

Interactive comment on “Ecosystem model-based approach for modelling the dynamics of ¹³⁷Cs transfer to marine plankton populations: application to the western North Pacific Ocean after the Fukushima nuclear power plant accident” by M. Belharet et al.

Anonymous Referee #1

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I fail to see the point of this paper. The authors' goal of the paper was stated as: “We presented a modelling approach based on an ecosystem model to estimate the ¹³⁷Cs activity in marine plankton populations following the Fukushima nuclear power plant (FNPP) accident. . .” I am not going to quibble too much about the strengths of the model and its details, which seem to be mostly sensible, but why do this in the first place? Why not simply measure Cs activities in the plankton, or rely on other people's measurements?

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A few minor points:

Betinetti & Manca - there are much better references for this statement

“Plankton populations were largely affected by this contamination. . .” Really? How? I doubt it.

Statement that reads “Consequently, the effective consideration of all these factors implies that the modelling approach of radionuclide transfer to marine biota should be driven by an ecosystem model describing different ecological processes and transfers between organisms in the food web” is not at all convincing. Again, why develop a model to estimate Cs in plankton when there are direct measurements of this?

For the statement “The simple linear method based on the bioconcentration factor, defined as the ratio of the amount of radionuclide in the organism divided by the concentration in the water, is the most commonly used to assess the radionuclide concentration in marine biota (Buesseler, 2014)” Buesseler 2014 is the wrong reference for this statement.

Statement that photosynthesis plays a prominent role in regulation of radionuclide concentrations in primary producer populations - this is normally not true.

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