

Outputs of Interest

Type	Variable	What It Tells Us
Temporal	Energy	Measures total energy use over time, reflecting migration effort and recovery needs.
	Swimming Difficulty	Tracks difficulty from swimming against or with the current, influencing energy expenditure.
Spatial	Patch-Difficulty	Maps areas with highest swimming difficulty and periods where fish struggle to migrate.
	Time	Shows where fish spend the most time, which may indicate resting zones or movement delays.
	Fish	Visualizes fish distribution by location, helping assess habitat use and crowding.

Model outputs identify where and when swimming becomes most difficult, highlighting zones of high energy demand during fish migration.