

# Horikawa Sen-nin Chosatai 2010

(Horikawa River Thousand-Citizen Survey Network 2010)

*Summary Meeting for the 9<sup>th</sup> Stage*  
*(April 1<sup>st</sup> ~ June 30<sup>th</sup> 2011)*



*Horikawa Sen-nin Chosatai 2010 Secretariat*

*Sep. 10<sup>th</sup> 2011*

# Horikawa River Pilot Project

~Transmission of raw water from Kiso River (TRWKR) ~

**1. Purpose:** To inspect the clarification effects by TRWKR with citizen's.

- (1) Develop a new clarifying policy
- (2) Catch effects on ecosystem
- (3) Sustain and enhance citizens activity
- (4) Progress of citizens awareness

**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 0.4 m<sup>3</sup>/s



**3. Pilot project period**

- (1) Evaluation and Survey term: about 5 years (From Apr. 2007 to Mar. 2012)  
(including term of account, survey after stopping TRWKR)
- (2) TRWKR period : about 3 years (From Apr. 22<sup>nd</sup> 2007 to Mar. 22<sup>nd</sup> 2010)



# Horikawa Sen-nin Chosatai (HSC) 2010

## ■ The formation of Horikawa Sen-nin Chosatai (HSC) (April 22<sup>nd</sup>, 2007)

With a viewpoint and a sense of citizens, the survey of clarification effect by TWRKR started.

The survey with a viewpoint and a sense of citizens

•clearness •transparency •color •bubble •smell •garbage •living things etc.

## ■ Fixed Point Observation Groups

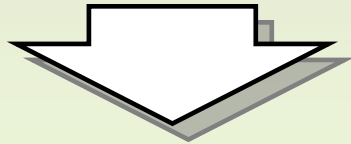
We are surveying the effect of pilot project about Horikawa River clarification.

## ■ Free Survey Groups

We are making studies of Horikawa River in any themes !

## ■ Horikawa Cheering Groups

We are supporting for Horikawa River clarification !



- ★ Confirm the effect of clarification
- ★ Sustain and enhance citizens activity
- ★ Progress of citizens awareness



# Number of Participants of Horikawa Sen-nin Chosatai 2010

Horikawa Sen-nin Chosatai started accepting participation on March 26<sup>th</sup> ,2007

	Apr. 22 <sup>nd</sup> 2007		Sep. 6 <sup>th</sup> 2011
Fixed Point Observation Groups	55Groups, 497Citizen	➡	90Groups, 900Citizens
Free Survey Groups	22Groups, 234Citizen	➡	38Groups, 639Citizens
Horikawa Cheering Groups	88Groups, 1,531Citizen	➡	2137Groups, 15,323citizens
Total	165Groups, 2,262Citizen	➡	2265Groups, 16,862Citizens



# Survey Period and the Number of Reports

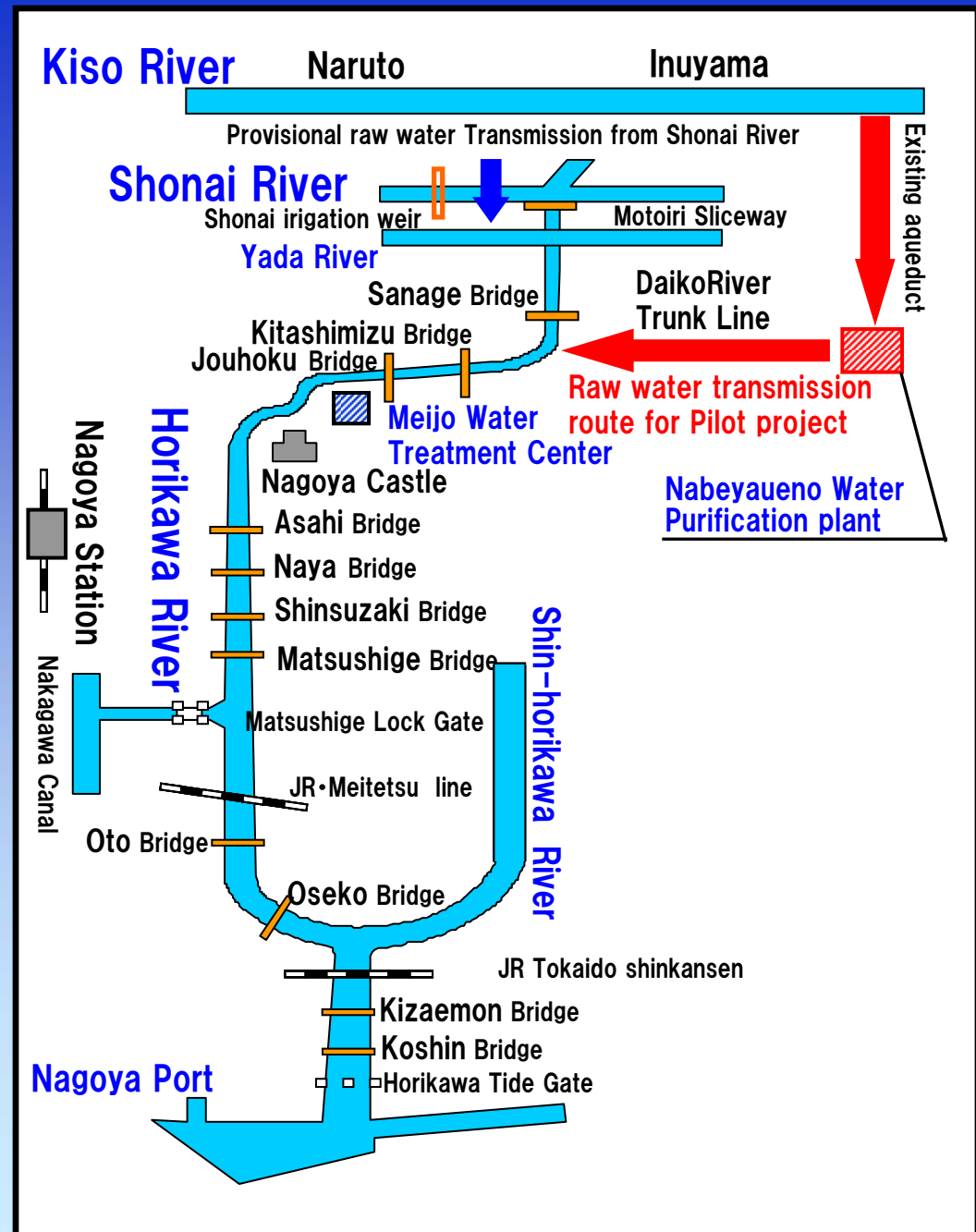


	Survey Period	Number
1st stage	Spring – Early summer / April 22nd to June 30th 2007	258
	July 1st to September 7th 2007	134
2nd stage	Autumn – Early winter / September 8th to December 16th 2007	383
	December 17th 2007 to March 31st 008	103
3rd stage	Spring – Early summer / April 1st to June 30th 2008	245
	July 1st to September 27th 2008	64
4th stage	Autumn – Early winter / September 28th to December 16th 2008	152
	December 17th 2008 to March 31st 2009	100
5th stage	Spring – Early summer / April 1st to June 30th 2009	145
	July 1st to September 26th 2009	54
6th stage	Autumn – Early winter / September 27th to December 16th 2009	120
	December 17th 2009 to March 31st 2010	81
7th stage	Spring – Early summer / April 1st to June 30th 2010	111
	July 1st to September 11th 2010	44
8th stage	Autumn – Early winter / September 12th to December 17th 2010	104
	December 18th 2010 to March 31st 2011	72
9th stage	Spring – Early summer / April 1st to June 30th 2011	112
Total		2282



# Transmission of Raw Water from Kiso River (TRWKR)

- TRWKR:  
0.4m<sup>3</sup>/s
- TRWKR period :  
From Apr.22<sup>nd</sup> 2007 to  
Mar.22<sup>nd</sup> 2010



# Transmission of Raw Water from Kiso River (TRWKR)



The View around the Inuyama Intake of Kiso River

Sanage Bridge



Daikou river trunk line



Injection point:

The downstream section below Sanage bridge on Horikawa River

# Results of TRWKR

Period: April 22<sup>nd</sup> 2007 ~ March 22<sup>nd</sup> 2010



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



Note) Days which a little raw water was transmitted are also counted in “Days of TRWKR”



# Experiment of increasing flow of raw water from Shonai River (extra experiment)

## 1. Water source and Volume of transmission of raw water

### (1) Water source

Shonai River : Shonai River system (1st grade river)

### (2) Volume of transmission of raw water

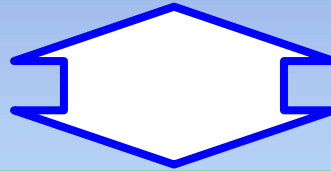
maximum 0.7 m<sup>3</sup>/s (Increasing flow volume 0.4 m<sup>3</sup>/s)



## 2. the term of increasing flow

(1) the term of experiment : Oct. 1<sup>st</sup> to Dec 31<sup>st</sup> 2010

(2) the term of increasing flow : Oct. 5<sup>th</sup> to Nov. 2<sup>nd</sup> 2010



## The 9<sup>th</sup> Stage

■ We investigated the water quality of Horikawa River without TRWKR in Spring and early Summer.

Jun. 30<sup>th</sup> to Apr. 1<sup>st</sup> 2011

# Increase of transmission of raw water from Shonai River

- Transmission of raw water from Shoai River :  
 $0.3\text{m}^3/\text{s} \rightarrow 0.7\text{m}^3/\text{s}$  (  $+0.4\text{m}^3/\text{s}$  )
- The term of increasing flow : Oct. 5<sup>th</sup> to Nov. 2<sup>nd</sup> 2010

## Result

Month	The number of days of increasing flow of raw water <sup>†</sup>
October	27 days
November	2 days
Total	29 days

<sup>†</sup>) Days are counted when the increase of transmission was measured.



# Summary of survey (after TRWKR to the 9<sup>th</sup> stage)

It was confirmed that

- The water quality tends to be improved during TRWKR (1<sup>st</sup> to 6<sup>th</sup> stage).
- The water quality tends to be deteriorated after the stop of TRWKR (7<sup>th</sup> to 9<sup>th</sup> stage) in some spans.
- The TRWKR effected to clarify of water quality.

The main measures of social experiment

Measures	2007			2008			2009			2010			2011		
	1st.		3st.		5st.		7st.		9st.						
		2st.		4st.		6st.		8st.							
TRWKR (0.4m <sup>3</sup> /s)															
Increase of raw water transmission from the Shonai River (+0.4m <sup>3</sup> /s)															
Introduction of advanced water treatment for the Meijo water treatment center															
Launch of the Horikawa Ugan Rain-water Reservoir for pollution controll															

# Summary of survey (after TRWKR to the 9<sup>th</sup> stage)

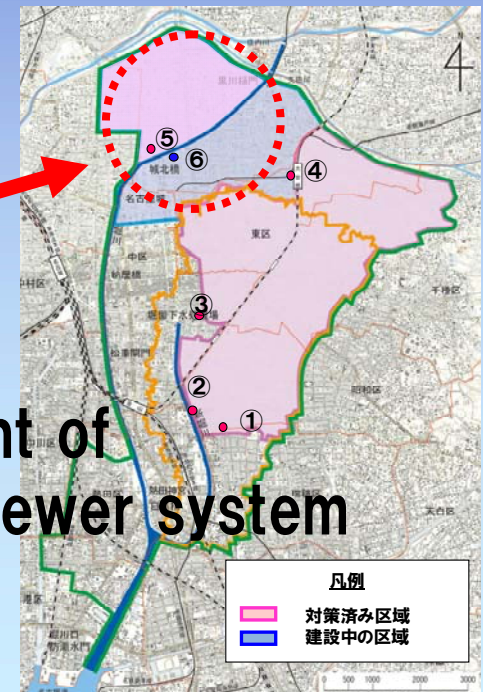
Launch of the advanced water treatment  
of the Meijo water treatment center  
May 2010



Launch of Horikawa Ugan Rain-water  
Reservoir for pollution control  
Sep. 2010



Improvement of  
combined sewer system





# Results of the 9<sup>th</sup> stage

- It was confirmed that the impression of water deteriorated compared to the term of the TRWKR.
- The number of span the impression of water deteriorated after the TRWKR was less than the 7th stage.
- Distinct deterioration on transparency, COD, babble, smell wasn't confirmed.
- The advanced water treatment of the Meijo water treatment center has launched since 2010.
- The Horikawa Ugan Rain-water Reservoir for pollution control has launched since 2010.
- The quality of raw water transmitted from the Syonai River has improved.

※Based on above measures, the deterioration of Horikawa River water may not be clear.



# Summary of survey

Item		Koshin Bridge ~Oseko Bridge	Oseko Bridge~ Matsushige Bridge	Matsushige Bridge ~Asahi Bridge	Asahi Bridge ~Johoku Bridge	Johoku Bridge ~Sanage Bridge	column
Impression of clearness	1st - 6th stage	-		○	○	○	May .2010 in service Meijo Water Treatment Center advanced water treatment
	Comparison of 7th stage with TRWKR period (spring ~ early summer)	-	●	●	-	●	
	Comparison of 8th stage with TRWKR period (autumn ~ early winter)	-		●	-		
	Comparison of 9th stage with TRWKR period (spring ~ early summer)	-		●	-		
Transparency	1st - 6th stage	-		○	-	○	Sep.,2010 in service Horikawa Ugan Rain-water Reservoir for pollution control
	Comparison of 7th stage with TRWKR period (spring ~ early summer)	-		●	-	●	
	Comparison of 8th stage with TRWKR period (autumn ~ early winter)	-	●	●	-	●	
	Comparison of 9th stage with TRWKR period (spring ~ early summer)	-			-		
COD	1st - 6th stage	-		○	○	○	
	Comparison of 7th stage with TRWKR period (spring ~ early summer)	-			-	●	
	Comparison of 8th stage with TRWKR period (autumn ~ early winter)	-		●	-	●	
	Comparison of 9th stage with TRWKR period (spring ~ early summer)	-			-		
Bubble	1st - 6th stage	-		○		○	
	Comparison of 7th stage with TRWKR period (spring ~ early summer)	-	●		-	●	
	Comparison of 8th stage with TRWKR period (autumn ~ early winter)	-		●	-	●	
	Comparison of 9th stage with TRWKR period (spring ~ early summer)	-			-		
Smell	1st - 6th stage	-			○	○	
	Comparison of 7th stage with TRWKR period (spring ~ early summer)	-	●		-	●	
	Comparison of 8th stage with TRWKR period (autumn ~ early winter)	-	●		-		
	Comparison of 9th stage with TRWKR period (spring ~ early summer)	-			-		

Note)・1<sup>st</sup> - 6<sup>th</sup> stage : TRWKR ・7<sup>th</sup> - 9<sup>th</sup> stage : No TRWKR

○:improvement areas during TRWKR ●:worse than the data during TRWKR - :note compared because the number of data is small (less than 9)

- It was confirmed that the water quality tends to be improved during TRWKR between Sanage Bridge and Matsushige Bridge.
- It was confirmed that the water quality tends to be deteriorated after the stop of TRWKR between Sanage Bridge and Johoku Bridge, and between Asahi Bridge and Matsushige Bridge.
- In this result, TRWKR was considered to have made good effects between Sanage Bridge and Matsushige Bridge.



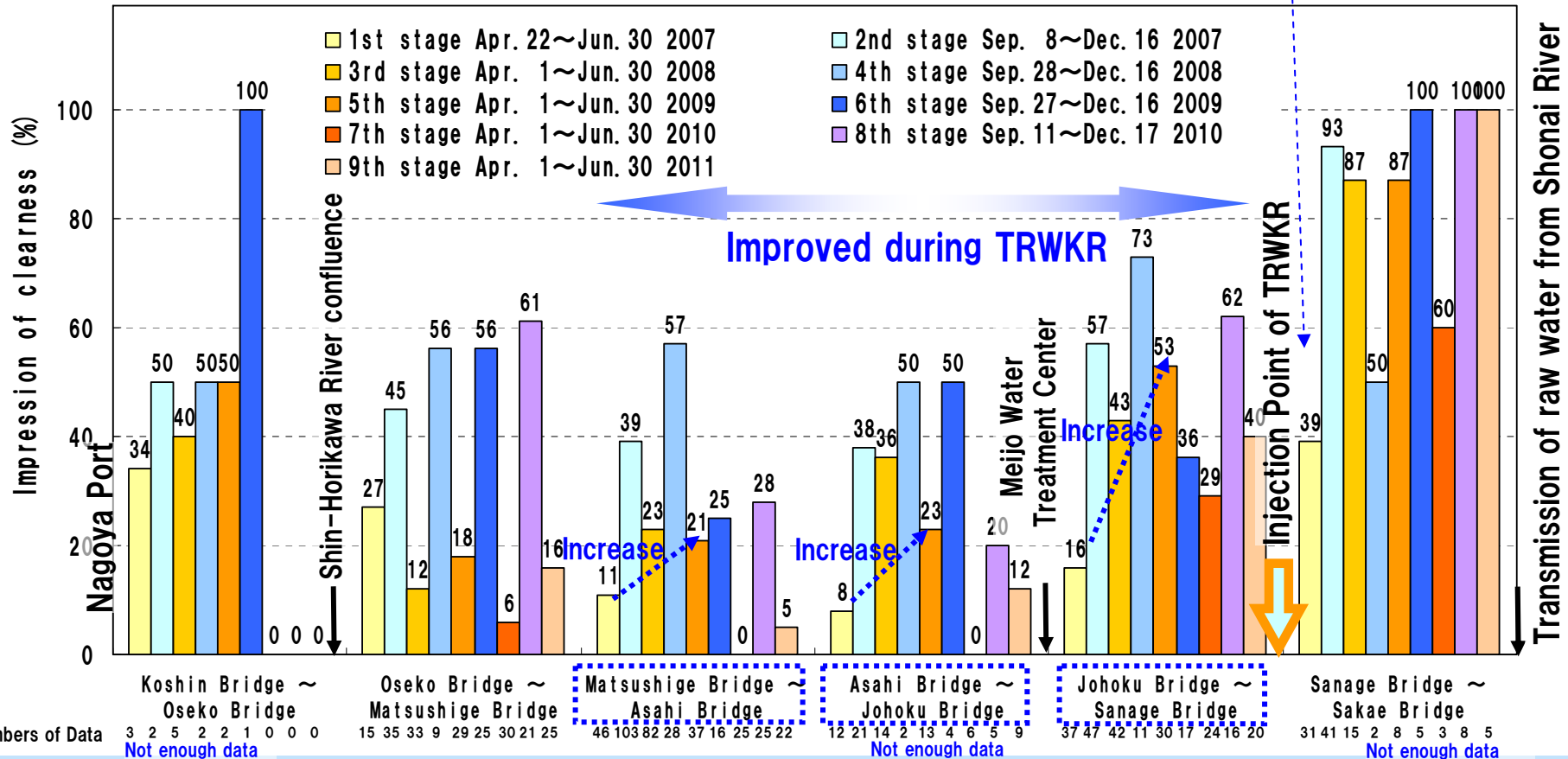
# Impression of Clearness

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

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

\*) % ; “comfortable” + “a little comfortable” + “neither”.

25 investigation of 31 were executed on June 27 at Kizune Bridge.



■ How did the impression of clearness (“from spring to early summer”) change during TRWKR ?

→ The ratio of “comfortable”, “a little comfortable” and “neither” increased with TRWKR.

It was confirmed that the ratio of “comfortable”, “a little comfortable” and “neither” tends to increase during TRWKR between Sanage Bridge and Matsushige Bridge.

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

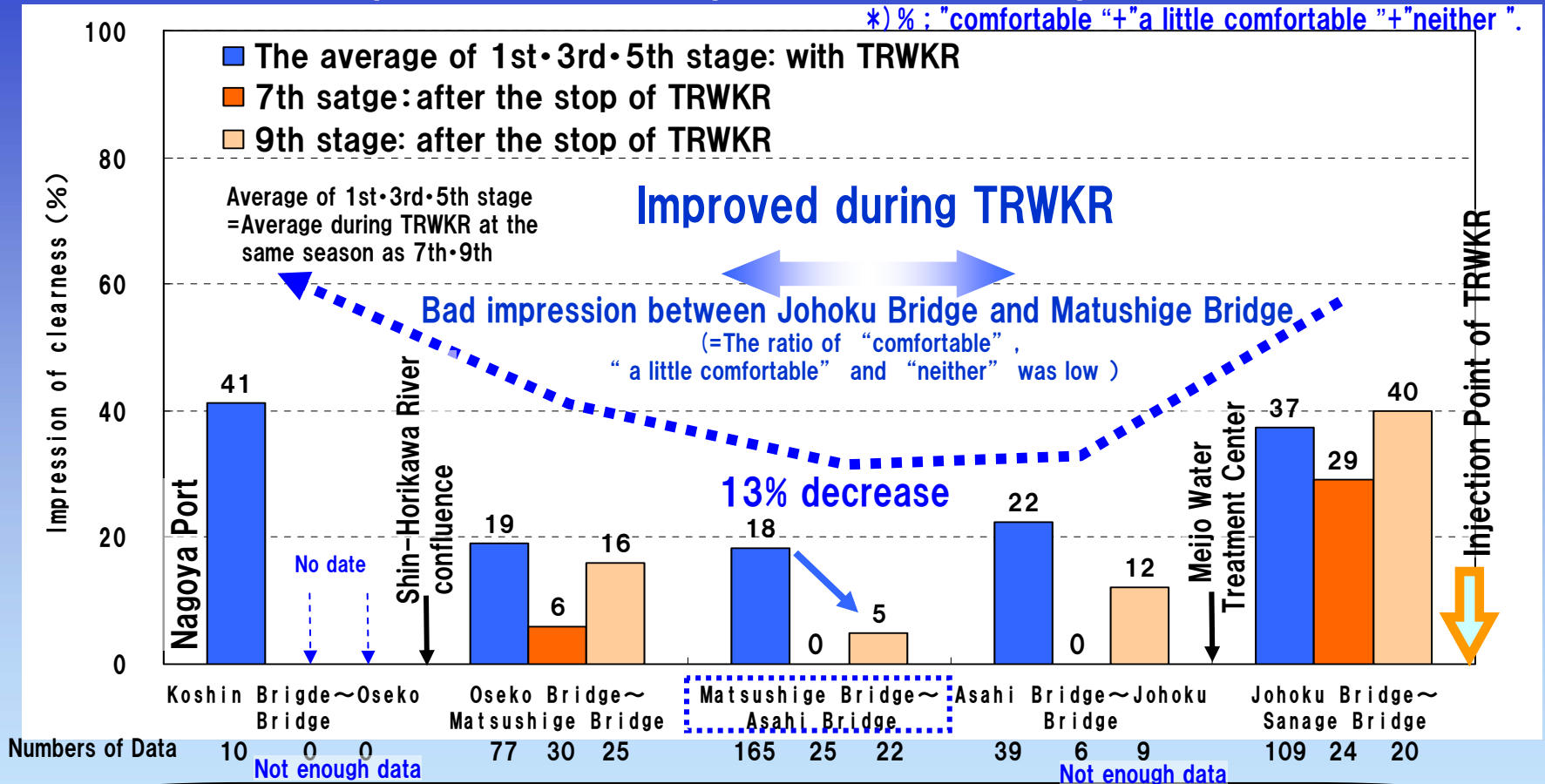


# Impression of Clearness

The ratio of "comfortable", "a little comfortable" and "neither".\*\*

Comparison of TRWKR period and after stop of TRWKR

- 1st – 6th 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 ?

- The ratio of "comfortable", "a little comfortable" and "neither" was reduced between Matsushige Bridge and Asahi Bridge.
    - In this result, it was confirmed that the impression of clearness was improved during TRWKR.
  - The ratio of "comfortable", "a little comfortable" and "neither" between Matsushige Bridge and Johoku Bridge was low.
    - It is considered that the impression of clearness between Matsushige Bridge and Johoku Bridge is not good.
- \*\* "comfortable", "a little comfortable" and "neither" are categorized as the acceptable range for citizens

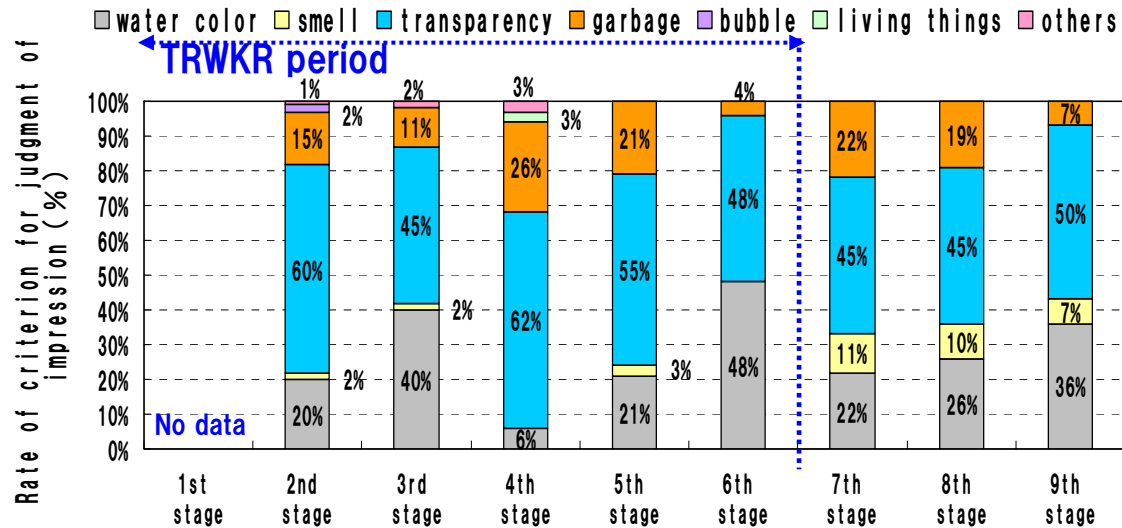




# Impression of Clearness (from Sanage Bridge to Koshin Bridge)

## Criterion for Judgment of "comfortable", "a little comfortable", "neither".

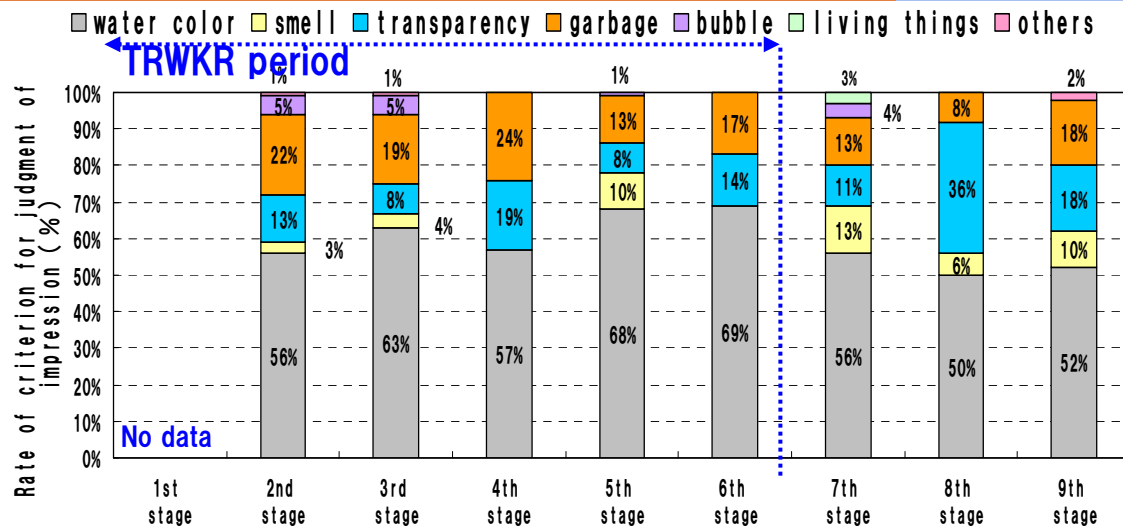
- 1st stage : No data
- 2nd - 6th stage: TRWKR
- 7th - 9th stage: No TRWKR
- No rain on the day and the previous day



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



## Criterion for Judgment of "a little Dirty", "Dirty"

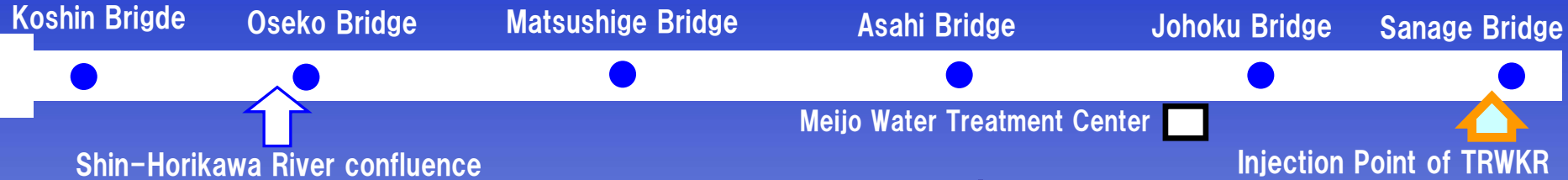


■ The reply of "Water color" was over 50%.



# Impression of Clearness (from Sanage Bridge to Koshin Bridge)

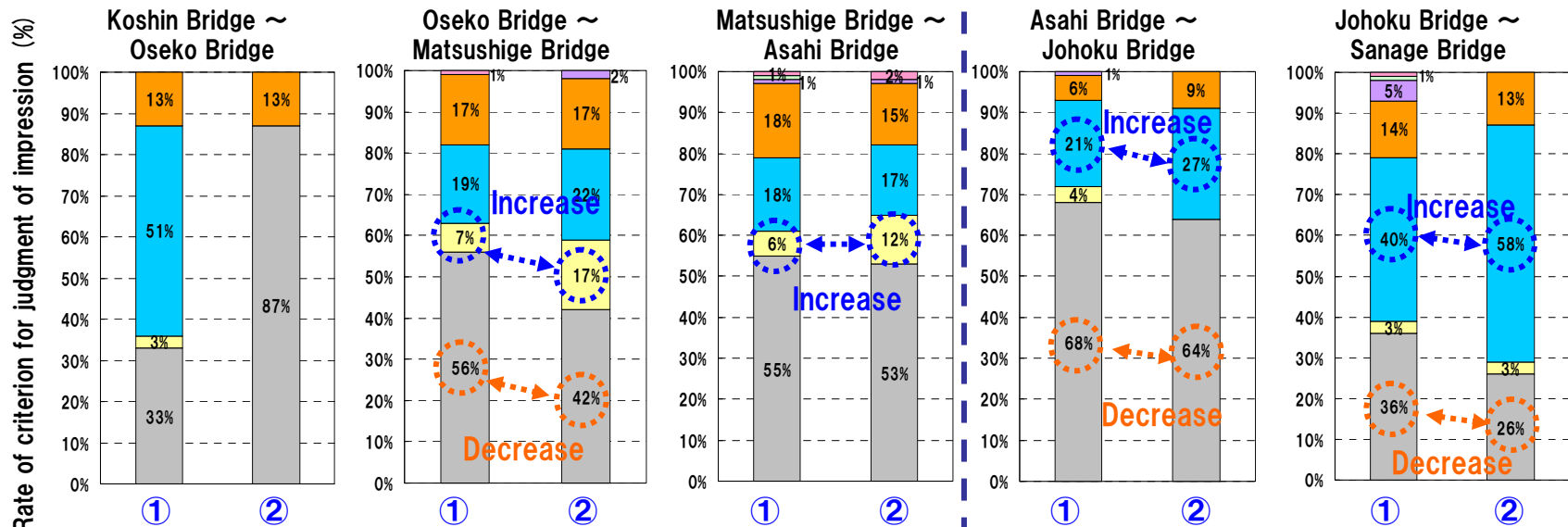
2nd – 9th stage containing the extended period with TRWKR / no TRWKR



“Smell” increased,  
“Water color” decreased



“Transparency” increased,  
“Water color” decreased

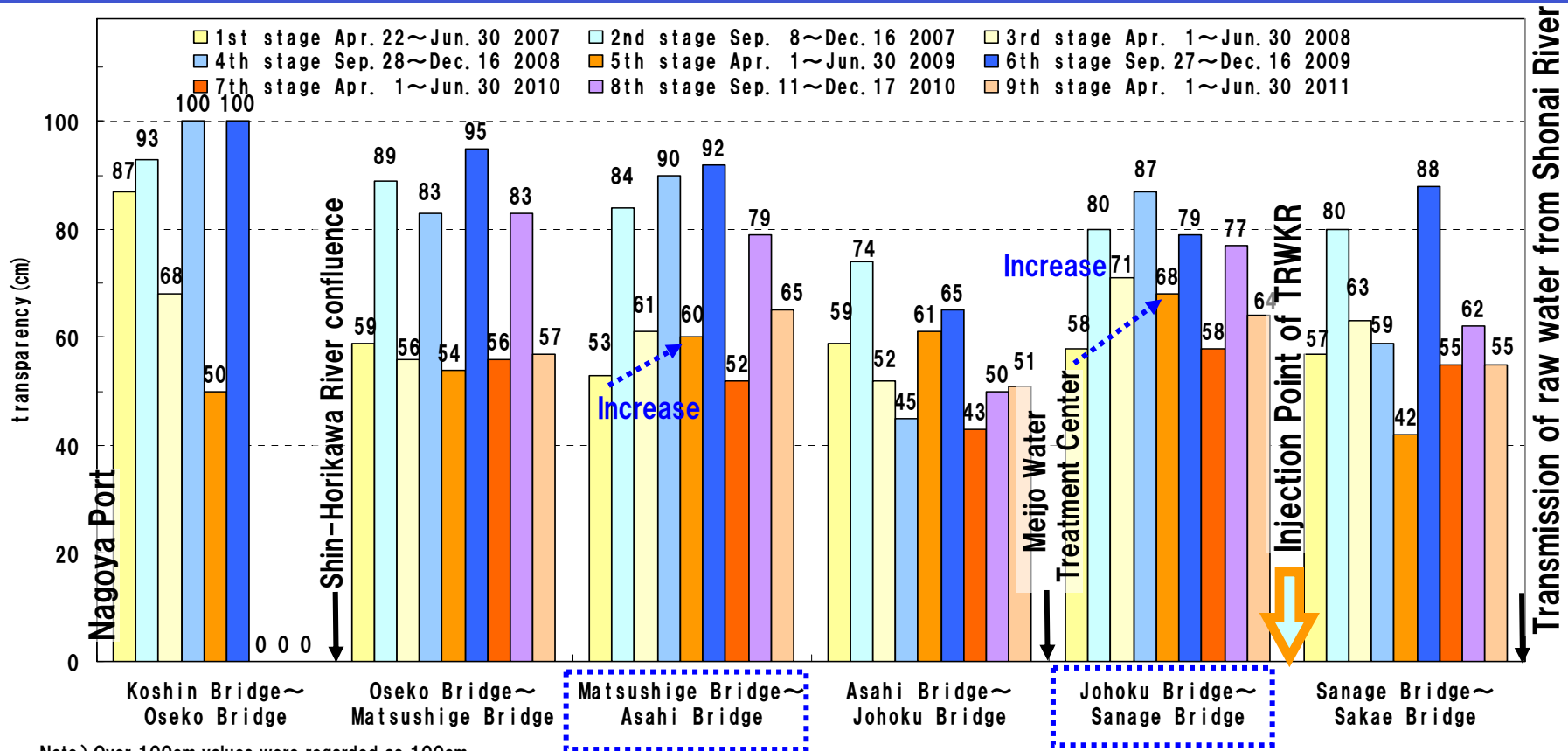


■ In case of rain on the previous day, how impression of clearness has changed?

- Between Sanage Bridge and Asahi Bridge, the evaluation of “Transparency” increased and “Water color” decreased.
- Between Asahi Bridge and Oseko Bridge, “Smell” increased and “Water color” decreased.

# Transparency average value in each section

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



Transparency improved during TRWKR

Transparency improved during TRWKR

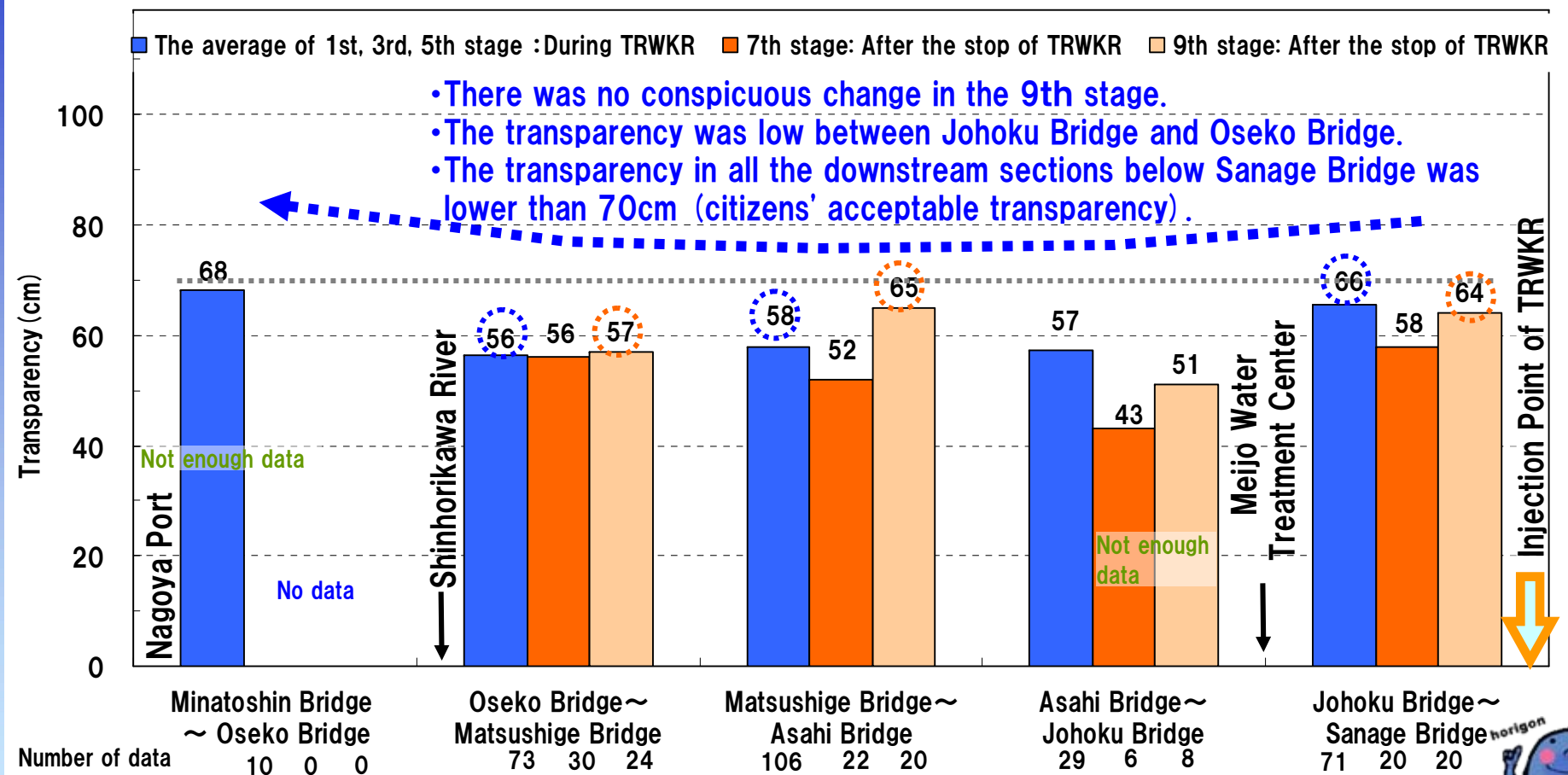
■ How did transparency of water (spring~early summer) change during TRWKR period?  
→ Transparency level was improved between Sanage Bridge and Johoku Bridge, and between Asahi Bridge and Matsushige Bridge.



# Change in Transparency – average of each section

- 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?

→ There was a little change after the stop of TRWKR. But, there was no conspicuous change in the 9th stage.

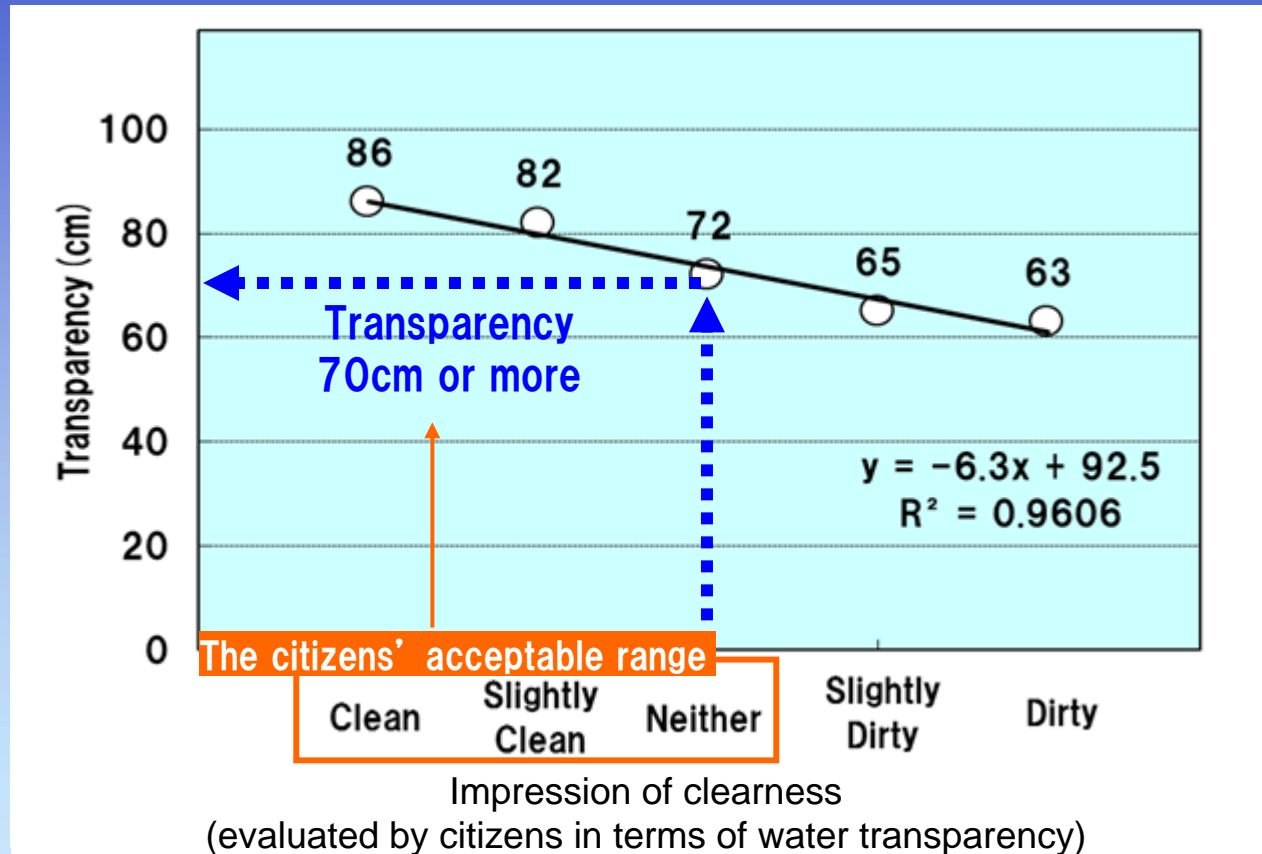
The transparency between Johoku Bridge and Oseko Bridge was low. The transparency in the downstream section below Sanage Bridge was lower (worse) than 70cm (citizens' acceptable transparency : Impression of water clearness: "Comfortable~Neither").





# Correlation between “impression of clearness” and the average of “transparency”.

- During 2nd~9th stage (including data of out-of stage period).
- No rain on the day
- All section including upstream section



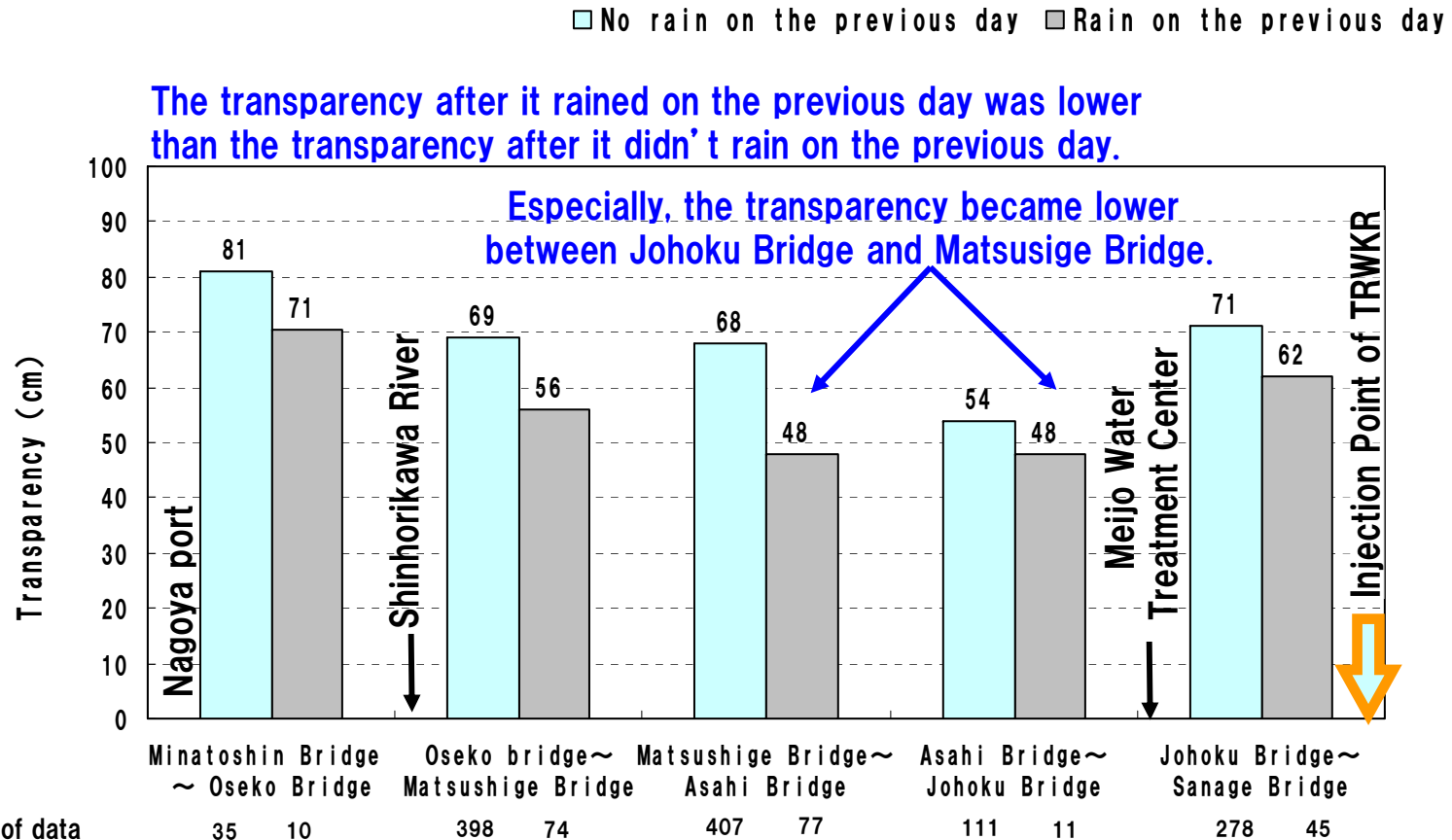
Transparency of “70 cm or more” is one of the targets for improvement of “impression of water clearness”.



# The average of transparency when it rained on the previous day.

Sanage Bridge~Minatoshin Bridge

- 1st~9th stage (including data of out-of stage period)
- No rain on the day



■ How did the transparency change after it rained on the previous day?

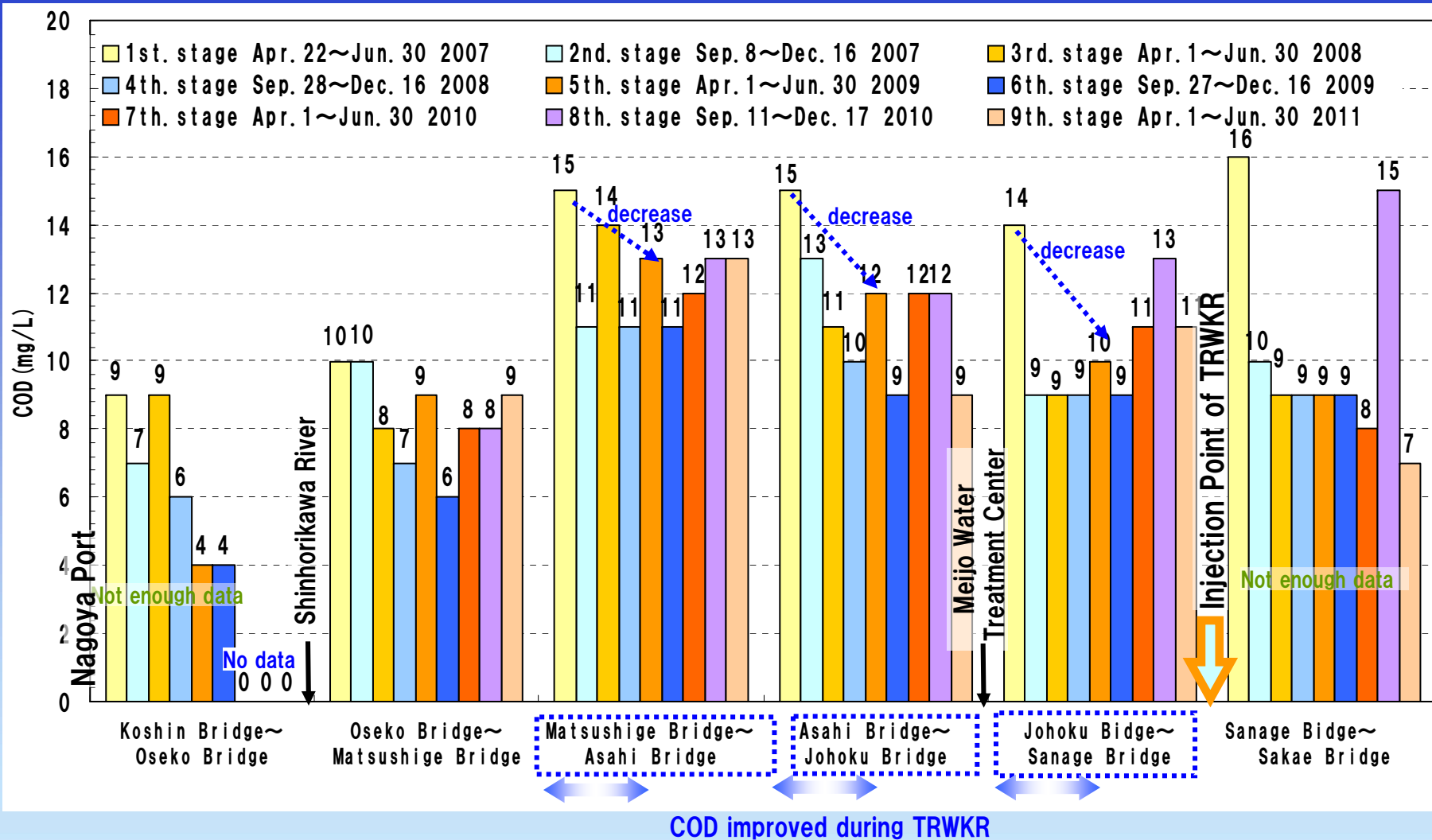
→ The transparency after it rained on the previous day was **lower than the transparency after it didn't rain on the previous day.**

**Especially, the transparency became lower between Johoku Bridge and Matsusige Bridge.**



# Change in COD the average value in each section

- 1st - 6th stage: TRWKR
- 7th - 9th 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

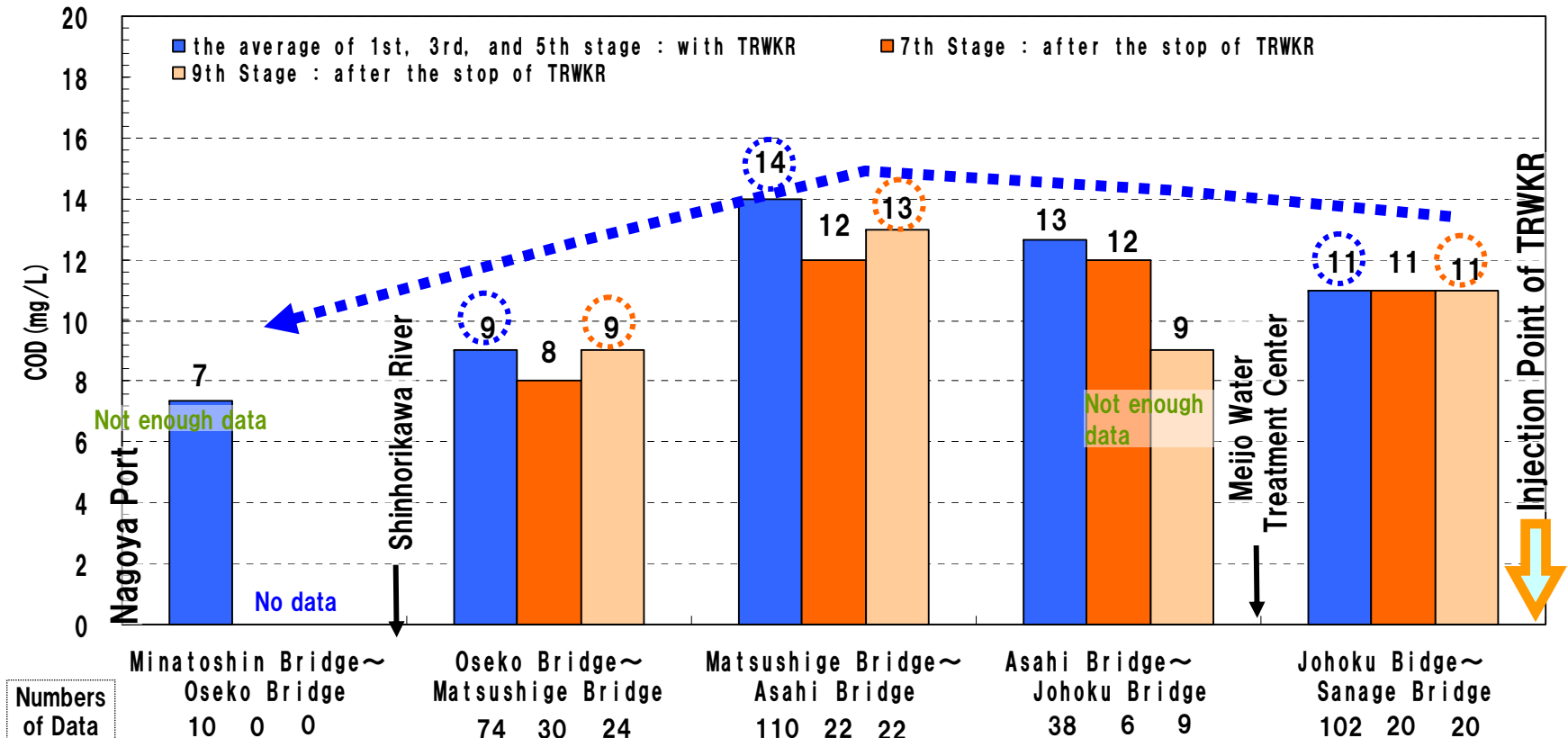


■ How did COD (spring~early summer) change during TRWKR period?  
 → As for COD between Sanage Bridge and Matsushige Bridge, the tendency of decrease (improvement) was found during TRWKR.

# Change in COD the average value in each section

- 1st, 3rd, 5th stage:TRWKR
- 7th and 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 and 9th stage (after the stop of TRWKR)



- How did COD (spring~early summer) change after the stop of TRWKR ?
- Although there was some change after the stop of TRWKR, a remarkable change was not found in the 9th stage.
- COD between Johoku Bridge and Matsushige Bridge was slightly high.



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



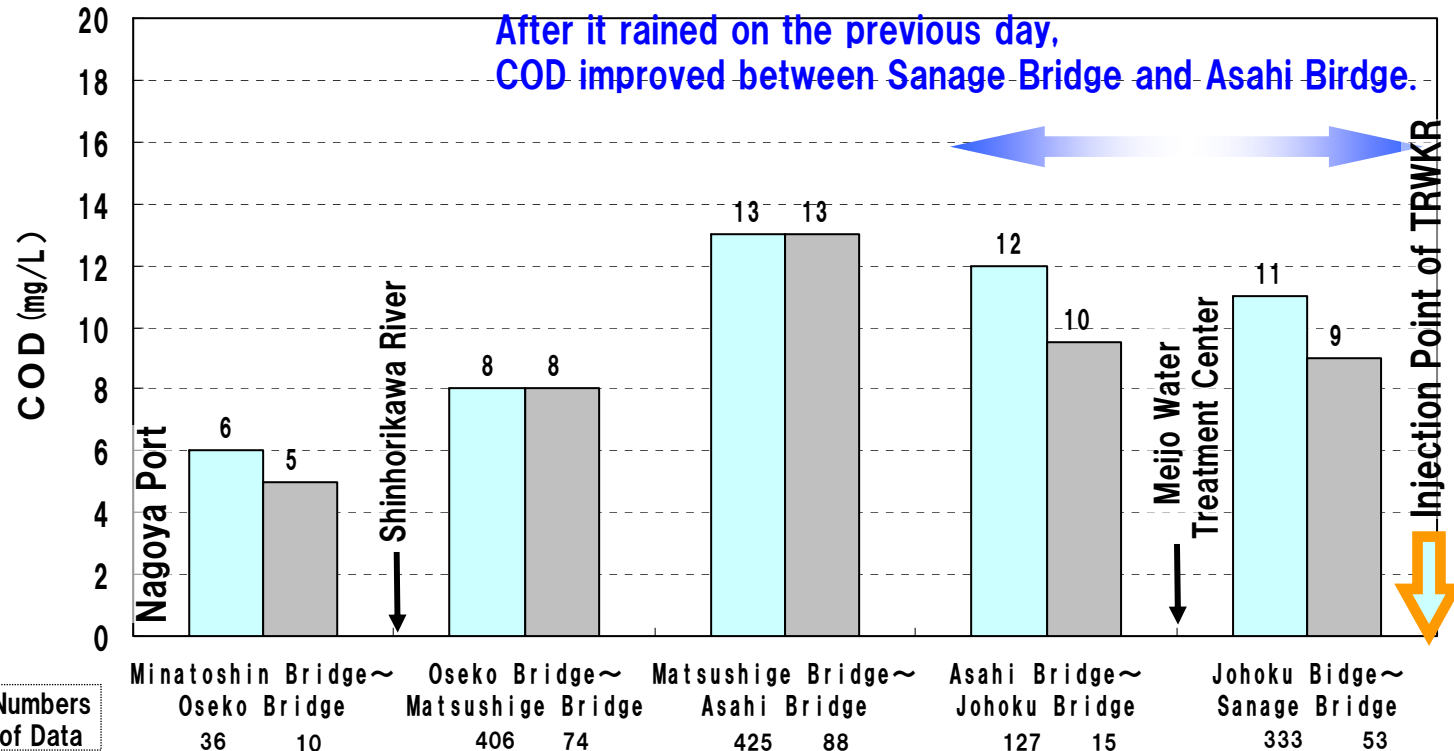
# The average of COD when it rained on the previous day.

## Sanage Bridge~Minatoshin Bridge

- During 1st~9th stage (including data of out-of stage period).
- No rain on the day

□ No rain on the previous day

■ Rain on the previous day



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

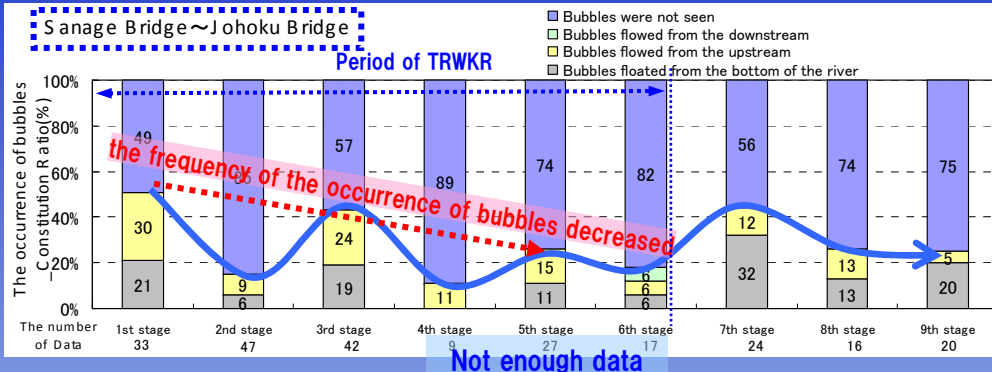
→ After it rained on the previous day, COD between Sanage Bridge and Asahi Bridge improved.



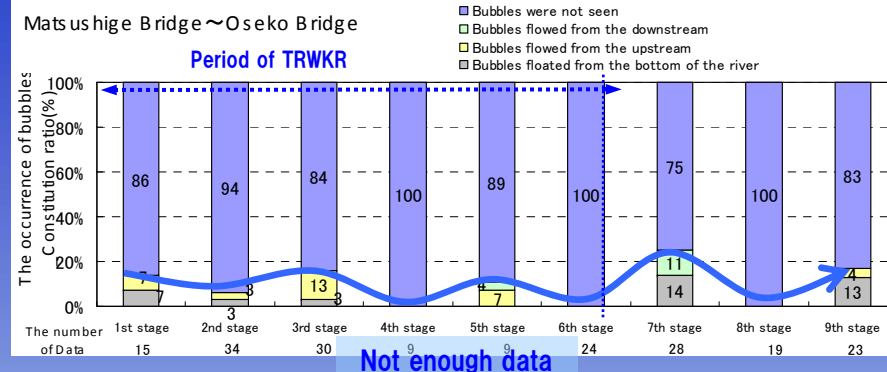
# The occurrence of bubbles (Sanage Bridge~Minatoshin Brigde・each area)

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

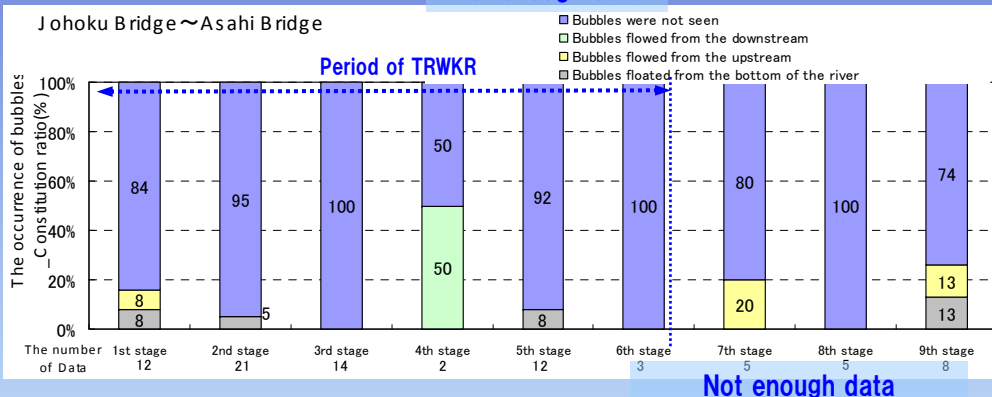
## Sanage Bridge~Johoku Bridge



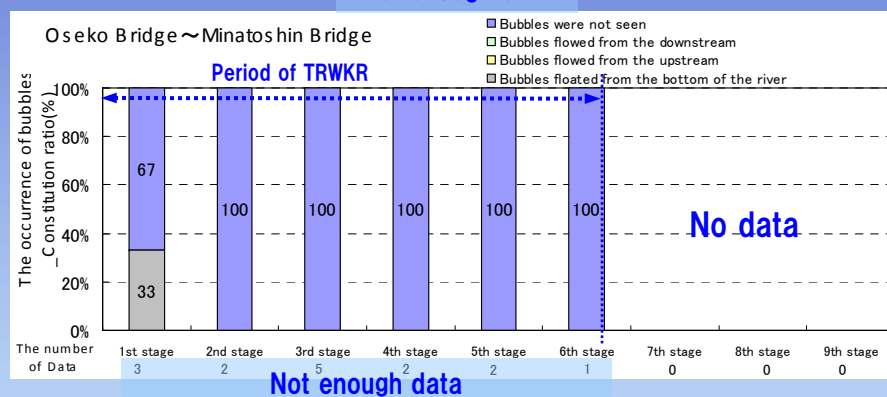
## Matsushige Bridge~Oseko Bridge



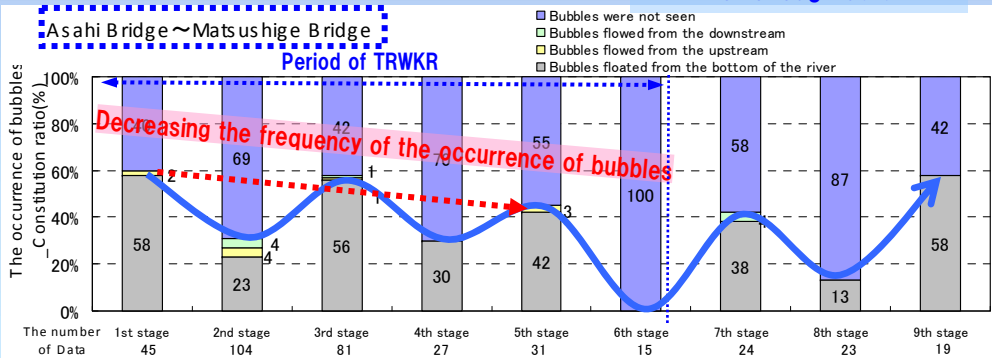
## Johoku Bridge~Asahi Bridge



## Oseko Bridge~Minatoshin Bridge



## Asahi Bridge~Matsushige Bridge



The ratio of "Bubbles from the bottom of the river" is larger than other areas.

How did the bubbles during the period of TRWKR (Spring~Early summer) change?

→The frequency of occurrence of bubbles decreased in the area between Sanage Bridge and Johoku Bridge, Asahi Bridge and Matsushige Bridge during the period of TRWKR.

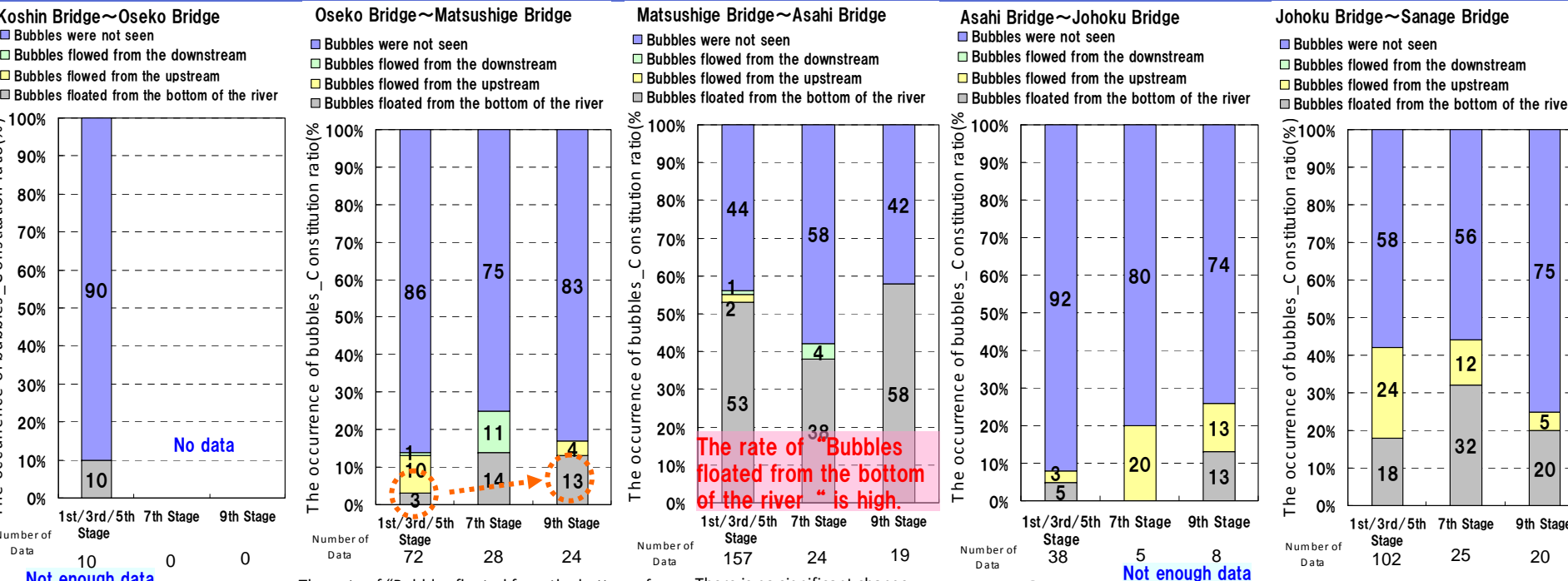
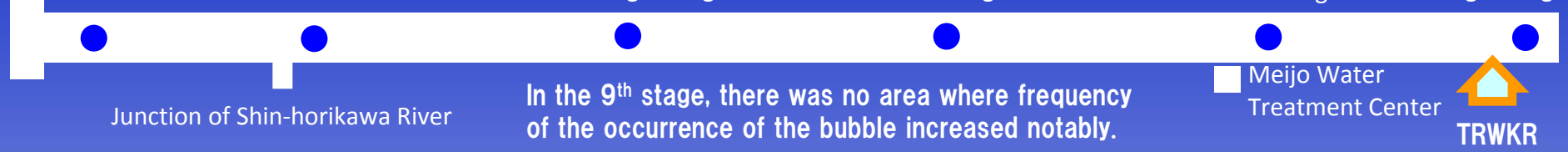


# The occurrence of bubbles

Comparison during the period of TRWKR and after the period of TRWKR  
(1<sup>st</sup>/3<sup>rd</sup>/5<sup>th</sup> Stage and 7<sup>th</sup>/9<sup>th</sup> Stage)

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

Minatoshin Bridge      Oseko Bridge      Matsushige Bridge      Asahi Bridge      Johoku Bridge      Sanage Bridge



Not enough data      The rate of "Bubbles floated from the bottom of the river" increases, after the period of TRWKR.      There is no significant change,, after the period of TRWKR.      Not enough data      After the period of TRWKR, the occurrence of bubbles decreased, especially "bubbles flowed from the upstream" decreased.

■ How did the bubbles during the period of TRWKR (Spring~Early summer) change?  
→ There was no area where frequency of the occurrence of the bubble increased notably, after the period of TRWKR (9<sup>th</sup> Stage).  
The frequency of the occurrence of bubbles between Sanage Bridge and Johoku Bridge decreased. And, the frequency of the occurrence of bubbles between Asahi Bridge and Ohseko Bridge didn't change significantly.

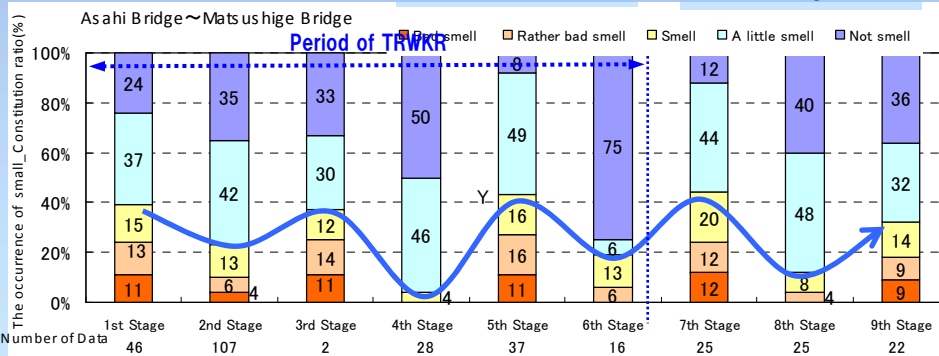
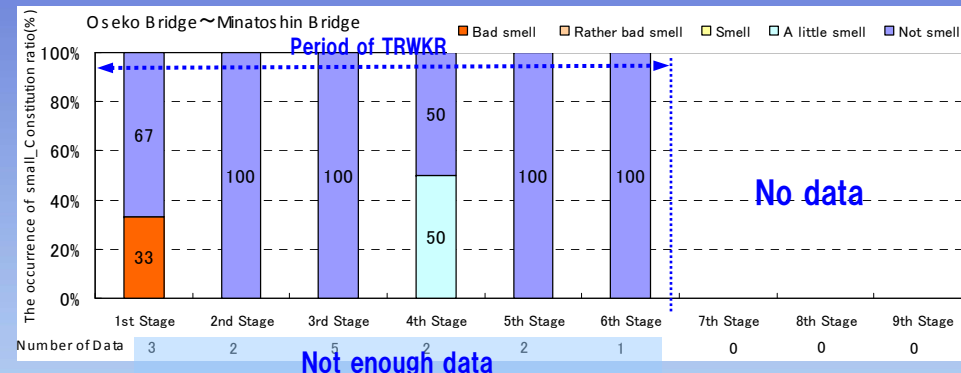
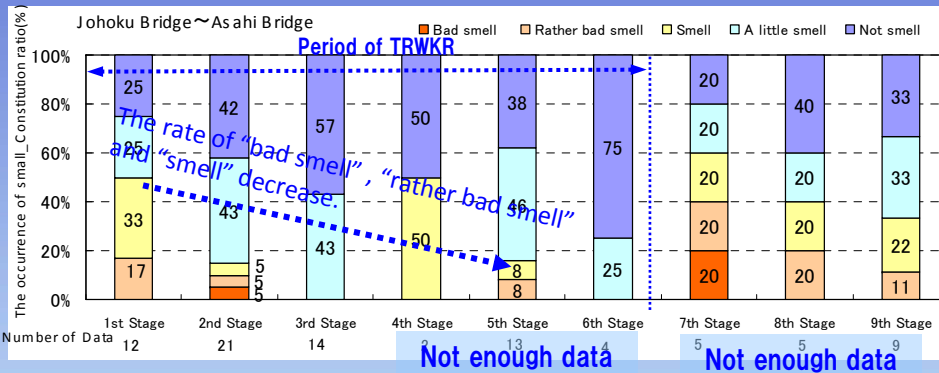
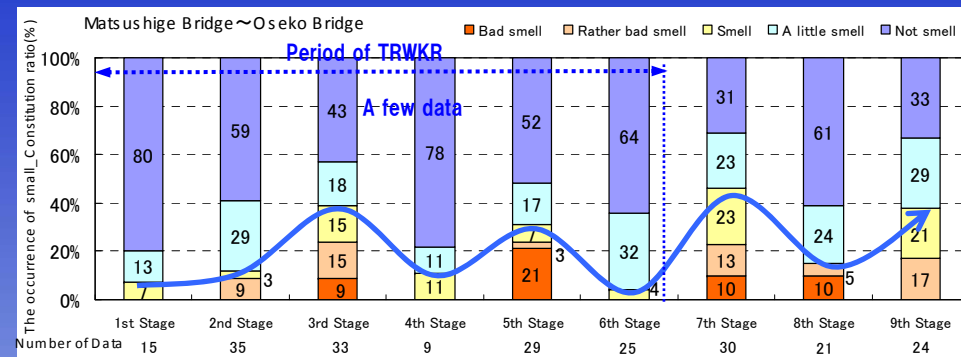
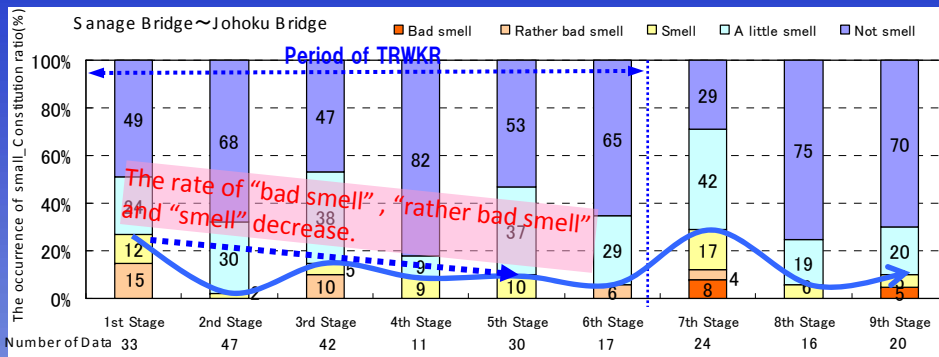
horigon

■ How about the occurrence of bubbles (Spring~Early summer) ?  
→ The rate of "bubbles floated from the bottom of the river" between Asahi Bridge and Matsushige Bridge is higher than other areas.

# The occurrence of smell

## (Between Sanage Bridge ~ Minatoshin Bridge)

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



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

→ The smell of "bad smell", "rather bad smell" and "smell" decreased in the area between Sanage Bridge and Johoku Bridge, Asahi Bridge and Matsushige Bridge, during the period of TRWKR.



# The occurrence of smell

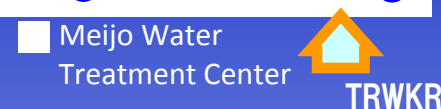
Comparison during the period of TRWKR and after the period of TRWKR

(1<sup>st</sup>/3<sup>rd</sup>/5<sup>th</sup> Stage and 7<sup>th</sup>/9<sup>th</sup> Stage)

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

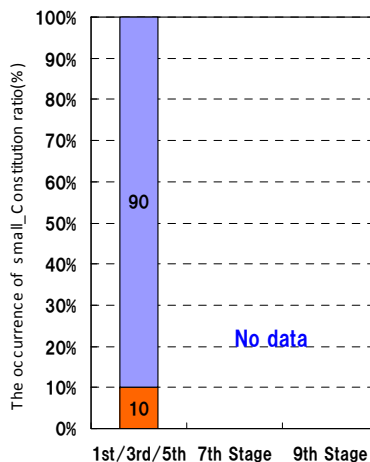
Minatoshin Bridge Oseko Bridge Matsushige Bridge Asahi Bridge Johoku Bridge Sanage Bridge

In the 9<sup>th</sup> stage, there was no area where the rate of “smell”, “rather bad smell” and “bad smell” increased notably.



Minatoshin Bridge~Oseko Bridge

Bad smell  
Rather bad smell  
Smell  
A little smell  
Not smell

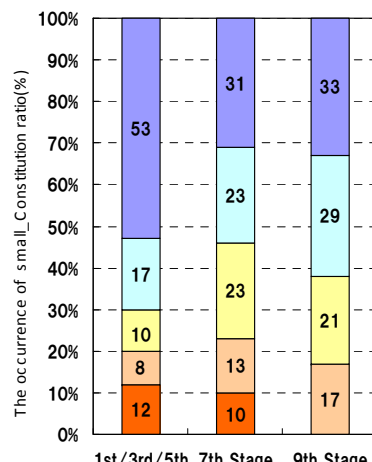


Number of Data 10 0 0

Not enough data

Oseko Bridge~Matsushige Bridge

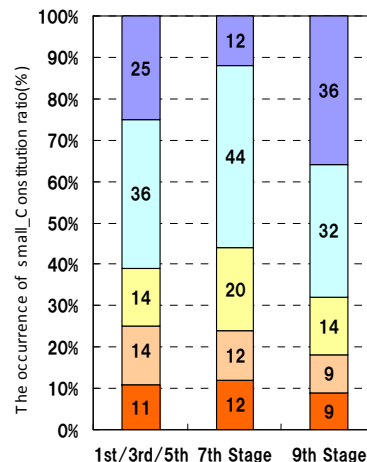
Bad smell  
Rather bad smell  
Smell  
A little smell  
Not smell



Number of Data 77 30 24

Matsushige Bridge~Asahi Bridge

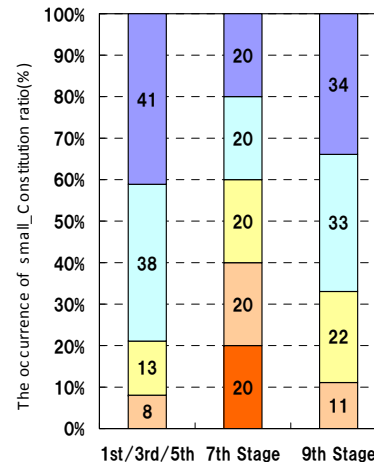
Bad smell  
Rather bad smell  
Smell  
A little smell  
Not smell



Number of Data 164 25 22

Asahi Bridge~Johoku Bridge

Bad smell  
Rather bad smell  
Smell  
A little smell  
Not smell

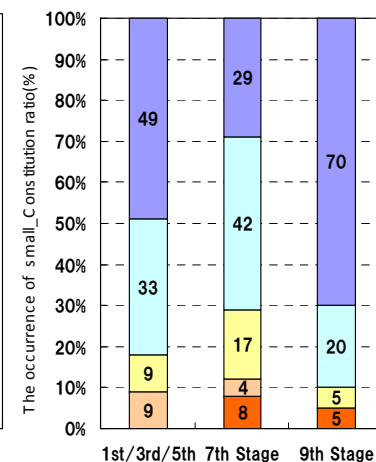


Number of Data 39 5 9

Not enough data

Johoku Bridge~Sanage Bridge

Bad smell  
Rather bad smell  
Smell  
A little smell  
Not smell



Number of Data 105 24 20

The rate of “bad smell”, “rather bad smell” and “smell” is high.

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

→ There was no area where the rate of “smell”, “rather bad smell” and “bad smell” increased notably, after the period of TRWKR (9<sup>th</sup> Stage).



■ How about the smell (Spring~Early summer)?

→ The rate of “bad smell”, “rather bad smell” and “smell” between Asahi Bridge and Ohseko Bridge is high.



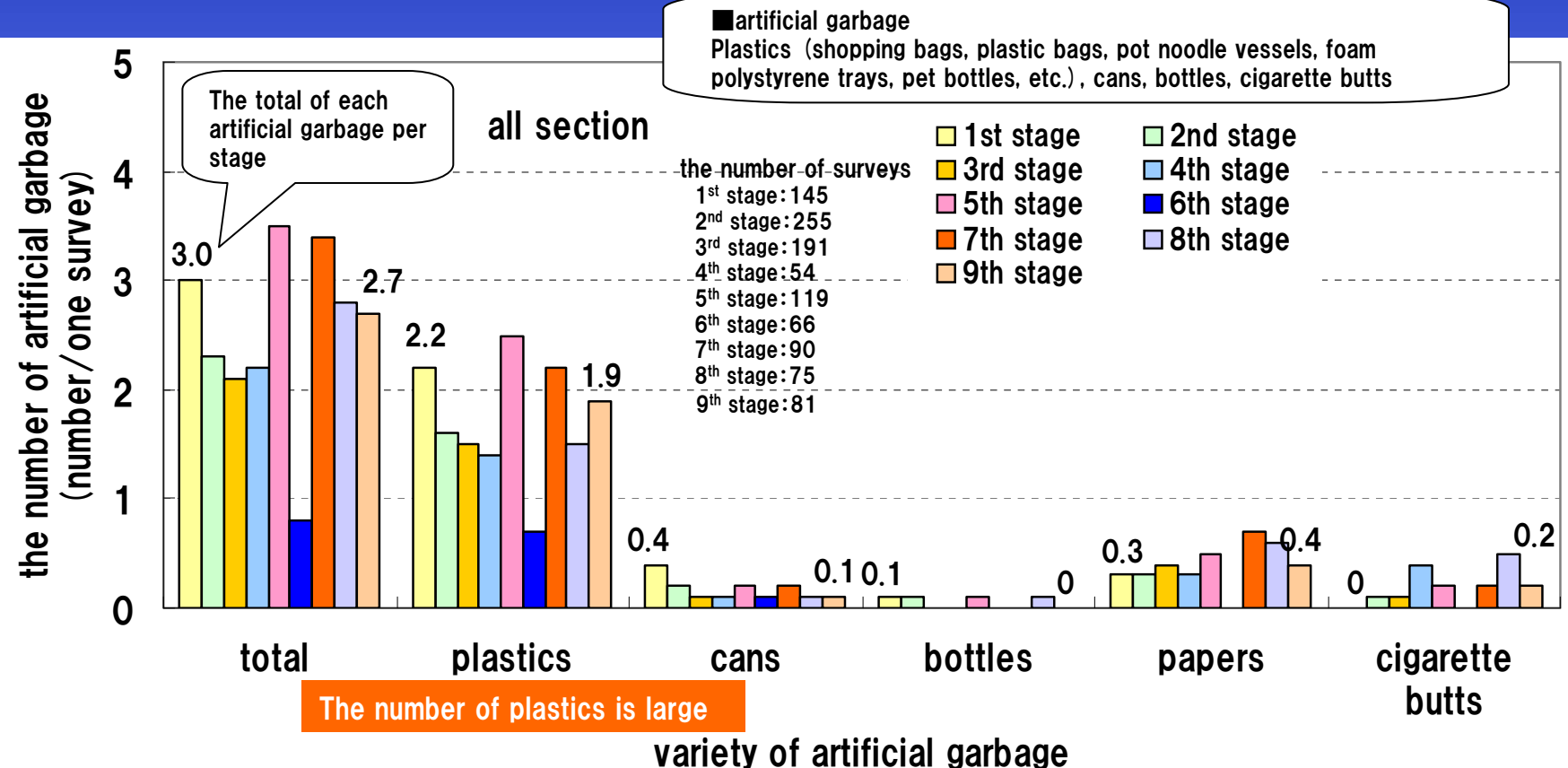
# Suspended Substance (Artificial Garbage)

## Change in the number of Suspended Substance

1st~6th stage: TRWKR

7th~9th stage: No TRWKR

No rain on the day and the previous day



Note1) the number of artificial garbage per survey = the number of each artificial garbage/the number of surveys

Note2) the number of artificial garbage is the garbage found by survey.

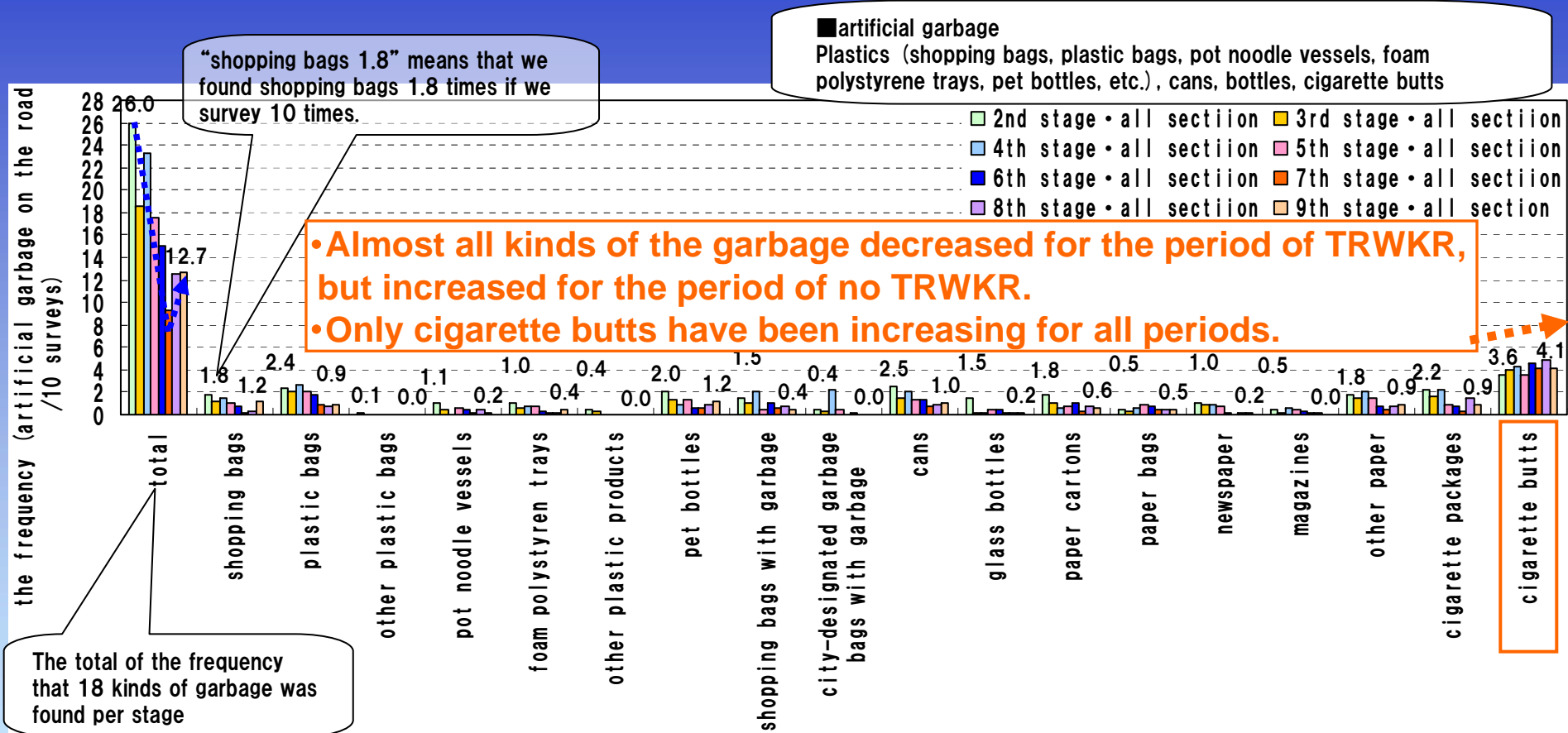


What is the garbage which floated in the water surface most?  
→ **Plastics!**

# Garbage on the road

## Change in the frequency that artificial garbage on the road was found (2<sup>nd</sup> stage~9<sup>th</sup> stage, all section)

1st~6th stage:TRWKR  
7th~9th stage:No TRWKR  
No rain on the day and the previous day



### How has the frequency of artificial garbage on the road changed?

- It decreased for the period of TRWKR. It might be caused by intensified cleaning campaign or changes in social circumstance (the charge for shopping bags started etc.)
- However, it increased after the stop of TRWKR (8th and 9th stages)
- “Cigarette butts” was most frequent to be found on the road. It has continued on increasing trend.



# Aquatic lives in the 9th stage

■ April 13, 2011

Young fishes, kind of a goby, were seen running up at Nishiki Bridge.

In 2008 and 2009, it was seen on April 22, and in 2010, April 25. It was seen 10 days earlier this year.



■ April 26, 2011

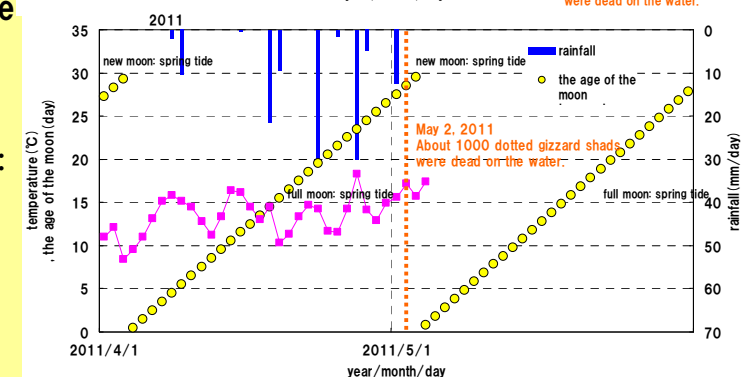
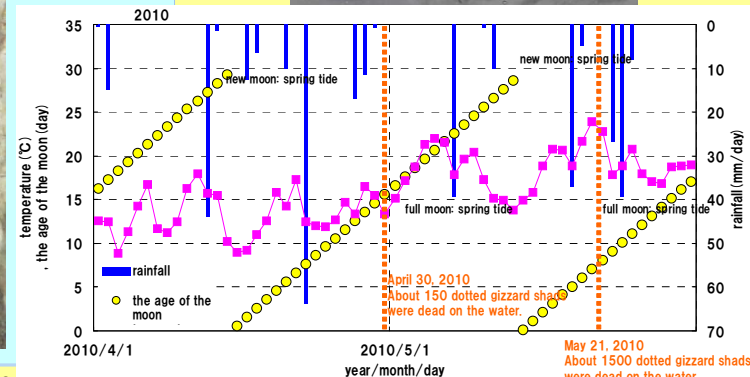
Young mullets (3cm in length) were seen running up to upper stream at Nishiki Bridge. It was seen one month earlier than last year. (The first day of seeing young mullets running up at Nishiki Bridge)

• May 9, 2007 • March 22, 2008  
• May 3, 2009 • March 25, 2010  
• April 26, 2011



■ April 30, 2011

Around 1:00 PM, dotted gizzard shads (20cm in length) were wriggling painfully on the water surface near Hioki Bridge. It might be caused by lack of oxygen. We surveyed the upper and lower stream area, and found that it occurred between Matsushige Lock Gate and Iwai Bridge.



■ From late April to early May, a large number of dotted gizzard shads were dead. The similarities between last year and this year are,  
①First mass death of fish of the year: late Apr.-early May. ②Kind of fish: dotted gizzard shad, ③temperature: around 15 °C, ④tide: spring tide, ⑤ rain: after rain?, ⑥ ? ? ? ....

堀川で魚大量死  
2日午前8時55分頃、名古屋市熱田区熱田西町の白鳥橋上流の堀川で、魚が大量に死んでいるのを通行人が見つけた。同市の発表によると、死んだ魚は体長20〜30センチほどのコノシロで、白鳥橋から、きらく橋（港区木場町）の約3・5キロにわたって約1000匹が死んでいた。市地域環境対策課の検査では有害物質は検知されなかった。1日までの降雨で川底のヘドロがかくはんされ、酸素不足になって死んだとみられる。



■ April 15, 2011 Egg-laying of Carp

A lot of big carp, 70~80cm in length, run up to the upper stream to lay eggs into algae. It was spectacular that they were pushing their way into a little algae, splashing, and laying eggs.



■ Experience in nature

Kurokawa Dream Party President Mr. Umemoto (also the President of the executive Committee of HSC)

We caught turtles, crayfish, Japanese mitten crabs, dragonfly naiads, goby minnow, Palaemon adspersus and so on.



■ May 8, 2011

Encountering a snake



■ June 9, 2011 a turtle laying eggs



Photo by Goyousui-ato-gaien-aigokai Survey Group



# Progress of Citizen's Awareness –Study Meetings–



The 8th meeting of HSC Report : secretariat



Survey of fish & living things in the bottom of river  
Report : Goyosuiato-gaien-Aigokai Survey Group



Strall around historical places near Horikawa River & Visiting Washing the dye of Yuzen textile

Participant : Japan Secondlife Association

Report : Goyosuiato-gaien-Aigokai Survey Group



History walking & Cherry blossom viewing at Horikawa River and Goyosuiato-gaien

Participant : Retired people Group of Aichi Prefecture High School

Report : Goyosuiato-gaien-Aigokai Survey Group



Horikawa Culture Reaearch Group "With Horikawa"

Report : Goyosuiato-gaien-Aigokai Survey Group



# Progress of Citizen's Awareness –Study Meetings–



Host : Ise Bay Basin Reclamation Network  
Report : secretariat



Chunichi Newspaper  
Morning, Feb.21<sup>st</sup>.2011



The 1<sup>st</sup> survey group special study meeting  
Report : Goyosuiato-Gaien-Aigokai Survey Group



Study meeting for freshers of Environmental Pollution  
Research and Analysis Center  
Report : Goyosuiato-Gaien-Aigokai Survey Group



# Progress of Citizen's Awareness –Study Meetings–



**Nature Observing Event in Horikawa River**  
Participant : 2<sup>nd</sup> Grade of Osugi Elementary School  
Report : Goyosuiato-Gaien-Aigokai-Survey Group



**Experience & study in nature in Horikawa river**  
Participant : 2<sup>nd</sup> Grade of Shimizu Elementary School  
Report : Goyosuiato-Gaien-Aigokai-Survey Group



**Experience & study in Horikawa “river living things survey”**  
Participant : 2<sup>nd</sup> Grade of Tsuji Elementary School  
Report : Goyosuiato-Gaien-Aigokai-Survey Group





# Progress of Citizen's Awareness –Study Meetings–



**Experience & study in nature in Horikawa river living things survey**  
**Participant : 2<sup>nd</sup> Grade of Iida Elementary School**  
**Report : Goyosuiato-Gaien-Aigokai-Survey Group**



**Experience & observing event in nature in Horikawa river living things survey**  
**Participant : 3<sup>rd</sup> Grade of Iida Elementary School**  
**Report : Goyosuiato-Gaien-Aigokai-Survey Group**



**Experience & study in Horikawa river living things survey**  
**Participant : 3<sup>rd</sup> Grade of Mehoku Elementary School**  
**Report : Goyosuiato-Gaien-Aigokai-Survey Group**



**Study event in Horikawa river**  
**Participant : 3<sup>rd</sup> Grade of Mehoku Elementary School**  
**Report : Goyosuiato-Gaien-Aigokai-Survey Group**



**Extracurricular study in Horikawa river**  
**Participant : 3<sup>rd</sup> Grade of Mehoku Elementary School**  
**Report : Goyosuiato-Gaien-Aigokai-Survey Group**



# Progress of Citizen's Awareness –Study Meetings–



Family experience event at waterside “Horikawa Hunter Horiko”  
Host : Junior Chamber International NAGOYA  
Report : Goyosuiato-Gaien-Aigokai-Survey Group



2011 1st Horikawa River  
regeneration forum  
Place : Nagoya Institute of  
Technology  
Report : secretariat



Chunichi Newpaper  
Morning, Feb. 22<sup>nd</sup>. 2011



Mini experience & study in Horikawa River  
Report : Goyosuiato-Gaien-Aigokai-Survey Group



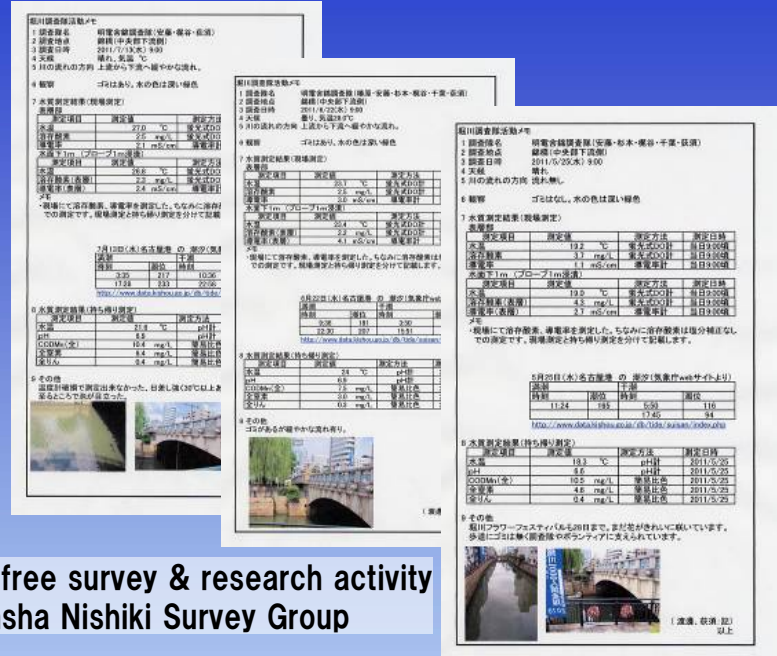


# Progress of Citizen's Awareness

## —Activities of “Free Survey Groups” and “Cheering Groups” —



Injection of “EM Mudball” & “EM activating liquid”  
by Conference for clarification of Ise Bay, Mikawa Bay and  
Horikawa River  
Report : Goyosuiato-Gaien-Aigokai-Survey Group



Report of free survey & research activity  
by Meidensha Nishiki Survey Group



Research Report  
by Nagoya Urban institute  
Report : Goyosuiato-Gaien-Aigokai-Survey Group



Presentation of results for one year survey  
by The 24<sup>th</sup> survey group of Environmental  
Department of University for Senior  
Place : Horikawa River Gallery  
Report : secretariat



# Progress of Citizen's Awareness

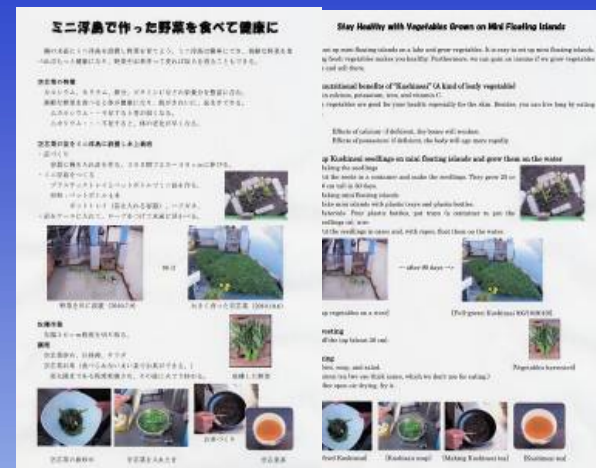
## —Activities of “Free Survey Groups” and “Cheering Groups” —



Chunichi Newspaper  
Tono area local version, Jun. 22<sup>nd</sup>. 2011



Clarification experiment of Horikawa River by water spinach  
Participant : Ena Agricultural High School  
Nagoya Horikawa Lions Club  
Report : secretariat



Introduction of “cultivation of water spinach in Horikawa River” to Cambodia  
Report : Gifu Prefecture UNESCO Association  
Ena Agricultural High School



Chunichi Newspaper  
Morning, Jun. 18<sup>th</sup>. 2011



Cars carrying relief supply to disaster area of the Great East Japan Earthquake by Earth Club Survey Group  
Report : secretariat

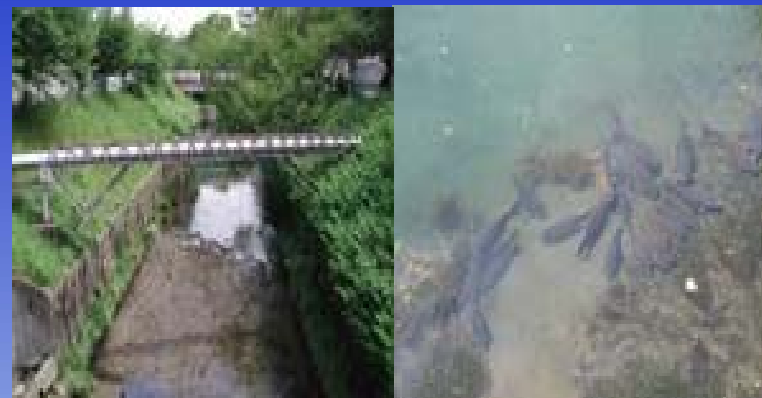


Horikawa River after Great East Japan Earthquake (on Mar. 12<sup>th</sup> & 14<sup>th</sup>)  
Report : Nakanihon Engineering Consultants  
Kawasemi survey group



Cleanup activity  
Host : Clean Horikawa

## —Activities of “Free Survey Groups” and “Cheering Groups” —



## Fixed point observation by Shinko Survey Group

**Survey of water quality for 8 hours at 6 points in Horikawa River  
by Kojo & Horikawa to Seikatsu wo Kangaeru Kai Survey Group  
Report : secretariat**



## Fixed point observation

### By Earth Club



**Chunichi Newspaper**  
**Evening, May. 31<sup>st</sup>. 2011**



## Eco Doco Horikawa Cheering Group Opening Homepage Site



# Progress of Citizen's Awareness

## —Activities of “Free Survey Groups” and “Cheering Groups” —



**Cleaning Activities by Roman Kurokawa,, Assistant Center Nanairo,**  
Report : Goyosuiato-Gaien-Aigokai Survey Group



**Cleaning Activity**  
by Nagoya Horikawa Lions Club,  
local residents and Boy Scouts  
Cooperation : Nagoya Seiko Kai  
Report : secretariat



**Cleanup Activity**  
by Kojo & Horikawa to Seikatsu  
wo Kangaeru Kai survey Group  
Report : secretariat



**Cleanup Activity & Fixed Point**  
**Observation**  
by Nakanihon Engeering Consultants,  
Kawasemi, Karugamo and Kamome  
Survey Group



**Cleanup Activity & Injection of EM Mudball, etc**  
Host : Horikawa Eco Club

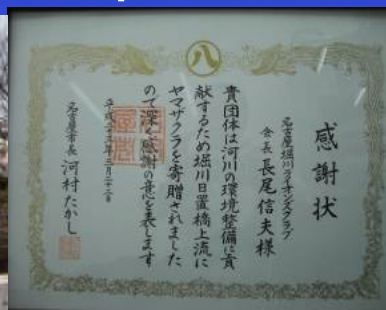


**Cleanup Activity & Injection of EM Mudball**  
Host : Kurokawa Dream Kai  
Report : Goyosuiato-Gaien-Aigokai Survey Group





## —Activities of “Free Survey Groups” and “Cheering Groups” —



**Chunichi Newspaper**  
**Morning, Mar. 29<sup>th</sup>, 2011**

街角ユース



# 里山由来の「粗朶」設置

災害救援や防災に取り組むNPO法人「レスキューNPO ストックヤード」(名古屋市中区)が十七日、同市守山区の堀川に、里山の間伐材を束ねた粗朶を設置した。近々市に寄贈する。

粗朶は木の枝や竹などを束ねて楕円状に組み、石を載せた資材。川底に沈めることで、魚などのすみになりやすく、川の流れの勢いもコントロールできる。この日は一辺四方の三基を設置した。

レスキューストックヤードはかねて「防災の森づくり川づくり」と題して粗朶の事業に取り組んで、粗朶製作は岐阜県したことが確認された。

ドはかねて「防災の森づくり川づくり」と題して粗朶の事業に取り組んで、粗朶製作は岐阜県したことが確認された。

本県市などの業者も協力している。

設置した一基は事前に名古屋市内の矢田川に沈め、コンクリート護岸の河川で、水流や生物への影響を調査、ウナギなどがすみかになることが確認された。



魚のすみか確保や流れの制御のため、クレイで設置される粗朶。名古屋市内の矢田川で

市内14版

2011年(平成23年)4月8日(金曜日)

富山県

富山

金沢

なだ、甲川内に入ると左右を入

底に砂利敷き／石で流れに変化

生物が住める

自然再生の川

17日に完成を祝う

順次、昔の小山の中へ」さ  
らにさくよと歌われるよう  
な自然歩が完成した。今  
名古屋市内川瀬、同市北  
区野万の庄内水を経て  
富山の庄内水を経て富  
山県民の足跡を数々なく  
自然再生を狙った天を行  
った。工事には20日、17  
日には、地元住民らによる完成  
式典が行われる予定だ。

工事は、市が、水の回復マ  
ル事業の第一歩として昨年3  
月から取り組んだ。これまで  
の溝工事で川の水の底を  
をコンクリートで固めただけ  
だった。今回生物が定着し  
生息しやすくなる。川底が  
50センチ以上の砂利を敷い

砂利敷きの川で魚が泳ぎやすくなる

**Yomiuri Newspaper**  
**Morning, Apr. 8<sup>th</sup>, 2011**

本巣市などの業者も協力している。

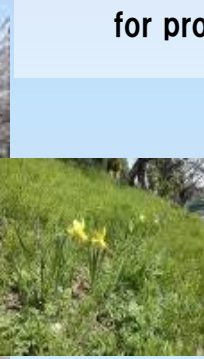


## —Activities of “Free Survey Groups” and “Cheering Groups” —

[illegible][illegible][illegible]

**Activity Report**  
**Meeting with youth of Kiso area**  
**Host : Kiso River Basin Min-Min no Kai**  
**for protecting river source area**

**Cleaning Activities by Roman  
Kurokawa, Assistant Center Nanairo,  
Report : Goyosuiato-Gaien-Aigokai  
Survey Group**





# Progress of Citizen's Awareness –Events–

浅井慎平さんトーク&ライブ  
韓国の先進事例を紹介

20年後の堀川の姿描こう

市中心部を流れる堀川の商業施設「ほとり川」を「ほとり川」で開かれた。NPO法人「市民ま」が主催。堀川沿い「ほとり川」で第二回「川のあ」河村市長は「歴史の景

堀川と街づくりについて意見が交わされたパ  
ネルディスカッション＝中区栄のはとりす

堀川の写真を展覧地  
で開く浅井さんは、名  
古屋を流れる歴史的な  
堀川を中心に、どうい  
う街にするのか、活用  
法も考えるべきだ」と  
発言。大森さんも十  
年、二十年後の堀川を  
どうしたいかの絵を描  
くべき」と述べた。

Horikawa River Talk & Live  
『Community Development with River』  
～suggestion from a point of view of Community  
Development and Waterside sightseeing  
sightseeing～  
Host : NPO Citizen Community Development Kaze  
no Kai  
Report : Goyosuiato-Gaien-Aigokai Survey Group

Chunichi Newspaper  
Morning, Feb. 27<sup>th</sup>. 2011



Ekichika Walking  
Report : Goyosuiato-Gaien-Aigokai Survey Group

Chunichi Newspaper  
Morning, Jun. 5<sup>th</sup>. 2011

清流を願う  
堀川まつり

第二十二回堀川まつりが四日、熱田区の宮の渡し公園と堀川周辺であった。縦十一個、ドーム形に三百六十五個のちようちんを付けたまきわら船が登場。無病息災と、川が清流り上がりを見せた。

最後はまきわら山車が登場。ちようちん行列も行われ、参加者全員が太鼓に合わせてちようちんを動かした。盛り上がりを見せた。



Nagoya Environmental Day in Spring 2011  
Host : Nagoya City Environmental bureau

Experience of boarding in Horikawa River  
Cooperation : Nagoya Horikawa Lions Club



[illegible]

**Report : secretariat**



# Progress of Citizen's Awareness –Events–

## 参加チーム大募集!! 堀川 エコロボットコンテスト 2011



平成23年8月21日(日) 名古屋・堀川「納屋橋周辺」

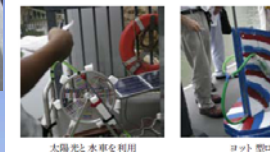
主催 名古屋堀川ライオンズクラブ  
協賛 名古屋工業大学



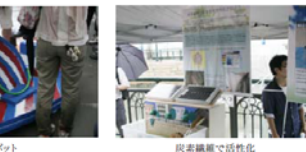
## 堀川浄化エコロボットコンテスト2011

工業高校生を中心に、中学生から大学生、社会人まで。  
21チーム300人が参加。

日時: 平成23年8月21日(日)  
会場: 名古屋市中区納屋橋付近  
主催: 堀川ライオンズクラブ  
協賛: 名古屋工業大学



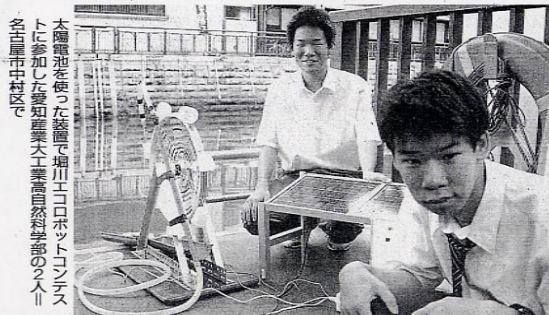
参加数全21チーム、多種多様なロボット開発に一步  
一歩前進する堀川浄化の将来を感じました。  
中学生の自転車の後輪を動かす仕組みを使った口  
ロボット。  
高校生の小石で堀川を浄化する新幹線型ロボット  
や、納豆菌で汚れを沈澱させる人工衛星型ロボット、  
汚れた水を吸ってカラダの中を過し、お尻から放水  
するカメラ型ロボット、太陽光発電と水車と炭素繊維の  
活用を考案したロボット、ユニークな空芯菜水質浄化  
ロボット。  
大学生の放電により動力汚水処理を行うロボット。  
社会人の光触媒酸化剤を活用した本格的な浄化口  
ロボットまで。  
ヘドロで絶望的になりかける思いを、若い将来の科  
学技術者達の夢や希望に燃発され、堀川浄化に取組ん  
でいなければならないという思いを、もらいました。



Mainichi Newspaper  
Morning, Aug. 22<sup>nd</sup>.  
2011

名古屋市内を流れる  
堀川を手作りのロボッ  
トで浄化し、かつての  
清流を取り戻すことを  
目指した「堀川エコ  
ロボットコンテスト20

## 堀川エコロボットコンテスト2011 浄化に活用し清流を 21グループが工夫凝らす



太陽電池を使った装置で堀川エコロボットコンテ  
ストに参加した愛知産業大工業部自然科学部の2人  
名古屋市中村区で

「1」が21日、名古屋  
市中村区名駅5の納屋  
橋船着き場近くの堀川  
で開かれた。中高生や  
大学生、一般の21グル  
ープが参加し、それぞ  
れ工夫を凝らしたロボ  
ットを披露した。  
コンテストは名古屋  
堀川ライオンズクラブ  
の主催で、今回が7回  
目。午前9時過ぎには  
激しい雷雨に見舞われ  
て川の上でのロボット  
の展示が打ち切れられ、  
10台中うが披露でき  
なくなるトラブルがあ  
った。その後は、川沿  
いにロボットを置き、  
鋳造廃材や炭素繊維な  
ど川の水やヘドロし  
て浄化する装置を紹介し  
た。  
愛知産業大工業高  
自然科学部は、部員  
が2人しかいない中、  
太陽電池で動くポン  
プで堀川の水をくみ上  
げて水車を回し、活  
性石で水を浄化する  
装置で参加した。浦口  
真一さん(3年)は「3  
年連続で参加して達成  
感がある」と語り、安  
井尚輝さん(同)は「こ  
れで部員が集まれば  
いい」と期待してい  
た。  
【丸山進】



表彰式の様子

report: ECOドコ応援隊 2011.8.24 <http://www.eco-doco.jp>

Horikawa River Eco-Robot Contest 2011  
Host : Nagoya Horikawa Lions Club, Nagoya Institute of Technology  
Report : secretariat, Eco-Doco Cheering Group <http://www.eco-doco.jp>



[illegible]

式典には約1000人が参加し、主催者の加藤敏夫実行委員長が「このフェスティバルが起爆剤となり、堀川が市民に親しまれることを願っています」と開幕を宣言した。

29日まで、期間中の土曜日にはフンドラの体験乗船（1人500円）が実施されるほか、15日午前11時から、中学校14校の生徒約5000人が合唱を披露するなど、各種イベントが予定されている。スケジュールは実行委のホームページ（<http://hokkaido-flower-festival.com> 2011.）で

堀川で始まったフラワーフェスティバル

**Yomiuri Newspaper**  
**Morning, May. 14<sup>th</sup>, 2011**



# Horikawa Flower Festival 2011 Opening Ceremony Report : secretariat



## Horikawa Flower Festival 2011

Report : Goyosuiato-Gaien-Aigokai Survey Group