

State of conservation report of Shiretoko

In response to the World Heritage Committee Decision 39 COM7B.13

GOVERNMENT OF JAPAN

November 2016



**FORMAT FOR THE SUBMISSION OF
STATE OF CONSERVATION REPORTS
BY THE STATES PARTIES**

(in compliance with Paragraph 169 of the *Operational Guidelines*)

• Shiretoko (Japan) (ID:1193)

1. Executive Summary of the Report

We report the state of conservation in response to the recommendations given in the Decision of the World Heritage Committee (39 COM 7B.13), based on the scientific examination at the “Shiretoko World Natural Heritage Council (Marine Area Working Group and River Construction Advisory Panel)”, in coordination with Ministry of the Environment, Forestry Agency and Agency for Cultural Affairs, Hokkaido Prefecture and other stakeholders.

- With regard to Decision Item 3, this report presents the methods to determine annual catch limits(ACLs) for Steller sea lions (SSLs), present status of SSL catch and the direction for future revision, of the management regime.
- With respect to SSLs that migrate to Hokkaido, The Hokkaido Fishing Zone Coordination Commission, under the supervision of the Fishery Agency of Japan and Hokkaido Government(HG), sets ACLs. Since the 2014/2015 migration season,ACLs have been presented separately for the Sea of Japan migrating group(SJMG) and the Nemuro Strait(Shiretoko) migrating group(NSMG).
- For SJMG, ACL is determined scientifically to meet the following purposes; i) to minimize the damage to the fisheries by SSLs ii). to avoid an acute population decline to be listed as “threatened species”, and iii) SSLs should be managed based on the precautionary and adaptive approach. For NSMG, ACL is set to be the same as the most recent catch quota for the Nemuro district set by the HG because of the low availability of data on the population dynamics on this group compared with SJMG. Appropriate catch management should be implemented within this catch quota.The ACL for NSMG will be revised based on the population trend and studies on the population structure of this group.
- Considering that the Rurua area is located at the core of the Shiretoko World Natural Heritage site, we intend to restore the salmonid spawning habitat in the Rurua River to as natural a state as possible.
- We are reviewing further modifications to the dams taking into consideration sediment and woody debris flows runoff into the coastal fishing grounds and impacts on the road and the bridge over the Rurua River.
- After investigating the alternatives, review on removal of the bridge over the Rurua River will be discussed.
- The review on the modification of the dams and removal of the bridge over the Rurua River will be reported in 2019.
- Invitation to an IUCN Advisory Mission to the area will be discussed in 2018.

Public access to the conservation report is accepted.

2. Response to the Decision of the World Heritage Committee

In the following, Japan sincerely reports on its actions in response to Decision 39 COM 7B.13 of the World Heritage Committee.

【Decision Item 3】

Notes the State Party's efforts to maintain a healthy population of Steller's Sea Lion in the Sea of Japan and in the property, and urges the State Party to ensure that catch quotas are regularly reviewed and adjusted to maintain a stable to growing population of sea lions in the property, and in the wider seascape

a) Report on population trends within the property

- The population of the Eastern subspecies, found to the east of Cape Suckling in Alaska, has been on the rise since the mid 1970s at the rate of approximately 3% per year. The population of the Central in the vicinity of the Aleutian Islands, belonging to the Western subspecies found to the west of the same cape, dropped rapidly in the 1970s, but has been increasing slightly (1% yr⁻¹) since 2000. The Asian group, another among the Western subspecies that occurs to the west of the Commander Islands, experienced a rapid population decline up until the 1980s, but it has then either remained stable or decreased in the west of the Bering Sea and to the east of the Kamchatka Peninsula, while showing an upward trend in recent years in the Kuril Islands and the Sea of Okhotsk at the rate of 4% yr⁻¹. In particular, a sharp increase in pup number has been marked on Tuleny Island in the vicinity of Sakhalin.
- In the red list revision in 2012, the International Union for Conservation of Nature (IUCN) lowered the category of the species from Vulnerable to Near Threatened.
- In Japan, SSLs were assessed as Vulnerable (VU) on the red lists issued by the Ministry of the Environment but the category was lowered to Near Threatened (NT) in the red lists revised in 2012 (the 4th Version of the Japanese Red Lists, released on August 28, 2012).
- The reasons include: it is estimated that there are roughly 5,800 SSLs migrating to Japan (FY2009, Fisheries Agency) and; the population of their origin, the Asian group, has been on the increase since the 1990s (Fisheries Agency and Fisheries Research Agency, "FY2013 Current Status of International Fishery Stocks").

b) Annual catch quota for sea lions

- With respect to Steller sea lions (SSLs) that migrate to Hokkaido, the Fisheries Agency

of Japan (FAJ) provides the Hokkaido Government every year with an annual allowable catch number, which serves as the scientific basis for management purposes. The Hokkaido Fishing Zone Coordination Commission, under the supervision of the Hokkaido Government, then sets ACLs.

- The annual allowable catch numbers were calculated on the basis of the Potential Biological Removal (PBR) level for the migration seasons from 2007/08 to 2013/14. For the migration seasons from 2010 to 2014, a block quota (i.e. an aggregate quota) was originally set for the five-year period based on the PBR level, and catch has been managed in accordance with that quota. The annual allowable catch numbers have therefore been calculated by reference to the degree as to how much the PBR and block quotas have been used up.
- However, for the 2014/15 migration season, which was the last year of the block quota period, the annual allowable catch numbers were presented separately for the Sea of Japan migrating group and the Nemuro (Shiretoko) migrating group, which was reported the last state of conservation. For the Sea of Japan migrating group, the population has recovered rapidly in recent years and increased enough to be downgraded from the threatened species. On the other hand, such population recovery has started causing serious damage to the fisheries. Against this background, the annual allowable catch numbers were recalculated scientifically in accordance with a basic management approach that had been newly presented by FAJ ((i) the objective should be to minimize damage to the fisheries caused by SSLs to the extent of posing no risk of SSL extinction; and (ii) in light of the past experience of letting the population decrease to be listed as threatened species, SSLs should be managed based on the precautionary and adaptive approach). For the Nemuro (Shiretoko) migrating group, the annual allowable catch number was set to be the same as the most recent catch quota for the Nemuro district (including Siretoko) set by the Hokkaido Government because fewer data on the population dynamics are available on this group than the Sea of Japan migrating group.
- Because 415 SSLs from the Sea of Japan migrating group were caught in the 2014/15 migration season (Table 4 below), 15% (75 animals) of the single year's quota (501 animals) was carried over and the ACL for the Sea of Japan migrating group was set to 576 for the 2015/16 migration season. Because 15 SSLs from the Nemuro (Shiretoko) migrating group were caught the previous year, the ACL was set to 15 for the 2015/16 migration season; this is the same as that for the 2014/15 migration season.

Table 1 Annual allowable catch numbers

(Number of individuals)

	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
Sea of Japan migrating group	144	156	197	257	257	501	576
Nemuro (Shiretoko) Migrating group						15	15

(Fisheries Agency)

c) Current numbers of Steller sea lions caught, and future revision

- The Hokkaido Government manages catches by allocating the catch quota for each district within the ACLs of SSLs set by the Hokkaido Fishing Zone Coordination Commission (Table 2), and on the basis of the catch records from the previous year and the state of damage to the fisheries, as well as information on SSLs spotting from fishermen. For the Nemuro district (including Siretoko), the catch quotas have been set at a level similar to, or not substantially exceeding, the catch records for the previous year (Table 3), in spite of the fact that fisheries damage has been growing year after year.
- Note that up until 2013/14, figures set for the respective districts were changed (upwards or downwards) midterm on an as-needed basis, considering the catch numbers and fisheries damage of given season, as well as information on SSLs spotting from fishermen, that were relevant to the respective districts. The numbers were managed thereby to the extent that they should not exceed the prefecture-wide quota.
- However, as the ACLs have been presented separately for the Sea of Japan migrating group and for the Nemuro (Shiretoko) migrating group - an approach that has started from 2014/15 as described earlier – proper catch management is now slated to continue so that catches should not exceed the respective catch limit (501 for the Sea of Japan migrating group and 15 for the Nemuro (Shiretoko) migrating group). In the 2014/15 migration season, 415 SSLs from the Sea of Japan migrating group were caught (Table 4 below). From this, 15% (75 sea lions) of the single year quota (501 sea lions) was carried over and the catch limit for the Sea of Japan migrating group for 2015/16 was set at 576. With 15 annual allowable catch number for sea lions in the Nemuro migrating group, proper catch management will continue to be implemented within the total catch limit of 591 sea lions for 2015/16 (576 in the Sea of Japan migrating group and 15 in the Nemuro migrating group). The ACL for the Nemuro (Shiretoko) migrating group will be revised on the basis of both the estimated number of migrating SSLs and the results of a study of the genetic characteristics of this group.

Table 2 Annual catch limits of SSL in Hokkaido offshore waters (Number of individuals)

	2009/10 (2009.10.1 -2010.6.30)	2010/11 (2010.10.1 -2011.6.30)	2011/12 (2011.10.1 -2012.6.30)	2012/13 (2012.10.1 -2013.6.30)	2013/14 (2013.10.1 -2014.6.30)	2014/15 (2014.9.1 -2015.6.30)	2015/16 (2015.9.1 -2016.6.30)
Hokkaido	144	156	197	253	253	516	591

(Hokkaido Fishing Zone Coordination Commission)

Table 3 Catch quota or Annual catch limit for the Nemuro district within the annual catch limits shown in Table 2 (Number of individuals)

	2009/10 (2009.10.1 -2010.6.30)	2010/11 (2010.10.1 -2011.6.30)	2011/12 (2011.10.1 -2012.6.30)	2012/13 (2012.10.1 -2013.6.30)	2013/14 (2013.10.1 -2014.6.30)	2014/15 (2014.9.1 -2015.6.30)	2015/16 (2015.9.1 -2016.6.30)
Nemuro district *	12(*1)	10	12	12→ 15(*2)	12→15	15	15

(Hokkaido Government)

* Catch figures set for the Nemuro district containing the Shiretoko World Natural Heritage Site

(*1) The 2009/10 figures are the numbers set for "Other districts" excluding Soya, Rumoi, Ishikari and Shiribeshi

(*2) (→) indicates a change in the set figure made midterm in consideration of the state of fisheries damage, etc.

Table 4 State of catches (Number of individuals)

	2009/10 (2009.10 -2010.6)	2010/11 (2010.10 -2011.6)	2011/12 (2011.10 -2012.6)	2012/13 (2012.10 -2013.6)	2013/14 (2013.10 -2014.6)	2014/15 (2014.9.1-20 15.6.30)
Hokkaido	122	115	195	249	253	415
Nemuro district *	8	6	10	14	13	15

(Hokkaido Government)

* This shows the catch records for the Nemuro district and is not limited to the area within the Shiretoko World Natural Heritage Site.

d) Observation survey of sea lion migration

- In the winter months of November to February, migration of SSLs to the east coast of the Shiretoko Peninsula is observed visually from land at six fixed observation points that were set up along the coast in the town of Rausu and in the northern part of the town of Shibetsu. As shown by the largest count*³, more than 100 migrating SSLs have been observed in most years. In recent years, however, the number of days on which it is difficult to count the SSLs has increased, because groups of SSLs have moved from their usual resting areas to different areas to avoid eco-tourism boats, sport divers,

fishing boats, and non-lethal efforts to drive them away. These groups have thus been broken up into smaller groups of individuals. It is considered necessary to introduce a new method for observing SSLs migration and estimating the numbers of migrating animals.

(*3) To search for SSLs, we observe the surface of the sea with 8× to 10× binoculars from the six fixed observation points on land along the eastern coast of the Shiretoko Peninsula. When we spot swimming SSLs, we count the number by using both 20× to 60× binoculars and the 8× to 10× binoculars. The largest number of SSLs observed over a continuous period of 20 to 30 minutes from each fixed observation point is taken as the count for the day for that point. The total number (daily count) of individuals counted on the same day at the six separate observation points combined is then calculated. Observations are made over several days, including in the peak season from mid-December to mid-January. The maximum daily count in each season (see below) is defined as the largest count. On the eastern coast of the Shiretoko Peninsula there is no rock on which SSLs can land regularly. During the day from November through February they often rest in groups floating in the sea 150 to 1000 m off the above-mentioned observation points. Therefore, the conventional method of counting individuals on the rocks is not appropriate for observing SSLs in Shiretoko.

Table 5 State of SSL wintering migration on the east coast of Shiretoko Peninsula after the World Heritage List inscription (Largest count by survey year)

(Number of individuals)

2006/07 winter season (2006.10.21 -2007.4.26)	2007/08 winter season (2007.9.30 -2008.3.8)	2008/09 winter season (2008.11.3 -2009.3.10)	2009/10 winter season (2009.11.16 -2010.2.15)	2010/11 winter season (2010.11.15 -2011.2.14)	2011/12 winter season (2011.10.22 -2012.2.4)	2012/13 winter season (2012.11.21 -2013.2.12)
95	98	60	126	179	128	131

2012/13 winter season (2012.11.21 -2013.2.12)	2014/15 winter season (2014.10.25 -2015.2.21)	2015/16 winter season (2015.11.7 -2016.2.19)
110	103	88

(Ishinazaka *et al.* (2009), Bulletin of the Shiretoko Museum 30:27-53.; Shiretoko Nature Foundation independent research project data (Proceedings of the 17th Conference of the Wildlife Conservation Society of Japan, pp. 85-86, etc.), Ishinazaka (2015) *Eumetopias jubatus* (Schreber, 1776) In: The Wild Mammals of Japan. second edition. Shoukadoh, Kyoto, pp. 292-294)

【Decision Item 6】

Also urges the State Party to continue further modifications of these dams, including consideration of the option to fully remove them, in close consultation with the local authority and communities, in order to fully mitigate the impacts of the three dams on the Rusha river, to also consider the option of removing the concrete below surface level, and to fully decommission the road and bridge that lead to the former hatchery, in order to restore normal flow of surface and ground water, and to promote river braiding and meandering to improve salmonid spawning habitat

e) Considering that the Rusha area is located at the core of the Shiretoko World Natural Heritage site, we intend to restore the salmonid spawning habitat in the Rusha River to as natural a state as possible through modifications to the dams in line with the Decision.

- We are reviewing further modifications to the dams in consultation with experts, taking into consideration sediment and woody debris flows runoff into the coastal fishing grounds and impacts on the road and the bridge over the Rusha River. We are also reviewing the removal of the bridge over the Rusha River, taking into consideration daily passage for the local fishermen and securement of evacuation in the event of natural disaster.

f) Further modification of the three dams

- In 2015, we conducted a hydraulic modeling experiment to collect basic data on changes in the flow morphology channel and the amount of sediment outflow that would result from removal of part of the body of each dam. The results showed that it was very likely that removal of a 40-m-wide section of each dam body would restore the normal flow of surface and subsurface waters and improve the salmonid spawning habitat.
- In 2016, we simulated potential changes in the landform after partial dam body removal (i.e. removal of a 40-m-wide section) and complete removal using numerical model, the amount of sediment flowing out, and the particle size distribution of the riverbed sediment in a 650-m-long area between the mouth of the Rusha River and upstream.
- In 2017, we intend to use the results of the hydraulic model experiment and the numerical simulation to examine locally required disaster-prevention functions and propose a draft method for modifying the dams.
- In 2018, we will discuss the proposed improvement plan of modification with local government and communities. We will then officially confirm the improvement plan after

gaining agreement from these bodies, and we will report the improvement plan to the World Heritage Commission in 2019.

g) Potential elimination of the bridge over the Rusha River

- We plan to consider placing stones on the riverbed to allow vehicles to cross the river without affecting salmonid migration.
- We will determine where vehicles could cross the river and will experimentally put stones in place in 2018. In 2019 (a field demonstration test to see if this works as an alternative to the function of bridge), we will evaluate the test results, determine what to do with the bridge, and report the result to the World Heritage Commission.

【Decision Item 7】

Recommends the State Party and the IUCN SSC Salmonid Specialist Group to seek a consensus based on best available science regarding the most appropriate and practicable solution and to consider the possibility of inviting an IUCN Advisory Mission to the property to provide advice on these matters

h) Field survey by experts and others

- We hold River Construction Advisory Panel, which consist of experts in river ecology, fish, and river engineering as well as relevant government bodies, on a regular basis. We have conducted a field survey and discussed modifications to the dams, options for dealing with the bridge, and improvements to the salmonid spawning habitat.

i) Appropriate and feasible solutions

- Currently, on the basis of experiment and simulation, we are investigating a specific method for modifying the three dams in the Rusha River to restore the normal flow of surface and subsurface waters and improve the salmonid spawning habitat. We also intend to perform a field demonstration test on how to deal with the bridges. We consider that it is possible to find an appropriate and feasible solution based on the results of these scientific assessments of different approaches.

j) Invitation to an IUCN Advisory Mission

- After the method of dam modification has been presented by the experts considering the results of h) and i), and after progress has been made in discussions with local government and communities, we will discuss whether to invite an IUCN Advisory Mission to visit the area in 2018.

3. Other current conservation issues identified by the State(s) Party(ies) which may have an impact on the property's Outstanding Universal Value

There are no other current conservation issues identified.

4. In conformity with Paragraph 172 of the Operational Guidelines, describe any potential major restorations, alterations and/or new construction(s) intended within the property, the buffer zone(s) and/or corridors or other areas, where such developments may affect the Outstanding Universal Value of the property, including authenticity and integrity.

There are no potential major restorations or other projects to be reported.

5. Public access to the state of conservation report

Accepted.

6. Signature of the Authority

亀澤 玲 治

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Director-General
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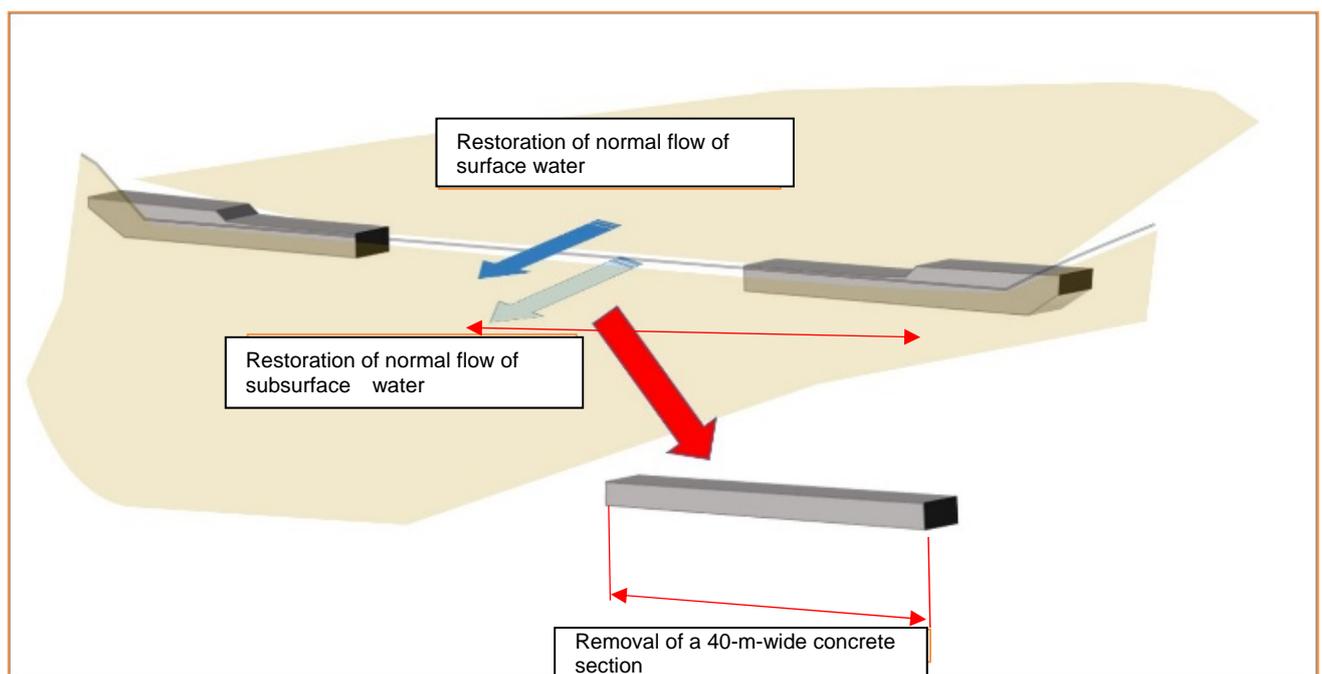
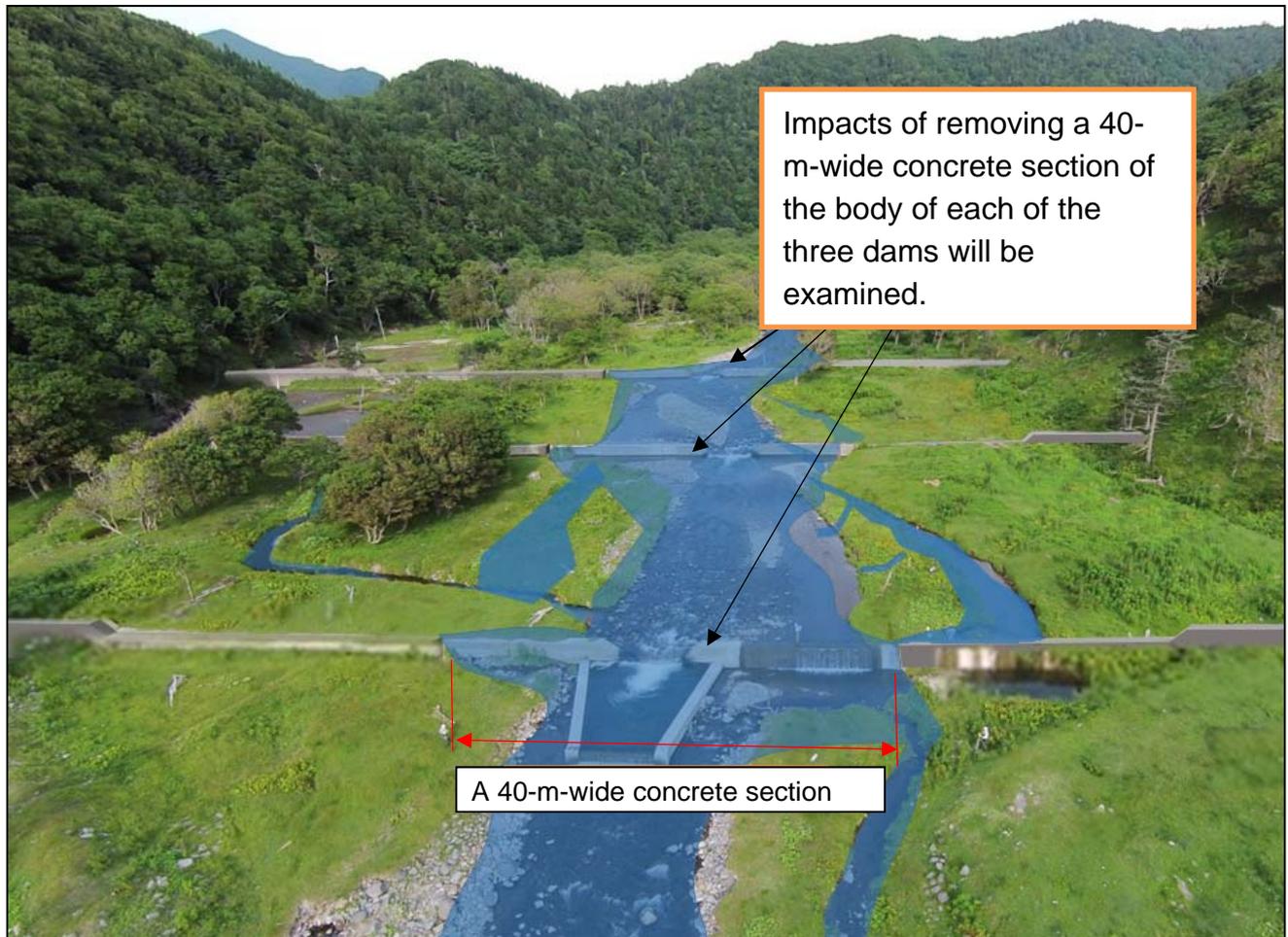
宮田 亮 平

MIYATA Ryohei
Commissioner
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Appendix 1

A Study of Modifications to low-head erosion control Dams on the Rusha River

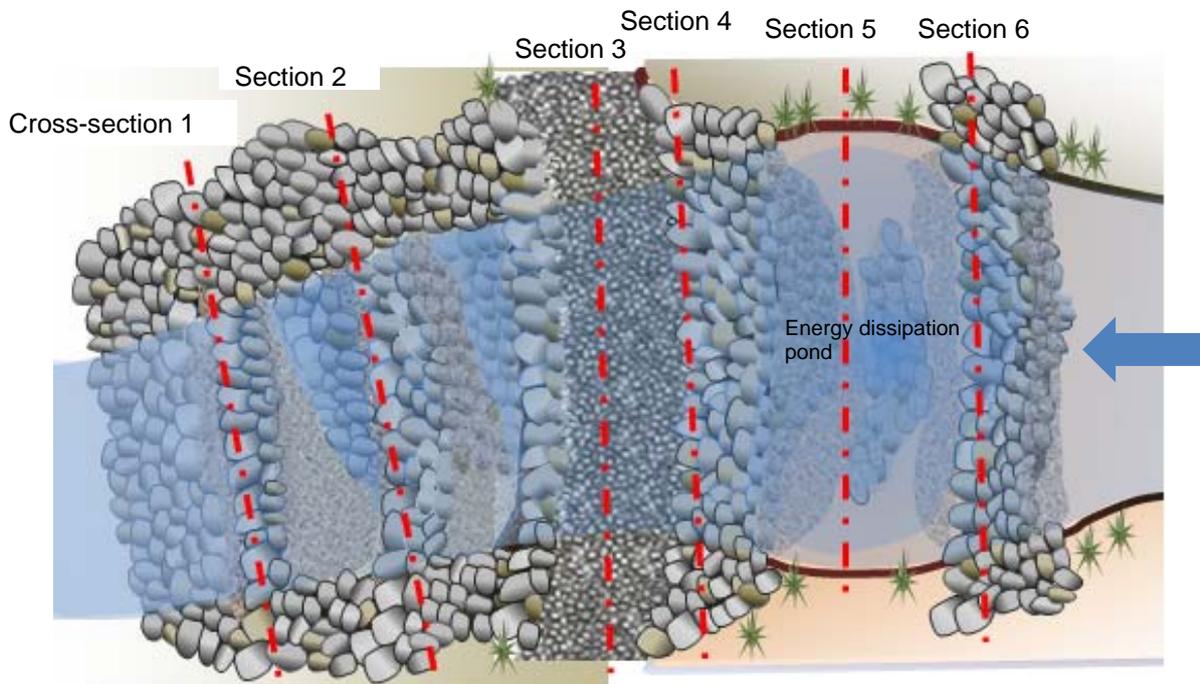
1. Appearance of the dams after removal of the submerged concrete wall



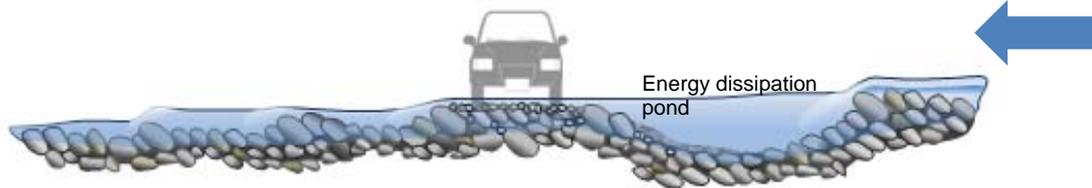
Appendix 2

Stones will be placed on the riverbed to allow vehicles to cross the river without affecting fish migration.

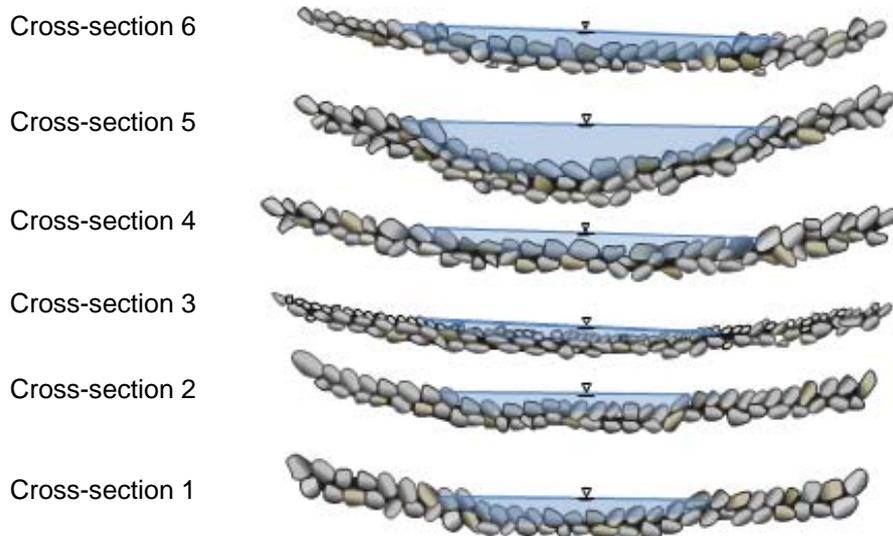
Plan view



Longitudinal view



Transverse view



The upper and lower sides of the raised riverbed will be protected by a 50-cm-wide stone riverbed sill. (The cross-section will be arch-shaped to avoid a sharp change in shape.)