

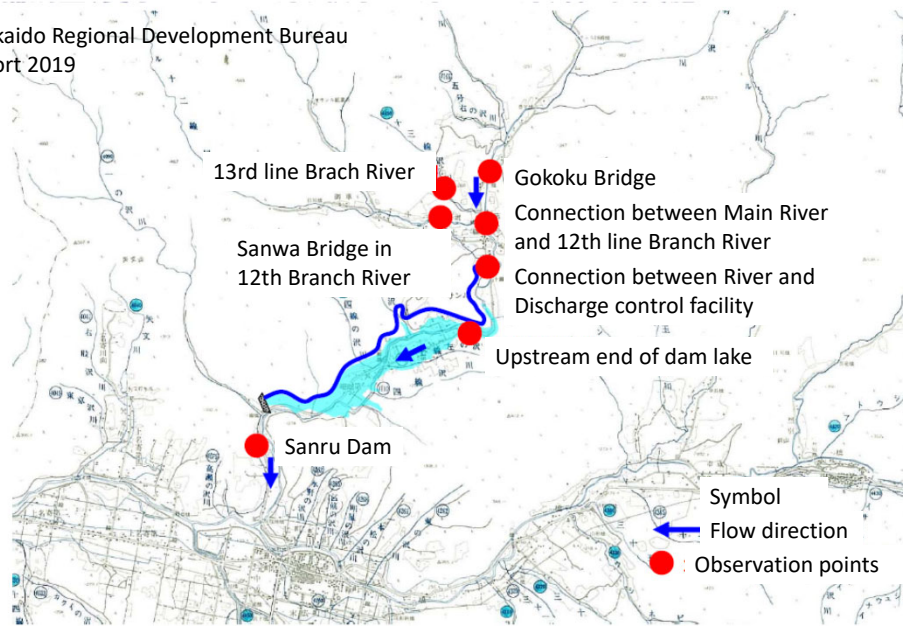
Nihon University, College of Science and Technology,
Dept. of Civil Engineering, Lab. of Environmental Hydraulics



Sanru River (Branch of
Nayoro River in
Teshio River with 256 km)
Catchment Area 5590 km²)

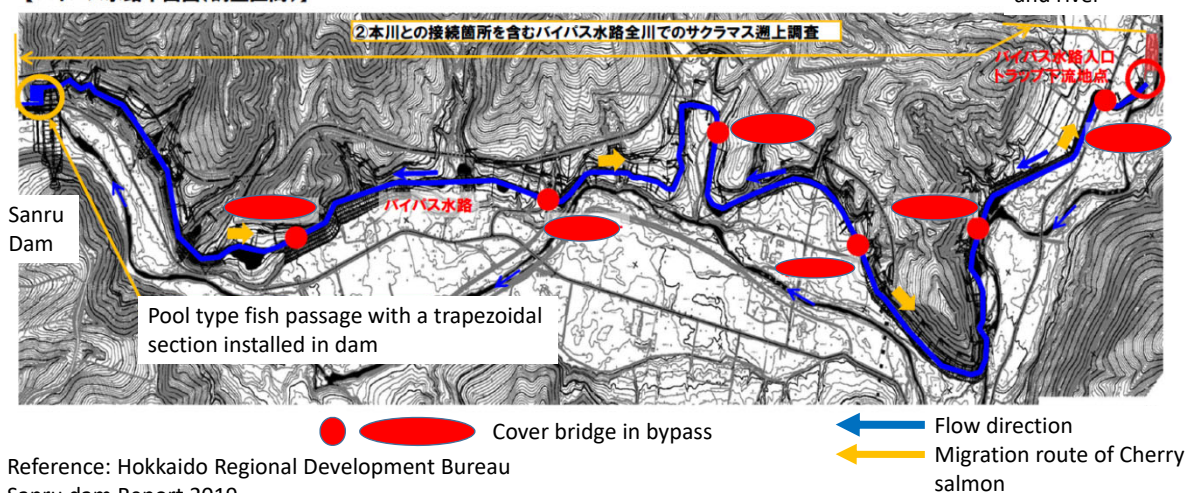
Dam lake due to the installation of Sanru Dam

Reference: Hokkaido Regional Development Bureau
Sanru dam Report 2019



Bypass at upstream of Sanru dam 7 km Migration route along dam lake

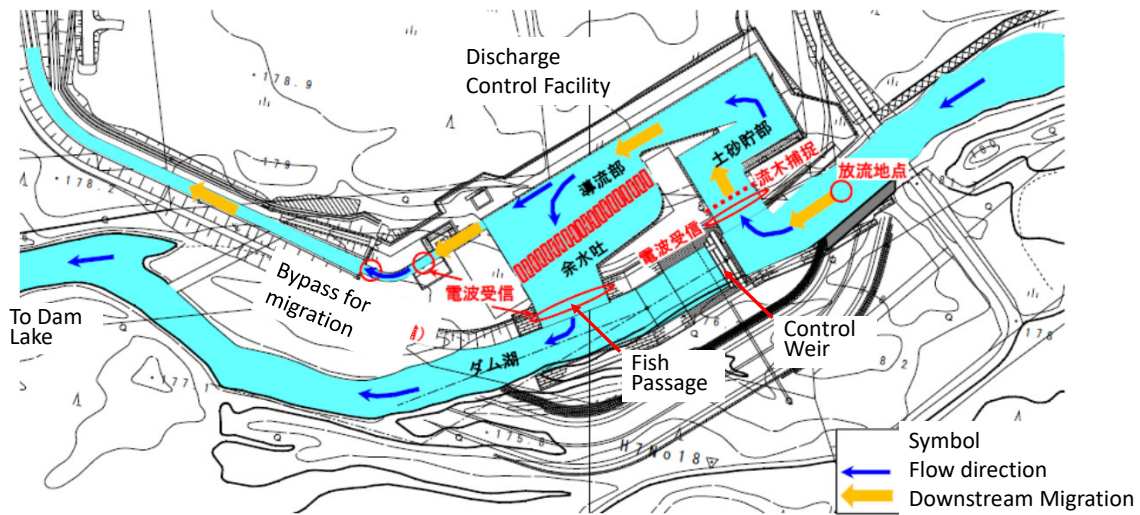
【バイパス水路平面図(調査区間)】



Reference: Hokkaido Regional Development Bureau
Sanru dam Report 2019

Discharge Control Facility

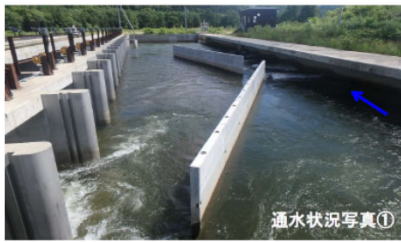
Reference: Hokkaido Regional Development Bureau
Sanru dam Report 2019



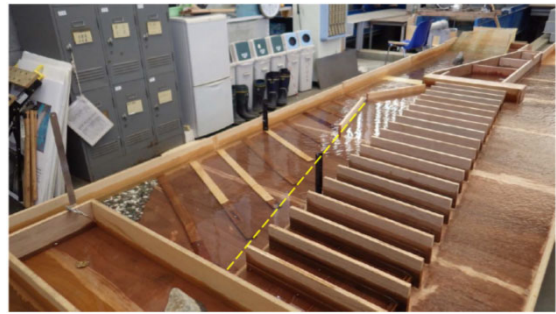
Fish Passage for Migration
Route from Dam Lake to
Upstream of River

Control Weir
Up to 28 m³/s

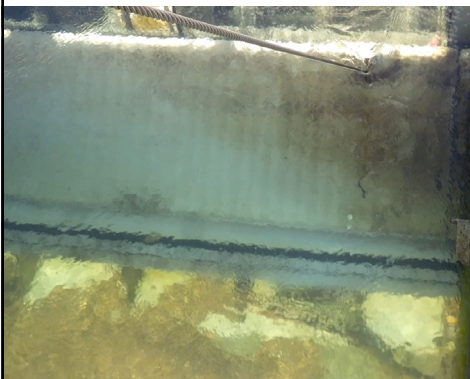




Discharge Control Facility

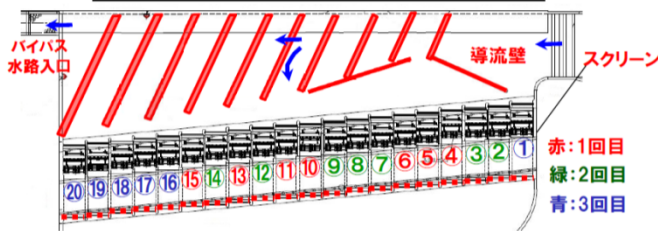


Drum screen for
protection of
downstream
migration to dam
lake

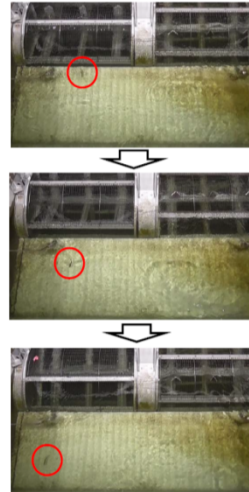


Survey results for defense effect of drum screens on downstream migration of smolt cherry salmon

スクリーン	No.	スモルト稚魚数 (尾)					計	合計
		12:00	18:00	0:00	6:00	12:00		
1画面	4	0	0	0	0	0	0	2
	5	0	0	0	0	0	0	
	6	0	0	0	0	0	0	
	(5/22~23)	10	0	0	0	0	0	
	11	0	1	0	0	0	1	
	13	0	0	0	0	0	0	
2画面	15	0	1	0	0	0	1	0
	2	0	0	0	0	0	0	
	3	0	0	0	0	0	0	
	(5/28~29)	7	0	0	0	0	0	
	8	0	0	0	0	0	0	
	9	0	0	0	0	0	0	
3画面	12	0	0	0	0	0	0	0
	14	0	0	0	0	0	0	
	1	0	0	0	0	0	0	
	(6/5~6)	16	0	0	0	0	0	
	17	0	0	0	0	0	0	
	18	0	0	0	0	0	0	
	19	0	0	0	0	0	0	
	20	0	0	0	0	0	0	



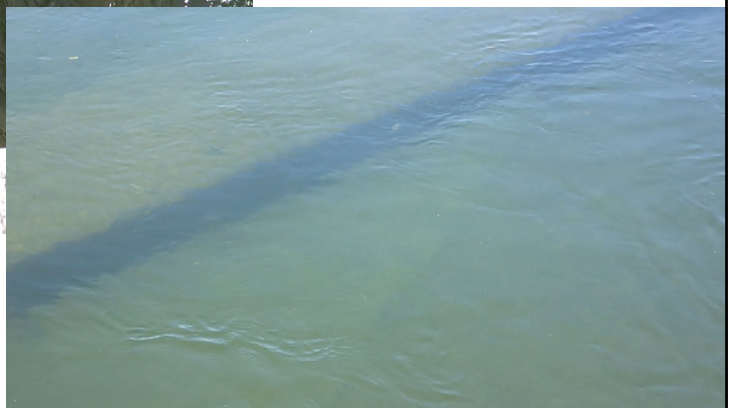
スクリーンからの回避状況

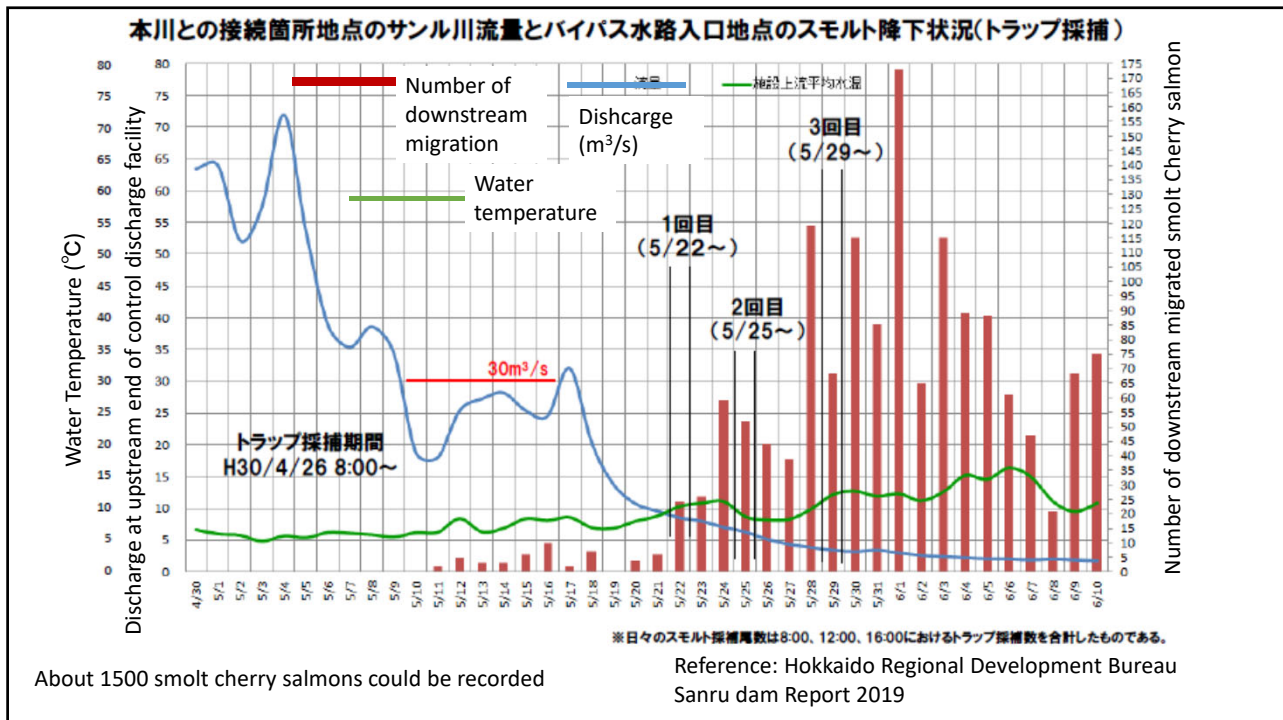


Reference: Hokkaido Regional Development Bureau
Sanru dam Report 2019



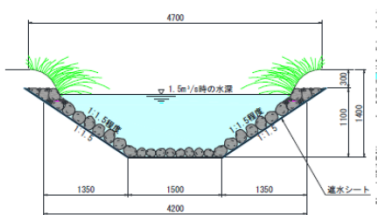
Downstream migration of smolt Cherry Salmons





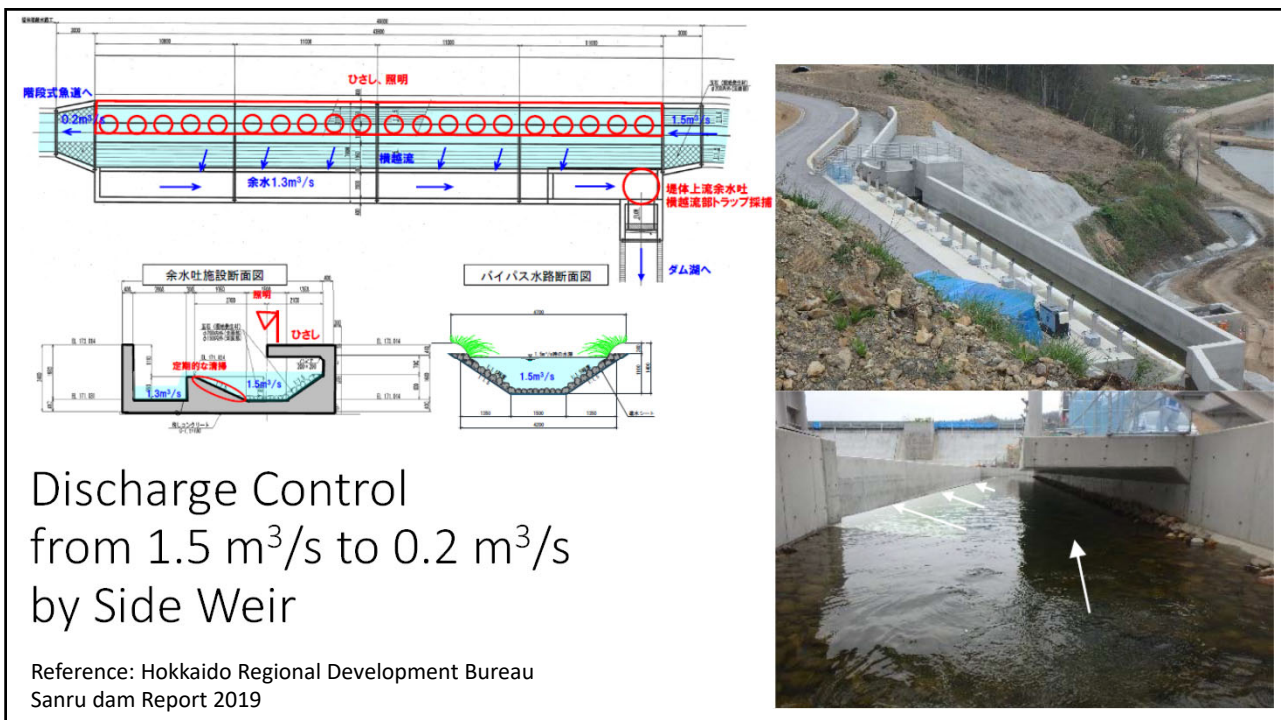
Cross section of Bypass

7 km



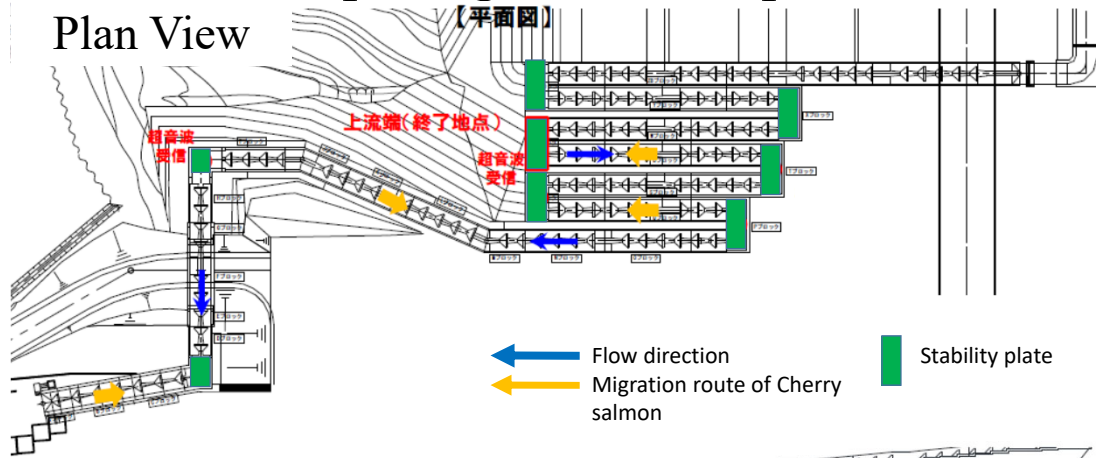
Cover Wooden Bridge





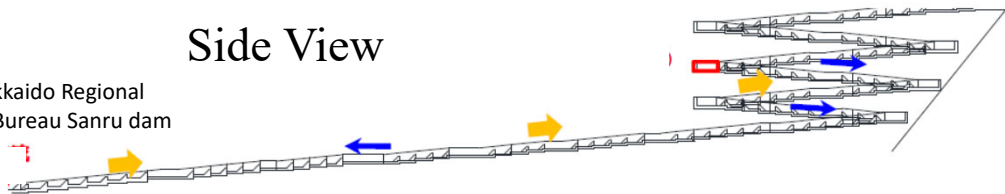
Pool type fish passage with a trapezoidal section

Plan View



Side View

Reference: Hokkaido Regional
Development Bureau Sanru dam
Report 2019



Pool Type Fish Passage with A Trapezoidal Section





Sanru Dam 46 m height



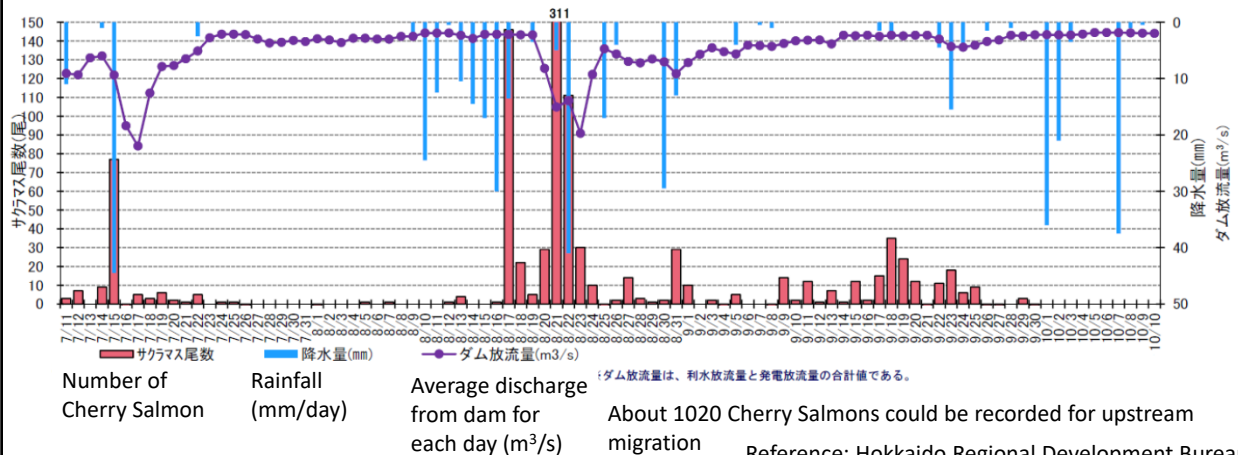
Downstream end of
Pool type Fish passage



Observation of Migrated Cherry Salmons

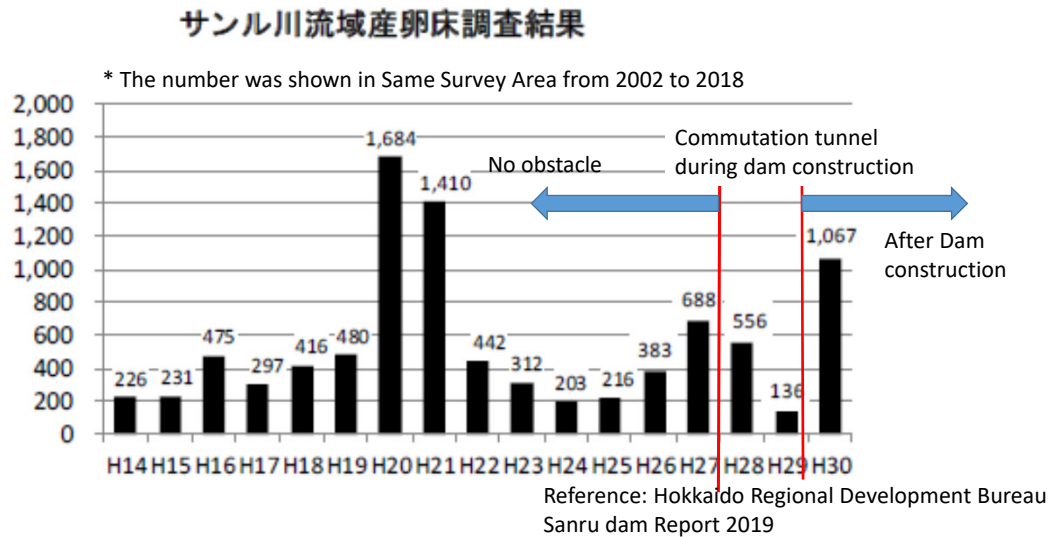


Relation of Number of upstream migration of Cherry Salmon, Discharge for out let from dam, and Rainfall with day by day in 2018



Number of spawning bed at upstream of Sanru dam

Number of Spawning bed by Cherry Salmon



Conclusion (Project of fish migration route in Sanru dam)

- In order to preserve the migration and the spawning of Cherry Salmon around Sanru dam, several facilities (Discharge control facility, Control weir, Drum screen, Fish passage connected to dam lake, Fish bypass (7 km length for 4 m height difference), Side weir for discharge control, Fish passage installed in dam) and the improvement of river cross section must be required, and the flow condition at each location must be designed with the change of discharge from 3 to 28 m³/s. Also, the flow conditions should be complex flow for the activities of fish.
- The upstream and downstream migrations could be kept around Sanru dam in accordance with field investigations.

Thank you very much for your attention.

