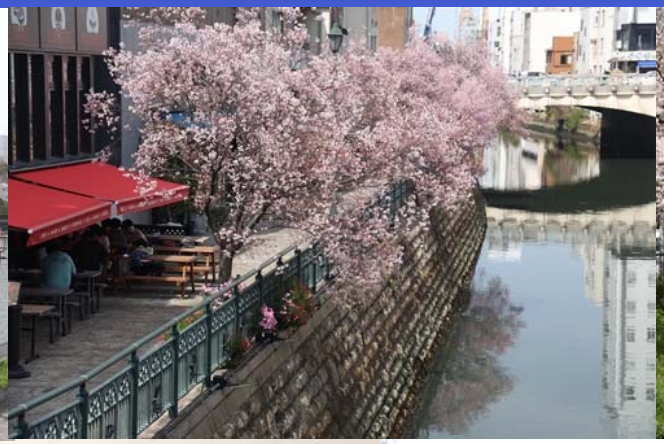
Horikawa Sen-nin Chosatai 2010 （HSC）

Summary meeting for the 31st stage

At the end of the 31st stage
Number of investigation reports
10,000 cases

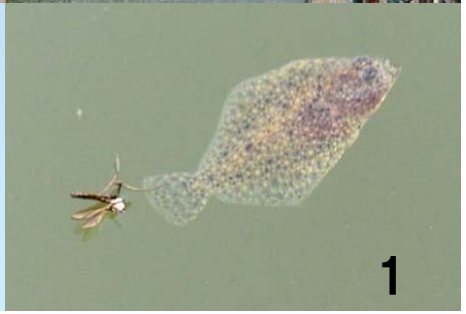
Plase：Nagoya Congress Center Bldg.2 2F Conference Room 224



Horikawa Sen-nin Chosatai 2010 （HSC）
Summary meeting for the 30th stage

The secretariat of Horikawa Sen-nin Chosatai 2010

Oct. 15th 2022



From secretariat

■ Every data you offer to us is valuable

Information about subtle change you find when you survey Horikawa river can be valuable data to understand the present situation of the river. We're looking forward to your data from now on.

■ Let us introduce your activity

Your activity, such as survey, think and cheer up Horikawa, is the motivation to increase the number of those who love Horikawa, Nagoya City and the Earth.

■ Let's hand down the past appearance of Horikawa as record

To know about the past Horikawa is very important to design the future Horikawa.

We refer Horikawa's photos taken in Taisho and Showa era to know forgotten past Horikawa. Do you keep photos which Horikawa was photographed in in your album? For example, photo of your family with Horikawa in the background of the picture is Okay.

(contact) secretariat
e-mail:2010@horikawa1000nin.jp
Please send comments and pictures (with date and place) from mobile phone or PC.
＊We think image quality of picture taken by mobile phone camera is enough.

Horikawa Sen-nin Chosatai 2010 (HSC)
Website QR Code

Fixed Point Observation
results input WebsiteQR Code

Horikawa Sen-nin Chosatai 2010 (HSC)
You Tube QR Code

1. Horikawa Sen-nin Chosatai 2010 ～15 years of history～

～Transmission of Raw Water from Kiso River (TRWKR)～

1.Purpose

To verify the clarification effects of TRWKR with citizens

(1) Develop to new clarifying measures
(2) Asses the influence on an ecosystem
(3) Sustain and enhance citizens' activities
(4) Develop citizens' awareness in the entire Horikawa River basin

2.Water source and Volume of transmission of raw water

(1) Water Source : Kiso River
(2) Volume of transmission of raw water : Maximum 0.4 m3/s

3.Pilot project period

(1) Evaluation and Survey term : About 5 years
(from Apr.2007 to Mar.2012)
(Including the term of follow-up survey and evaluation after the stop of TRWKR)
(2) TRWKR period : about 3 years
(from Apr.22nd.2007 to Mar.22nd.2010)

■Increase of Transmisson Volume from the Shonai River (additional pilot project)

1.Water source and Volume of transmission of raw water

(1) Water Source : Shonai River
(2) Transmission Usual 0.4m3/sec (maxium 0.7m3/sec)

2.Period of Increase

(1) Experiment Period : Oct.1st - Dec.31st.2010
(2) Period of Increased Transmision Volume : Oct.5th - Nov.2nd.2010

The formation of HSC (April.22nd.2007)
With a viewpoint and a sence of citizens, the survey of the clarification effect of TRWKR started

■ The survey from a viewpoint and a sence of citizens'
＊Clearness ＊Transparency ＊Color ＊Bubble ＊Smell
＊Garbage ＊Living things, etc

The first Nagoya City Environmental Practice Prize, Feb.2012
Branch of contribution for Regional Environment Development Award for Excellence

Water Resource Contributor Awards
Minister of Land, infrastructure and Transportation) Aug.2016

Transmission of Raw Water from Kiso River (TRWKR)

3 years from April.22nd.2007(Stopped on March.22nd.2010)

Surveys during TRWKR period : 3 years
April.2007 ～ March.2010
Surveys after the stop of TRWKR period : 2 years
April.2010 ～ March.2012

Horikawa Sen-nin Chosatai
April.2007 ～ March.2012

■ Fixed Point Observation Groups
Surveying effects of TRWKR

■ Free Survey Groups Researching
Horikawa River by free themes

■ Horikawa Support Groups Supporting
clarification of Horikawa

The survey from a viewpoint and sense of citizens

Results of pilot project (Clarification effects of TRWKR)

■ It was confirmed that the water quality tended to improve during TRWKR between Sanage Bridge and Matsushige Bridge.

■ Network of citizens who wish for clarification and restoration of Horikawa River expanded.

■ Citizens' awareness of cleaning of the river was developed.

■ Role of Horikawa Sen-nin Chosatai
(Conclusions of Summary Meeting for the 10th Stage)

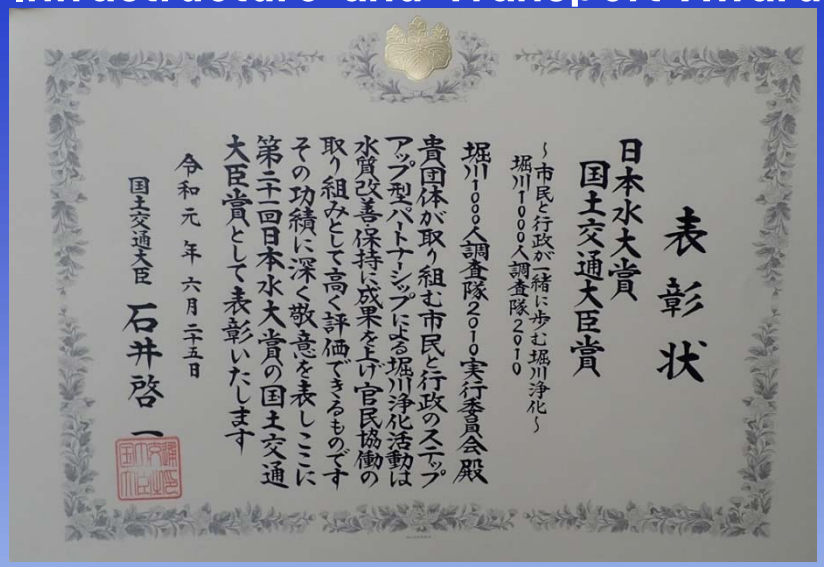
① More surveys should be implemented.

•Continuity of investigation, clarification of the situation of the river, identification of cause of pollution in the river, are needed.
•We improve our plan and take action against the pollution.
•After that, citizens and public administration do what is possible to clean the river.

②There are many things that citizens can do.

•We expand our partners who love Horikawa River and hope TRWKR again.
•We deepen exchanges with people living in the basin of Kiso, Nagara, and Ibi River.
•We check the effects of pollution removal from domestic wastewater and implement it in each residence.

Won the21st Japan Water Award Minister of Land, Infrastructure and Transport Award June 2019


表彰状

日本水大賞
国土交通大臣賞

～市民と行政が一緒に歩む堀川浄化～
堀川1000人調査隊2010

堀川1000人調査隊2010実行委員会殿

貴団体が取り組む市民と行政のスクラップアップ型パートナーシップによる堀川浄化活動は水質改善保持に成果を上げ官民協働の取り組みとして高く評価できるものです
その功績に深く敬意を表しここに第二十一回日本水大賞の国土交通大臣賞として表彰いたします

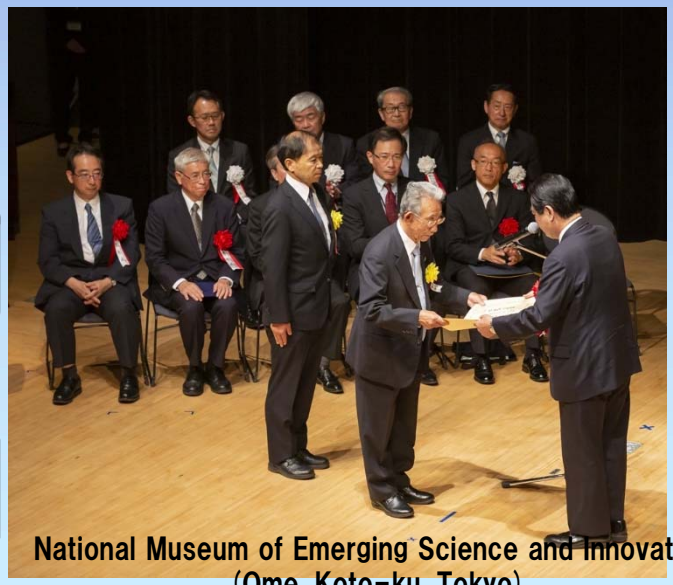
令和元年六月二十五日

国土交通大臣 石井啓一

Public-private academic collaboration step-up partnership

Horikawa Sen-nin Chosatai Executive Committee visited Mayor Kawamura to report getting a prize on the Japan Water Award and Minister of Land, Infrastructure, Transport and Tourism award.

On June 25, 2019, the award ceremony for the 21st Japan Water Awards was held in the presence of Crown Prince Akishino. Horikawa Sen-nin Chosatai Executive Committee received the Minister of Land, Infrastructure, Transport and Tourism Award.



National Museum of Emerging Science and Innovation (Ome, Koto-ku, Tokyo)

Water Environment of Horikawa River

Horikawa-River
Area of basin :52.85km²
Length :16.20km

Shin-Horikawa-River
Area of basin :22.77km²
Length : 5.95km

Change in temperature, precipitation and hours of sunshine

Kiso River is our water source.

Cause of breeding of phytoplankton, nitrogen and Phosphorus are included in wastewater from houses, factories and stores.

The primary cause of water pollution is wastewater from houses, factories, and stores.

Wastewater is discharged after treatment in wastewater treatment plant.

After heavy rain, wastewater is discharged without treatment.

Shonai River
Privisional raw water transmission: 0.3m3/s

Wastewater Treatment Plant

Sanage Bridge

Motoiri Sluiceway

Tide Gate

▼High Tide

Horikawa River

Difference of water level is more than 2m between high tide and ebb tide.

▼Ebb Tide

Water level, direction of current and velocity are changed, by tide.

Shimizu wakuwaku-sui

Nagoya Port

Rising

Groundwater, etc

Ise Bay

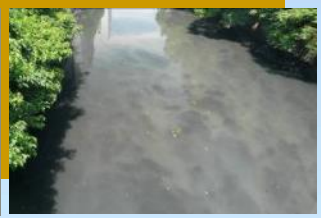
It has looked like red tide or blue tide.
In Nagoya Port and downstream of Horikawa, it is said that phytoplankton does over breeding and extinction, so water basin is polluted

Sludge rises and floats.


Red Tide


Blue Tide


Floating Sludge


Raised Sludge

2. Number of Participants of Horikawa Sen-nin Chosatai

(Horikawa Sen-nin Chosatai started accepting participation on 26th Mar.2007)

Network of citizens who wish for clarification and restoration of Horikawa River is growing.

More than 50 thousand citizens' network

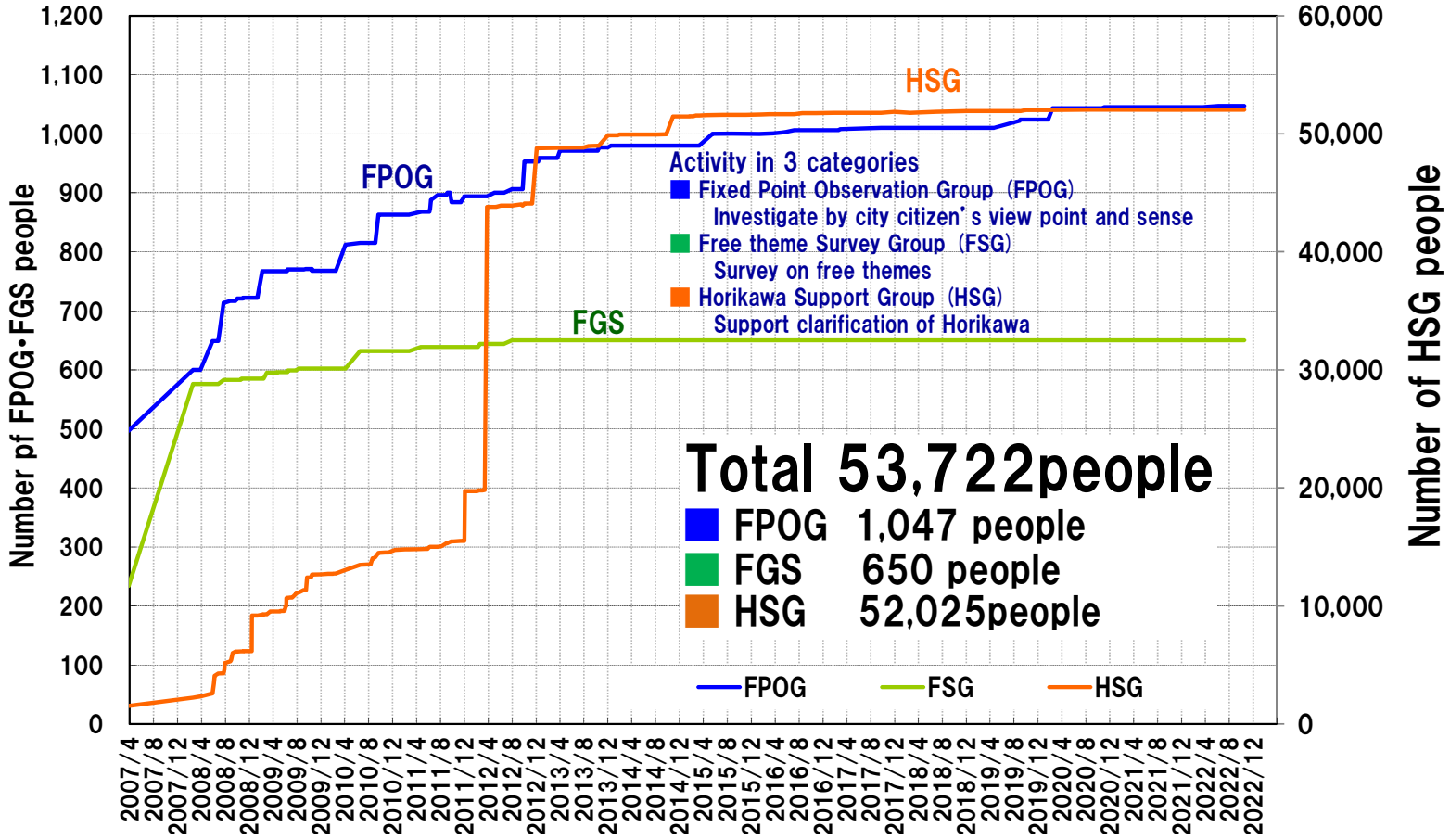
Horikawa, the Mother River of Nagoya, was polluted in rapid economic growth.
The citizens have rised to get the past back.

	Start 22nd Apr.2007	Now 15th Oct. 2022
Fixed Point Observation Groups	55 groups 497 persons	109 groups 1,047persons
Free Survey Groups	22 groups 234 persons	40 groups 650 persons
Horikawa Support Groups	88 groups 1,531 persons	2,607 groups 52,025persons
Total	165 groups 2,262 persons	2,756 groups 53,722persons

Number of Participants

Horikawa Sen-nin Chosatai was established to clean *Horikawa* River and to check effective of experiment for it by city citizen's viewpoint.
This activities are not only to surveys, but also spread to the clarification, cleanup, enlightenment activities and exchanges between regions.

Number of Participants （FPOG･FGS･HSC）



As of Oct. 15 2022

3. Survey Periods and Number of Reports

Subject		FY		Term			Numnber of report		
								Horikawa River	Shin-Horikawa River
Horikawa River clarification pilot project	during TRWKR period 0.4 m^3/s	Heisei19 2007	1st st.	Spring to Early Summer	4/22 ~6/30		258	258	-
				Interim	7/1 ~9/7		134	134	-
			2nd st.	Autumn to Early winter	9/8 ~12/16		383	383	-
				Interim	12/17 ~3/31		103	103	-
		Heisei20 2008	3st.	Spring to Early Summer	4/1 ~6/30		245	245	-
				Interim	7/1 ~9/27		64	64	-
			4st.	Autumn to Early winter	9/28 ~12/16		152	152	-
				Interim	12/17 ~3/31		100	100	-
		Heisei21 2009	5st.	Spring to Early Summer	4/1 ~6/30		145	145	-
				Interim	7/1 ~9/26		54	54	-
			6st.	Autumn to Early winter	9/27 ~12/16		120	120	-
				Interim	12/17 ~3/31		81	81	-
		Heisei22 2010	7st.	Spring to Early Summer	4/1 ~6/30		111	111	-
				Interim	7/1 ~9/11		44	44	-
			8st.	Autumn to Early winter	9/12 ~12/17		104	104	-
				Interim	12/18 ~3/31		72	72	-
		Heisei23 2011	9st.	Spring to Early Summer	4/1 ~6/30		112	112	-
				Interim	7/1 ~9/10		42	42	-
			10st.	Autumn to Early winter	9/11 ~12/16		133	133	-
				Interim	12/17 ~3/31		77	77	-
Step-up partnership of public-private-academia collaboration		Heisei24 2012	11st.	Spring to Early Summer	4/1 ~6/30		148	148	-
				Interim	7/1 ~9/21		60	59	1
			12st.	Autumn to Early winter	9/22 ~12/16		139	135	4
				Interim	12/17 ~3/31		92	78	14
		Heisei25 2013	13st.	Spring to Early Summer	4/1 ~6/30		145	129	16
				Interim	7/1 ~9/28		70	55	15
			14st.	Autumn to Early winter	9/29 ~12/17		113	99	14
				Interim	12/18 ~3/31		79	68	11
		Heisei26 2014	15st.	Spring to Early Summer	4/1 ~6/30		133	117	16
				Interim	7/1 ~9/28		91	78	13
			16st.	Autumn to Early winter	9/29 ~12/16		99	90	9
				Interim	12/17 ~3/31		107	89	18
		Heisei27 2015	17st.	Spring to Early Summer	4/1 ~6/30		113	100	13
				Interim	7/1 ~9/19		81	69	12
			18st.	Autumn to Early winter	9/20 ~12/16		126	109	17
				Interim	12/17 ~3/31		91	79	12
		Heisei28 2016	19st.	Spring to Early Summer	4/1 ~6/30		127	116	11
				Interim	7/1 ~9/19		62	54	8
			20st.	Autumn to Early winter	9/20 ~12/16		130	107	23
				Interim	12/17 ~3/31		104	84	20

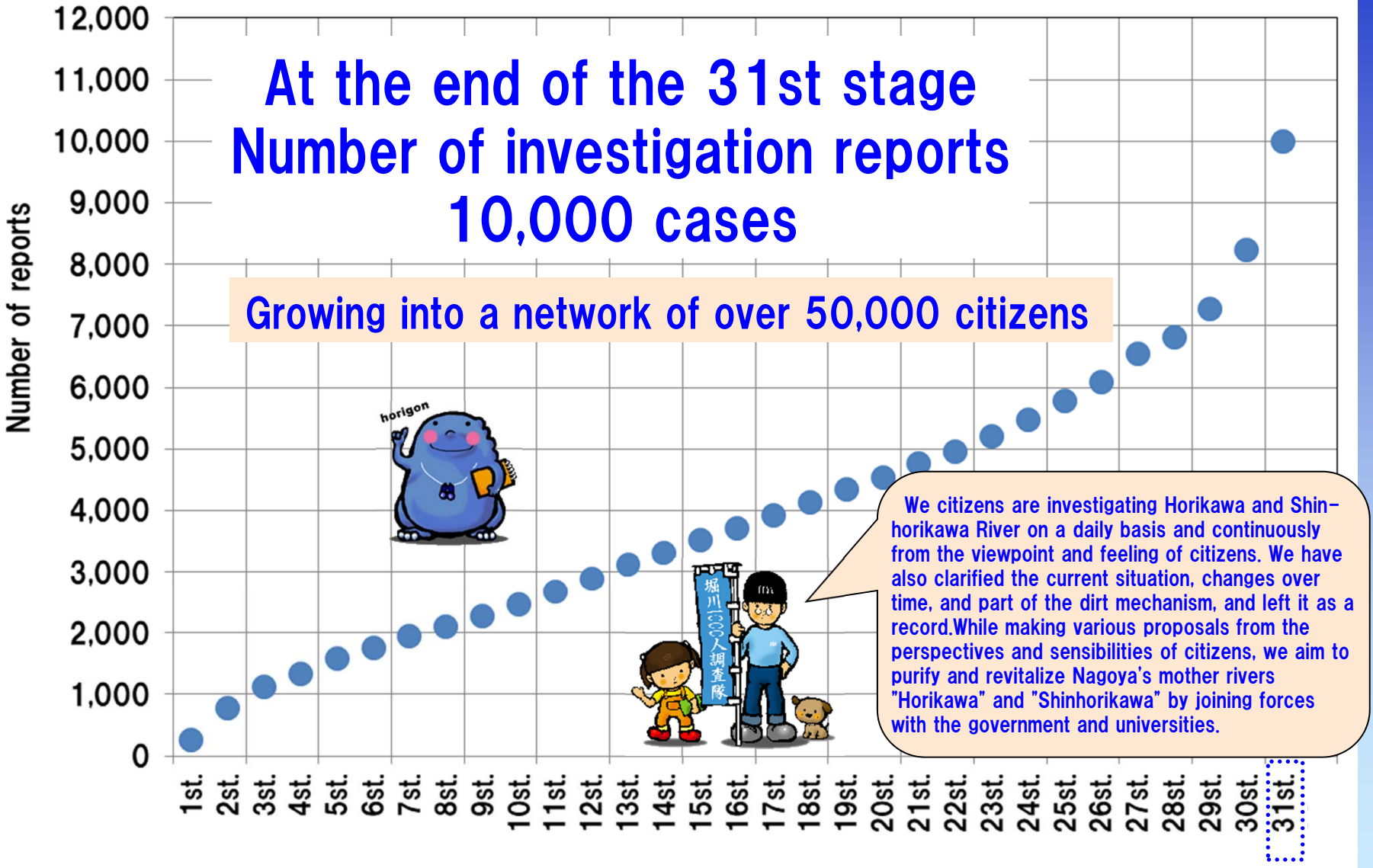
Subject	FY		Term			Numnber of report		
							Horikawa River	Shin-Horikawa River
Step-up partnership of public-private-academia collaboration	Heisei29 2017	21st.	Spring to Early Summer	4/1 ~6/30		129	100	29
			Interim	7/1 ~9/18		58	48	10
		22st.	Autumn to Early winter	9/19 ~12/20		121	93	28
			Interim	12/21 ~3/31		80	67	13
	Heisei30 2018	23st.	Spring to Early Summer	4/1 ~6/30		180	107	73
			Interim	7/1 ~9/19		76	44	32
		24st.	Autumn to Early winter	9/20 ~12/16		184	106	78
			Interim	12/17 ~3/31		108	67	41
	Heisei31 、Reiwa 1 2019	25st.	Spring to Early Summer	4/1 ~6/30		193	127	66
			Interim	7/1 ~9/19		101	43	58
		26st.	Autumn to Early winter	9/20 ~12/16		214	105	109
			Interim	12/17 ~3/31		123	67	56
	Reiwa2 2020	27st.	Spring to Early Summer	4/1 ~6/30		333	168	165
			Interim	7/1 ~9/19		32	23	9
		28st.	Autumn to Early winter	9/20 ~12/16		232	161	71
			Interim	12/17 ~3/31		131	101	30
	Reiwa3 2021	29st.	Spring to Early Summer	4/1 ~6/30		343	190	153
			Interim	7/1 ~9/19		35	22	13
		30st.	Autumn to Early winter	9/20 ~12/16		907	816	91
			Interim	12/17 ~3/31		878	857	21
	Reiwa4 2022	31st.	Spring to Early Summer	4/1 ~6/30		898	788	110
			Interim					
		32st.	Autumn to Early winter	9/20 ~12/16				
			Interim					
Total						10,000	8,497	1,503

Background about COVID-19

2020
1/16 The Infected person was confirmed in Japan.
2/27 Prime Minister requested temporary closure of school.
4/7 The state of emergency in 7 prefectures.
4/10 The state of emergency in Aichi.
4/16 The state of emergency in Japan.
5/31 The state of emergency was lifted.
8/6~24 Prefectural emergency in Aichi.
2021…about Aichi
1/14~2/28: The state of emergency
5/12~6/20: The state of emergency
6/20~7/11:Pre-emergency measures
8/8~8/26: Pre-emergency measures
8/27~9/30: The state of emergency
2022
1/21~3/21: Pre-emergency measures

The number of survey results reported was 10,000 at the end of the 31st stages (April 1 to June 30, 2022). The number of reports for 31st stages was 897. Of these, 787 were in Horikawa River and 110 were in Shin-Horikawa River.
Many citizens are conducting daily and continuous research on the water environment of the Horikawa and Shin-Horikawa Rivers from a citizen's point of view and sense.

Total Number of Reports



4. Weather conditions

This year's Yoshino cherry blossoms (Nagoya) bloomed on March 22nd, which is almost the same as the average year (March 24th), and the full bloom was on March 30th. Also. The rainy season started around June 14th, slightly later than the average value (June 6th).The average temperature for the 31st stage (April to June) was higher than normal and the highest ever. Precipitation and sunshine hours were at normal levels.

(Features)
- The average temperature is higher than normal and the highest ever.
- Precipitation and sunshine hours are at par with normal years.

■ Temperature

The average temperature was 20.2° C, higher than the average temperature (19.0° C) and the highest ever. Temperatures by month were higher than normal with some fairly high days in April and June, and were close to normal in May.

■ Precipitation

The rainy season started around June 14th, slightly later than the average (June 6th). The average monthly precipitation was 139mm, about the same as the normal value (154.8mm). By month, April and May were about normal, and June was below normal. On May 27th, 63mm of rain fell.

■ Sunlight hours

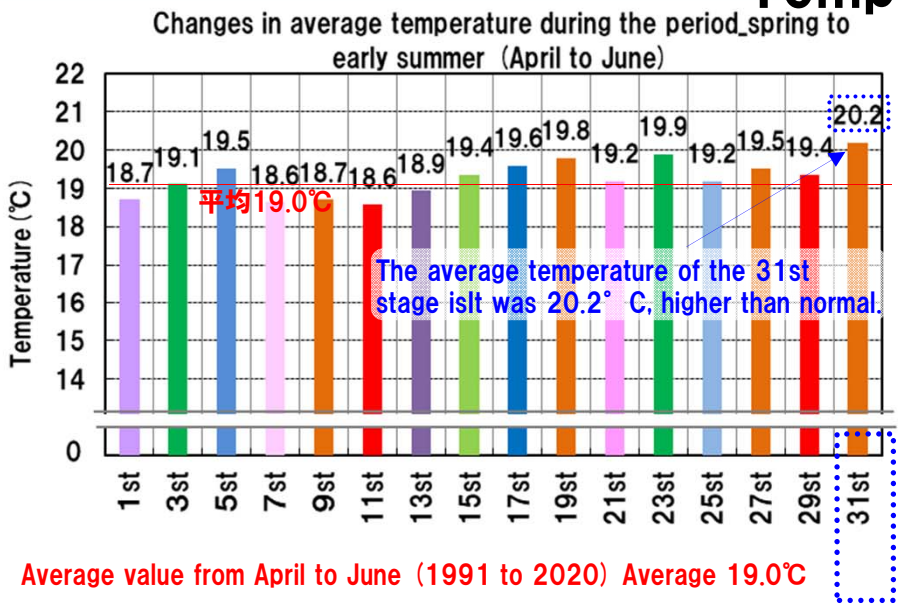
The average monthly sunshine hours was 205 hours, which is about the average yearly value (185.8 hours). By month, June was longer than normal, and April and May were about normal.

Meteorological Agency _ Meteorological Statistics,
Nagoya Local Meteorological Observatory
http://www.jma.go.jp/jma/menu/report.html

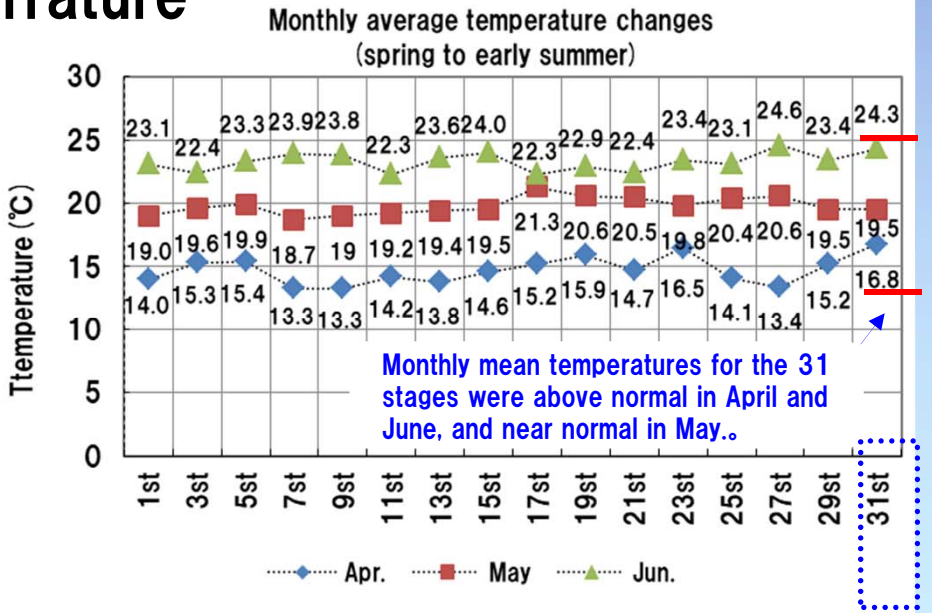
■1991-2020 Average in Nagoya Meteorological Observatory

区分	Precipitation (mm) Total	Temperature (℃) Average	Temperature (℃) day high	Temperature (℃) day minimum	Sunshine hours (h) Total
Term	1991 ~2020	1991 ~2020	1991 ~2020	1991 ~2020	1991 ~2020
Number of reports	30	30	30	30	30
Annual total	1535.3	15.8	20.7	11.9	2091.6
Apr.	127.5	14.6	20.1	9.7	200.2
May	150.3	19.4	24.6	14.9	205.5
Jun.	186.5	23.0	27.6	19.4	151.8
Average	154.8	19.0	24.1	14.7	185.8
Sep.	231.6	24.5	29.1	21.0	159.6
Oct.	164.7	18.6	23.3	14.8	168.9
Nov.	79.1	12.6	17.3	8.6	167.1
Dec.	56.6	7.2	11.7	3.4	170.3
Average	133.0	15.7	20.4	12.0	166.5

Temperrature



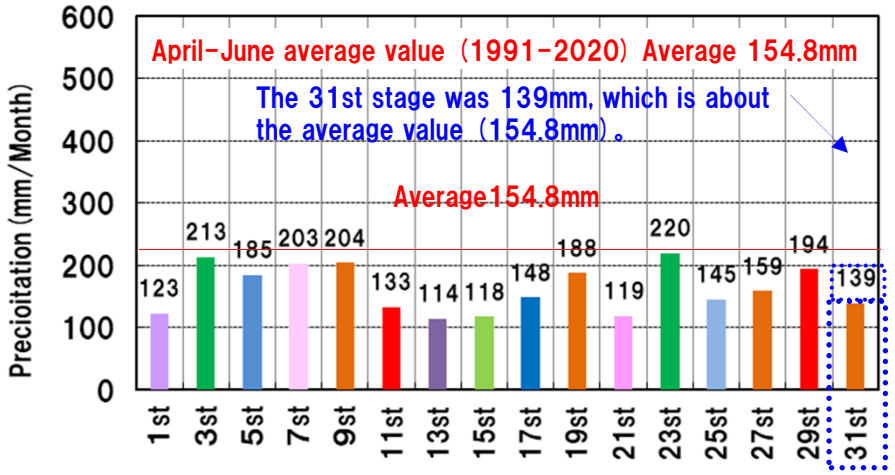
Average value from April to June (1991 to 2020) Average 19.0℃

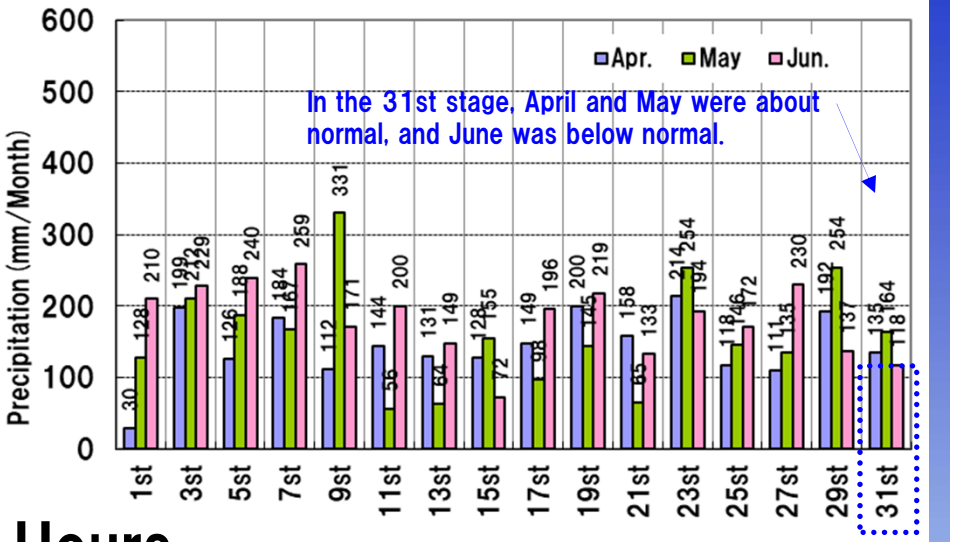


Weather conditions

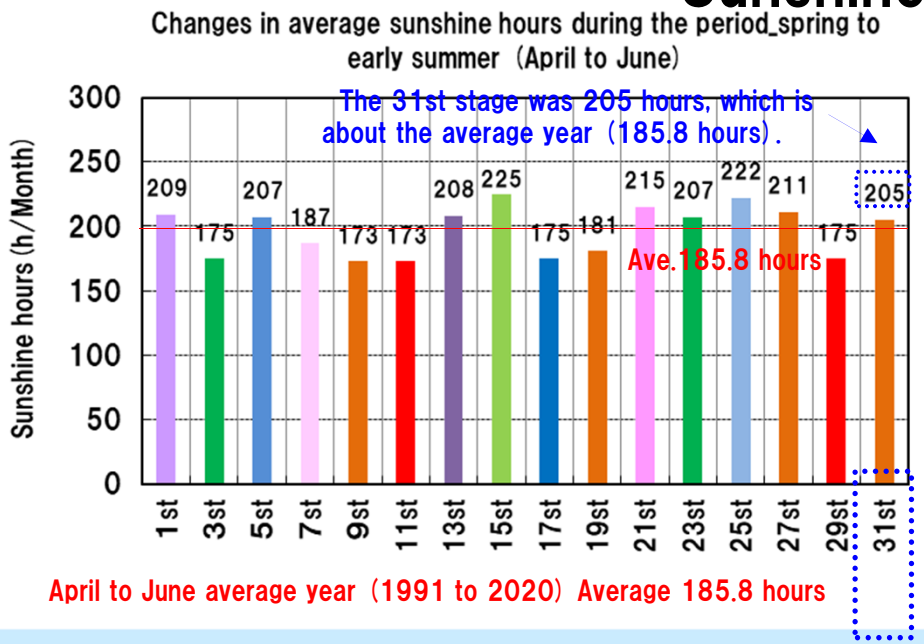
Meteorological Agency _ Meteorological Statistics, Nagoya Local Meteorological Observatory http://www.jma.go.jp/jma/menu/report.html

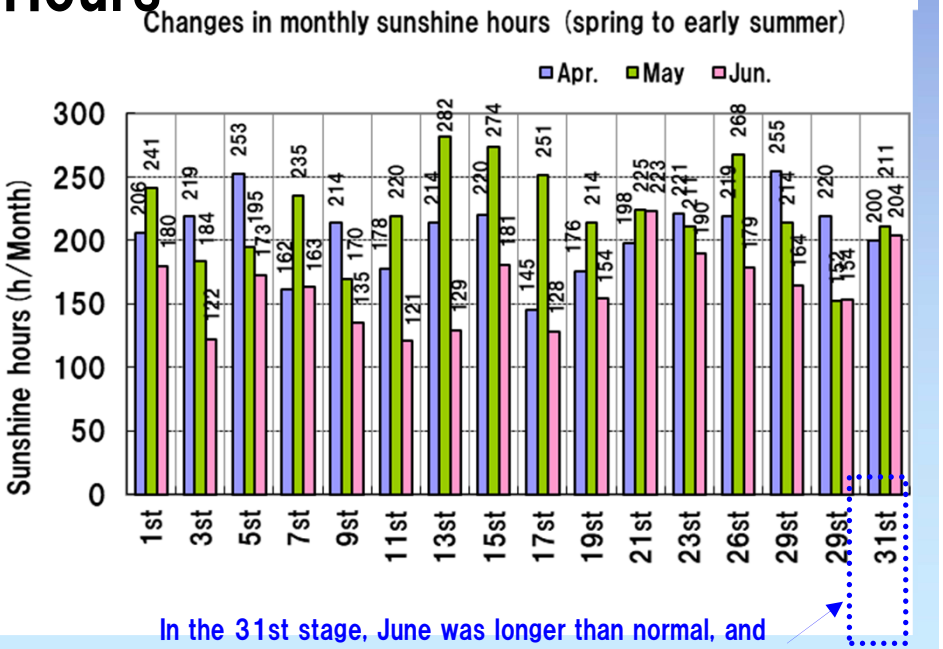
Precipitation



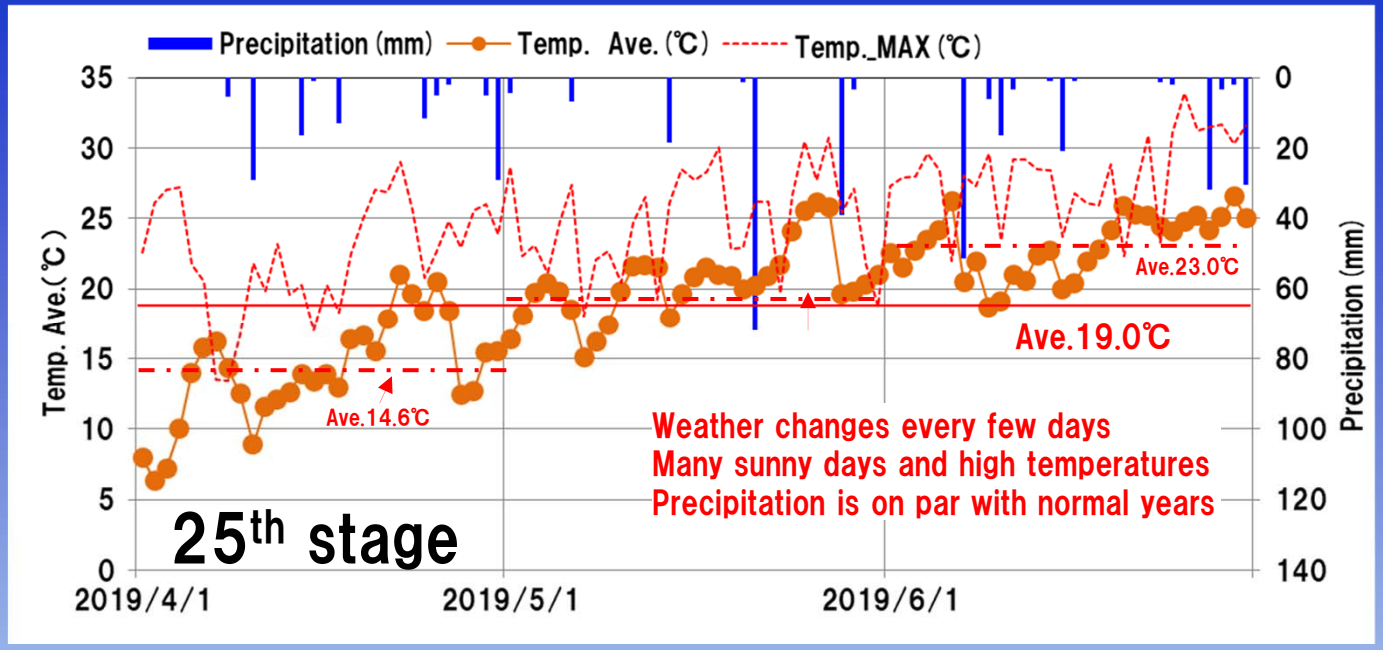


Sunshine Hours

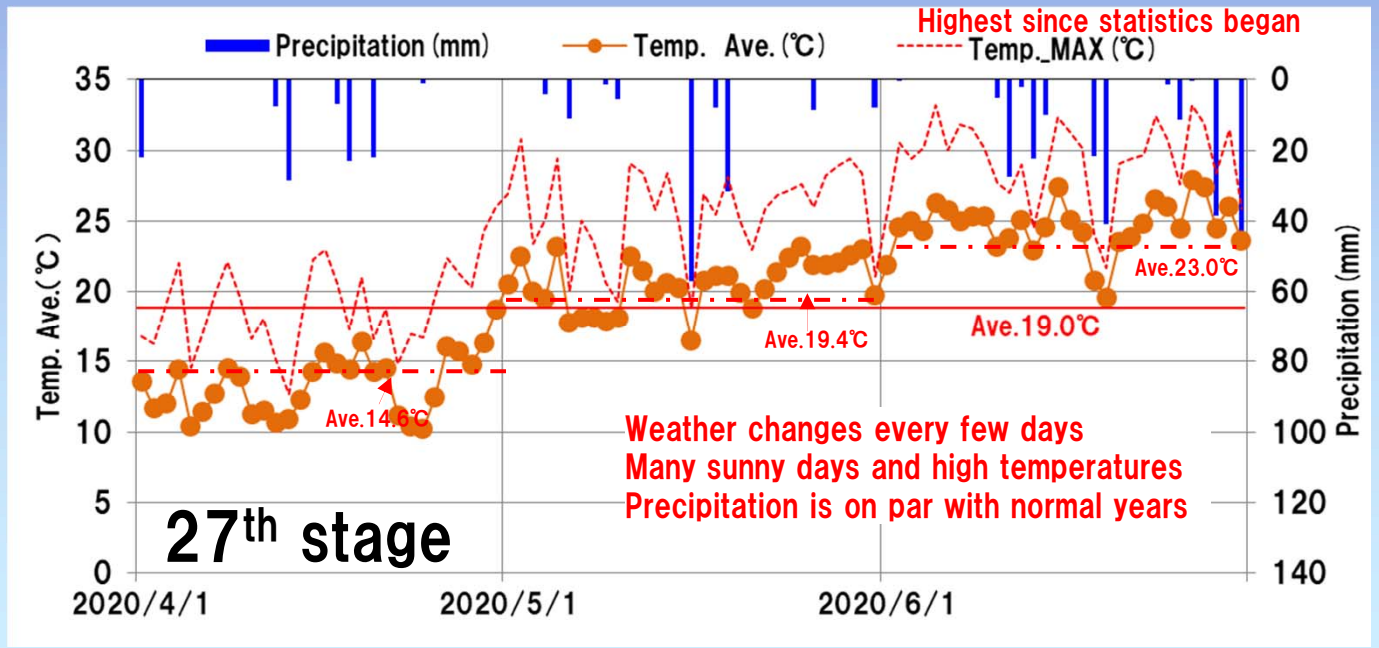




(Reference) Daily temperature and precipitation

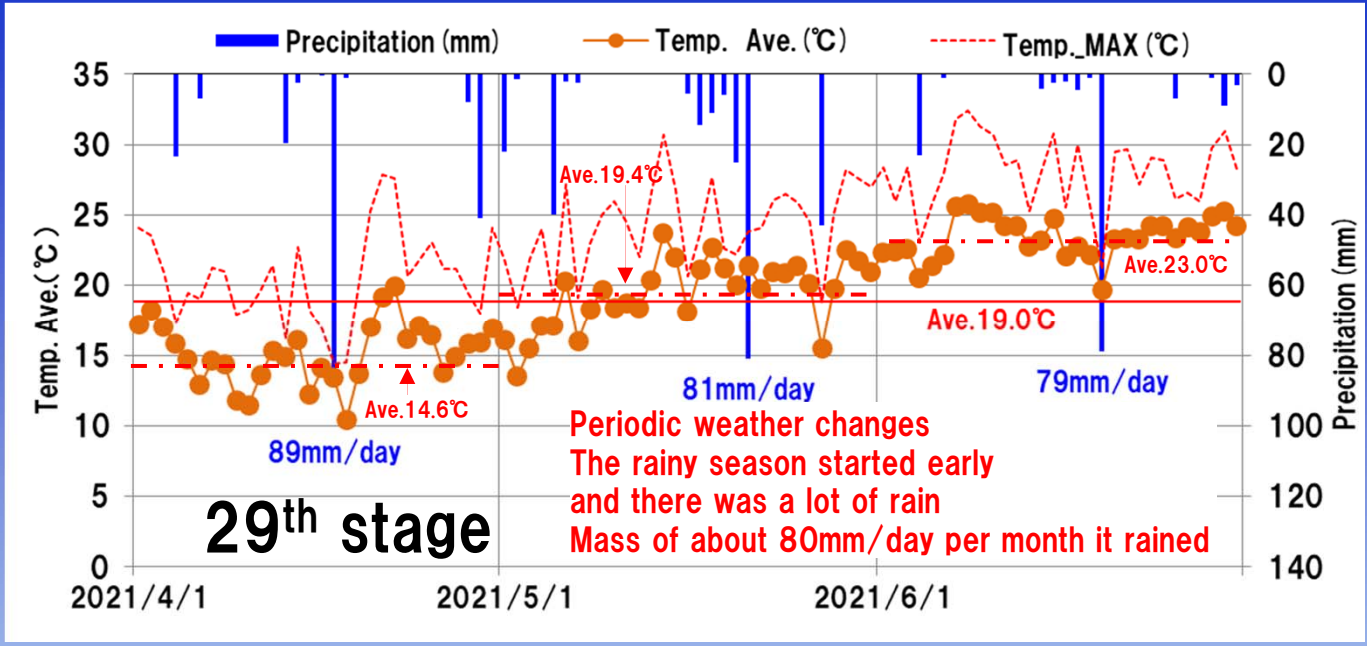


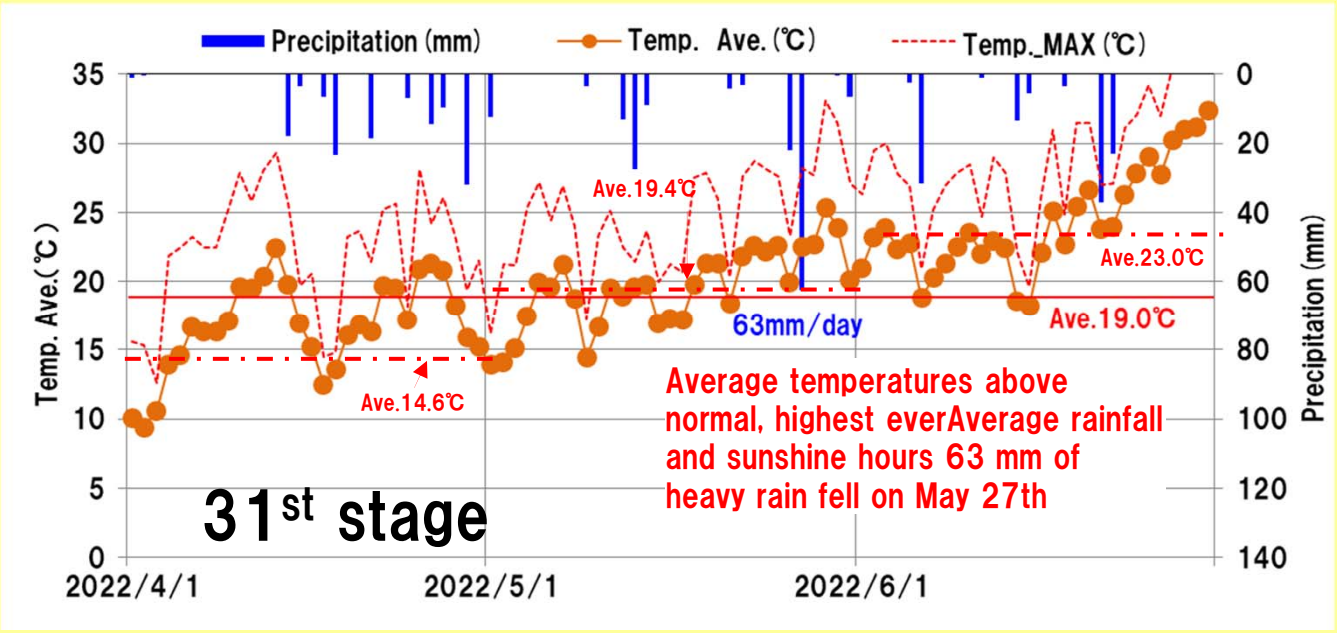
What is the temperature in June
Highest since statistics began



Note)
during the target period
Arrangement of weather features
■ Period average temperature (° C)
Average temperature-normal value
0.5℃ or higher → high temperature
-0.5℃ or less → low temperature
■ Period average precipitation (mm/month)
Average precipitation - normal year
20mm/day or more→heavy rain
-20 mm/day or less → little rain
■ Period average sunshine hours (hours/month)
Average sunshine duration-normal year
20 hours/day or more → lots of sunshine
-20 hours/day or less → low sunshine

(Reference) Daily temperature and precipitation





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5. Main Water Quality Improvement Measures

Measures	2007		2008		2009		2010		2011		2012		2013		2014	
	1st.	2nd.	3st.	4st.	5st.	6st.	7st.	8st.	9st.	10st.	11st.	12st.	13st.	14st.	15st.	16st.
TRWKR (0.4m³/s)																
Making shallow and deep (Improvement of self-purification function and water enviroment)							Kurokawa No.1 Bridge～Meoto Bridge				downstream Kurokawa No.2 Bridge		upstream Kurokawa No.2 Bridge			
Increase of Raw Water transmission from Shounai River (+0.4m³/s)	*provisional raw water transmission from Shonai River 2001.Jul～ Max0.3m³/s															
New water resource (from shallow ground water) (0.0825m³/s)	upstream Tsujie Bridge 0.01m³/s (2004) upstream Kizune Bridge 0.01m³/s (2005) Shimizu wakuwaku water 0.0005m³/s (2008)												upstream Seko Bridge 0.01m³/s		upstream Sanage Bridge 0.01m³/s	
Experiment of sand covering for water purification Habashita Bridge～Sakura Bridge (water's edge along both banks)														Gojo Bridge～Naka Bridge		
Remove bad smell at Shin-Horikawa River (dredging,sand cover)																
Reclaimed wastewater at the Moriyama Waste Water Treatment Center (0.046m³/s)																
Advanced waste water treatment at the Meijo Waste Water Treatment Center																
Rain-water Reservoir for pollution control							Horikawa Ugan									
Advanced primary treatment facility																

Measures (after 2015)	2015		2016		2017		2018		2019		2020		2021		2022	
	17st.	18st.	19st.	20st.	21st.	22st.	23st.	24st.	25st.	26st.	27st.	28st.	29st.	30st.	31st.	32st.
TRWKR (0.4m³/s)																
Making shallow and deep (Improvement of self-purification function and water enviroment)		downstream Rurikou Bridge		downstream Meoto Bridge			upstream Shinbori Bridge	upstream Kizune Bridge				downstream Shinbori Bridge				
Increase of Raw Water transmission from Shounai River (+0.4m³/s)							(donated by Johoku Lions Club)									
New water resource (from shallow ground water) (0.0825m³/s)	upstream Shiga Bridge 0.01m³/s		upstream Nakatsuchido Bridge 0.01m³/s				upstream Kinjo Bridge 0.01m³/s				upstream Kurokawa No.1 Bridge 0.01m³/s				upstream Asahi Bridge 0.002m³/s	
Experiment of sand covering for water purification Habashita Bridge～Sakura Bridge (water's edge along both banks)	Gojo Bridge～Naka Bridge						Habashita Bridge～Gojo Bridge Naka bridge～Sakura Bridge									
Remove bad smell at Shin-Horikawa River (dredging,sand cover)					downstream area		upstream area									
Reclaimed wastewater at the Moriyama Waste Water Treatment Center (0.046m³/s)																
Advanced water treatment at the Meijo Water Treatment Center	※Advanced waste water treatment at the Tsuyuhashi Waste Water Treatment Center (Oct. 2017)															
Rain-water Reservoir for pollution control									Horikawa Sagan							
Advanced primary treatment facility									Horidome Waste Water Treatment Center		Meijo Waste Water Treatment Center					

New water quality improvement measures after transmission of raw water from Kiso River

(Since 2010)

Source of pollution

houses, factory, etc

Improvement of natural purification function

■ Shaping of Rapids and Pools
(Since 2010, 8 places)

Effulent water
from water treatment center
Drainage from combined sewerage
in the case of rain

Water Pollution

Mainly organic matter
(dissolved, floating)

brown coloer

Smell of ditch

Sence of citizens

Impression, bubbles smell, color

Water quality improvement by new measures

Color
mainly cloudiness,dark grey and brown

Smell
mainly ditch, sludge、putrid etc

No color, No smell

Cloudiness

Putrid

Smell of sludge

Dark grey

Sinking and Sedimentation of floating subsidence including organic matter

↓

rolling up

Consumption of oxgen

Bubble
methane

Bubble
hydrogen sulfide

Sludge

Measures for reduction water pollution

Improvement of effulent water quality from water treatment center

■Advanced treatment in Meijo Water Treatment Center (2010)
■Advanced facility for simple treatment in Horidome Water Treatment Center (2018)
■Advancement facility for of primary treatment in Meijo Water Treatment Center (2019)

Restraint of combined sewerage effulent when raining

■Horikawa Ugan Rain-water Reservoir for pollution control (2010)
■Horikawa Sagan Rain-water Reservoir for pollution control (2019)

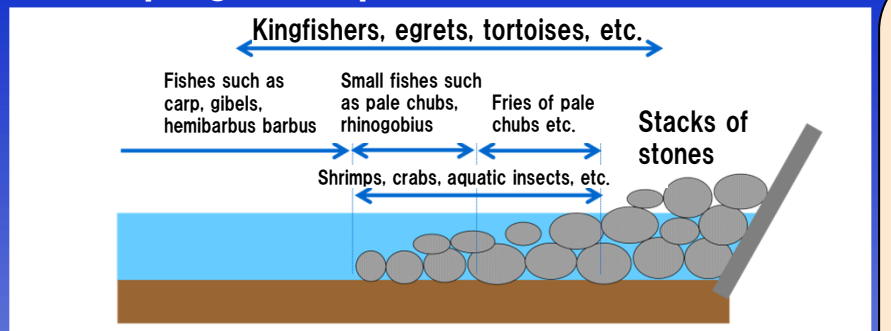
Secure of new water source

■Utilization of Reclaimed wastewater from Moriyama Water Treatment Center (2011)
■Utilization of shallow ground water (2013)

Measures for smells and cloudiness from the bottom of river

■Sand cover
• Horikawa River : Habashita Brg-Sakura .Brg (2014,2017)
■Removal and Sand cover of sludge
•Shin-Horikawa River : downstream area (2017,2018)
■Removal of sludge
•Shin-Horikawa River : Tateishi Brg - upstream area (2018)
•Horikawa River : Removal of sludge after revetment works

Shaping of Rapids and Pools



Rise of self-purification by food chain

Dirt of water (organic substance, nitrogen, phosphorus)

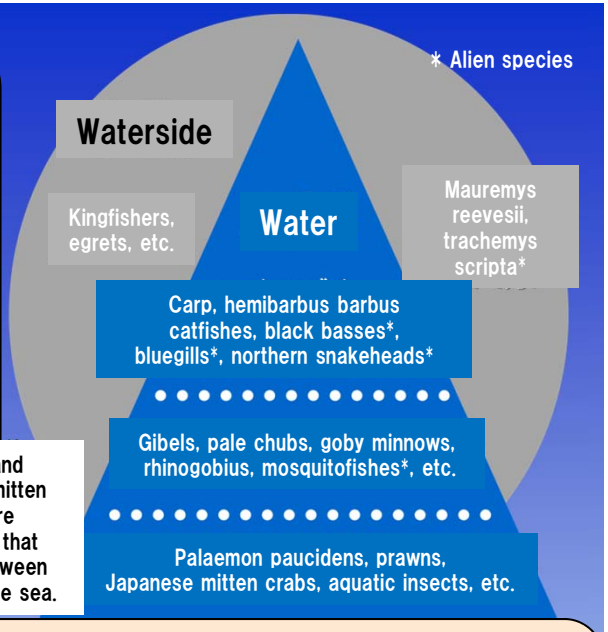
Algaes and microbes stick on stones with the dirt as nutrition.

Small fishes, shrimps, aquatic insects feed the algaes and the microbes.

Big fishes and birds prey the small fishes and aquatic insects.

We confirmed that <u>various living things grow up and breed if rapids and pools are shaped</u>.
This place has been a habitat of living things that eat cobble and stones.
In winter there are some ducks waiting for spring here.
<u>Let's observe there paying attention to the differences of stones used (round stones, angular stones)</u>

Prawns and Japanese mitten crabs are organisms that migrate between rivers and the sea.



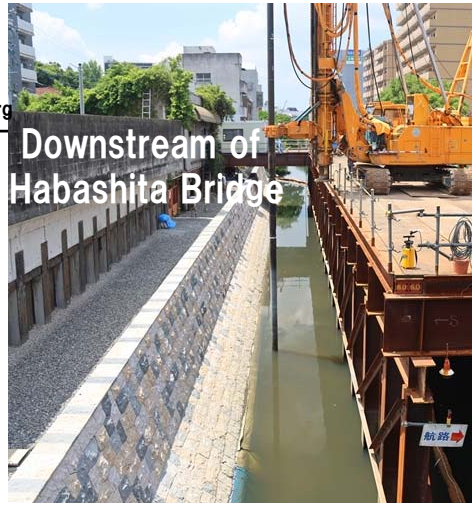
The components of dirt in the water are taken up and consumed for growth and reproduction by living things in the food chain.
<u>As the riapids and pools are shaped and a diverse and affluent ecosystem is built, dirt components are consumed more in a chain and removed from the water, then the water is cleaned. The purifying effect of the river will increase</u>. (=Increased self-cleaning effecet)

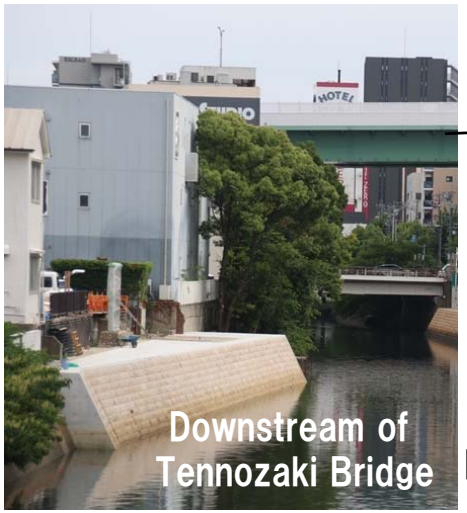
The rapids and pools, which was formed in the past, maintains its diversity as transition depending on the environment.

Constructed in 2016
Photo : by secretariat in July,2016
Downstream of Meoto Bridge

Photo : by secretariat on June 9th, 2022
Downstream of Meoto Bridge

■Revetment works at middle stream area (removal of sludge)





Horikawa

Asahi Brg
Habashita Brg
Koshio Brg
Keiun Brg
Gojo Brg
Naka Brg
Sakura Brg
tenma Brg
Nishiki Brg
Naya Brg
Tennozaki Brg
Shinsuzaki Brg
Suzaki Brg
Iwai Brg
Hioki Brg
Matsushige Brg
Sanno Brg
Furuwatari Brg
JR・Meitetsu Brg
oto Brg
Sumiyoshi Brg

After revetment works, sludge is removed with river bed excavation

Horikawa River

Nakagawa Canal

Tsuyuhashi Water Treatment Center

Matsushige Lock Gate

Removal of sludge

Revetment works status
The secretariat
On site confirmation

Legemd

revetment works completed section

Photos：Secretariat
From April to July 2022

Sand cover works

between Sakura Brg and Habashita Brg

from Jan to Feb 2015, Dec 2017 to Jan 2018

Temporary transmission from Shonai River

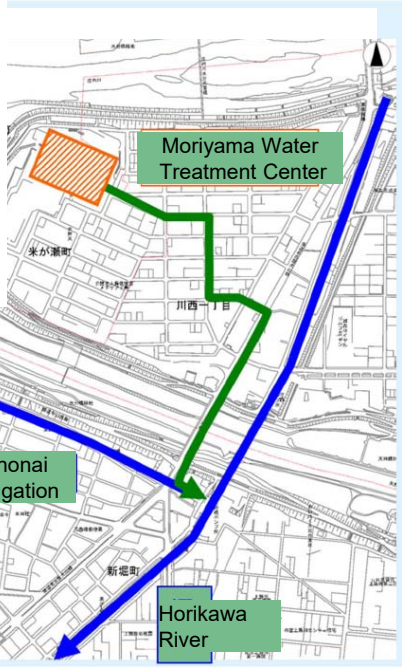
From Jul 2001, max0.3m³/s

Secure of new water source (Utilization of shallow ground water)

■ Measure against foul odors In the Shin-Horikawa River

(Dredging・Sludge dredged)
Section : Btwn Upstream of Tateishi Brdg. and Upstream end.
Period:Sep.2018—Feb.2019

Securing a new water source.
■Utilization of Reclaimed wastewater (Except winter)
Conducting reclaimed wastewater treated by
Membrane filtration at the Moriyama Water
Treatment Center (up to 4000m3/day)is discharged.
Start to conduct in Aug.2011



Conductiong point into Horikawa River

Reclaimed wastewater is conducted during irrigation season(Apr – Oct)
(Excluding the period Nov.-Mar. when water is passed throught the Shonai irrigation canal.)

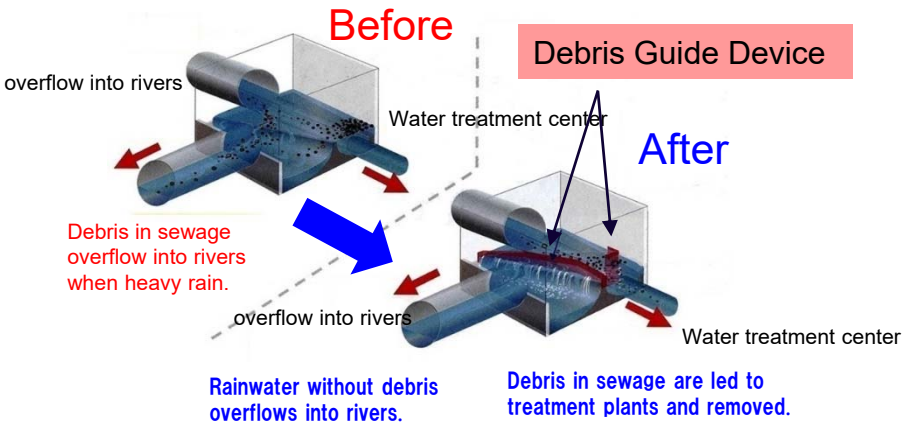
Newly launched facilities after the stop of TRWKR

■Improvement of Treatedwater Quality

Meijo Water Treatment Plant installed filtration devices and improved quality of treated water.

Meijo Water
Treatment Plant
•Processing method
: Conventional activated sludge process + Rapid filtration
•Operated since : May 2010

■Preventing the outflow of debris into rivers



■Installation of Narrower Slit Screens

- Shiratoribashi Pump Station
- Nakajima Pump Station
- Chitose Water Treatment Plant

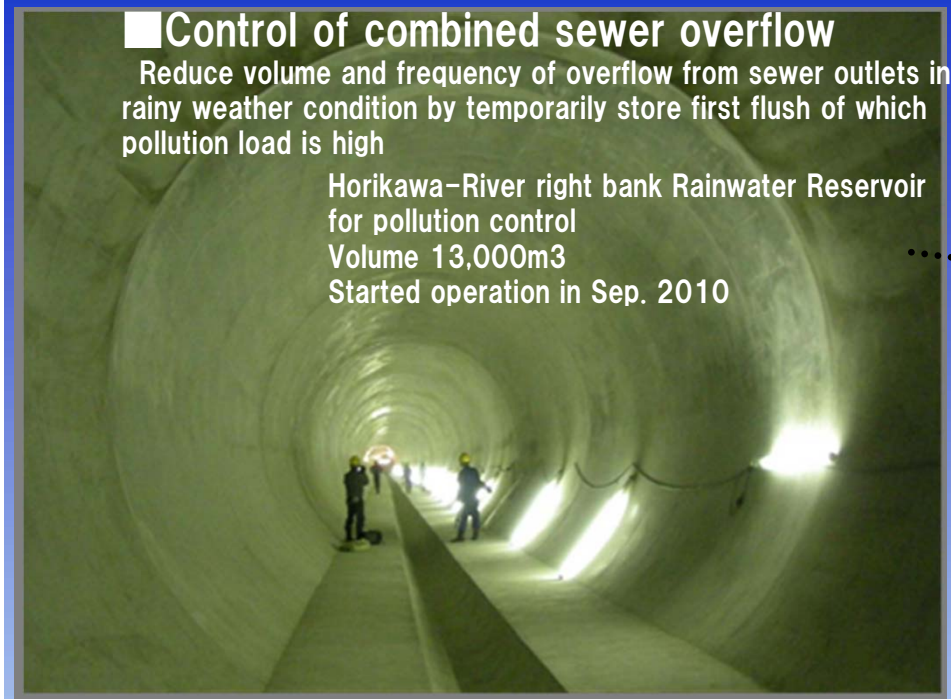
◆Interval of Slits
40mm → 25mm

Facilities which started operation after the stop of TRWKR

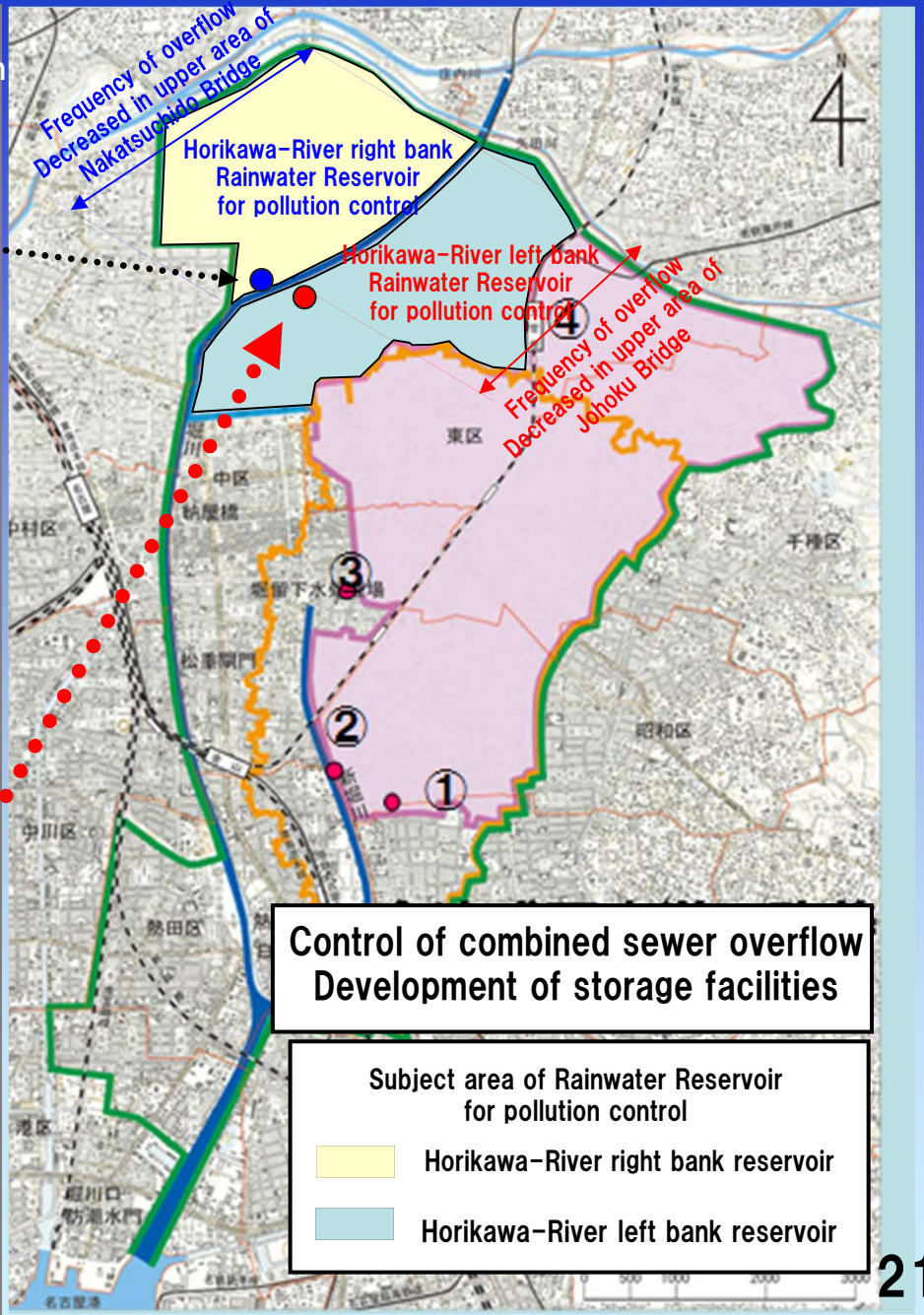
■Control of combined sewer overflow

Reduce volume and frequency of overflow from sewer outlets in rainy weather condition by temporarily store first flush of which pollution load is high

Horikawa-River right bank Rainwater Reservoir
for pollution control
Volume 13,000m3
Started operation in Sep. 2010



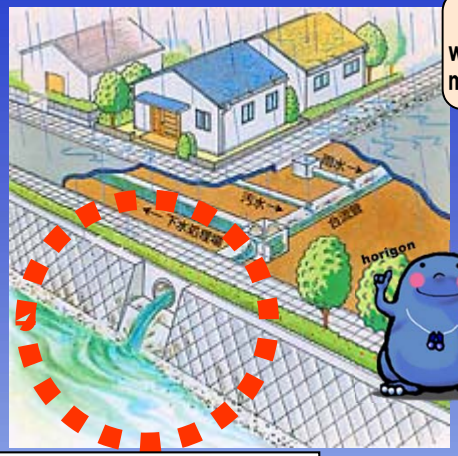
Horikawa-River left bank Rainwater Reservoir
for pollution control
Volume 14,000m3
Started operation in Nov. 2019



Advanced Facility for simple treatment in Horidome Water Treatment Center

Started in Mar. 2019

Combined Sewer System in rainy day



Less than certain amount of rainwater is treated with wastewater in water treatment center, but more amount is directly discharged into the river.

Rain-water Reservoir for pollution control is the facility temporally storing the initial rainwater (="first flush" which is particularly dirty).
Accumulated rainwater in the reservoir is delivered to the water treatment center for treatment after rain stops.

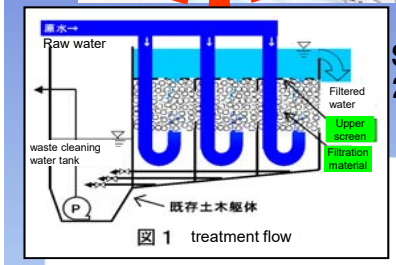
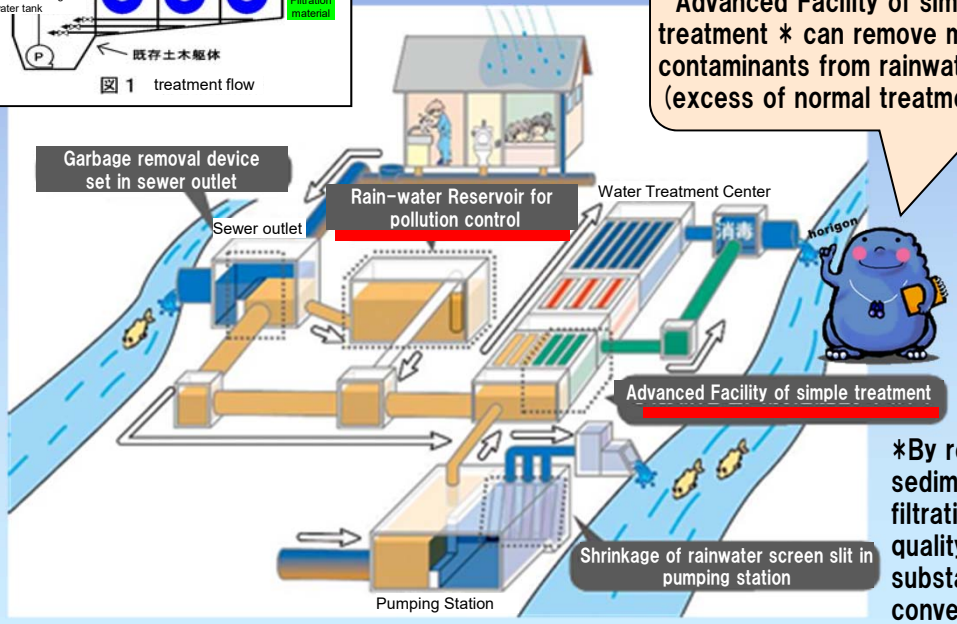


図１ treatment flow

Source:
25th HSC Conference
(Report by Nagoya City)

Advanced Facility of simple treatment * can remove more contaminants from rainwater (excess of normal treatment).



*By replacing sedimentation tank to filtration facility, water quality improves substantially compared with conventional simple treatment.

(Source) Website of Nagoya City Waterworks and Sewerage Bureau
https://www.water.city.nagoya.jp/category/mizukankyoukoujou/2096.html

Examination of using ground water for Shin-Horikawa River

- Summarize information of groundwater capable to use for Shin-Horikawa River
- Review model cases of using ground water for river clarification

(reference) Well Water of Tsuruma Library

There are many water springs in basement floor of Tsuruma Library. One of springs is abundant (more than 100 litters/min. (fluctuated)) and water quality is good.

(Source) Website of Nagoya City Environment Bureau
http://www.city.nagoya.jp/kankyo/page/0000089008.htm

6. 31st stage survey report

～Column～ For the clean-up and regeneration of Horikawa River

Horikawa Sen-nin Chosatai (HSC) was established on April 22nd, 2007 for clean-up and regeneration of Horikawa River, as a place for citizens' activities (Fixed Point Observation Group, Free Survey Group and Support group).
Fixed Point Observation Group examines Horikawa River to confirm the clean-up effect by the water quality improvement measure and to make clear the condition of water quality and cause of pollution, from a viewpoint and a sense of citizen.
Free Survey Group studies Horikawa River from various view points.
Support Group supports clean-up and regeneration of Horikawa River in various-free ways. These three groups wish for clean-up and regeneration of Horikawa River, and work together in a large network.
Currently (as of Mar.19.2022), there are 2,607 groups and 53,722 people in HSC.
(109 groups in Fixed Point Observation Groups, 40 groups in Free Survey Group and 2,607 groups in Support Group) At the time of launch of HSC, there were 165 groups and 2,262 people.
We can see that the network of citizens who wish to purify and regenerate Horikawa-River has expanded significantly.
(Reference. Survey group registration status p.7～8)

We will explain the status of activities of Fixed Point Observation Groups. The Fixed Point Observation Groups carried out 10,000 observationsIns. In the surveys conducted so far, it has been found that the state of the water area changes from moment to moment depending on the ebb and flow of the tide in the section downstream from the Sanage Bridge on the Horikawa River and the Shin-Horikawa River (the tidal section). Since Fixed Point Observation Groups made many observations from the perspective and sense of the citizens (Observation in various places, tide conditions, and time zones), we are able to grasp the average condition of the water quality of the Horikawa, and trends in that change become clear. (Reference: 3. Survey period / number of reports of survey results_p.9-10)

-Pilot project of Horikawa River clean-up "from Apr. 2007 to Mar. 2012 confirmed the effect of TRWKR"-

In 5 years pilot project of Horikawa River clean-up, it was confirmed that the range of improved water quality due to TRWKR "0.4㎥/sec" was about between Sanage Bridge and Matsushige Bridge. And in this period, it was confirmed that the amount of waste "artificial waste : plastic waste" was reduced. This is probably because the public awareness has changed due to increased cleaning activities.

【Summary of 5 years pilot project】

■Confirmed the effect of clean-up between Sanage Bridge and Matsushige Bridge due to TRWKR
■The network of citizens who wish to clean and revives the Horikawa River has been expanded
■Citizens' awareness of clean-up improved as cleaning activities became active

During the 31st stage (spring-summer, April 1～June 30), the 6 the wave of COVID-19 quieted down and the number of seriously injured patients was tend to decrease. But still control measures for this infectious disease were needed. So, activities of HSC were forced to be limited and conducted without 3Cs (closed spaces, crowded places, and close-contact settings).
The survey results of this stage is not enough evaluated at this time as previous stages during the COVID-19 pandemic. It is necessary to reorganize them according to future survey results.

(1) State of weather etc.
The average temperature of the 31st stage (Apr-Jun) was 20.2, which was the highest ever. The precipitation was 139 mm/month, which was almost same of average (154.8 mm/month).

Feature of the 31 st stage or weather
・Average temperature was highest ever
・Precipitation and hours of sunlight was almost same as average

(2) Implementation of new water quality improvement measures
After the TRWKR was stopped "Mar. 2010", new measures have been implemented to improve the water quality.
In FY2021, a 10th well was drilled to utilize shallow grand water upstream of the Asahi Bridge, and water conduction to the Horikawa River (0.002 ㎥/s) began.

Dredging sludge of river bottom has been continuously conducted with revetment construction. In FY2019, Horikawa-River left bank Rainwater Reservoir for pollution control and advanced facilities of primary treatment at the Meijo Water Treatment Center were put into service. In FY2020, a new rapids was formed downstream of the Shinhori Bridge in the Horikawa River.

In the Shin-Horikawa River, dredging sludge of the river bottom was conducted at the upstream area and near confluence as an odor control measure in FY2017 and 2018. In FY2018, advanced facilities of primary treatment at the Horidome Water Treatment Center located in the upstream end were put into service.

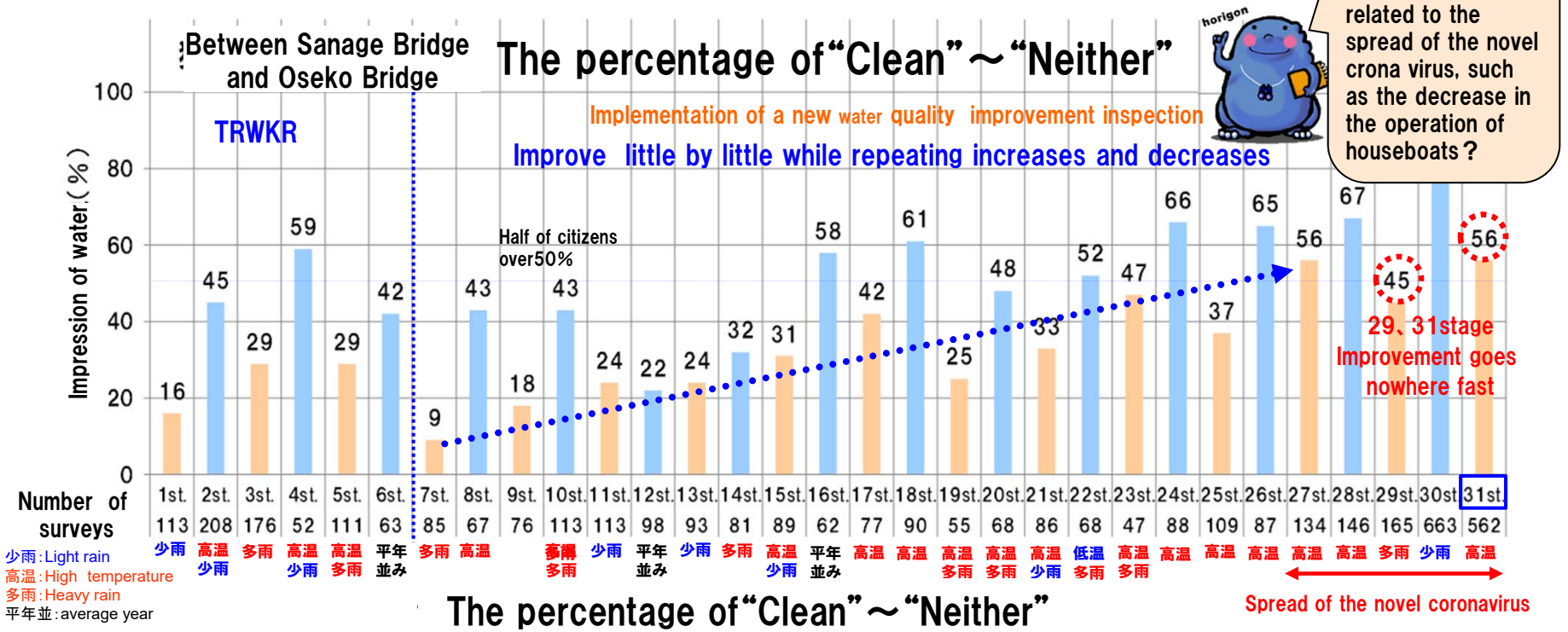
(3) Change in water quality of Horikawa River

"Impression of water clearness" between Asahi Brdg - Oseko Brdg got worse after the stop of TRWKR. After that, there has been a general tendency for improvement. However, in recent 29th and 31 st stages, it didn't show the signs of improvement.

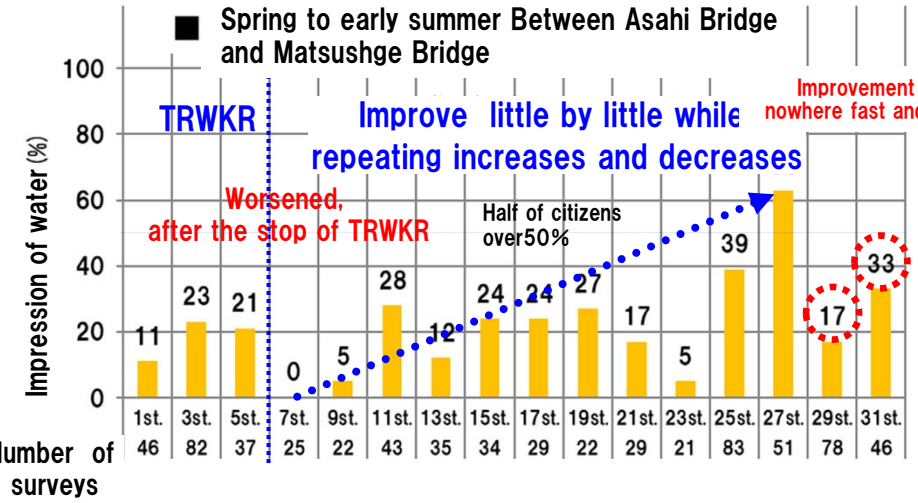
Smells between Sanage Brdg and Oseko Brdg got worse in recent 29th stage.
But in 31st stage, ratio of "terrible smell"-"smell" decreased between Sanage Brdg - Oseko Brdg and that of "no smell" increased (improved) to 95%.

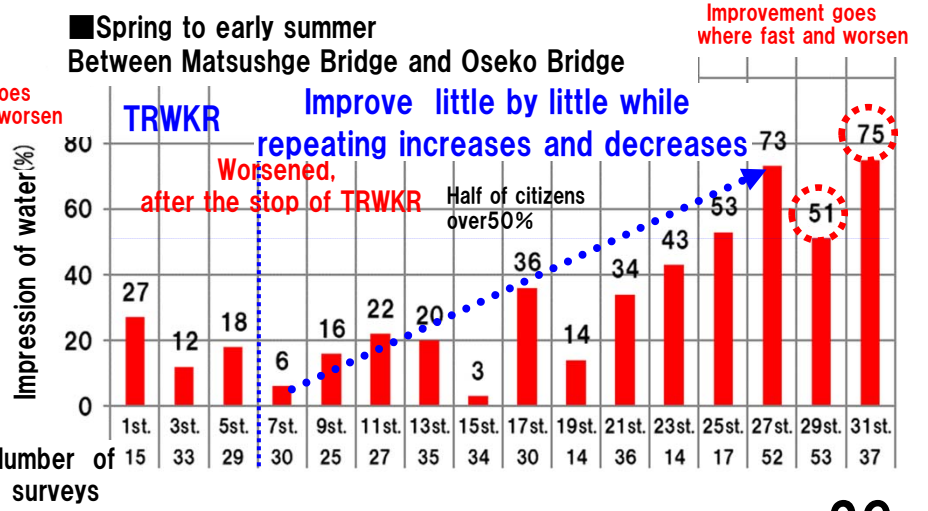
These deterioration of water quality has some relation to COVID-19 pandemic, such as decreased operations of Yakata-bune (house boats)?
To solve this question is our forthcoming task.

Impression of water

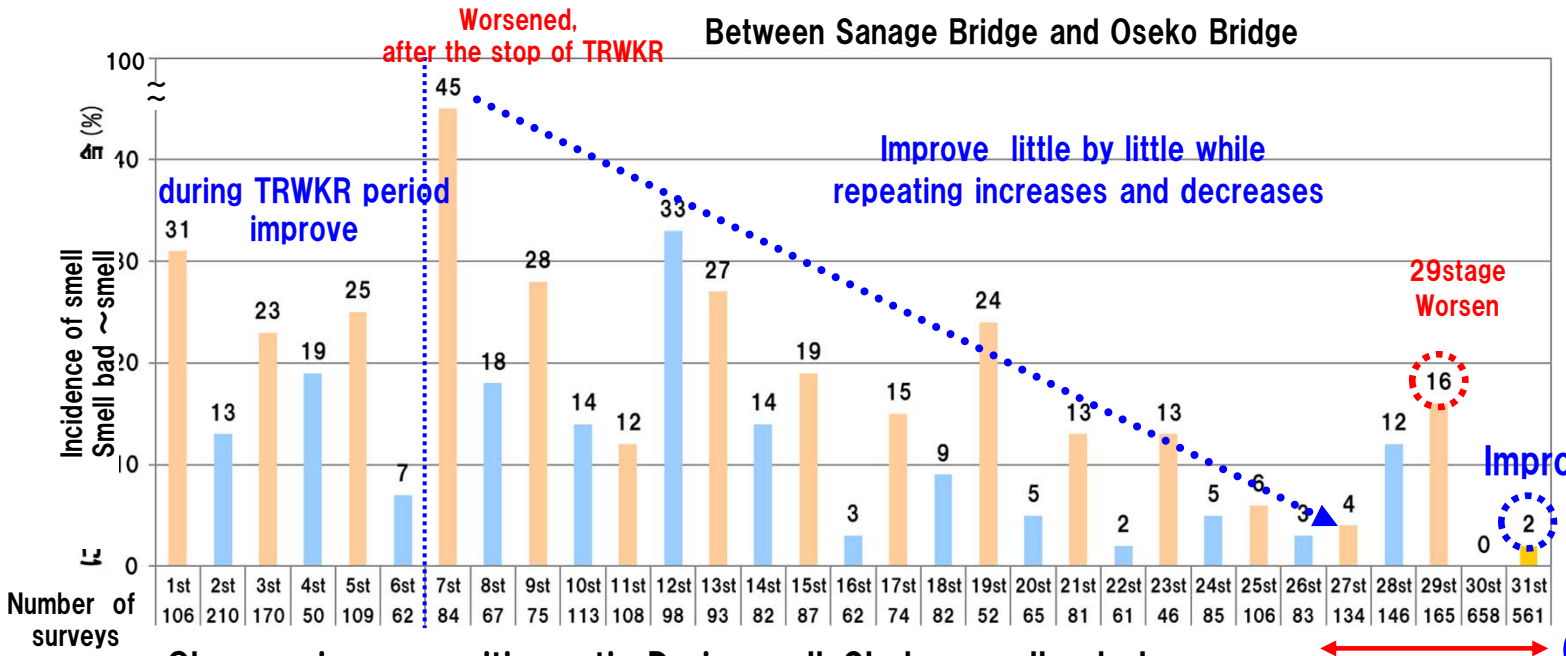


Is the stepping for improvement related to the spread of the novel crona virus, such as the decrease in the operation of houseboats？





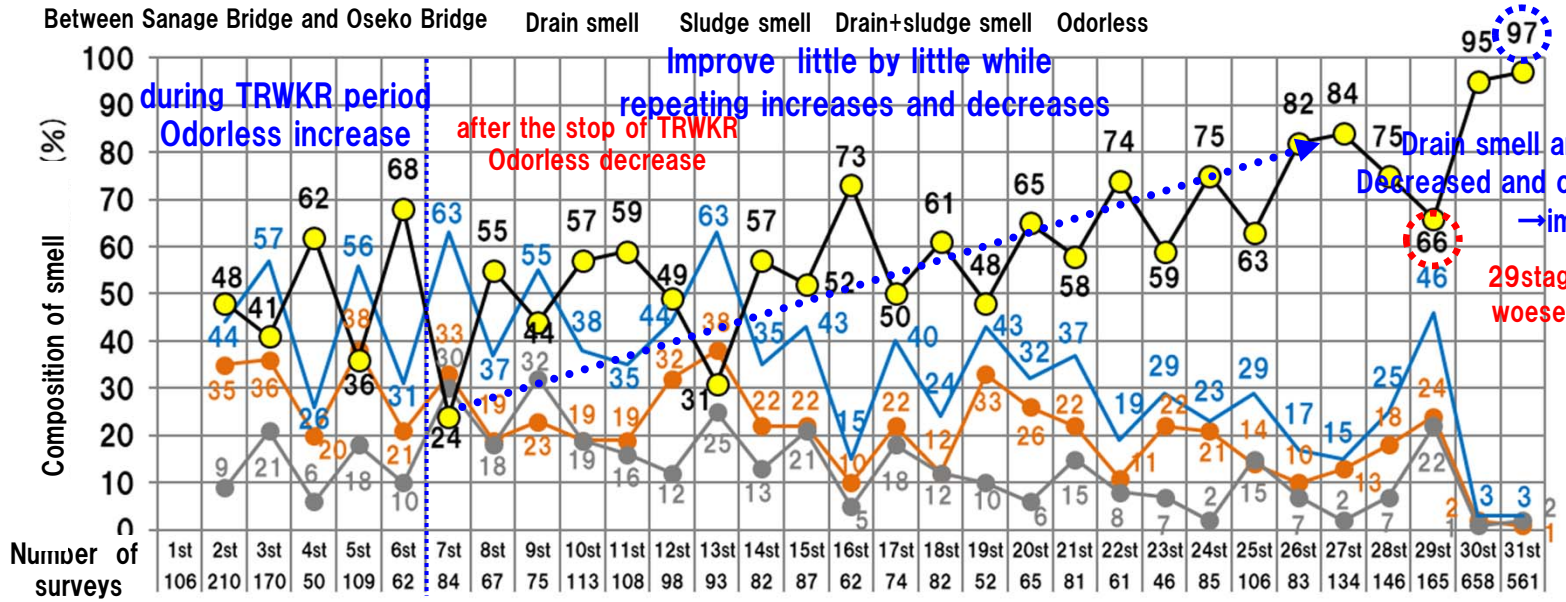
Smell The percentage of Smell bad～smell



Changes in composition ratio Drain smell・Sludge smell・odorless

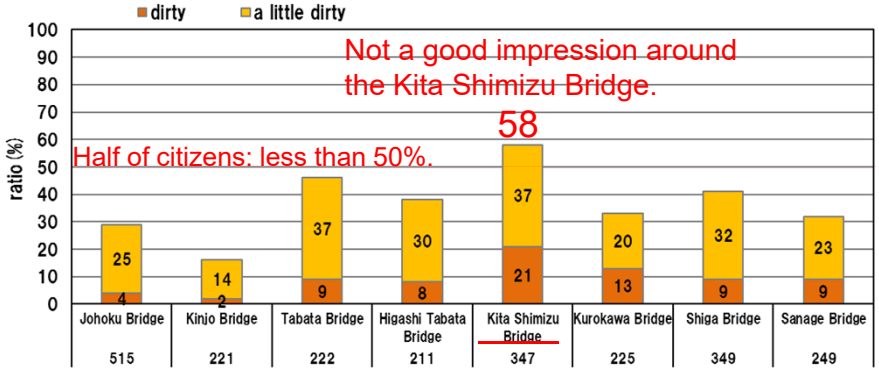
Spread of the novel coronavirus

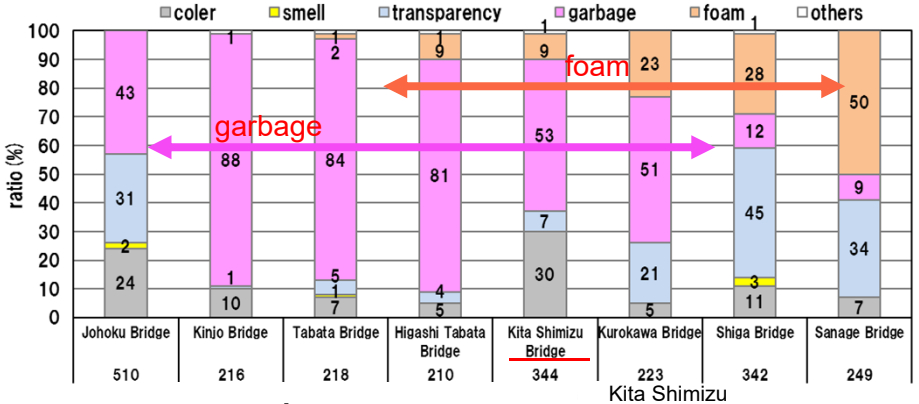
Odorless increase



(4) Organize features between Horikawa・Johoku Bridge and Sanage Bridge

We found that the impression of water contamination was not good near the North Shimizu Bridge. And, including the results of previous citizen reports, the characteristics of water pollution, such as the shape of the river channel, the movement of water due to tides, and the influence of flow from upstream, are gradually becoming clear. Further investigation is needed to further elucidate the mechanism of pollution and to implement countermeasures through the combined efforts of the public and private sectors.



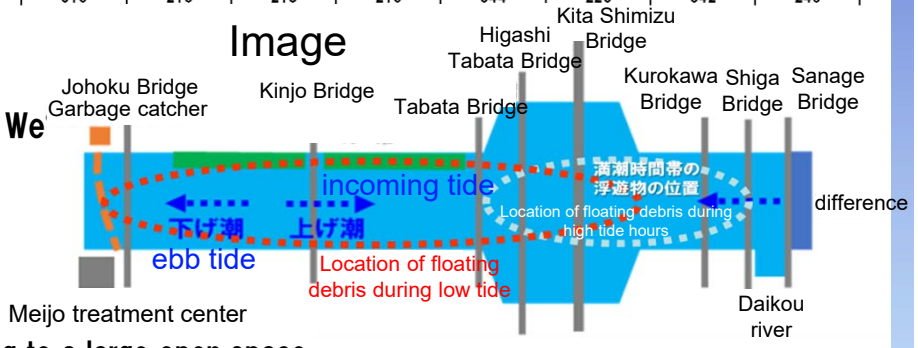


(5) Why has garbage increased?

In the 31st stage, garbage on the streets has suddenly increased. We tried to sort out the current situation based on the photos sent by everyone.

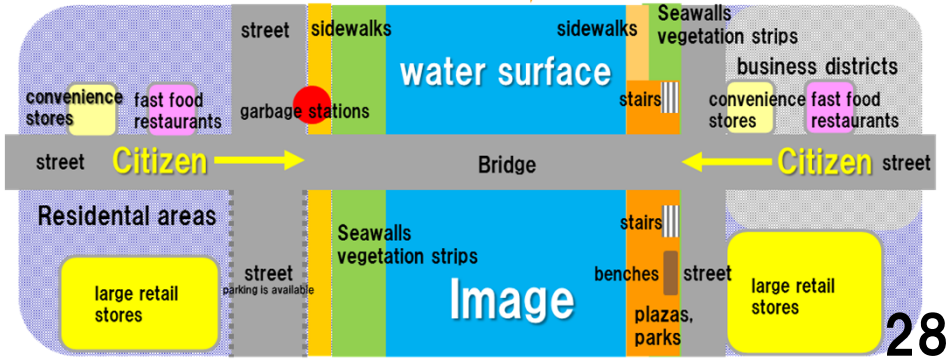
Based on the results, we came up with a hypothesis.

(hypothesis)Could the 3Cs (crowded places, closed spaces, closed-contact settings) avoidance of the new corona countermeasure be affecting the increase in discarded trash?



Going to a large open space outside in search of a place to eat, drink, and smoke.

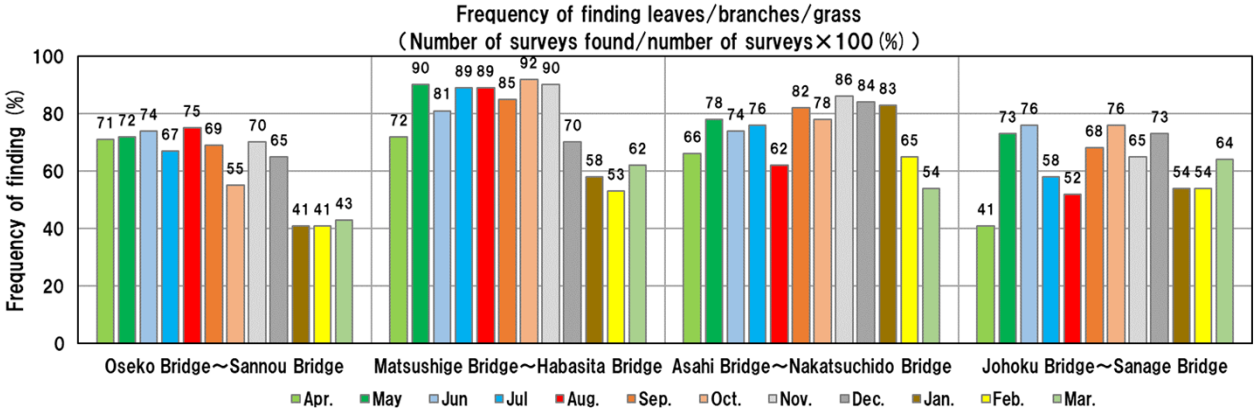
Take-out.
Eating, drinking and smoking



(6) Current status of floating matter derived from nature

All data of 7th～31th stage The number of data:6,064

We organized the current status of floating matter derived from nature that moves and accumulates together with man-made garbage. Floating and accumulating floating matter derived from nature makes it difficult to collect man-made garbage that is entangled in it. In particular, it has been confirmed that leaves, branches, and grasses, including dead reeds, are frequently floating throughout the year. It has also been confirmed that artificial waste is floating in it.



Floating matter entangled with man-made garbage

(7) State of growth of reeds(Comparison with and without cutting)

We organized the current state of growth of reeds floating on the surface of the water throughout the year with photographs. By cutting reeds from autumn to early winter, dead reeds were not mixed in the vegetation zone during the growing season (around March to July). This means that almost no dead reeds fell or floated on the surface of the water from this vegetation zone during the growing season. Cutting reeds from autumn to early winter may reduce the number of dead reeds that are entangled in man-made garbage and accumulate and move, making it easier to collect man-made garbage.

(8) Jellyfish mysteries found the upstream of the Shin-Horikawa River?

Jellyfish are thought to drift in seawater and move by their movements.
The fact that live jellyfish were found in the jellyfish live enters the upstream of the Shin-Horikawa River in a short period of time and replaces it.

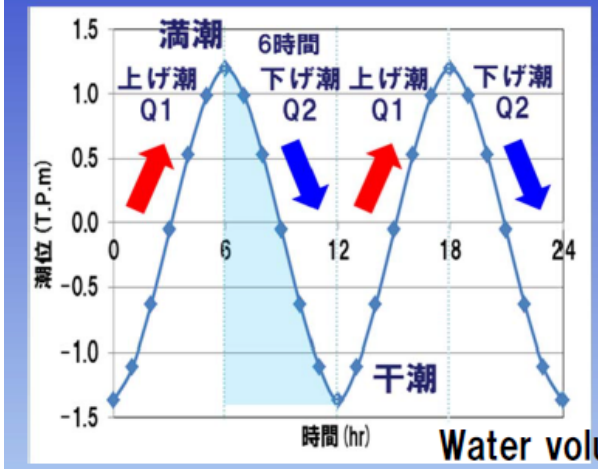
(Hypothesis)
At high tide, the jellyfish run upstream and get left behind?

There are two tidal periods ina day, and about 40% of the volume of the Shin-Horikawa River can be replaced during one tidal period?

Place:Kinen Bridge

Movement of water in the Shin-Horikawa River due to tidal flow

Ebb Tide



high tide level T.P.1.20m

Toward downstream
380,000m³
Run-off

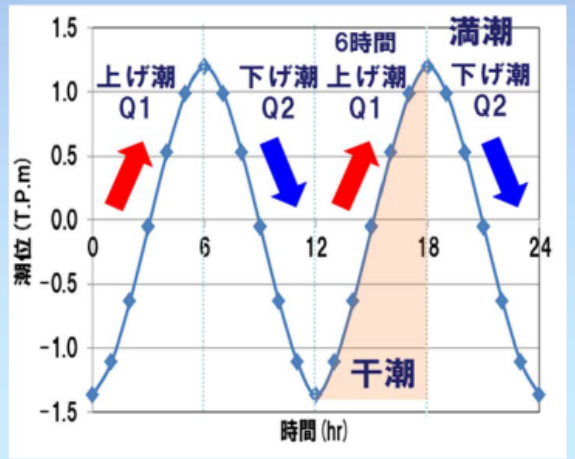
low tide level T.P.-1.37m

unchanged water volume
600,000m³

Horikawa River
Nagoya Port

Water volume of Shin-Horikawa River at high tide is 1,000,000m³

High Tide



high tide level T.P.1.20m

From downstream
360,000m³ Run-up

low tide level T.P.-1.37m

unchanged water volume
600,000m³

Horikawa river change

An example of the citizen survey
In response to the “new lifestyle”.

6.2.1. Impression and evaluation of water pollution

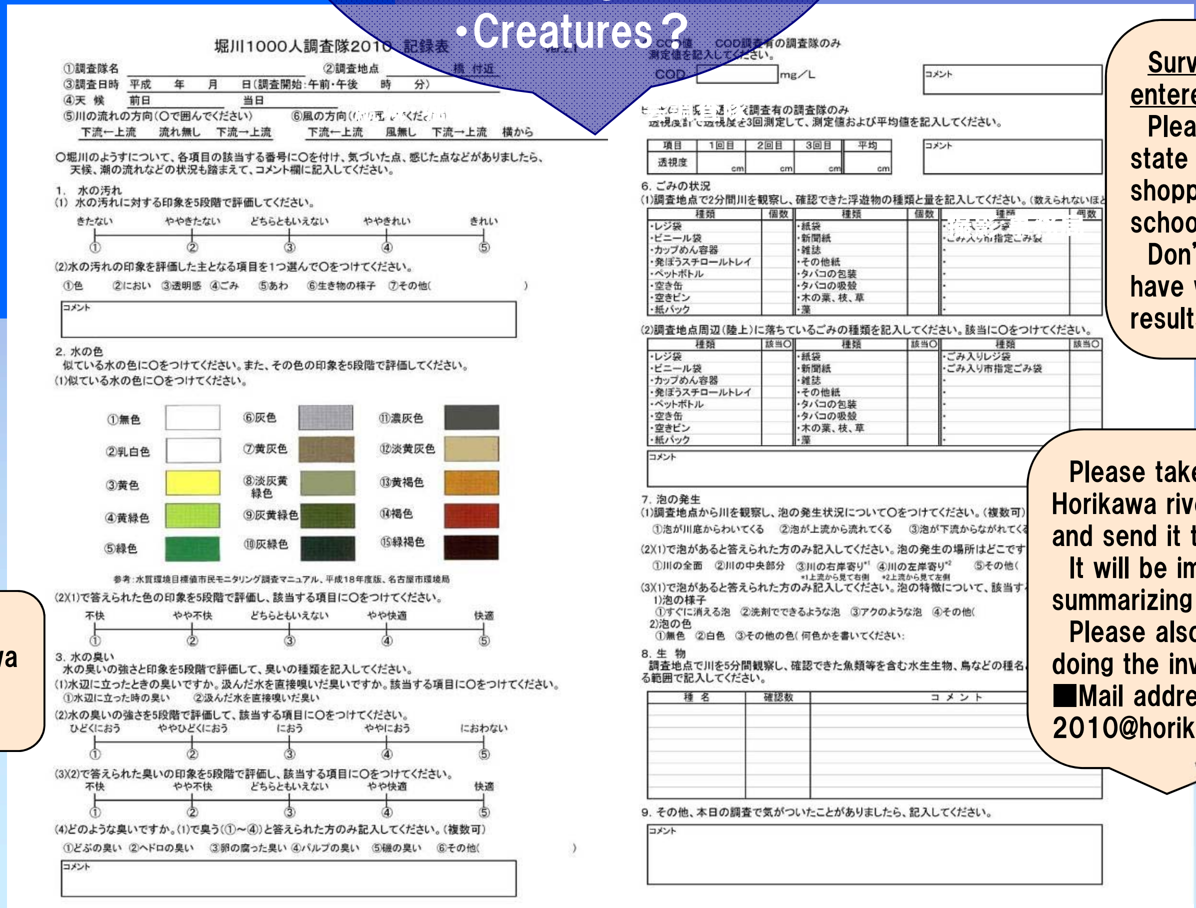
■Evaluation of water pollution
Evaluation the impression of water pollution on a 5-point scale
①Dirty
②A little dirty
③Neither
④A little clean
⑤Clean

■Select one main item for evaluating the impression of water pollution
①Color
②Smell
③Clarity
④Garbage
⑤Bubble
⑥Creatures
⑦Other

・Impression of waster pollution？
・Water clarity？
・Water color？
・Bubble？
・Smell？
・Garbage？
・Creatures？

Fixed point observation results
Input form QR code

We evaluate the state of water pollution in the Horikawa river from the perspective of citizens.



堀川1000人調査隊2010 記録表

①調査隊名　②調査地点　橋 付近
③調査日時　平成　年　月　日(調査開始:午前・午後　時　分)
④天 候　前日　当日
⑤川の流れの方向(○で囲んでください)　下流←上流　流れ無し　下流→上流
⑥風の方向　下流←上流　風無し　下流→上流　横から

○堀川のようすについて、各項目の該当する番号に○を付け、気づいた点、感じた点などがありましたら、天候、潮の流れなどの状況も踏まえて、コメント欄に記入してください。

1. 水の汚れ
(1) 水の汚れに対する印象を5段階で評価してください。
きたない ①　ややきたない ②　どちらともいえない ③　ややきれい ④　きれい ⑤
(2)水の汚れの印象を評価した主となる項目を1つ選んで○をつけてください。
①色　②におい　③透明感　④ごみ　⑤あわ　⑥生き物の様子　⑦その他(　)
コメント

2. 水の色
似ている水の色に○をつけてください。また、その色の印象を5段階で評価してください。
(1)似ている水の色に○をつけてください。
①無色　②乳白色　③黄色　④黄緑色　⑤緑色
⑥灰色　⑦黄灰色　⑧淡灰黄緑色　⑨灰黄緑色　⑩灰緑色
⑪濃灰色　⑫淡黄灰色　⑬黄褐色　⑭褐色　⑮緑褐色
参考:水質環境目標値市民モニタリング調査マニュアル、平成18年度版、名古屋市環境局
(2)(1)で答えられた色の印象を5段階で評価し、該当する項目に○をつけてください。
不快 ①　やや不快 ②　どちらともいえない ③　やや快適 ④　快適 ⑤

3. 水の臭い
水の臭いの強さと印象を5段階で評価して、臭いの種類を記入してください。
(1)水辺に立ったときの臭いですか。汲んだ水を直接嗅いだ臭いですか。該当する項目に○をつけてください。
①水辺に立った時の臭い　②汲んだ水を直接嗅いだ臭い
(2)水の臭いの強さを5段階で評価して、該当する項目に○をつけてください。
ひどくにおう ①　ややひどくにおう ②　におう ③　ややにおう ④　におわない ⑤
(3)(2)で答えられた臭いの印象を5段階で評価し、該当する項目に○をつけてください。
不快 ①　やや不快 ②　どちらともいえない ③　やや快適 ④　快適 ⑤
(4)どのような臭いですか。(1)で臭う(①～④)と答えられた方のみ記入してください。(複数可)
①どぶの臭い　②ヘドロの臭い　③卵の腐った臭い　④パルプの臭い　⑤磯の臭い　⑥その他(　)
コメント

COD値　COD調査有の調査隊のみ
測定値を記入してください。
COD　mg／L
コメント

透視度計で透視度を3回測定して、測定値および平均値を記入してください。

項目	1回目	2回目	3回目	平均
透視度	cm	cm	cm	cm

コメント

6. ごみの状況
(1)調査地点で2分間川を観察し、確認できた浮遊物の種類と量を記入してください。

種類	個数	種類	個数	種類	個数
・レジ袋		・紙袋			
・ビニール袋		・新聞紙		・ごみ入り市指定ごみ袋	
・カップめん容器		・雑誌		・	
・発ぽうスチロールトレイ		・その他紙		・	
・ペットボトル		・タバコの包装		・	
・空き缶		・タバコの吸殻		・	
・空きビン		・木の葉、枝、草		・	
・紙パック		・藻		・	

(2)調査地点周辺(陸上)に落ちているごみの種類を記入してください。該当に○をつけてください。

種類	該当○	種類	該当○	種類	該当○
・レジ袋		・紙袋		・ごみ入りレジ袋	
・ビニール袋		・新聞紙		・ごみ入り市指定ごみ袋	
・カップめん容器		・雑誌		・	
・発ぽうスチロールトレイ		・その他紙		・	
・ペットボトル		・タバコの包装		・	
・空き缶		・タバコの吸殻		・	
・空きビン		・木の葉、枝、草		・	
・紙パック		・藻		・	

コメント

7. 泡の発生
(1)調査地点から川を観察し、泡の発生状況について○をつけてください。(複数可)
①泡が川底からわいてくる　②泡が上流から流れてくる　③泡が下流からながれてく
(2)(1)で泡があると答えられた方のみ記入してください。泡の発生の場所はどこです
①川の全面　②川の中央部分　③川の右岸寄り[*1]　④川の左岸寄り[*2]　⑤その他(
*1上流から見て右側　*2上流から見て左側
(3)(1)で泡があると答えられた方のみ記入してください。泡の特徴について、該当す
1)泡の様子
①すぐに消える泡　②洗剤でできるような泡　③アクのような泡　④その他(
2)泡の色
①無色　②白色　③その他の色(何色かを書いてください:

8. 生 物
調査地点で川を5分間観察し、確認できた魚類等を含む水生生物、鳥などの種名
る範囲で記入してください。

種 名	確認数	コ メ ン ト

9. その他、本日の調査で気がついたことがありましたら、記入してください。
コメント

<u>Survey results can also be entered form cellphones, etc.</u>
Please feel free to report the state of the river when walking, shopping, commuting, going to school,etc.
Don’t worry if you don’t have water clarity or COD results.

Please take a picture of the Horikawa river with your cellpohone and send it to the secretariat.
It will be important information when summarizing the survey results.
Please also send me how you are doing the investigation.
■Mail address
2010@horikawa1000nin.jp

Garbage

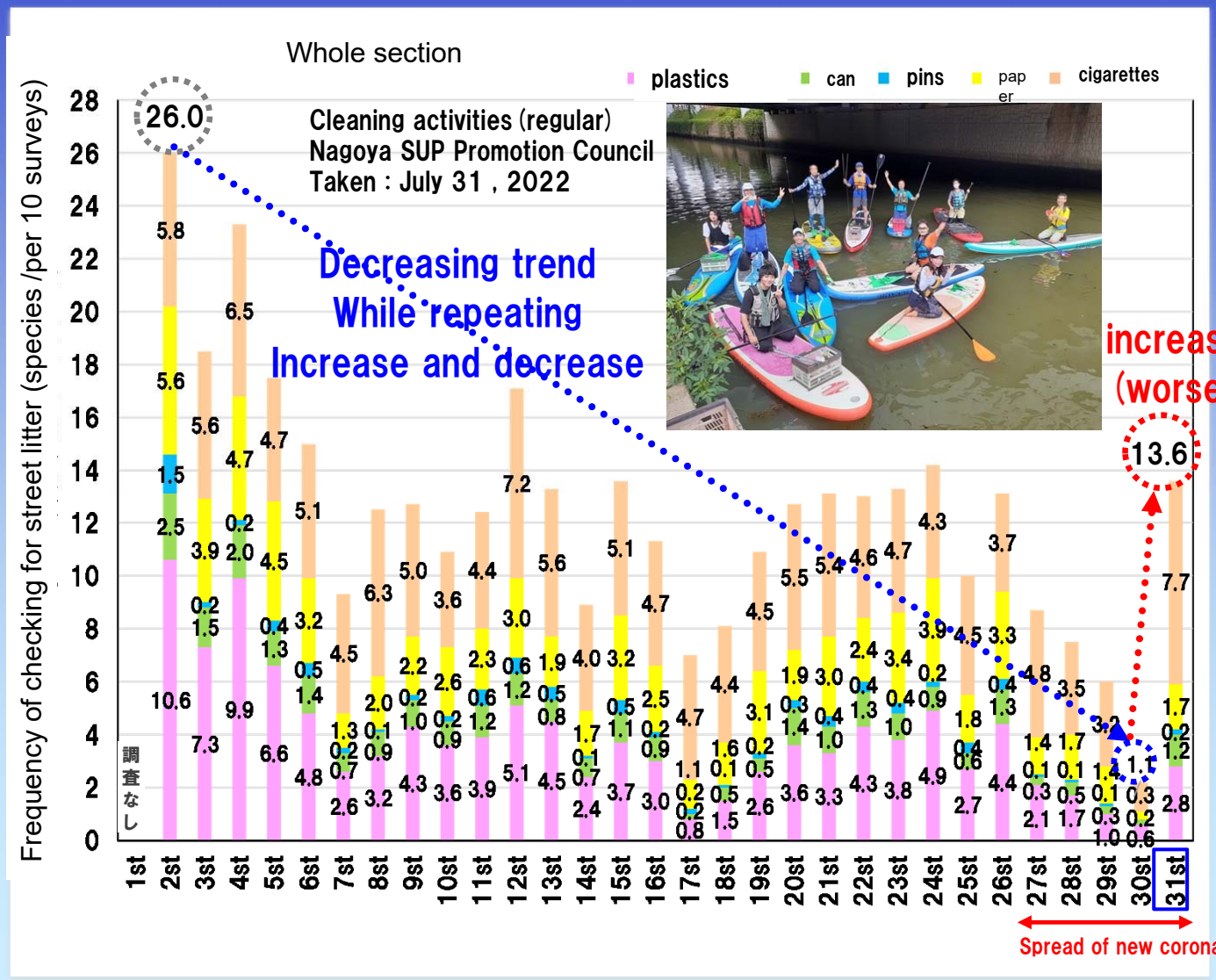
About street garbage
Changes in the number of confirmed types of street litter (artificial litter) (2nd～31nd stages: all sections)

第1～6st :TRWKR
No rain before or on the day
第7～31st:No TRWKR
No rain before or on the day

■Man-made garbage？:Plastics (plastic shopping bag , plastic bag , noodle cup , polystyrene foam tray , pet bottles , plastic bag with garbage , etc.) ,cans ,pins , cigarettes (wrapping , cigarette butts)

Note) What is the confirmed number of types of street litter?

It is not the number of garbage. In each survey, man-made waste (classified into 18 types) was identified, and each type was counted as 1 type. This is a summary of how many types of man-made waste were confirmed per survey.



26.0 (2nd) for the frequency of checking street litter indicates that 2.6 types of street litter were found on the ground during one survey.

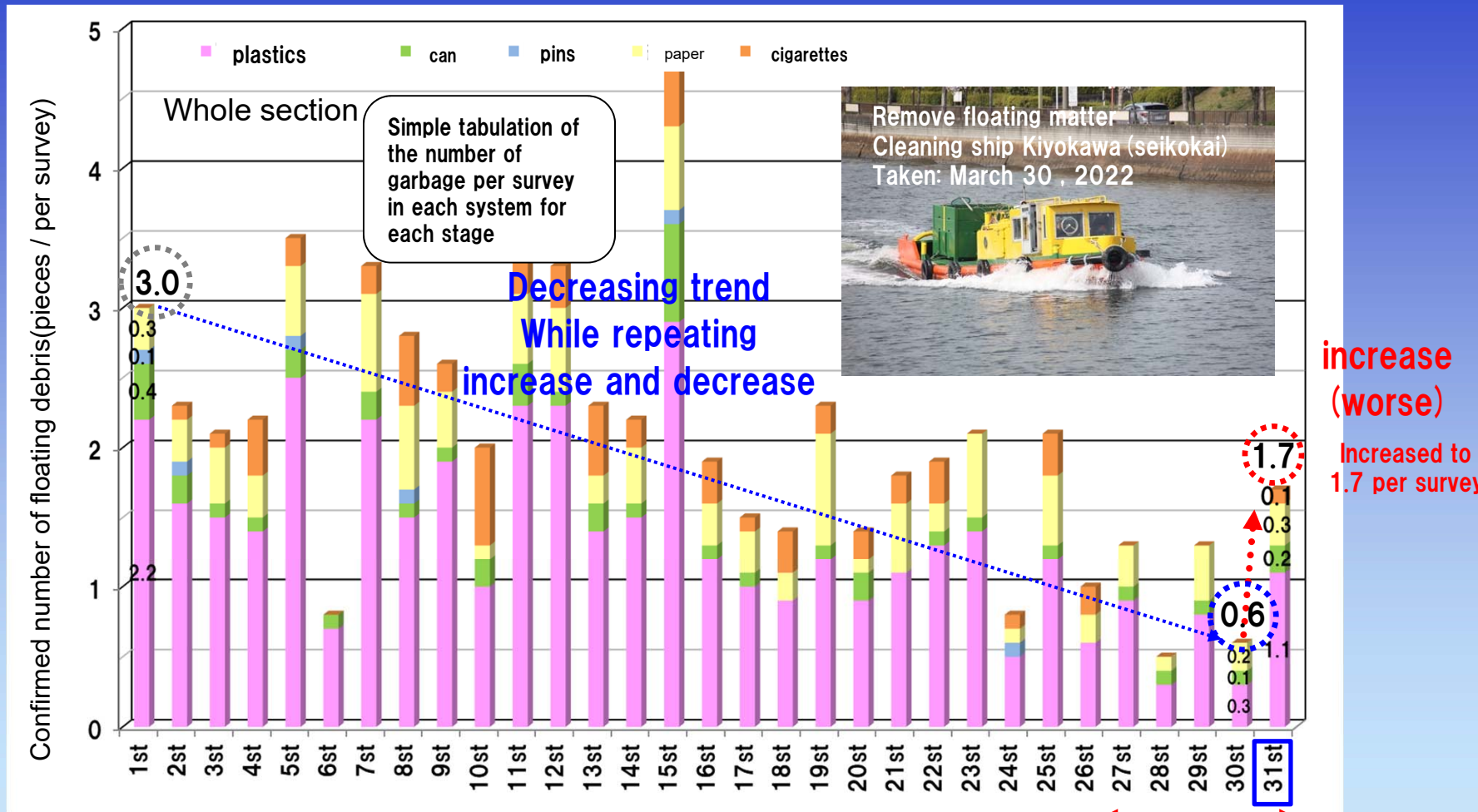
■ How often do you see street litter (artificial litter)？
Street litter (artificial litter) in the 30th stage decreased (improved) from 26.0 to 1.1 compared to the 2nd stage added to the survey items. However, it increased (worsened) to 13.6 at 31 stages. This result means that there was always more than one type of litter (1.36 types) on the road in one visit to the survey.

Floating matter
Changes in floating matter (artificial waste)

第1～6st:TRWKR
No rain before or on the day

第7～31st: No TRWKR
No rain before or on the day

■Man-made garbage？:Plastics (plastic shopping bag , plastic bag , noodle cup , polystyrene foam tray , pet bottles , plastic bag with garbage , etc.) ,cans ,pins , cigarettes (wrapping , cigarette butts)



increase (worse)

Increased to 1.7 per survey

Note) Number of garbage per survey = Number of man-made waste confirmed by type / number of surveys.
* Number of man-made waste is the number of waste confirmed by the survey. For those reported as "many (=***)", we calculated by substituting 10, which is equivalent to the maximum reported value of man-made waste.

■ What about floating objects (artificial waste)？
The number of floating debris in 30 stages was 0.6 per survey. Floating matter (human waste) decreased (improved) compared to the first stage. In particular, plastics decreased (improved) to 0.3 per survey. However, at 31 stages, it increased (worsened) to 1.7 per survey.

Why has garbage increased？

(hypothesis)Could the 3Cs (crowded places, closed spaces, closed-contact settings) avoidance of the new corona countermeasure be affecting the increase in discarded trash?

I pick it up... I pick it up...

Garbage (Ref: p.57,58) suddenly increased in the 31st stage. Based on the photos sent by everyone, we tried to sort out where most of the garbage was left and thrown away, and arrived at the hypothesis that "the increase in garbage may be related in no small part to the avoidance of the 3Cs as a measure against the new type of corona? This is the hypothesis that we have arrived at.

Continued investigation is needed to confirm this factual relationship, but there is no doubt that it is the citizens (a handful) who are abandoning and throwing away garbage. This is an unforgivable act.

Where are many dumped?

- Around convenience stores
- Around fast food restaurants
- Around large retail stores
- Around business districts
- Around streets where parking is available
- Around garbage stations, etc.

→ water surface

Waterfront (plazas, parks, etc.)

On bridges, seawalls/vegetation strips, sidewalks, benches, stairs, etc.

3Cs avoidance required by the new Corona disaster

image

citizen → Around convenience stores
Around fast food restaurants
Around large retail stores ← citizen

residential district

business districts

Eating, drinking, and smoking areas - large open space outdoors

Waterfront (plazas, parks, etc.)

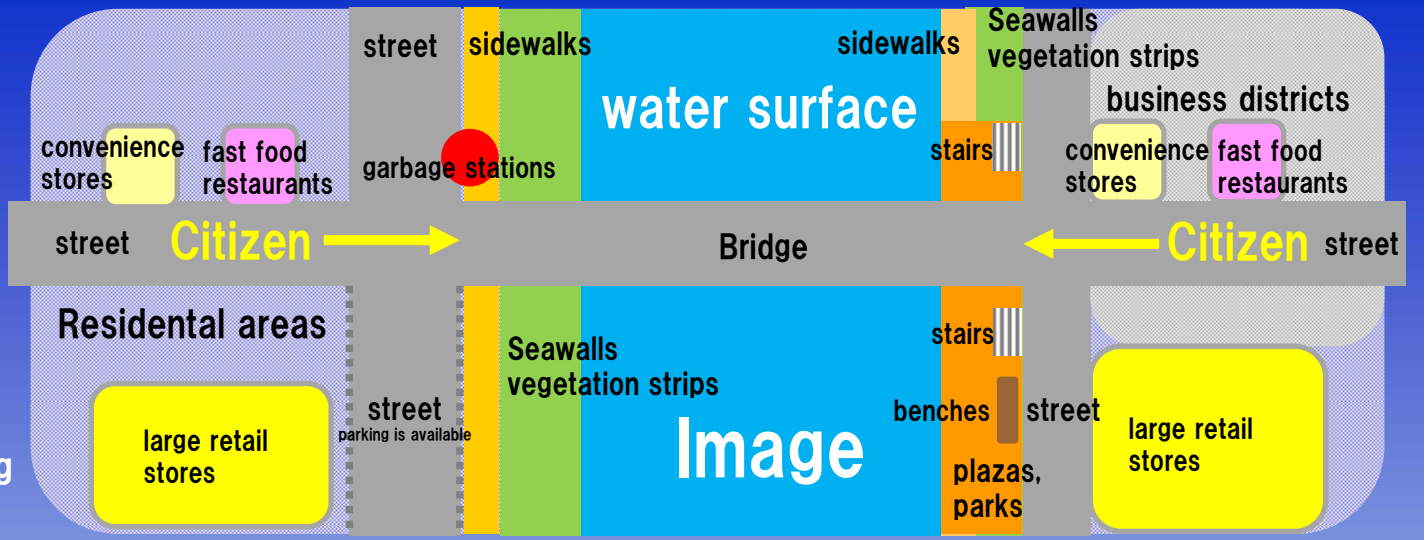
On bridges, seawalls/vegetation strips, sidewalks, benches, stairs, etc.

Increase in abandoned and littered trash?

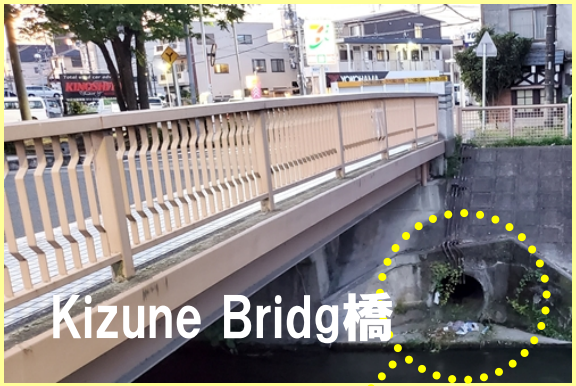
Who？ → A handful of citizens

Going to a large open space outside in search of a place to eat, drink, and smoke.

Take-out.
Eating, drinking and smoking



■ Around convenience stores



Has it changed to street litter with the introduction of convenience store bag fees?

Garbage is left in pieces and thrown in various places.












A hand towel bag here, and a hand towel at the end of it... Drink container over there... A bag of rice balls over there... A popsicle stick here...

In recent years, litter on the streets has been characterized by the fact that it is left in various places and thrown about. I feel that this is due to the fact that convenience store bags are now charged for, and that this is one of the characteristics of street litter.

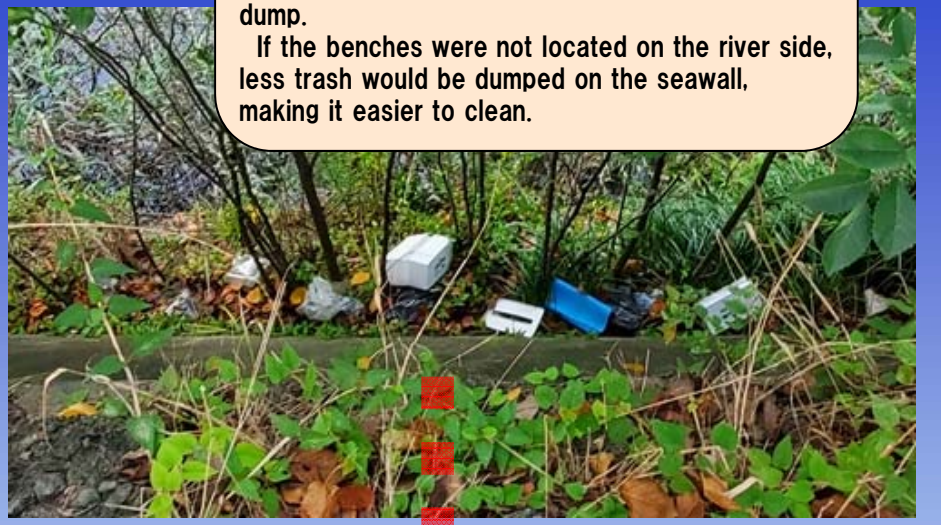
Bench on the river side

The seawall on the back side looks like a garbage dump

Goyousui-ato-gaien

When benches are located on the river side, it seems that garbage is easily littered on the seawall. In particular, the sloping seawall is difficult to clean, so a large amount of trash accumulates there, making it look like garbage dump.

If the benches were not located on the river side, less trash would be dumped on the seawall, making it easier to clean.



Around Kinjo Bridge

■ Around fast food restaurants

■ Around large retail stores

It seems that groups are eating, drinking, and smoking in the restaurant after purchasing alcohol and snacks.

■ Around Business District

There is a lot of littering of cigarette butts. Are there no infection-control smoking areas in the offices?
Some people sit on benches during their lunch break, eat and drink, smoke cigarettes afterwards, and leave their litter there.... The area around the benches is quickly littered with trash.

■ Around the street where parking is available

(Information/Photographs) Earth Club Research Team

After eating, drinking, or resting in their cars, they seem to be dumping their garbage on the street or at the water's edge.

■ Around Garbage Stations

On the day of garbage collection or the day after or the day after, bags of recyclable garbage may float on the surface of the water. The contents of the recyclable trash (aluminum cans?)), they may collect the bags they no longer need, put them into one bag, and throw it into the river. (**The 30th survey meeting**)

Current status of floating matter derived from nature

We organized the current status of floating matter derived from nature that moves and accumulates together with man-made garbage.

All data of 7th～31th stage
The number of data:6,064

Frequency of finding leaves/branches/grass

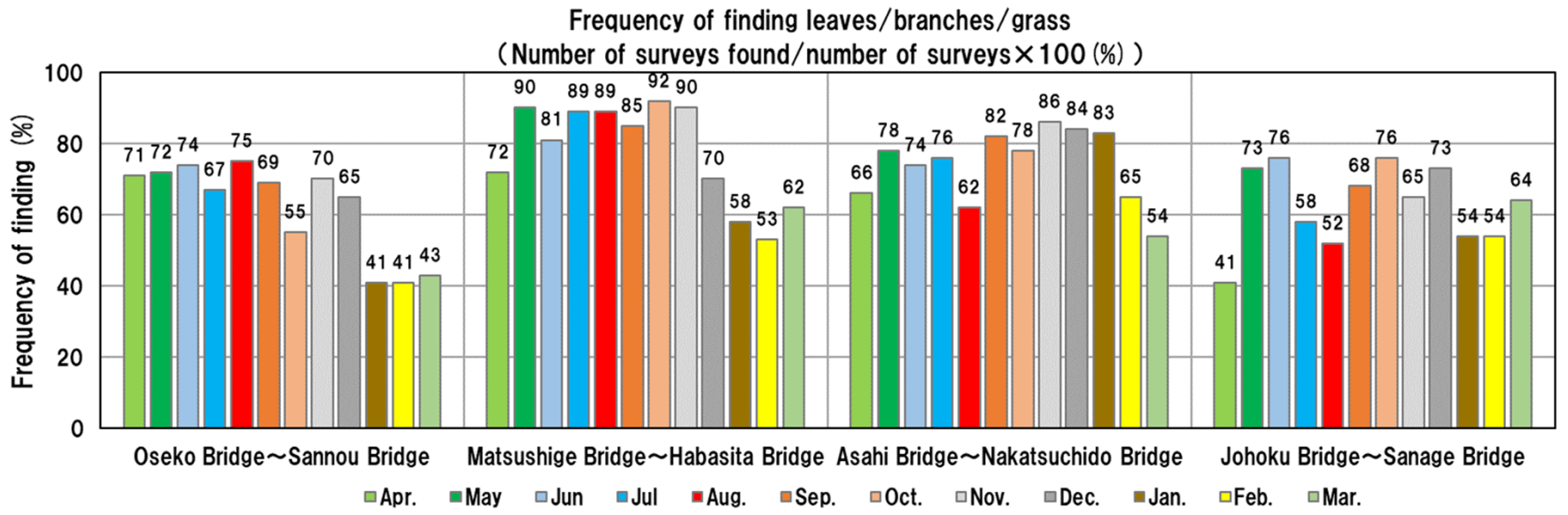


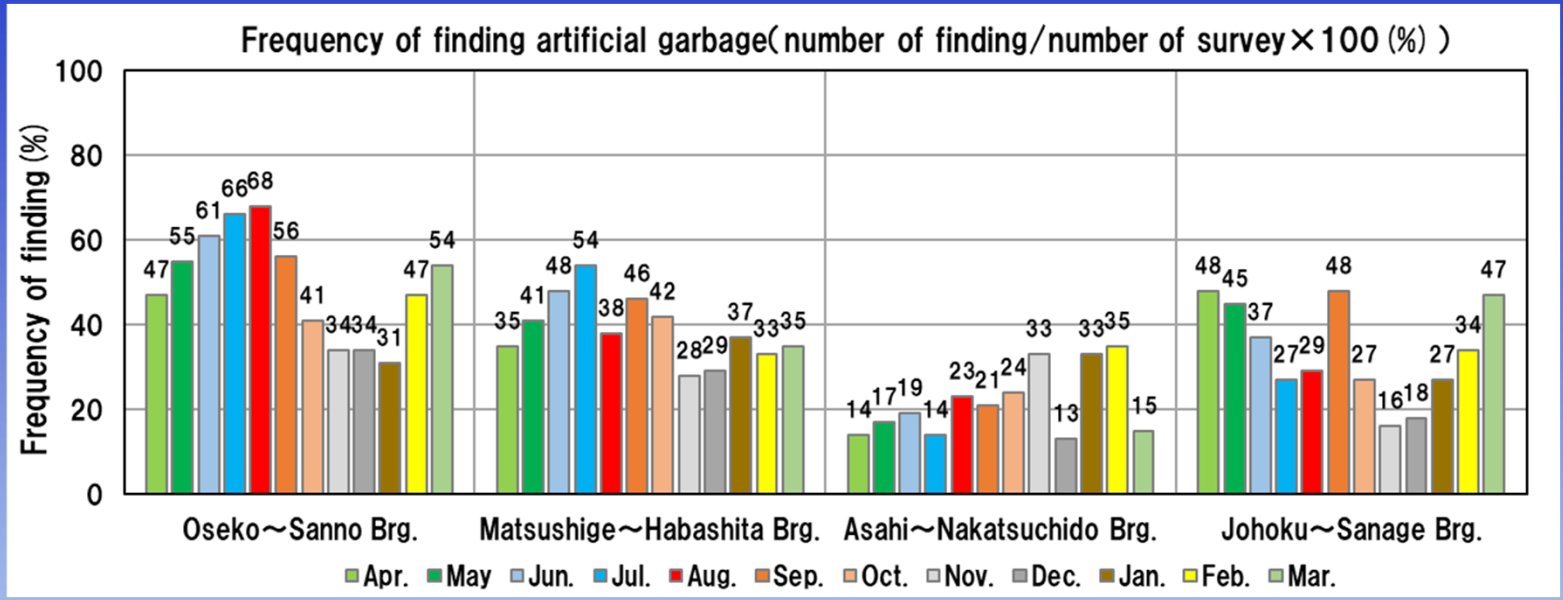
Photo:Chikyu-club survey group Aug. 4. 2021
Shiratori Wharf (in front of International conference hall)

It has been confirmed that leaves, branches, and grasses, including dead reeds, are frequently floating throughout the year. It has also been confirmed that artificial waste is floating in it. Floating and accumulating floating matter derived from nature makes it difficult to collect man-made garbage that is entangled in it.

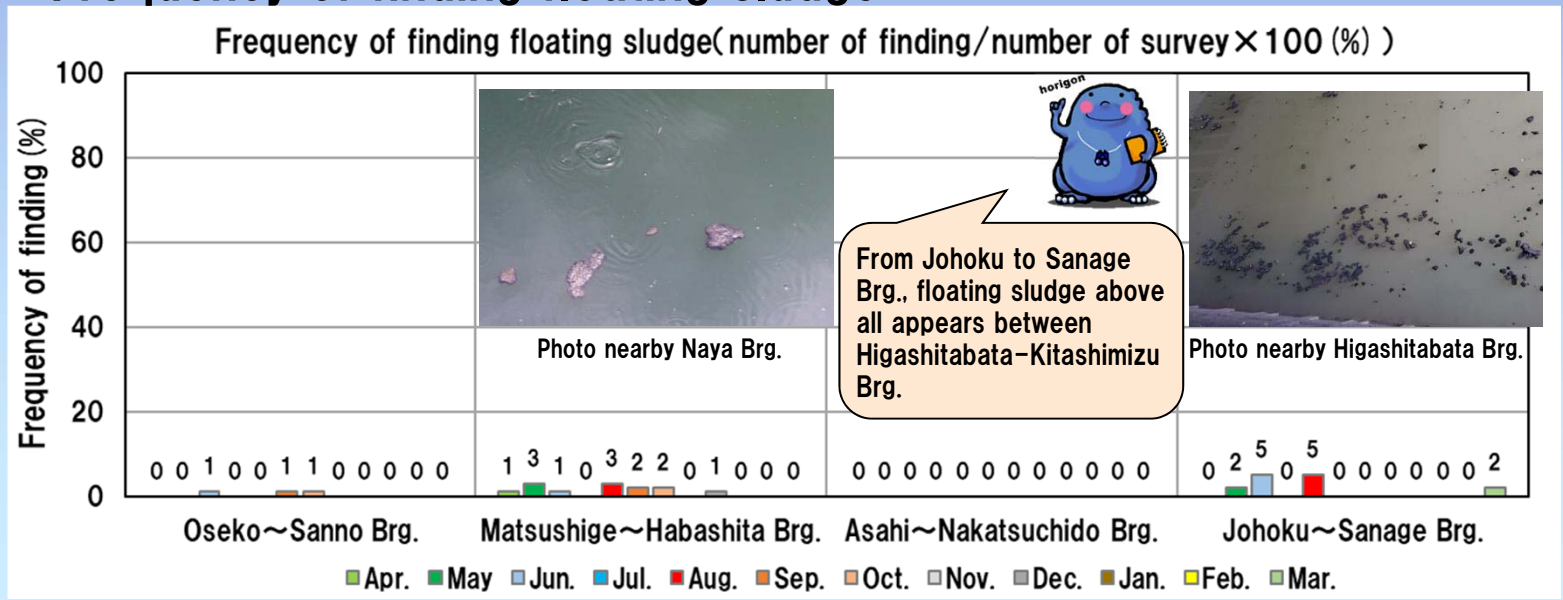
Photo:Secretariat Oct.23.2021
Near Kitashimizu Bridge

（Reference）

Frequency of finding artificial garbage

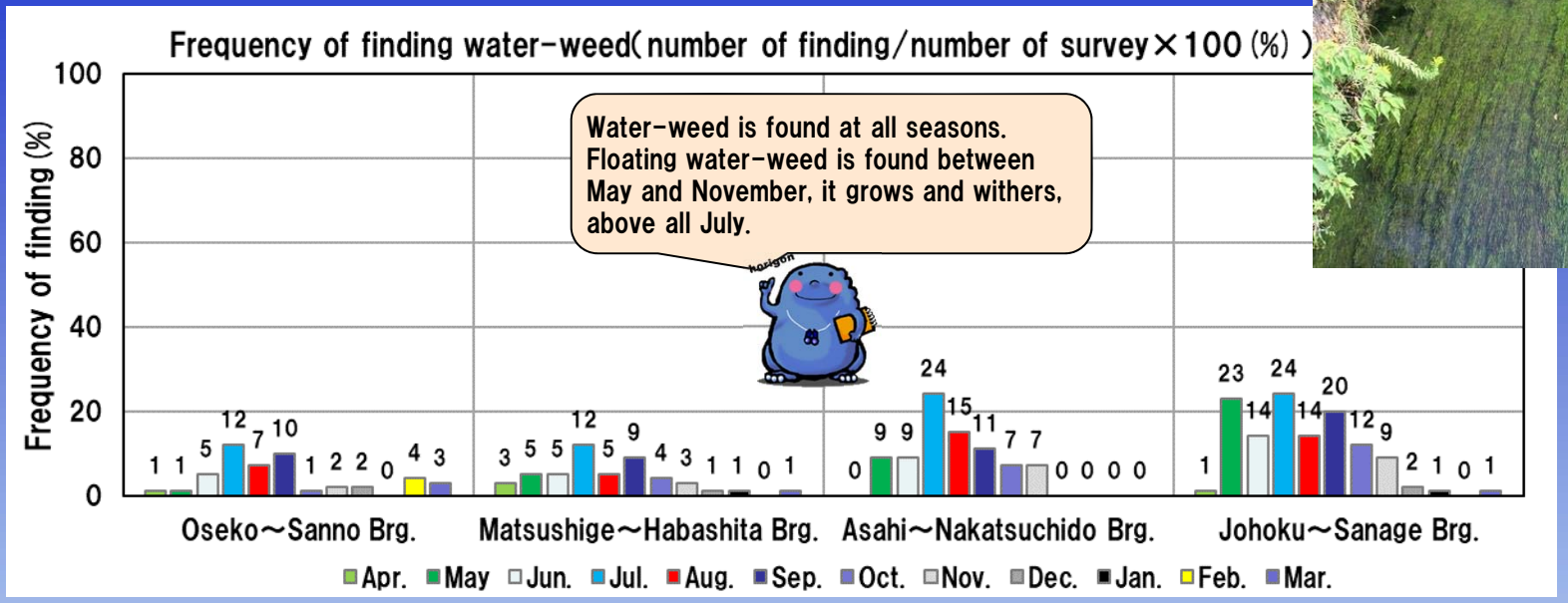


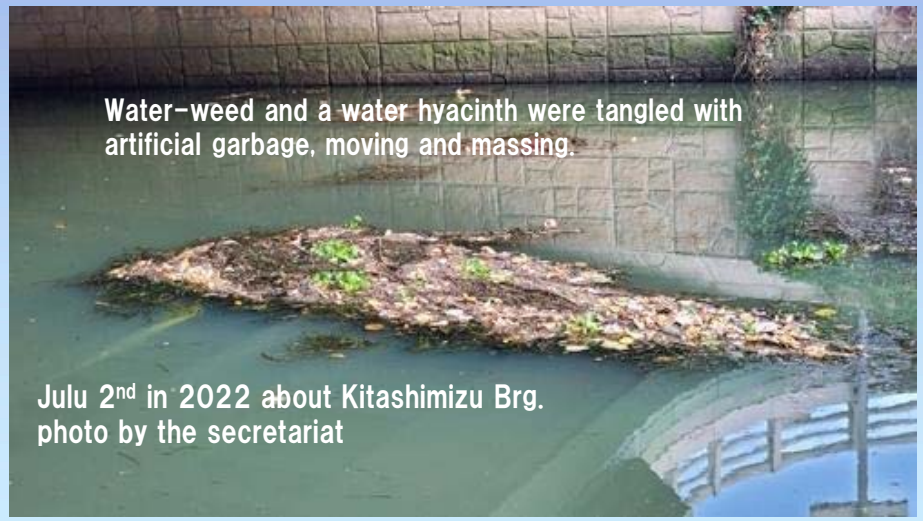
Frequency of finding floating sludge



Frequency of finding water-weed

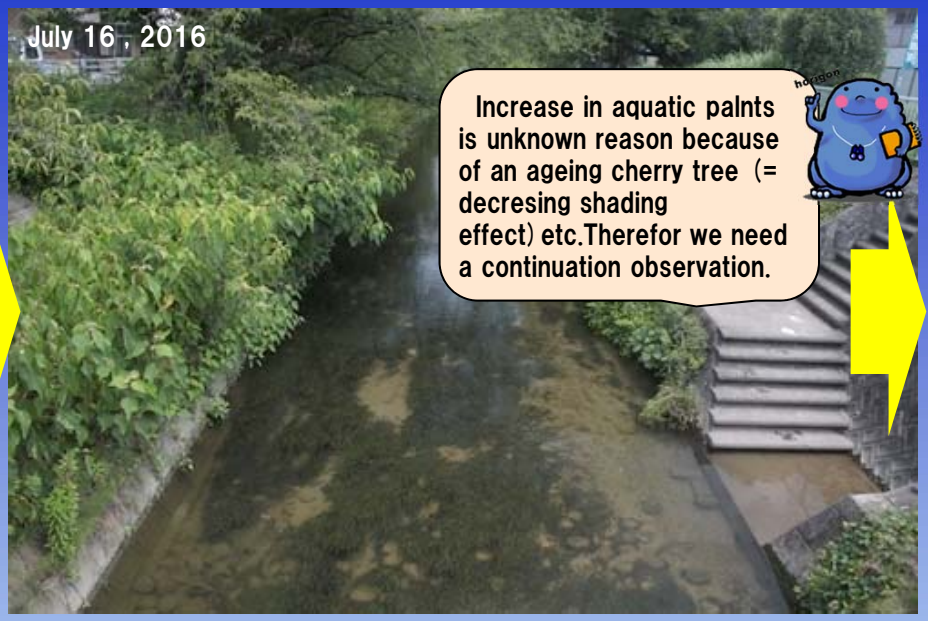
Grouth of water-weed at Chigonomiya Brg.
photo by the secretariat

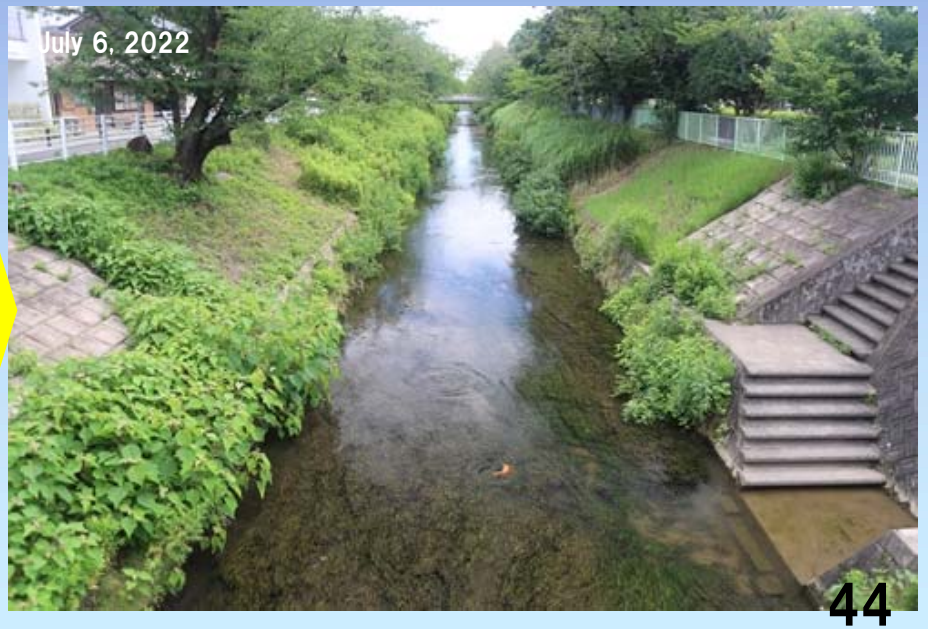




（Reference）
Grouth of water-weed about Chigonomiya Brg. in May and April

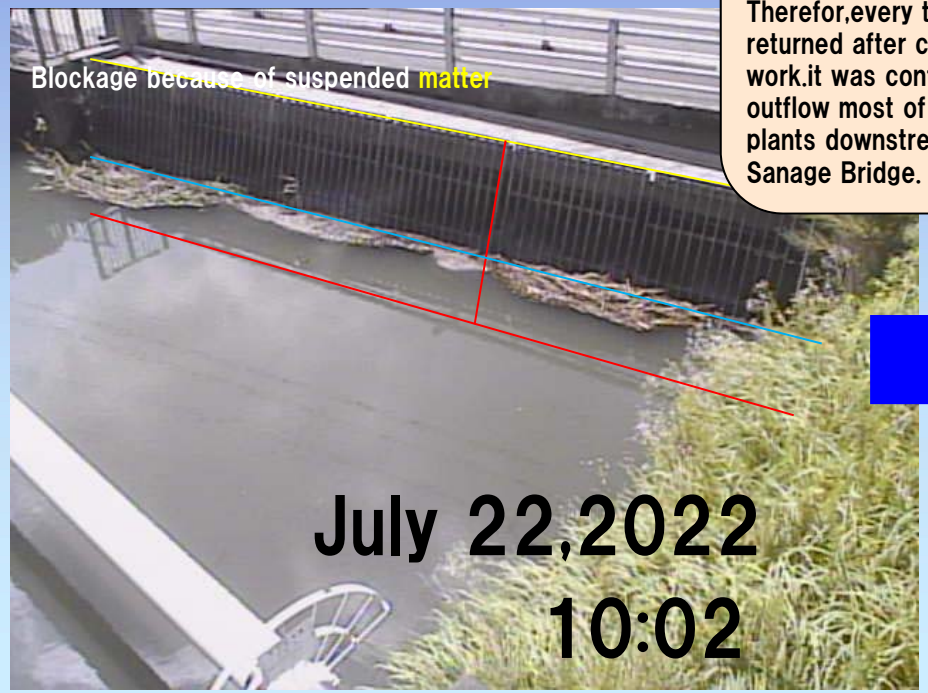
（Reference ）Horikawa_near Chigonomiya pedestrain Bridge
Growth status of aquatic plats on July





（Reference ） Blockage of Screen set up for upstream of Asahi Bridge

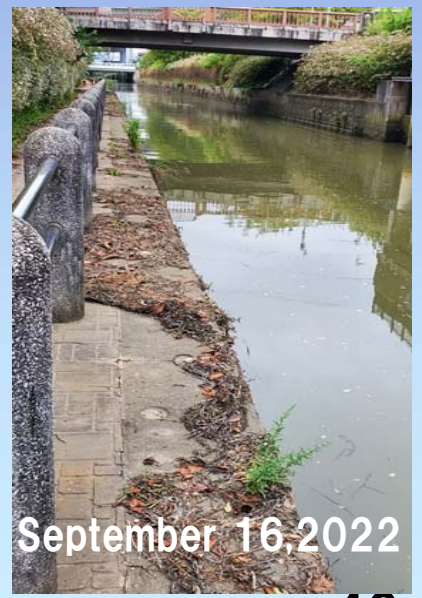
Screen set up upstream of Asahi Bridge have something to occluded by aquatic plants、etc.
For this reason,decrease in temporary water transfer,the water depth in the downstream section might be shallow.
Waterweeds are growing on the riverbed in the upstream of especially Sanage Bridge section . we could observe an aquatic plants rise to the the suface because of the water level drops and part of the riverbed dries up.
Therefor,every time is returned after cleaning work.it was confirmed that outflow most of the aquatic plants downstream in Sanage Bridge.



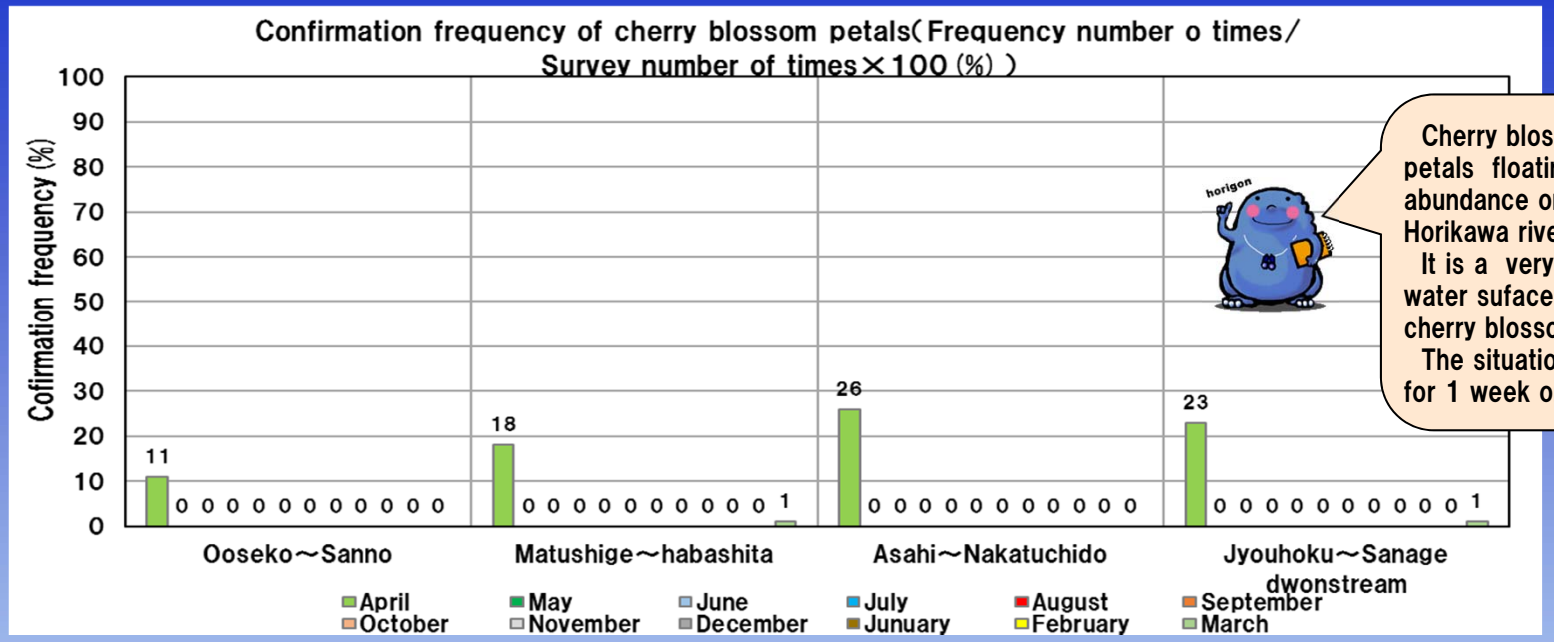
（ Reference ）The situation of aquatic palnts that flowed out downstream
Sanage Bridge

■ Aquatic plants that flowed out

■ Aquatic plants left behind at the water's edge Tabata Bridge～Shiga Bridge

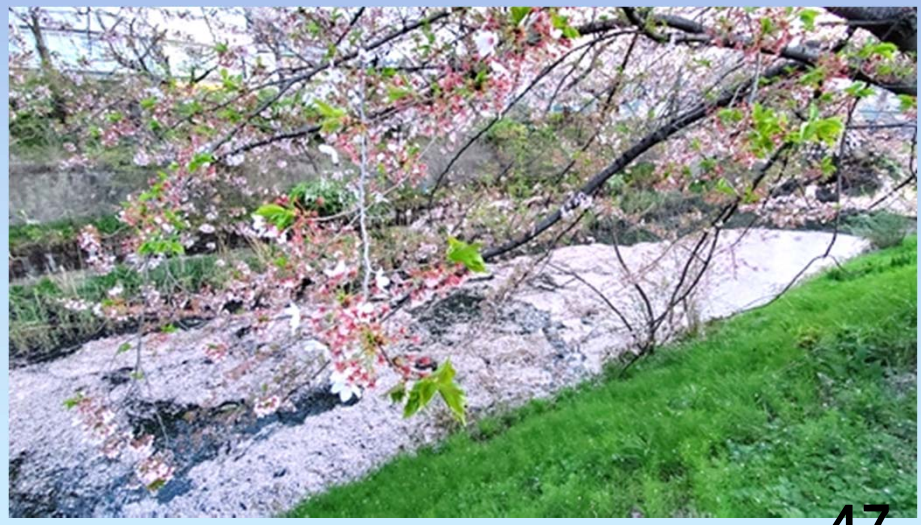


Confirmation frequency of cherry blossom petals



April 8,2022 Shiratori Wharf (Front of Nagoya congress center)
Photograph : Chikyukurabu Survey-group

April 7,2022 Jyohoku Bridge～Kinjou Bridge
Photogaraph : secretarist



Condition of Reed Fields after weeding

Comparing pictures of reed fields with/without weeding

Records of Reed fields weeding

By weeding reeds after autumn, withered reeds didn't remain mixed in the next growing season, and the number of leafage in the water has decreased. Removing withered reeds will be making it easier to collect man-made waste entangled in floating reeds leafage.

I felt that the pruned reed belt was also very beautiful scenery.


2021
before weeding
April 15th 2021
Upstream of Nakatsuchido Bridge


2022
after weeding
April 13th 2022
Upstream of Nakatsuchido Bridge


withered reeds didn't remain mixed

With Weeding

Without Weeding

With Weeding

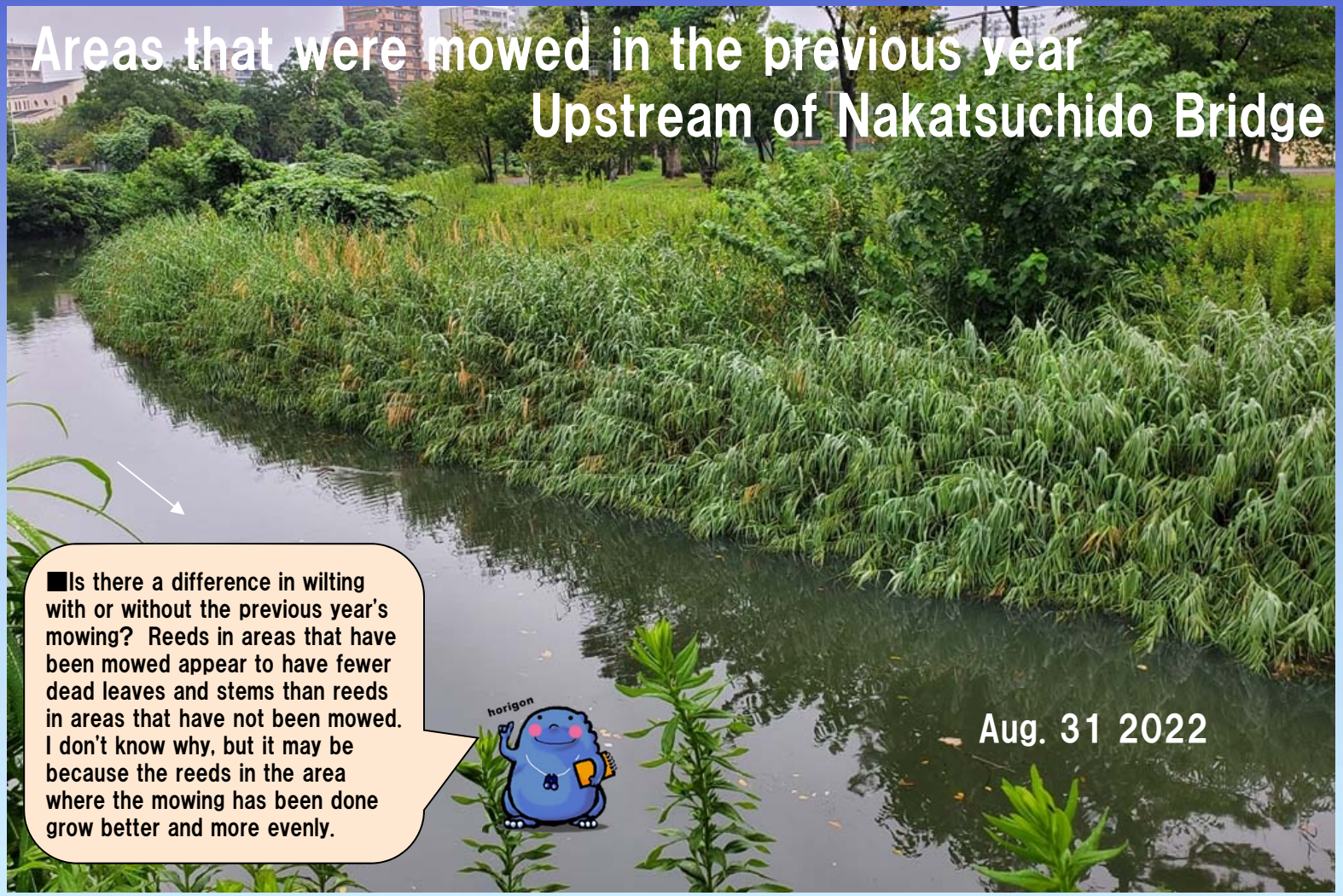
Without Weeding

Without Weeding　Upstream of Kinjo Bridge

End of Aug. 2022　From summer to autumn

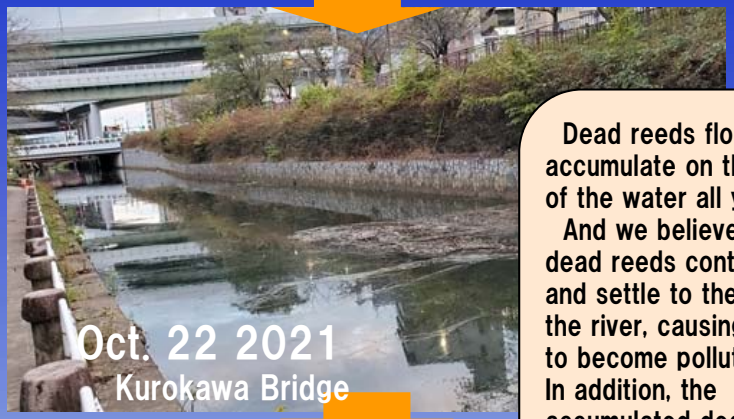
Changes in reeds beginning to die

Is there a difference in wilting with or without the previous year's mowing?



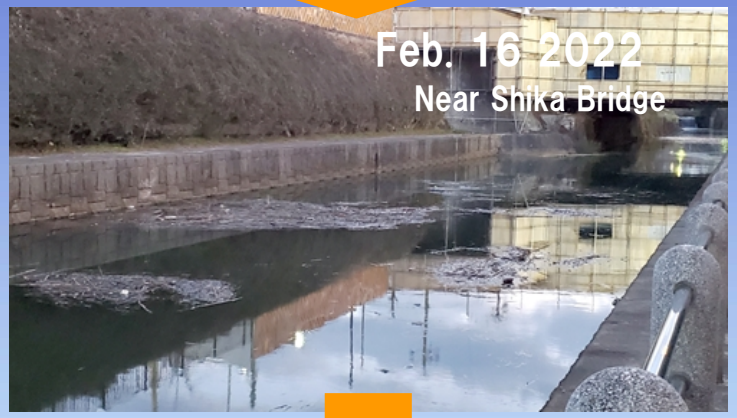
Areas that were not mowed in the previous year

(reference) Dead reeds floating and accumulating throughout the year



Dead reeds float and accumulate on the surface of the water all year round.
And we believe that these dead reeds contain water and settle to the bottom of the river, causing the water to become polluted.
In addition, the accumulated dead reeds, along with water plants, are entangled in the artificial waste. We believe this makes it difficult to collect artificial litter.


Jan. 21 2022
Near Kitashimizu Bridge


Feb. 16 2022
Near Shika Bridge


March 25 2022
Near Higashi
tabata Bridge


April 22, 2022
Jyouhoku Bridge
– Kinjyou Bridge


May 25 2022
Jyouhoku Bridge
– Kinjyou Bridge


June 24 2022
Downstream of
Jyouhoku Bridge

Confirmed flatfish juveniles in Horikawa River ‘near Shirotori Bridge and Naya Bridge’ April 23rd ,25th 2022

2022年4月23日

ゴンドラと堀川水辺を守る会
20時間前 ・

明日4/24(日)のヴェネチアンゴンドラ定期運航は、雨予報のため中止とさせていただきます。
ご理解いただけますと幸いです。
なお、5月の運航は、堀川フラワーフェスティバルでの「ベニスのゴンドラ乗船」（5/7,8,14,15,21）となります。
よろしくお願いいたします。

2枚目の写真は、桟橋で本日見かけた普段見ない幼魚。蚊(?)の亡骸と比較するとその小ささがわかるかと思います。

Flatfish juvenile were confirmed on April 23rd ‘neap tide’ and 25th ‘long tide’.
Flatfish were confirmed and reported for the first time in this survey.

2022年4月25日

地球倶楽部調査隊

スバシリの季節到来！
カレイの稚魚が混じってひらひらと漂っていました。

Confirmed heron in Horikawa & Shin-Horikawa River

6.4.5. Confirmed great reed warbler in the reed blet of Horikawa River

May 6th 2022

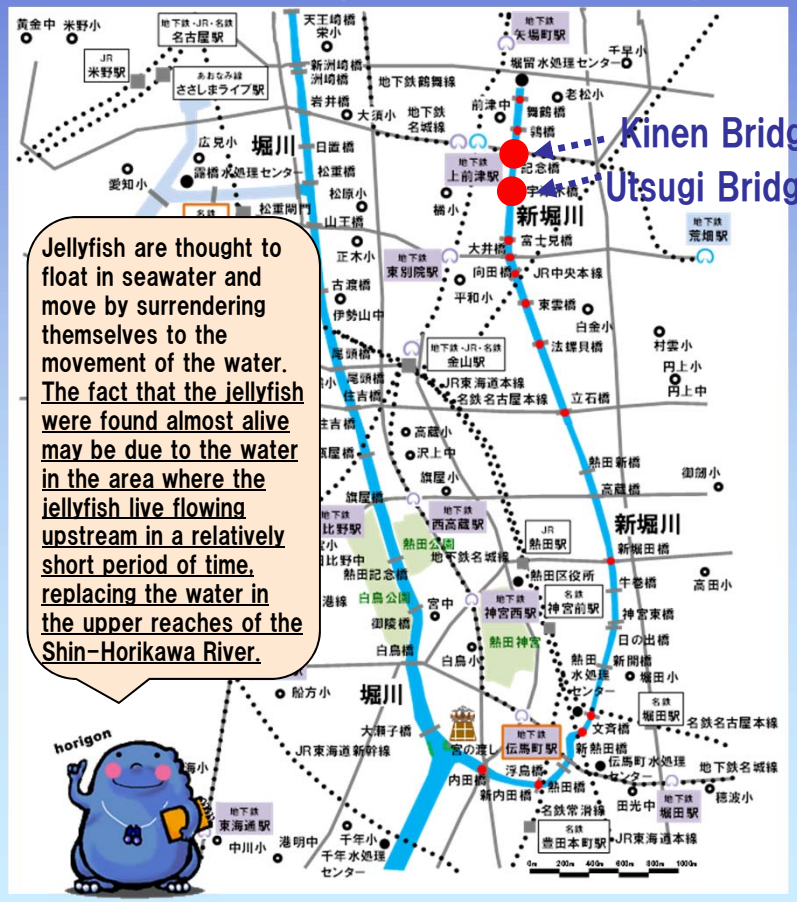
6.4 Mystery of jellyfish found upstream of Shin-Horikawa River

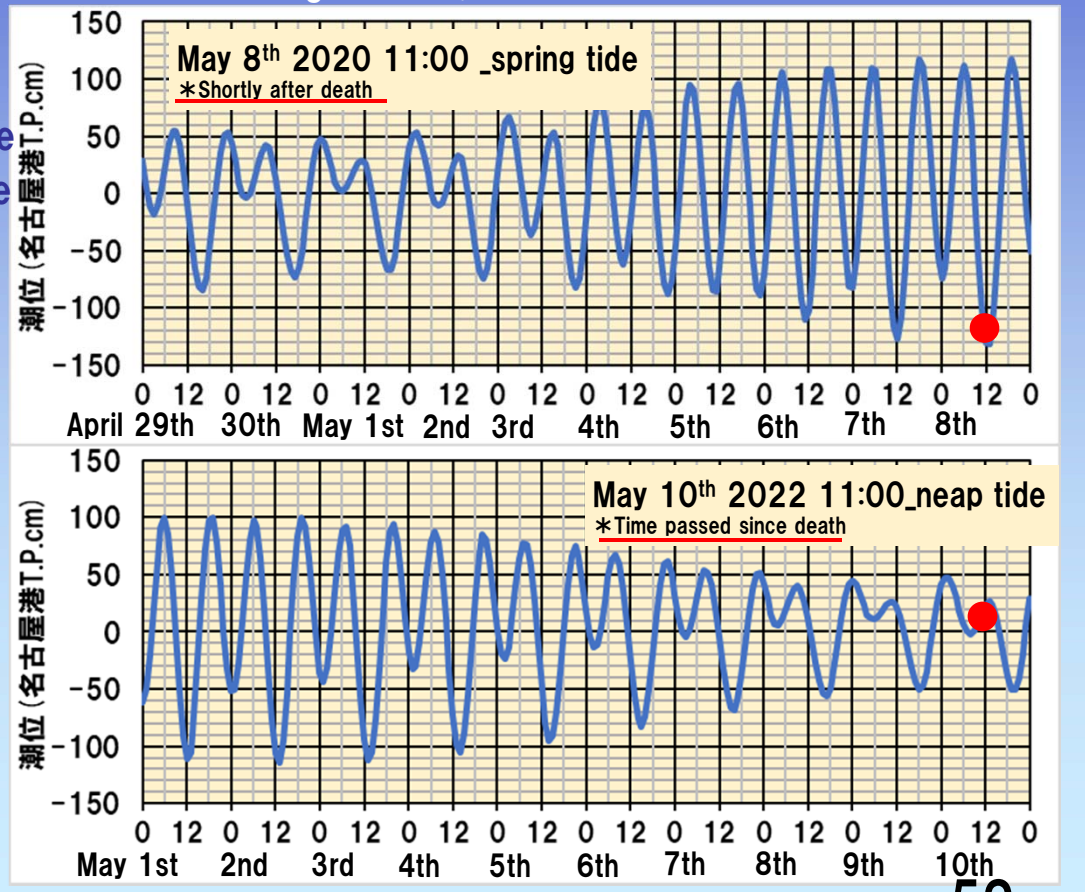
May 8th 2020_spring tide

27th Report p.101

May 10th 2022_neap tide

(Hypothesis)They went upstream with the tide rising and left. "tide difference 2m"





Why are jellyfish in the upstream of Shin-Horikawa River?

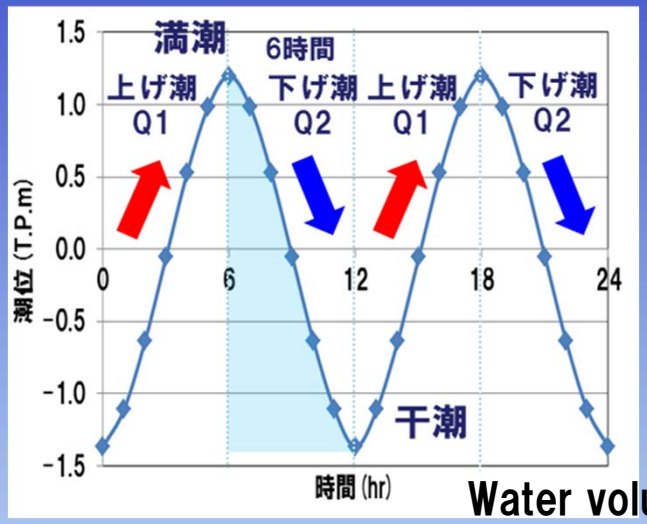
Do they migrate upstream during the rising tide?

About 40% of the water is replaced in one ebb and flow?

To clarify this question, here we estimated the replacement of water in Shin-Horikawa River. We need to continue the investigation in order to clarify the actual situation.
We believe that this is very important to elucidate how contamination accumulates in Shin-Horikawa River and to take countermeasures in the future.

Movement of water in the Shin-Horikawa River due to tidal flow

Ebb Tide



high tide level T.P.1.20m

Toward downstream
380,000m³
Run-off

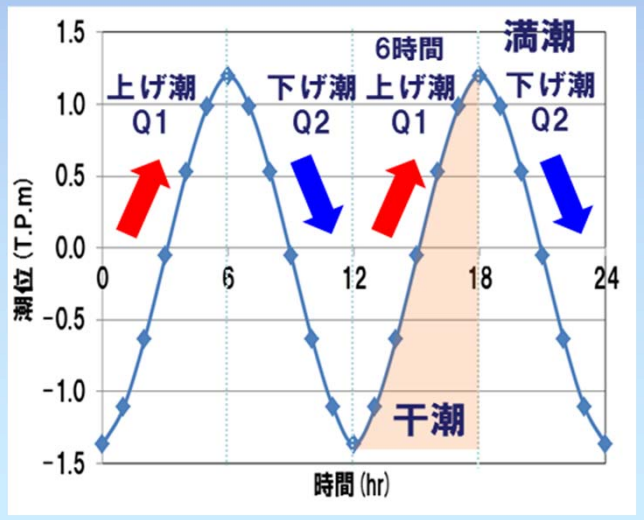
low tide level T.P.-1.37m

unchanged water volume
600,000m³

Horikawa River
Nagoya Port

Water volume of Shin-Horikawa River at high tide is 1,000,000m³

High Tide



high tide level T.P.1.20m

From downstream
360,000m³ Run-up

low tide level T.P.-1.37m

unchanged water volume
600,000m³

Movement of water in the Shin-Horikawa River due to tidal flow

Low Tide

WTP : Wastewater Treatment Plant

River Extention : 6,000m
Average Width : 25m

Temmacho WTP
38,466m³/day
(2019)

Atsuta WTP
21,758m³/day
(2019)

Horidonme WTP
105,086m³/day (2019)

mean high tide level
T.P.1.20m

Horikawa River
Nagoya Port

low tide
Q2

difference in water level
2.57m

Volume
400,000m³(tide range)

~~extention:6,000m×width:25m×water level:2.57m~~

T.P.0m

Toward downstream
380,000m³
Run-off

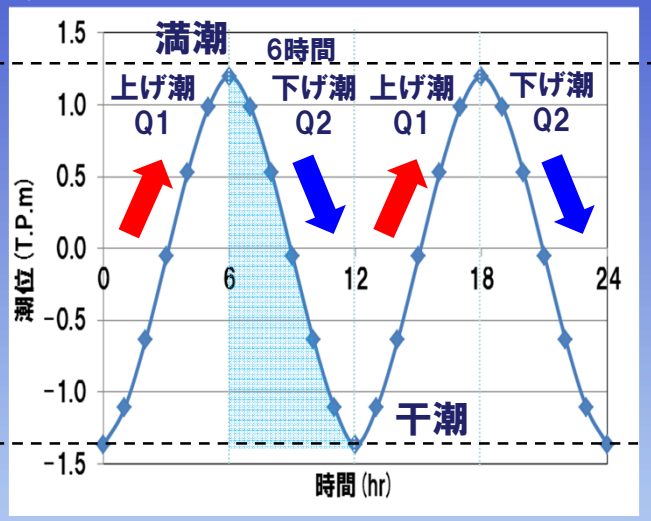
Treated water from WTPs
20,000m³

Range difficult to move with changes in tidal levels
600,000m³

extention:6,000m×width:25m×depth:3.88m ((5.5-1.37)+(5.0-1.37))/2
=582,000m³

T.P.-5.0m

T.P.-5.5m



Conditions for estimation

①No Rainfall
②Tide level changes horizontally upstream
③Freshwater and seawater are divided into two layers due to differences in specific gravity
④Treated water flows at the average velocity of the water body during low tide hours
⑤All treated water during up-tide hours stays in the river.
⑥The river width was measured on the map and generally averaged 25 meters.
⑦Waters below the mean low tide level do not move

Movement of water in the Shin-Horikawa River due to tidal flow

High Tide

WTP : Wastewater Treatment Plant

Temmacho WTP
38,466m³/day
(2019)

Atsuta WTP
21,758m³/day
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Horidonme WTP
105,086m³/day (2019)

River Extention : 6,000m
Average Width : 25m

mean high tide level
T.P.1.20m

Horikawa River
Nagoya Port

High tide
Q1

difference in water level
2.57m

Treated Water from WTPs
40,000m³

Volume
400,000m³(tide range)

extention:6,000m×width:25m×water level:2.57m

T.P.0m

From downstream
360,000m³
Run-up

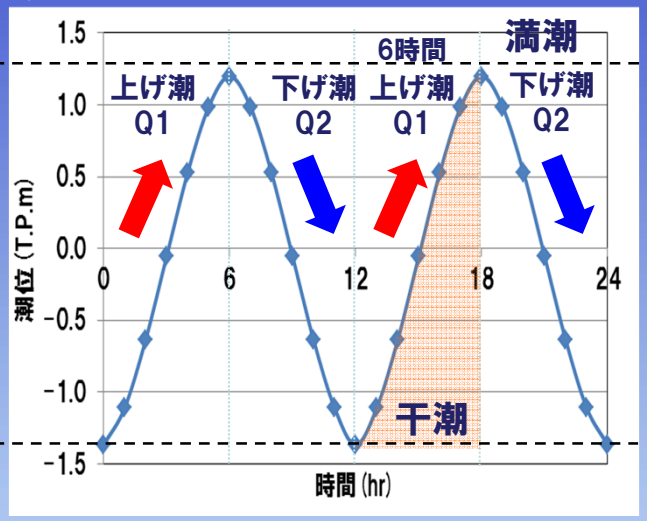
mean low tide level
T.P.-1.37m

Total Volume at High Tide
1,000,000m³

Range difficult to move
with changes in tidal levels
600,000m³

T.P.-5.0m

T.P.-5.5m



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Improving citizen awareness Study meetings etc.

Horikawa Sen-nin Chosatai 2010 (HSC)
Summary meeting for the 30th stage
Mar.19.2022 Place:Will Aichi

(第3種郵便物認可) 中日 2022.3.20(日)

堀川「ゴミがゴミ呼ぶ状態」

調査隊、市に対応要望

堀川の環境を市民が調査する「堀川1000人調査隊2010」の定例報告会が十九日、東区のウィルあいちであり、活動に参加する市民ら四十人が、市の担当者と意見交換した。

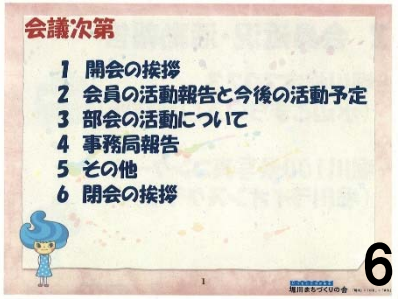
二〇〇七年結成の調査隊は現在、五万人以上が登録し、堀川の臭いや見た目の変化を記録している。報告会では、昨年九~十二月に実施した三十回目の定点観測を、事務局長の服部宏さん(六六)が説明した=写真。

新型コロナウイルス禍で清掃活動が減り、川のゴミも増えている現状を報告。資源ゴミの回収日に、空き缶を取り出したゴミ袋が川や護岸の斜面に捨てられ、市が川に設置するゴミ回収装置も十分に機能を発揮していないといい、「ゴミがゴミを呼ぶ状態。海まで流出しかねない状況に指をくわえたままでいいのか」と市側の対応を求めた。

また北区の猿投橋付近で見られる泡を毎日撮影し、発生率を独自算出した分析も説明。上流の庄内川の水位との関係や臭いについて「水質や安全面をしっかり調べてほしい」と訴えた。(曽布川剛)

Mar.20.2022
Chunichi Newspaper

Horikawa Town Planning Group
■18th Horikawa Round Table
Mar.24.2022 Place: Nagoya Noh Theater
■19th Horikawa Round Table
Aug.2.2022 Place: Nagoya City Center



Purification experiment with water spinach at Horikawa River　Jun.24.2022 start

Organizer:Ena agricultural high school , Nagoya Horikawa Lions Club

Place:Near the pier Naya Bridge

Improving citizen awareness Free research・Activities as supporters

「Shin-Horikawa future vision」
Published by the Nagoya Chamber of Commerce and Industry
M

Mar.24.2022 Chunichi Newspaper

Mar.31.2022 Chunichi Newspaper
Kurokawa Cherry Blossom Project

Flyer for big cleaning at Horikawa River Apr.16.2022
Organizer：Clean Horikawa

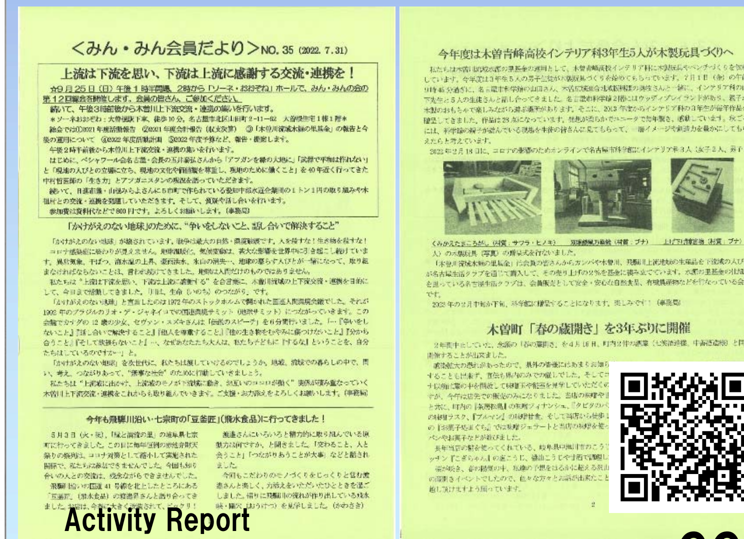
29th stage English HP translate by WBP Horikawa Cheering Groups

Improving citizen awareness Free research・Activities as supporters

Free Free Survey Groups
Meiden-Sya Nishiki Free
Survey Groups
2022
(Reiwa4) Wednesday,
May 25th
Water quality survey
activity report

「Horikawa Sen-nin Chosatai (HSC)」
Trajectory of 15 years of activities
Chosatai Secretariat

鯱城・堀川と生活を考える会
2021 Activity Report

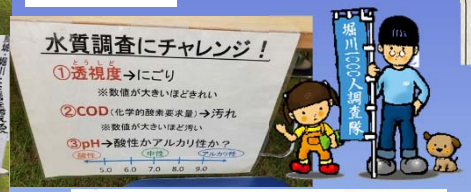


Activity Report
「上流は下流を思い、下流は上流に感謝する」
水源の里を守ろう 木曽川流域 みん・みんの会

Improving citizen awareness　Events

Horikawa Flower Festival 2022Information on hanging basket creation group April 14, 2022～April 18
Place:「ゆめ広場」天王崎橋東交差点

A water supply week event "Nagoya water festival" is held the 65th time.
Sunday, June 5, 2022
10:00-15:00
Place:Nabeueno Water Purification Plant
Sponsored by: Nagoya City Water and Sewerage Bureau
Participating survey group :
鯱城・堀川と生活を考える会調査隊
名古屋市河川計画課調査隊



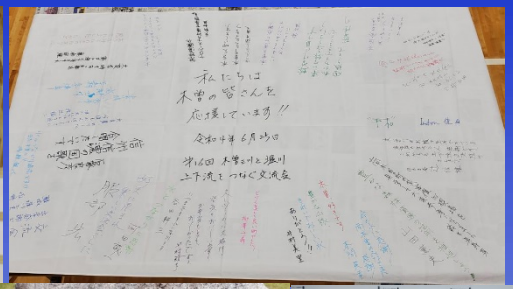
The 16th Horikawa Eco Robot Contest WEB heldEntry
Period: June 1st to June 30th, 2022
Organizer: Nagoya Horikawa Lions Club
Nagoya Institute of Technology

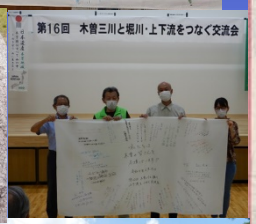
Jun.6.2022 Chunichi Newspaper

Horikawa 100 Views Photo Contest Exhibition heldNagoya Horikawa Lions Club
Place: Nagoya City Center 11th floor, Town Development Plaza
August 9th to 21st, 2022

Improving citizen awareness　Events

The 16th exchange event connecting Kiso San-Sen and Horikawa River upstream and downstream was held.
Date and time 2022,June 25th
Venue: Nagiso Town, Kiso District, Nagano Prefecture, Heisei Januke Monument, Tsumago-Juku Exchange Center
Sponsored by the executive committee of the exchange event connecting the Kiso San-Sen and Horikawa River upstream and downstream. Horikawa Sen-nin Chosatai 2010 Executive Committee
Sponsored by: Ministry of Land, Infrastructure, Transport and Tourism, Chubu Regional Development Bureau, Nagoya City, Kiso Wide Area Union, Nagiso Town Nagoya City Development Corporation Nagoya City Center





Chunichi Newspaper (Nagoya Citizen Edition) June 28, 2022

中日新聞 2022.6.28(火)

木曽三川と堀川 上下流の交流会

町並み保存、防災 長野で意見交換

木曽三川の上下流域の住民が親交を深める「木曽三川と堀川 上下流をつなぐ交流会」が二十五日、木曽川上流域の長野県南木曽町で開かれた。新型コロナウイルスの影響で三年ぶりの開催で、名古屋市民を中心に五十人ほどが参加した。

同市の市民団体「堀川1000人調査隊」と木曽広域連合などでつくる実行委の主催。旧中山道妻籠宿で国重要文化財の脇本陣奥谷などを見学し、妻籠宿での町並み保存について説明を受けた。一九五三（昭和二十八）年と二〇一四年の土石流災害の碑も訪れた。

妻籠町並み交流センターでは、「防災」と「町並み保存」の二班に分かれて地元住民と意見交換。町並み保存で名古屋の出席者は「他の地域から移ってきた人もいるのか」「既に後継者はできているのか」などと質問していた。

調査隊の服部宏事務局長（六七）は「上流域、下流域それぞれの課題を、交流を通して自分たちのことと考えていければ。交流会は可能な限り続けていきたい」と話した。（生田貴士）

意見交換する参加者たち＝長野県南木曽町の妻籠町並み交流センターで