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CONTRIBUTION OF TERRESTRIAL VEGETATION TO THE MARINE FOOD CHAIN AND MARINE SEDIMENTATION IN FRONT OF TROPICAL DELTAS

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In the Orinoco Delta, Venezuela, large amounts of plant parts are swept out to sea from the lower delta plain during each high tide. The tropical swamp forest on these tidal flats lives thus in an open system. Input occurs as nutrients in form of sediment brought by the river. Output takes the form of decaying organic matter which is removed to sea before it can be recycled. Experiments in the lower delta plain demonstrated that up to 80% of the leaves, seeds, branches, and twigs that fall to the ground are removed from the system within a few tidal cycles. The amount of material removed depends on microtopography of the forest floor and closeness to a tidal or distributary channel. The total amount of organic debris that leave the mouth of the delta is significant. The various stages of decay make large parts of it readily available to marine organisms. The undecayed remnants become part of the sediment and kerogen. The Orinoco Delta has many characteristics which make it a model for fossil tropical deltas. Thus, the processes described can be taken into account in older deposits.