry

9	Is it possible to run this model at global scale?	Not sure what global scale means, but grid size can be adapted to suit different scales, ensuring sensitivity checks are made as Mitch described. Direct rainfall is the primary means by which pollutants are generated in TUFLOW CATCH, but inflowing boundaries from catchments upstream can be applied by using SA lines/points/regions with flows and concentrations specified a priori. Great question	Shuang Gao
10	Does TUFLOW provide a QGIS tool that can easily define or automatically create suitable catchment boundaries for catchment pollutant modelling?	TUFLOW uses direct rainfall simulation so there is no need to delineate subcatchments manually or a priori - just give TUFLOW the digital elevation model and rainfall (gridded/single source/etc) and it works out where water and pollutants flow automatically. The reason for this is that TUFLOW solves the shallow water equations that predict water flow direction and velocity and depth directly so water just obeys these equations and does what water does in reality in response to terrain - we therefore don't need to know in advance what subcatchments are where - solving the equations of motion does it all for us inside TUFLOW! One good thing about this in urban areas is that this automatic computation by TUFLOW includes pipe networks that may cross subcatchment boundaries - TUFLOW looks after those water and pollutant flows too. Great question.	Michael Barry
11	So anyway to get free trial of TUFLOW for projects?	If you pay to attend one of our instructor lead training courses, you receive a one month trial licence for all our Products! It has a higher value than the actual training event you'd be attending. https://tufLOW.com/training/training-course-catalogue/ Otherwise, you're only option is our demo mode, though it has simulation size and time limits: https://wiki.tufLOW.com/New_User_Guide_Free_Demo_Version	Emilie Nielsen
12	So this pollutant model only does advection and dispersion or does it also consider sorption and decay??	It does AD, as well as infiltration to the subsurface. Pollutants can also be set to settle, at which point they are added back to the dry store and available for subsequent re-release. This allows pollutants to be dynamically liberated from one part of the catchment and transferred to another, without making a priori assumptions - solving the equations of motion and solute transport do this for us!	Michael Barry
13	I'm joining from Ethiopia. Will recordings of the 2026 New Release Workshops be made available after the events for people who cannot attend in person?	If you are asking about the TUFLOW 2026 New Release Workshops, then no, unfortunately there will not be recordings. However, the team is planning to facilitate the New Release Workshops in a paid online format in December this year, or early next year.	Emilie Nielsen
14	Are there plans to add new tools to the TUFLOW plugin to make catchment pollutant modelling easier to add in addition to the flood model	There are instructions in the TUFLOW CATCH manual as to how to convert a flood model to TUFLOW CATCH, and the steps are simple enough to not really warrant development of a standalone tool at this stage. But - it is a good idea that we will keep in mind, thank you. TUFLOW CATCH Manual: https://docs.tufLOW.com/catch/manual/2026.0/ The TUFLOW CATCH tutorial models also shows an example of this process: https://wiki.tufLOW.com/TUFLOW_CATCH_Tutorial_Introduction	Michael Barry

15	Is there a recommended minimum cell size for effective catchment pollutant modelling, and what factors should be considered when selecting it?	Great question. The key conceptual difference between flood modelling and catchment pollutant modelling related to spatial and temporal scales of interest. Flood models are typically short term (maximum days) while environmental catchment pollutant models are to be run over at least weeks, and up to years. This is due to the models being developed to answer different questions at different scales - this means that cell sizes can also be different (and should be). We have successfully run and calibrated TUFLOW CATCH hydrology models up to grid sizes of 200m - this is unacceptable for flood models of course, but entirely reasonable for long term environmental pollutant export modelling. So - modellers can experiment with cell size to optimise speed and runtime, and this should be done in the context of maintaining the ability to answer the questions being asked of the model	Michael Barry
16	Why is a TUFLOW CATCH licence required for catchment pollutant modelling instead of the Advection Dispersion licence?	Great question. Our Advection Dispersion (AD) licence is no longer sold separately - it is included by default within the functionality and price of all our environmental modules that need AD calculations. This includes TUFLOW CATCH. So users get two modules for the price of one! Here is a news article that explains all the details: https://www.tuflow.com/news/2026-03-tuflow-bundle-discounting-faqs/	Michael Barry
17	What types of nitrogen specifics, do we have to define this in the model?	Any pollutant can be simulated - the user just needs to specify accumulation or erosion rates. TUFLOW CATCH doesn't really mind which pollutants are used, as long as it has the accumulation/erosion/settling/infiltration parameterised, it takes care of the rest!	Shuang Gao
18	Is there any upcoming intro training available for junior staff who have limited experience with catchment pollutant modelling	There is a free eLearning module for TUFLOW CATCH available on the TUFLOW website: https://tuflow.com/training/training-course-catalogue/tt300-e-tuflow-catch-model-build-free-elearning/ In person training for TUFLOW CATCH is not scheduled at the moment, but you can register your interest and we can schedule one if there are enough people. Please see the TUFLOW Website for more information or contact training@tuflow.com . There are also free TUFLOW CATCH tutorials available on the TUFLOW Wiki: https://wiki.tuflow.com/TUFLOW_CATCH_Tutorial_Introduction	Emilie Nielsen
19	What is the key advantage over the SWMM Rain on Grid to do the pollutant transport?	TUFLOW CATCH offers a wide range of features that are described in the online manual. Modellers are free to use this information to make their own inferences with regards to cross platform comparisons. https://docs.tuflow.com/catch/manual/2026.0/	Michael Barry
20	Is there a list of pollutants that can be modelled, and can users add or customise pollutants that are not already included?	Any pollutant can be simulated - the user just needs to specify accumulation or erosion rates. TUFLOW CATCH doesn't really mind which pollutants are used, as long as it has the accumulation/erosion/settling/infiltration parameterised, it takes care of the rest. If TUFLOW CATCH links to TUFLOW FV downstream with water quality turned on (an extension of what Mitch is showing today) then the pollutants simulated in the catchment need to match those expected by TUFLOW FV, but without TUFLOW FV any pollutant can be simulated. Great question, thanks.	Michael Barry
21	Great presentation thanks. I'm pleased you refer to ammonium in your model parameters list rather than ammonia. Is it possible to have an in-model conversion from the ammonium pool to unionised ammonia using temperature and pH empirical relationships? Similarly, could we incorporate a conversion from bed shear stress to non-cohesive sediment transport (saltation and/or resuspension) using empirical particle size mobilisation relationships?	Thanks Dan. TUFLOW CATCH does not yet simulate temperature. More advanced sediment transport can be added relatively easily, potentially drawing on the established science already implemented within TUFLOW FV's Sediment Transport module	Michael Barry

22	Can catchment pollutant modelling only be carried out using direct rainfall on the grid, or can other rainfall and inflow approaches also be used?	Direct rainfall is the primary means by which pollutants are generated in TUFLOW CATCH, but inflowing boundaries from catchments upstream can be applied by using SA lines/points/regions with flows and concentrations specified a priori. Great question	Michael Barry
23	How could climate change scenarios be modelled for the water quality parameters? Generally Australia is expecting to have less frequent rainfall but at higher intensities into the future.	Great question. Climate change can be simulated by altering the rainfall used to force the direct rainfall simulations of TUFLOW CATCH. There are many techniques to do this outside or inside TUFLOW, but once done, TUFLOW CATCH can be re-executed as required. Because TUFLOW CATCH uses hydraulics (shear/depth/velocity etc) to compute pollutant release, changes in pollutant export in response to intensified rain (and changed hydraulics) are expected and computed as a matter of course. So the key is getting the different rainfall patterns as inputs, and then TUFLOW CATCH takes care of the rest!	Shuang Gao
24	Does groundwater modelling need to be switched off when running catchment pollutant modelling, or can both processes be modelled together?	Both surface runoff and subsurface flow can be run at the same time. If a pollutant is soluble, you can turn on infiltration for that pollutant and it will infiltrate into the soil layer and transport with groundwater. If infiltration is not enabled for a pollutant, the pollutant can accumulate at the soil surface (only water gets infiltrated) and it can be washed off again during the next rainfall event.	Michael Barry
25	What is the maximum number of pollutants that can be modelled in a single TUFLOW CATCH simulation	Great question. TUFLOW CATCH in pollutant export configuration (as Mitch is showing) can simulate up to 256 pollutants. If connected to a downstream TUFLOW FV model then the pollutants simulated in TUFLOW CATCH need to match those expected by TUFLOW FV	Michael Barry
26	How have buildings been modelled in this particular example? Is it just a different material value and it's otherwise assumed that buildings do not obstruct flow?	They are different materials, with a depth dependent Mannings roughness	Mitch Smith
27	Are there any plans for the TUFLOW gents/ladies to present at conferences in Africa or the Middle East? Thanks	Not at present, but we are always keen to meet modellers as we travel, so will keep this in mind	Michael Barry
28	For water-quality modelling, particularly rainfall-driven pollutant concentrations, how do you recommend conducting sensitivity analysis? would you normally use different scenarios?	Yes - sensitivity analysis can be useful for establishing robust pollutant export parameterisation. These can be done with TUFLOW CATCH, but not yet with broader scenario/event functionality	Michael Barry
29	Is there a catchment pollutant example model available to download so new users can become familiar with the modelling workflow	There are TUFLOW CATCH tutorial models that are free to download and run here: https://wiki.tuflow.com/TUFLOW_CATCH_Tutorial_Introduction	Shuang Gao
30	Sounds like users would have to be careful around using direct rainfall approaches with applying to pits first - as this essentially skips all of surface area upstream of the pits and potentially undercount the pollutant runoff	Great comment. That's correct, "SA PIT" option would apply rainfall at 2D cells connected with pits first	Shuang Gao
31	Should building roofs be excluded from catchment pollutant modelling, or should they be included as a separate land use type with their own pollutant loads?	This is up to the user and will likely vary in need from project to project. TUFLOW CATCH offers the functionality to do either	Michael Barry
32	Can pollutants be modelled using US customary units, or does CATCH require metric units?	Only metric at this stage	Michael Barry
33	Could irrigation flow be modelled with and without rainfall?	Yes. TUFLOW CATCH offers the option to specify non-hydrologic pollutant flows and loads through SA points, polylines and regions. These can used to describe irrigation, sewage plant discharges or similar. The TUFLOW CATCH manual describes these features here: https://docs.tuflow.com/catch/manual/2026.0/03-Process-Descriptions.html#sec-ProcessDescriptionsSAs-2	Michael Barry

34	Can catchment pollutant modelling be used to assess increased sediment, ash and nutrient runoff after a bushfire, and how should the affected landuse properties be adjusted? Would love to hear your thoughts	Indeed - this is an excellent use case. It would require only that the spatial distribution of pollutant export properties changes after a fire (increased organic carbon export, most likely). TUFLOW CATCH can be set up with a restart file that used pre-fire generation rates, but then set to run for post-fire rates that vary spatially. This is just a matter of changing a few parameters in the pollutant export blocks of the TUFLOW CATCH control file and running the model. It would be a SUPER interesting application of TUFLOW CATCH - I'd love to chat more if you were open to that (contact support@tuflow.com).	Michael Barry
35	Are there any limitations on the data that can be entered into it? For example, are there any limits on the area that can be entered?	The area of a model and cell size are related to run time and optimising these are always an important project set up step. There are no extents limitations as such in TUFLOW CATCH, other than balancing that with cell size and run time.	Michael Barry