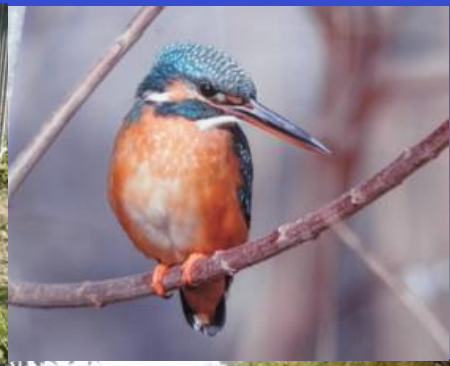
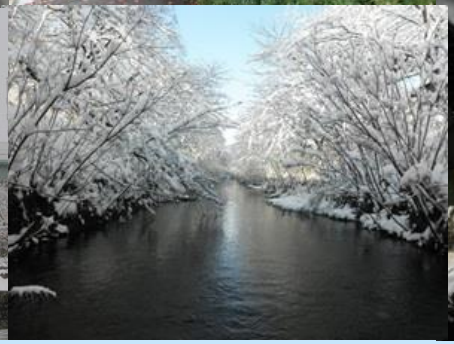
Horikawa Sen-nin Chosatai 2010

Summary meeting for the 17th stage





The secretariat of Horikawa Sen-nin Chosatai 2010

Sep.5th.2015

Photos：Goyousui-ato-gaien-aigokai
Survey Group
KawasemiSurvey Group

Table contents

Horikawa Sen-nin Chosatai 2010

～Transmission of Raw Water from Kiso River～

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 transmisission 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 3years
(from Apr.22nd 2007 to Mar.22nd 2010)

■Increase of Transmisson Volume from the Shonai River (additional pilot project)
(1) Water Source Shonai River
(2) Transmission Usual 0.4m3/sec (maxium 0.7m3/sec)
(3) Experiment Period :1st Oct-31St 2010
(4) 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 view point and a sence of citizens
＊Clearness ＊Transparency ＊Color ＊Smell
＊Garbage ＊ Living things ,etc

The first Nagoya City Environmental practice Prize February.2012
Branch of contribution for Regional Environment Development
Award for excellence

Transmission of Raw Water from Kiso River

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

To verify the clarification effects of TRWKR
Surveys during TRWKR period :
April 2007 ～ March 2010
Surveys after the stop of TRWKR

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 Cheering Groups
Cheering clarification of Horikawa

To verify the clrification effects of TRWKR

The survey from a view point and a sence of citizens

■ 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 the survey group
(Conclusions of Summary Meeting for the 10th Stage)

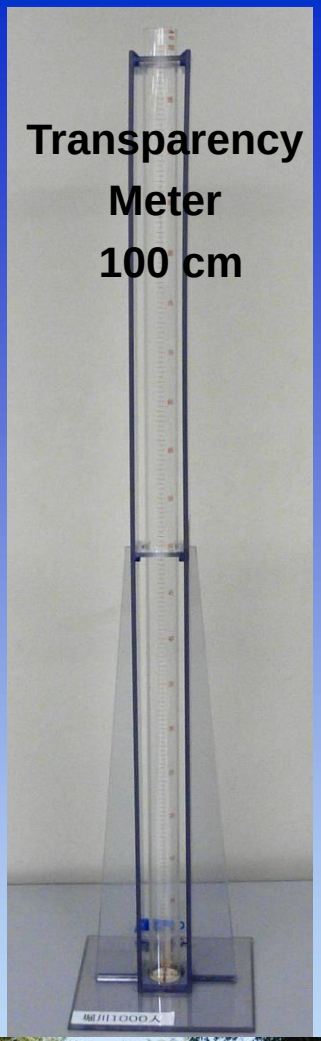
① More surveys should be implemented. Continuity of investigation, Clarification of the situation of the river, identification of cause of pollution in the river, are needed.

We improve our plan and take action against the pollution. After that, citizens and public administration do what is possible to clean the river.

② There 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 house.

Method of fixed-point observation



Measurement of COD

Chemical Oxygen Demand. This is an index of water contamination used for sea, lakes and marshes. It is an oxygen consumption required for oxidation of organic matters dissolved in ample water. The higher COD, the more it is contaminated.

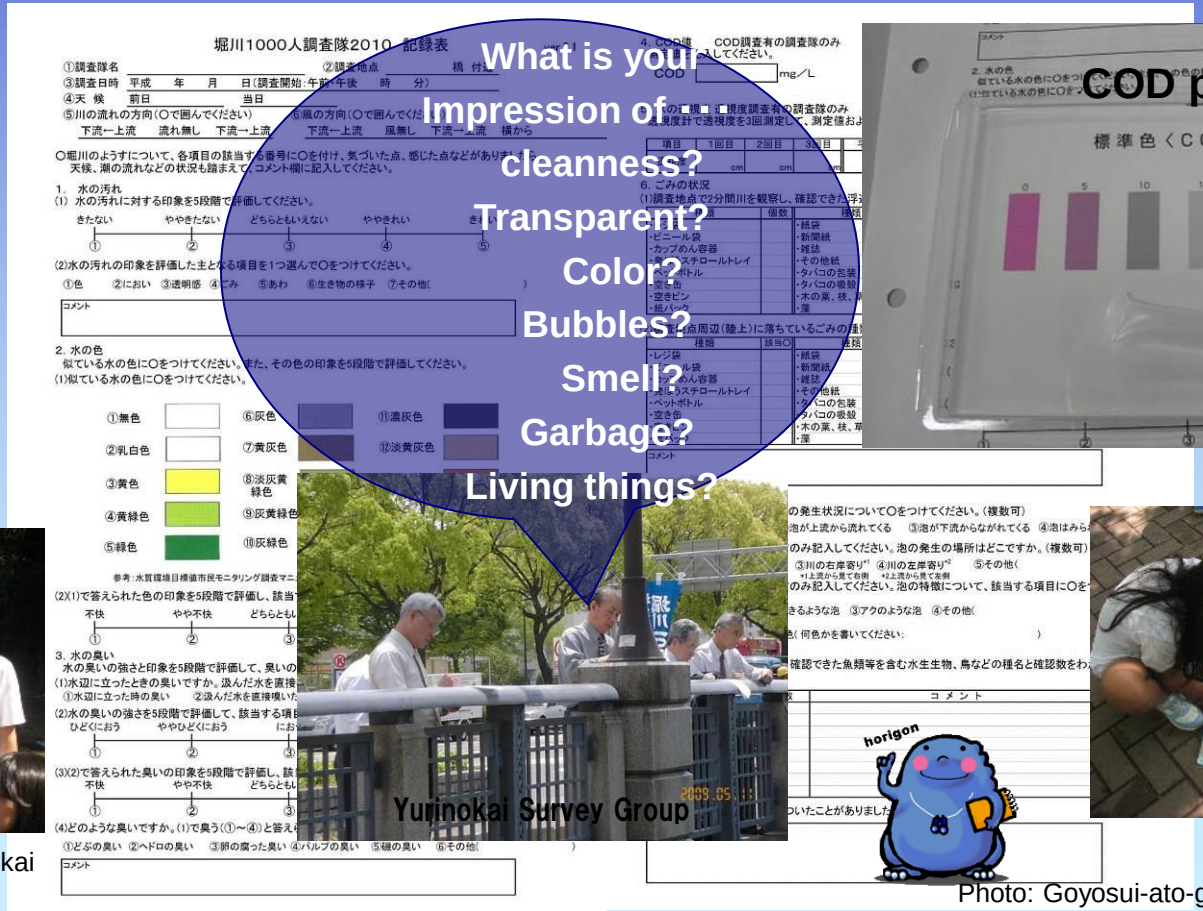


photo:Goyosui-ato-gaien-aigokai Survey Group

Photo: Goyosui-ato-gaien-aigokai Survey Group

Water Environment of Horikawa River

Area of basin :51.9km²
Length :16.2km

Kiso River is our water source.

Change in temperature, precipitation and length of sunlight

Cause of breeding of phytoplankton, nitorogen and phosphorus are included in wastewater from houses, factories and stores.

The primary cause of water pollution is wastwater from houses,factiories and stores.

Wastwater is discharged after treatment in wastwater treatment plant.

When heavy rain, wastewater is discharged without treatment.

Shonai River
Provisional raw water transmission :0.3m³/s

Wastewater Treatment Plant

Sanage Bridge

Motoiri Sluiceway

Tide Gate

▼high tide

Horikawa

▼ebb tide

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

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

Nagoya Port

Ise bay

rising

Ground water etc

Shimizu wakuwaku-sui

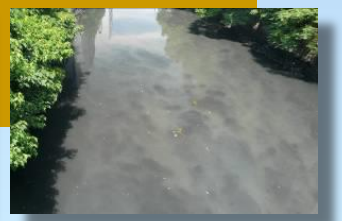
It has looked like red tide or blue tide.
In Nagoya Port and downstream of Horikawa, it is said that phytoplankton does over breeding and extinction, so water basin is polluted

Sludge rises and floats.


rad tide


blue tide


floating sludge


raised sludge

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

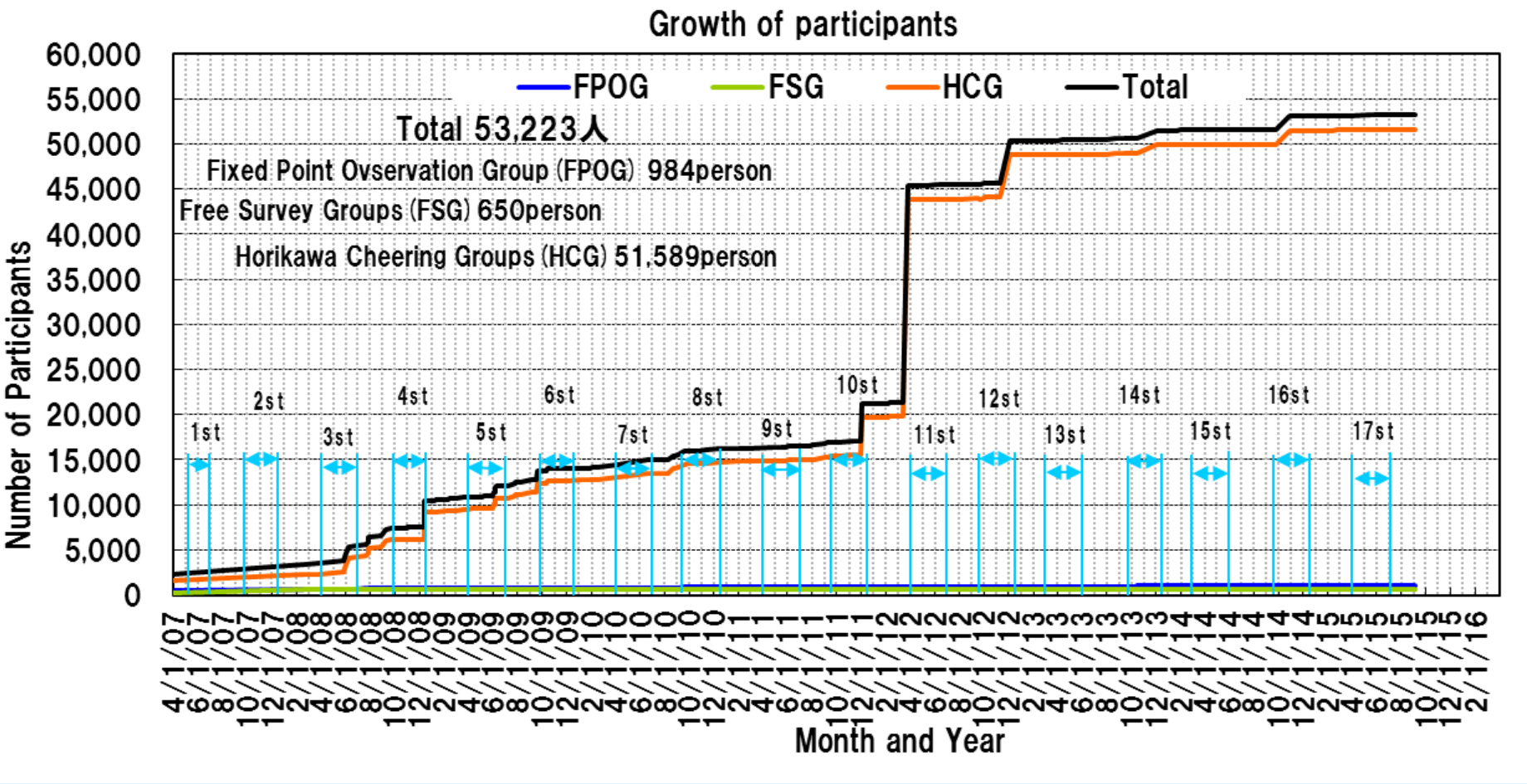
Number of Participants of Horikawa Sen-nin Chosatai 2010

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

	Start 22nd Apr.2007	Now 5th Sep.2015
Fixed Point Observation Groups	55 groups 497persons	96 groups 984persons
Free Survey Groups	22groups 234persons	40 groups 650persons
Horikawa Cheering Groups	88groups 1,531persons	2,562 groups 51,589persons
Total	165groups 2,262persons	2,698 groups 53,223persons

Investigation spots

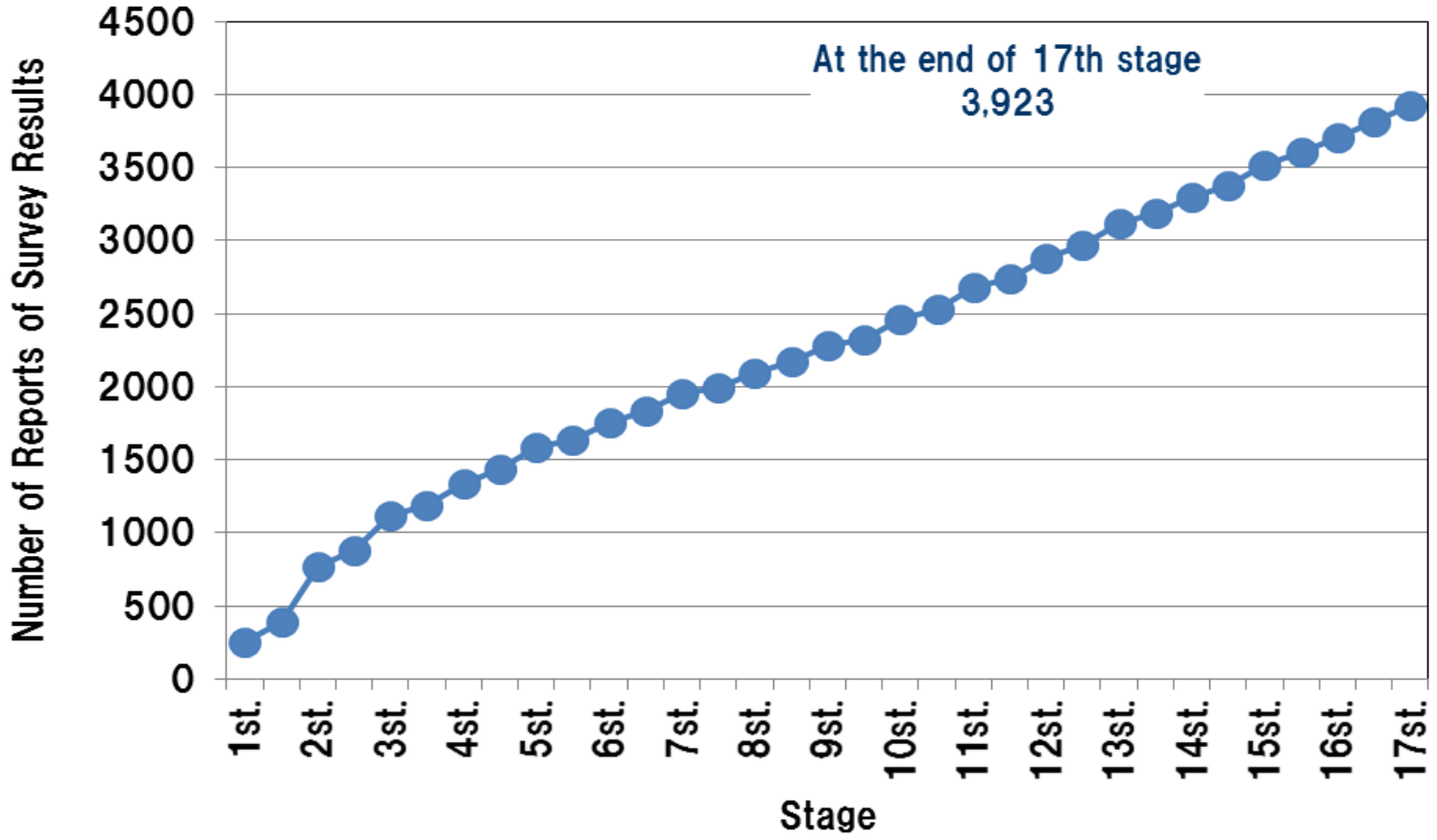
Number of Participants of Horikawa Sen-nin Chosatai



Survey Period and Number of Reports

Survey Period			Number of Reports
With TRWKR / Introduceds shallow ground water	1st Stage	Spring~Early summer/Apr.22nd ~ Jun.30th.2007	258
	Interval	Jul.1st ~ Sep.7th.2007	134
	2nd Stage	Autumn ~ Early Winter /Sep.8th~Dec.16th 2007	383
	Interval	Dec.17th ~ Mar.31st.2008	103
	3rd Stage	Spring~Early summer/Apr.1st ~ Jun.30th.2008	245
	Interval	Jul.1st ~ Sep.27th.2008	64
	4th Stage	Autumn ~ Early Winter /Sep.28th~Dec.16th 2009	152
	Interval	Dec.17th.2008 ~ Mar.31st.2009	100
	5th Stage	Spring~Early summer/Apr.1st ~ Jun.30th.2009	145
	Interval	Jul.1st ~ Sep.27th.2009	54
	6th Stage	Autumn ~ Early Winter /Sep.27th~Dec.16th 2009	120
Introduction od advanced water	Interval	Dec.17th.2009 ~ Mar.31st.2010	81
traetment st the Meijo Water Treatment Center	7th Stage	Spring~Early summer/Apr.1st ~ Jun.30th.2009	111
	Interval	Jul.1st ~ Sep.11th.2007	44
In-service of Horikawa Ugan Rain -Water Reservoir for pollution control	8th Stage	Autumn ~ Early Winter /Sep.12th~Dec.17th 2010	104
	Interval	Dec.18th.2010 ~ Mar.31st.2011	72
	9th Stage	Spring~Early summer/Apr.1st ~ Jun.30th.2011	112
	Interval	Jul.1st ~ Sep.10th.2011	42
Utilizaion of reclamed wastwater from Moriyama Water Treatment Center from Apr.to Oct	10th Stage	Autumn ~ Early Winter /Sep.11th~Dec.16th 2011	133
	Interval	Dec.17th.2011 ~ Mar.31st.2012	77
	11th Stage	Spring~Early summer/Apr.1st ~ Jun.30th.2012	148
	Interval	Jul.1st ~ Sep.21th.2012	60
	12th Stage	Autumn ~ Early Winter /Sep.22th~Dec.16th 2012	139
	Interval	Dec.17th.2011 ~ Mar.31st.2013	92
	13th Stage	Spring~Early summer/Apr.1st ~ Jun.30th.2013	145
	Interval	Jul.1st ~ Sep.28th.2013	70
	14th Stage	Autumn ~ Early Winter /Sep.29th~Dec.17th 2013	113
	Interval	Dec.18th. ~ Mar.31st.2014	79
	15th Stage	Spring~Early summer/Apr.1st ~ Jun.30th.2013	133
Covered sand	Interval	Jul.1st ~ Sep.7th.2014	91
	16th Stage	Autumn ~ Early Winter /Sep.28th~Dec.16th 2014	99
	Interval	Dec.1st. 2014~ Sep.7th..2015	107
	17th Stage	Spring~Early summer/Apr.1st ~ Jun.30th.2015	113
Total			3,923

Number of Reports



The total number of reports about survey is 3,923 by the end of the17th stage.
On average, it is 400 every year.
A lot of citizens survey the real state of water environment of Horikawa River continually from a viewpoint and sense of citizens.

4. Weather Condition

17th stage (Apr.-Jun. 2015)

To Sum up the weather condition in 17th stage (Apr.-Jun. 2015), precipitation was more than normal at beginning and mid-April, while length sunlight was more than nomal in late April and at beginning May. Onset of rainy season was Jun 8 almost same as normal.

■ Temperature

Average temperature was 16.3℃, especially 17.8℃ in May almost same as the normal (15.4℃)

■ Precipitation

Average precipitation was 107mm/month , especially 74.4mm a little more than usual. (121.9mm/month)

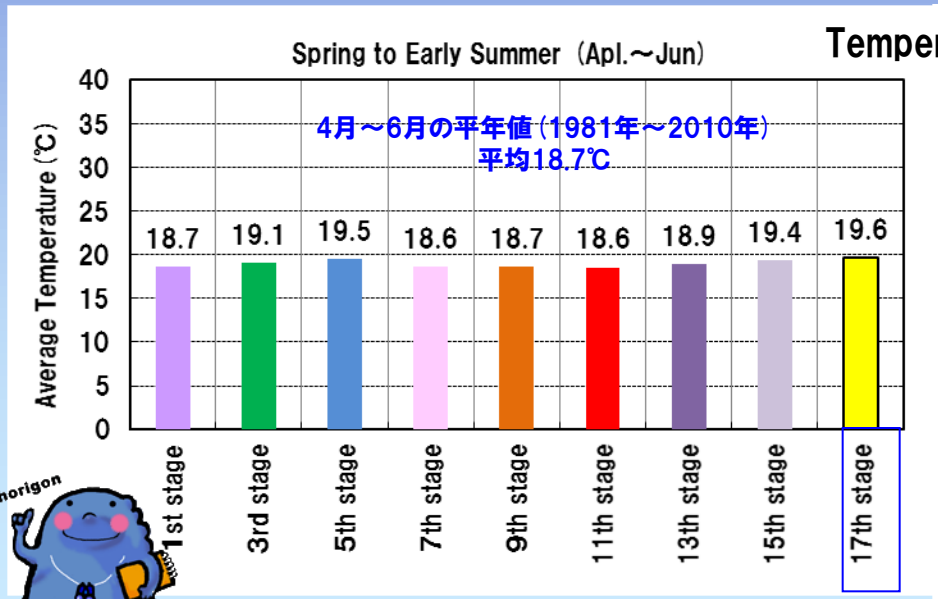
■ Length of sunlight

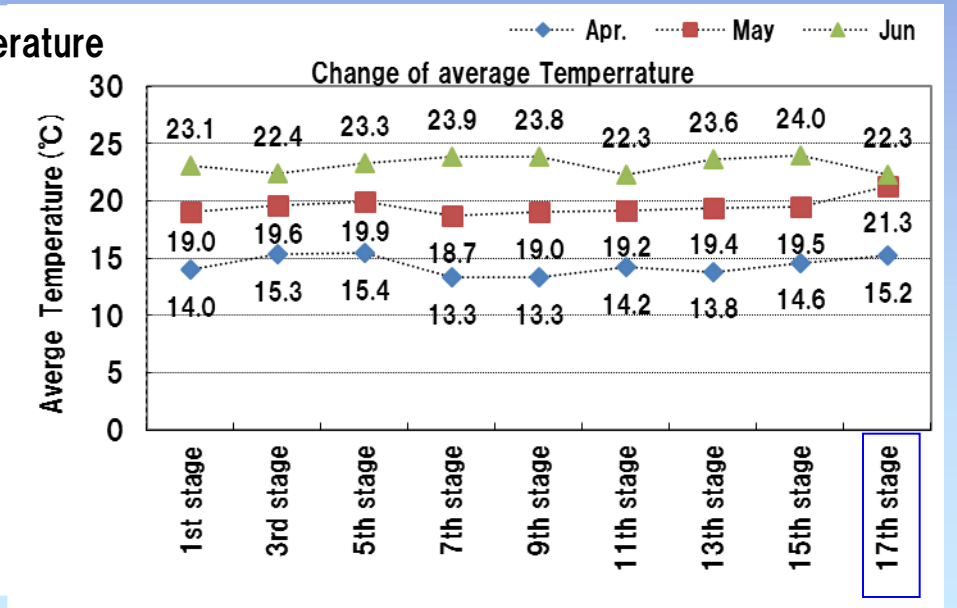
Average hours of sunlight was 157 hr/month, almost same as the normal (163.7hr/month) .Especially in April was shorter 54 hr as the normal , while in May was longer 57 hr as the normal

average value (Nagoya Local Meteorological Agency)

http://www.jma.go.jp/jma/menu/report.html

section	temperature (mm) total	temperature (℃) average	max.	min..	length of sunlight total
period	1981 ~2010	1981 ~2010	1981 ~2010	1981 ~2010	1981 ~2010
years	30	30	30	30	30
April	143.3	14.1	19.5	9.2	188.4
May	155.7	18.5	23.7	14.0	199.6
June	201.5	22.3	26.7	18.7	145.2
Average	166.8	18.3	23.3	14.0	177.7
September	234.4	24.1	28.6	20.7	151.0
October	128.3	18.1	22.8	14.1	169.0
November	79.7	12.2	17.0	8.1	162.7
December	45.0	7.0	11.6	3.1	172.2
Average	121.9	15.4	20.0	11.5	163.7

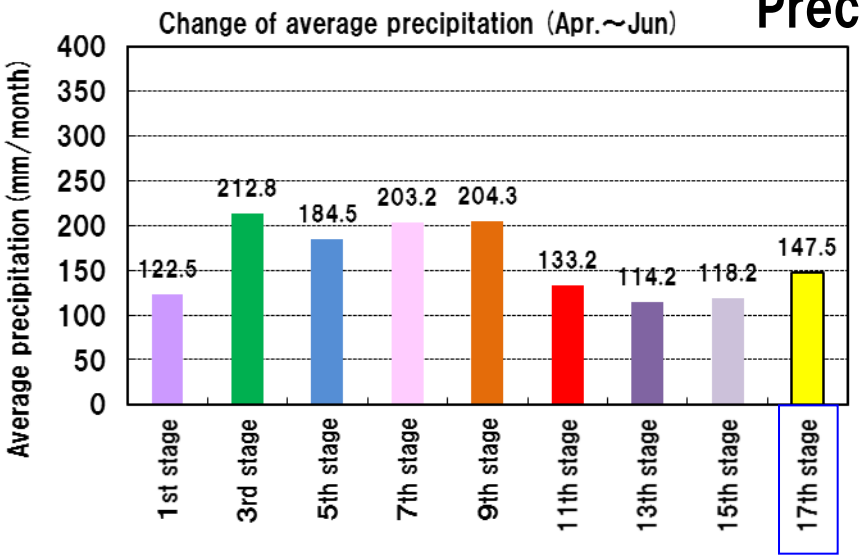


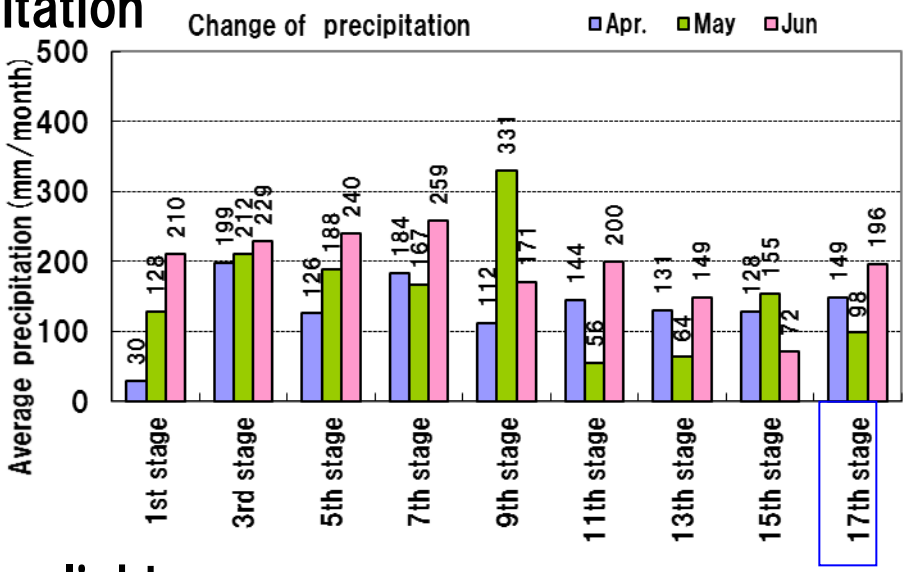


4.Weather Condition

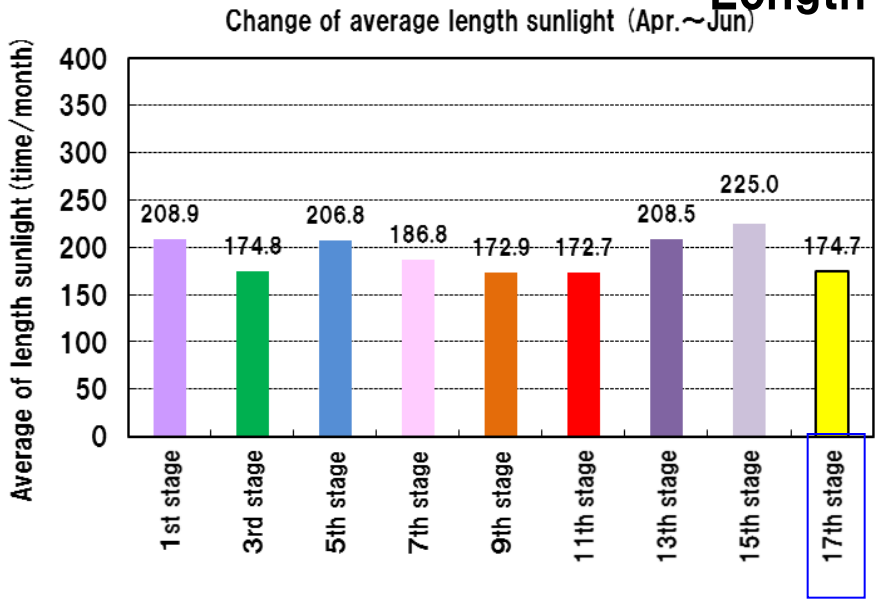
資料：気象庁_気象統計情報　名古屋地方気象台
http://www.jma.go.jp/jma/menu/report.html

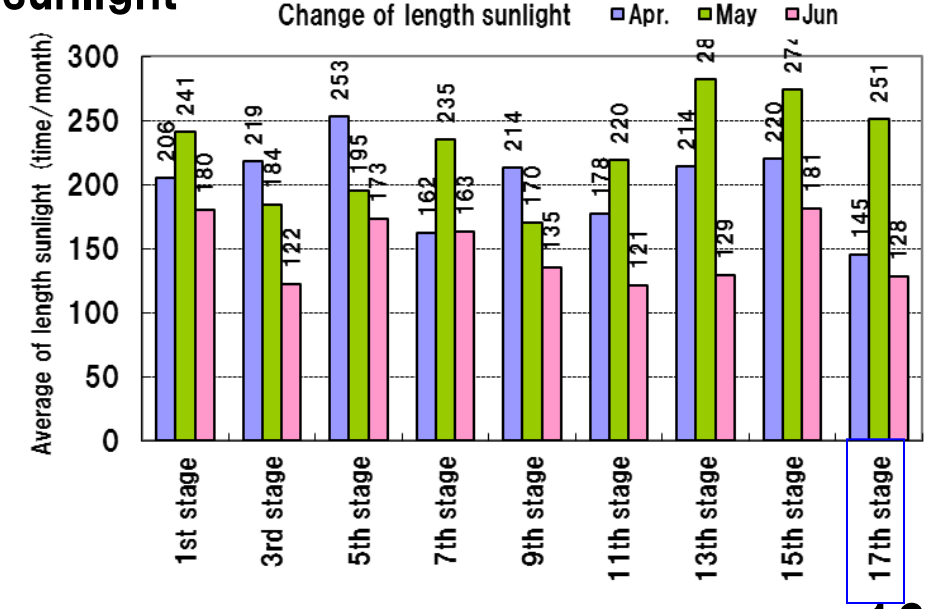
Precipitation





Length sunlight





6. Report of 17th stage survey

Column “To clarify and restore Horikawa River”

Horikawa Sen-nin Chosatai 2010, which is composed of Fixed Point Observation Groups, Free Survey Groups and Horikawa Cheering Groups, made a start as a place for citizens’ activities to clarify and restore Horikawa River on April 22nd, 2007.

Fixed point Observation Groups survey clarification effect of Horikawa by Transmission of Raw Water from the Kiso River (TRWKR) with a view point and sense of citizens. Free Survey Groups research Horikawa on free theme. Horikawa Cheering Groups support clarification and restoration of Horikawa. These groups are cooperating each other in the big network for clarification and restoration of Horikawa.

There are 96 Fixed Point Observation Groups, 40 Free Survey Groups and 2,562 Horikawa Cheering Groups, the total is 2,698 groups and 53,223 persons as of Feb.15, 2014.
Compared with the number of groups and participants, 165 groups and 2,262 persons, at the start, network of people who wish clarification and restoration of Horikawa has developed.

Fixed Point Observation Groups have made surveys at 3,923 times from 1st stage to 17th stage.
Those surveys show that the situation in the area of the downstream from Sanage Bridge variously changes as the tide rises and falls from hour to hour in Horikawa basin.
We learned that various surveys at various time, place and tidal situation enable us to understand average and change of water quality in Horikawa.
And it was confirmed that water quality was improved roughly between Sanage Bridge and Matsushige Bridge for five years of pilot project.
It was also confirmed that artificial garbage was reduced during this period.
So it is supposed that citizens’ awareness has changed for example cleaning activities are held more.

～Pilot project for clarification of Horikawa
“Clarification effect by TRWKR from April 2007 to March 2012 was confirmed”～
【Summary】
- ■Clarification effect by TRWKR was confirmed between Sanage Bridge and Matsushige Bridge
- ■Network of citizens who make a wish for clarification and restoration of Horikawa has grown
- ■Awareness of clarification of Horikawa advanced

1．Weather and its influence on Horikawa River at 17th stage(from April to June in 2015)

There were many rainy days in the beginning and middle of April, and many sunny days in the end of April and in May. The rainy season started on June 8th, in an average year. In this period, the temperature was a little higher, the precipitation was less and hours of sunshine was shorter than usual.

Shorter hours of sunshine remarkably influenced on water color in the downstream from Sanage Bridge, which is tidal section. The color like brown made by the red tide decreased. We think that's because the plankton didn't increase very much because of short hours of sunshine.

2．Change of water quality from Spring to Early Summer(1st・3rd・5th・7th・9th・11th・13th・15th・17th stage)

①Change year by year

After the stop of TRWKR in March in2010, Advanced Water Treatment was introduced at Meijo Water Treatment Center in May and Horikawa Ugan Rain-Water Reservoir for Pollution Control was in service in September in 2010. And reclaimed waste water by membrane filtration started to be injected from Meijo Water Treatment Center into Horikawa in August in 2011. The amount of the injected water is max 4,000m^3/day (0.046 m^3/second). The water is injected into Shonai Irrigation Canal from November to March, non-irrigation season, and into Horikawa from April to October. Shallow ground water also has been injected as a new water resource in the upstream area. A well was dug in the upstream area of Shiga Bridge in March and the ground water started to be injected into Horikawa by 0.01m^3/s. In addition, new clarification experiment by sand capping started between Naka Bridge and Gojo Bridge in February.

The water quality of Horikawa got worse in the 7th stage from April to June in 2010, just after TRWKR. But after 7th stage, the water quality has been tend to be improved or kept in the limited section. We think that the water quality has get better by the new measures for water quality improvement.

②Change in a year

We analyzed 1971 survey data collected from April in 2010 to March in 2015 to understand the change of the water quality by month. The analyzation proved following.

○"Impression of clearness", "transparency" and "ＣＯＤ" get worse from Spring to Autumn (from April to September). ○"Impression of clearness" was worse especially in the high tide in August when "impression of clearness" was evaluated more by smell than other months. ○When "bubbles from the bottom" is observed, "Smell" gets worse (the ratio of "Terrible smell"～"Smell" is 44%).

We have guessed that it's difficult to evaluate "Smell" quantitatively because there are differences among individuals to distinguish kinds or strength of "Smell" . But many data collected by survey groups enable us to understand citizen's average sense when they evaluate Horikawa.

3. General Survey on High Tide in Spring in April 20th ,2015

（1）Weather

We had 25.5 mm of rain from 11:00 to 15:00 because of a low pressure with a front om that day and the temperature got high because warm and humid air blew to the front.

（2）Inflow into Horikawa

”Light yellow gray” colored fresh water was flowing in from Nakagawa Canal. It affected the water color in downstream near Sanno Bridge. “Gray green” colored muddy water was flowing from sewer outlet from 12:00 ～ 13:00 when it rained heavily.

（3）Changes in Horikawa

①Blue Tide and Red Tide flow backward to the middle stream area

Flowing backward of milky water and the red tide were not observed. It might be because “the plankton can’t increase easily because of short hours of sunshine“ and “good quality rain water flowed into Horikawa caused by a long rain” in the beginning and middle of April. On the other hand, milky-like light yellow gray was observed at Horagai Bridge in the upstream of Shin-Horikawa.

②Sludge was raised up

Sludge was raised up a lot between Naya Bridge and Gojo Bridge at the low tide nearly on the ebb tide. The water color was “dark gray” and it was raised up heavier near the bank than in the center of river.

③Bubbles from the bottom

Bubbles from the bottom was not found.

④Floating things were gathered at the tip of the tide

Floating things were gathered near Naka Bridge at the high tide but the quantity of those is not many.

Floating things flowing downstream were gathered in the pool near Naya Bridge at the low tide and those moved to the upstream from the pool at the high tide. Those seem to flow to downstream and upstream over and over between the pool in the downstream and the tip of the tide in the upstream.

■Clarification Experiment by Covering Sand started in February

①Fixed Point Observation

We arranged changes surveyed in the experiment section and also upstream and downstream to the experiment section. That shows that “impression of water clearness” mainly is tend to be improved. We need to continue survey.

②Living Things

The capping sand appeared on the water at the ebb tide of the high tide and birds which like the waterside stayed there and was looking for foods. If a variety of living thing lives and breeds there, improvement of the self-purification action of nature can be expected. We need to continue survey.

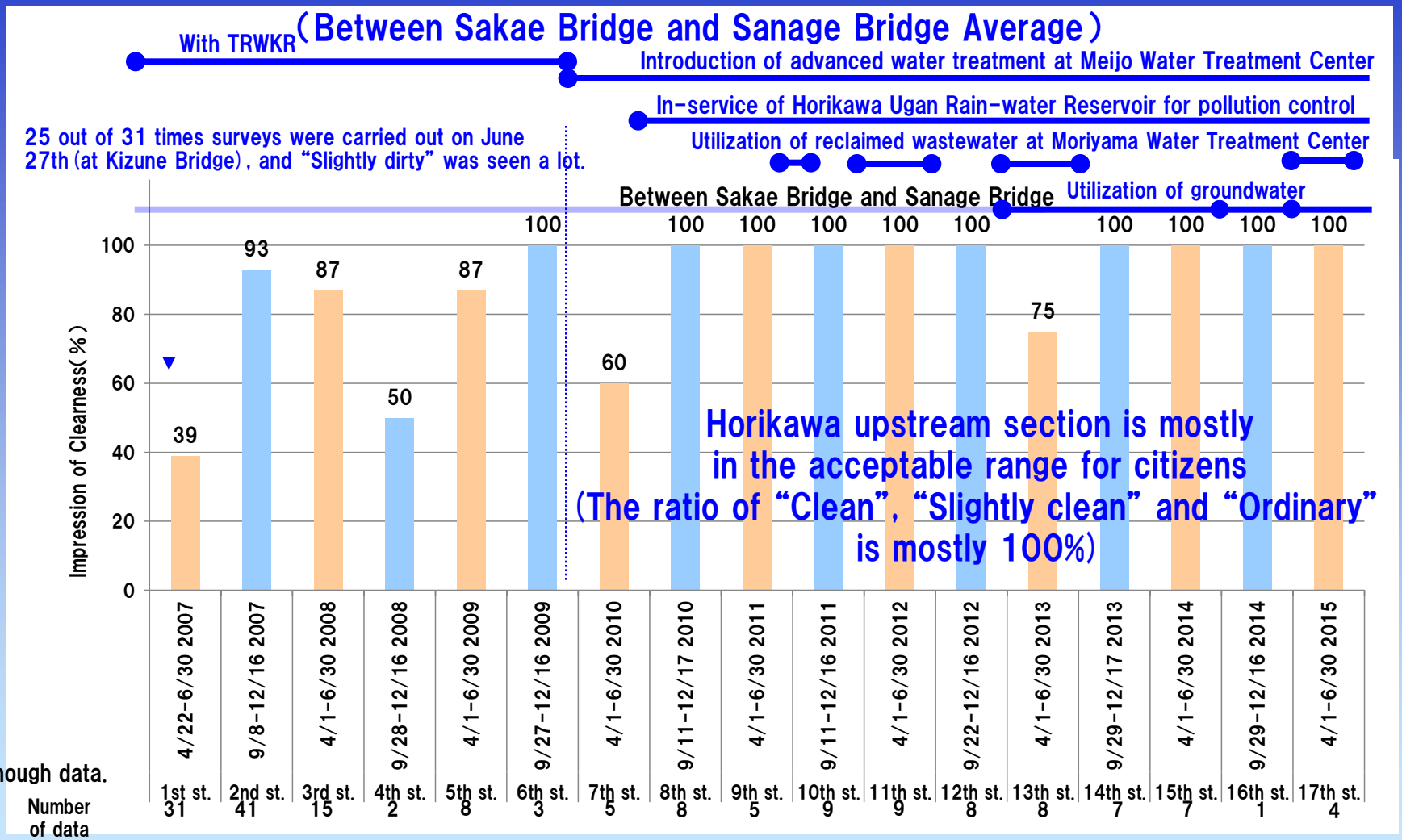
6.2. Impression of Clearness

The 1st-6th Stage : With TRWKR
No rain on the day and the previous day
The 7th-17th Stage: No TRWKR
No rain on the day and the previous day

The ratio of "Clean", "Slightly clean" and "Ordinary"

Upstream Section

Not enough data.



Not enough data.

■ How did the impression of water clearness change in Horikawa upstream section (between Sakae Bridge and Sanage Bridge)?

→Although we don't have enough data, the ratio of water clearness impression changes mostly in the acceptable range for citizens. ＊"Clean", "Slightly clean" and "Ordinary" are categorized as the acceptable range for citizens.

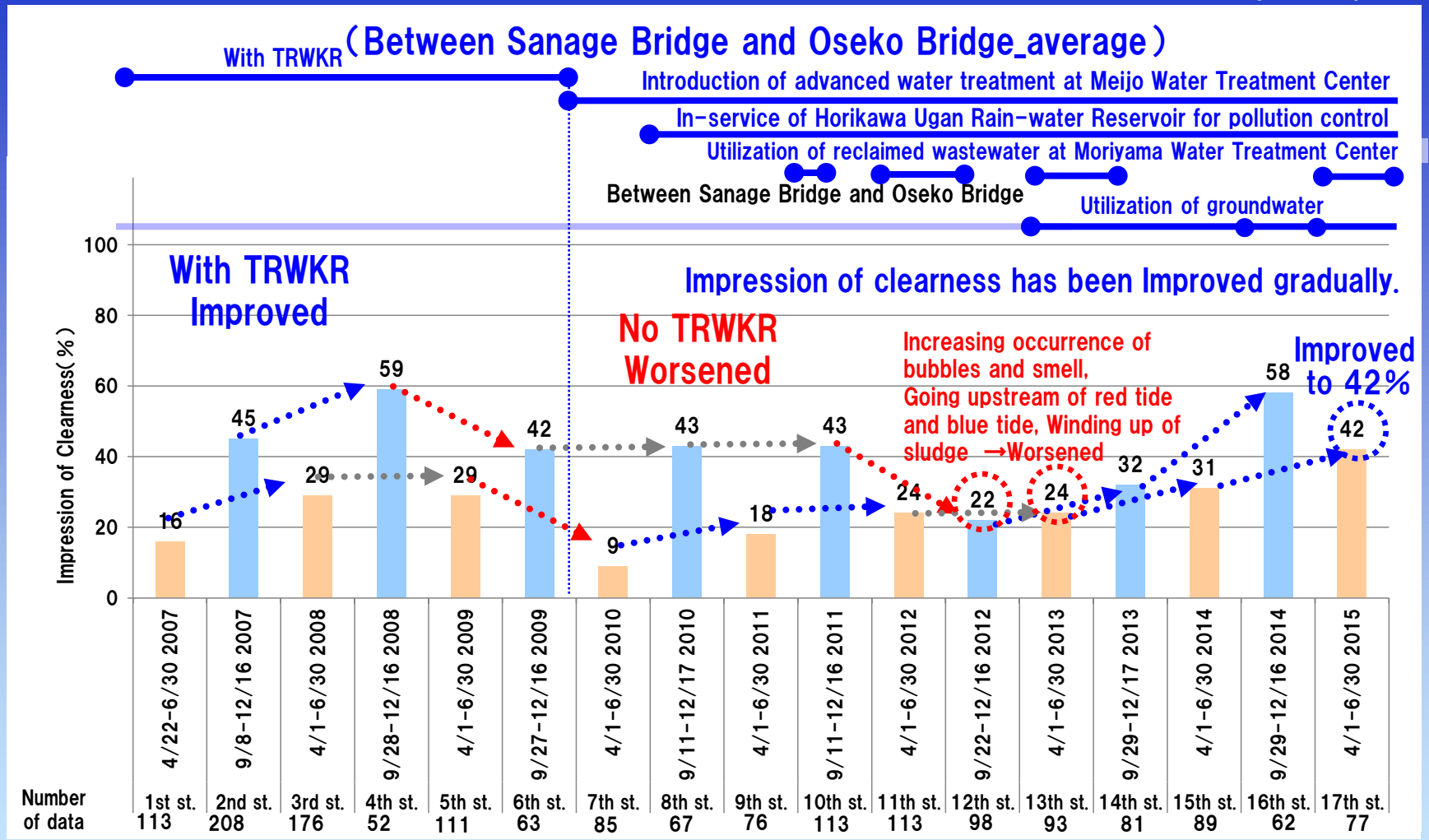
Impression of Clearness

Middle and Downstream Section

The ratio of "Clean", "Slightly clean" and "Ordinary"

Except the data between Oseko Bridge and Minatoshin Bridge for not enough data

The 1st-6th Stage : With TRWKR
No rain on the day and the previous day
The 7th-17th Stage: No TRWKR
No rain on the day and the previous day



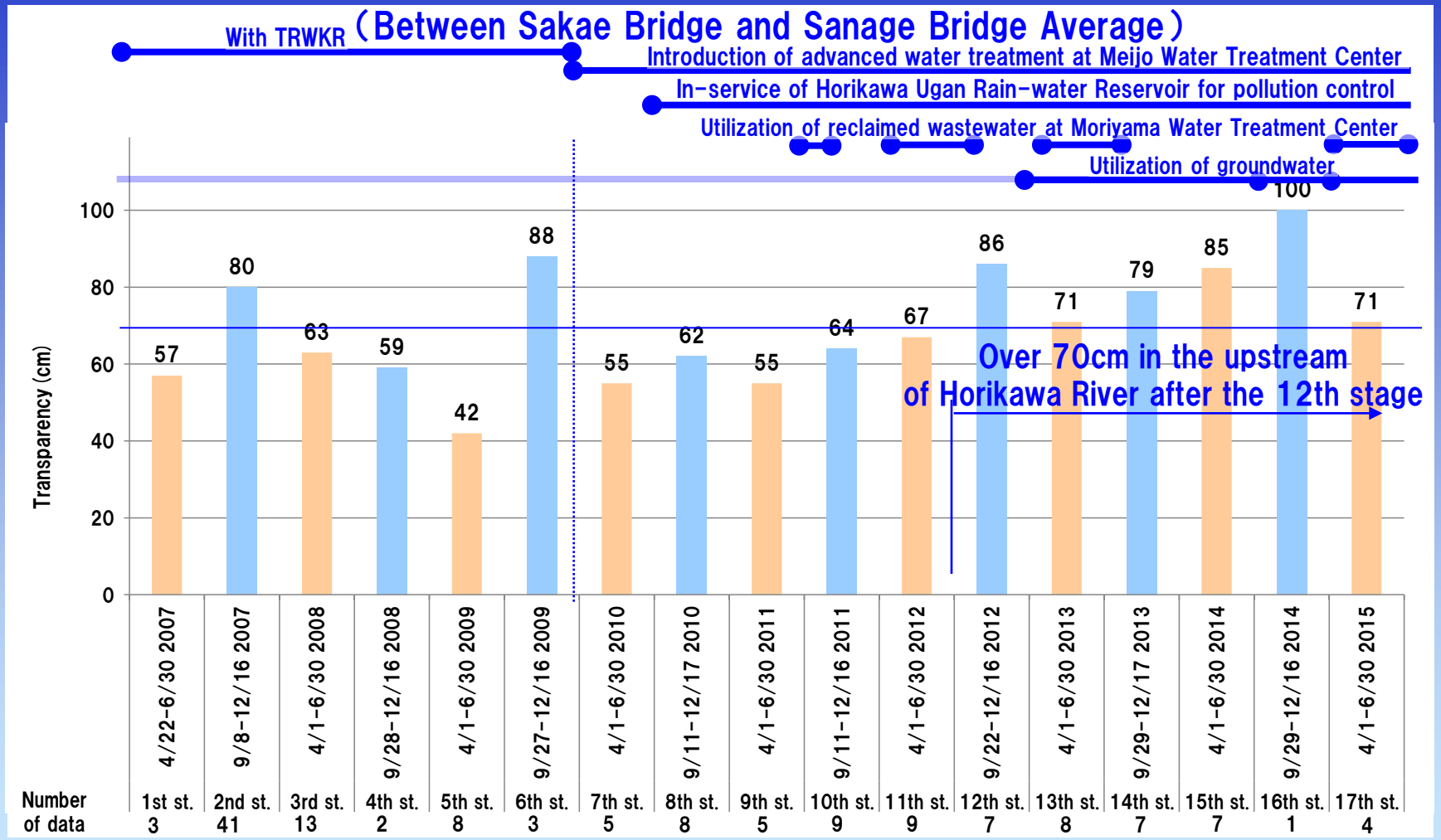
■How did the impression of water clearness change in the middle and downstream of Horikawa River (between Sanage Brdg. and Oseko Brdg.)?
→Improving trend was seen (the ratio of "Clean", "Slightly clean" and "Ordinary" was increased) during TRWKR. In the 7th stage after the stop of TRWKR, Impression of water clearness was worsened. Moreover, in the 12th and 13th stage, it was worsened by increasing occurrence of bubbles and smell, going upstream of red tide and blue tide, and winding up of sludge. However, impression of water clearness was improved after that. It is considered that these trends are made by the effect of new water quality improvement measures. The ratio of "Clean", "Slightly clean" and "Ordinary" was 42% in the 17th stage.
＊"Clean", "Slightly clean" and "Ordinary" are categorized as the acceptable range for citizens.

2. Transparency

The 1st-6th Stage : With TRWKR
No rain on the day and the previous day
The 7th-17th Stage: No TRWKR
No rain on the day and the previous day

Upstream Section

Change in Transparency



Not enough data.

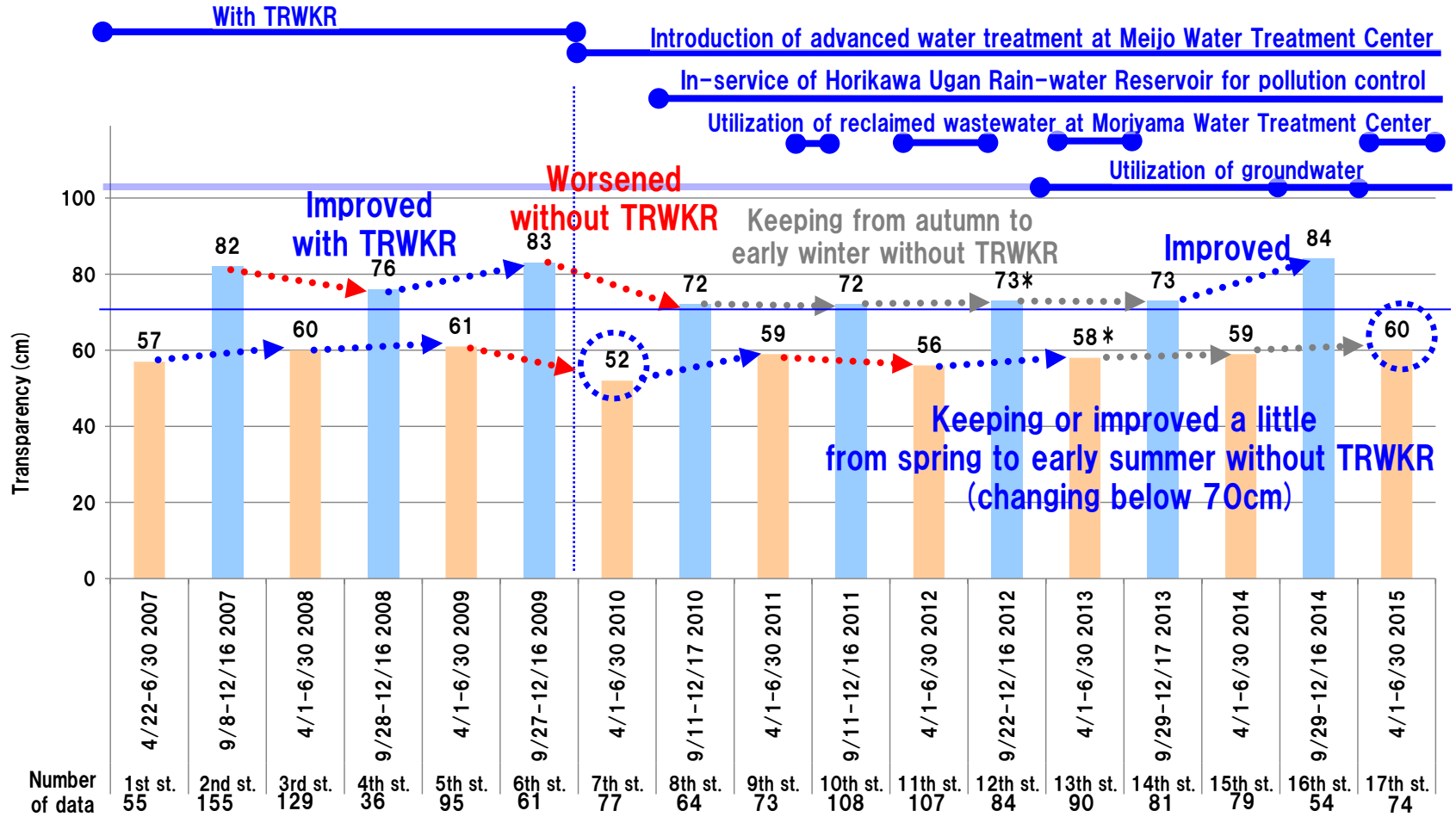
■ How did the transparency change in the upstream section (Sakae Bridge - Sanage Bridge) ?
→There are not enough data, but transparency after the 12th stage have been over 70cm (citizen's acceptable value).

Middle and Downstream Section

Change in Transparency

The 1st-6th Stage : With TRWKR
No rain on the day and the previous day
The 7th-17th Stage: No TRWKR
No rain on the day and the previous day

(Between Sanage Bridge and Oseko Bridge_average)



■How did the transparency change in the downstream section (Sanage Bridge - Oseko Bridge)?

It was improved during TRWKR and it was worsened without TRWKR. It was above 70cm, which is acceptable for citizens, and it was still improved in 16th stage. From spring to early summer, it was improved slightly or keeping after the stop of TRWKR. But the readings were below 70cm.

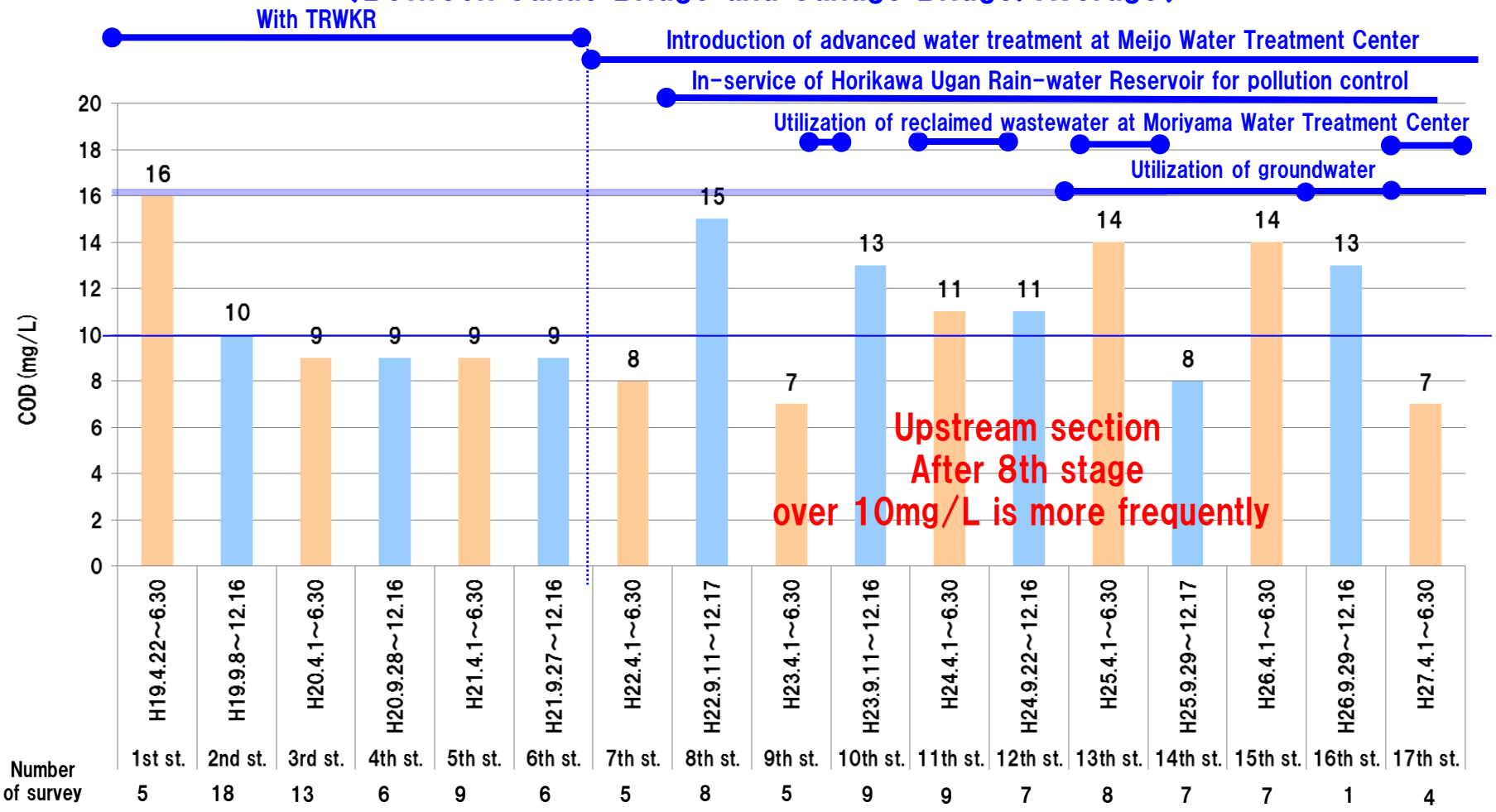
*In 12th and 13th stage, it was reported that blue tide or red tide flowed up and sludge rolled up, but it didn't affect the result clearly. The reason of it is probably that we scoop and observe fresh water on surface.

Upstream Section

Cange of COD

The 1st-6th Stage : With TRWKR
No rain on the day and the previous day
The 7th-17th Stage: No TRWKR
No rain on the day and the previous day

（Between Sakae Bridge and Sanage Bridge. Average）



Not enough data

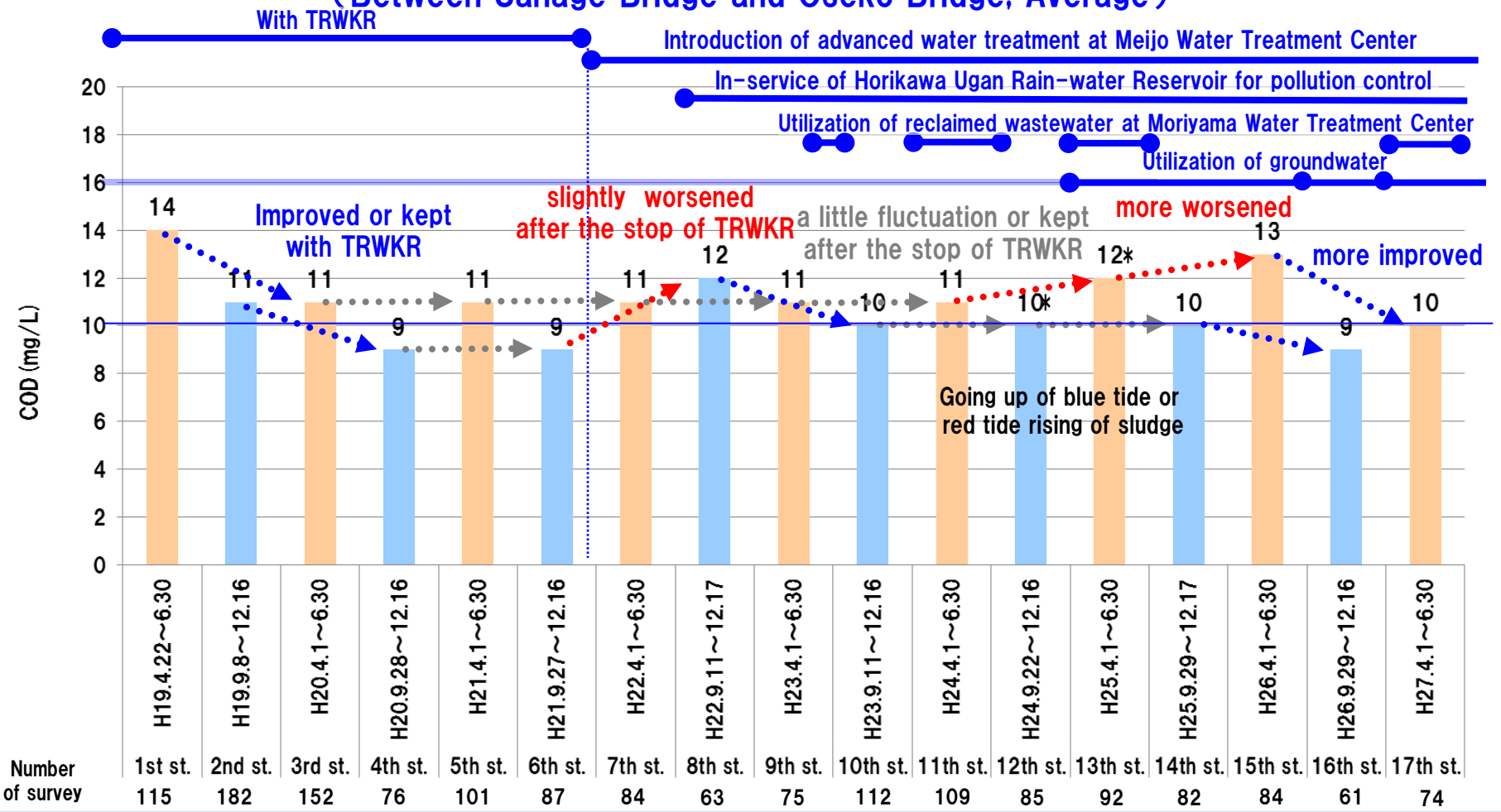
■ How did COD change in the upstream section (between Sakae Bridge and Sanage Bridge)?
→Although COD was 7mg/L in the 7th stage, it is over 10mg/L more frequently after 8th stage.

Middle and downstream section

Cange of COD

The 1st-6th Stage : With TRWKR
No rain on the day and the previous day
The 7th-17th Stage: No TRWKR
No rain on the day and the previous day

(Between Sanage Bridge and Oseko Bridge, Average)



■ How did COD change in the middle and downstream section (between Sanage Bridge and Oseko Bridge)?

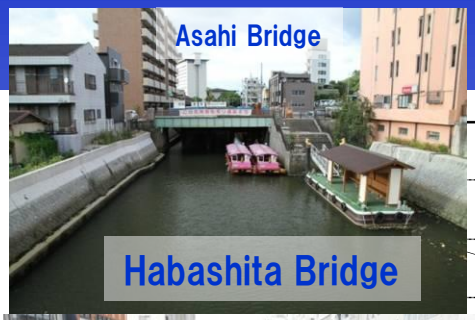
→It seems that COD was improved and kept during TRWKR, slightly worsened after the stop of TRWKR in the 8th stage, and was fluctuated or kept around 10mg/L. Although COD was slightly worsened in the 15th stage, it was slightly improved around 10mg/L in the 17th stage.

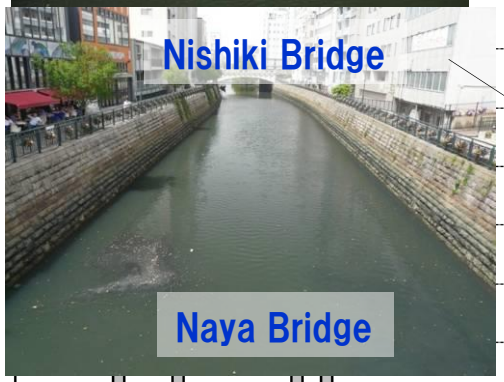
In the 12th and 13th stage, going up of blue tide or red tide rising of sludge was reported, but the effect of those didn't appear clearly because it supposed that we observed fresh water of a surface

Change of bubbles from the bottom

In the 1st, 3rd, 5th, 7th, 9th, 11th, 13th, 15th, and 17th stage (spring-early summer)
At each bridge, No rain, Both with TRWKR and without TRWKR

Occurrence of bubbles component ratio (%)
＝Days when bubbles rise from the bottom／All survey days×100





Suspended state substance occurs and settles and sludge of bottom tends to deposit because it is located at the end of ebb and high of the tide.

Sludge of bottom tends to deposit because where the river is wide is slow to flow.

Bubbles are frequently observed from spring to early summer between Naya Bridge and Tenma Bridge, at Habashita Bridge and Kitashimizu Bridge.

At Kitashimizu Bridge, suspended substance is settled and sludge of bottom tends to deposit because where the river is wide is slow to flow. Betweeen Asahi Bridge and Naya Bridge, suspended state substance occurs and settles and sludge of bottom tends to deposit because it is located at the end of ebb and high of the tide.

＊:Under 10 samples

Sorce：Report from the thirteenth survey meeting of HSC p.79

Review: Current Condition & Pollution Mechanism of Horikawa

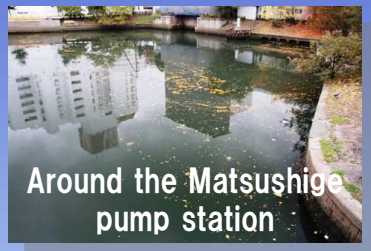
Based on 3,083 surveys for 6.5 years by HSC

Bad impression of the water pollution between Johoku Bridge and Matsushige Bridge

Especially between Asahi Bridge and Matushige Bridge
- Many bubbles from the bottom
- Terrible smell

How do we evaluate impression of the Water Pollution (13th stage)

Color of water 60%
Cleamess 18%
Litter 14%
Smell 7%



Bad impression of the water pollution

Many babbles from bottom

Terrible smell

Many floating litter

Many floating litter

Minatoshinbashi Bridge

Oseko Bridge

Kameya Bridge

Matsushige Bridge

Asahi Bridge

Johoku Bridge

Sanage Bridge

Shonai River
Motoiru Sluiceway

Nagoya port

▼high tide

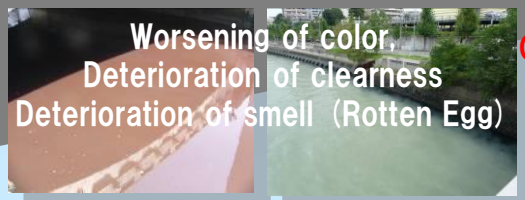
▼low tide

Water level, stream direction ,flow rate Changes by tide level.

Difference of tide level reaches 2m & over

Rising sludge

Sedimentation of sludge

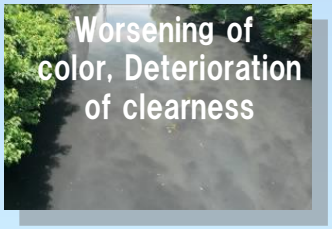


Red tide

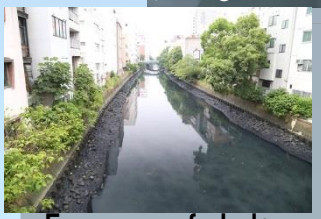
Blue tide

Going up of blue tide or red tide

Deterioration of color, clearness and smell



Rising of sludge



Exposure of sludge
When tide is low at spring tide

6.6. Smell　Kind of smell (each division)・・・spring～early summer

With TRWKR

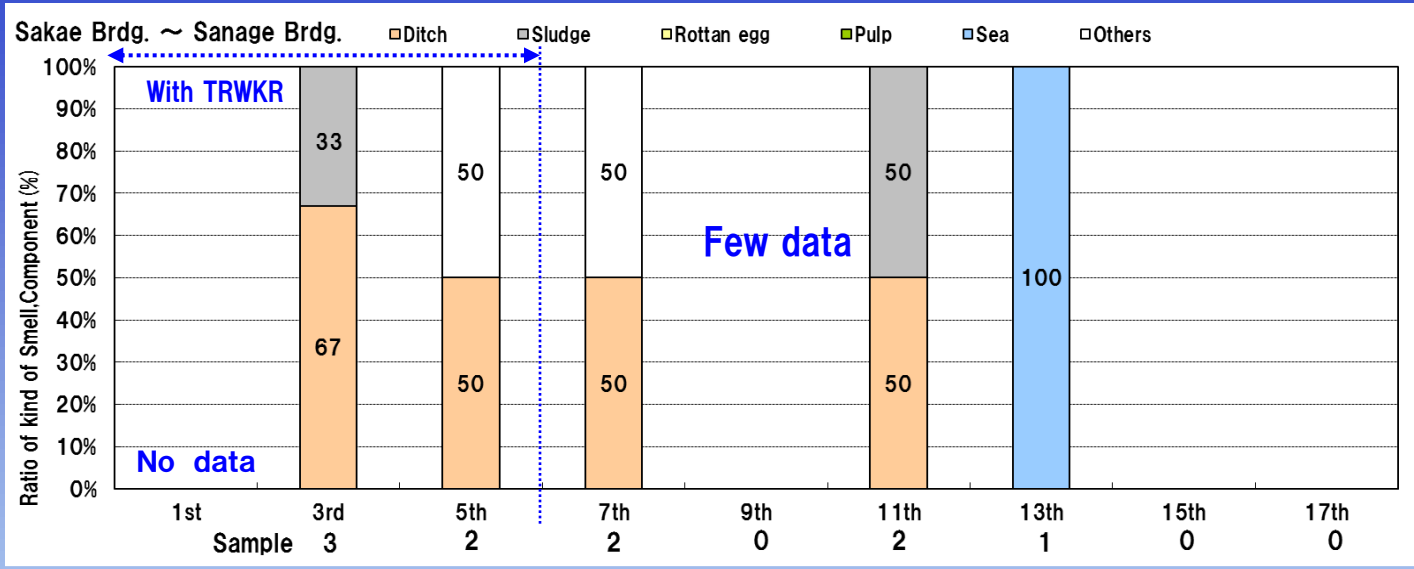
Introduction of Advanced treatment at Meijo Wastewater Treatment Center

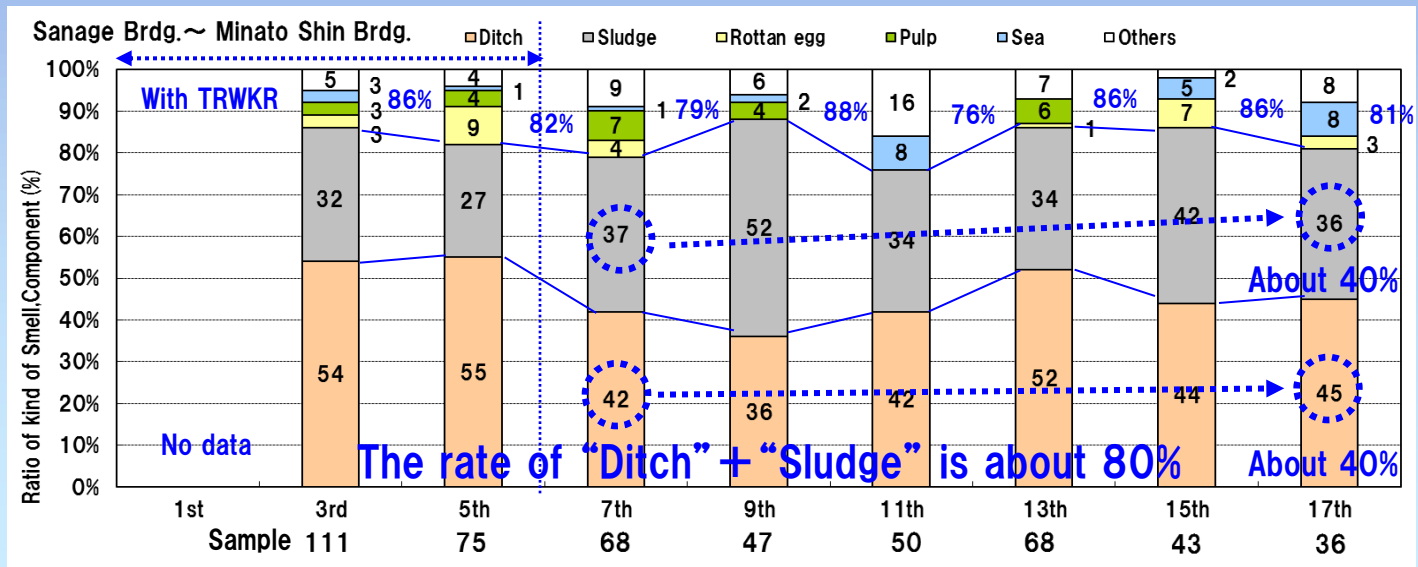
・In-service of Horikawa Ugan Rain-water Reservoir for Pollution Control

Utilization of Reclaimed Wastewater(April～October))

Utilization of groundwater

1st,3rd,5th stage : With TRWKR
No rain on the day and the previous day
7th,9th,11th,13th,15th,17th stage : No TRWKR
No rain on the day and the previous day



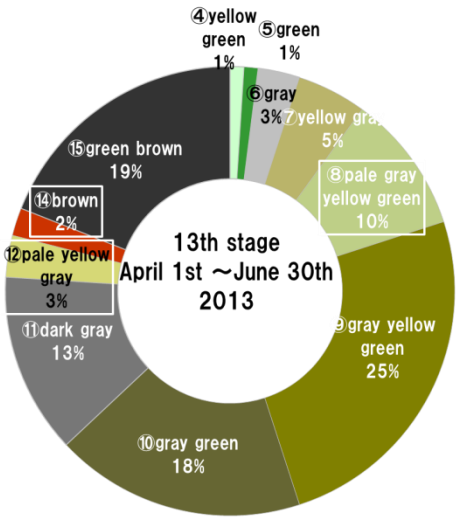


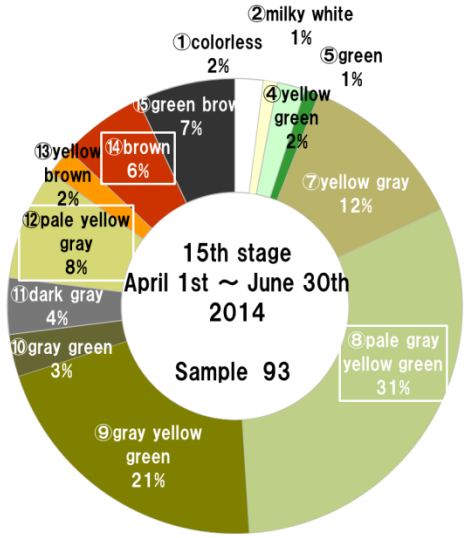
■Change of the smell, from spring to early summer, between Sanage bridge to Minatoshin bridge
→The amount of "Ditch" and "Sludge" was about 80%.
Each rate was about 40%.
There is no significant change in 7th stage and 17th stage.

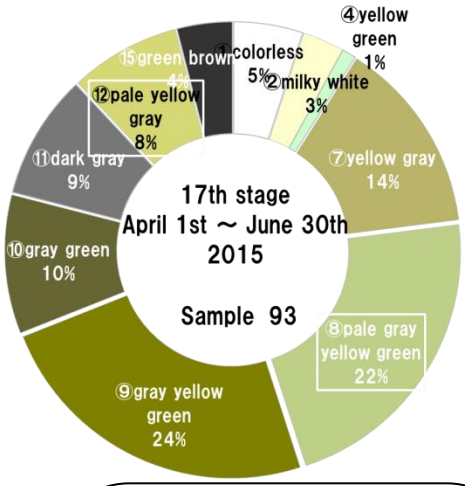
＊ 0% item isn't displayed.

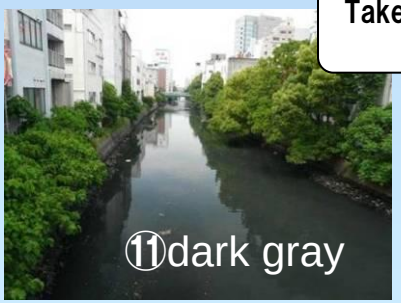
6.7. Colors

Ratio of color（Sanege bridge ～ Minatoshin bridge）









There was a report that fishes were suffering at “⑧ pale gray yellow green”

Taken at Nishiki bridge

■Frequent colors?

⑨gray yellow green,
⑧pale gray yellow green,and
⑦yellow gray.

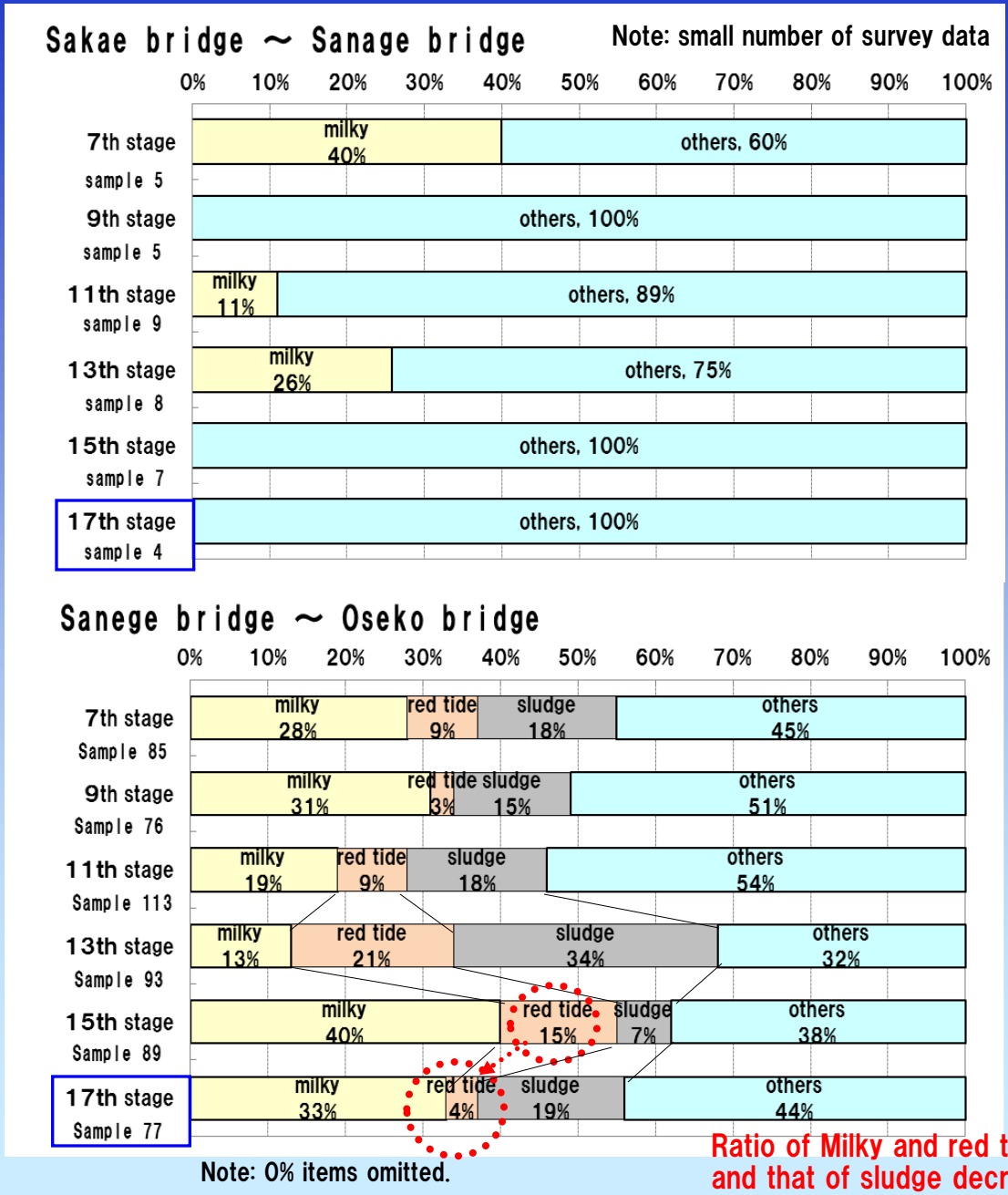
Compared to 15th stage, the ratio of ⑧pale gray yellow green and brown color (⑬ yellow brown,⑭brown, and ⑮ green brown) decreased, but the ratio of ⑩gray green and ⑪dark gray increased.

It seems that fewer coloration of plankton have decreased the ratio of brown colors.

（Red tide did not occurred in 17th stage）

Change of colors (from spring to early summer)

The 7th, 8th, 11th, 13th, 15th 17th stage:
without TRWKR ,no rain on the day and the previous day



Note: 0% items omitted.

legend

■milky
- ②milky white
- ⑧pale gray

yellow green
- ⑫pale yellow gray

■red tide
- ⑬yellow brown
- ⑭brown
- ⑮green brown

■sludge
- ⑥gray
- ⑩gray green
- ⑪dark gray

■ change of colors

In the 15th stage, the ratio of milky and red tide was high, and the ratio of sludge was low. This was because of blue tide (milky color) by higher temperature and longer duration of sunshine than usual.

In the 17th stage, compared to the 15th , the ratio of milky and sludge increased, the ratio of red tide decreased.

It seems that lower duration of sunshine than 15th have affected small amount of red tide (small amount of plankton) .

Ratio of Milky and red tide increased, and that of sludge decreased.

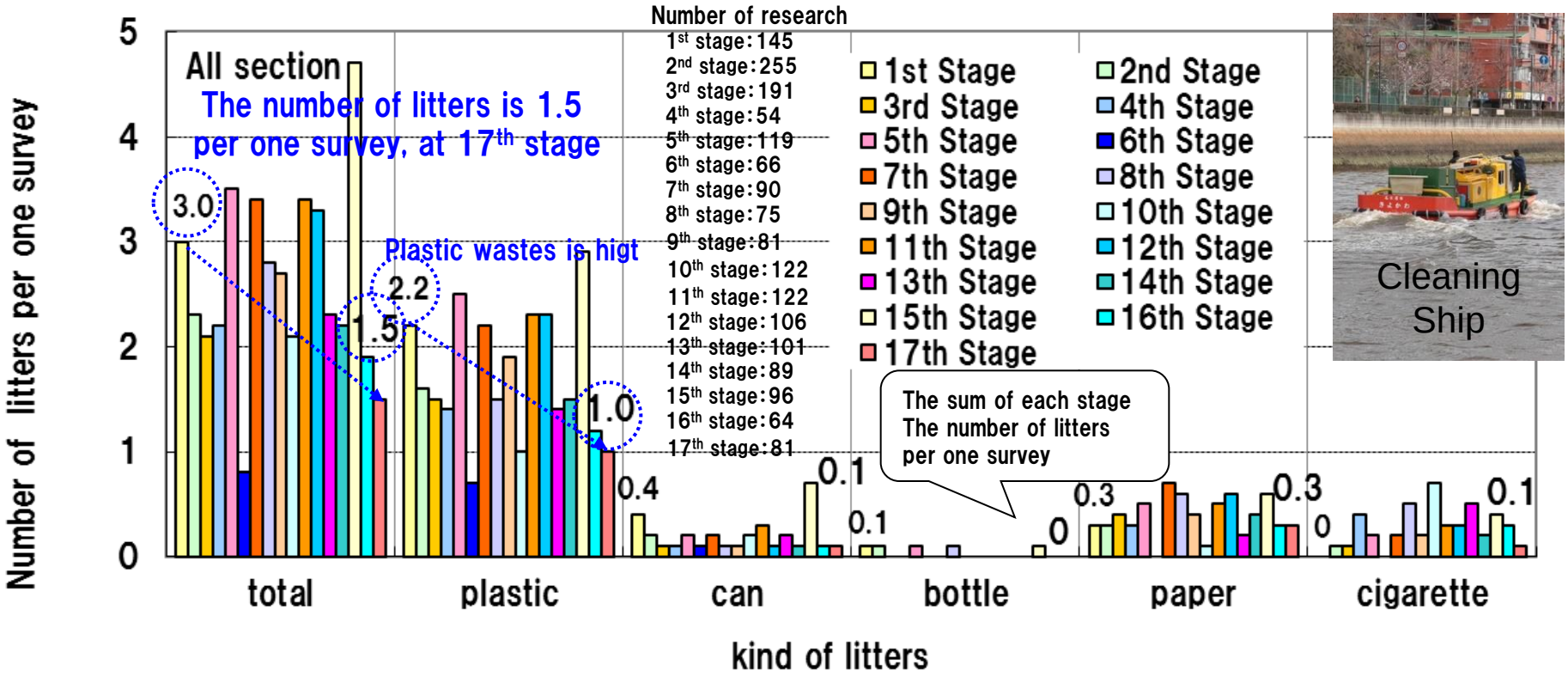
Litters

Floating litters,
Change of the number of litters

1st-6th stage : With TRWKR
No rain on the day and the previous day

•7th-17th stage : No TRWKR
No rain on the day and the previous day

■Litters
Plastic wastes (PE shopping bag, plastic bag, noodle cup, polystyrene foam tray, pet bottles, PE shopping bag with garbage) , can, glass bottle, cigarette (wrapping, butt)



Note: the number of litters per one survey = the number of each litters found in all survey / the number of surveys
＊the number of litters is the number of litters found in all survey
If the number of litters was reported “countless(=＊＊＊)”in some survey, it count ”10”, the maximum number of other reports.

■Floating litters
→At 17th stage, the number of floating litters is 1.5 per one survey. Especially, the number of plastic wastes is high, about 1.0 per one survey.

6.9. Living things

Going upstream of migration fish and brackish water

■ Going upstream of Gobys fry was confirmed.

○ Nishiki Bridge

○ First confirmed day

April 22 2008
April 22 2009
April 25 2010
April 13 2011
April 18 2012
April 16 2013
April 23 2014
April 22 2015

Goby

■Going upstream of Mullet fry (total length was about 3cm) was confirmed.

○ Nishiki Bridge

○ First confirmed day

May 9 2007
March 22 2008
May 3 2009
May 25 2010
April 26 2011
April 27 2012
April 29 2013
May 21 2014
April 22 2015

Young fish of Mullet

Upstream of Horikawa River

Report:Goyosui-ato-gaien-aigokai-chosatai

Spawmomg of Carp around the Menoto Bridge April 24 2015

Yellow Soft-shelled Turtle at Shiga Bridge

Soft-shelled Turtle around Chigomiya Bridge June 21 2015

Colored carp of 60cm length Around kurokawa 2nd Bridge June 2 2015(Tue)

Living things around Nishiki Bridge April 22 2015(Wed)
Photo : Kawasemi Chosatai

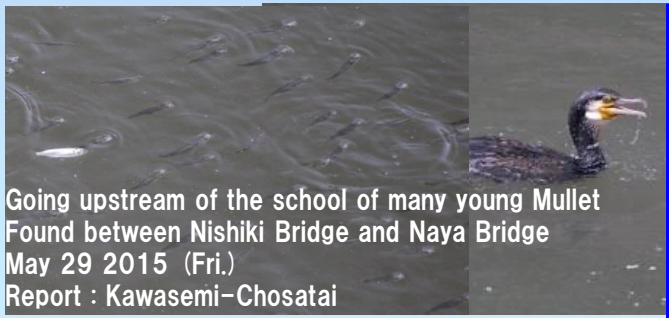
Mosquitofish(Alien species) and Goby

Red swamp crawfish

Chiromantes dehaani

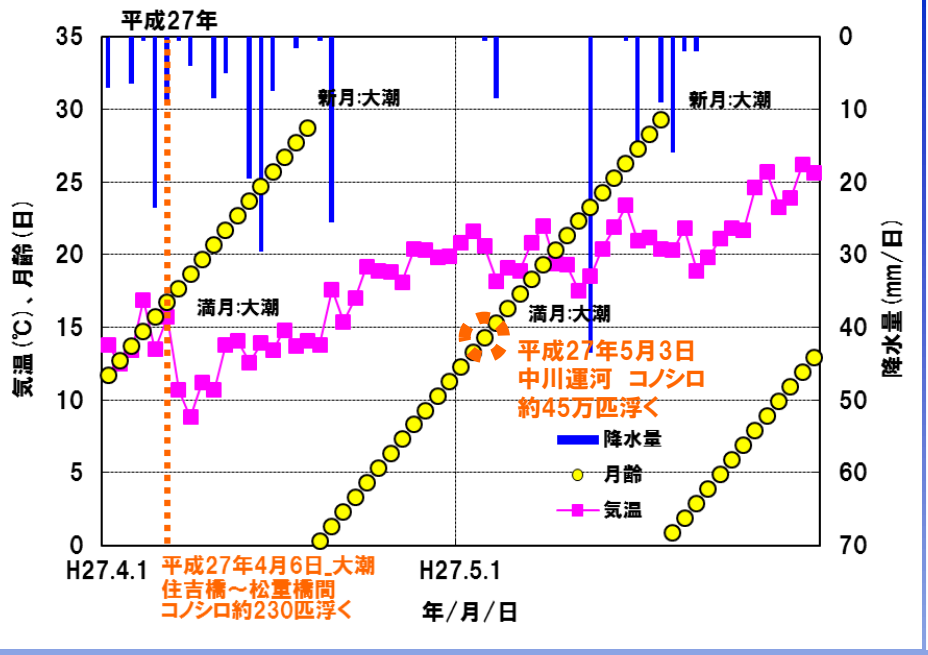
School of young fish of Mullet
Around the Sumiyoshi Bridge
May 27 2015 (Wed)
Photo : Chikyukurabu-Chosatai

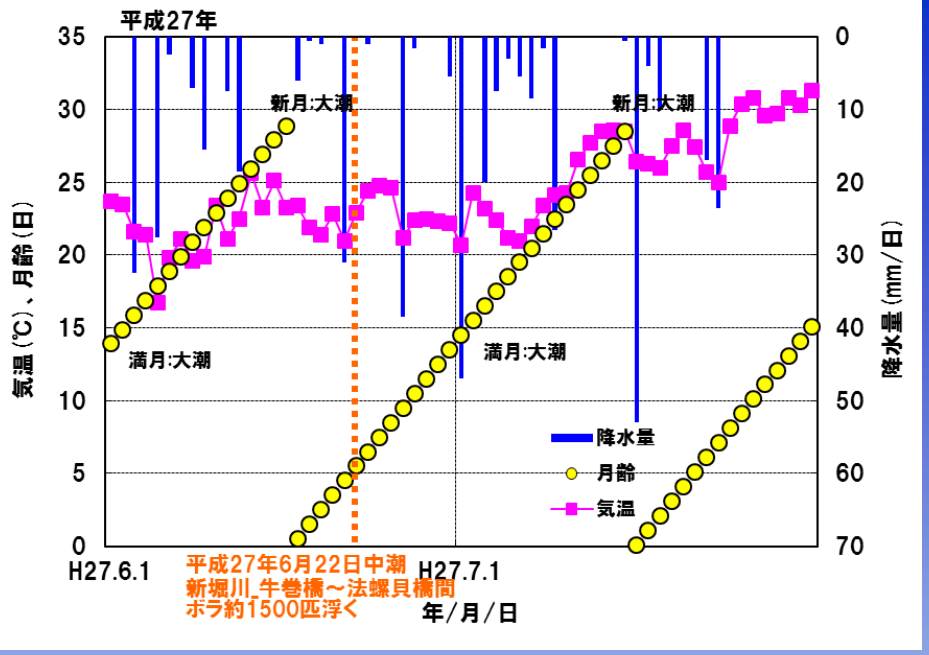
School of young fish of Mullet
Along the right bank from Atsutakinen Bridge to Shiratori Bridge
June 5 2015(Fri)
Report : Kojo Horikawa-to-Seikatsu-wo-Kangaerukai



Going upstream of the school of many young Mullet
Found between Nishiki Bridge and Naya Bridge
May 29 2015 (Fri.)
Report : Kawasemi-Chosatai

Japanese cormorant preyed on mullet.





Nakatoko Bridge Living things Observation Diary

Report:Sato family Chosatai

We think that if many river fishes being to live, the river become rich ecosystem. So, we walk and observe around Nakatsuchido Bridge to notice, what we can do for the river to became rich ecosystem. We try to do that 200 times in one year, and reduce a certain amount of reports except for the special topics.

April 1 2015(Wed)
It's not visible figure of fish because the river was impure.
Two new feces of a raccoon dog was found.

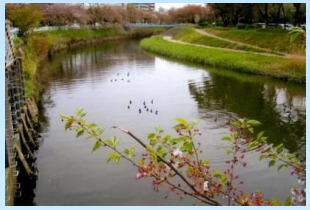
April 9 2015(Thu)
It's not visible figure of carp
One new feces of a racoon dog was found.

May 9 2015(Sat)
Young fish of Carp, Japanese dace
New feces of a raccoon dog

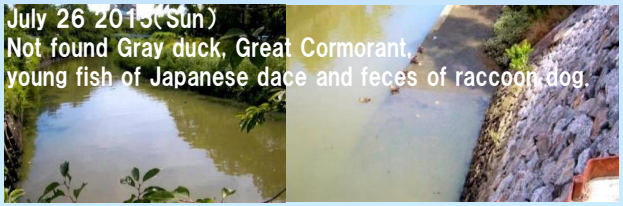
May 24 2015(Sun)
Young fish of Japanese dace
Old feces of a raccoon dog

June 7 2015(Sun)
Not found Carp, Japanese dace and feces of raccoon dog

April 12 2015(Sun)
Tufted duck, Common teal, Carp is found. Two new feces of a raccoon dog was found. One is new, another is old.



April 23 2015(Thu)
Not found Common teal, young fish of Japanese dace and feces of raccoon dog.



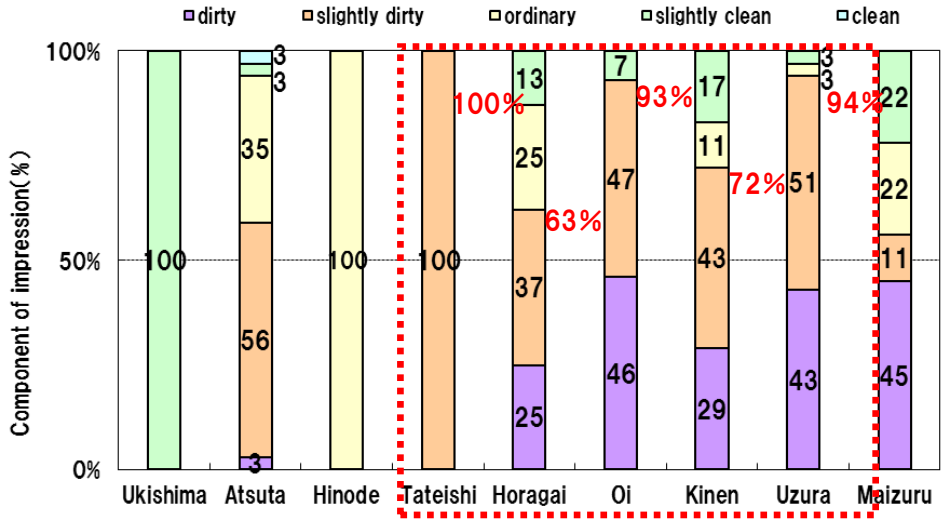
July 26 2015(Sun)
Not found Gray duck, Great Cormorant, young fish of Japanese dace and feces of raccoon dog.

Raccoon dog at Nakatsuchido Bridge
January 27 2015
(data)16thmeeting p.80

6.11. State of Shin-horikawa River

Impression of water pollution

All data included

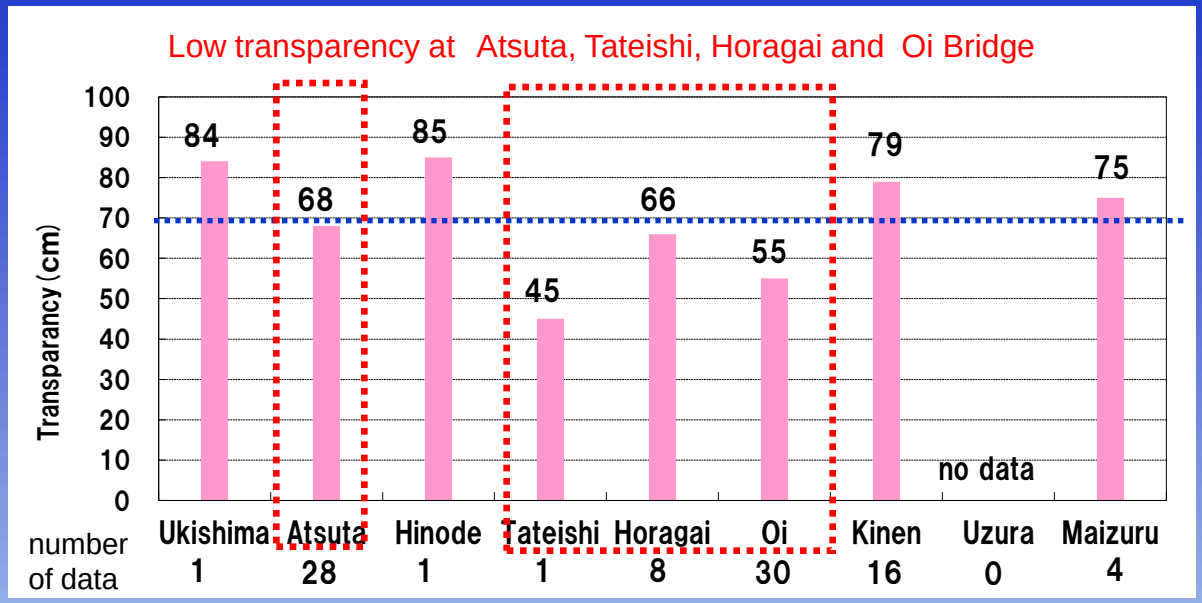


■ Impression of water pollution

Component ratio of “dirty” and “slightly dirty” got more than 70% at Uzura bridge and Oi bridge (upstream of Shin-horikawa). Especially that ratio was more than 90% at Uzura Bridge and Oi Bridge. At Atsuta Bridge(downstream of Shin-horikawa), most answers are between “slightly dirty” and “slightly clean”.

Impression of water pollution is bad between Uzura Bridge and Oi Bridge.

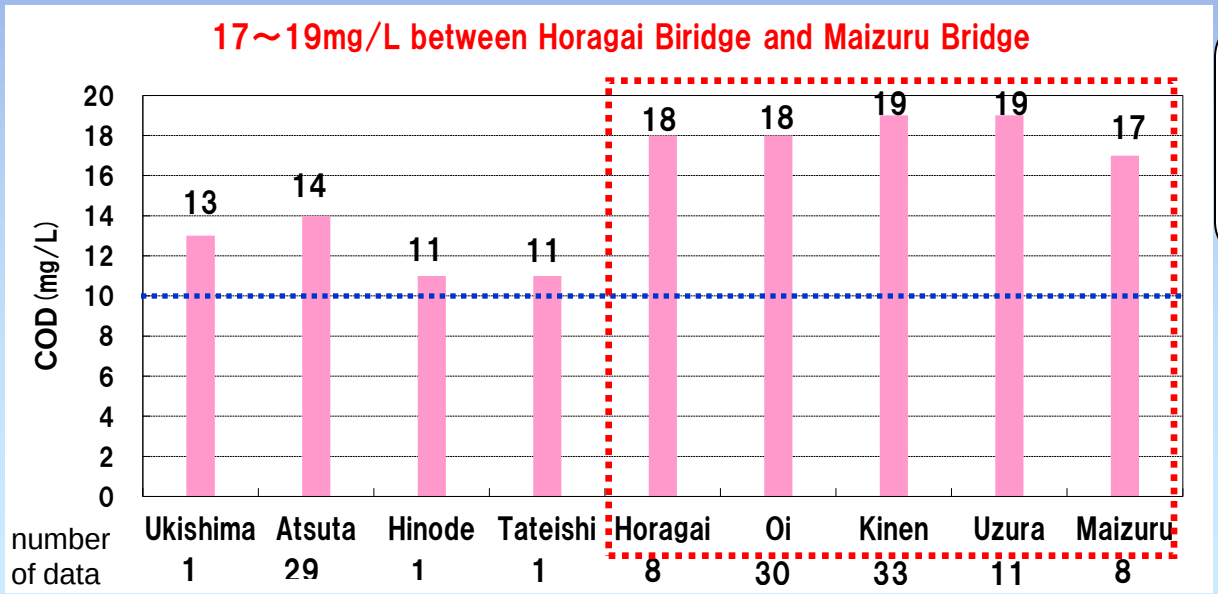
Transparency of Shin-horikawa River



Transparency in upstream of Shi-horikawa river, at Maizuru Bridge and Kinen Bridge, was more than 70cm.It was acceptable range of citizen. But it was only 45-68cm at Atsuta, Tateishi, Horagai and Oi Bridge.

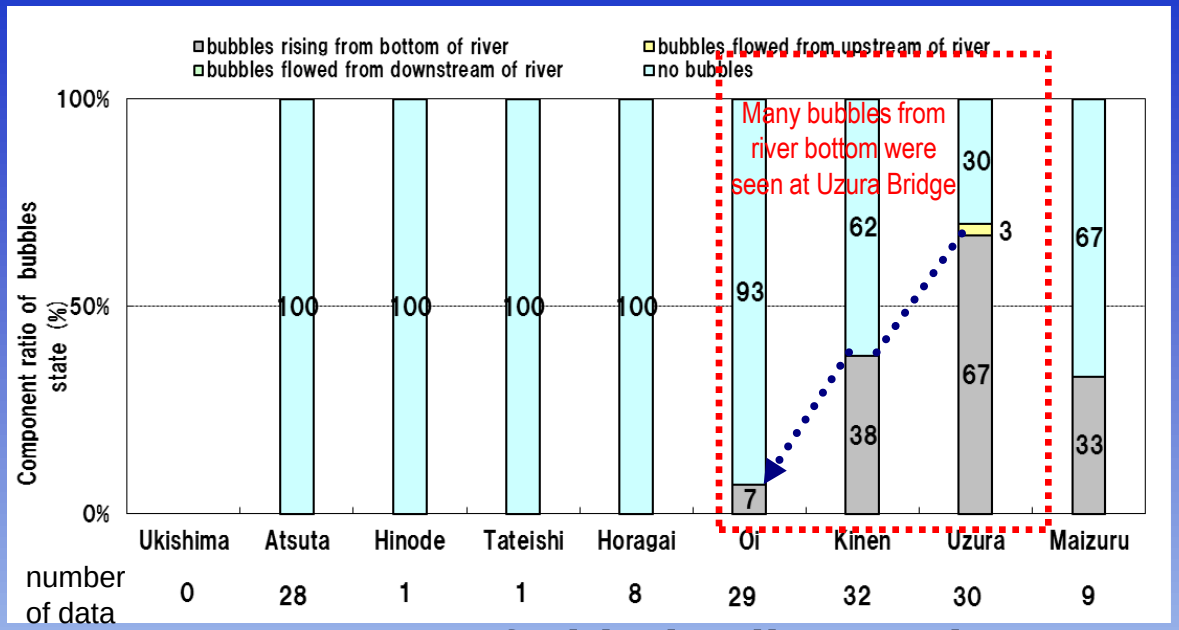
＊acceptable range for citizen
: 70cm & over transparency

COD of Shin-horikawa River



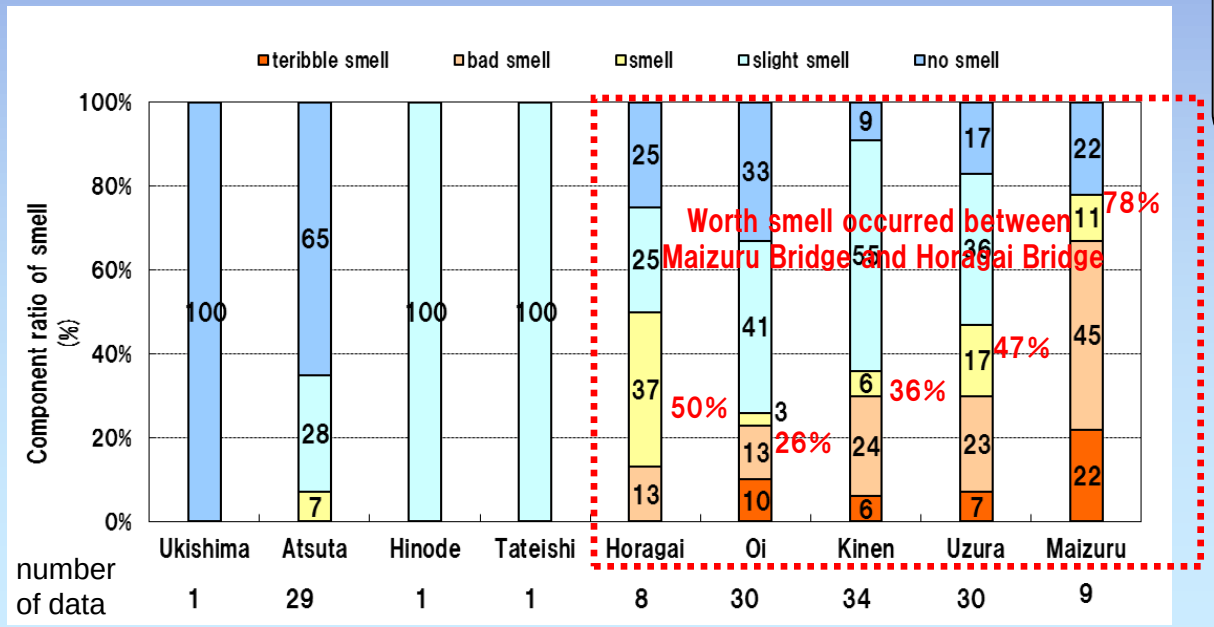
High COD level was seen between Maizuru Bridge and Horagai Bridge. Atsuta Bridge on downstream of Shin-horikawa is 14mg/**L**. COD of upstream is higher than that of downstream.

Bubbles of Shin-horikawa River



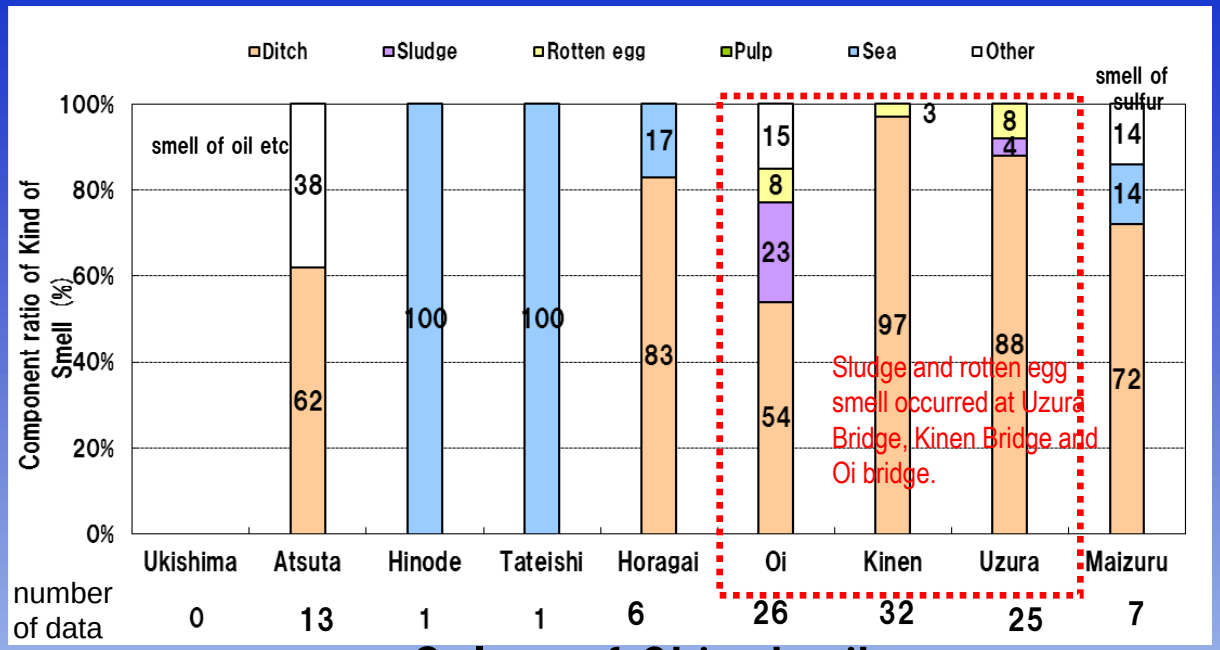
Bubbles from river bottom were seen at Maizuru, Uzura, Kinen and Oi Bridge. Especially, the ratio of “bubbles from river bottom” is 67% at Uzura Bridge.
No bubbles occur at other Bridges.

Smell of Shin-horikawa River



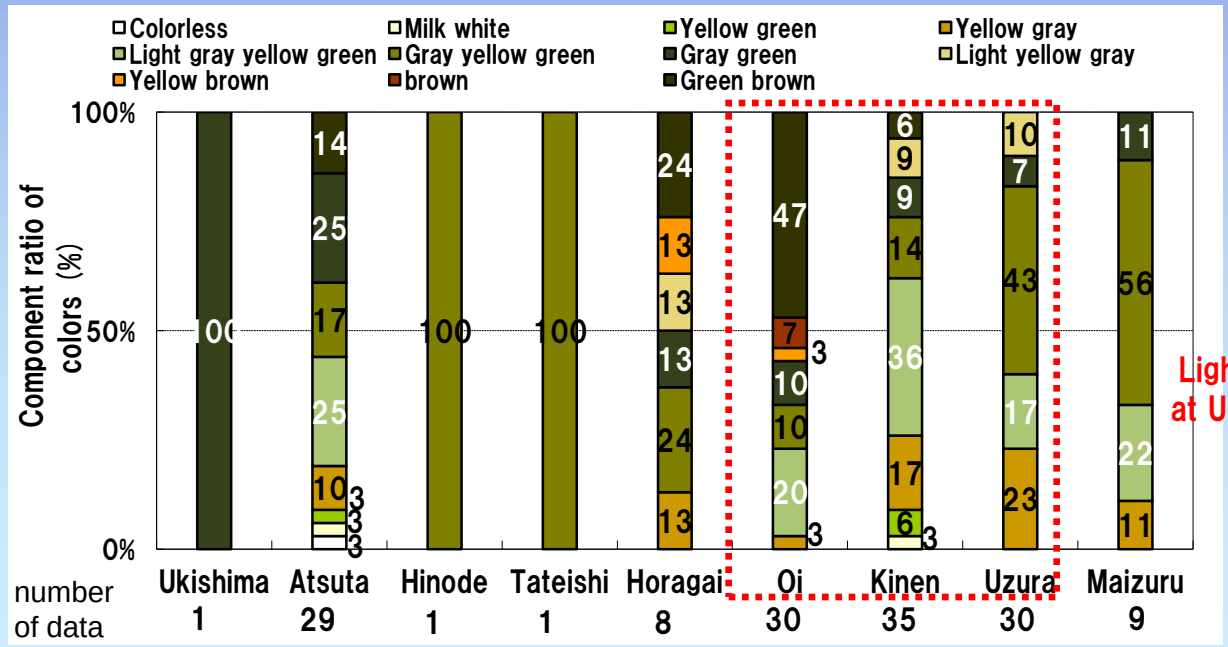
Terrible or bad smell occurred upstream, between Maizuru Bridge and Horagai Bridge. the ratio of “terrible smell” “bad smell” and “smell” is 26%-78% between Maizuru Bridge and Horagai Bridge.

Kind of Smell from Shin-horikawa River



Ditch, sludge and rotten egg smell occurred on upstream between Uzura Bridge and Oi Bridge.

Colors of Shin-horikawa



Lighter colors were seen at Uzura Bridge and Kinen Bridge. Colloidal particulate sulfur might cause these colors.
And darker green colors seen at Kinen Bridge, Oi Bridge, and Horagai Bridge were from phytoplankton.

Lighter colors were seen at Uzura Bridge and Kinen Bridge

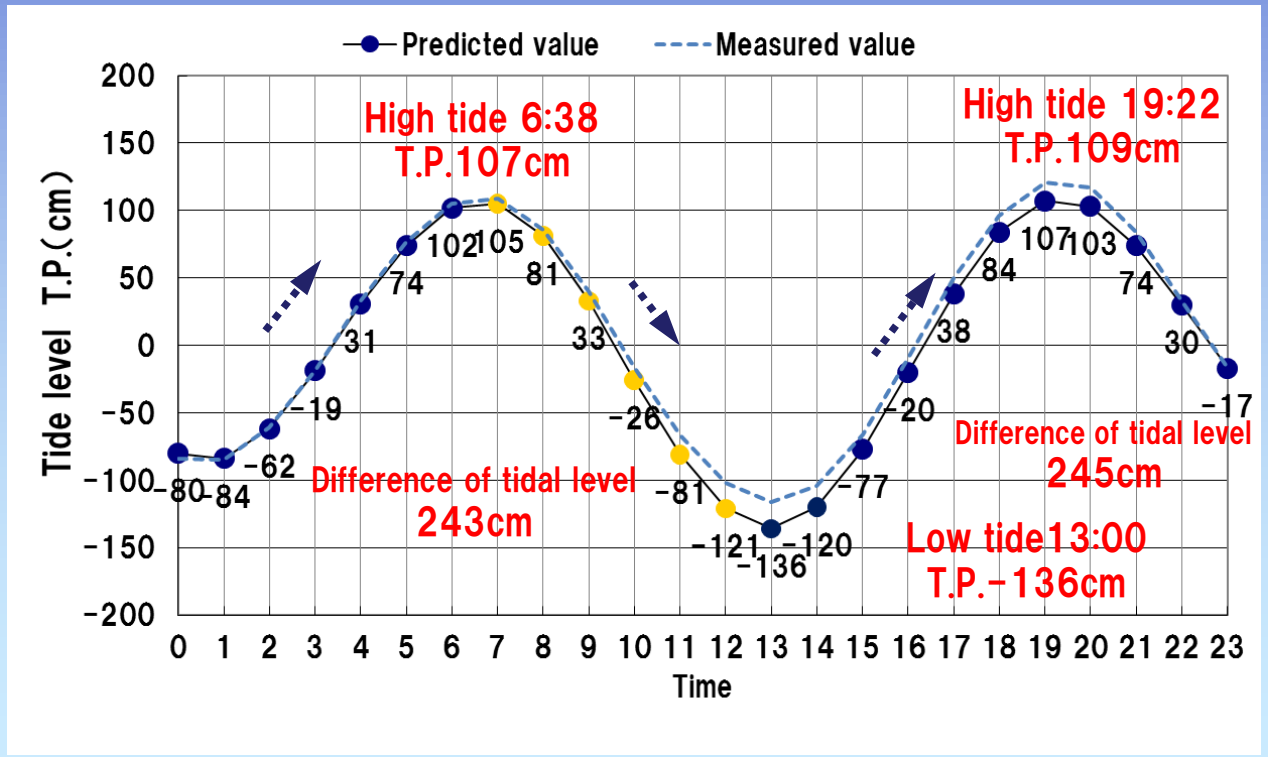
6.12. Spring tide general survey in Spring（Apr. 20th ,2015）

Horikawa Sen-nin Chosatai 2010
5th Horikawa general survey
～Spring tide general survey in Spring～

surveyed when the change of the tide is high

Survey day：Monday, April 20th ,2015

Changes in the tide level（Nagoya Port）：Tide level difference about 2.4m



The difference of tide level at Nagoya Port was about 2.4m (predicted value). Measured value was a little higher than the predicted value.

Source) Japan Meteorological Agency HP

Survey method

- Survey item：Same item as other fixed point observation

＊Record table use the ones of fixed-point observation

- Survey photo：To record the state of the Horikawa River Photos

～Point of survey～

■Change of Color, Smell and Bubble

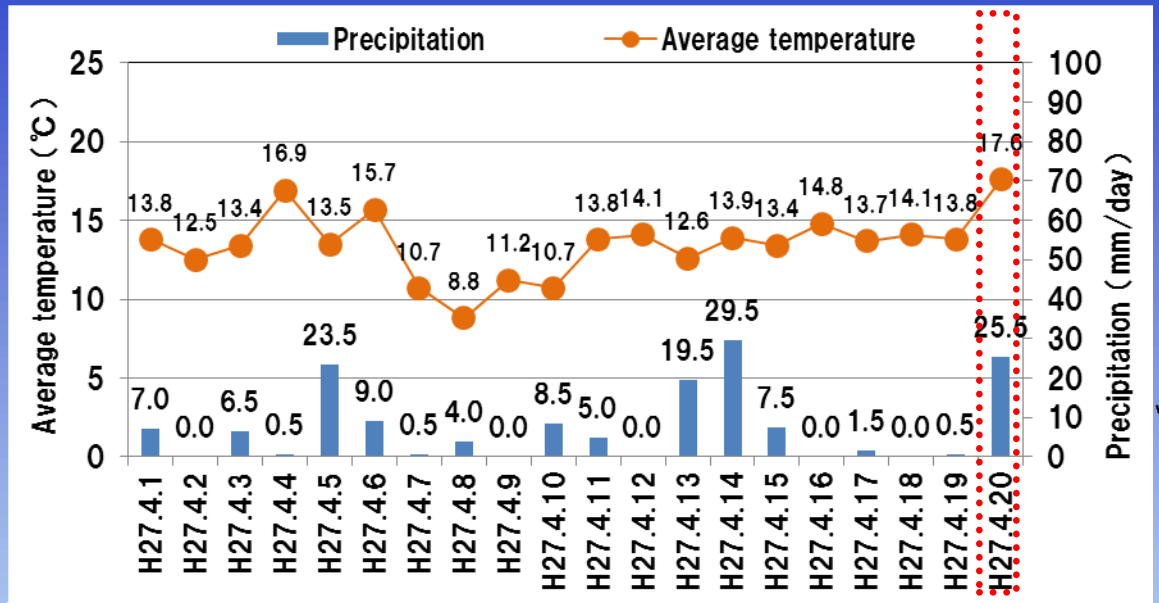
①Run-up of blue tide and red tide
②Raised up of sludge on riverbed
③Bubbles from river bottom

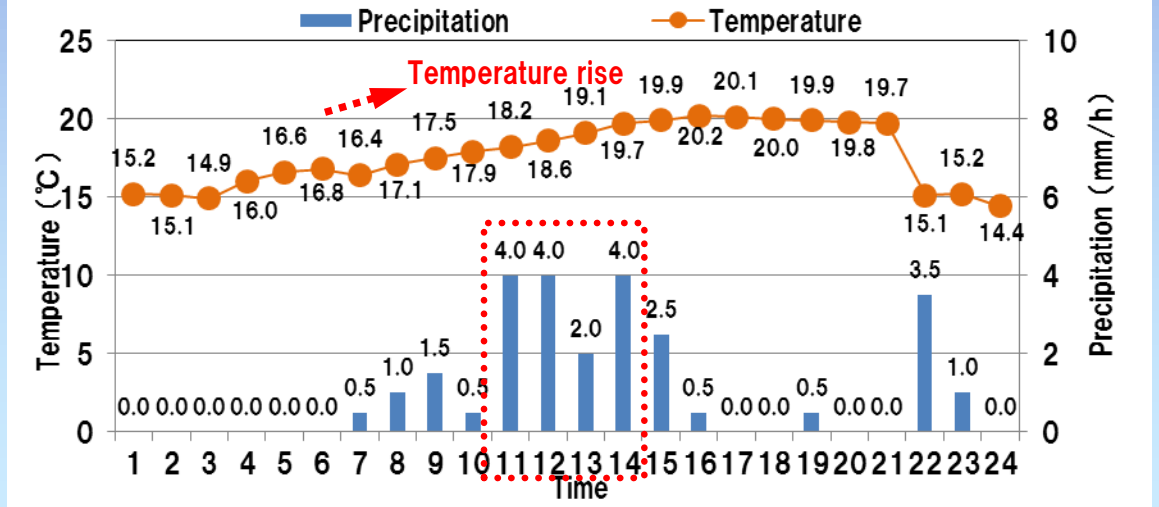
■Other changes

①State of creatures
②State of floating litters at edge of tide

～Spring tide general investigation in Spring～ （Apr. 20th ,2015）

Weather Overview（Nagoya）



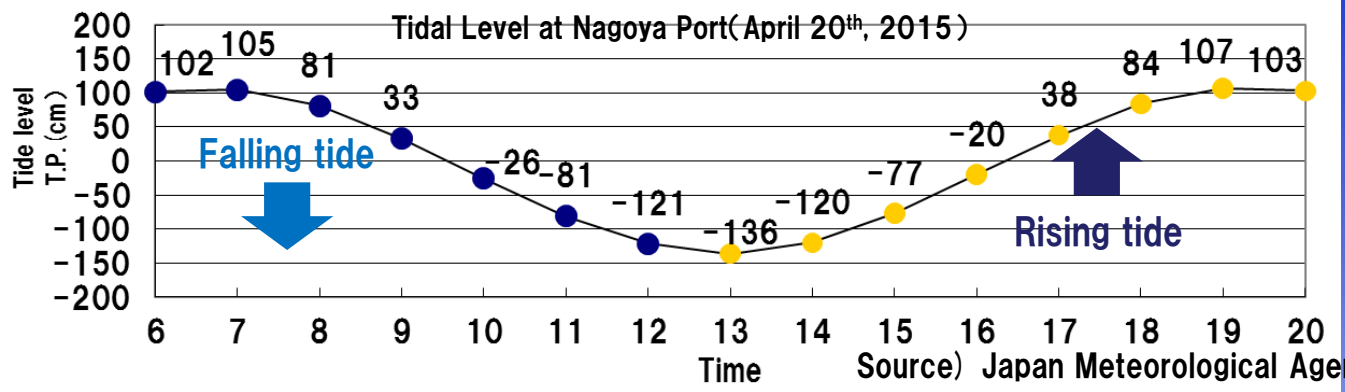


Mid-early April unstable weather continued, rainy day is now many. On the day of the survey, the low pressure associated with the front passes through, the rain of 25.5mm was down. In addition, warm moist air toward the front flows, temperature became high.

Rain was down to 11:00 to 15:00. Occasionally, blew a strong wind of about umbrella is broken. Since that has flowed warm moist air, the temperature has increased.

Source） Japan Meteorological Agency HP

①Direction of water flow



Change in the direction of water flow(April 20th)

↓:Downstream direction ↑:Upstream direction −:No flow

River	Bridge	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00
Horikawa	Meoto				↓											
	Shiga					↓										
	Kitashimizu					↓										
	Johoku				−											
	Nakatsuchido				↓											
	Gojo								↓							
	Naka								↓						↓	
	Sakura								↓					↓		
	Temma								↓				↑			
	Nishiki					↓		↓			↑	↑		↓		
	Naya					↓		↓				↑				
	Tennozaki					↓		↓								
	Shinsuzaki					↓		↓								
	Suzaki					↓		↓								
	Iwai						↓	↓								
	Hioki						↓	↓								
	Matsushige					↓	↓	↓								
	Sanno						↓									
	Oto					↓										
	Goryo							↓								
	Shiratori					↓										
	Oseko				↓											
Shin-Horikawa	Horagai					−										

Water flow had been stagnant at falling tide.

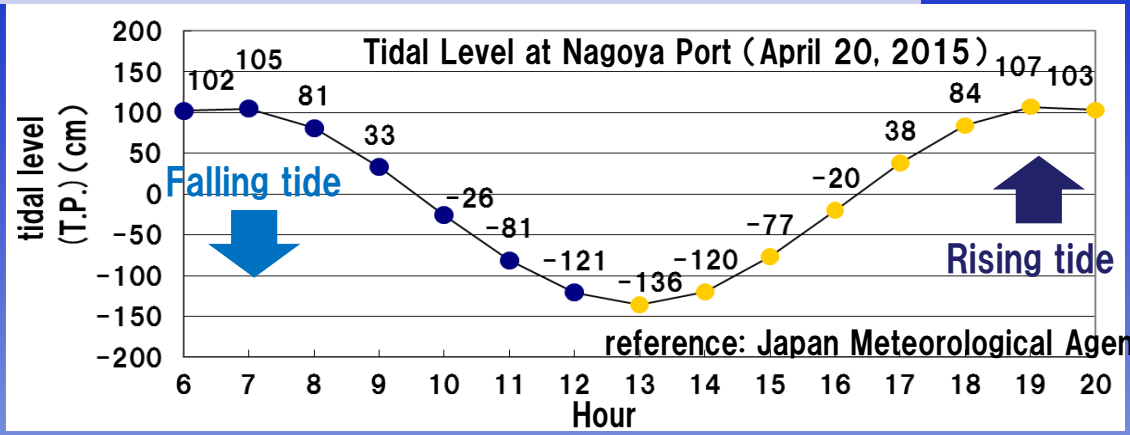
Continued to flow downstream, in spite of the low tide.

Flow direction changed from upstream to downstream, before high tide.

Water flow had been stagnant at falling tide.

Upstream ↕ Downstream

②Impression of water clearness



Change in water clearness impression (April 20, 2015)

↓:flow downstream ↑:flow upstream −:no flow
1:dirty 2:slightly dirty 3:ordinary 4:slightly clean 5:clean

upstream ↕ downstream

River	Bridge	Hour 6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Horikawa	Meoto				3↓											
	Shiga					1↓										
	Kitashimizu					3↓										
	Johoku				2−											
	Nakatsuchido				2↓											
	Gojo								1↓							
	Naka								1↓						1↓	
	Sakura								1↓					1↓	1↓	
	Temma								1↓				1↑			
	Nishiki					2↓		1↓			2↑	1↑		1↓		
	Naya					2↓		1↓				1↑				
	Tennozaki					2,3↓		1↓								
	Shinsuzaki					2↓		1↓								
	Suzaki					2↓		1↓								
	Iwai						1↓	1↓								
	Hioki						2↓	1↓								
	Matsushige					2↓	2↓	2↓								
	Sanno						1↓									
	Oto					4↓										
	Goryo							2↓								
	Shiratori					5↓										
	Oseko				4↓											
Shin-Horikawa	Horagai					1−										

"dirty" between Naya Bridge ~ Naka Bridge around high tide.

"slightly clean" or "clean" in downstream area from Oto Bridge at falling tide

"dirty" or "slightly dirty" between Sannno Bridge~Johoku Bridge.
"dirty" between Hioki Bridge ~Gojo Bridge at low tide

"dirty"

Water clearness impression (April 20, 2015)

upstream

downstream

1:color 2:smell 3:transparency 4:litters

River	Bridge	Hour 6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Horikawa	Meoto				4↓											
	Shiga					1↓										
	Kitashimizu					1↓										
	Johoku				2–											
	Nakatsuchido				3↓											
	Gojo								1↓							
	Naka								1↓						4↓	
	Sakura								1↓					4↓	4↓	
	Temma								1↓				1↑			
	Nishiki					1↓		1↓			1↑	1↑		4↓		
	Naya					1↓		1↓				1↑				
	Tennozaki					1↓		1↓								
	Shinsuzaki					1↓		1↓								
	Suzaki					1↓		1↓								
	Iwai						1↓	1↓								
	Hioki						1↓	1↓								
	Matsushige					2↓	1↓	1↓								
	Sanno						1↓									
	Oto					3↓										
	Goryo							3↓								
	Shiratori					1↓										
	Oseko				3↓											
Shin-Horikawa	Horagai					1–										

Highest ratio was "Color" between Sanno Bridge Gojo Bridge at falling tide.

Highest ratio was "Transparency" between Oseko Bridge and Oto Bridge (except for Shiratori Bridge) at falling tide.

Highest ratio was "Litters" between Naya Bridge and Naka Bridge near high tide.

Highest ratio was "Color".

■Evaluation of "Impression of water dirtiness"

①Impression of water dirtiness between Sanno Bridge and Johoku Bridge was "slightly dirty" or "dirty", which were evaluated mostly by "Color". Especially, it was evaluated as "dirty" between Hioki Bridge and Gojo Bridge at falling tide, which were considered as the influence of whirling up sludge. On the other hand, it was evaluated as "slightly clean" or "Clean" at falling tide.

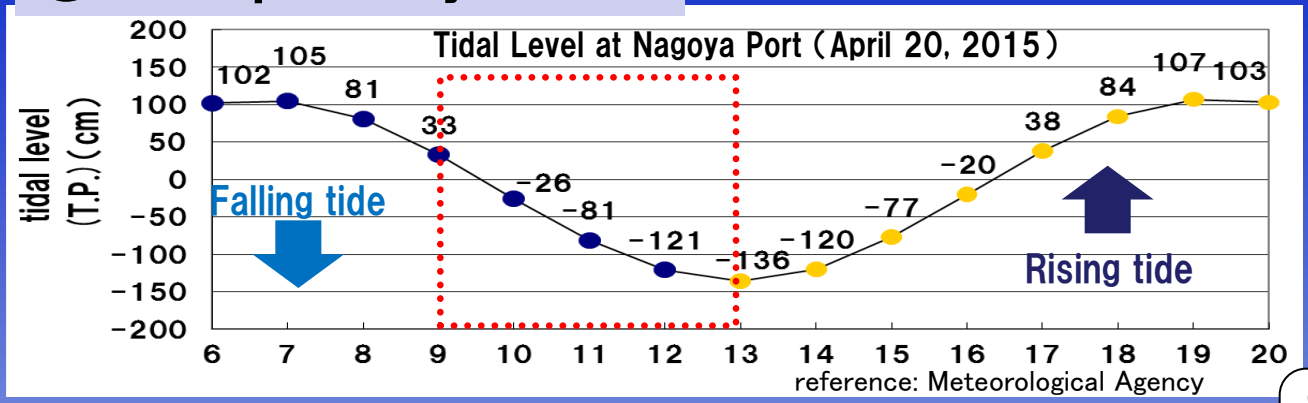
These results show that impression of water dirtiness is different by areas. Our future task is to analyze these states.

Impression of water dirtiness between Naya Bridge and Naka Bridge at high tide was "slightly dirty" or "dirty", which were evaluated mostly by "Litters". Floating objects gathered by tidal influence are considered as the cause.

②Impression of water dirtiness at Horagai Bridge of Shin-Horikawa River was "dirty", which were evaluated mostly by "Color". It was "pale yellow gray", different from Horikawa (mainly "gray yellow green", "gray green" and "dark gray"), although we surveyed Horikaw and Shin-Horikawa in the same day. Our future task is to analyze these states.

②Transparency・COD

Transparency and COD differ depending on the area

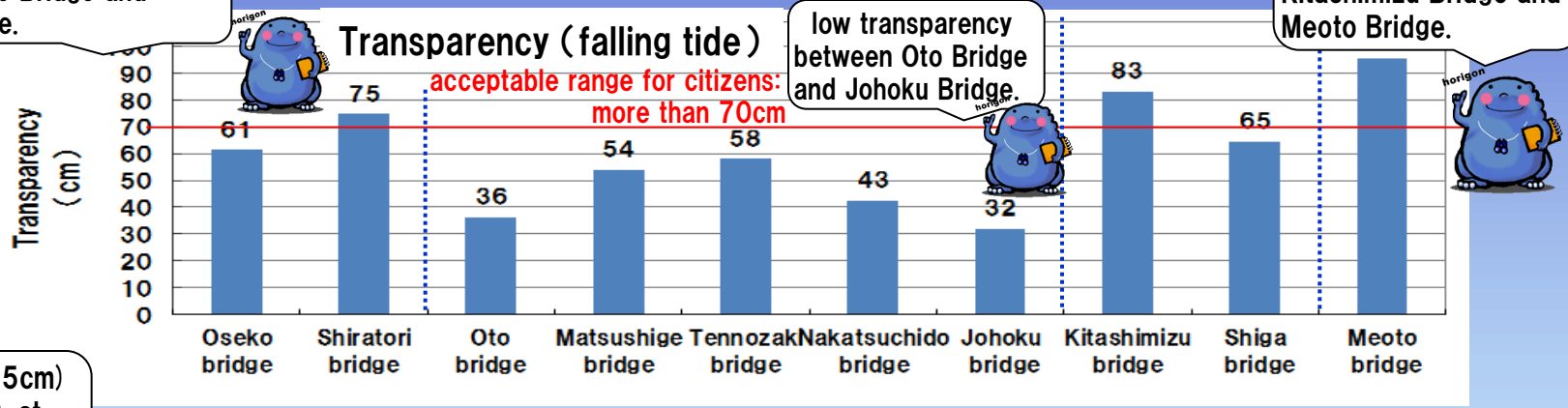


Transparency and COD (April 20, 2015)

generally good transparency between Oseko Bridge and Shiratori Bridge.

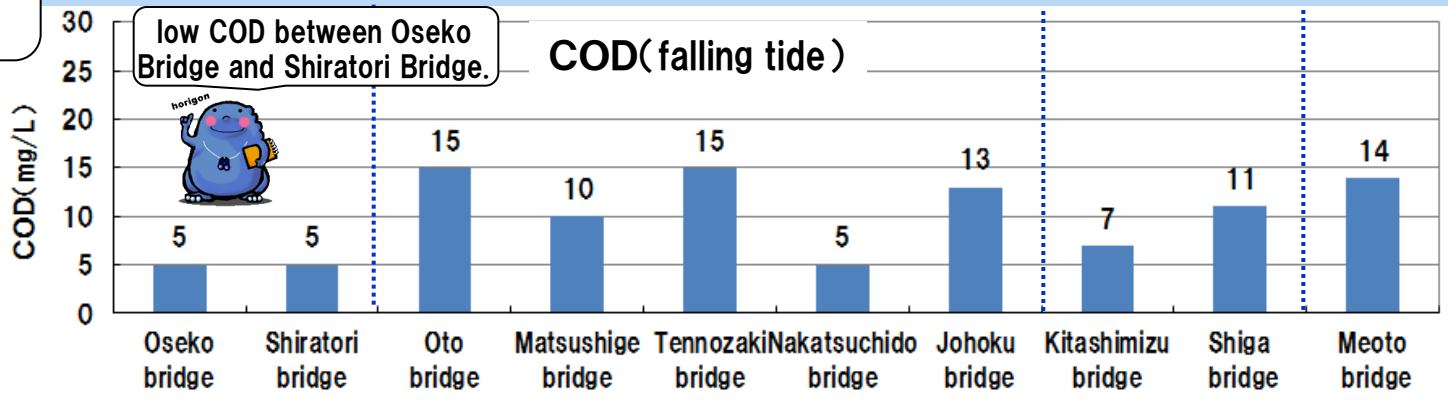
low transparency between Oto Bridge and Johoku Bridge.

generally good transparency between Kitashimizu Bridge and Meoto Bridge.



Transparency (75cm) and COD (5mg/L) at Shiratori Bridge was especially good.

low COD between Oseko Bridge and Shiratori Bridge.



③Water Color

Water Color（April 20, 2015）

1:colorless、2:milky white、7:yellow gray、8:pale gray yellow green、9:gray yellow green、10:gray green、11:dark gray、12:pale yellow gray

upstream ↕ downstream

River	Bridge	Hour 6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Horikawa	Meoto				1↓											
	Shiga					9↓										
	Kitashimizu					7↓										
	Johoku				12-											
	Nakatsuchido				12↓											
	Gojo								11↓							
	Naka								11↓						9↓	
	Sakura								11↓					9↓	9↓	
	Temma								11↓				10↑			
	Nishiki					9↓		11↓			9↑	11↑		9↓		
	Naya					9↓		11↓				11↑				
	Tennozaki					9↓		10↓								
	Shinsuzaki					9↓		10↓								
	Suzaki					9↓		10↓								
	Iwai						9↓	10↓								
	Hioki						9↓	10↓								
	Matsushige					9↓	9↓	10↓								
	Sanno						8↓									
	Oto					2↓										
	Goryo							10↓								
	Shiratori					9↓										
	Oseko				7↓											
Shin-Horikawa	Horagai					12-										

"pale yellow gray color"

Sludge was whirled up between Naya Bridge and Gojo Bridge at ebb tide and the color was "dark gray"

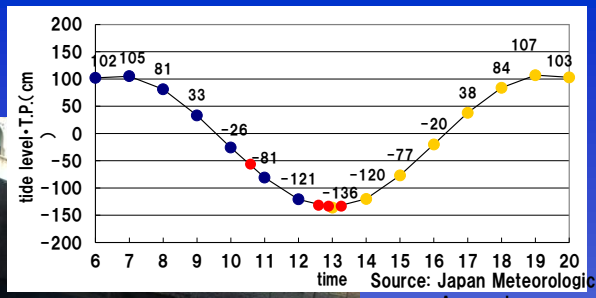
"milky white color"

Water color at this point was "pale gray yellow green".
It was effected by the flow water (pale yellow gray color) from Nakagawa Canal.

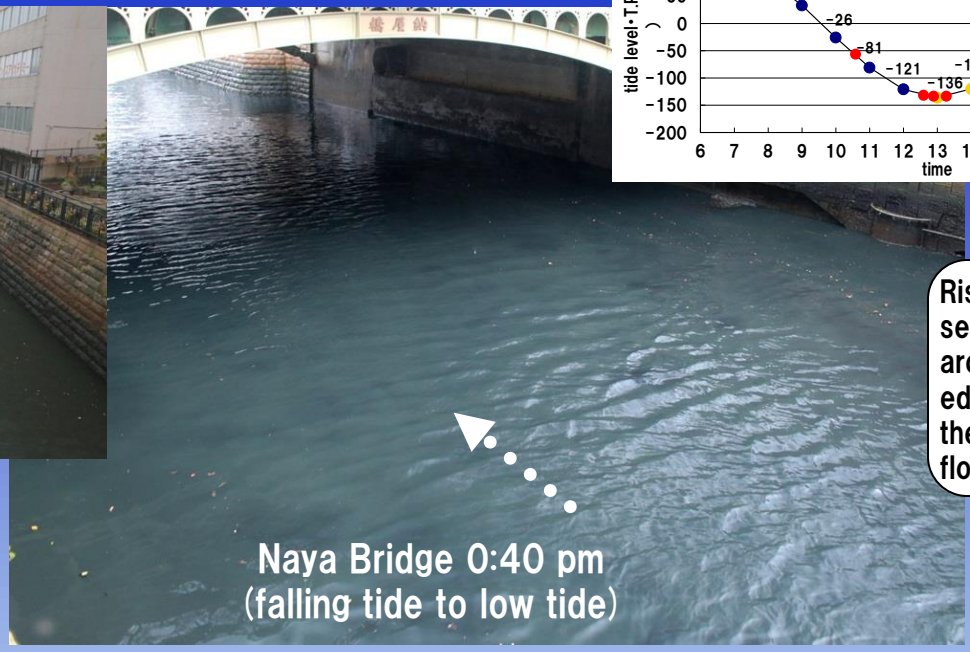
"pale yellow gray color"

Flowing up of white-colored water nor red tide was observed. "Short hours of sunshine inhibit growth of phytoplankton"、"rainy water of better quality flows into Horikawa" are thought to be probable reasons.
On the other hand, water color at Horagai Bridge, upsteam area of Shin-Horikawa was "pale yellow gray". The cause of this was not confirmed yet.

Rising sludge occurred at ebb current time.



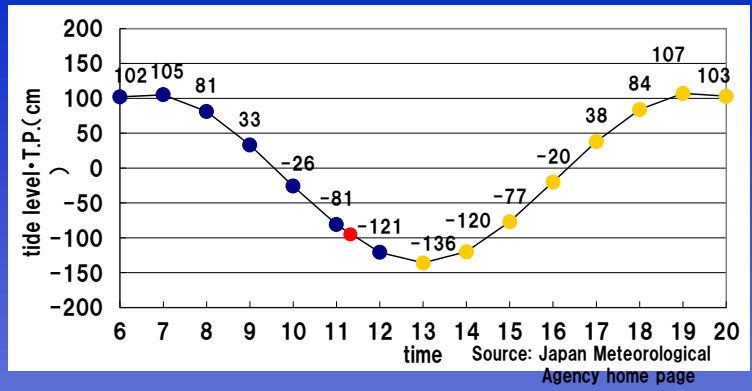
Rising sludge seems to occur around water's edges more than the center of the flow.



Rising sludge seems to occur around water's edges more than the center of the flow.

Rising sludge was prominently observed in the area from Naya Bridge to Gojo Bridge at falling tide. The colour of water was 'dark grey'.
Rising sludge occurred prominently around water's edges more than the center of the flow.

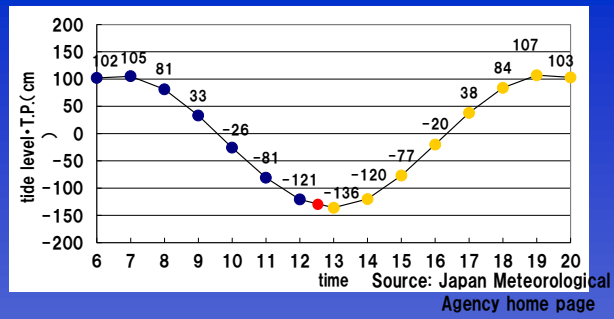
～Spring tide general survey in spring～
Apr.20,2015
Cloudy light yellow gray water flowed out from Nakagawa Canal.

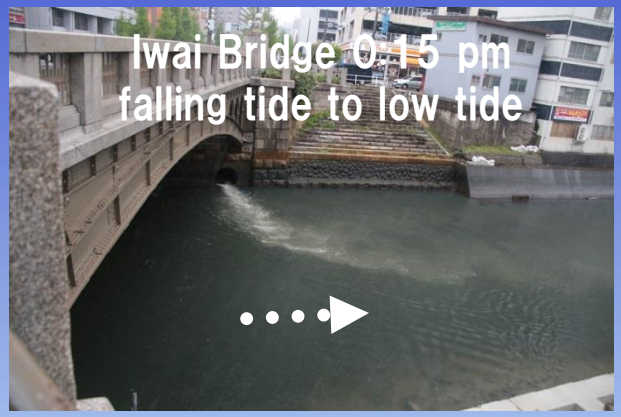


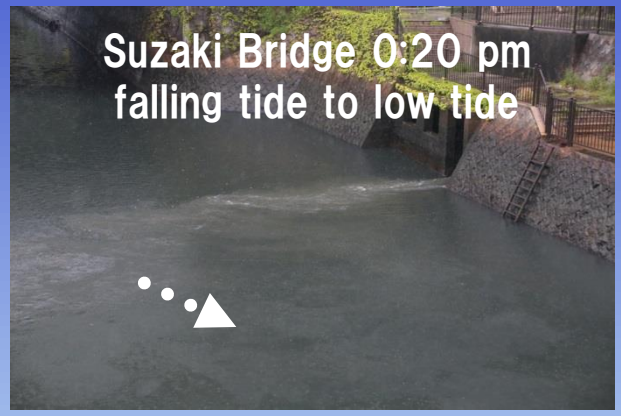
Cloudy water from Nakagawa Canal influenced the colour of water near Sanno Bridge.

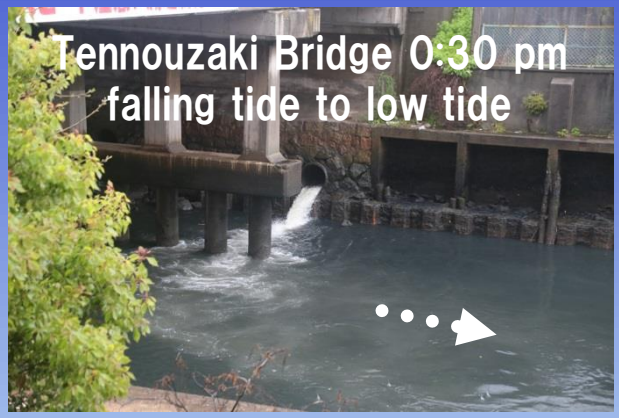
～Spring tide general survey in spring～
Apr.20,2015

Cloudy gray green water flowed out from sewer outlet.

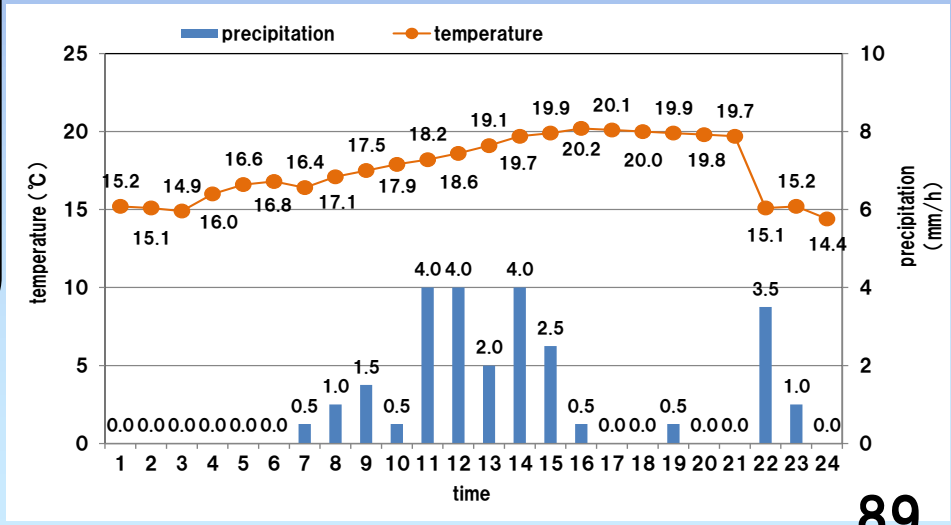








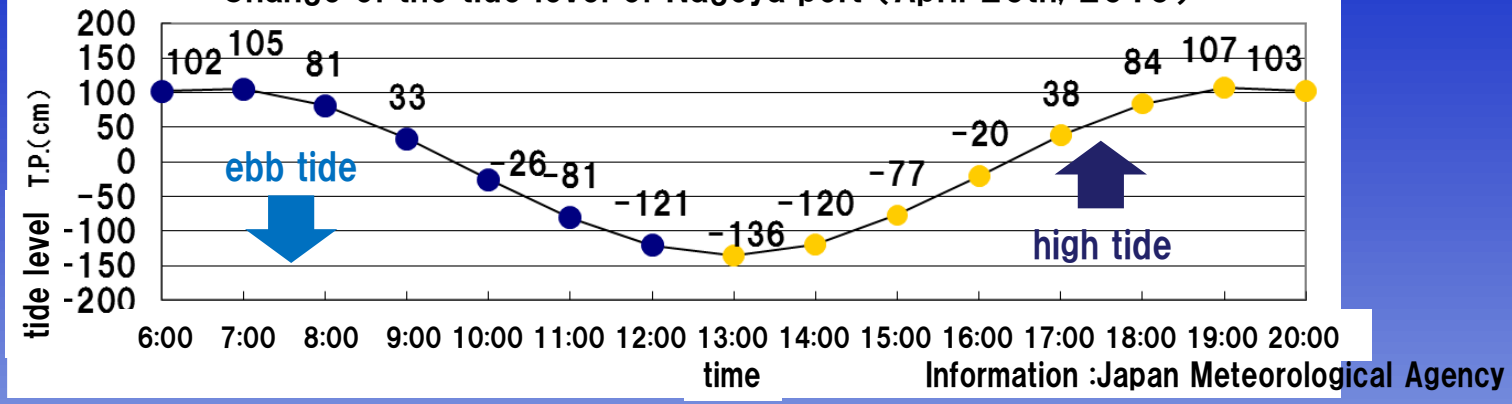
The colour of cloudy water from sewer outlet around Iwai Bridge, Suzaki Bridge and Tennnouzaki Bridge was 'gray green'.
Around Naya Bridge, outflow from sewer outlet did not occur.



④Smell

～Survey at spring tide ～ April 20th, 2015

Change of the tide level of Nagoya port（April 20th, 2015）



Information :Japan Meteorological Agency

Change of the smell（April 20th, 2015）

Kind of smell 1:Ditch、2:Sludge、*:No smell

	place	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00
Horikawa River	Meoto Bridge				*↓											
	Shiga Bridge					1↓										
	Kitashimizu Bridge					*↓										
	Johoku Bridge				–											
	Nakatsuchido Bridge				*↓											
	Gojo Bridge*								2↓							
	Naka Bridge*								2↓						1↓	
	Sakura Bridge*								2↓					1↓		
	Tenma Bridge								2↓				1↑			
	Nishiki Bridge					1↓		2↓			1↑	1↑		1↓		
	Naya Bridge					1↓		2↓				1↑				
	Tennozaki Bridge					1↓		1↓								
	Shin-Suzaki Bridge					1↓		1↓								
	Suzaki Bridge*					1↓		1↓								
	Iwai Bridge						1↓	1↓								
	Hioki Bridge						1↓	1↓								
	Matsushige Bridge*					1↓	1↓	1↓								
	Sanno Bridge*						1↓									
	Oto Bridge					*↓										
	Goryo Bridge							*↓								
	Shiratori Bridge					*↓										
	Oseko Bridge				1↓											
Shin-Horikawa River	Horagai Bridge					1-										

upstream

downstream

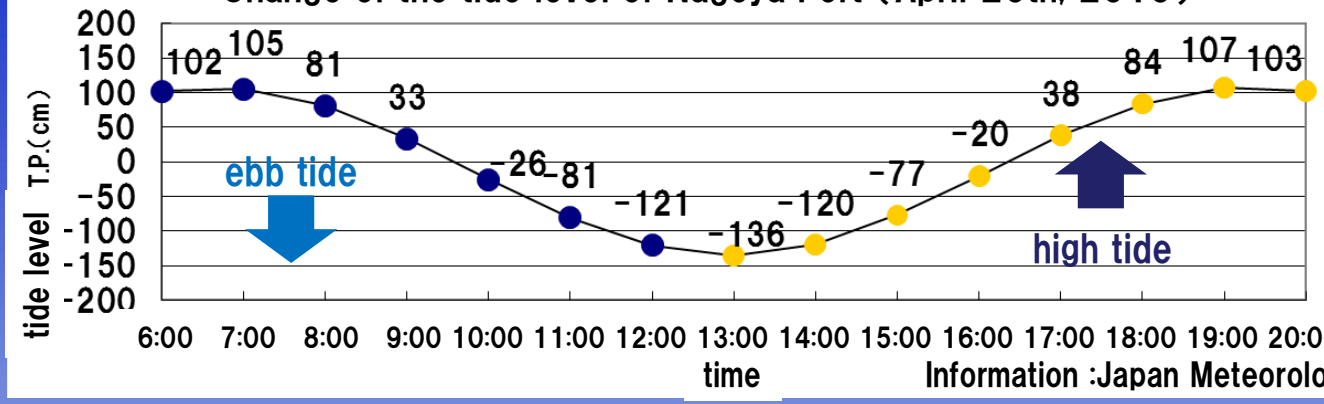
There were no smell between Oto Bridge and Shiratori Bridge.

There were smell of sludge between Gojo Bridge and Naya Bridge at the time of ebb tide, almost low tide.
The cause of smell is considered to be the stilled sludge.

⑤Bubbles

～Survey at spring tide ～ April 20th, 2015

Change of the tide level of Nagoya Port（April 20th, 2015）



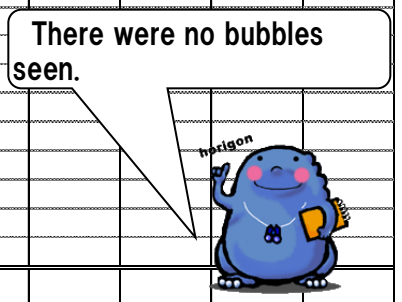
Information :Japan Meteorological Agency

Change of the bubbles（April 20th, 2015）

4.No bubbles、*No data

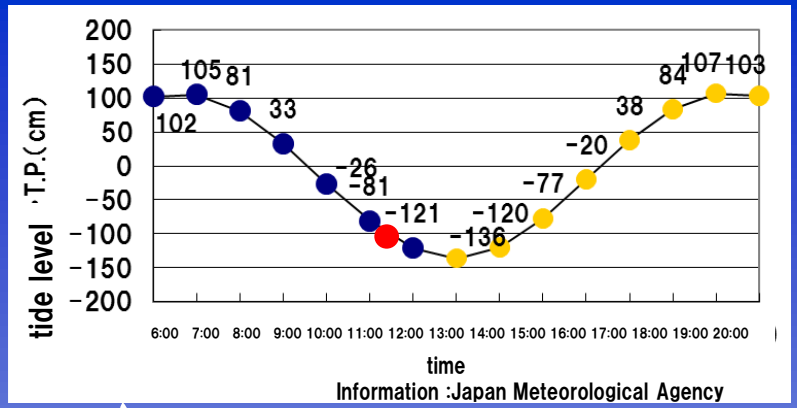
upstream ↕ downstream

	place	6:00	7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00
Horikawa River	Meoto Bridge				4↓											
	Shiga Bridge					4↓										
	Kitashimizu Bridge					4↓										
	Johoku Bridge				*-											
	Nakatsuchido Bridge				4↓											
	Gojo Bridge*								4↓							
	Naka Bridge*								4↓						4↓	
	Sakura Bridge*								4↓					4↓		
	Tenma Bridge								4↓				4↑			
	Nishiki Bridge					4↓		4↓			4↑	4↑		4↓		
	Naya Bridge					4↓		4↓				4↑				
	Tennozaki Bridge					4↓		4↓								
	Shin-Suzaki Bridge					4↓		4↓								
	Suzaki Bridge*					4↓		4↓								
	Iwai Bridge						4↓	4↓								
	Hioki Bridge						4↓	4↓								
	Matsushige Bridge*					4↓	4↓	4↓								
	Sanno Bridge*						4↓									
	Oto Bridge					4↓										
	Goryo Bridge							4↓								
	Shiratori Bridge					4↓										
	Oseko Bridge				4↓											
Shin-Horikawa River	Horagai Bridge					4-										

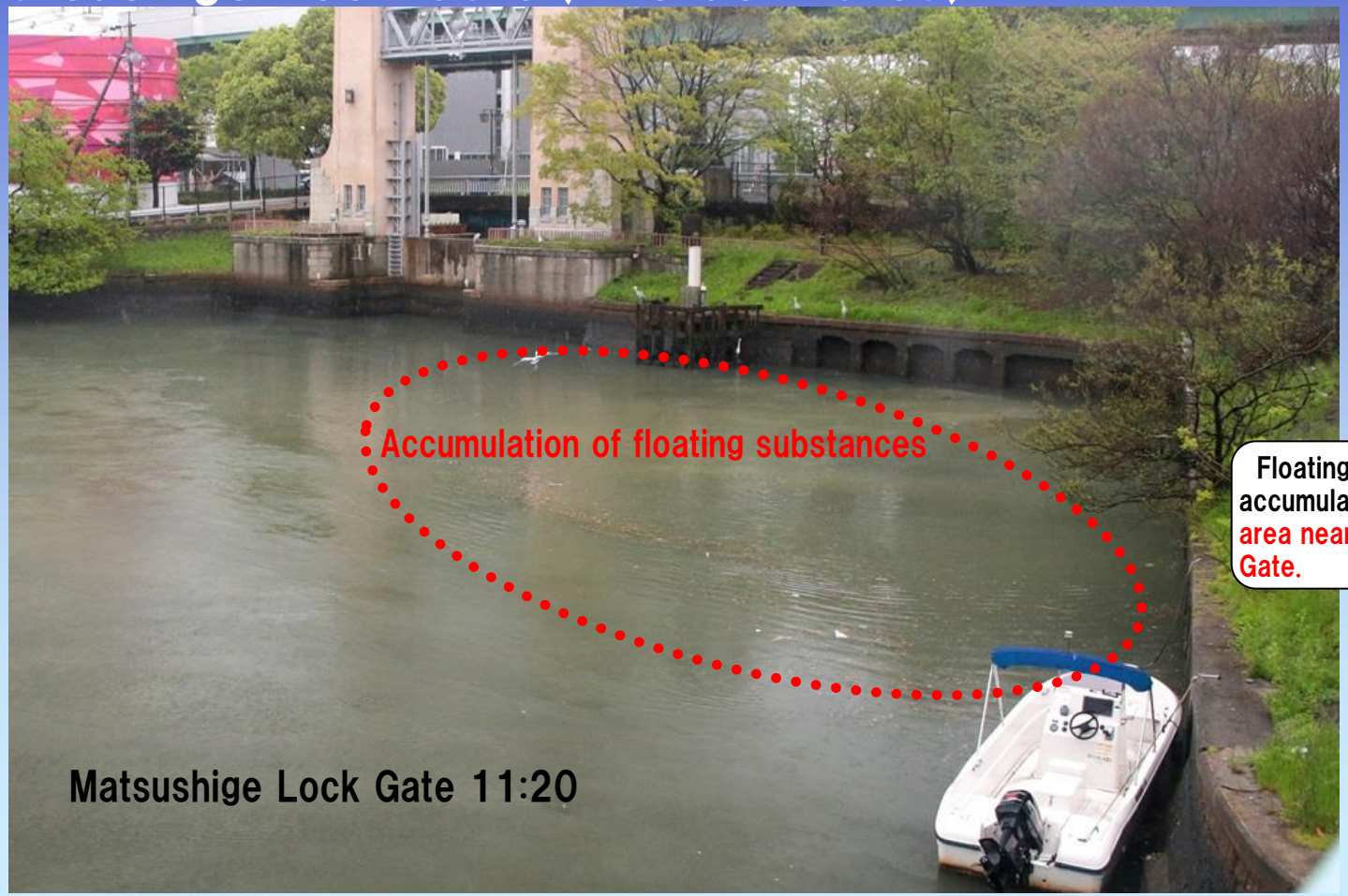


～Survey at spring tide ～ April 20th, 2015

⑥Accumulation of litters



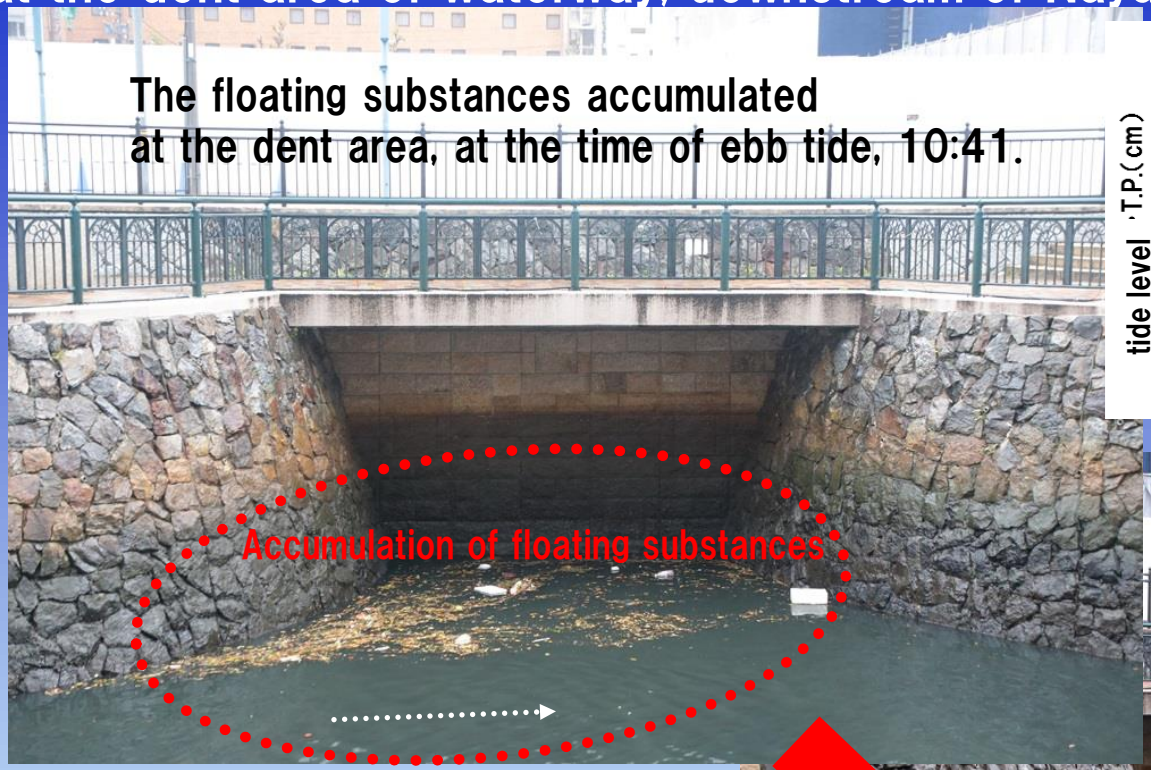
Floating substances accumulated near Matsushige Lock Gate (the dent area)

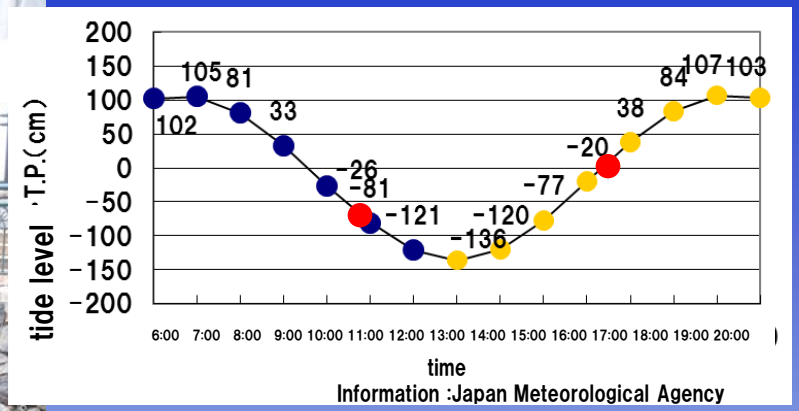


Floating substances accumulated at the dent area near Matsushige Lock Gate.

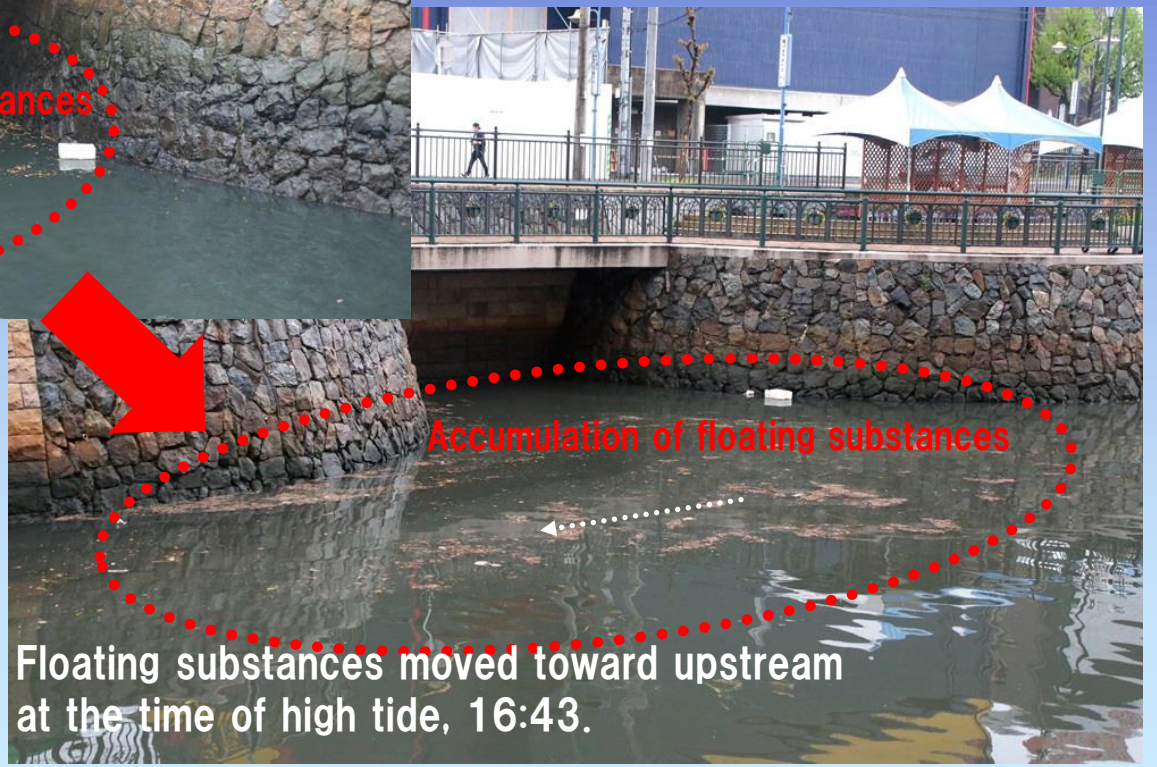
The floating substances accumulated at the dent area of waterway, downstream of Naya Bridge

～Survey at spring tide～
April 20th, 2015



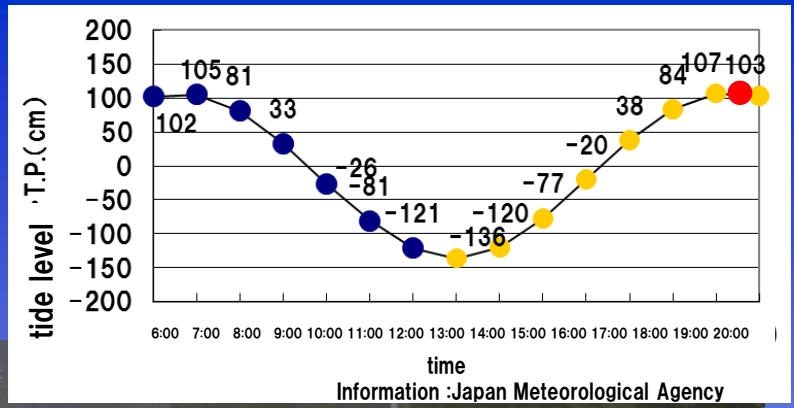


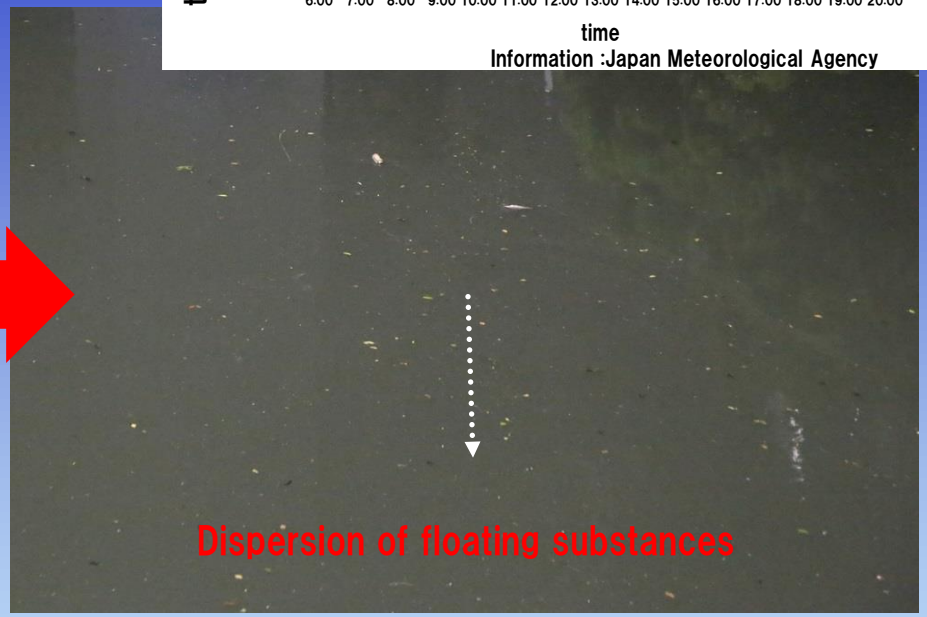
Floating substances accumulated at the dent area, at the time of ebb tide. They moved toward upstream from the dent area, at the time of high tide.



～Survey at spring tide ～ April 20th, 2015

Floating substances accumulated on the surface at the edge of the tide





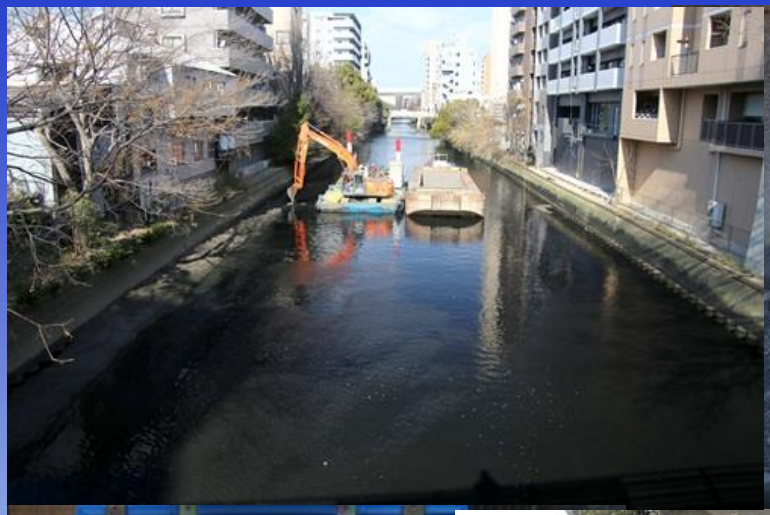
Naka Bridge area 19:05
Floating substances accumulated

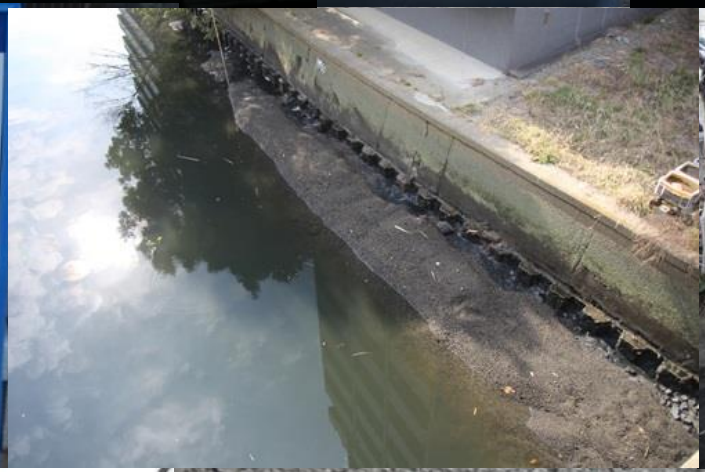
Sakura Bridge area 19:20
Floating substances dispersed

Water flowed toward downstream, probably because the water from upstream increased by the rains.
The accumulation of floating substances were not conspicuous.
They dispersed after the flow toward downstream increased.

6.13. The water quality improvement project by sand cover etc. launched in Feb. 2015

Photo (Under Construction) Jan. 20th 2015

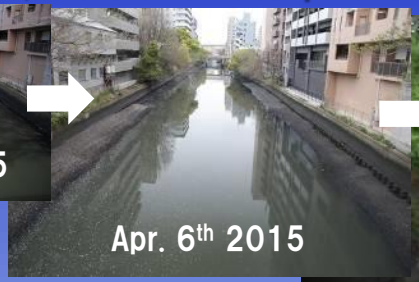


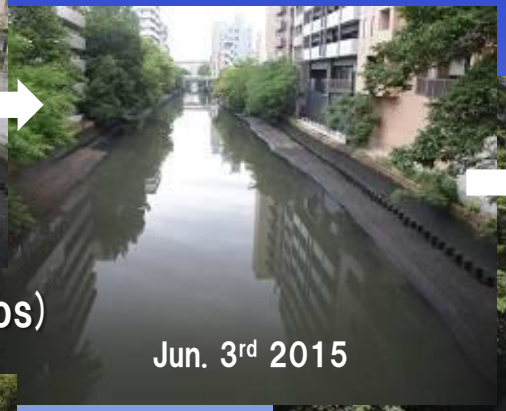


The water quality improvement project by sand cover etc.

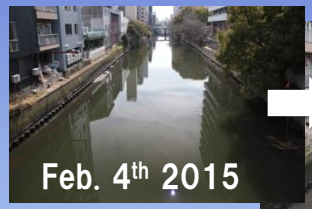
Location: middlsteam area, between Naka Bridge and Gojo Bridge Report: Kawasemi Survey Group

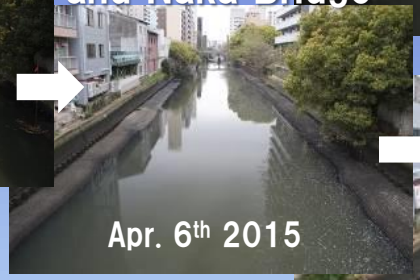
Between Naka Bridge (in front of the photos) and Gojo Bridge

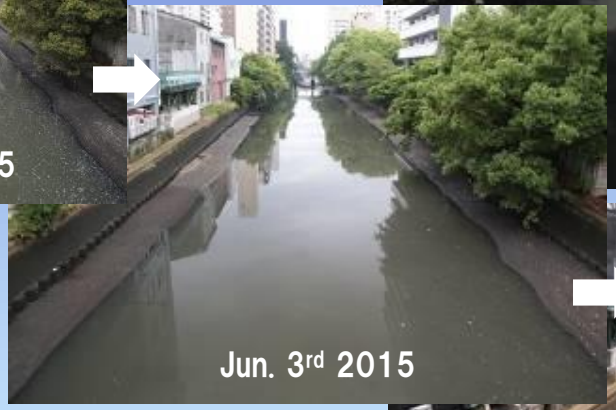




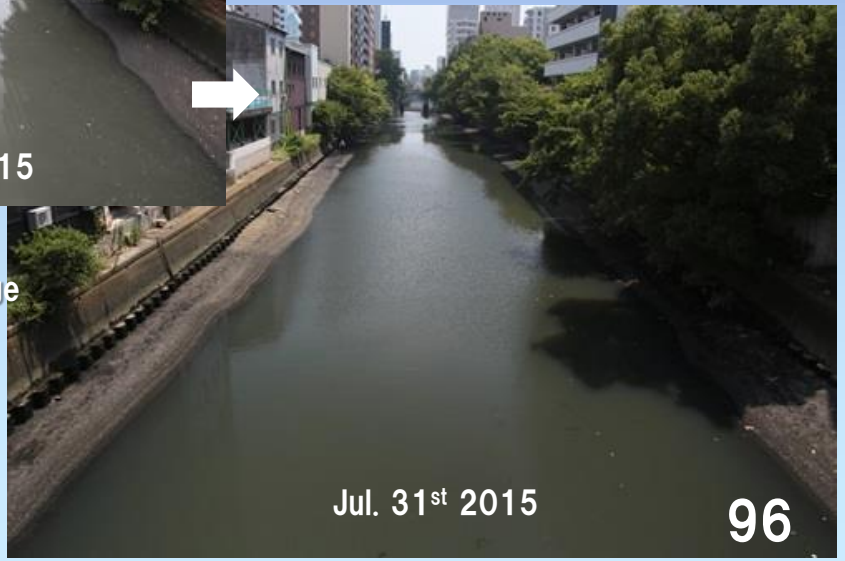
Between Gojo Bridge (in front of the photos) and Naka Bridge







Comparing “with sand cover” and “without sand cover”



The water quality improvement project by sand cover etc.

launched since Feb. 2015

Improvement of natural purification by food chain is expected.

Observed living things

Reported by the Kawasemi Survey Group

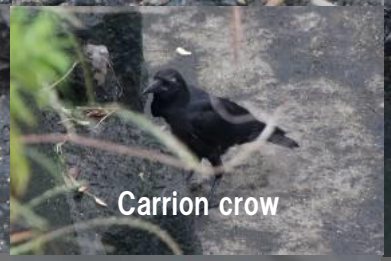

Water wagtail


Starling

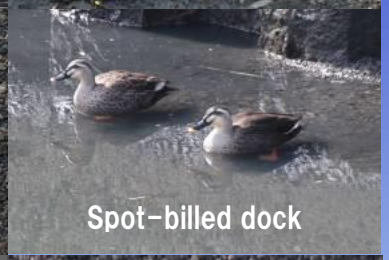

Phoenicurus


Turtledove


Rock dove


Carrion crow


Little egret


Spot-billed dock

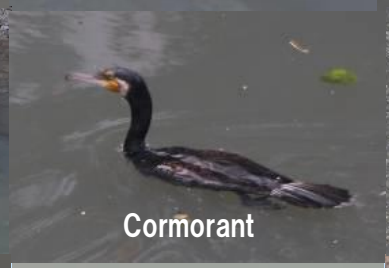

Dabchick


Mandarin dock


Tufted dock


Teal

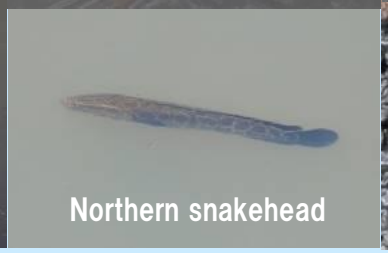

Mallard


Cormorant


Red eared slider

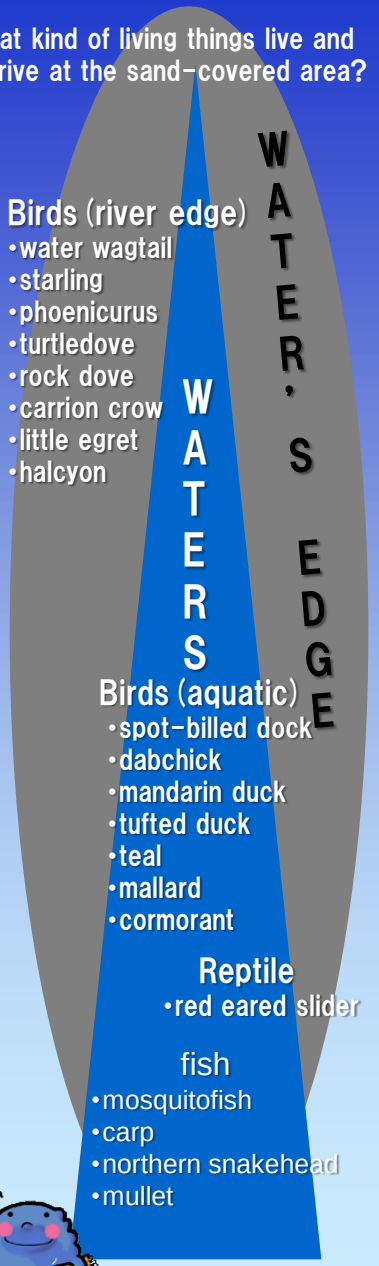

Group of little mullet


Carp


Northern snakehead


Common bluebottle

What kind of living things live and thrive at the sand-covered area?



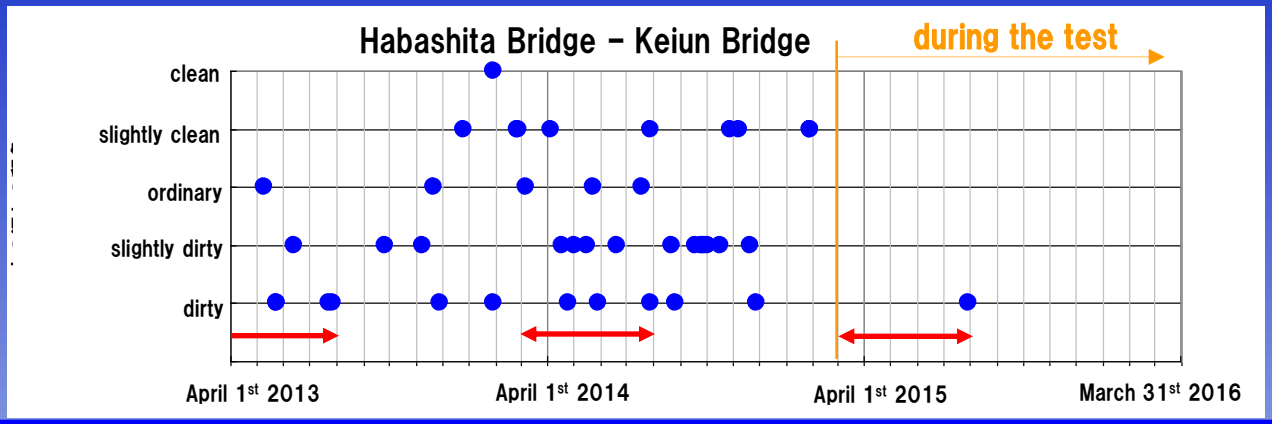
Birds searching food in water's edge were observed. What kind of food for birds is in sand cover area?

Comparison of before and after clarification test

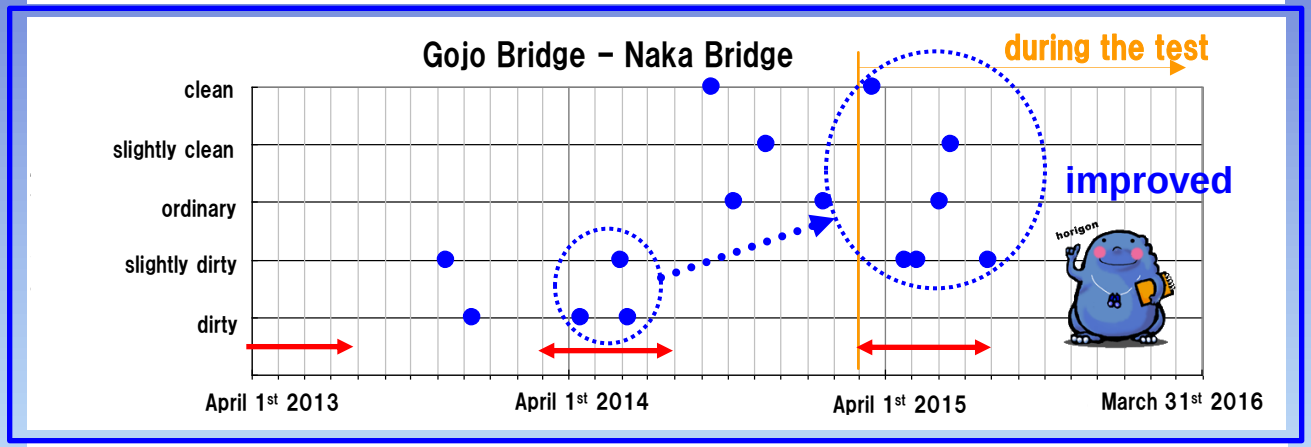
■ 13th-17th stage
No rain on the day and the previous day

◆ Impression of water clearness

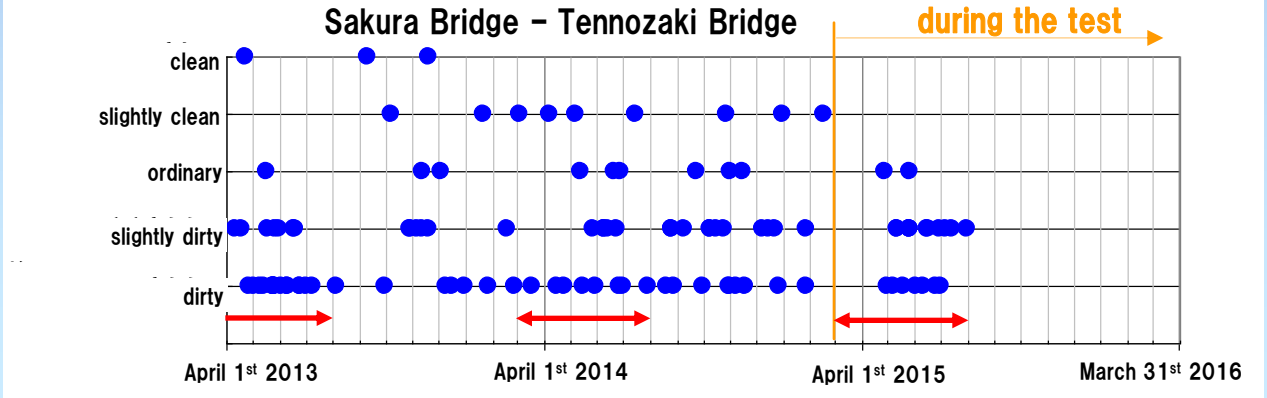
Out of the test site



Test site



Out of the test site

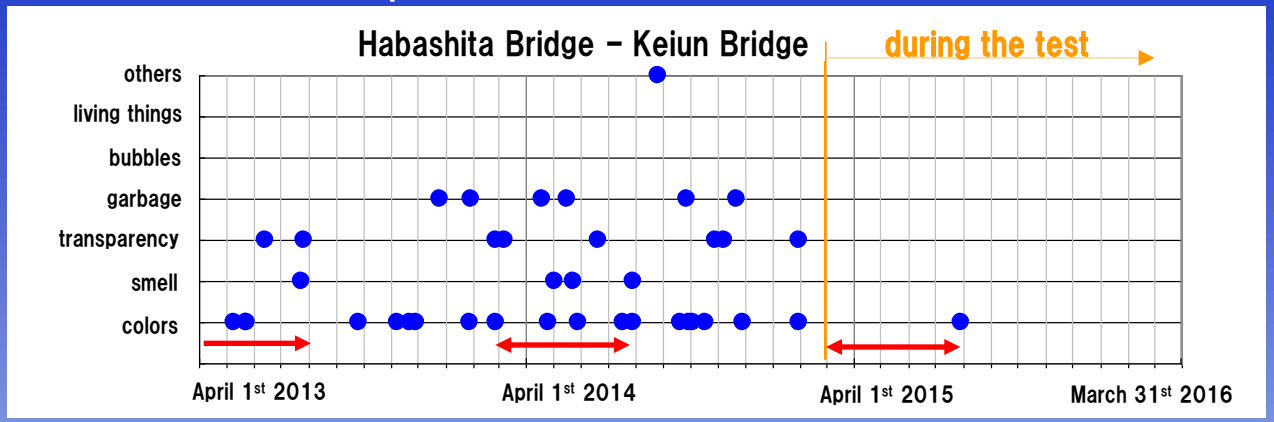


Comparison of before and after clarification test

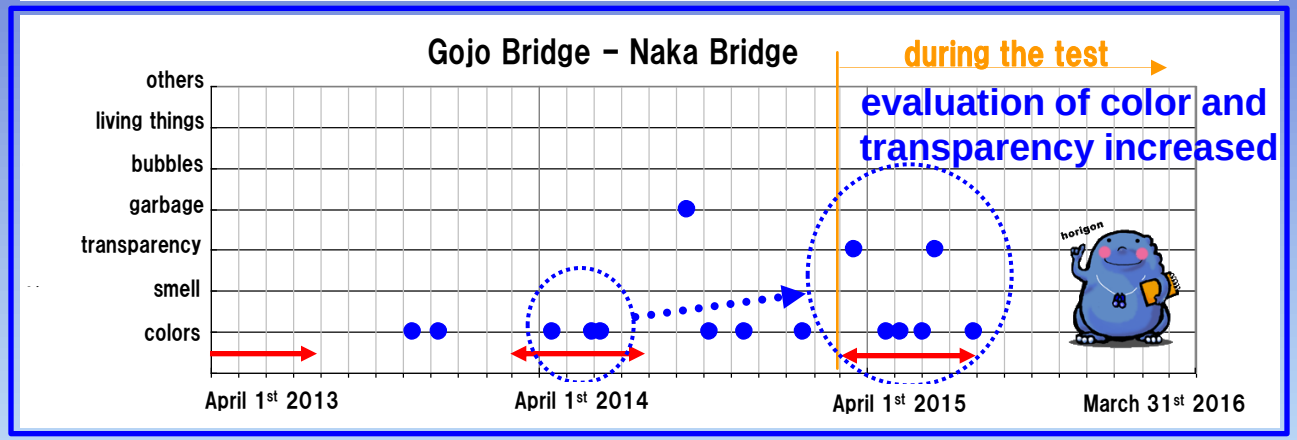
■ 13th-17th stage
No rain on the day and the previous day

◆ Evaluation of impression of water clearness

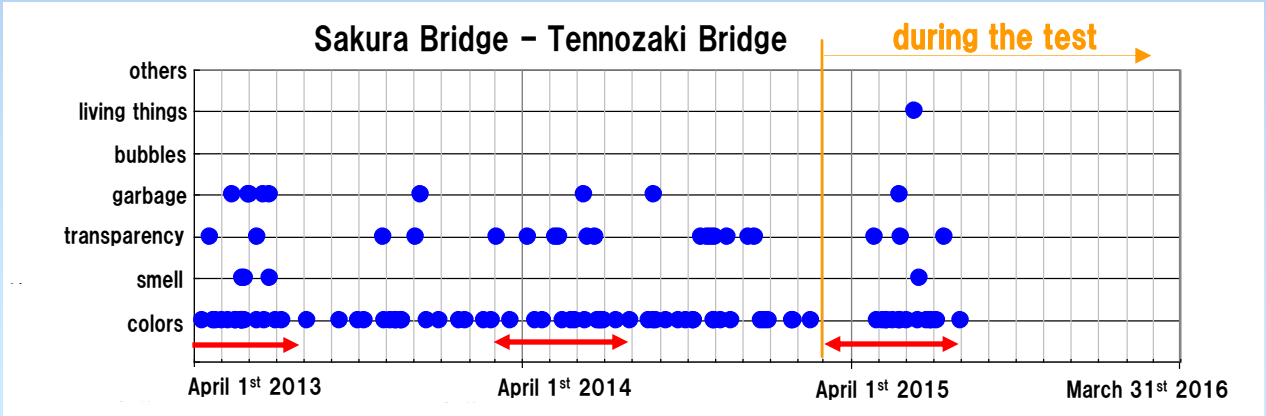
Out of the test site



Test site



Out of the test site

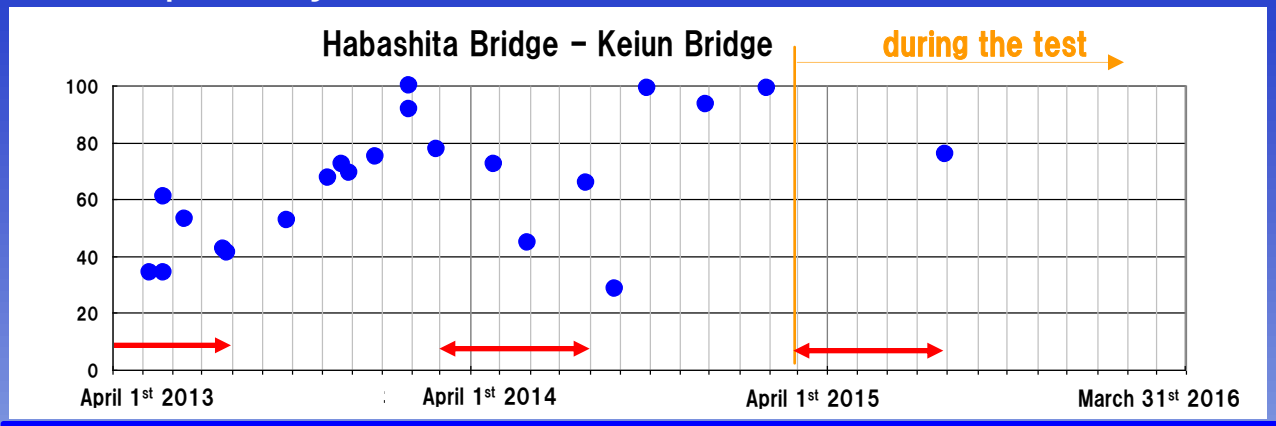


Comparison of before and after clarification test

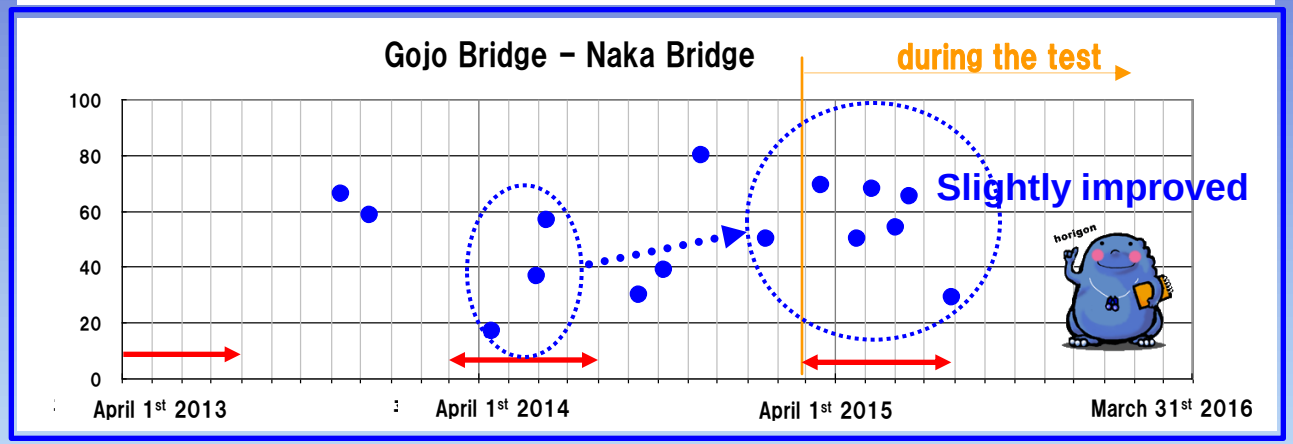
■ 13th-17th stage
No rain on the day and the previous day

◆ Transparency

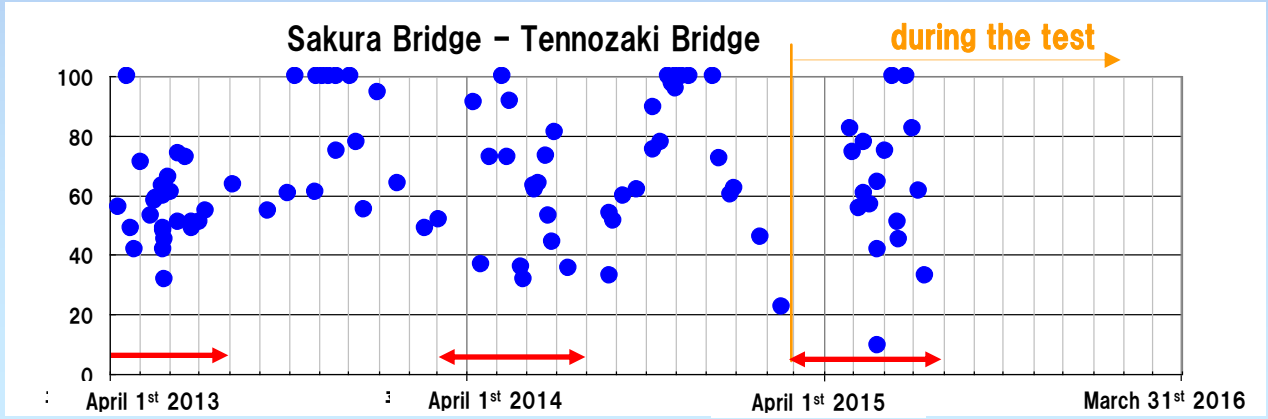
Out of the test site



Test site



Out of the test site

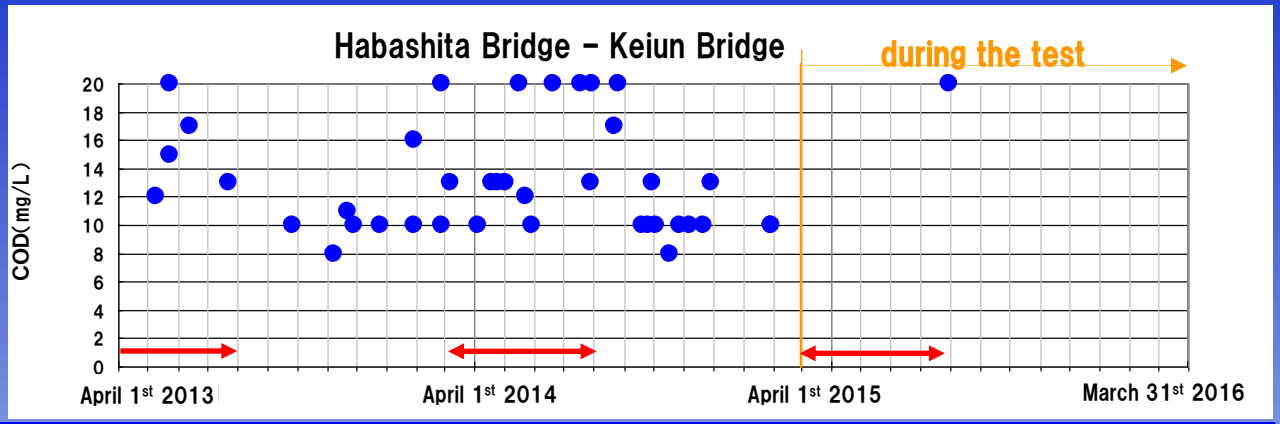


Comparison of before and after clarification test

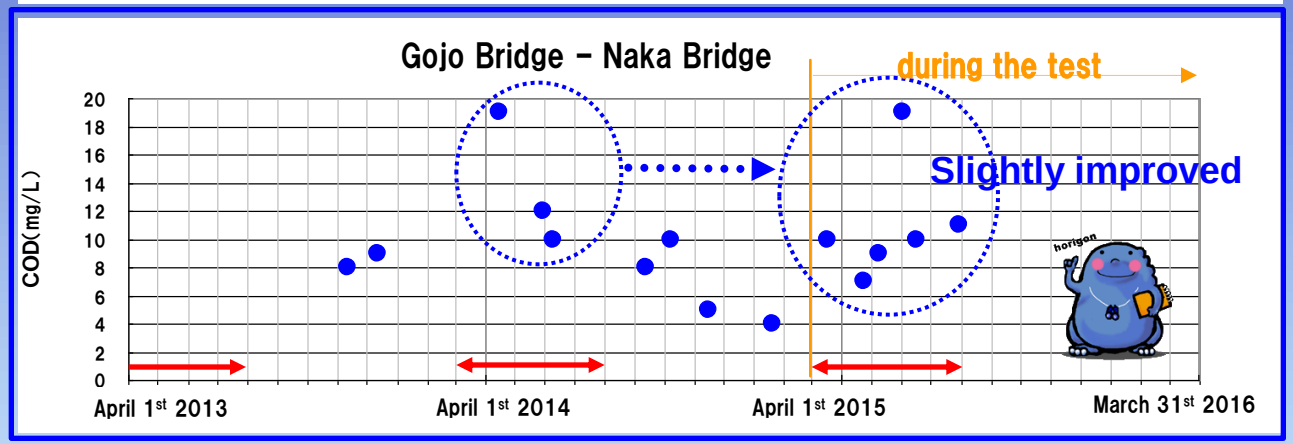
■ 13th-17th stage
No rain on the day and the previous day

◆ COD

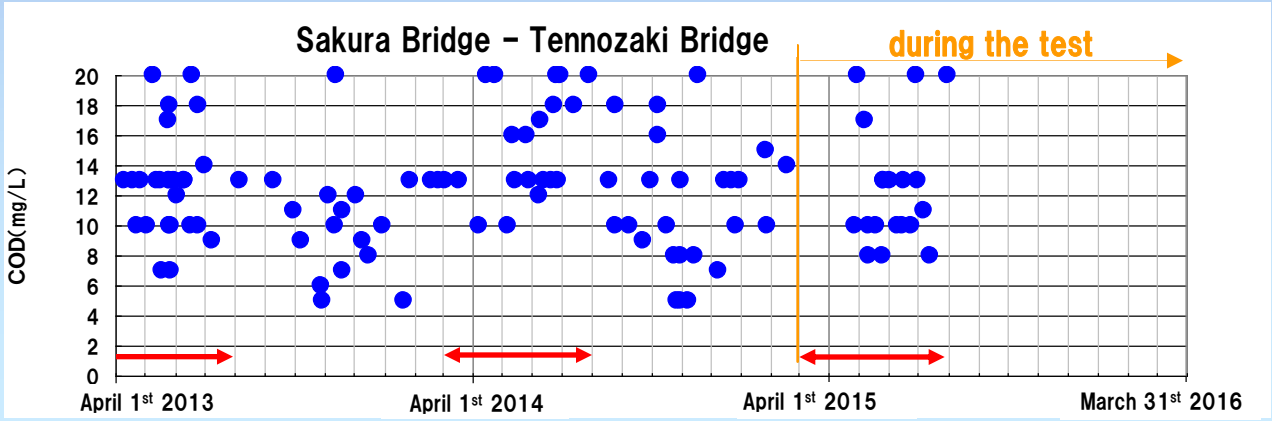
Out of the test site



Test site



Out of the test site

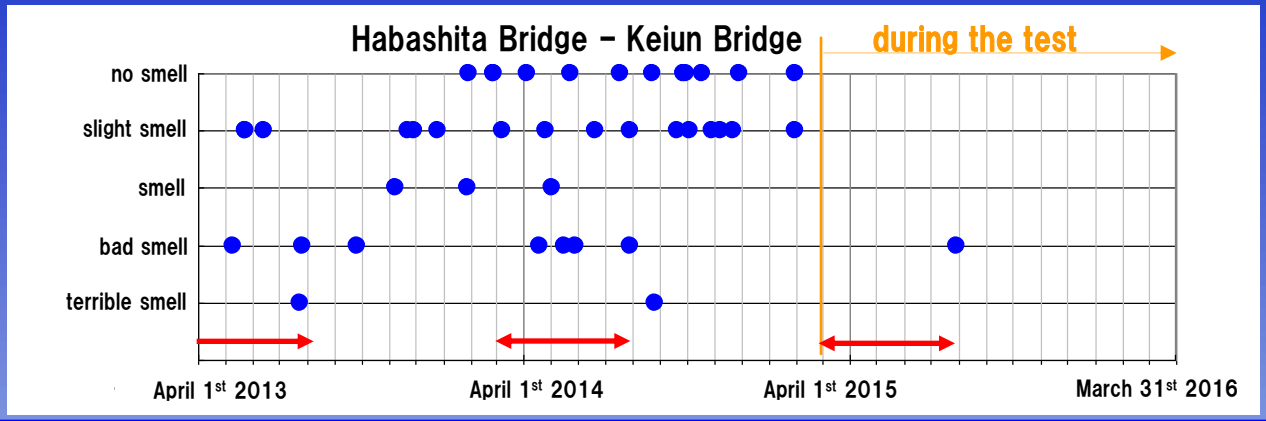


Comparison of before and after clarification test

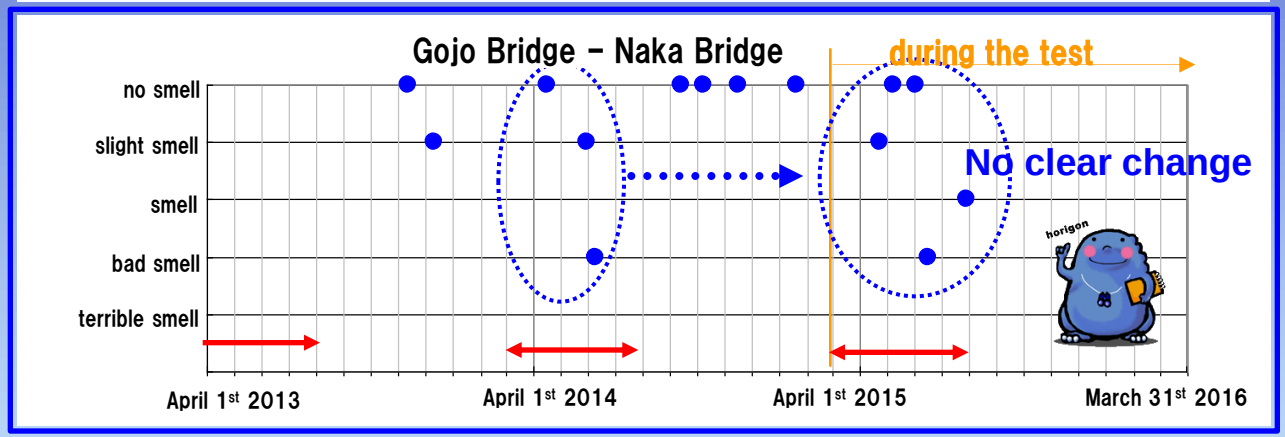
■ 13th-17th stage
No rain on the day and the previous day

◆ Occurrence of Smell

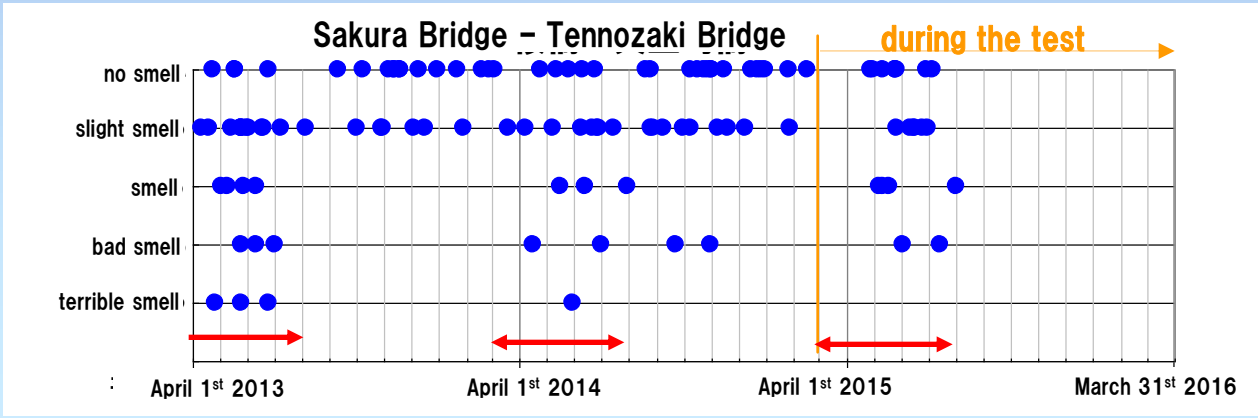
Out of the test site



Test site



Out of the test site



6.14. Progress of Citizen's Awareness Activities of Studies

堀川1000人調査隊2010　第16回調査隊会議
平成27年2月15日(土)　報告:事務局

伊勢湾流域圏再生フォーラム
平成27年2月28日(土)
報告:事務局

読売新聞　平成27年3月1日（日）朝刊より

伊勢湾流域圏の環境保全

東海3県、長野県 関係者ら交流

東海3県と長野県にまたがる伊勢湾流域圏で、環境保全などに取り組む団体による「伊勢湾流域圏再生ネットワーク」が28日、名古屋市東区の名古屋文化短期大学でフォーラムを開き、関係者約50人が参加した。

フォーラムでは、三重大の朴恵淑副学長が「持続可能な開発のための教育（ESD）と伊勢湾流域圏とのテーマで講演し、三重大で行われているESDプログラムについて紹介した。


講演する朴副学長

朴副学長は「四日市公害はなぜ起こったか、そこから何を学ぶか、何がまだ解決していないかを考える必要がある」と述べ、同大の学生が学ぶ「四日市学」の重要性を説明。その上で、「伊勢湾流域圏の再生には、ESDという手段を使って、地域や世界と手を組み活動を進めていくことも大切だ」と呼びかけた。

このほか、ネットワークに参加している各団体が、それぞれの地域で行っている活動を報告し、情報交換や交流を深めた。

第4回堀川ラウンドテーブル 開催
キャッチコピー「いつも心に川がある」
堀川まちづくりの会
平成26年3月19日(木)

堀川上流散策
社団法人日本セカンドライフ協会 御一行
平成27年4月4日(土)
報告:御用水跡街園愛護会調査隊

Progress of Citizen's Awareness　Activities of Studies

主催・協力・報告：黒川ドリーム会・御用水跡街園愛護会調査隊・ロマン黒川

飯田小学校3年生　堀川体験学習
平成27年6月6日（土）

名北小学校3年生　黒川観察会
平成27年6月16日（火）

正木小学校5年生　黒川観察会
平成27年6月23日（火）

大杉小学校2年生　堀川観察会
平成27年6月25日（木）

笹島小学校5年生　堀川観察会
平成27年7月2日（木）

清掃活動とコスモスの苗植え
場所：北区の北清水親水広場周辺
主催：黒川ドリーム会

春の環境デーなごや2015
平成27年6月6日（土）

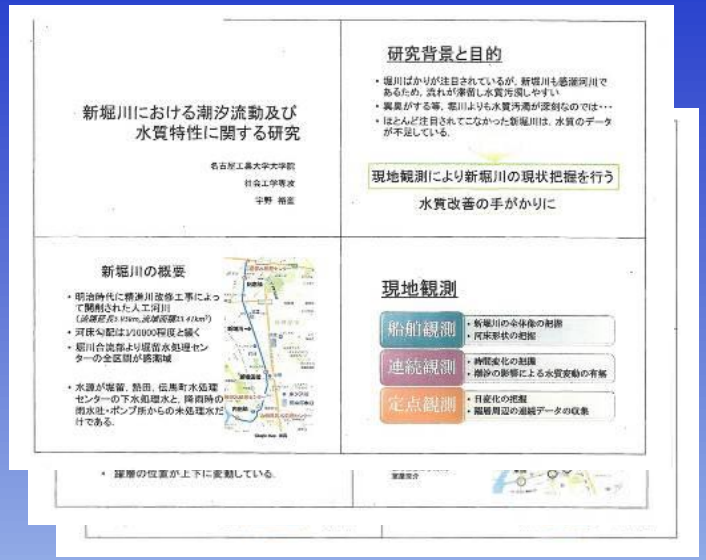
堀川体験乗船
「身近な自然体験会～船から発見！　私たちの堀川」
主催：名古屋市環境局
運営協力：名古屋堀川ライオンズクラブ
場所：熱田区白鳥桟橋

堀川歴史探索　高年大学
平成27年6月23日（火）
報告：御用水跡街園愛護会調査隊

平成26年度　堀川浄化活動報告書
鯱城・堀川と生活を考える会

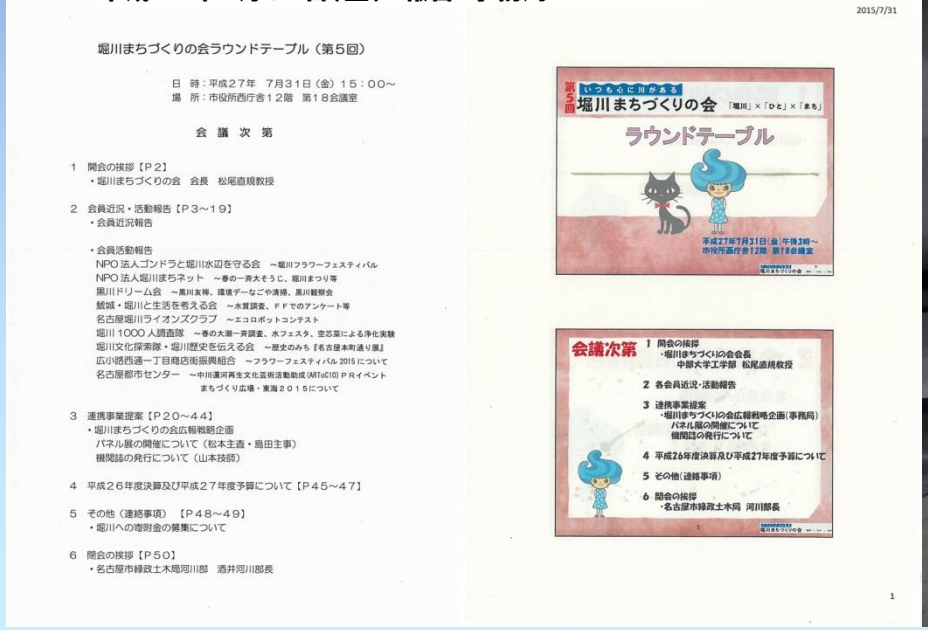
Progress of Citizen's Awareness　Activities of Studies

新堀川フォーラム「新堀川の水質を考える」 平成27年7月7日(火)



Inspectorates of waterworks and sewage bureau in Mexico City visited Horikawa River

第5回 堀川ラウンドテーブル　堀川まちづくりの会
平成27年7月31日(金) 報告:事務局



堀川まちづくりの会ラウンドテーブル（第5回）

日　時：平成27年　7月31日（金）15：00～
場　所：市役所西庁舎12階　第18会議室

会　議　次　第

1　開会の挨拶【P2】
・堀川まちづくりの会　会長　松尾直規教授

2　会員近況・活動報告【P3～19】
・会員近況報告

・会員活動報告
NPO法人ゴンドラと堀川水辺を守る会　～堀川フラワーフェスティバル
NPO法人堀川まちネット　～春の一斉大そうじ、堀川まつり等
黒川ドリーム会　～黒川友禅、環境データなどや清掃、黒川観察会
納涼・堀川と生活を考える会　～水質調査、ＦＦでのアンケート等
名古屋堀川ライオンズクラブ　～エコロボットコンテスト
堀川１０００人調査隊　～春の大潮一斉調査、水フェスタ、空芯菜による浄化実験
堀川文化探索隊・堀川歴史を伝える会　～歴史のみち『名古屋本町通り展』
広小路西通一丁目商店街振興組合　～フラワーフェスティバル2015について
名古屋都市センター　～中川運河再生文化芸術活動助成（ARTsCITE）ＰＲイベント
まちづくり広場・東海２０１５について

3　連携事業提案【P20～44】
・堀川まちづくりの会広報戦略企画
パネル展の開催について（松本主査・島田主事）
機関誌の発行について（山本技師）

4　平成26年度決算及び平成27年度予算について【P45～47】

5　その他（連絡事項）【P48～49】
・堀川への寄附金の募集について

6　閉会の挨拶【P50】
・名古屋市緑政土木局河川部　酒井河川部長

2015/7/31

Horikawa Clean Experiment with Chinese Water Spinach and SunPatiens

By Ena agricultural High School, Nagoya Horikawa Lions Club and Especmic corporation
Place：near the pier of Naya Bridge

実験開始3日目　6月22日

第1週間目　6月29日

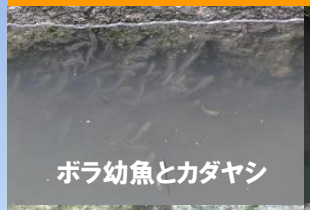
第2週間目　7月6日

第3週間目　7月22日

第4週間目　7月27日

第5週間目　8月4日

集まってきた生き物たち



Activities of “Free Survey Groups” & “Cheering Groups”

定点観測の活動報告
名古屋市高年大学29期調査隊　平成27年1月～3月分

志賀橋上流側左岸に
井戸水を引き上げるポンプを設置
平成27年1月　工事開始
撮影：名古屋市

志賀橋地下水通水式　平成27年3月25日（水）
報告：御用水跡街園愛護会調査隊

2015年（平成27年）3月19日（木曜日）

北区歌った「黒川慕情」

北署の長屋さん　定年控え制作、来月披露

北署地域課警部補の長屋裕志さん(60)が、署が管轄する北区をテーマにしたオリジナルソング「黒川慕情」をつくった。3月末で定年退職する記念に、世話になった北区の盛り上げに一役買おうと考えた。4月5日に柳原通商店街で開かれる春まつりの音楽ステージで披露する。（藤嶋崇）

長屋さんは「エレキの神様」として知られるギタリスト寺内タケシさんの愛知後援会長を務めるほどの音楽好き。昨年夏は、初任地だった西署が管轄する西区の円頓寺商店街を舞台にした「恋の町円頓寺」を作曲。自らリーダーを務めるエレキギターバンド「The Oh! Jeans」（ザ・オウ・ジーンズ。通称オジンズ）のライブで歌ってきた。

現役警察官として最後に勤めた北区の曲は、上司で歌が好きな平野省一副署長（[illegible]）と歌詞を練り、北区ならではの伝統や地名を取り上げた。曲は演歌調だ。

歌詞には、北署のすぐ南を流れる堀川（黒川）やその上流に架かる夫婦橋などが登場。明治時代には黒川に船だまりがあり、船が行き交ったという史実も参考にした。

柳原通商店街の春まつりのライブ出演は午前十一時から。観覧無料。長屋さんは「日常的に聞いてもらえるよう、ご当地ソングとして認知されればうれしいですね」と話している。

◇

退職を控えた長屋さんは、北署員向けの応援歌も制作中だ。治安を守る警察官の使命や団結をテーマに二十八年ほど前に作った曲「熱血男児管区機動隊」を編曲し直し、歌詞も見直す。長屋さんは「署員の士気が高まるような曲にしたい」と話している。

県警の警察官がつくった曲では、西署員五人で構成するバンド「ヤングウエスト」のメンバーが西区の安全を願った「笑顔の街」がある。今月十一日に署の公式HPに載せ、インターネット上で聴けるようにした。「愛知県警西署」で検索。新着情報欄にある。

黒川慕情の歌詞

①へさくら舞う堀川堤
友禅流しが春を呼ぶ
航路しのぶ常夜灯
川面に浮かぶ想い女
ああ黒川　北の街

②へ御用水　夫婦橋
葉桜そよぐ並木道
ふれあい橋か　婚橋
独り歩いて君想う
ああ黒川　北の街

③へコスモス揺れる志賀の森
二人で見る日は来るだろか
過ぎ去る日々はかえらねど
明日を信じて生きてゆく
ああ黒川　北の街

船だまりのあった黒川の歴史を生かして曲「黒川慕情」をつくった長屋裕志さん＝北区の北清水親水広場で

中日新聞　平成27年3月19日（木）　朝刊より

昔の町並みなどの写真を掲載した銘板を設置
北区役所まちづくり推進室
平成27年3月11日（水）
報告：御用水跡街園愛護会調査隊

堀川調査隊活動メモ

1. 調査隊名　：　明電舎錦調査隊　／　八木・浅井・梶谷・荻須
2. 調査地点　：　錦橋（中央部下流側、護岸部西側）
3. 調査日時　：　2015/3/25(水)　9:15頃
4. 天　候　：　晴れ　（前日に降雨：無し）
   気　温　：　10℃
   風　：　強めの風
5. 流　れ　：　やや早め（上流→下流）
   水　位　：　高い　（右岸＝護岸部西側の階段：8段目）
6. 臭　い　：　やや臭う
   水の色　：　淡灰黄緑色
   泡　：　無し
   浮遊物　：　少々（落ち葉）

7. 水質測定結果（現場測定）

表層部

測定項目	測定値	測定方法	測定日時
水温	13.4　℃	導電率計	2015/3/25(水)　9:15頃
導電率	8.0　mS/cm	導電率計	2015/3/25(水)　9:15頃

水面下1m　（プローブ1m浸漬）

測定項目	測定値	測定方法	測定日時
水温	14.2　℃	導電率計	2015/3/25(水)　9:30頃
導電率	19.1　mS/cm	導電率計	2015/3/25(水)　9:30頃

2015/3/25(水)　名古屋港の潮汐（気象庁webサイトより）

満潮		干潮	
時刻	潮位	時刻	潮位
8:43	208	2:40	77
21:45	191	15:18	35

http://www.data.jma.go.jp/gmd/kaiyou/shindan/index.html

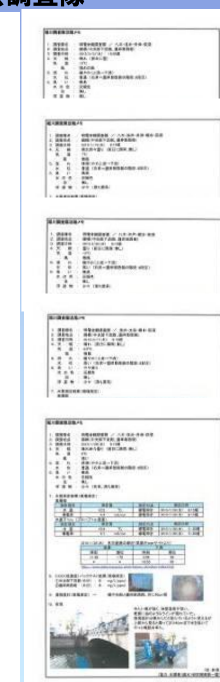
8. COD（低濃度）パックテスト結果（現場測定）
   ①中央部下流側（5分半）：Ⓐ8　Ⓑ9 mg/L(ppm)
   ②護岸部西側　（5分半）：Ⓐ8　Ⓑ8 mg/L(ppm)

9. 透視度計（現場測定）
   ①中央部下流側　：53．5cm
   ②護岸部西側　：51．8cm

10. 所見

堀川沿いの桜が満開、今週末が見頃。
風が強く冷たいが、晴天で水の色も若干明るく感じる。
しかし透視度計は不純物も混じり前回より悪い結果。
今回も生体確認出来ず。

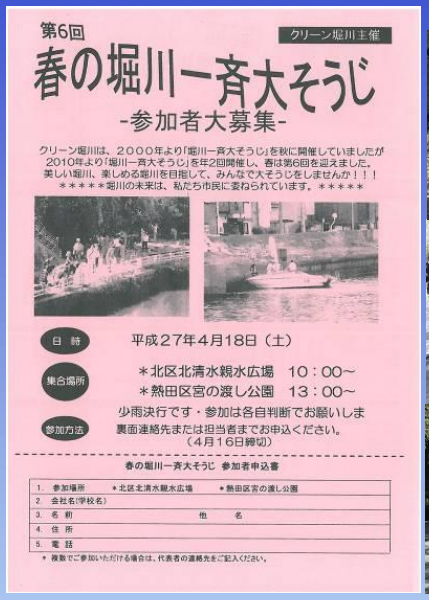
（記：荻須）
（協力：水環事）風水）研究開発第一課）



水質調査活動報告　明電舎錦調査隊
平成26年8月～平成27年3月まで
http://www.horikawa1000nin.jp/katudou/2015-05-11-meidensha.htm

Activities of “Free Survey Groups” & “Cheering Groups”

第6回　春の堀川一斉大そうじ
主催：クリーン堀川
平成27年4月18日（土）
報告：御用水跡街園愛護会調査隊
事務局



名古屋友禅を体験
平成27年4月18日（土）／7月20日（月）
案内・報告：御用水跡街園愛護会調査隊

堀川ギャラリー
「不思議な堀川」展示会
平成27年6月2日（火）
報告：御用水跡街園愛護会調査隊

中日新聞　平成27年6月25日（木）朝刊より

清掃活動
中日本建設コンサルタント㈱
かわせみ調査隊
場所：錦橋～納屋橋間
平成27年5月7日（木）

清掃活動
ぎふしんムーミン清水支部
堀川応援隊
場所：北清水橋周辺
平成27年6月13日（土）

堀川ギャラリー
故・丹坂和義さんの
「昭和の納屋橋」作品展
平成27年6月25日（木）
報告：御用水跡街園愛護会調査隊

Activities of “Free Survey Groups” & “Cheering Groups”

広報パンフレットを作成
名古屋堀川ライオンズクラブ
平成27年3月

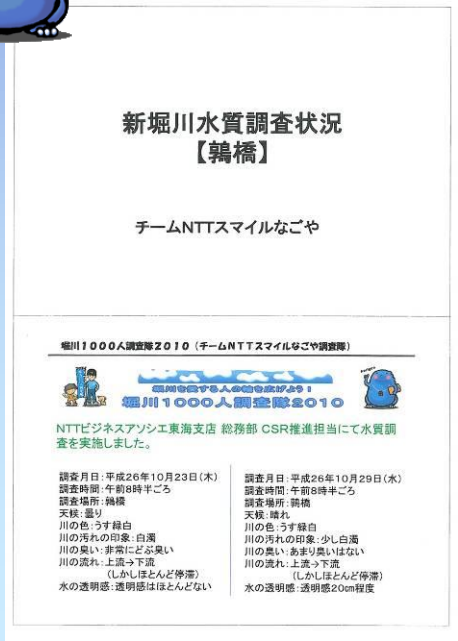
機関誌「クリーン堀川2015・3　第18号」発行
市民団体 クリーン堀川

活動報告「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

活動レポート：
伊勢湾流域圏再生ネットワーク事務局

活動レポート：
環境ボランティアサークル「亀の子隊」

フリーペーパー「中区フリモ　2015．5　vol.14」に
堀川1000人調査隊が特集記事として掲載



新堀川水質調査報告
チームNTTスマイルなごや
平成26年1月～
平成27年7月分

Events

堀川友禅流し
平成27年4月4日(土)
主催:北区役所
北区民まちづくり推進協議会
報告:事務局

友禅流し 桜の下で 黒川

名古屋友禅で染めた10メートル余りの布八本が、冷たい川の水の中へ。渡辺さんの下で友禅染を学ぶ名古屋学芸大の学生や地元の子どもたちが水に入り、手で優しく表面をこすったり、流れに漂う美しい花柄の反物と競演した。

北区龍ノ口町の伝統工芸士渡辺芳治さん(三〇)らが染めた長さ十年の高橋美晴さん(三〇)は「雨を心配していたけれど、桜吹雪が舞う最高の天気。美しい物を大切にする日本の心が感じられた」と満足そうに話した。

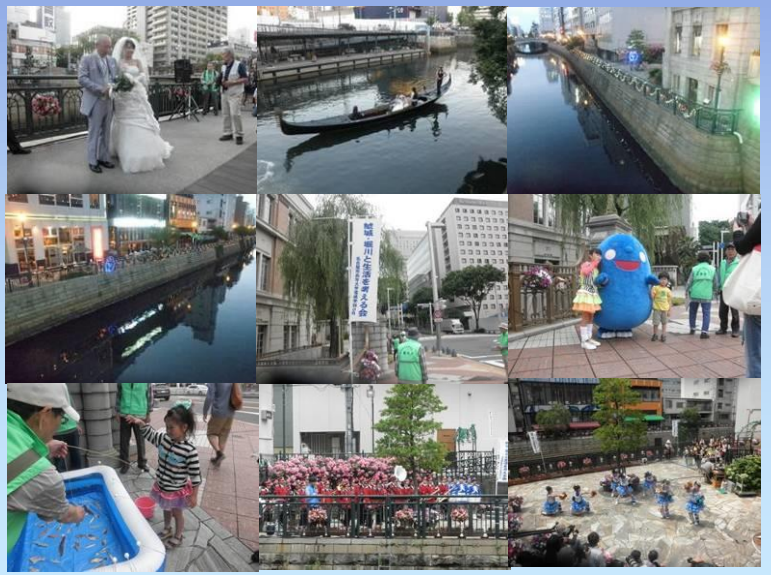
名古屋友禅は、文化振興に努めた尾張藩主徳川宗春(一六九六～一七六四年)の時代に京都から伝来したとされ、現在まで着物や帯をつくるための大切な技術として継承されている。黒川での友禅流しは水質悪化で途絶えていたが、魅力をPRしたいと考えた地元の住民らが一九九九年にイベントとして復活させた。(中野祐紀)

桜の下で友禅流しをする人たち＝北区辻本通の黒川で

中日新聞　平成27年4月5日(日)　朝刊より

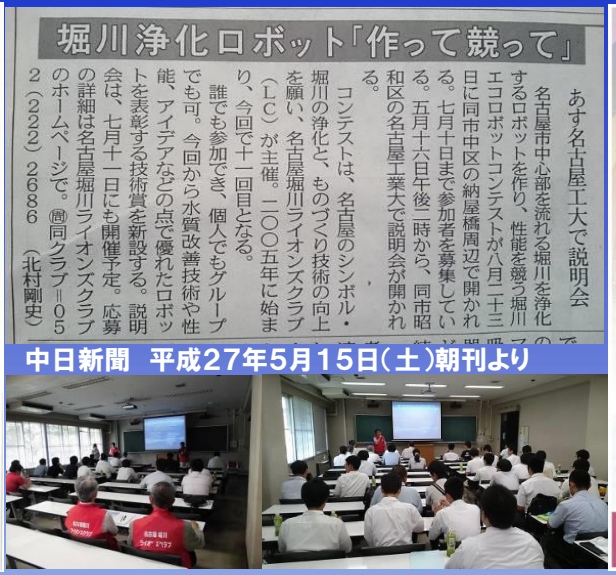
桜山「木祖村アンテナショップ」
平成27年6月12日(金)～
リニューアルオープン
撮影:御用水跡街園愛護会調査隊

フラワーハンキングバスケットづくり
平成27年4月16日(木)
報告:御用水跡街園愛護会調査隊



堀川フラワーフェスティバル2015開幕
平成27年5月8日(金)～23日(日)
報告:御用水跡街園愛護会調査隊

Events



堀川浄化ロボット「作って競って」

あす名古屋工大で説明会

名古屋市中心部を流れる堀川を浄化するロボットを作り、性能を競う堀川エコロボットコンテストが八月二十三日に同市中区の納屋橋周辺で開かれる。七月十日まで参加者を募集している。五月十六日午後二時から、同市昭和区の名古屋工業大で説明会が開かれる。

コンテストは、名古屋のシンボル・堀川の浄化と、ものづくり技術の向上を願い、名古屋堀川ライオンズクラブ（LC）が主催。二〇〇五年に始まり、今回で十一回目となる。

誰でも参加でき、個人でもグループでも可。今回から水質改善技術や性能、アイデアなどの点で優れたロボットを表彰する技術賞を新設する。説明会は、七月十一日にも開催予定。応募の詳細は名古屋堀川ライオンズクラブのホームページで。問同クラブ＝052（222）2686（北村剛史）

中日新聞　平成27年5月15日(土)朝刊より

第11回「堀川エコロボットコンテスト2015」説明会　平成27年5月16日(日)
主催：名古屋堀川ライオンズクラブ　協賛：名古屋工業大学

なごや水フェスタ（鍋屋上野浄水場解放イベント）
平成27年6月7日(日)
参加：名古屋市高年大学環境学科29期調査隊
名古屋グランパス調査隊
名古屋堀川ライオンズクラブ調査隊

宮の渡し公園「堀川まつり」
平成27年6月6日(土)～6月7日(日)
報告：御用水跡街園愛護会調査隊

水辺で乾杯at堀川　納屋橋シャムズガーデン
堀川応援隊　ミズベリング・ミズ中部
平成27年7月7日(火)

Activities of “Free Survey Groups” & “Cheering Groups”

中日新聞
平成27年6月25日(木) 朝刊より

中川運河に水上交通

レゴランド開業で整備へ

二〇一七年春にテーマパーク「レゴランド」が開業予定の金城ふ頭（港区）の開発で、市は都心部と名古屋港をつなぐ中川運河に水上交通網を整備する方針を明らかにした。

レゴランド開業後は、平日も親子連れなどでにぎわうことが予想され、岡本康宏氏（民主）が交通網の充実を求めた。

住宅都市局の黒田昌義局長は「都心部と港の回遊性を高めることが重要だ」と答弁した。

市は一四年十一月の二日間、名古屋駅に近い中川運河堀止に仮設の乗船場を設け、名古屋港までの約八キロでクルーズ船を試験運航。水上から街並みをながめる企画が人気を集め、定員百人に二十三倍の応募者が殺到した。レゴランド開業に合わせ、常設の乗船場の整備を模索する。

あおなみ線（名古屋—金城ふ頭）では、全線十五キロをノンストップで結ぶ直行便の運行も検討している。

読売新聞
平成27年7月23日(木) 朝刊より

郷土史家・沢井鈴一さん死去

「堀川文化」歴史や庶民生活発掘

「堀川文化探索隊」の創設者で郷土史家の沢井鈴一（さわい・すずいち）さんが21日午後7時ごろ、春日井市瑞穂通の自宅で、肝硬変で死去した。76歳だった。告別式は25日午後1時、同市鳥居松町4の3、平安会館春日井中央斎場。喪主は長男の和也（かずや）氏。

「堀川文化探索隊」代表だったころの沢井鈴一さん（2009年10月16日、春日井市の自宅で）

沢井さんは名経大市邨高校（名古屋市千種区）の教諭時代に、名古屋の発展を支えてきた堀川に魅せられ、その歴史や川に関わる庶民の生活などを発掘。2000年に「堀川文化探索隊」を発足し、現地調査や講演などを通じて、堀川の様々な姿を伝えてきた。

11年に肝臓がんが見つかり、入退院を繰り返した。同隊代表を引き継いだ伊藤正博さん(66)とともに昨年6月、集大成といえる「堀川　歴史と文化の探索」（あるむ刊）を出版。伊藤さんは「人間に着目し、やさしい語り口が特徴だった」と話した。

新聞記事

毎日新聞
平成27年6月25日(木)朝刊より

水上交通網整備へ

名古屋港

名古屋市は24日、名古屋港の金城ふ頭（名古屋市港区）で、都市部と結ぶ水上交通網を整備する方針を明らかにした。テーマパーク「レゴランド」が2017年度に開業予定で、オープンに合わせ、交通アクセスの利便性を高める狙いがある。

市中心部を流れる中川運河に乗降場に設け、船で行き来できるようにする。昨年11月に実施した体験乗船のコースを想定している。この体験乗船は定員の23倍に当たる2300人の応募があり、需要が見込めると判断した。また、「あおなみ線」（名古屋—金城ふ頭）に、レゴランドのキャラクターなどをデザインした列車を走らせることも視野に入れているという。

同日の市議会定例会で、岡本康宏市議（民主）の個人質問に黒田昌義住宅都市局長が答えた。【三上剛輝】

中日新聞
平成27年7月28日(火) ～8月2日(日) 朝刊より

中日新聞 2015年（平成27年）7月28日（火曜日）

面影を探して 90年目の昭和

堀川① 「木の道」の終点

川面を飛び回る筏師

中日新聞 2015年（平成27年）7月29日（水曜日）

面影を探して 90年目の昭和

堀川② 開き橋

探して 90年目の昭和

堀川③ 死せる川

中日新聞 2015年（平成27年）8月1日（土曜日）

面影を探して 90年目の昭和

堀川⑤ 得月楼

探して 90年目の昭和

堀川④ 水上スナック

中日新聞 2015年（平成27年）8月2日（日曜日）

面影を探して 90年目の昭和

堀川⑥ 納屋橋ブルース