Horikawa Sen-nin Chosatai 2010

(Horikawa River Thousand Citizen Survey Network 2010)

Summary Meeting for the 10th Stage

(Sep. 11st – Dec. 16th 2011)

Horikawa River Pilot Project

- Transmission of Raw Water from the Kiso River (TRWKR) -

1.Purpose: To verify the clarification effects of TRWKR with citizens
(1) Develop a new clarifying measures
(2) Assess the influence on ecosystem
(3) Sustain and enhance citizens' activity
(4) Develop citizens' awareness in entire Horikawa river basin

2. Water source and Volume of transmission of raw water
(1) Water source
Kiso River: Kiso River System (first grade river)
(2) Volume of transmission of raw water
Maximum 0.4m^3/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)

Horikawa Sen-nin Chosatai (HSC) 2010

■ The formation of Horikawa Sen-nin Chosatai (HSC) (April 22nd 2007)
With a viewpoint and a sense of citizens, the survey of the clarification effect of TRWKR started.

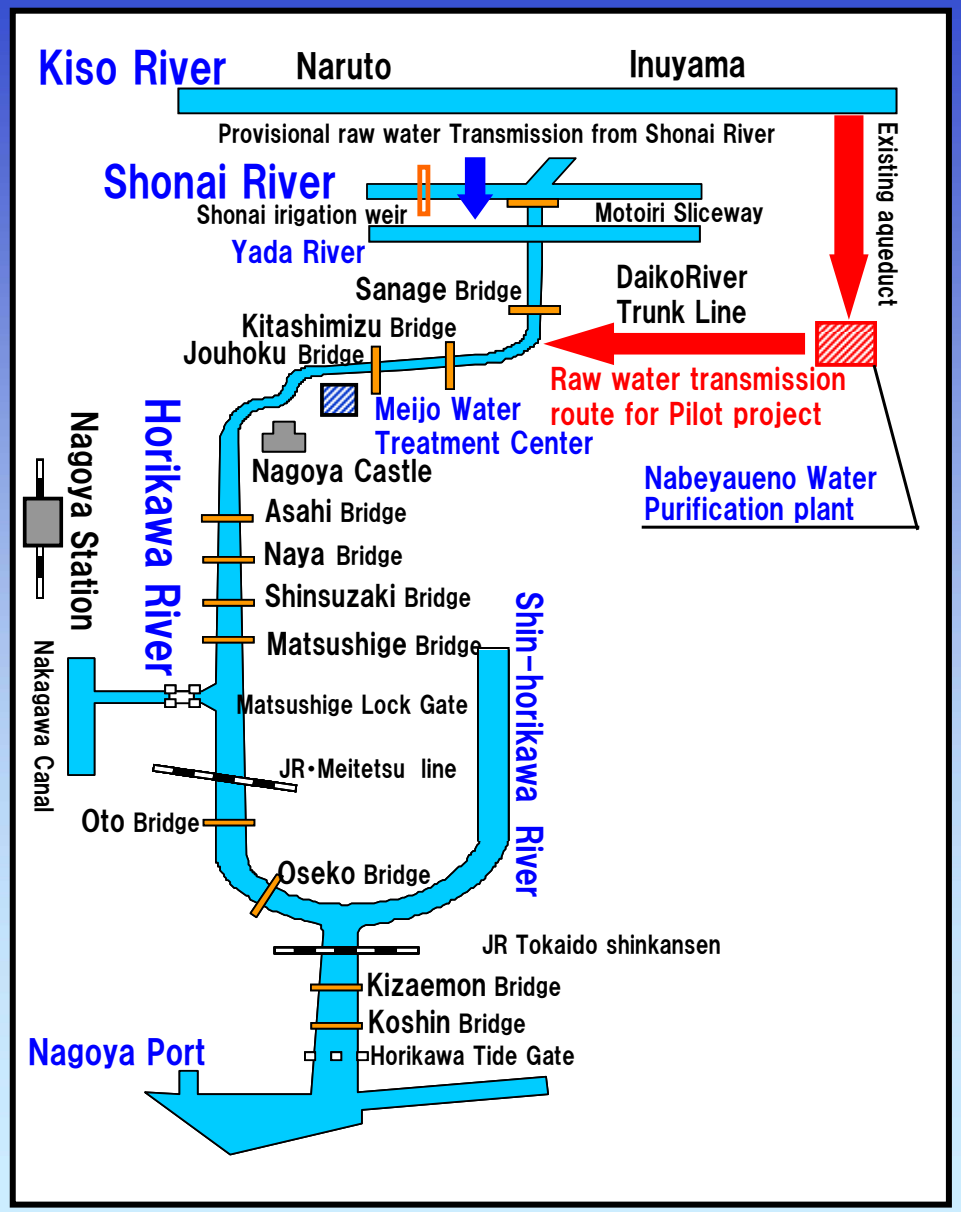
■ The survey with a view point and a sense of citizens
・Clearness ・Transparency ・Color ・smell ・Garbage ・Living things, etc.

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

(1) Water Source: Shonai River
(2) Transmission Volume: Usual Max. 0.3m3/sec
Increased Max. 0.7m3/sec
(3) Experiment Period: 1st Oct. – 31st Dec. 2010
(4) Period of Increased Transmission Volume: Oct. 5th – Nov. 2nd 2010

Transmission of Raw Water from Kiso River（TRWKR）

■TRWKR：0.4m³/s ■TRWKR period : From Apr.22nd 2007 to Mar.22nd 2010



Kiso River Inuyama Intake

TRWKR point : Horikawa River

- the downstream section below Sanage Bridge

Results of TRWKR

Period：April 22nd 2007 - March 22nd 2010

Survey Period		Days of Period	Days of TRWKR (%：Days of TRWKR/Days of Period/×100)
1st stage	April 22nd 2007～June 30th 2007	70	52 (74%)
Interval		69	41
2nd stage	September 8th 2007～December 16th 2007	100	84 (84%)
Interval		106	86
3rd stage	April 1st 2008～June 30th 2008	91	81 (89%)
Interval		89	39
4th stage	September 28th 2008～December 16th 2008	80	50 (63%)
Interval		105	93
5th stage	April 1st 2009～June 30th 2009	91	82 (90%)
Interval		88	63
6th stage	September 27th 2009～December 16th 2009	81	60 (74%)
Interval (Until the stop of TRWKR) December 17th 2009～March 22nd 2010		96	92
Total		1,066	823 (77%)

Note) It counts as one of “Days of TRWKR “ if just a little raw water is transmitted to Horikawa.

Increase of transmission of raw water from Shonai River

■ Transmission of raw water from Shonai River　0.3m³/s→0.7m³/s
（+0.4m³/s）

■ The term of increasing flow : Oct. 5th to Nov. 2nd 2010

Number of Participants of Horikawa Sen-nin Chosatai 2010

Horikawa Sen-nin Chosatai started accepting participation on March 26th ,2007

	start Apr.22th 2007	now Feb.20th 2012
Fixed Point Observation Groups	55 groups 497 persons	89 groups 894 persons
Free Survey Groups	22 groups 234 persons	39 groups 644 persons
Horikawa Cheering Groups	88 groups 1,531 persons	2,251 groups 19,796 persons
Total	165 groups 2,262 persons	2,379 groups 21,334 persons

Survey period and Number of reports

Survey period		Reports
1st stage	spring～early summer/Apr.22nd～Jun.30th 2007	258
	Jul.1st ～Sep.7th 2007	134
2nd stage	Autumn～early winter/Sep.8th～Dec.16th 2007	383
	Dec.17th 2007～Mar.31st 2008	103
3rd stage	spring～early summer/Apr.1st～Jun.30th 2008	245
	Jul.1st ～Sep.27th 2008	64
4th stage	Autumn～early winter/Sep.28th ～Dec.16th 2008	152
	Dec.17th 2008～Mar.31st 2009	100
5th stage	spring～early summer/Apr.1st～Jun.30th 2009	145
	Jul.1st ～Sep.26th 2009	54
6th stage	Autumn～early winter/Sep.27th～Dec.16th 2009	120
	Dec.17th 2009～Mar.31st 2010	81
7th stage	spring～early summer/Apr.1st～Jun.30th 2010	111
	Jul.1st ～Sep.11th 2010	44
8th stage	Autumn～early winter/Sep.12th～Dec.17th 2010	104
	Dec.17th 2010～Mar.31st 2011	72
9th stage	spring～early summer/Apr.1st ～Jun.30th 2011	112
	Jul.1st ～Sep.10th 2011	42
10th stage	Autumn～early winter/Sep.11th～Dec.16th 2011	133
Total		2,457

The main measures of the pilot project

Measures	2007				2008				2009				2010				2011			
		1st.				3rd.				5th.				7th.				9th.		
				2nd.					4th.				6th.				8th.			10th.
TRWKR ($0.4m^3/s$)	●											●								
Increase of raw water transmission from the Shonai River ($+0.4m^3/s$)															●	●				

The main measures implemented by City of Nagoya

Measures	2007				2008				2009				2010				2011			
		1st.				3rd.				5th.				7th.				9th.		
				2nd.					4th.				6th.				8th.			10th.
Advanced water treatment at the Meijo water treatment center													●							
The Horikawa Ugan Rain-water Reservior for pollution controll															●					

The facilities which started the services after the stop of TRWKR

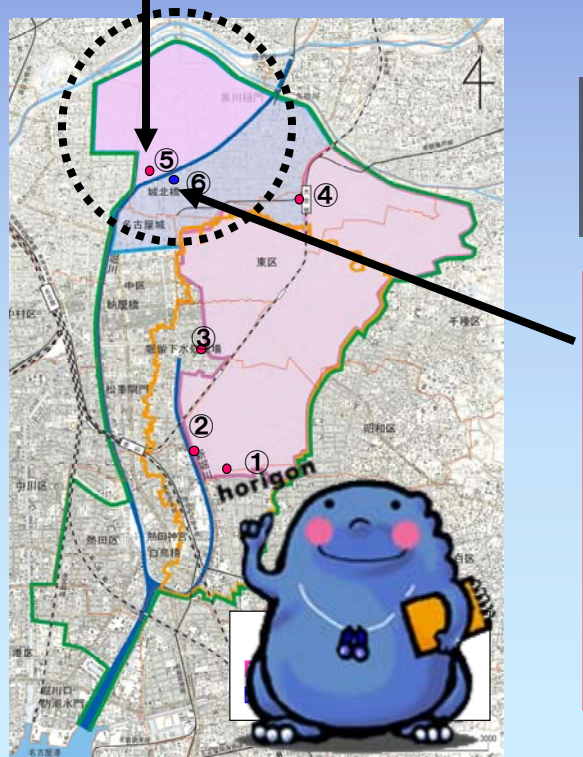
■ Improvement of the quality of treated water

The additional filtration of treated water at the Meijo Water Treatment Center leads to the improvement of quality of the water sluiced into Horikawa River.

Meijo Water Treatment Center (Advanced water treatment)

Solution: conventional activated sludge process + rapid filtration

Launch (rapid filtration): May. 2010



■ Improvement of combined sewer system

By capturing and storing first flush with high-pollution load temporarily, the frequency of overflow from the sewer outlet can be reduced.

Horikawa Ugan Rain-water Reservoir for pollution control

Volume: 13,000m^3

Coverage Area: 633ha

Launch: Sep. 2010

Summary of the clarification effects by TRWKR

Verification of the clarification effects due to TRWKR

Item		Minatoshin Bridge ～Oseko Bridge	Oseko Bridge～ Matsushige Bridge	Matsushige Bridge ～Asahi Bridge	Asahi Bridge ～Johoku Bridge	Johoku Bridge ～Sanage Bridge	note
Impression of clearness	1st - 6th stage (during TRWKR)	–		○	○	○	Meijo Water Treatment Center started the service of Advanced water treatment in May 2010.
	spring ～ early summer	–		●	●		
	autumn ～ early winter	–			●		
Transparency	1st - 6th stage (during TRWKR)	–		○		○	Horikawa Ugan Rain-water Reservoir started the service of pollution control in Sep. 2010.
	spring ～ early summer	–			●		
	autumn ～ early winter	–		●		●	
COD	1st - 6th stage (during TRWKR)	–		○	○	○	
	spring ～ early summer	–					
	autumn ～ early winter	–				●	
Bubble	1st - 6th stage (during TRWKR)	–		○		○	
	spring ～ early summer	–			●		
	autumn ～ early winter	–					
Smell	1st - 6th stage (during TRWKR)	–			○	○	
	spring ～ early summer	–	●		●		
	autumn ～ early winter	–	●				

Improvement of water quality is verified

Note) ○:water quality was improved during TRWKR.
●:water quality became worse after the stop of the TRWKR
(or it can be said that TRWKR was necessary to maintain water quality.)

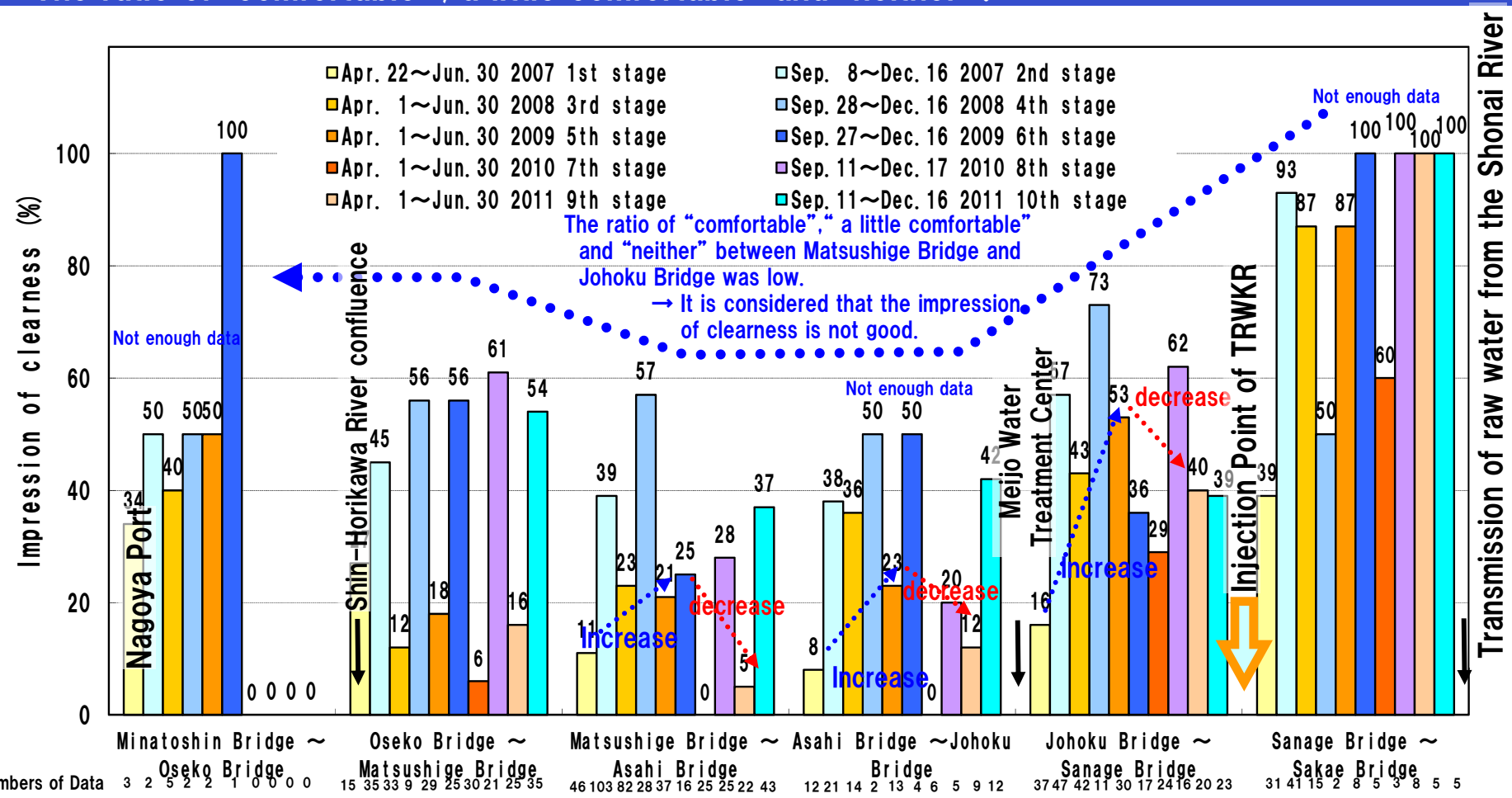
- It was confirmed that the water quality tended to improve during TRWKR between Sanage Bridge and Matsushige Bridge.
- Although changes of the water quality are different according to items and stages, it was confirmed that the water quality tended to deteriorate after the stop of TRWKR between Sanage Bridge and and Matsushige Bridge.

→In this result, the TRWKR was considered to have made good effects on the water quality between Sanage Bridge and Matsushige Bridge.

Impression of Clearness

- 1st – 6th stage : TRWKR
- 7th – 9th stage : No TRWKR
- No Rain on the day and the previous day

The ratio of “comfortable ”,”a little comfortable” and ”neither ”. *



■How did the impression of clearness change?

- The ratio of “comfortable”, “a little comfortable” and “neither” (1st,3rd,5th,7th,9th stage) was lower than (2nd,4th,6th,8th,10th stage).

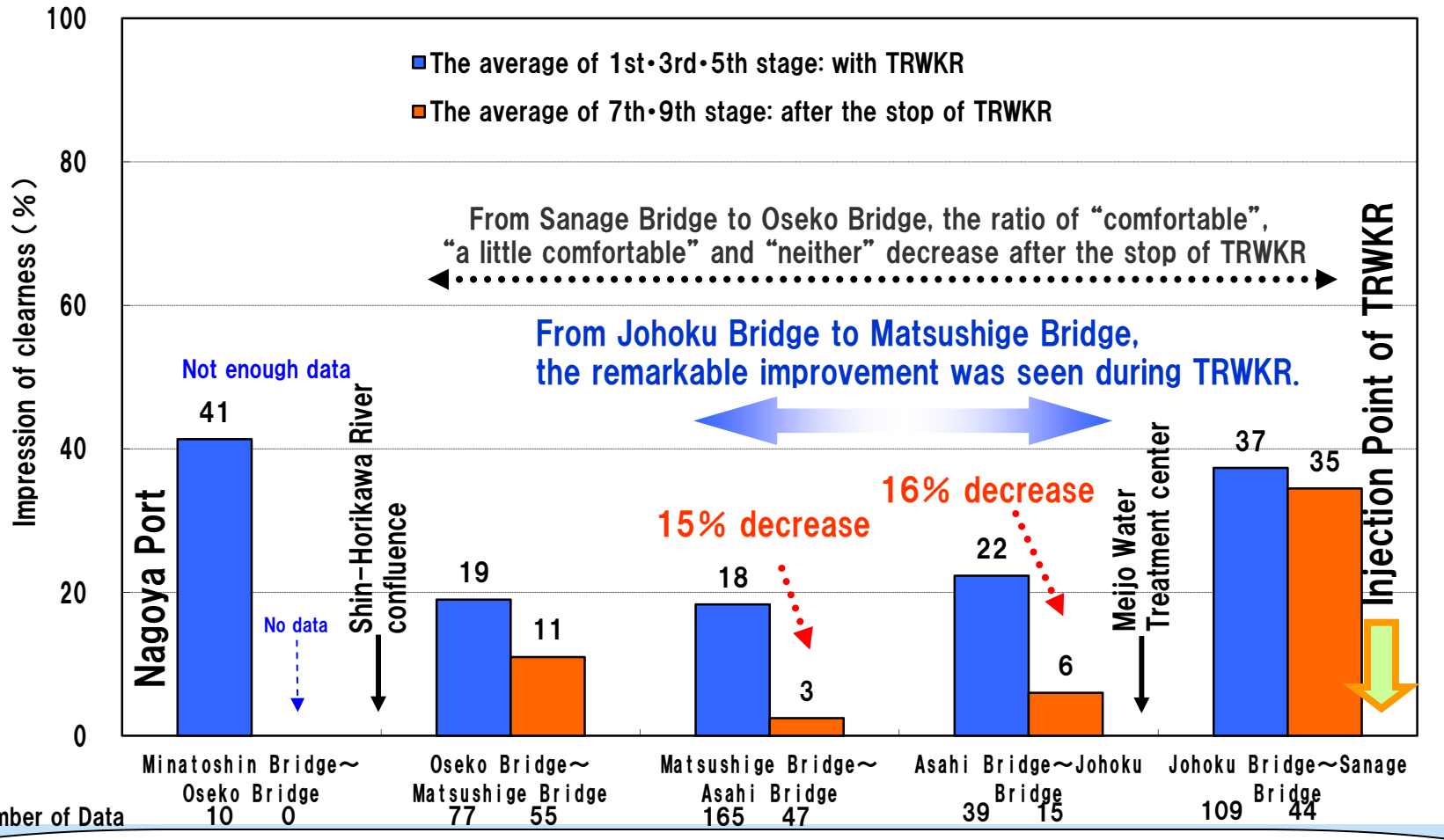
The impression of clearness between Sanage Bridge and Matsushige Bridge improved during TRWKR (1st, 3rd, 5th stage), but deteriorated after the stop of TRWKR

* ”comfortable”, ”a little comfortable” and ”neither ” are categorized as the acceptable range for citizens

Impression of Clearness・・・from spring to early summer

The ratio of “comfortable”, “a little comfortable” and “neither”. *
Comparison between TRWKR and no TRWKR period

・1st・3rd・5th stage：TRWKR
・7th・9th stage：No TRWKR
・No Rain on the day and the previous day



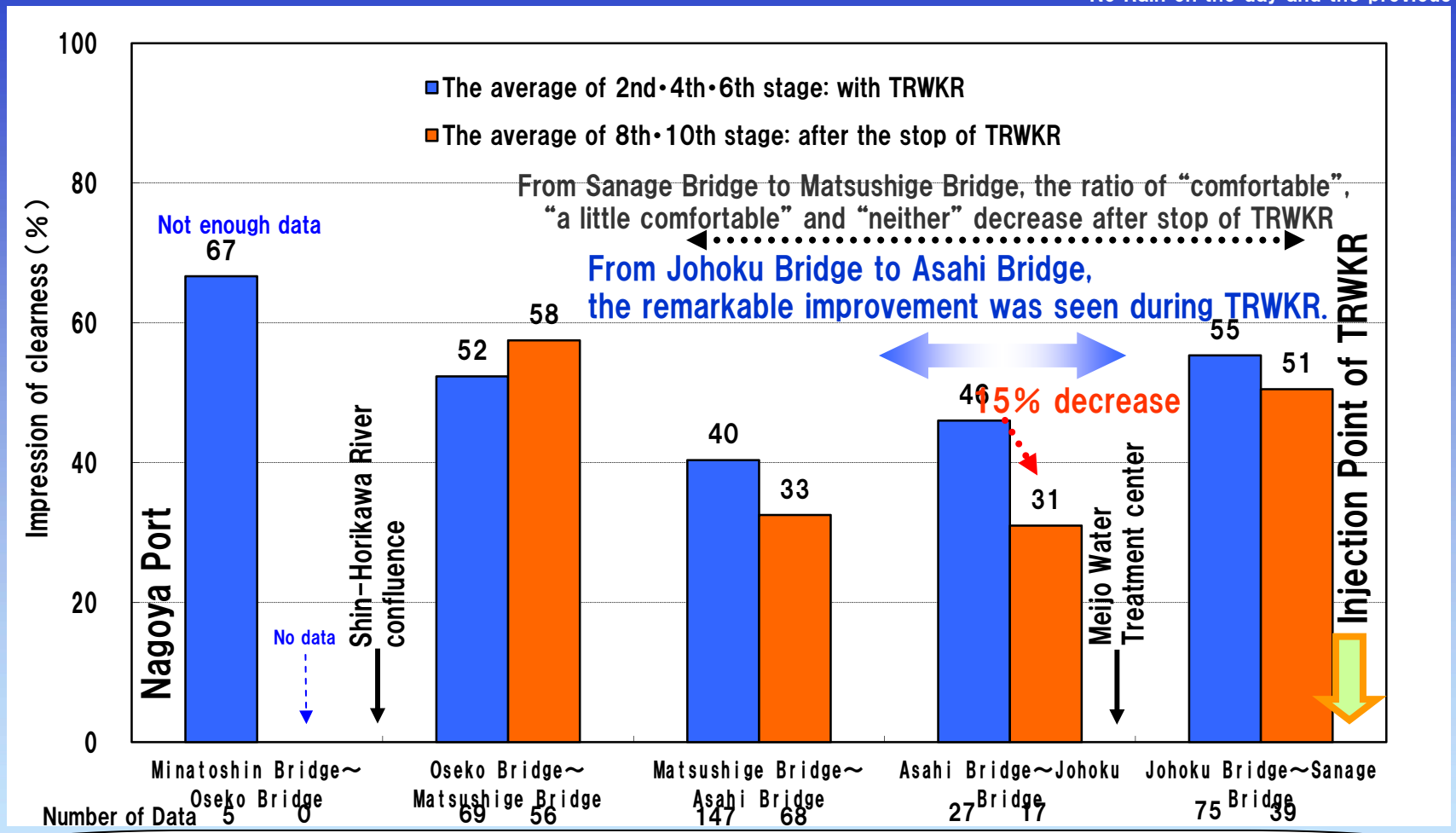
■ How did the impression of clearness (“from spring to early summer”) change after the stop of TRWKR?
→From Sanage bridge to Oseko Bridge, the ratio of “comfortable”, “a little comfortable” and “neither” decrease after the stop of TRWKR. In this result, it was confirmed that the impression of clearness was improved during TRWKR. Especially, it was from Johoku bridge to Matsushige Bridge where the remarkable improvement was seen during TRWKR.
* ”comfortable”, “a little comfortable” and ”neither” are categorized as the acceptable range for citizens

Impression of Clearness･･･from autumn to early winter

The ratio of “comfortable”, “a little comfortable” and “neither”. *

Comparison between TRWKR and no TRWKR period

- 2nd･4th･6th stage:TRWKR
- 8th･10th stage:No TRWKR
- No Rain on the day and the previous day



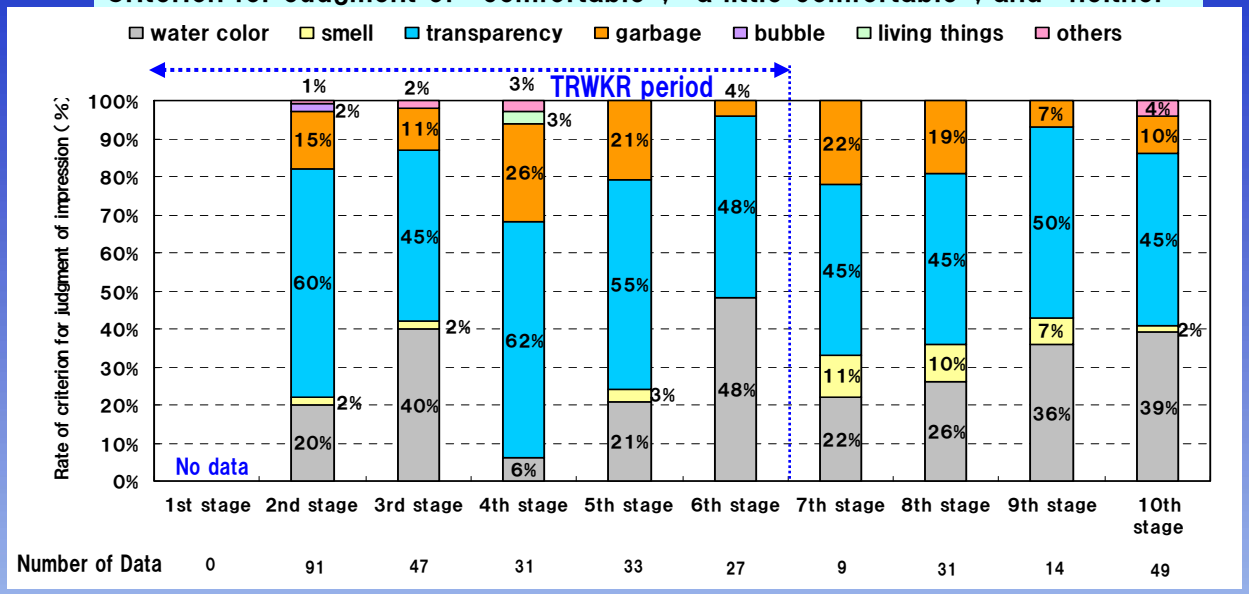
■ How did the impression of clearness (“from autumn to early winter”) change after the stop of TRWKR?

→From Sanage bridge to Matsushige Bridge, the ratio of “comfortable”, “a little comfortable” and “neither” decrease after the stop of TRWKR. In this result, it was confirmed that the impression of clearness was improved during TRWKR. Especially, it was from Johoku bridge to Asahi Bridge where the remarkable improvement was seen during TRWKR.

＊ ”comfortable”, “a little comfortable” and ”neither” are categorized as the acceptable range for citizens

Impression of Clearness (from Sanage Bridge to Minatoshin Bridge)

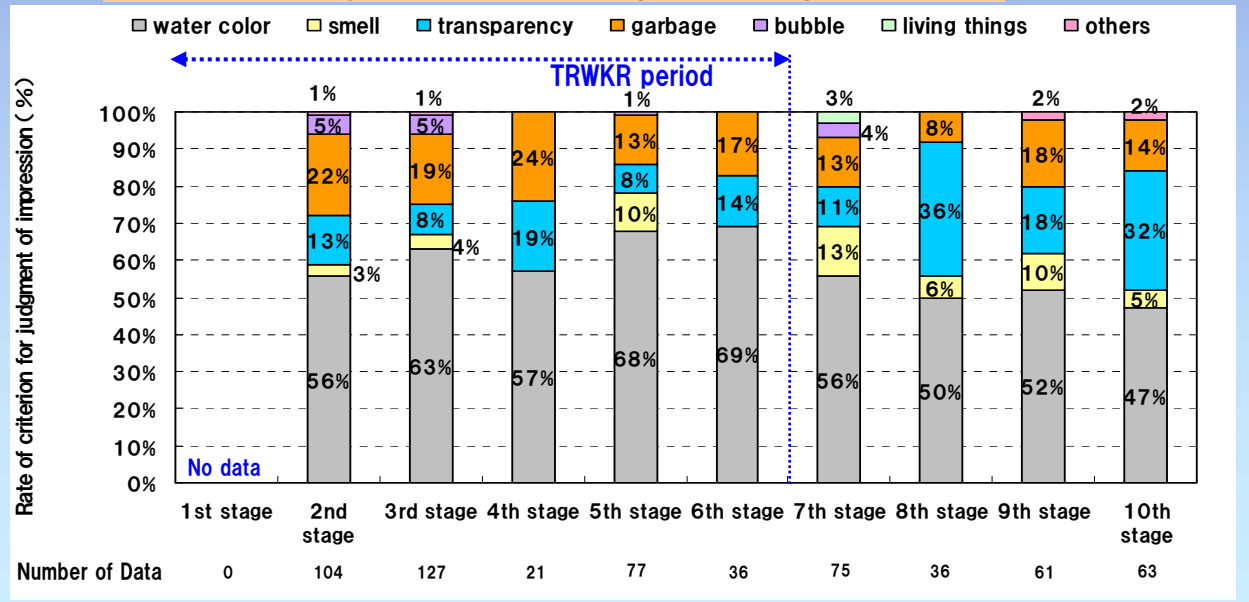
Criterion for Judgment of "comfortable", "a little comfortable", and "neither"



- 1st stage : No data
- 2nd – 6th stage : TRWKR
- 7th – 10th stage : No TRWKR
- No rain on the day and the previous day

■The reply of "Transparency" was 40 ~ 60%.

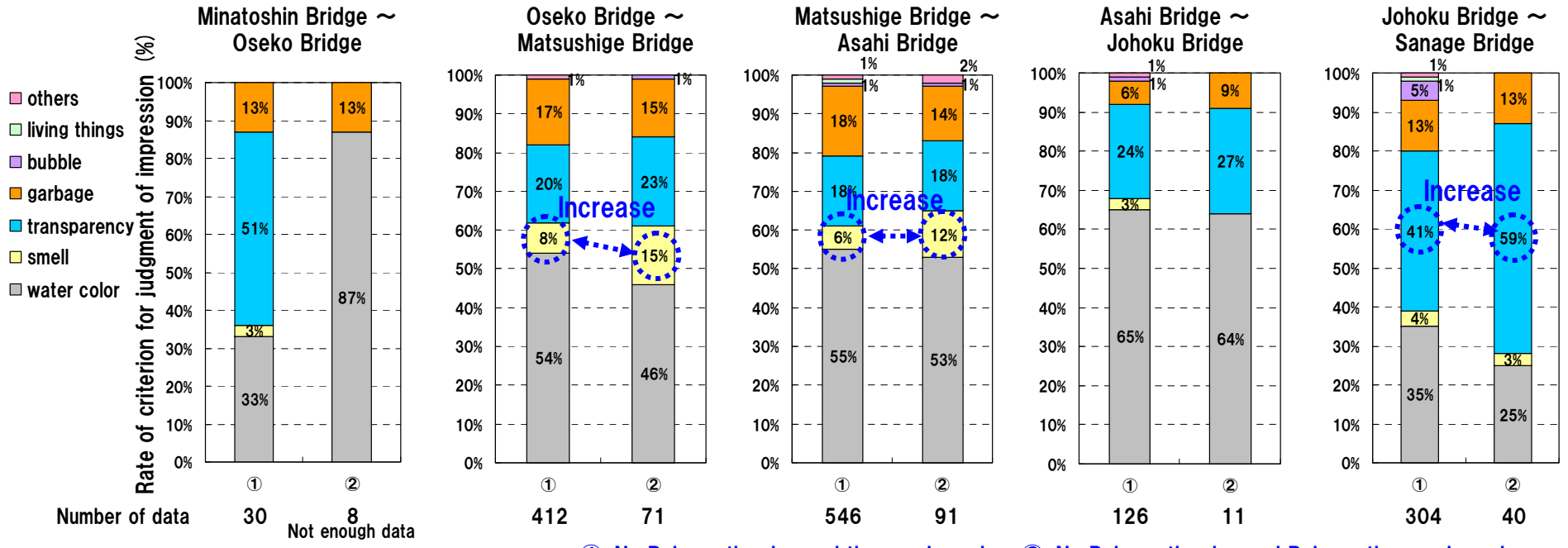
Criterion for Judgment of "a little Dirty" and "Dirty"



■The reply of "Water color" was 50 ~ 70%.

Impression of Clearness (from Sanage Bridge to Minatoshin Bridge)

2nd – 10th stage containing the extended period, both TRWKR and no TRWKR
No Rain on the day and Rain on the previous day



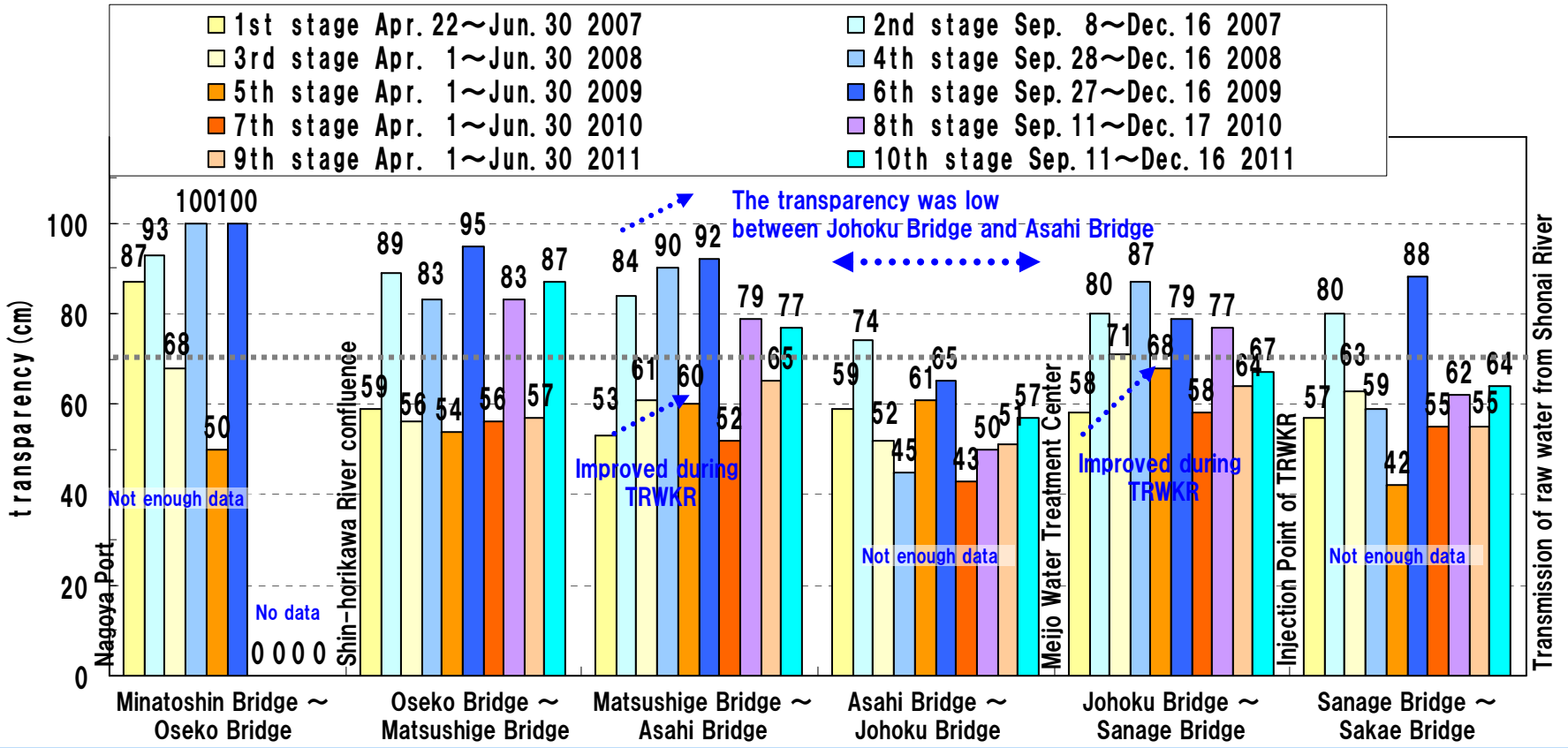
①: No Rain on the day and the previous day ②: No Rain on the day and Rain on the previous day

In case of rain on the previous day ••• impression of smell increased impression of transparency increased

■ In case of rain on the previous day, how did the impression of clearness change?
→Between Sanage Bridge and Asahi Bridge, the impression of "Transparency" increased.
→Between Asahi Bridge and Oseko Bridge, the impression of "Smell" increased.

Transparency

1st～6th stage : With TRWKR
No Rain on the day and the previous day
7th～10th stage : No TRWKR
No Rain on the day and the previous day



Note) The value of 100cm or more was treated as 100cm

■ How did transparency change？

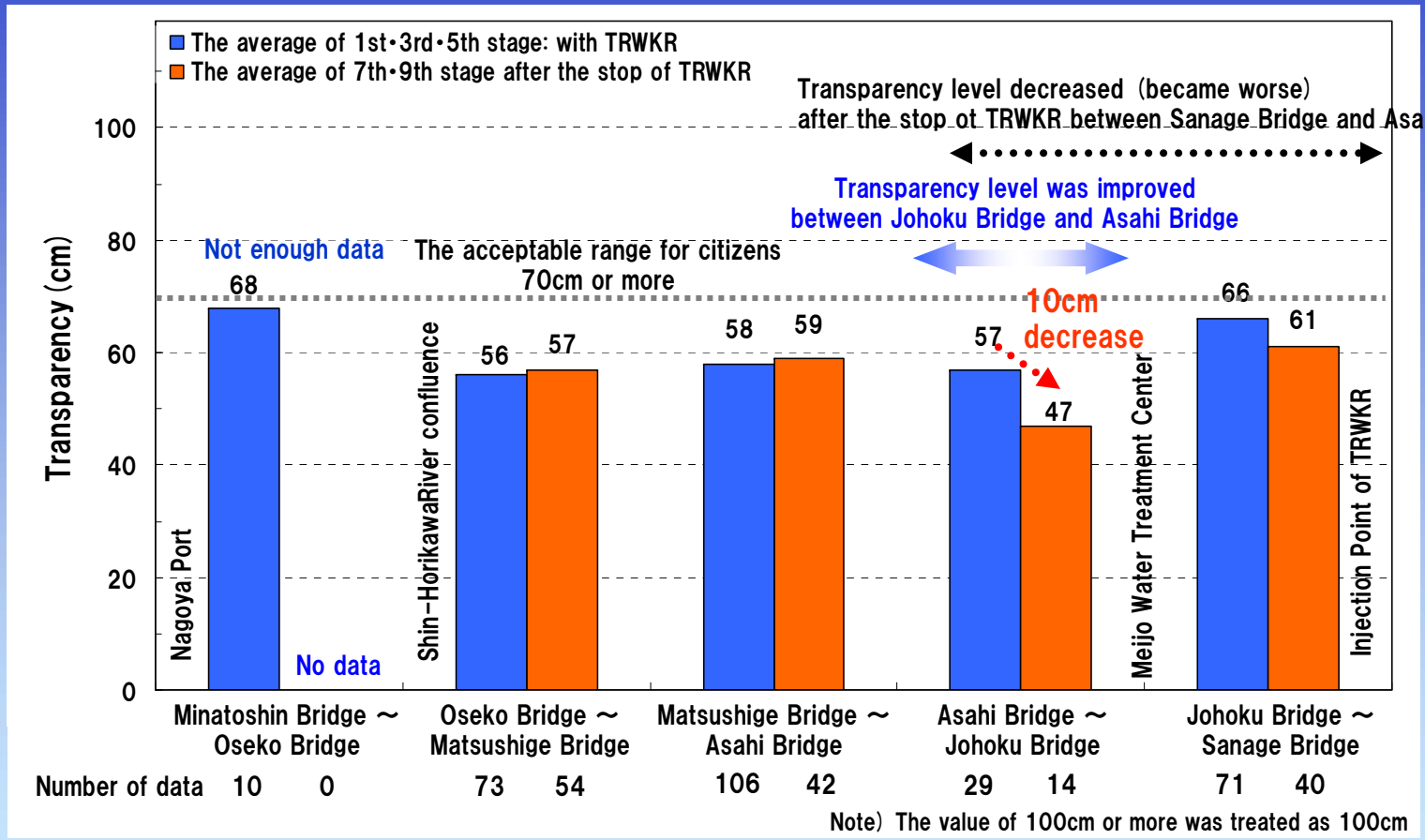
→ “Spring～Early summer (1,3,5,7,9th stage)” was lower than “Autumu～Early winter (2,4,6,8,10th stage)”.
Transparency level was improved between Sanage Bridge and Johoku Bridge, in “Spring～Early summer (1,3,5th stage)” during TRWKR.
The transparency between Johoku Bridge and Asahi Bridge is especially low.

＊ “① comfortable”～ “③ neither” are categorized as the acceptable range for citizens.

Transparency ・・・ Spring～Early summer

1st, 3rd, 5th stage：TRWKR
7th and 9th stage：No TRWKR
No rain on the day and the previous day

Comparison between the transparency during TRWKR（the average of 1st, 3rd, 5th stage）
and the transparency after the stop of TRWKR(the average of 7th, 9th stage）

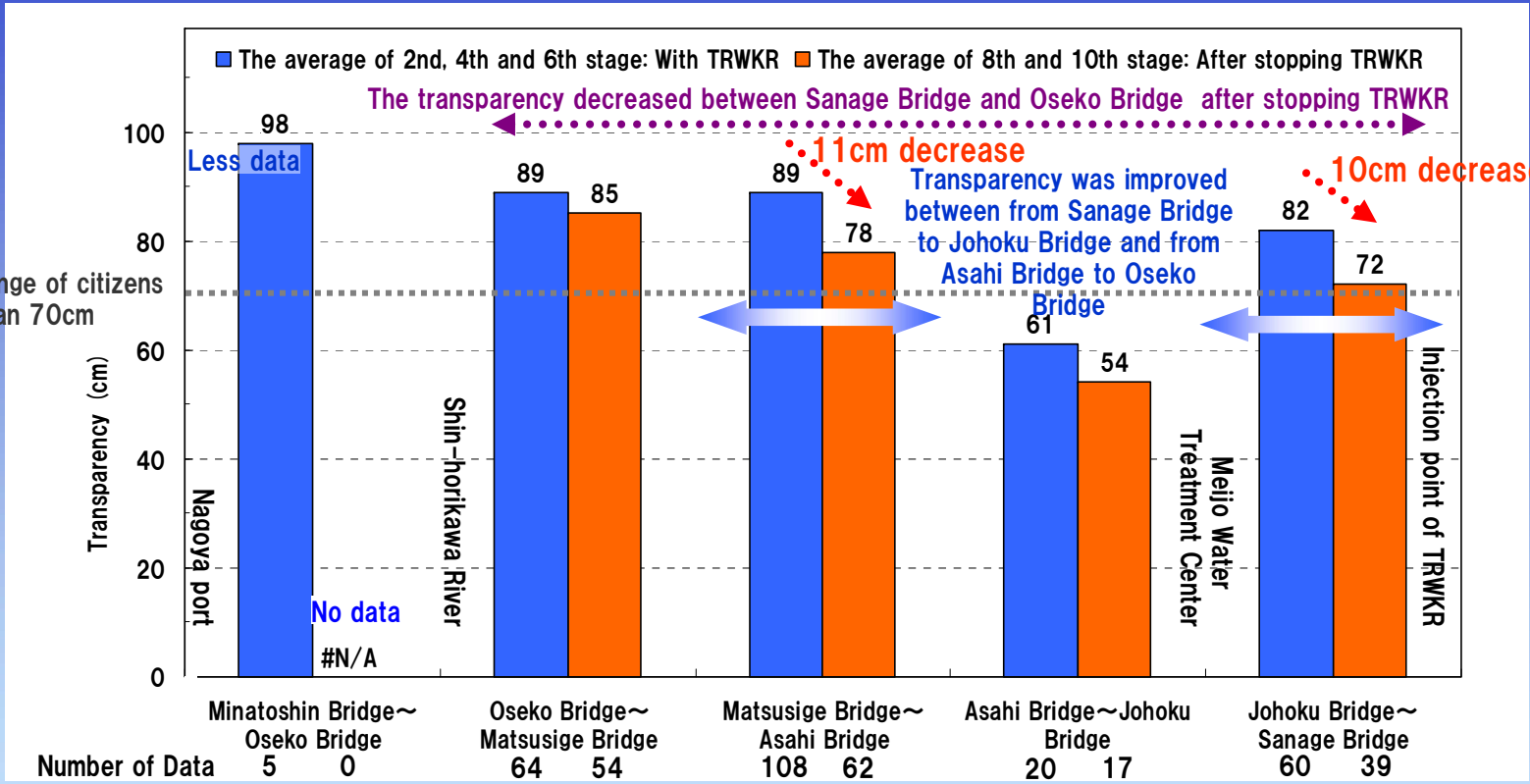


■ How did the transparency (Spring～early summer) change after the stop of TRWKR?
→ Transparency level decreased (became worse) after the stop ot TRWKR between Sanage Bridge and Asahi Bridge. Therefore we made sure that the transparency was improved by TRWKR. Especially, improvement by TRWKR appeared between Johoku Bridge and Asahi Bridge.
And, in spring～early summer (1,3,5,7,9th stage), the transparency was lower than 70cm (citizens' acceptable transparency) in all sections.

Change in transparency・・・Autumn～early winter

Comparison between during TRWKR and after stopping TRWKR
Comparison of average of 2nd, 4th, and 6th stage and of 8th and 10th stage

2nd, 4th, 6th stage : With TRWKR
No rain on previous day and the day
8th, 10th stage : Without TRWKR
No rain on previous day and the day



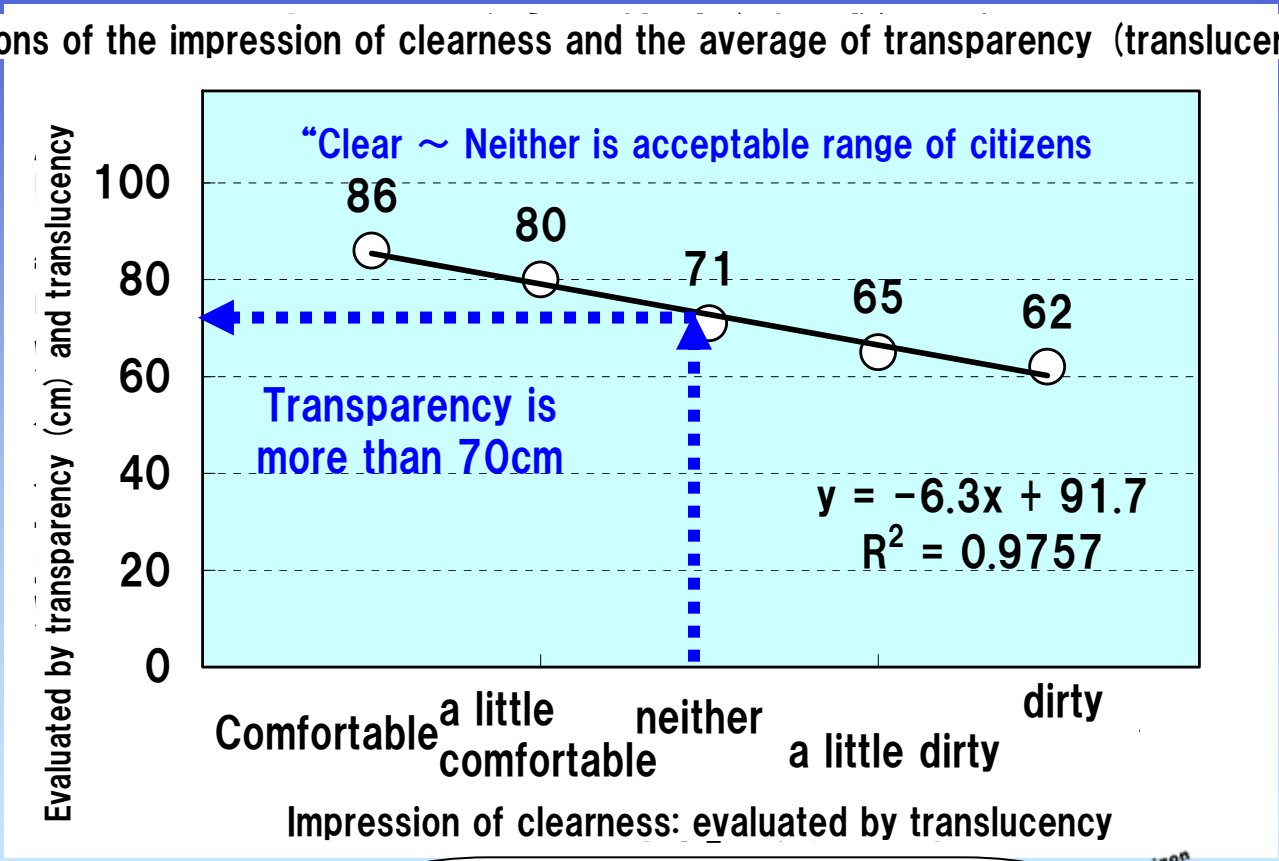
■ How did transparency changed?

→The transparency decreased between Sanage Bridge and Oseko Bridge after stopping TRWKR. This fact shows that TRWKR improved the transparency. The improvement by TRWKR was observed specially between Sanage Bridge and Johoku Bridge, Asahi Bridge and Oseko Bridge. In the survey on autumn and early winter (2nd, 4th, 6th, 8th, and 10th stage) ,transparency between Johoku Bridge and Aasahi Bridge was less than acceptable range of citizens:70 cm.

*The values more than 100cm were handled as 100cm.

Relations of the impression of clearness and the average of transparency (translucency)

2nd stage ～10th stage: No rain including data out of period
Impression of clearness: evaluated by translucency
All sections (including the upper reaches)



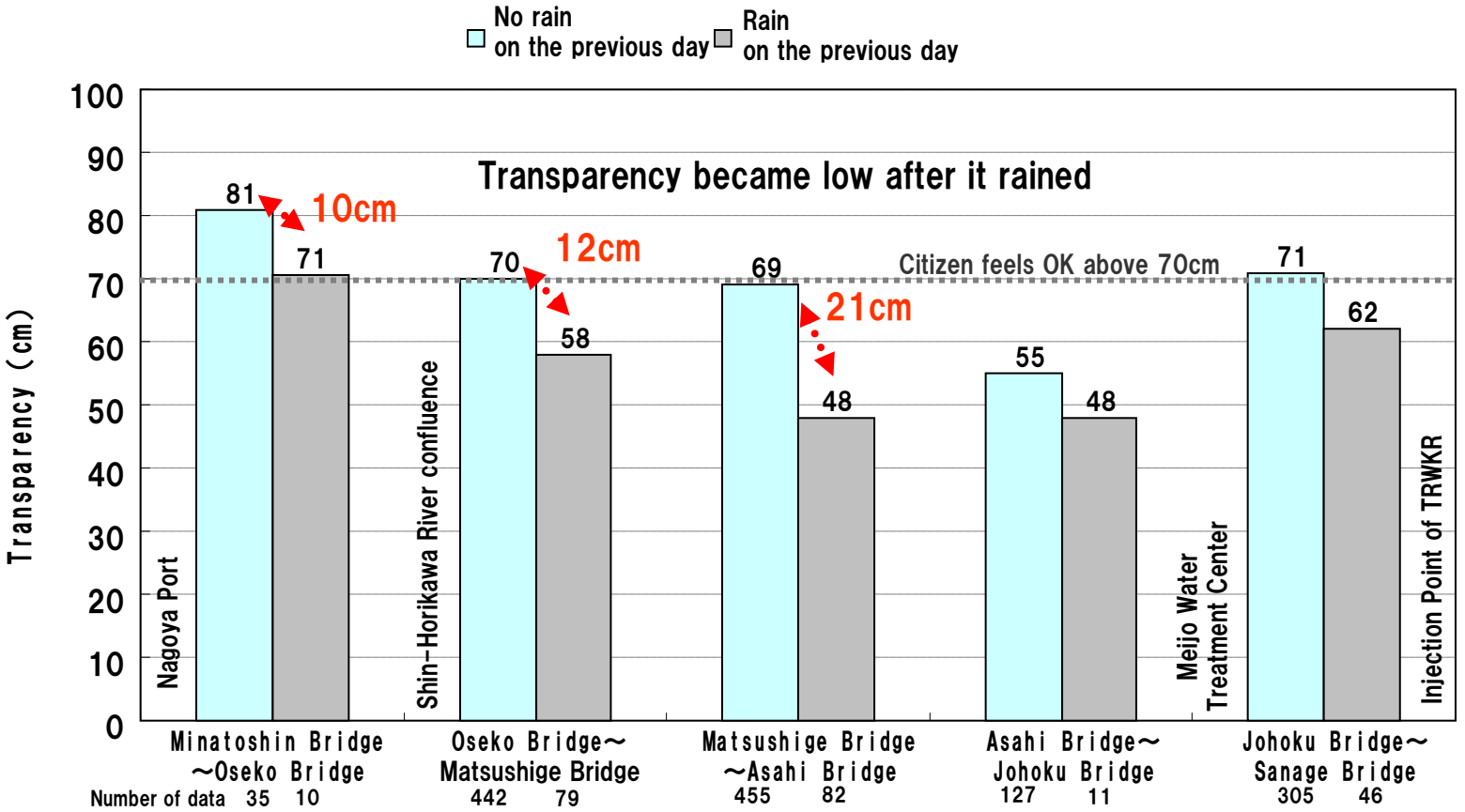
The acceptable range of citizens for transparency is more than 70 cm.
This becomes one index to aim at the improvement of the impression of clearness.

*The values more than 100cm were handled as 100cm.

The average of transparency if it rained on the previous day

Sanage Bridge ～ Minatoshin Bridge

・1st～10th stage including all data（TRWKR and No TRWKR）
・No rain on the day

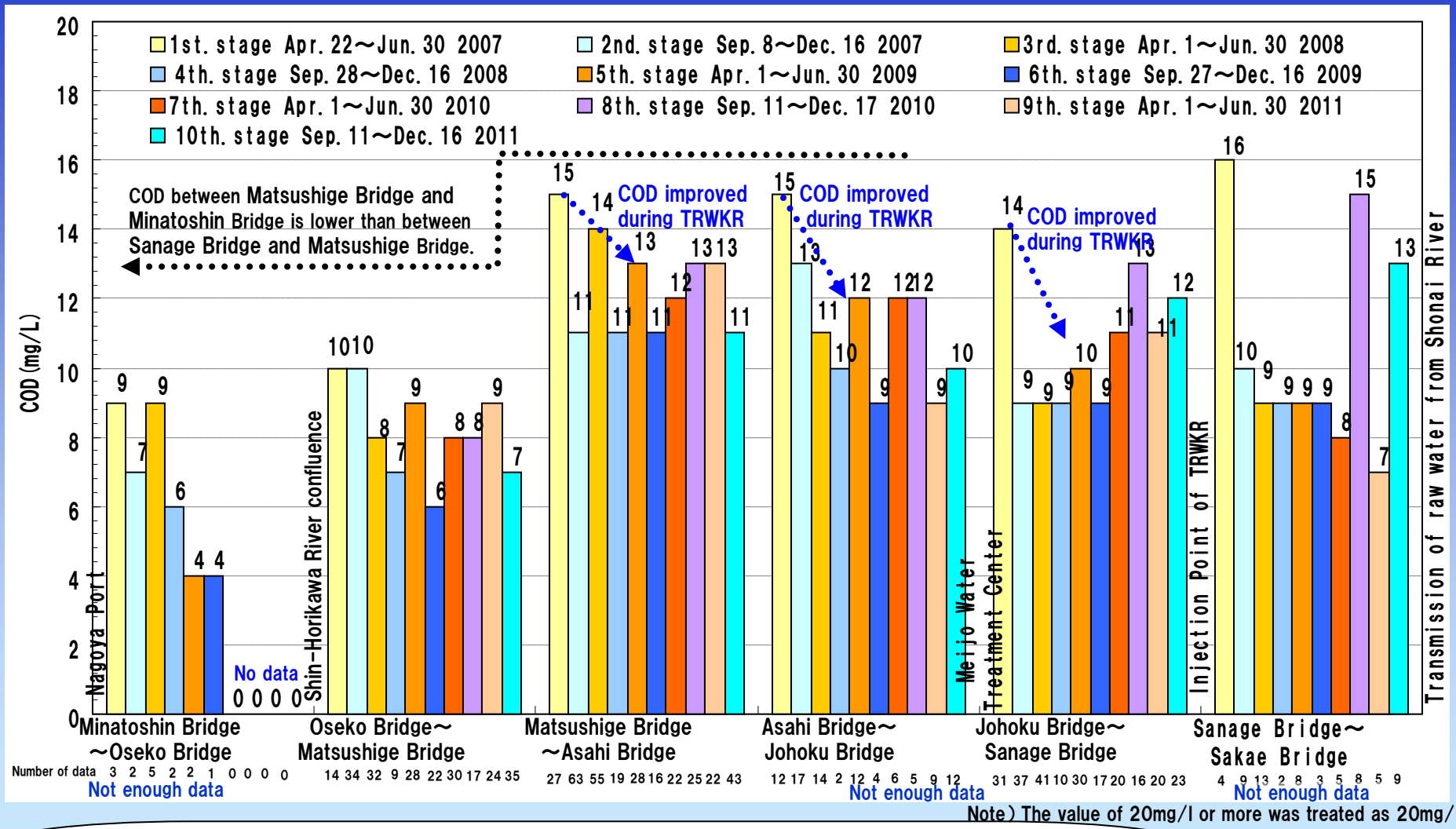


Note）The value of 100cm or more was treated as 100cm

■ How did the transparency change if it rained on the previous day ?
→Transparency became low after it rained . Especially, the transparency became lower between Asahi Bridge and Minatoshin Bridge .

Change in COD

・1st-6th stage : TRWKR
No rain on the day and the previous day
・7th-10th stage : No TRWKR
No rain on the day and the previous day



Note) The value of 20mg/l or more was treated as 20mg/l

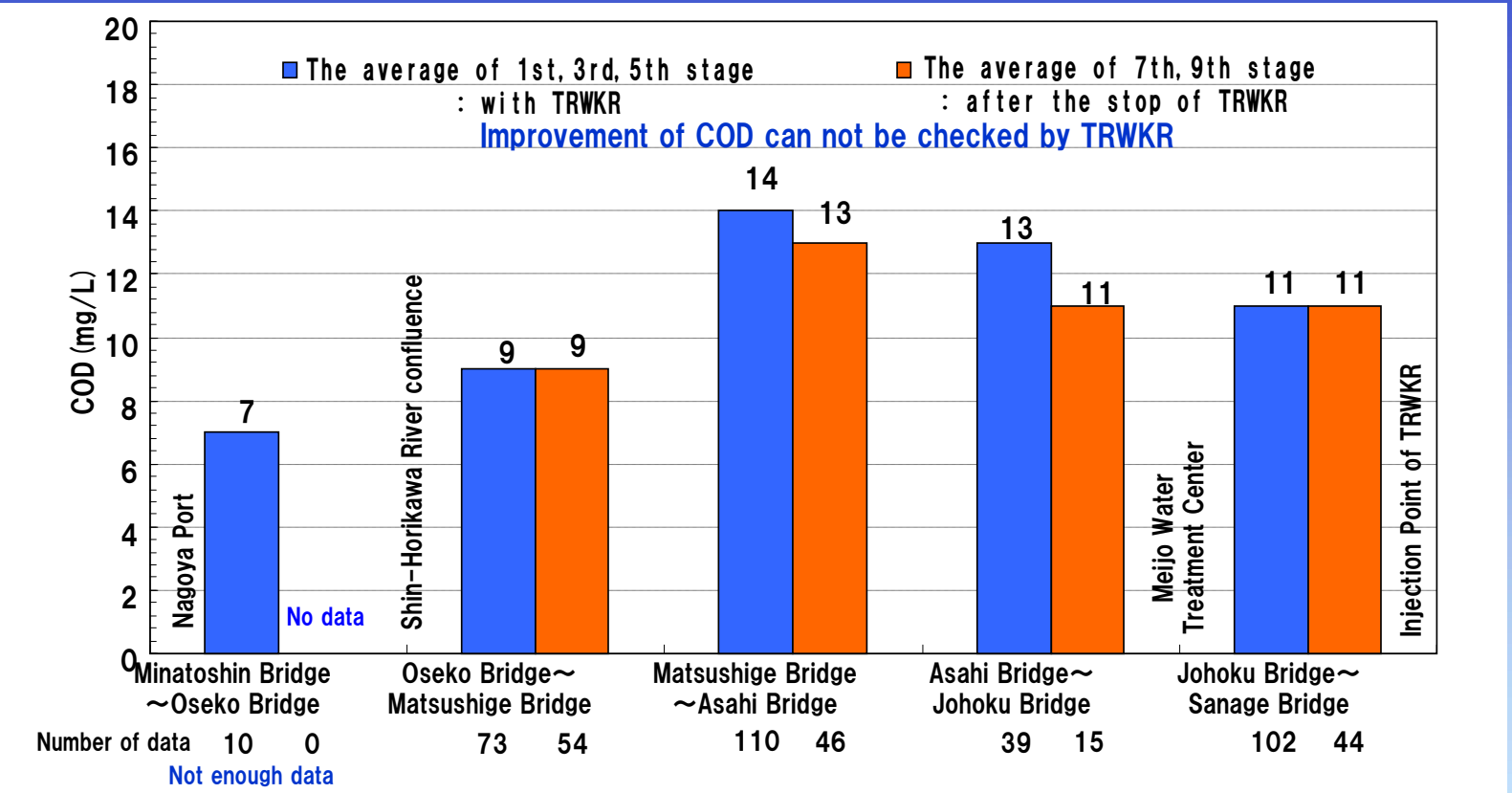
■ How did COD change ?

→「spring～early summer (1st,3rd,5th,7th,9th stage) 」is higher than「autumn～early winter (2nd,4th,6th,8th,10th stage) 」.
During TRWKR period「spring～early summer (1st,3rd,5th stage) 」, COD was improved between Sanage Bridge and Matsushige Bridge.
COD between Matsushige Bridge and Minatoshin Bridge is lower than between Sanage Bridge and Matsushige Bridge.

Change in COD・・・spring～early summer

・1st・3rd・5th stage : TRWKR
No rain on the day and the previous day
・7th・9th stage: No TRWKR
No rain on the day and the previous day

Comparison between average COD of 1st, 3rd, 5th stage （ TRWKR period ） and average COD of 7th, 9th stage （ after the stop of TRWKR ）



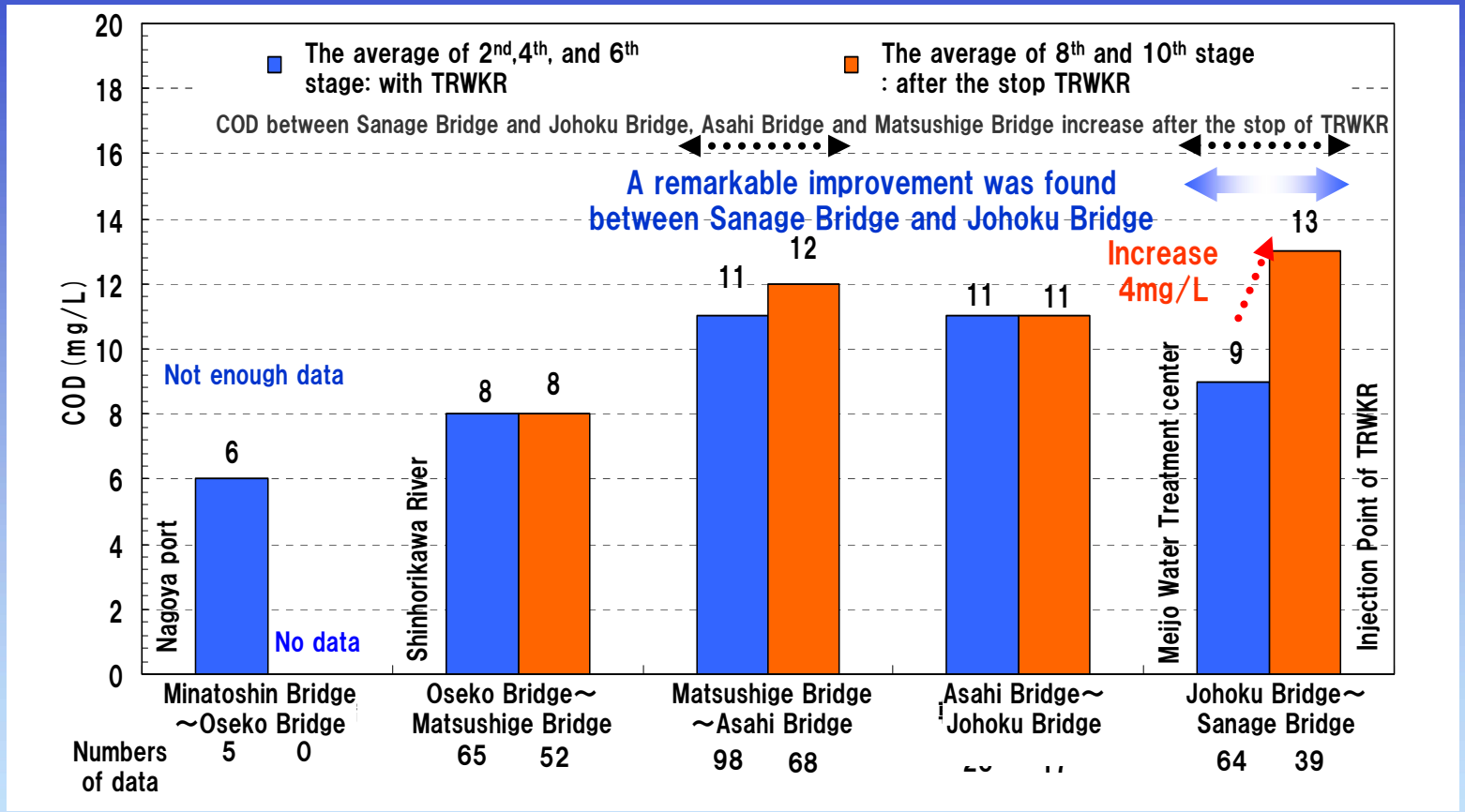
■ How did COD change after the stop of TRWKR （ spring～early summer ）?
→After the stop of TRWKR the value of COD was same.
Improve of COD was not found by TRWKR.

Note）The value of 20mg/l or more was treated as 20mg/l

Change in COD・・・Autumn～earlywinter

2nd,4th,6thstage:TRWKR
8th and 10th stage:No TRWKR
No rain on the day and the previous day

Comparison between average COD of 2nd,4th,6th stage (TRWKR period) and average COD of 8th and 10th stage (after the stop of TRWKR)



■ How did COD (Autumn～early winter) change after the stop of TRWKR ??

→COD between Sanage Bridge and Johoku Bridge, between Asahi Bridge and Matsushige Bridge increased (worsen) after the stop of TRWKR.

In this downstream section, improvement by TRWKR was verified.

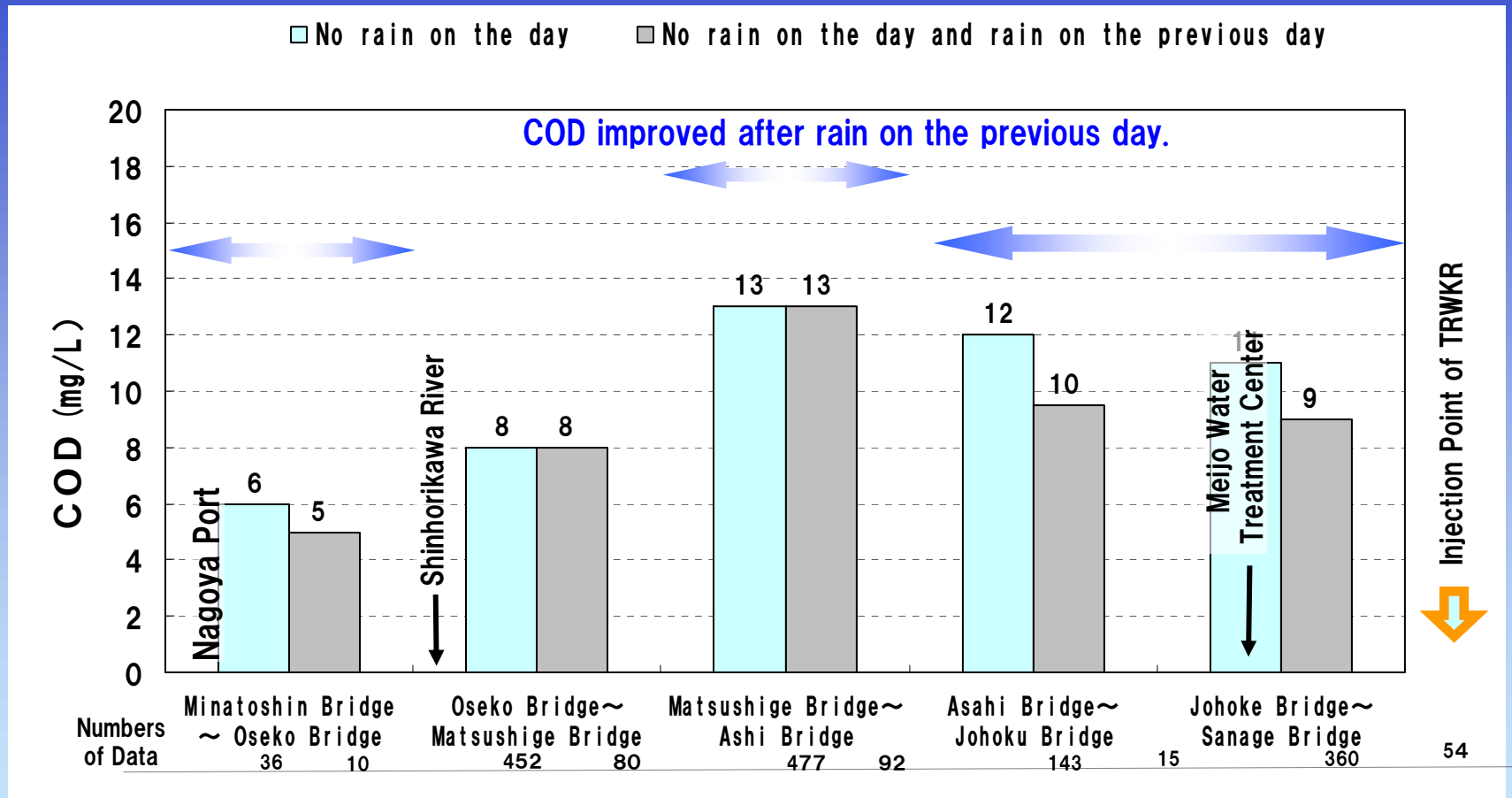
A remarkable improvement was found between Sanage Bridge and Johoku Bridge.

Note) The value of 20 mg/l and more was treated as 20mg/l

The average of COD after rain on the previous day.

Sanage Bridge～Minatoshin Bridge

- During 1st～10th stage
- No rain on the day



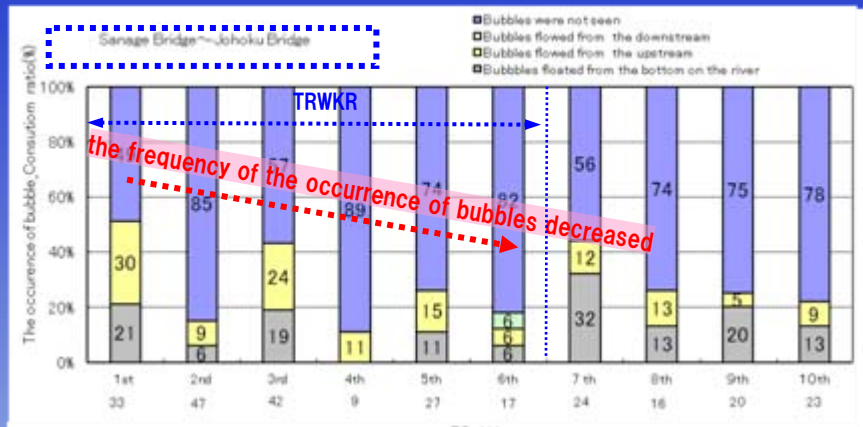
■ How did COD change when it rained on the previous day？

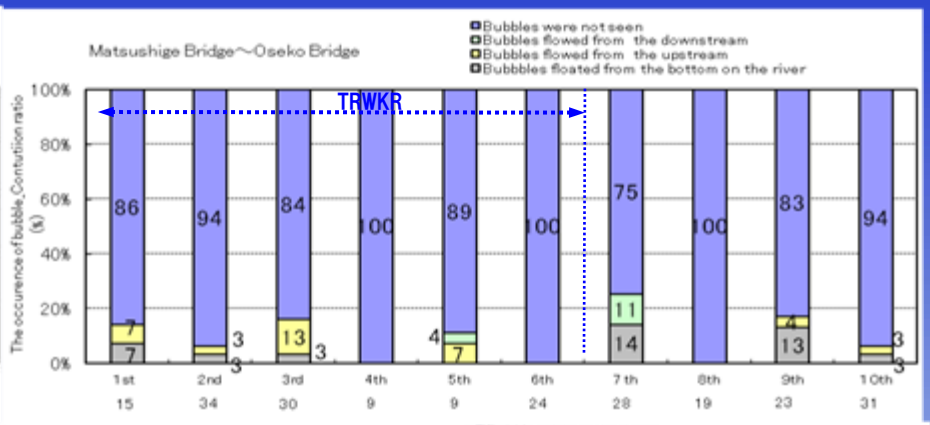
→After rain on the previous day, COD improved between Sanage Bridge and Asahi Bridge.

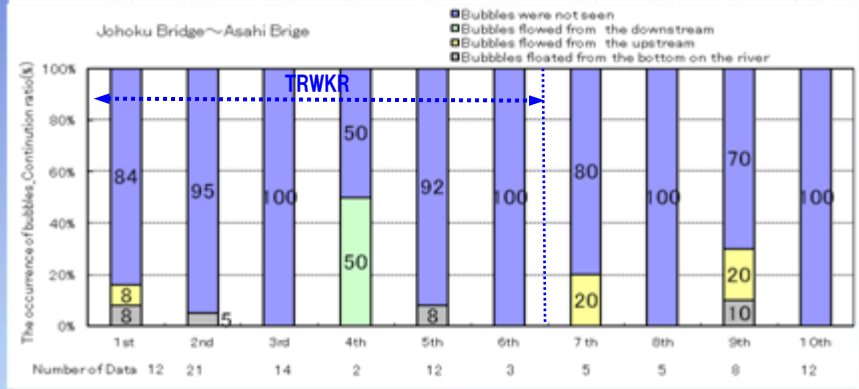
COD improved between Minatoshin Bridge and Oseko Bridge, too.

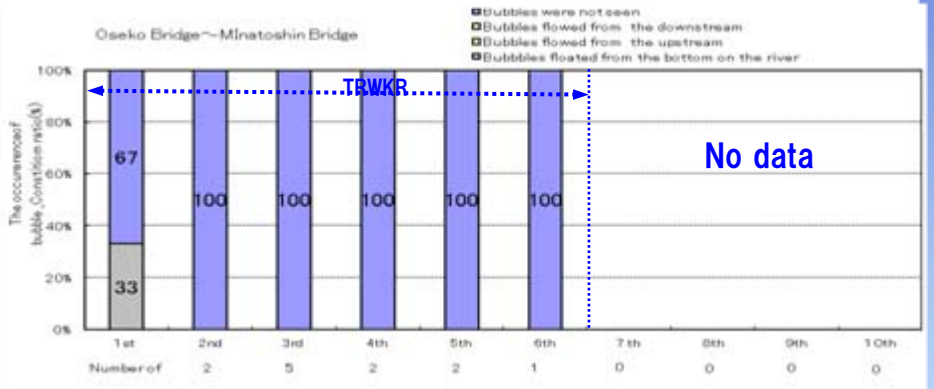
The occurrence of bubbles (Sanage Bridge～Minatoshin Brigde・each area)

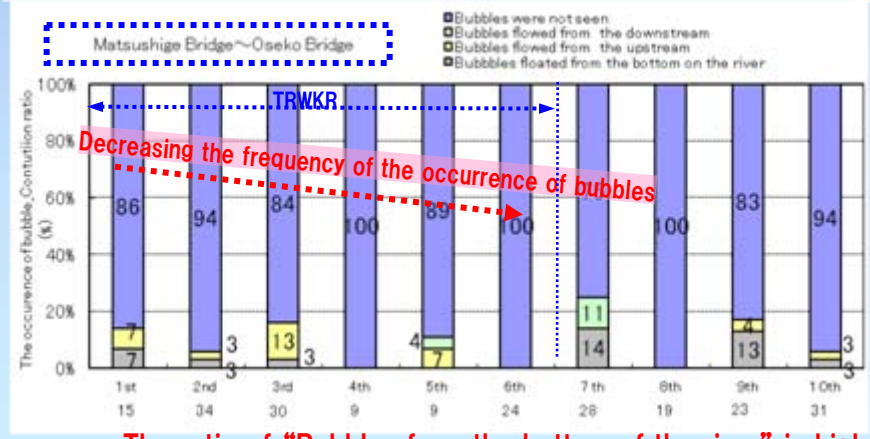
- 1st～6th stage: TRWKR
- 7th～10th stage: No TRWKR
- No rain on the day and the previous day











The ratio of “Bubbles from the bottom of the river” is higher.

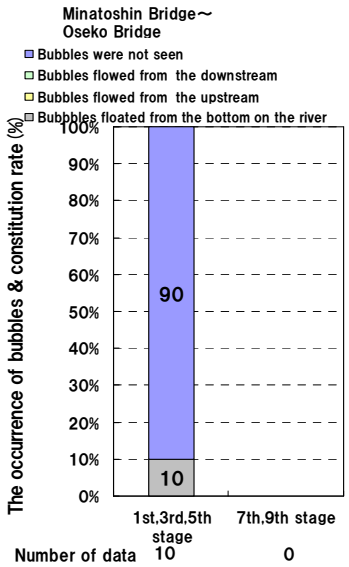
■ How did the bubbles change during TRWKR?
→The frequency of occurrence of bubbles decreased between Sanage Bridge and Johoku Bridge, Asahi Bridge and Matsushige Bridge during TRWKR.

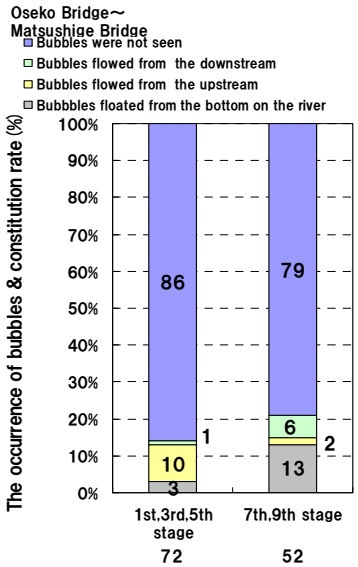
The occurrence of bubbles・・・Spring～Early Summer

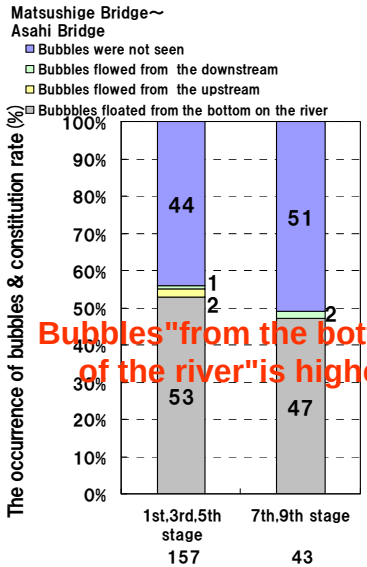
Comparison during and after TRWKR
(1st/3rd/5th Stage and 7th/9th Stage)

1st,3rd,5th Stage: TRWKR
No rain on the day and the previous day

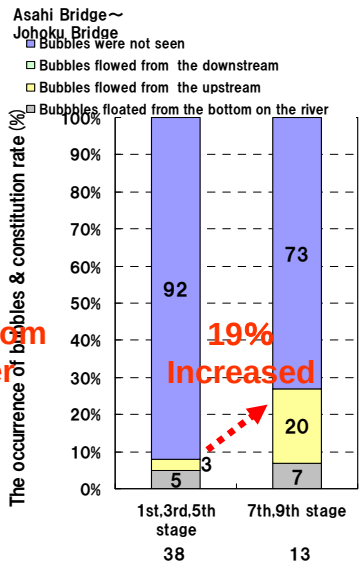
7th,9th Stage : No TRWKR
No rain on the day and the previous day



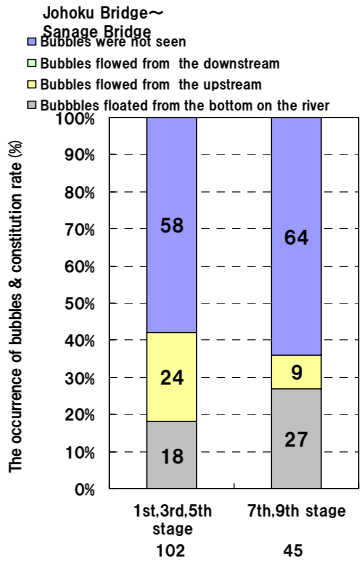




Bubbles"from the bottom of the river"is higher



19% Increased



The frequancy of bubbles increased remarkably, "between Johoku Bridge and Asahi Bridge".

■How did the bubbles change after TRWKR?
(spring～early summer)
→The frequency of occurrence of bubbles increased 19% between Johoku Bridge to Asahi Bridge after TRWKR.
The ratio of “bubbles from upstream” increaced.

■ How about bubbles?
(spring～early summer)
→The rate of "from the bottom of the river" is higher between Asahi Bridge and Matsushige Bridge.

The occurrence of bubbles･･･Autumn～Early Winter

Comparison during and after TRWKR
(2nd/4th/6th Stage and 8th/10th Stage)

2nd･4th･6th Stage：TRWKR
No rain on the day and the previous day

8th･10th Stage： No TRWKR
No rain on the day and the previous day

Minatoshin Bridge　Ohseko Bridge　Matsushige Bridge　Asahi Bridge　Johoku Bridge　Sanage Bridge

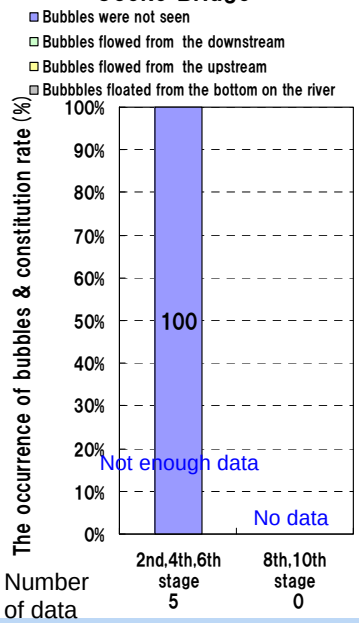
Confluence of Shin-Horikawa River

After TRWKR, the rate of the occurrence of bubbles did not change vey much

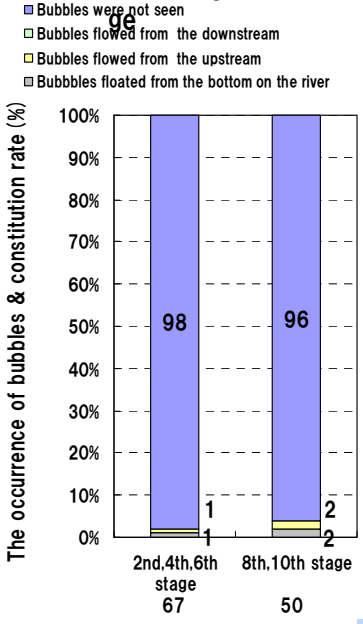
Meijo Water Treatment Center

TRWKR

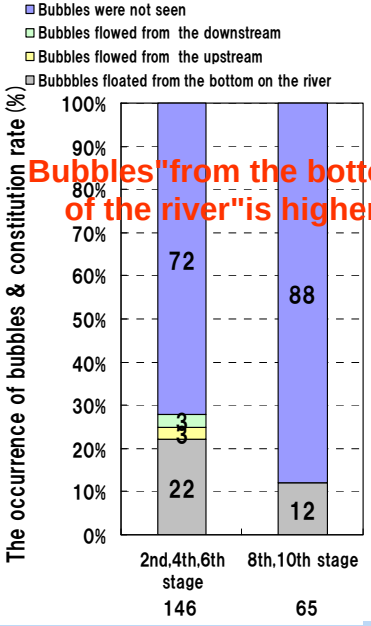
Minatoshin Bridge～ Oseko Bridge



Oseko Bridge～ Matsushige Brid ge

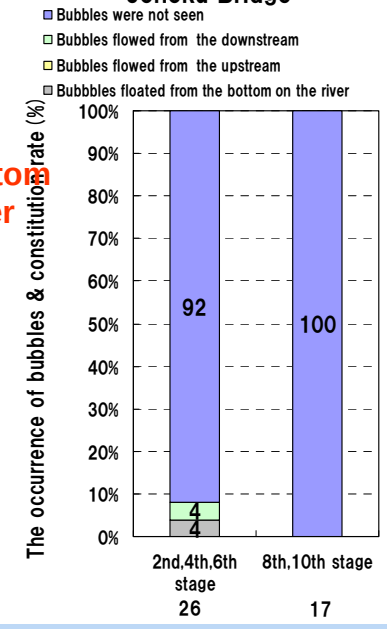


Matsushige Bridge～ Asahi Bridge

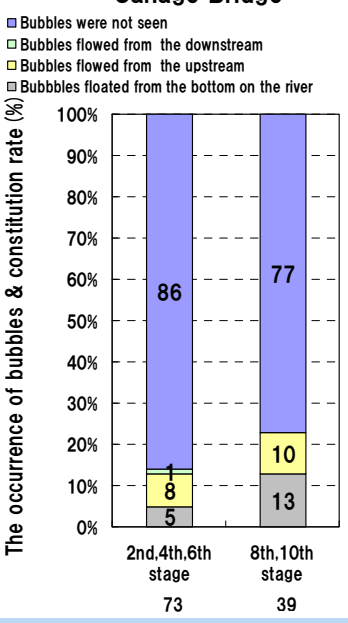


Bubbles"from the bottom of the river"is higher

Asahi Bridge～ Johoku Bridge



Johoku Bridge～ Sanage Bridge



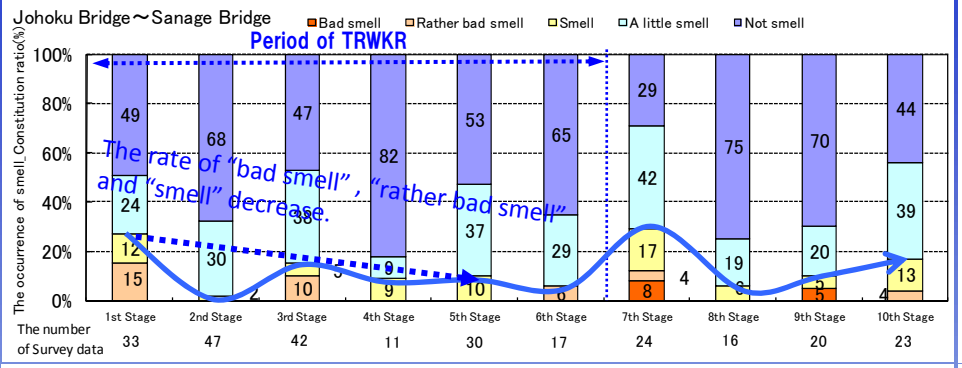
■ How did the bubbles change after TRWKR?
(autumn～early winter)
→There is no sections that the frequency of occurrence of bubbles changed.

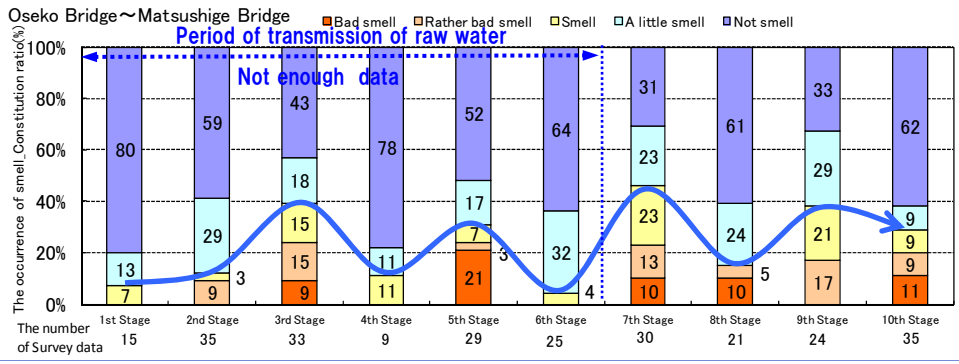
■How about bubbles (autumn～early winter)
→The rate of "from the bottom of the river" is slight higher between Asahi Bridge and Matsushige Bridge.

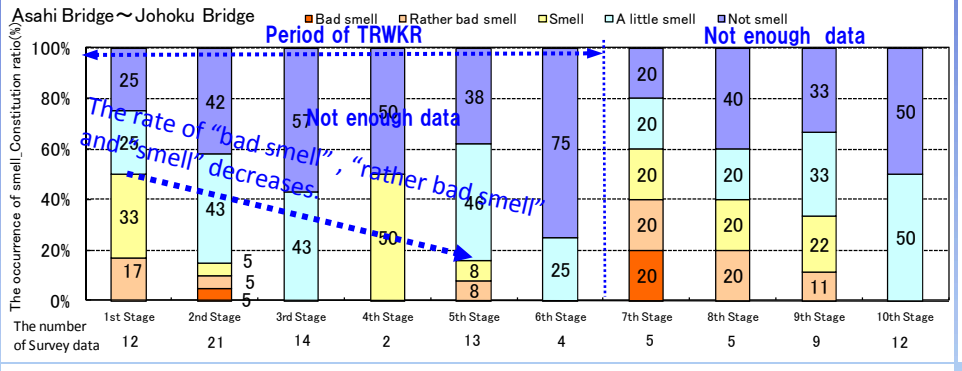
The occurrence of bubbles (Sanage Bridge～Minatoshin Brigde・each area)

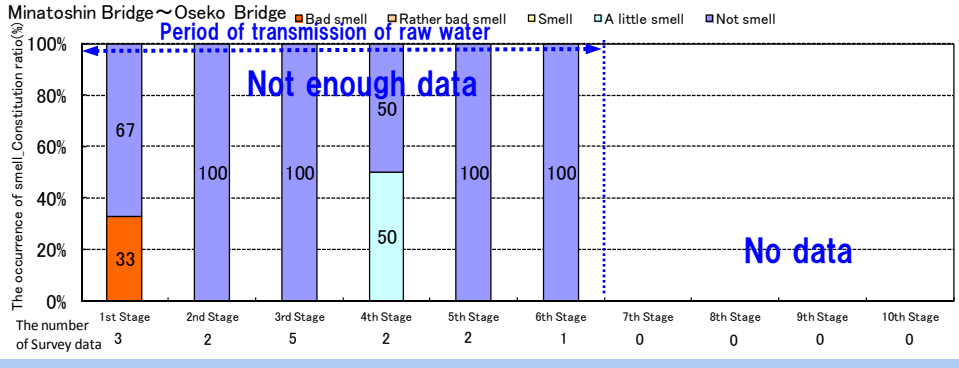
1st～6th Stage: TRWKR
No rain in the day and the previous day

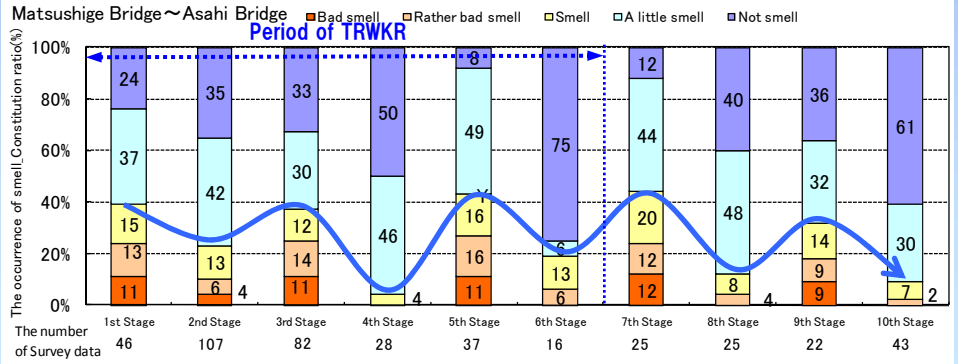
7th～9th Stage: TRWKR
No rain in the day and the previous day











■ How did the smell change during TRWKR? (Spring～Early summer)

→ "bad smell","rather bad smell" and "smell" decreased between Sanage Bridge and Johoku Bridge, between Asahi Bridge and Matsushige Bridge, during TRWKR.

The occurrence of smell･･･Spring～Early Summer

Comparison during and after TRWKR (1st/3rd/5th Stage and 7th/9th Stage)

1st,3rd,5th Stage: TRWKR
No rain in the day and the previous day

7th,9th Stage : TRWKR
No rain in the day and the previous day

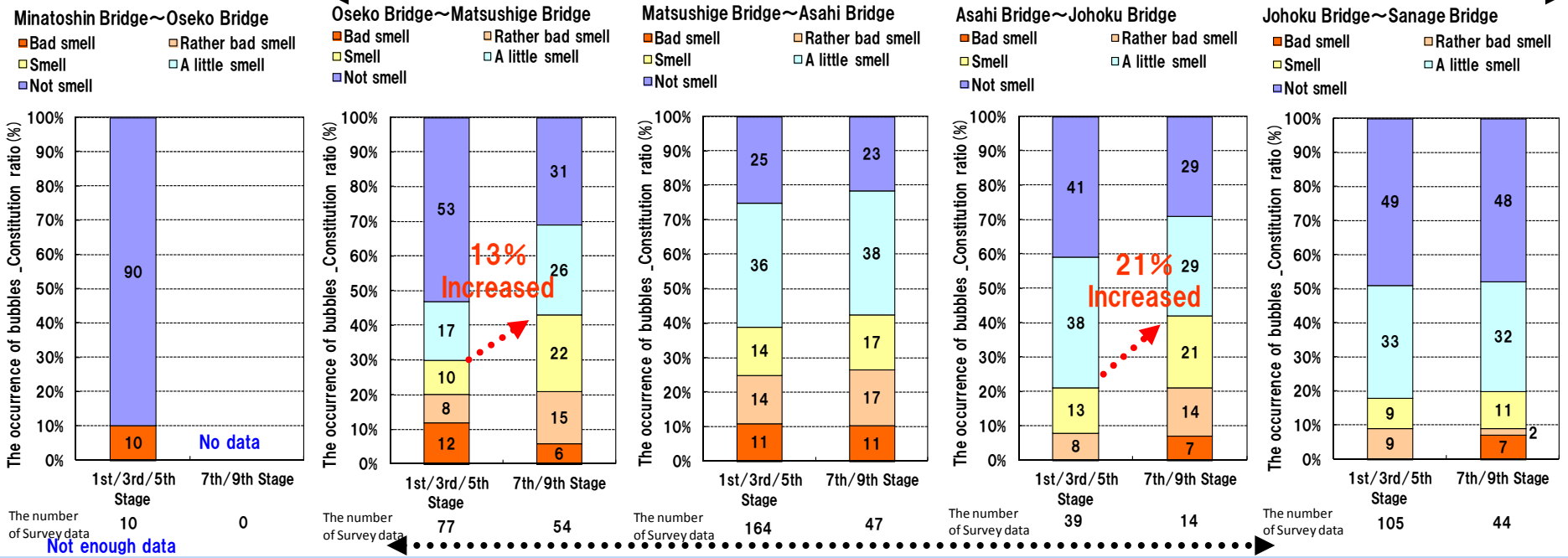
Minatoshin Bridge　Ohseko Bridge　Matsushige Bridge　Asahi Bridge　Johoku Bridge　Sanage Bridge

Confluence of Shin-Horikawa River

After TRWKR, the rate of the occurrence of smell was increased between Sanage Bridge and Oseko Bridge.

Meijo Water Treatment Center

TRWKR



The rate of "bad smell～smell" is high.

The rate of "bad smell～smell" increased notably, "between Johoku Bridge and Asahi Bridge" and "between Matsushige Bridge and Oseko Bridge".

■How did the smell change after TRWKR (spring～early summer)?
→The rate of "bad smell～smell" increased between Sanage Bridge and Oseko Bridge, after TRWKR. It has been confirmed that the smell had been improved by TRWKR. The area that tha rate of "bad smell～smell" increased notably, "between Johoku Bridge and Asahi Bridge" and "between Matsushige Bridge and Oseko Bridge".

■ How about smell ?
(spring～early summer)
→The rate of "bad smell～smell" is high between Johoku Bridge and Oseko Bridge.

The occurrence of smell・・・Autumn～Early Winter

Comparison during and after TRWKR (2nd/4th/6th Stage and 8th/10th Stage)

2nd・4th・6th Stage: TRWKR
No rain in the day and the previous day

8th・10th Stage: TRWKR
No rain in the day and the previous day

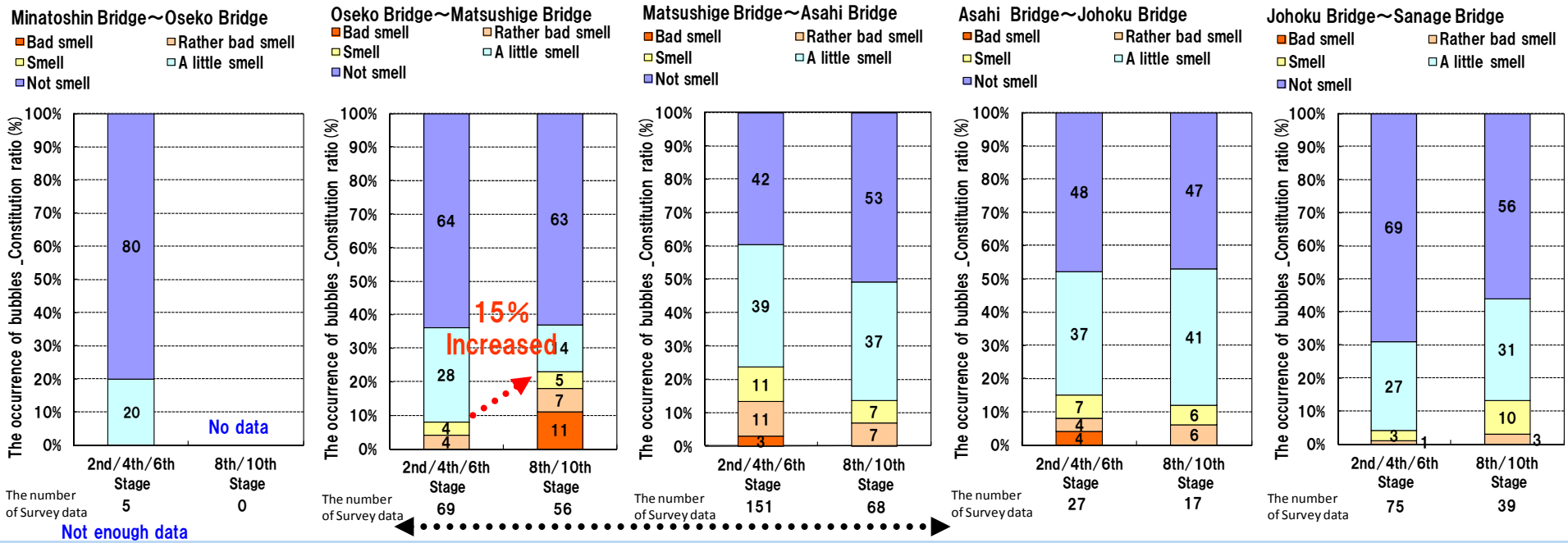
Minatoshin Bridge　Ohseko Bridge　Matsushige Bridge　Asahi Bridge　Johoku Bridge　Sanage Bridge

Confluence of Shin-Horikawa River

After the TRWKR, the rate of the occurrence of smell was increased "between Sanage Bridge and Johoku Bridge" and "between Matsushige Bridge and Oseko Bridge".

Meijo Water Treatment Center

TRWKR



The rate of "bad smell～smell" is high.

The rate of "bad smell～smell" increased notably, "between Matsushige Bridge and Oseko Bridge".

■ How did the smell change after TRWKR (autumn～early winter)?
→The rate of "bad smell～smell" was increased ,between Sanage Bridge and Johoku Bridge, Matsushige Bridge and Oseko Bridge, after TRWKR. It was confirmed that the smell had been improved by TRWKR. The area, that "bad smell～smell" had been notably increased after TRWKR, was between Matsushige Bridge and Oseko Bridge.

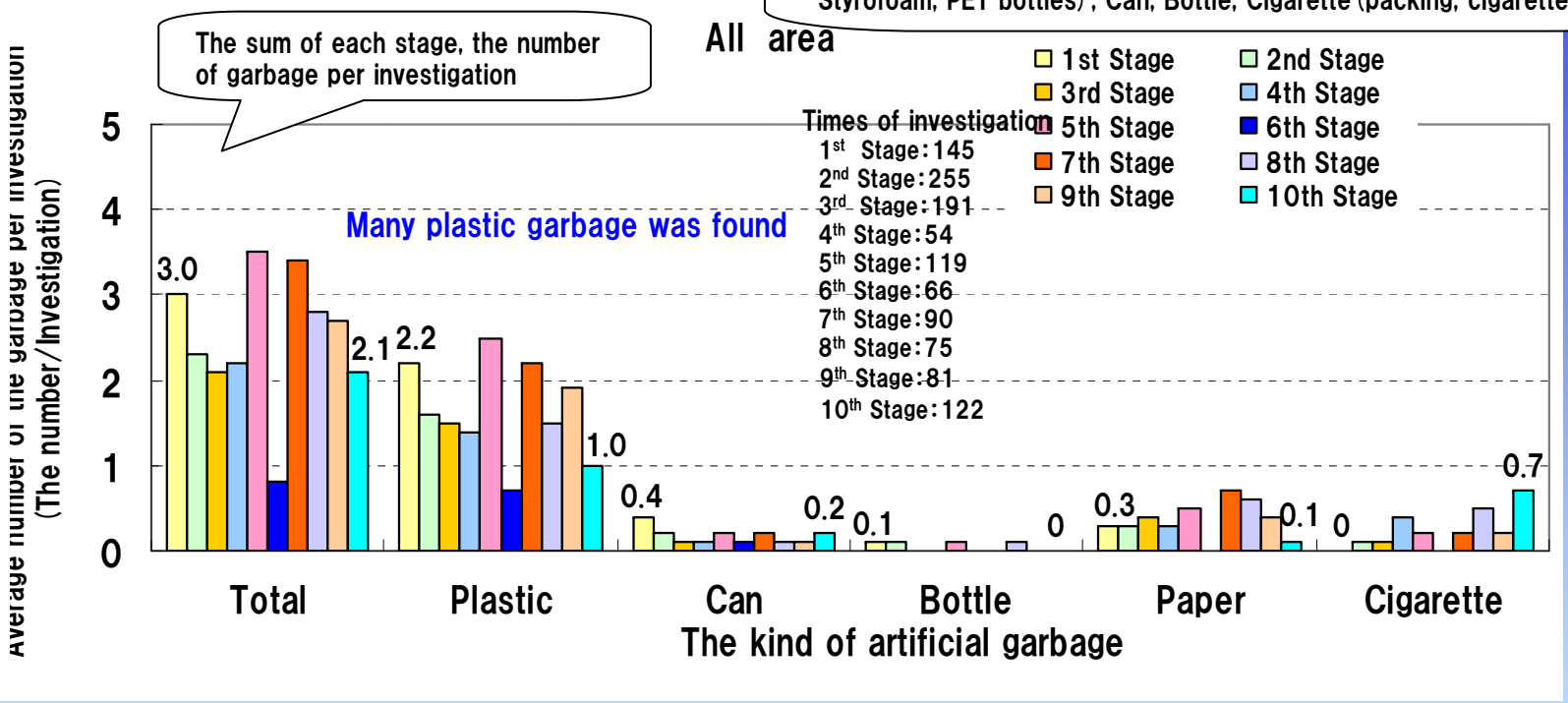
■How about the smell (fall～early winter)?
→The rate of "bad smell～smell" is high between Asahi Bridge and Oseko Bridge.

7. Garbage

1st～6th Stage: TRWKR
No rain in the day and the previous day
7th～9th Stage: TRWKR
No rain in the day and the previous day

- Suspended Substance
- Change in the number of suspended substance (artificial garbage)

■What's the artificial garbage?
Plastic (such as shopping bag, plastic bag, cup noodles container, Styrofoam, PET bottles), Can, Bottle, Cigarette (packing, cigarette butt)



注)Amount of garbage per survey= The number of garbage that was confirmed on the type of artificial/The number of survey
＊The number of artificial garbage is the number that was confirmed on the survey.
About what has been reported "many (= ＊＊＊)", was calculated by substituting the maximum number of 10 reported number of artificial garbage.

■What kind of garbage did we find in suspended substance?
→We found many plastic garbage.

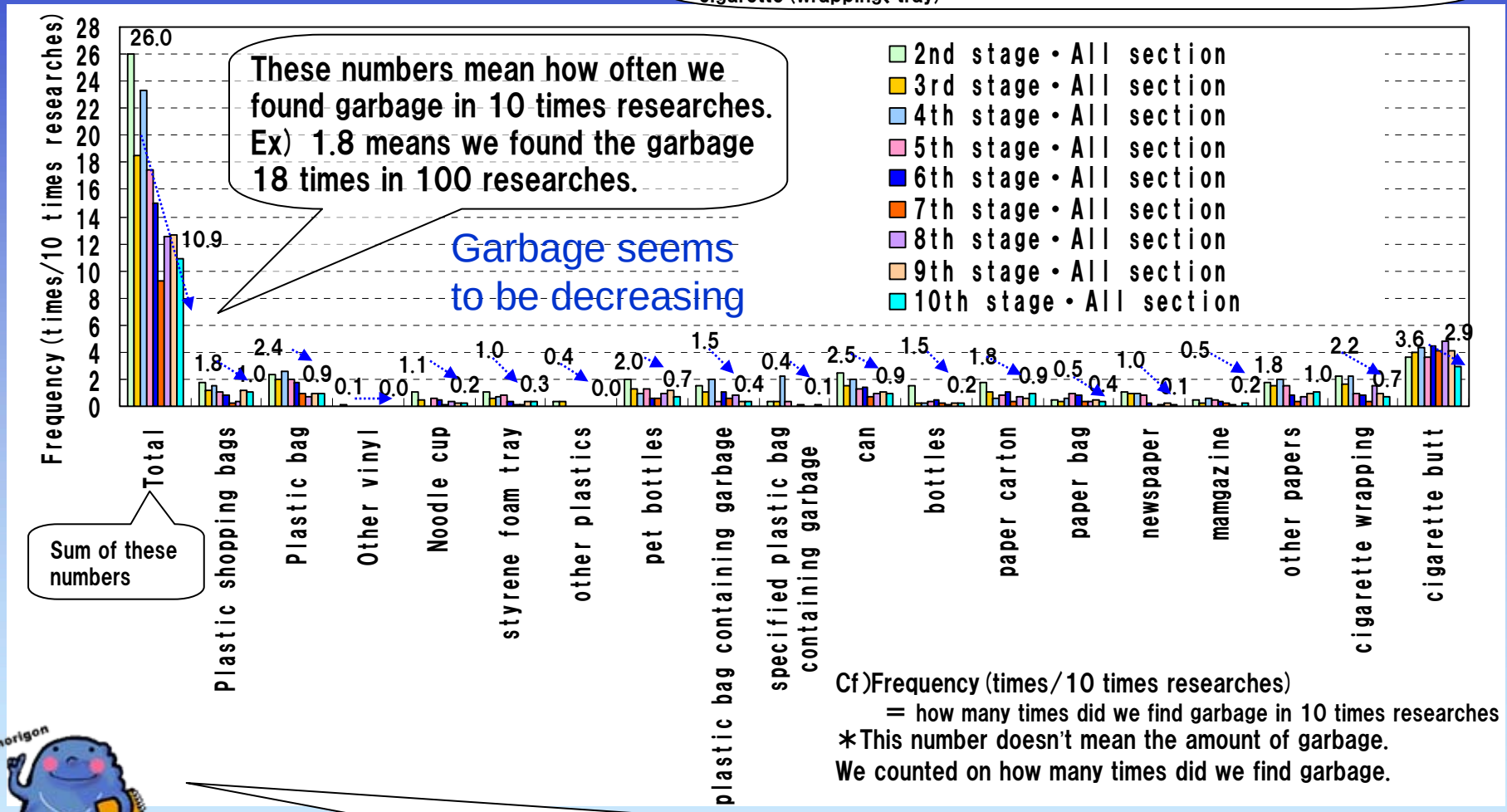
Garbage on the road

Change of frequency that artificial garbage were found

(2nd–10th stage,All sections)

From 1st to 6th stage : TRWKR
No rain on the day and the previous day
From 7th to 10th stage:No TRWKR
No rain on the day and the previous day

■What is artificial garbage? :Plastics (shopping bag、vinyl bag、noodle cap、Pofoam tray、PET bottle、shopping bag with garbage)、can、bottle、cigarette (wrapping、tray)



Cf)Frequency (times/10 times researches)
= how many times did we find garbage in 10 times researches
＊This number doesn't mean the amount of garbage.
We counted on how many times did we find garbage.

■How often does we find garbage around Horikawa river?
Garbage seems to be decreasing. Change of social environment such as charging for plastic shopping bags and vibrant Cleaning activity may affect. It is cigarette butt that we found most often in the research.

Living things around Horikawa river

①Fish (in the water)

Japanese trouts are caught on Nov 16th ,2009.
By Mr. Umemoto
(Krokawa Dream Party)
By Mr. Wada
(NPO Environment citizens)

Motoiri Sluiceway ～Sanage Bridg
Sanage Bridge ～Johoku Bri
Johoku Bridge ～Asahi Bridge
Asahi Bridge～ Matsushige pumping station
Matsushige pumping station ～Kameya Bridge
Kameya Bridge ～the mouth of Horikawa river

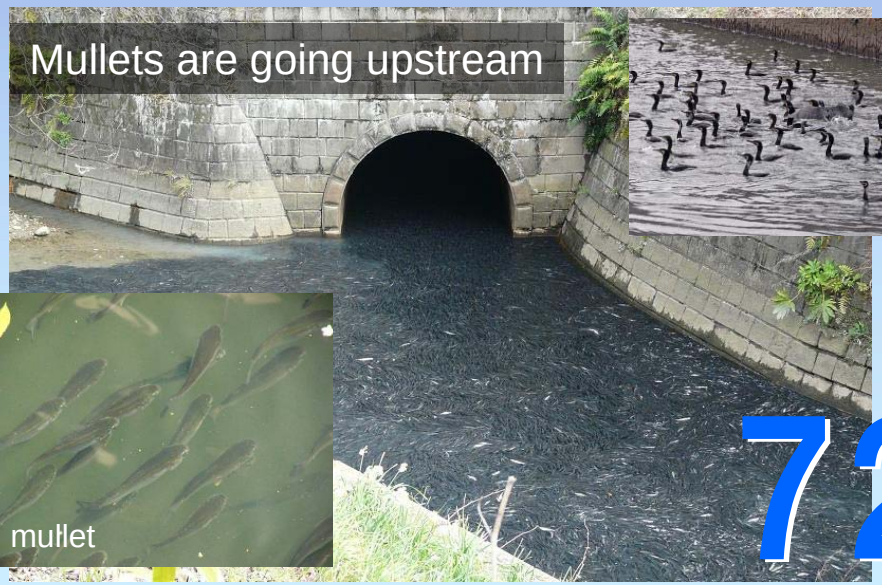
Japanese trought, stone moroko, etc.

Carp,gibel,Cat fish, Mosquitofish, Largemouth bass, Northern snakehead, etc.

Mullet, dotted gizzard shad, Perch, Goby, etc.

The width of river
Narrow
Wide
A tide
Salinity intrusion

Introduced species



Brackish water species

②Crabs and Shrimps
(at the waterside,in the water)


Shrimp


Japanese mitten crab and prawn caught between Motoiri Sluiceway and Sanage Bridge


Red swamp cray fish (introduced species)


At nayabashi bridge
Japanese mitten crab (Wandering species)


Black grapsoid crab
At nishikibashi bridge

Report:Goyousui-ato-gaien-aigokai Survey Group

Motoiri Sluiceway ～Sanage Bridge

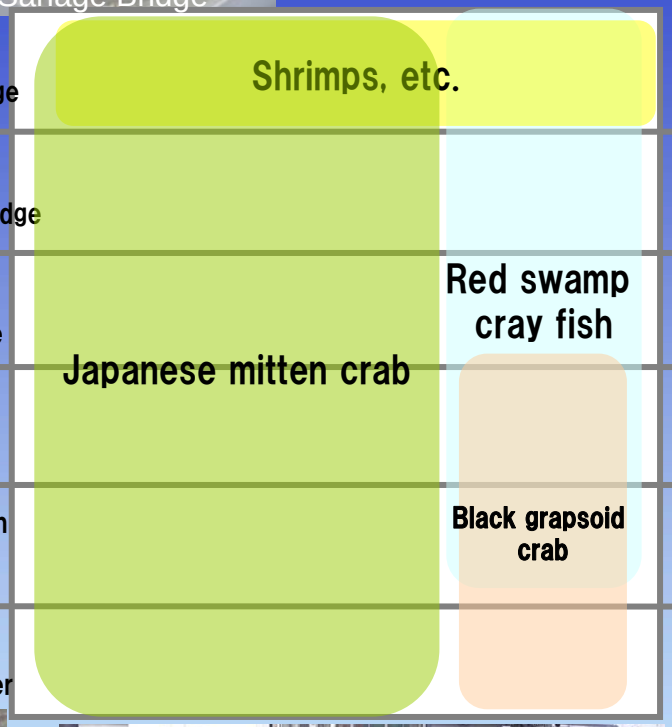
Sanage Bridge ～Johoku Bridge

Johoku Bridge ～Asahi Bridge

Asahi Bridge～ Matsushige pumping station

Matsushige pumping station ～Kameya Bridge

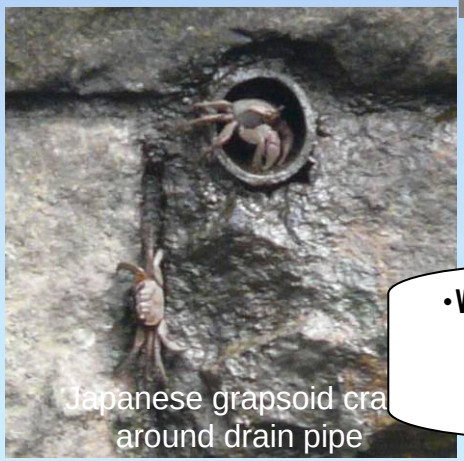
Kameya Bridge ～The mouth of river



The width of river narrow

A tide

Salinity Intrusion


Japanese grapsoid cra around drain pipe

Wide horigon

- We found
  wandering Japanese mitten crabs.
  shrimps between Motoiri Sluiceway and Sanage Bridge.
  black grapsoid crabs between Asahi Bridge and the estuary.

Bird(water's edge)

Width of river

narrow

tide

Salinity Intrusion

wide

Motoiri Sluiceway～Sanage Bridge	Little Egret Night Heron Great Egret Heron
Sanage Bridge～Johoku Bridge	
Johoku Bridge～Asahi Bridge	
Asahi Bridge～Shigematsu Pumping Station	
Shigematsu Pumping Station～Binya Bridge	
Kameya Bridge～Estuary	

During the winter ducks are spotted in Horikawa river. They migrate fron the continent to Horikawa river to winter. They go back to the continent when winter is over.

Width of river

narrow

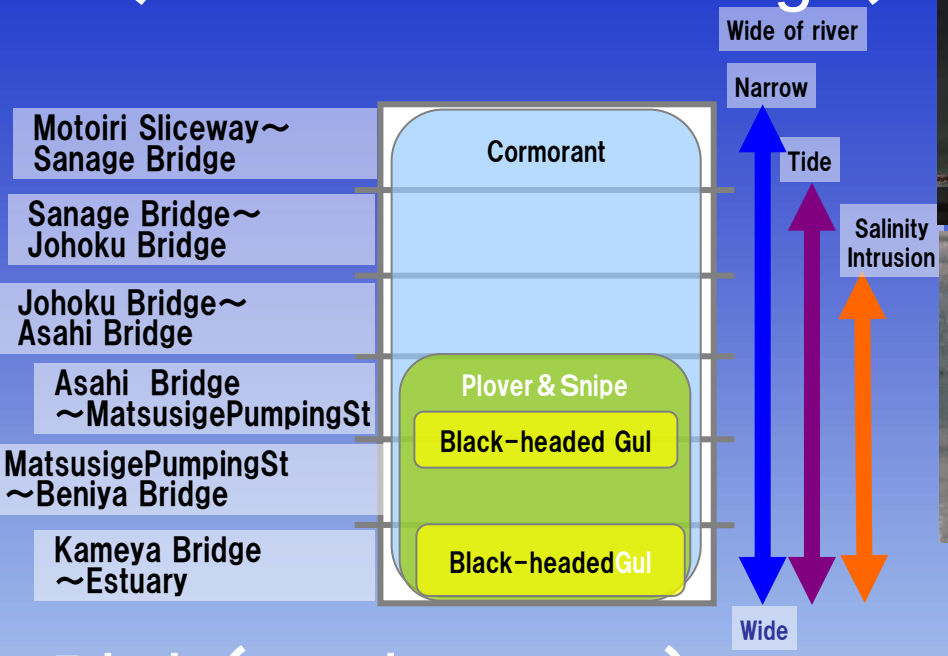
tide

Salinity Intrusion

wide

Motoiri Sluiceway～Sanage Bridge	Spot-billed Duck Green-winged Duck Mallard Duck Pintail Aythya Ferina Tufted Duck Little Grebe group Commom Moorhen group
Sanage Bridge～Johoku Bridge	
Johoku Bridge～Asahi Bridge	
Asahi Bridge～Shigematsu Pumping Station	
Shigematsu Pumping Station～Binya Bridge	
Kameya Bridge～Estuary	

Birds(on the Water's edge)



Horikawa river seems to be a path of the birds.

You can see birds eating the berries and insects in the waterside trees.

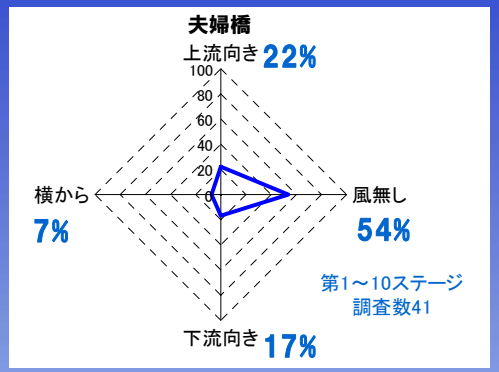
The line of trees along the water's edge is necesarry for them.

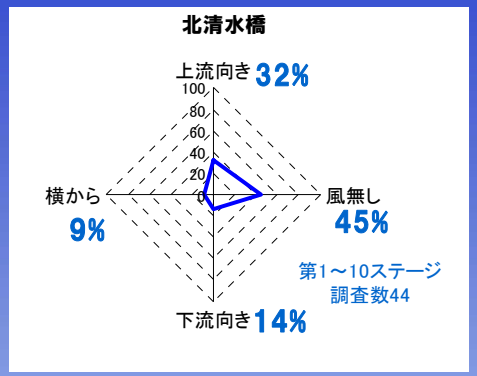
Birds(on the trees)

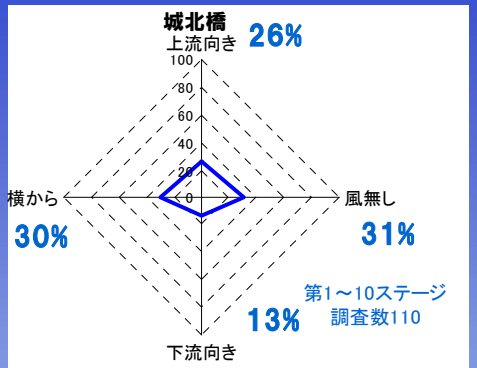
Direction of wind

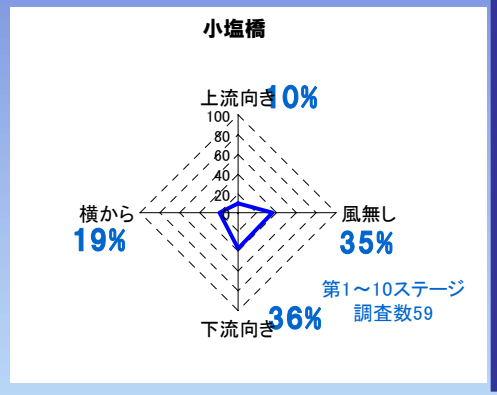
Wind for upstream

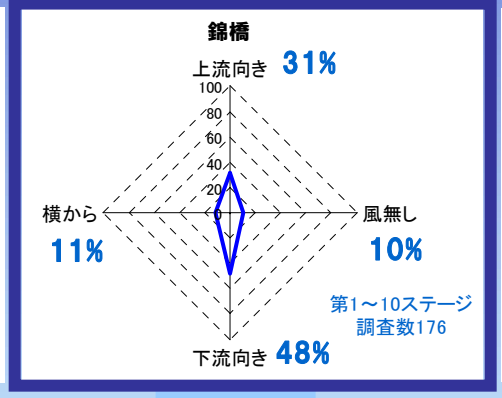
Wind from side

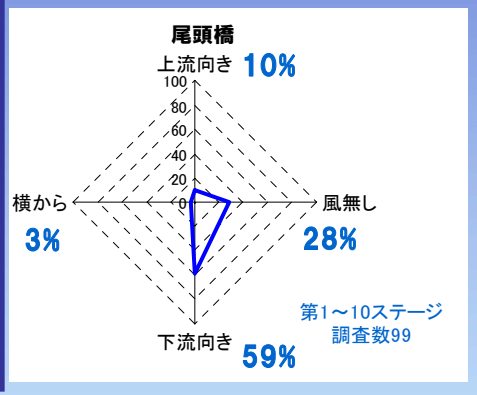












Wind for downstream

There are many directions of winds along Horikawa river.

■How about the direction of wind?
We were organized it using all dates on the 10th stage from first stage.
It seem that there are more winds along Horikawa river than crossing it.
About 80% of wind blows along Horikawa river around Nishiki Bridge.

10. Citizen Awareness & Learning Meeting ect

2011/09/10
9th Horikawa Sen-nin Chosatai
Reported by secretariat

Kurokawa Observation"Horikawa Oyako-Hureai Kansatukai"
Sponsored by Kurokawa Dream Party
Reported by Goyousui-ato-gaien-aigokai Survey Group

Horikawa biodiversity measures meeting
Reported secretariat


堀川の生態調査

上流4か所 詳細に

あす、市や住民団体

生き物の減少懸念

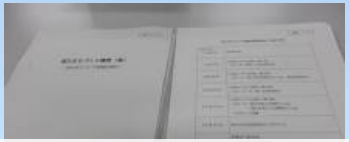
環境を守ろうと、名住民組織などで結成堀川生物多様性対策梅本隆弘会長）が堀大規模な生き物の詳初めて乗り出す。堀物が減少している恐ているため、17日区の堀川の4か所に設け、魚類や昆虫なを調べる。流部では、堀川を大気持ちを子どもに持おうと、住民組織「黒ム会」や北区役所な

3月までの計画で生態調査を進めようと、準備を進めてきた。

17日は、対策会議のメンバー約20人が北区の稚児宮人道橋や猿投橋の付近に定置網を設置。地元子供会の児童約20人も手伝って生き物の種類や大きさ、数などを調べる。同会議事務局の沢村寿さん（60）は、「堀川では、雑食性のコイや外来種の魚類の過剰繁殖で生態系のバランスが崩れた恐れがある。調査を通じ、生き物が豊かな堀川を守るにはどうしたらいいか考えた い」と話している。

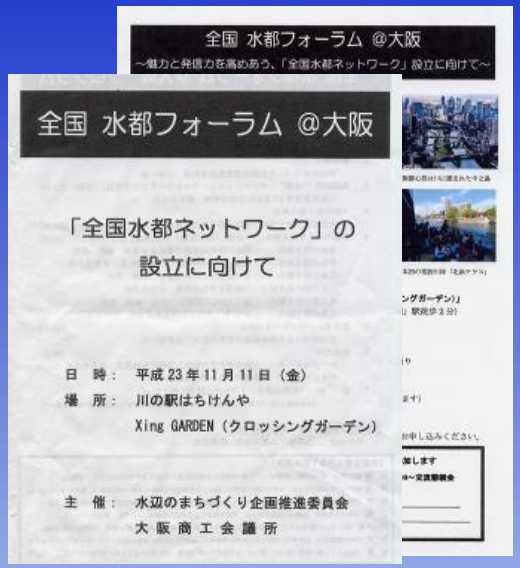
2011/12/16 by News paper

Horikawa Urban Development council
Executive committee
Nigiwai group
Reported secretariat



Horikawa Urban Development council
Executive committee
Reported secretariat

Progress of Citizen's Awareness –Study Meetings–

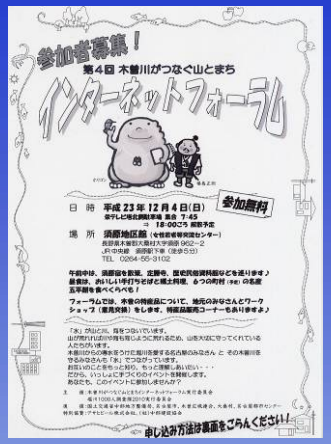


「Nationwide Water City Forum in Osaka」
Host: Chamber of Commerce and Industry of Osaka
Planning for Waterfront Promotion Committee
Report : secretariat

Horikawa River Cruise Experience
Marunouchi junior high school
Host : Nagoya Host Lions Club
Guide: Nagoya Horikawa Lions Club

On board
Host:Horikawa Sen-nin Chosatai
report:Secretariant
Cooperation:Nagoya Horikawa Lions Club
City of Nagoya (Housing and City Planning Bureau)
Nagoya Port Authority

Progress of citizen's awareness



The 4th internet forum of which the Kiso River connecting mountains and towns
Host: the executive committee of which the Kiso River connecting mountains and towns, the executive committee of HSC
Sponsors: the middle area development bureau of MLIT, Nagoya City, the Kiso extended association, the Okuwa Village, the Nagoya Urban Institute

The symposium of which application of the Horikawa River
Host: the executive committee of HSC, the executive committee of the Horikawa River water-magic festival, the Nagoya Urban Institute

Progress of citizen's awareness activity of study, cleaning etc.

Fixed point observation
The earth club survey group

Cleaning event of Horikawa River
Host: Clean Horikawa
Report: Goyousui-ato-gaien-aigokai Survey Group, the activation association of the Hirokoji central area, the executive committee of HSC

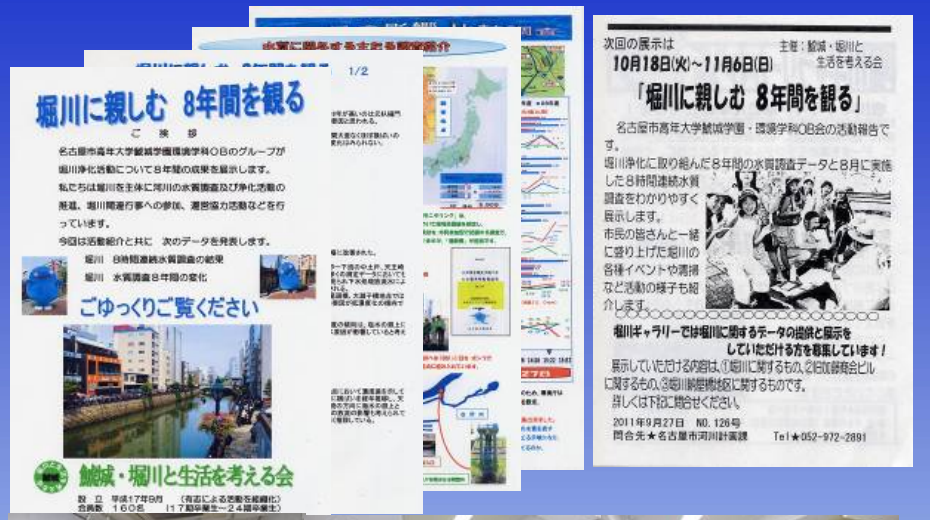
The cleaning activity of the Miya-no-watasi, Horikawa bank protection
Activity, report: the NPO Horikawa Town net

Cleaning activity of Goyousui-ato-gaien-aigokai Survey Group, children of the Iida elementary school
Report: Goyousui-ato-gaien-aigokai Survey Group

Cleaning activity and fixed point observation by Nakanihon Engineering Consultants, Kawasemi-Karugamo-Kamome group

Progress of citizen's awareness activity of study, cleaning etc.

Planting of tulip
Cooperation: life support canter Nanairo, children of neighborhood
Report: Goyousui-ato-gaien-aigokai Survey Group



Display of 8year study of the Horikawa River "getting familiar with the Horikawa River, record of 8year"
Kojo, Horikawa River and lifestyle thinking group
Report: executive committee of HSC

Panel display "trace the history of Horikawa River Water-magic festival"
Host: executive committee of the Horikawa Water-magic festival
Display: the Horikawa River gallery
Report: executive committee of HSC

Environmental patrole
Lead: Shonai River Office of MLIT
Participate & report: Kojo, Horikawa River and lifestyle thinking group

Progress of citizen's awareness activity of study, cleaning etc.

The Kankury clarification experimentation
Ena agricultural high school,
Horikawa lions club
Report: executive comm

Report of Kankury clarification experimentation
Report: Mr. Morimoto teacher of Ena agricultural high school

Living things, seen in the Kankury clarification experimentation
Report: Kawasemi survey groop

長野・王滝で下草刈りに汗
名古屋シニアLC

ススキやつる草を刈る名古屋シニアライオンズクラブの会員＝長野県王滝村で

人が六日、長野県王滝村の「こどもの森」近くの村有林で下草刈りをした。

木曽川の上下流交流の一環として、名古屋シニアライオンズクラブ（中区）の会員二十人が六日、長野県王滝村の「こどもの森」近くの村有林で下草刈りをした。

作業をしたのは、二〇〇七年に村と結んだ協定に基づきオオヤマザクラの植樹や手入れをしている「桜の園」。二千平方㍍のうち半分ほどを対象に、ススキやつる草を鎌で刈り取った。

桜井脩会長は「水源のために少しでも役立てばとの思いで活動している。桜の成長も楽しみ」と話していた。

クラブは五十歳以上の会員二十七人で組織。桜の園に二、三回訪れているほか、木曽川沿線の住民や自治体が王滝村で実施している森づくり活動にも参加している。

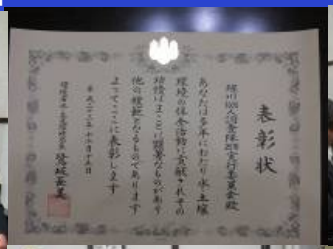
From the Chunichi paper Oct. 7th 2011

Activity aid by the Uny co. & the Kao co.
Grateful letter from Mr. Umemoto, Chief of executive committee
Report: executive committee of HSC

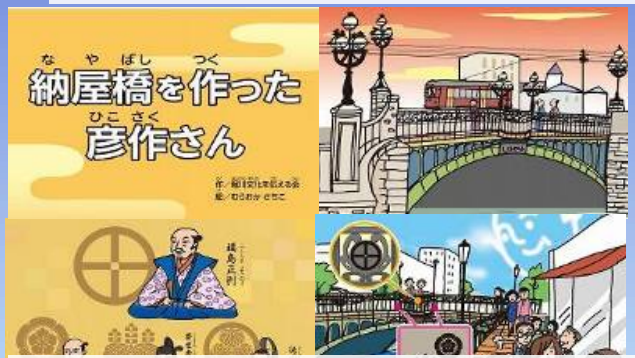
Cleaning activity of the Horikawa river
Horikawa EM club
Report: Goyousui-ato-gaien-aigokai Survey Group

Progress of Citizen's Awareness

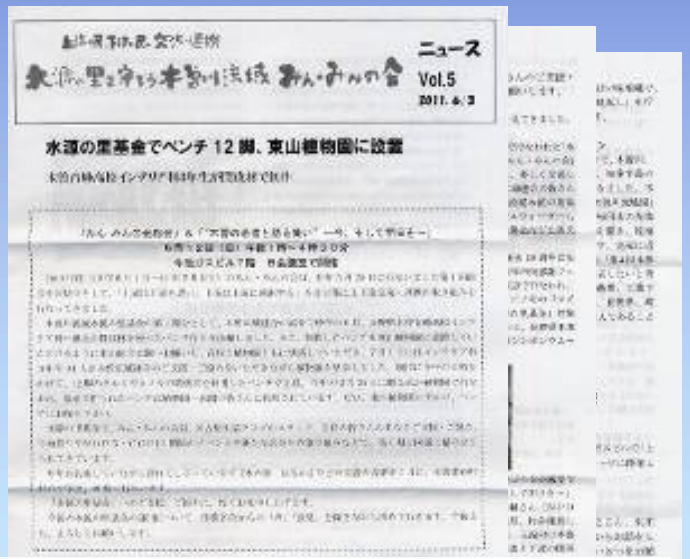
- Activities of "Free Survey Groups" and "Cheering Groups" -



Awarded the prize of the water and soil preservation activities by Director General of Environmental Management Bureau, Environment Ministry of Japan
Report：secretariat



Picture-Story Show「Hikosaku ,who constructed the Nayabashi Bridge」
Produced by "The party for passing on the culture of Horikawa"



「The upstream respects for the downstream, while the downsteam thanks the upstream」
Activity Report by the group "Kiso River Basin Min-Min no Kai for protecting river source area"

Chunichi Newspaper
Morning Edition :
Jan.24 2012

Yominuri Newspaper
Morning Edition : Dec. 24 2011

Progress of Citizen's Awareness - Events -

「商店街の輪」映画お待たせ

名古屋・円頓寺舞台「WAYA!」完成

来月22日から上映

17、18日ワークショップ

Chunichi Newspaper
Morning Edition :Sep. 14 2011

夢乗せ 堀川クルーズ

納屋橋と名古屋城 結び

8、15、22日に運航

フェス実行委企画「定期的な舟運 復活させたい」

Chunichi Newspaper
Morning Edition :Oct. 7 2011

ウォーターマジック フェスティバル

♪堀川♪水辺音楽祭

堀川水上バス

名古屋観光

堀川水上バス

乗船者募集中!

The 9th Horikawa Water Magic Festival
Host:Exective Committee of Horikawa Water Magic Festival
Paritcipation (booth) :Kojo-kai for the life with Horikawa
Report:secretariat

なやばし夜イチ1年

中村区の堀川沿い ビール祭りにぎわい

Chunichi Newspaper
Morning Edition :Sep. 24 2011

Environment Day Nagoya 2011 in which HSC run the booth
Report:secretariat

Progress of Citizen's Awareness –Events–

Nakagawa Canal Water Festival
Dragon Boat Race Competition
Host: Nakagawa Canal Water Festival Executive Committee
Cooperation: Japan Dragon Boat Association


市内の「東海龍舟」が優勝

ドラゴンボートレース 中川運河で13チーム

Chunichi Newspaper
Morning, Oct. 10th. 2011


水辺観光の将来性は?
七里の渡し実験クルーズ始まる

Chunichi Newspaper
Morning, Oct. 24th. 2011

「Language Exhibition of 2011 Citizens」
Host:Kotodama Neon Project
Report: Secretariant

Shichirinowatashi Cruise
NPO「Society for Preservation of
Gondola and Horikawa waterfront」
Cooperation: Nagoya Horikawa Lions Club

「Horikawa Sweets」
Nagoya Youth Chamber (JC)
Report: Secretariant