	QQHP-2023-018

1200MW
220kV

2023 3

林洋五河1200MW风光储一体化基地项目

220kV输变电工程

1			
2		P1、P9、P52	
3		P21、P25-27、P34-35、P40-41	
4			
5		生态专题	

五河永洋新能源科技有限公司

202 年3月

1

2

1

2

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9

10

11

12

13

14

15

16

1

2

3 220kV

4 220kV

5

6

7

8

9

10

11

12

13

	1200MW		220kV
	2302-340300-04-01-156957		
	220kV		
	~ 220kV		
	~ 220kV		

~
220kV

	☑ ☐
	220kV HJ24-2020
	2021-2030
	2021-2030
	1 1 -5 2022 142 2 TSP 220kV 4000V/m GB3096-2008 2

3

2

220kV

220kV

220kV ~ ~ ~ ~

500kV

220kV

220kV 220kV

4

1.1

	[2022]142		5
	2022 45 1 2 3		6
	[2022] 35 1 2 3		7
	2022 35 1 2 3		8
	2022 35		9

	1 2 3		
	[2022] 35 1 2 3		10

1 220kV 4
220kV 35kV

	[2022] 12 99.4575 1 1	17.65m	

1.1

3. HJ1113-2020

HJ1113-2020

1.2 HJ1113-2020

	HJ1113-2020		
1			/

2

7			
8			
9	HJ19	HJ19	

HJ1113-2020

4

2.1

220kV

1

2.2

5

1 220kV

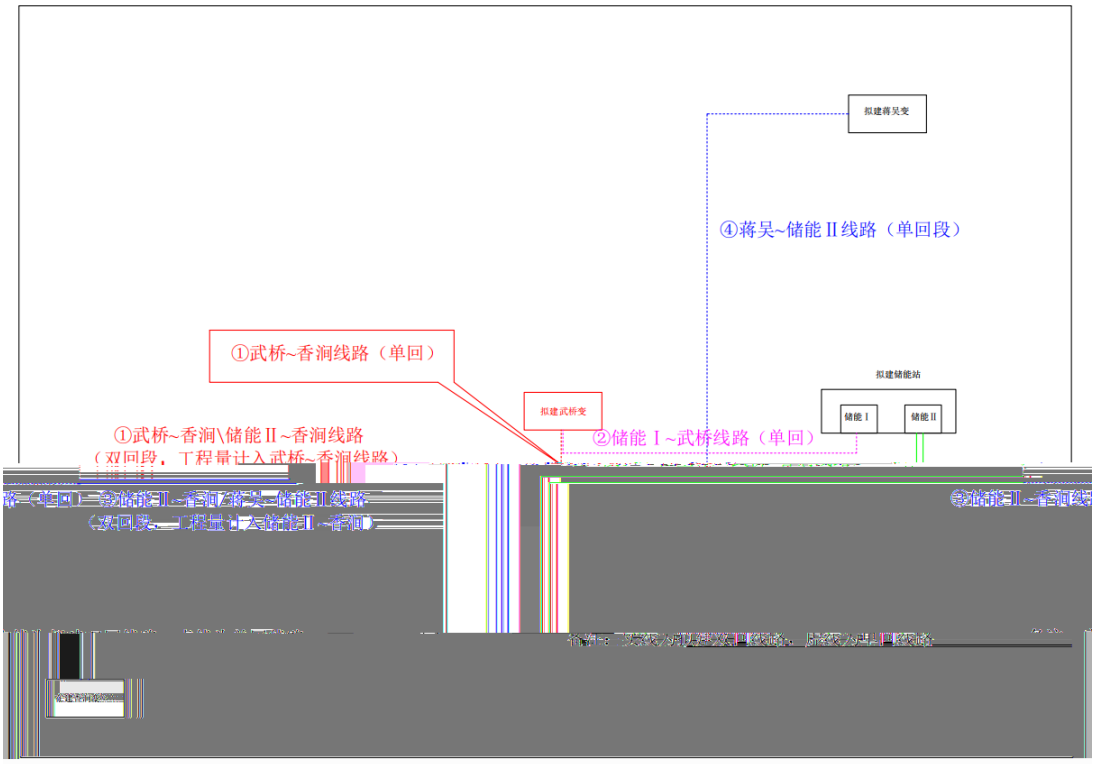
2

~ 220kV

~ 220kV

~ 220kV ~ 220kV

~ 220kV ~ 220kV



2.1

1200MW 220kV

2.1

2.1

1	220kV	2 300MVA 220kV 2 1 1 2200kV 3 1 1 1

43.4km 1.6km
41.8km 220kV
2.91km 2 630mm^2
2 500mm^2
2 ~ 220kV
119
2.2 10

200m^2 2.38hm^2
1.8km 3m

5		36	11	19.56	54.0	
6		39	2	20.63	57.0	

2.4 - 220kV

		(m)		(t)	(m)	
1	220-HB21S-Z2	36	1	18.89	54.0	
2		39	1	19.94	57.0	

	86m^3 70t 0.895t/m^3 78.2m^3 100% MU15 M10 C30 P6 1:2 50 GB18597-2023 12m^3 30536m^2 13739m^2 220kV 4 2 ~ 220kV 220kV ±800kV 1970 ±800kV 35kV 316 - 220kV 35kV 316 35kV 306 35kV 306 35kV 315 35kV 315 35kV 315 - - 35kV 314 G344 35kV 363 500kV 43.4km 2.91km / 1.6km 41.8km - 3 ~ 220kV 220kV G104 G104 220kV 0.6km

4 ~ 220kV

~ 220kV

220kV G104

G104 ~

220kV 1.5km

±800kV ~ 220kV

0.9km ~ 220kV

2.4km

0.9km 1.5km

5 ~ 220kV

220kV 400m

220kV

G104 ±800kV

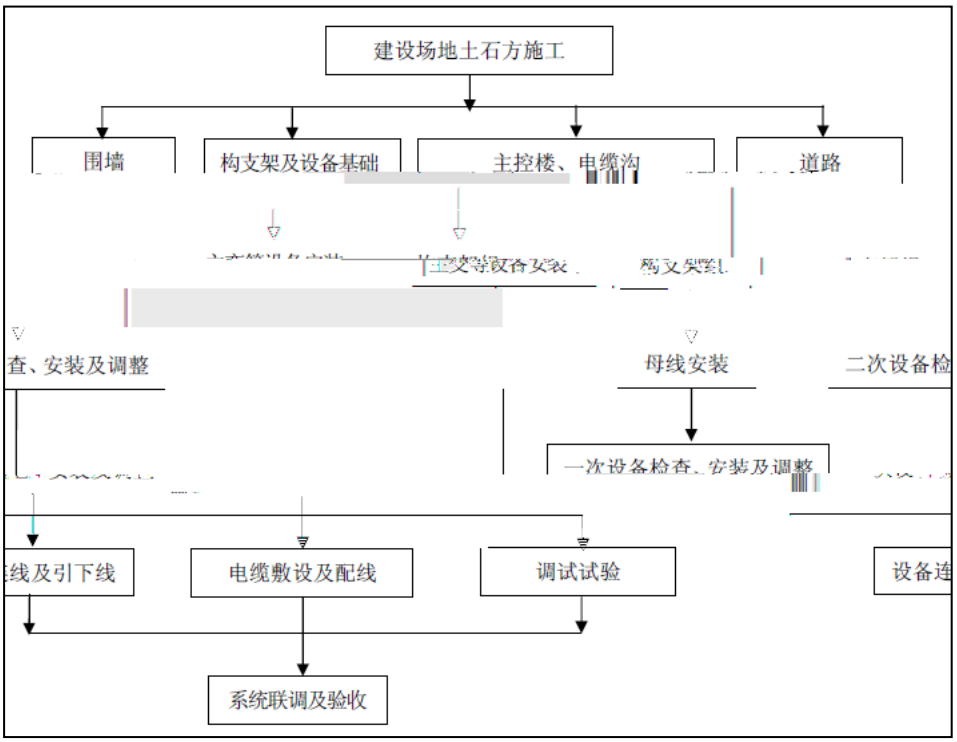
±800kV - 220kV

220kV

9.1km

2.4

2.3



2.3

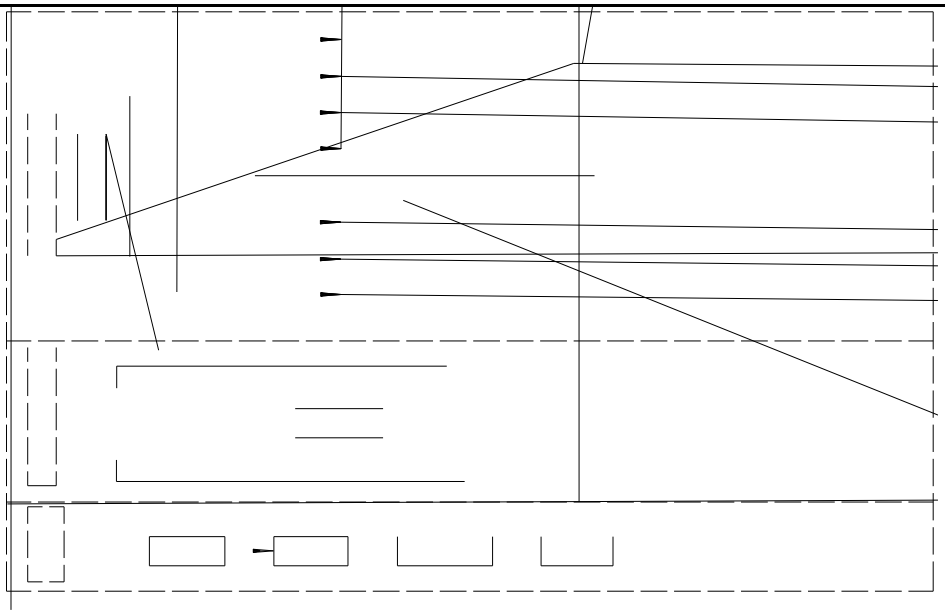
220kV

14

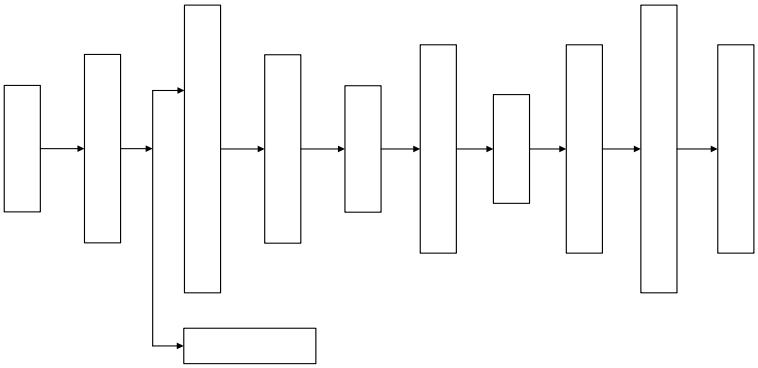
104

2.5

2.4



2.4



2.5

	2 **2.6** 14

3.1

2013 82

-5

2022

142

3.2

2022 3 2021

1

2021

5 GB3838-2002

III

2021 6

2 III

III

2 III

V

2

2021 1

100%

2021 6

100%

3.3

2021 2021

11 / 27 /

PM10 68 / PM2.5 37 / 95

0.8 / 8 90 155 /

3.4

0.5 V/m~0.6V/m

0.030 T~0.177 T 0.5 V/m

~158.3V/m 0.030 T~0.326 T

GB8702-2014

4000V/m 100 T

3.5

2022 7 24 2023 3 7 2023 3 8

CMA

181012050340

1

2

5m/s

3

2

4

5

3.5.1

A

3.5.2

1

220kV

11

2

3.1 1200MW 220kV

		%	m/s	

2022.7.24
7:20~11:40

3.3 **dB A)**

1 **2** **GB3096-2008**
GB/T15190-2014 **3**
104 **50m** **1**
GB3096-2008 4a **4** **~** **220kV**
~ **220kV**

3.5.6

3.3 20kV
47dB A 41dB A GB3096-
2008 4a 70dB A 55dB A
45~47dB A 39~40dB A GB3096-

2008 2 60dB A 50dB A

46dB A

37dB A GB3096-2008 2 60dB

A 50dB A 46dB A

39~40 dB A GB3096-2008 4a

70dB A 55dB A

104 55dB

A 11dB A GB3096-2008 4a

70dB A 55dB A

37~47dB A 35~44dB A GB3096-

2008 1 55dB A 45dB A

3.6

2022 2072

2021-2035

-5

1

37.16km^2

60.5% 21.4%

3.5 8

3.5

			km^2	%
1			22.48	60.5
			7.95	21.4

2			1.52	4.1
			1.45	3.9
			0.07	0.2
3			1.86	5.0
4			1.41	3.8
5			0.41	1.1
			37.16	100

	220kV 500kV 2021 6 8

3.8

3.8.1

HJ19-2022

HJ19-2022

3.7

3.7

	1174.12km^2 5.54%		
	2021		500m

3.8.2

HJ2.3-2018

300m

3.8

3.8

		160m	
		60m	

3.8.3

HJ2.4-2021

200m

HJ24-2020 220kV

40m

3.7 3.8

3.7 220kV

		/m			/m		/	
		X	Y	Z				
1								

0,0,0 **X**

Y

3.1

3.8 **220kV**

		/m					/

~ **220kV** ~ **220kV**

3.8.3

HJ24-2020

40m 220kV

40m

220kV 1

220kV 15

3.9

1

220kV 104

104 15m GB 3096-

2008 104 40m GB

3096-2008 4a GB 3096-

	2008 2 GB 3096-2008 1 50m GB 3096-2008 4a 2 GB8702-2014 4000V/m 50Hz 10kV/m 3 220kV GB12348-2008 4 GB12348-2008 2 GB12523-2011 70dB A 55dB A

4.1

1

147036m^2

38236m^2 108800m^2

4.1

220kV		m^2		m^2
		30536	/	/
		30536		/
		4650		71230
		3050		37570
		7700		108800
	38236		108800	

1 500m

	1 2 3 35kV 306

2020 I II

4

5

4

16

4.2

220kV

HJ2034-2013

4.2

4.2 **dB(A)**

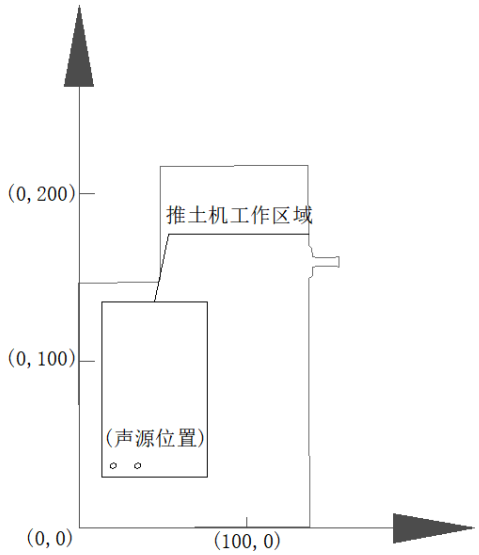
		5m
		83
		86
		73
		84
		86
		73

HJ2034-2013

$$L = L_0 - 20\lg\frac{r}{r_0}$$

L r dB

220kV 4.1



A

220kV

4.2 5m 86dB

A 30m

GB12523-2011 70dB A

4.5 220kV Leq dB(A)

15dB A

4.5 220kV

GB3096-2008 4a 70dB A A

GB3096-2008 2 60dB A

2

4.2

4.6

4.6 dB(A)

	m					
	5	10	20	30	40	100
	73	67	61	57	55	47

5m

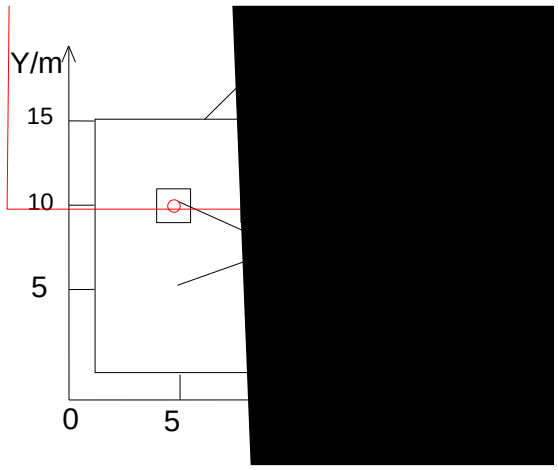
4.2 4.6 73dB A

GB12523-2011 70dB A

15dB A

58dB A

GB12523-2011 70dB A



4.2

300m

25m

25m 25m

15dB(A)

4.7

4.7 **dB(A)**

		m				

15dB(A)

15dB(A)

GB3096-2008

6~8

4.3

31.1m 4m

6 100%

1 100%

2.5m 1.8m

2 100%

100%

3 100%

15

4 100%

5 100%

6 100%

4.4

1

2

3

8000m³

4.8

4.8 **m³**

4.6

4.7.1

A_{div} A_{atm} A_{gr}

A_{bar} A_{misc}

$$L_P(r)=L_P(r_0)+D_c-(A_{div}+A_{atm}+A_{bar}+A_{gr}+A_{misc})$$

Aatm Agr

Abar Amisc Dc

A_{div}

$$L_A \quad r \quad =L_A \quad r_0) \ -A_{div}$$

L_A r dB(A)

L_A r_0 r_0 A dB(A)

A_{div}

110kV

1

/

1m A 65dB A 4.9

4.9

			/m					
			X	Y	Z	/		
1	1#	/	37.6	33.6	4	65dB(A)/ 1m		24h
2	2#	/	23.6	34.8	4			

0,0,0 , 4.3

4.3 220kV

220kV 1m 4.10

4.11

4.10 220kV 1m

	110kV		1m	m
1#	104.8	38.5	35.2	113
2#	121.5	38.5	18.5	113

1m 10m 8m L

4.11

		/m			/m		/	
		X	Y	Z				
1								

2								

4-12~ 4-13

4.12 **dB A**

		#1	#2		
#1		24.6	23.3	27	70
		24.6	23.3	27	55
#2		33.3	33.3	36	60
		33.3	33.3	36	50
#3		34.1	39.7	41	60
		34.1	39.7	41	50
#4		23.9	23.9	27	60
		23.9	23.9	27	50

1 **24**

4.13

		/dB(A)		/dB(A)		/dB(A)		/dB(A)		/dB(A)		/dB(A)			
1															

24

220kV 1m

GB12348-2008 4

GB12348-2008 2

GB3096-2008

4.7.2

220kV

220kV 2X21/ 2X22

220kV 4569 4

2020 0489

GB3096-2008

4.14

4.14 110kV

	220kV 2X21/ 2X22	
	220kV	220kV
		/
		/
	14m	10m/ 9m
	400	400 630

1

220kV

2

3

400 630

400

400 630

4

14m

220kV 2X21/ 2X22

4.15 220kV 2X21/ 2X22

dB(A)

1	220kV 2X21/ 2X22 #41~#42 18m	0m	45	42
2		5m	45	42
3		10m	45	43
4		15m	45	42
5		20m	46	42
6		25m	45	42
7		30m	45	42
8		35m	45	42
9		40m	45	42
10		45m	46	42
11		50m	45	42

220kV

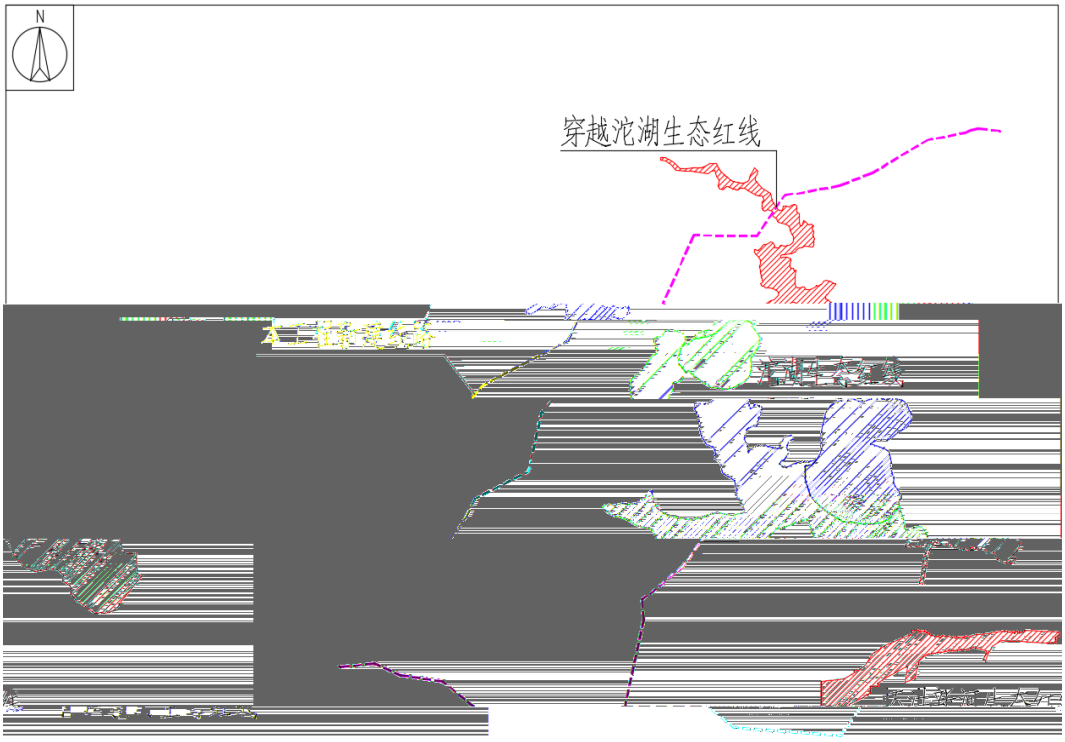
220kV 50m

	3 2021 15 HW08 900-220-08 ,1# 86m^3 70t 0.895t/m^3 78.2m^3 100% 100% MU15 M10 C30 P6 1:2 50 GB18597-2023 **4.10** HJ169-2018
	4.11 **4.11.1** 1 2 3 4 5 6

7

8

4.11.2 ~



4.4

4.4

220kV

	5.1 1 2 3 4

	5.5
	5.6 **5.7** 1m A 65dB A GB12348-2008 4 2 **5.8** 220kV GIS 6.5m 220kV 10m 220kV 9m **5.9** **5.10** 1 220kV 2

	2021 15 HW31 900-052-31 2021 15 HW08 900-220-08 **5.11** 86m^3 70t 0.895t/m^3 78.2m^3 100% MU15 M10 C30 P6 1:2 50 GB18597-2023 HJ169-2018
	5.12 1

2

1~2

3

5.1

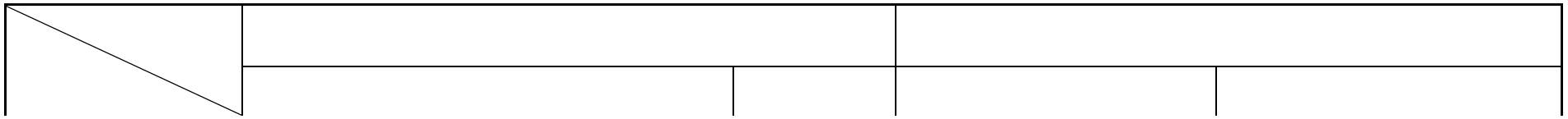
		Leq				GB3096-2008 GB12523-2011
						GB8978-2014

			Leq			4	GB3096-2008 GB12348-2008
				/		1 5 2 3	- HJ 1166 HJ 710.1-2014

5.13

5.2

5.2



1

2

	3 4			
			/	/

	/	/	86m^3 100% MU15 M10 C30 P6 1 2 50 GB18597- 2023	
	/			
	/	/	/	/

1200MW **220kV**

1200MW
220kV

1.1

kV

2 300MVA 220kV 2

1 1 2200kV 3

43.4km 1.6km 41.8km

220kV

2.91km $2 \times 630mm^2$

$2 \times 500mm^2$ 119

0.6km $2 \times 400mm^2$

3

2.4km 0.9km 1.5km

220kV ~ 220kV

~ 220kV $2 \times 630mm^2$

7

220kV 9.1km

$2 \times 400mm^2$ 25

[

1.2

HJ24-2020

1-1

1-1 220kV

220kV 15m

1.3

1

2

220kV 40m 220kV

40m

3

220kV

1.4

40m 220kV

40m

220kV 1

14 1-3

2022 7 24 2023 3 7 2023 3 8

CMA

181012050340

1

2

80%

3

2

4

5

“ ”

1

2 11

1

220kV

220kV

3-1

	[	[

	[	

2

220kV

220kV GIS

220kV

220kV 2×300MVA

220kV 3×240MVA

2 300MVA

220kV

220kV

3

4

5 5

5

HJ681-2013

EFA-300 0.1V/m~200kV/m

1nT~20mT

6

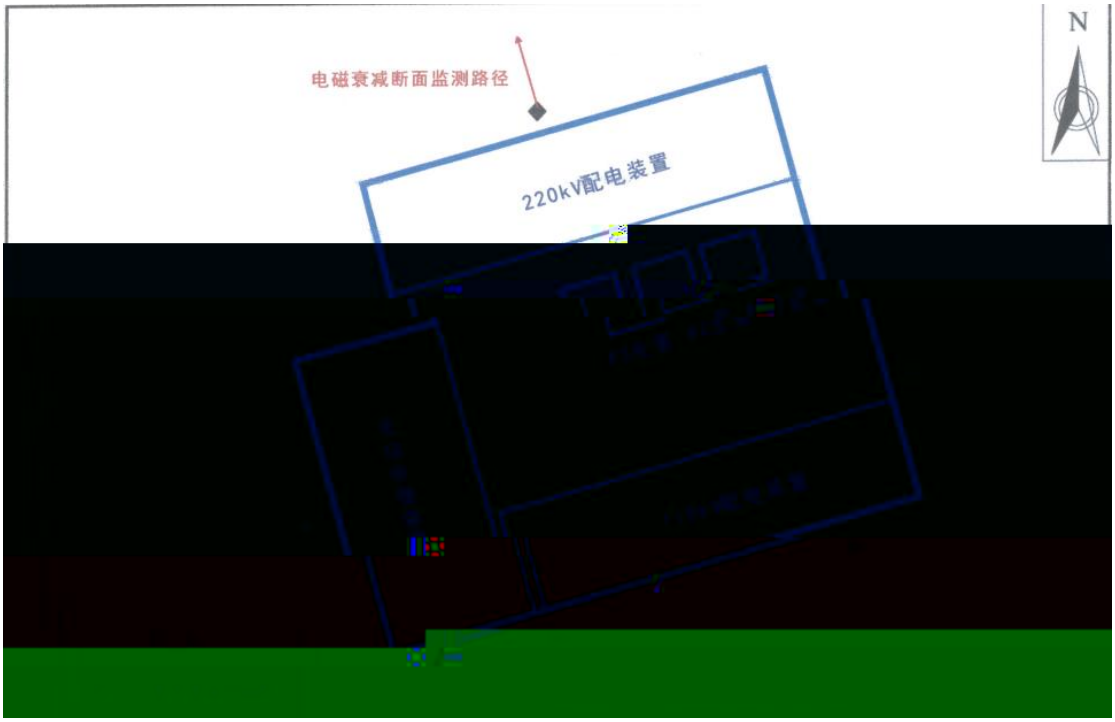
2020 11 3

6

161712050220

				[

			[	



3-2

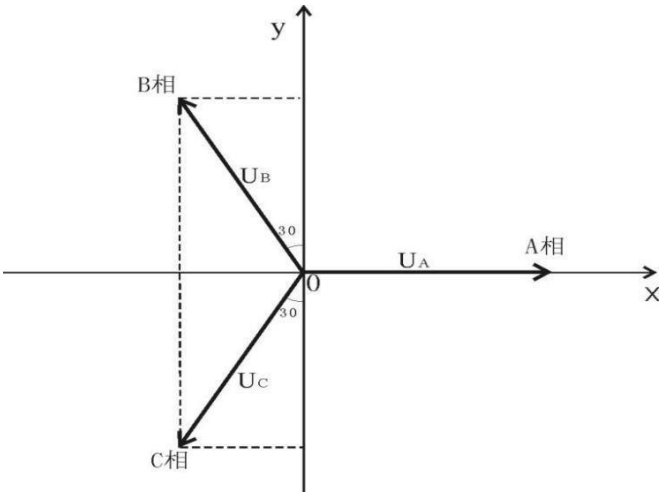
4000V/m

220kV

GB8702-2014

“ ” 4kV/m

$$
\begin{array}{cccccc}
U_1 & 11 & 12 & \cdots & 1n & Q \\
U_2 & 21 & 22 & \cdots & 2n & Q_2 \\
\cdots & \cdots & \cdots & \cdots & \cdots & \cdots \\
U_n & n1 & n2 & \cdots & nn & Q_{n1}
\end{array}
$$



$$\frac{220\ \ 1.05}{\sqrt{3}}$$

U_A= 133.4+j0 kV

U_B= -66.7+j115.5 kV

U_C= -66.7-j115.5 kV

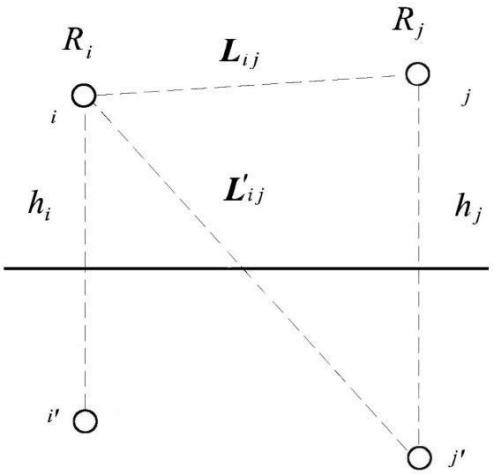
ii $\frac{1}{2\ \ _0} 1\mathrm{n}\frac{2h_i}{\mathrm{R_i}}$

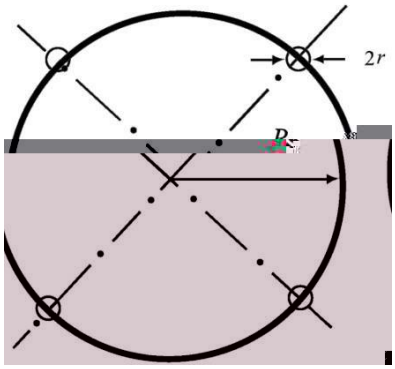
ij $\frac{1}{2\ \ _0} 1\mathrm{n}\frac{L'_{ij}}{\mathrm{L_{ij}}}$

ij ji

0 $\frac{1}{36}$ $10^{-9} F/\mathrm{m}$

$\boldsymbol{R}_{\mathrm{i}}$ $\boldsymbol{R}$ $\sqrt[\mathrm{n}]{\frac{\boldsymbol{nr}}{\boldsymbol{R}}}$





$$\overline{U_i} \quad U_{iR} \quad jU_{il}$$

$$\overline{Q_i} \quad Q_{iR} \quad jQ_{il}$$

C1

$$U_R \qquad Q_R$$

$$U_I \qquad Q_I$$

x y E_x E_y

$$E_x \quad \frac{1}{2 \quad 0} \sum_{i\ 1}^{m} Q_i \ \frac{x \quad x_i}{L_i^2} \ \frac{x \quad x_i}{(L_i^{'})^2}$$

$$E_y \quad \frac{1}{2 \quad 0} \sum_{i\ 1}^{m} Q_i \ \frac{y \quad y_i}{L_i^2} \ \frac{y \quad y_i}{(L_i^{'})^2}$$

$$\overline{E_x} \quad \sum_{i\ 1}^{m} E_{ixR} \quad j \sum_{i\ 1}^{m} E_{ixl}$$

$$E_{xR} \quad jE_{xl}$$

$$\overline{E_y} \quad \sum_{i\ 1}^{m} E_{iyR} \quad j \sum_{i\ 1}^{m} E_{iyl}$$

$$E_{yR} \quad jE_{yl}$$

$$\overline{E} \quad E_{xR} \quad jE_{xl}\ \overline{x} \quad E_{yR} \quad jE_{yl}\ \overline{y}$$

$$\overline{E_x} \quad \overline{E_y}$$

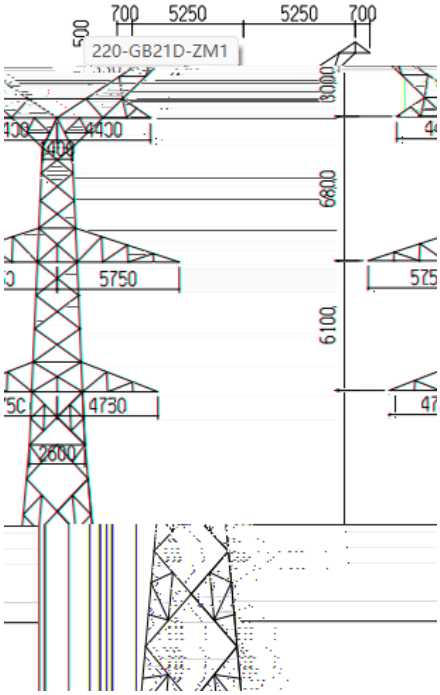
$$E_x \quad \sqrt{E_{xR}^2 \quad E_{xl}^2}$$

$$E_y \quad \sqrt{E_{yR}^2 \quad E_{yl}^2}$$

y=0

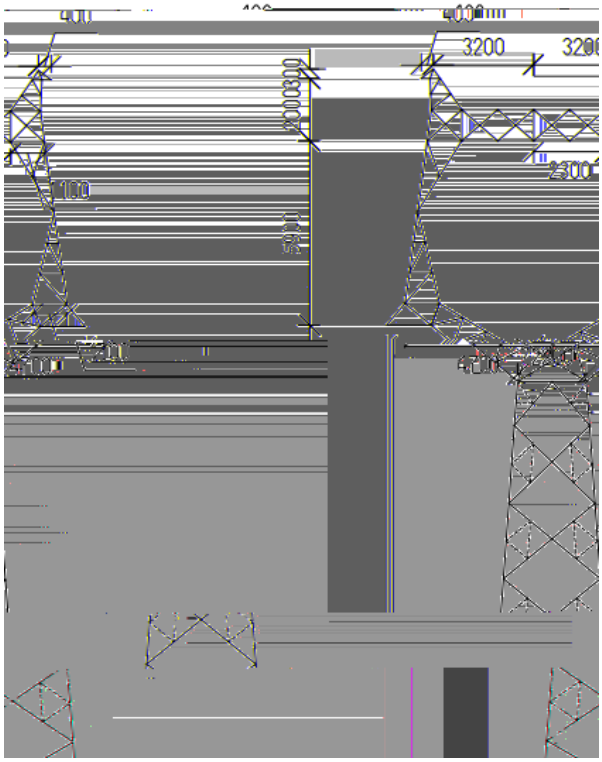
$$E_x = 0$$

$$d \quad 660\sqrt{\frac{}{f}}\ m$$

	220kV
	
	B -4.40,H+12.9 B 4.40,H+12.9 A -5.75,H+6.1 C 5.75,H+6.1 C -4.75,H A 4.75,H

3- 220kV

	220kV
	[

	220kV
	
	[[

1

3- 220kV

[[

[

2

3- 220kV

			[			[
		[[				[

[

	[				[	
	[	[				
[			[	[		[
			[			
		449		2.484	2.430	[
	[			1.744	1.717	
		[		[	1.275	[
				[[	[	[

3-7 220kV JL3/G1A-400/35

			[			[
	[					
			[			[
				[	[	[
	[					[
				[	[[	
	[[	[[				

[

[[

[

[

1200MW

220kV

2023 3

1.

1.1

1.1.1

1 220kV

2 300MVA 220kV 2

1 1 2200kV 3

2

~ 220kV

43.4km 1.6km

41.8km 220kV

2.91km 2×630mm^2

2×500mm^2 119

220kV

0.6km 2×400mm^2

3

220kV ~ 220kV

2.4km 0.9km 1.5km

220kV ~ 220kV

~ 220kV 2×630mm^2

7

~ 220kV

220kV 9.1km

2×400mm^2 25

1.1.2

1 2014

2015 1 1

2 2018

2018 12 29

3 2015 61

4

2016 150

5

2021 108

6

2022 142

7

2022 2072

8 2013

12 4

9 2018 6 27

10

2020 7 10

11

2022 5

12

2022 113

13

2023 2 2023 1 5 2

1.1.3

1 HJ2.1-2016

2 HJ19-2022

3 HJ1113-2020

Ä

1.1.4

1 1200MW

1.2

HJ19-2022

1-1

HJ19-2022 6.1.2	a	
	b	
	c	
	d HJ 2.3	
	e ÅNU01E69199E]TJETQEMC /Spa8 <</MC	

HJ24-2020

HJ19-2022

1-2

1-2

			/	
	/	/	/	
	/	/	/	

2

220kV 500m

1km 1km

1km 3km

300m

1.4

40m 220kV

40m

220kV 1 14

1-3

1-2

		4 7	
	4 33	26	
	117°39'35"~117°51'55"E 30°06'48"~30°17'10"N 28.7km 19km 11000hm^2		300m 2 45m
	-5		520m

	1174.12km^2 5.54%		
	2021		500m

2.

2.1

2.1.1

1

2017

~ 220kV

2

2021 12 24

3

2018 4 24 2018 16

4

2023 1

2023 2

1

5 6

7 8

1

2

3

4

5

6

7

8 9

10

11

2.1.2

1

300

2 2021-2030

2021-2030

35kV

306

2021-2030

3 2010-2030

2010-2030

4A

2010-2030

图2-1 沱湖省级自然保护区旅游总体规划图

图2-2 [illegible]

2.1.3

1

21

2019

2

2-1

2-

		1.2019 2019 48	

•Ð *Aî@ ×

220kV

4000V/m

GB3096-2008 4a 2

SL190-2007 2000

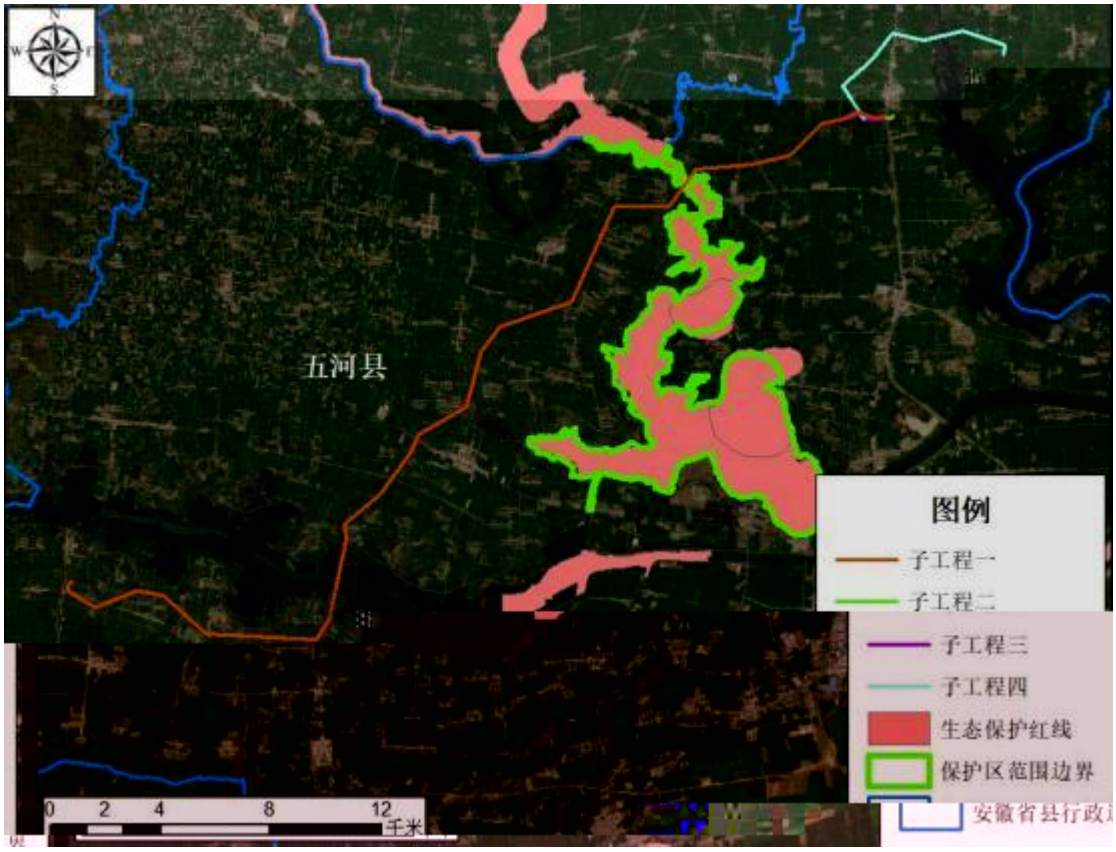


图2-3 工程与蚌埠市生态保护红线关系图

2.2

35kV 306 35kV 306

1

- 220kV

35kV 306 30m 35kV 306

- 220kV

35kV 306 30m 35kV 306

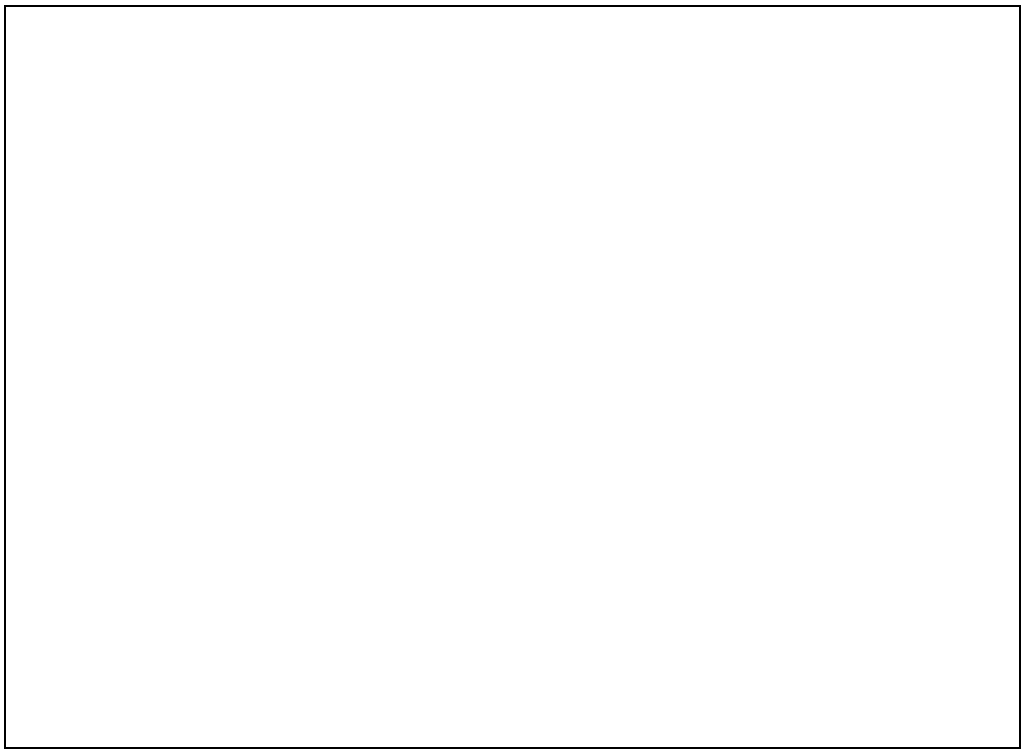


图2-4

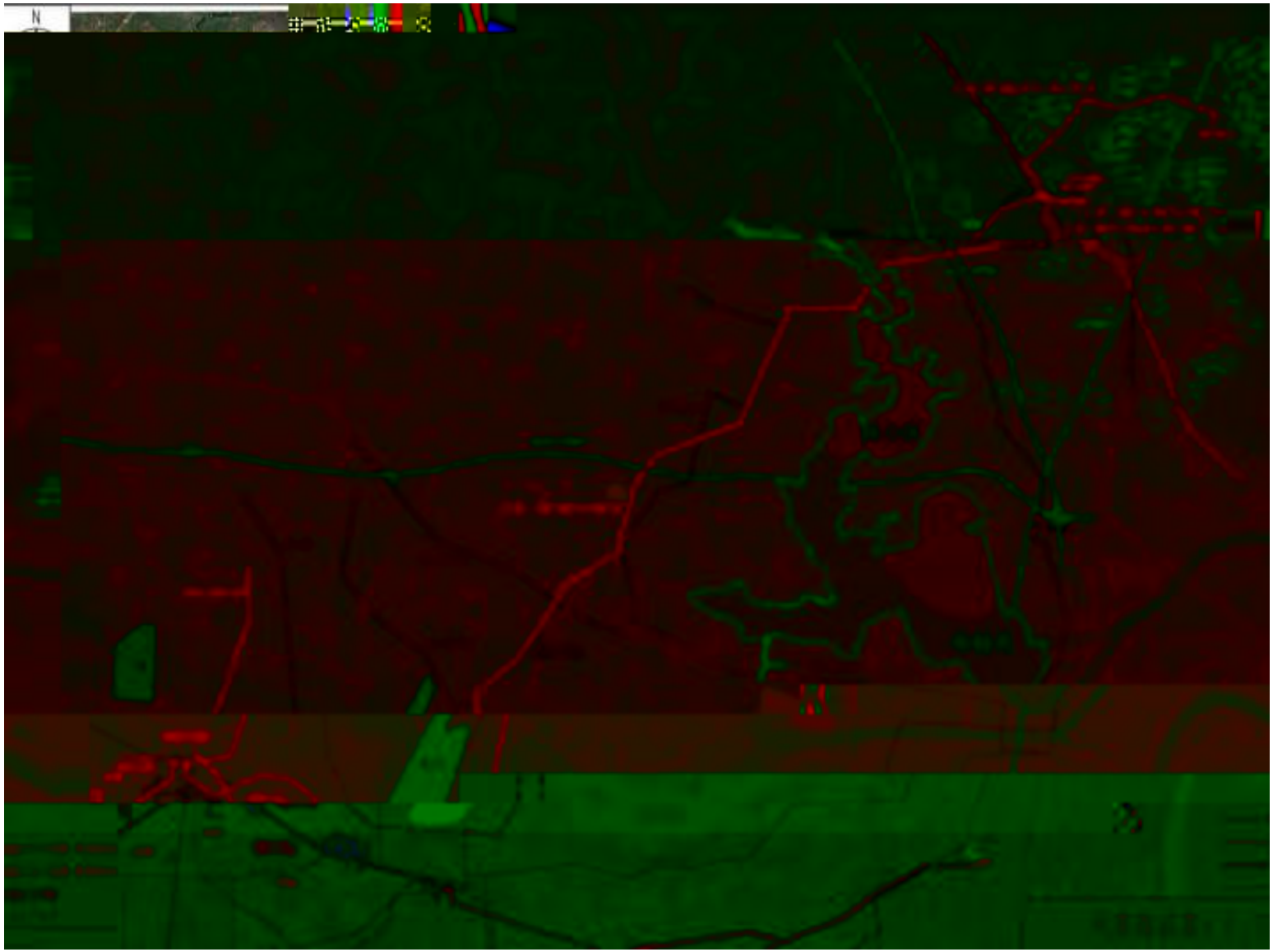


图2-6 工程线路路径图

3.

3.1

3.1.1

13-19

1-2

3.1.2

1

515.4J/cm^2 2307hr

52% 6-8 12-2

2

61 113 56 135 230

11 1 4 2 212

11 3 15

3

906

70

6.8

4

3 4

9 11

5 6 90%

5

3.1.3

1994

2012-2021

3.1.5

1

84 207 292

4 4 5 78 20 5

147 201 18 54 8

2

35 63 91 13

335 6 13 26 7 2 5

16 41 103 5

3.2

GB/T

序号	类
1	

自然 类

8		
9		

3.3

3.3.1

1

2

2021-2025

2025

% † 0 +

2

3.3.2

2021-2030

3-2

			%
		1717.81	40.09
		2567.22	59.91
		4285.03	100.00

1

2021-2030

1717.81 -

~

820.95 ~ ~

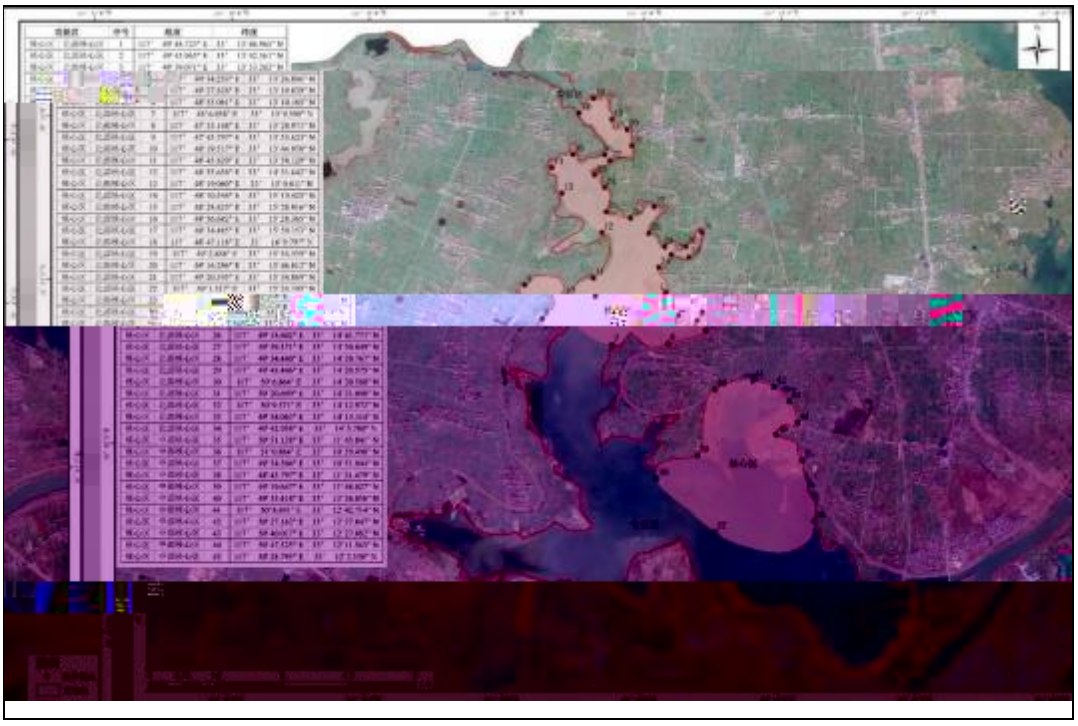
896.86 ~

~

2

- -

2567.22



3-1

3.3.3

- -

2021-2030 3

6

3.4

1

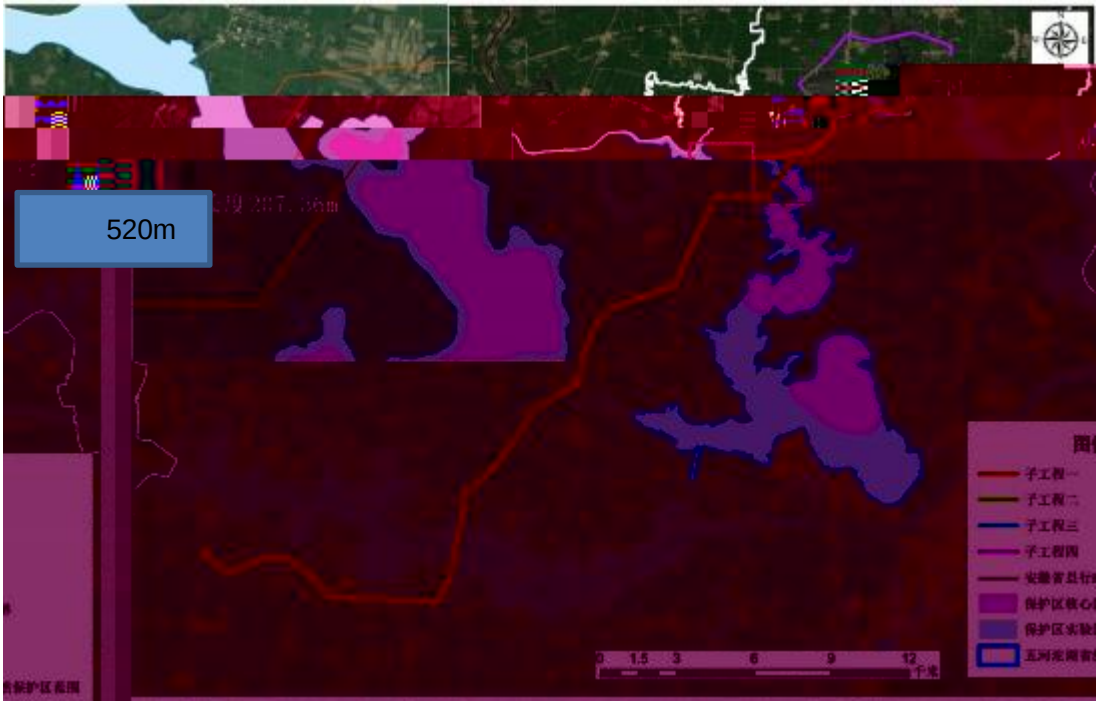
2021-2030

- 220kV

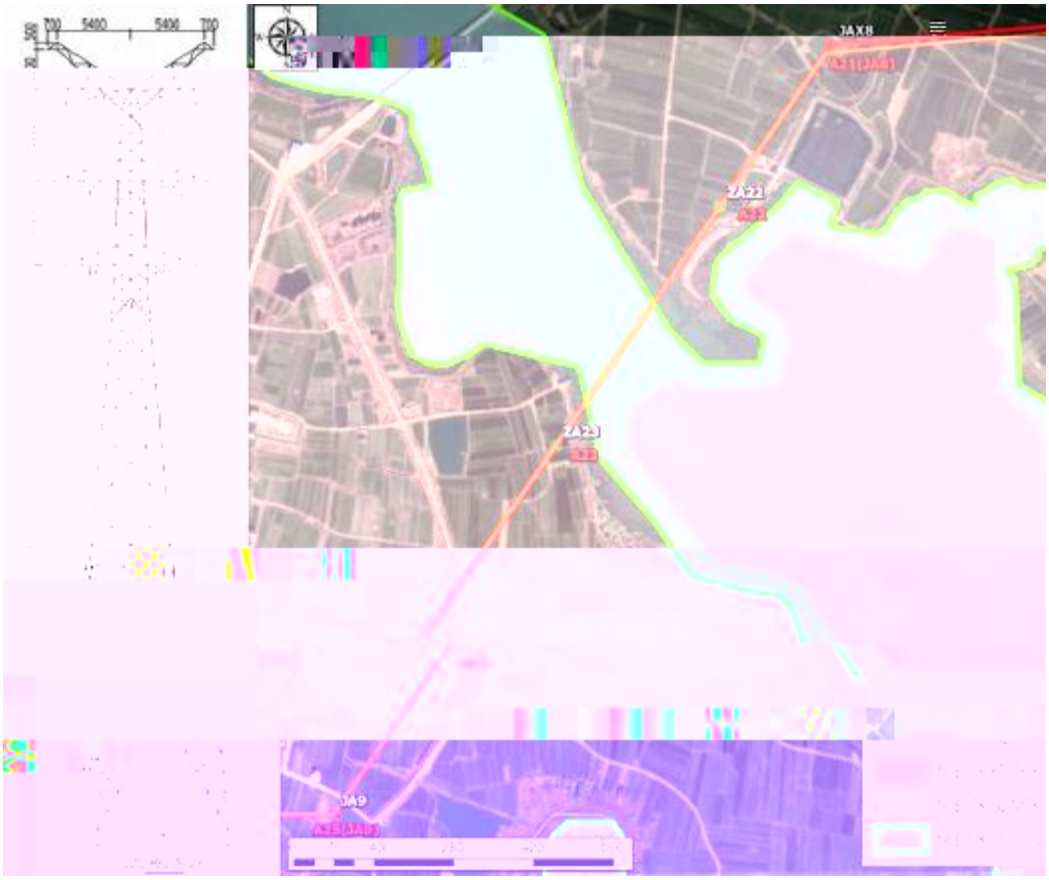
35kV 306

300m 520m

60m 160m



3-2



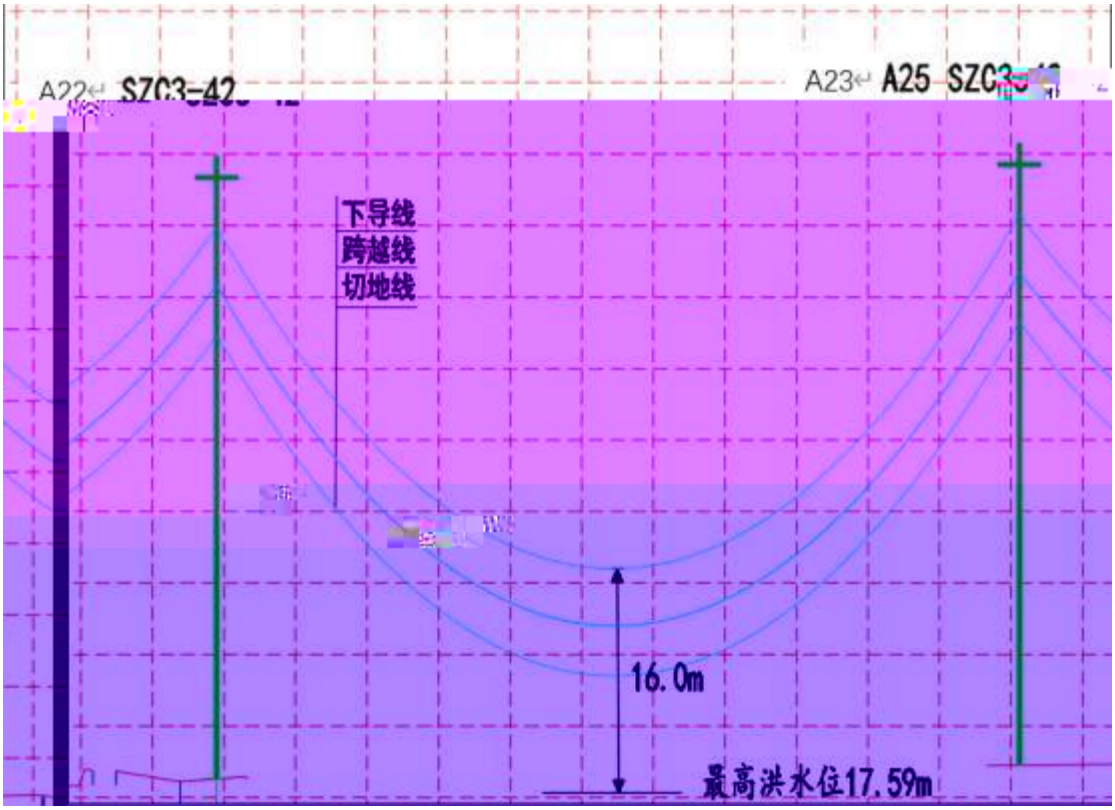
3-3

2

- 590m 300m

17.59m 2

45m 560m



3-4

3-3

		- 220kV	
		220kV	
		- - -	
		A22#	A23#
		220-HB21S-ZC3-42	220-HB21S-ZC3-42
	m	42	42
	m	59	59
	m		210
	2000	X=3682976.7456 Y=575592.9827	X=3682557.4366 Y=575304.5397
	m	15.6	
		75°	
		:2×JL3/G1A-630/45 :2 48 OPGW	

4

4.1

2003

-3 -

I3-5 -

4-1

1 -3 -

g

5379.2km^2

14.6C 2170 850~900mm

1800mm

图4-1

4.2

1km 3km

2021-2030

4-2

4-1

		%		%		%
	0	0.00	0.07	0.00	0.07	0.00
	0	0.00	5.57	0.14	5.57	0.16
	0.13	0.06	173.7	4.28	173.83	4.03
	10.5	4.55	92.88	2.29	103.38	2.39
	219.57	95.13	3727.3	91.93	3946.87	91.16
	0	0.00	1.09	0.03	1.09	0.03
	0	0.00	18.21	0.45	18.21	0.44
	0.03	0.01	1.94			

		%		%		%
	0.01	0.00	0.17	0.00	0.18	0.00
	0	0.00	0.07	0.00	0.07	0.00
	0	0.00	21.38	0.53	21.38	0.50
	0	0.00	0.64	0.02	0.64	0.02
	0	0.00	0.15	0.00	0.15	0.00
	0	0.00	2.08	0.05	2.08	0.09
	0	0.00	0.03	0.00	0.03	0.00
	0.03	0.01	4.7	0.12	4.73	1.01
	0	0.00	0.16	0.00	0.16	0.00
	230.48	100	4054.55	100	4285.03	100

4.3

4.3.1

1

2

4.3.2

4.3.2.1

1 5 1985~1992

1989 2017

1991

2019

2018

2012

2011

4.3.2.2

1 GPS

GPS

GPS

2

20m×20m

5m×5m 1m×1m

GPS

3

2km~3km

20m~300m

GPS

15m~30m

2012

2015

2018

2003 2016

4.3.2.3

2022 10 20 -25 2022 11 2 -

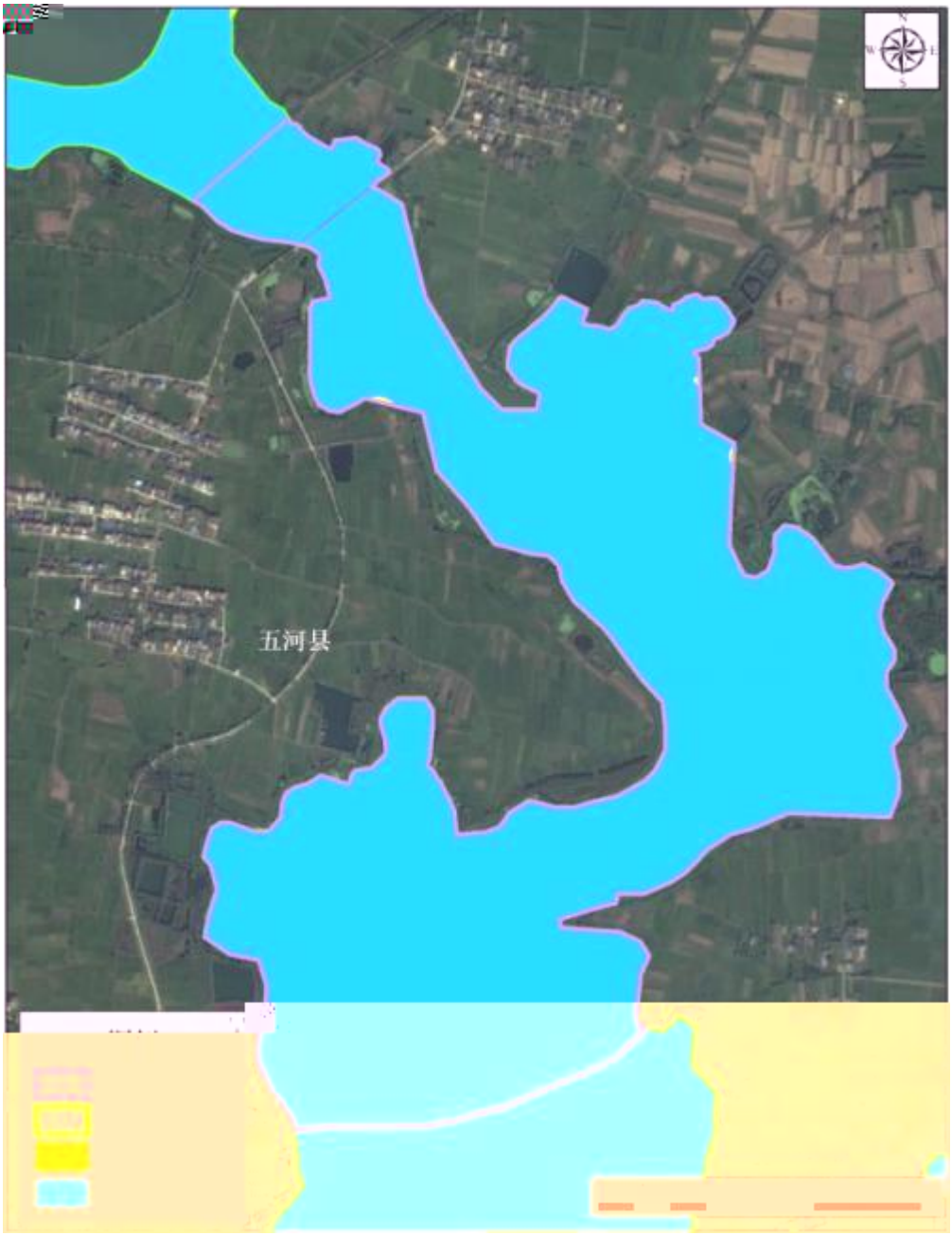
4

4.4

— /

230.07hm^2

99.82% 0.41hm^2 0.18%



4-3

4-2

		95%	230.07 hm^2
			0.41h m^2/

4.5

4.5.1

4.5.1.1

55 123 158

2 2 2 2 2 2 51 119 154

4-3 1

4-3

2	2	2	2	2	2	51	119	154	55	123	158

4.5.1.2

2 2 13

4-4

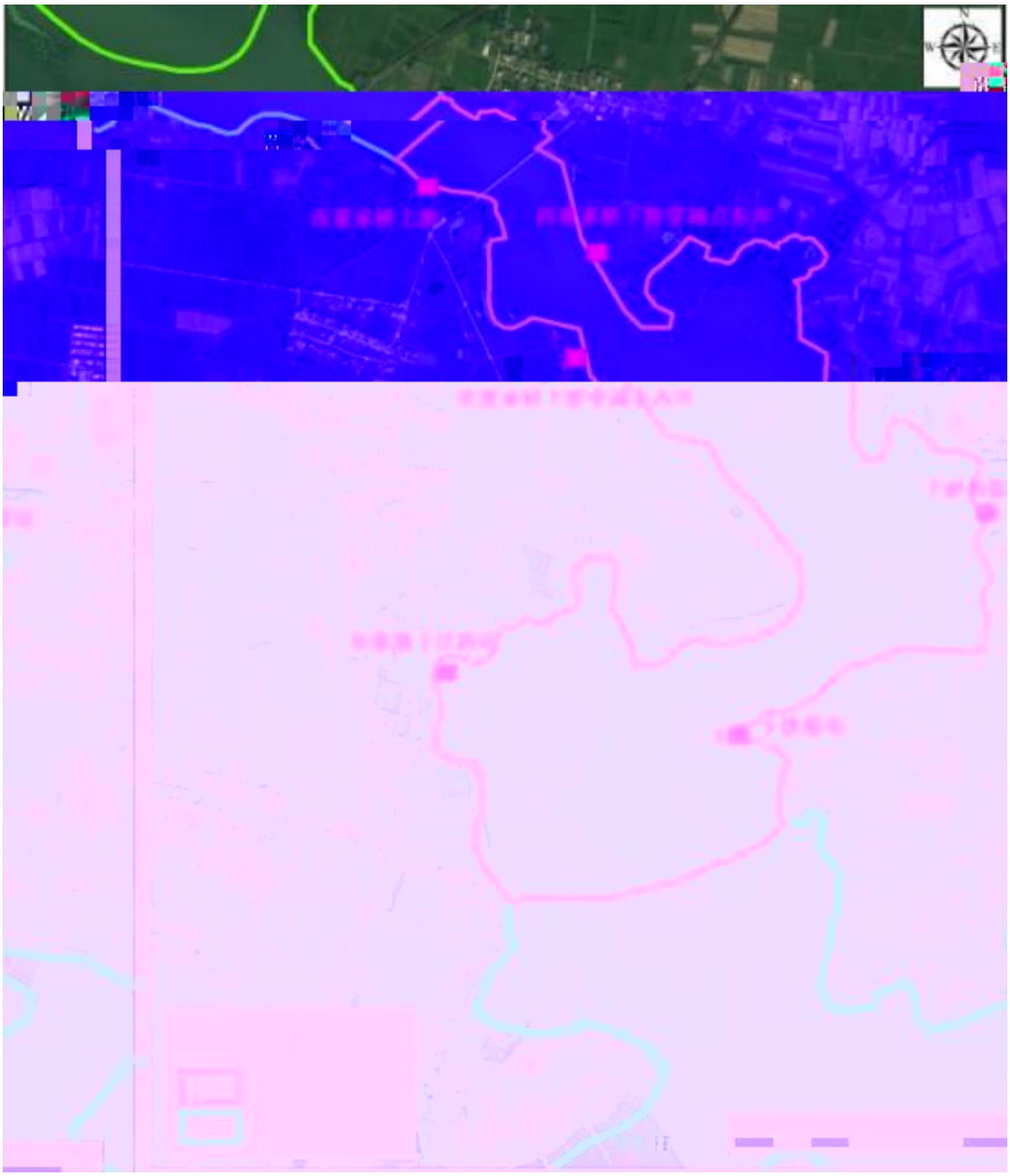
4-4

			1.	Form.*Populus*	
			2.	Form.*Salixbabylonica*	
			3.	Form.*Broussonetia papyrifera*	
			4.	Form.*Cynodondactylon*	
			5.	Form.*Artemisialancea*	
			6.	Form.*Humulusscandens*	
			7.	Form.*Setariaviridis*	
			8.	Form.*Veronicapersica*	
			9.	Form.*Sonchusasper*	
			10.	Form.*Trifoliumrepens*	
			11.	Form.*Taraxacum mongolicum*	
			12.	Form.*Geranium carolinianum*	
			13.	Form.*Cirsiumarvense*var.*integrifolium*	

4.5.1.3

5m×20m 10m×10m

1m×1m 1.5m×1.5m GPS



4-4

4-5

序号	地点	经纬度
1		
2		
3		
4		
5		
6		

4-6

样方调查表1					
/m²	1m×1m				
			m		°
			9		0
	80%	0.1m			0.1-0.2m

	90%	0.5m	0.3-0.6m

		0.3-0.5m

4.5.1.4

1

Salixbabylonica

Pterocaryastenoptera *Sapiumsebiferum*

2

Setariaviridis *Sonchusasper* *Trifoliumrepens*

Geraniumcarolinianum *Veronicapersica*

Humulusscandens *Artemisialavandulifolia*

4.5.1.5

1

图4-6

4.5.2.1

1

1 3 5

2023

2 B*ufogargarizans* *Buforaddei*

2

2

2

3

3

5 3 1

3 1

4.5.2.2

1

2 4 5

2023

2

5 3

Gekkoswinhonis 1

Lycodonrufozonatum

Elaphedione *Gloydiusbrevicaudus* 3

1

3

2 2

3

4.5.2.3

1

75 14 37

21 33 56.75% 44.00%

4-8

Pycnonotussinensis *Passermontanus*

Laniusschach *Motacillaalba* *Picapica*

Turdusmerula *Streptopeliachinensis*

Streptopeliaorientalis *Motacillaalba*

4 11 1 8 1

7

99% *Egrettagarzetta*

Bubulcusibis *Gallinulachloropus*

Tachybaptusruficollis

4-8

目	科	百分比（%）	种	百分比（%）
	1	2.70	1	1.33
	1	2.70	7	9.33
	1	2.70	1	1.33
	1	2.70	2	2.67
	1	2.70	2	2.67
	1	2.70	3	4.00
	4	10.81	11	14.67
	1	2.70	8	10.67
	1	2.70	1	1.33
	1	2.70	1	1.33
	1	2.70	2	2.67
	1	2.70	2	2.67
	1	2.70	1	1.33
	21	56.76	33	44.00
	37	100	75	100

2

75 19

25.33%

Streptopeliachinensis *Ardeolabacchus*

Acridotheres *Vanelluscinereus*

Charadriusdubius *Hirundorustica*

Cecropisdaurica *Zosteropsjaponicus*

3 4.00%

Charadriusalexandrinus

Ardeacinerea *Motacillacinerea*

4-9

区系	种	占比%
	30	40.00

	21	28.00
	21	28.00
	3	4.00
	75	100

3

75 6

10

13.33%

Himantopushimantopus

Nycticoraxnycticorax *Ixobrychussinensis* 20

26.67%

Milvusmigrans *Falcotinnunculus* 2

2.67%

Phasianus

colchicus 3 4.00%

Cuculuscanorus *Cuculusmicropterus*

Cerylerudis *Upupaepops* *Dendrocoposcanicapillus*

Dendrocoposmajor 7 9.33%

33

44.00%

Fulicaatra

4

75 4

C.columbianus *Aixgalericulata*

30

7

2023

23 *Anserfabalis*

Anseranser *Anaspoecilorhyncha*

Zosteropsjaponicus

4.5.2.4

1

4 6 9 4

44.44%

1 *Mustelasibirica*

2

1

Erinaceuseuropaeus *Lepustolai*

Microtusmandarinus *Apodemusagrarius*

Mustelasibirica 9

3

2

2 7

4.5.2.5

4

33 7

26

2022 2

Otistarda *Ciconiaboyciana*

Grusleucogeranus *G.vipio*

G.grus *Platalealeucorodia*

4.6

4.6.1

HJ19-2022 2022

2022

4

4

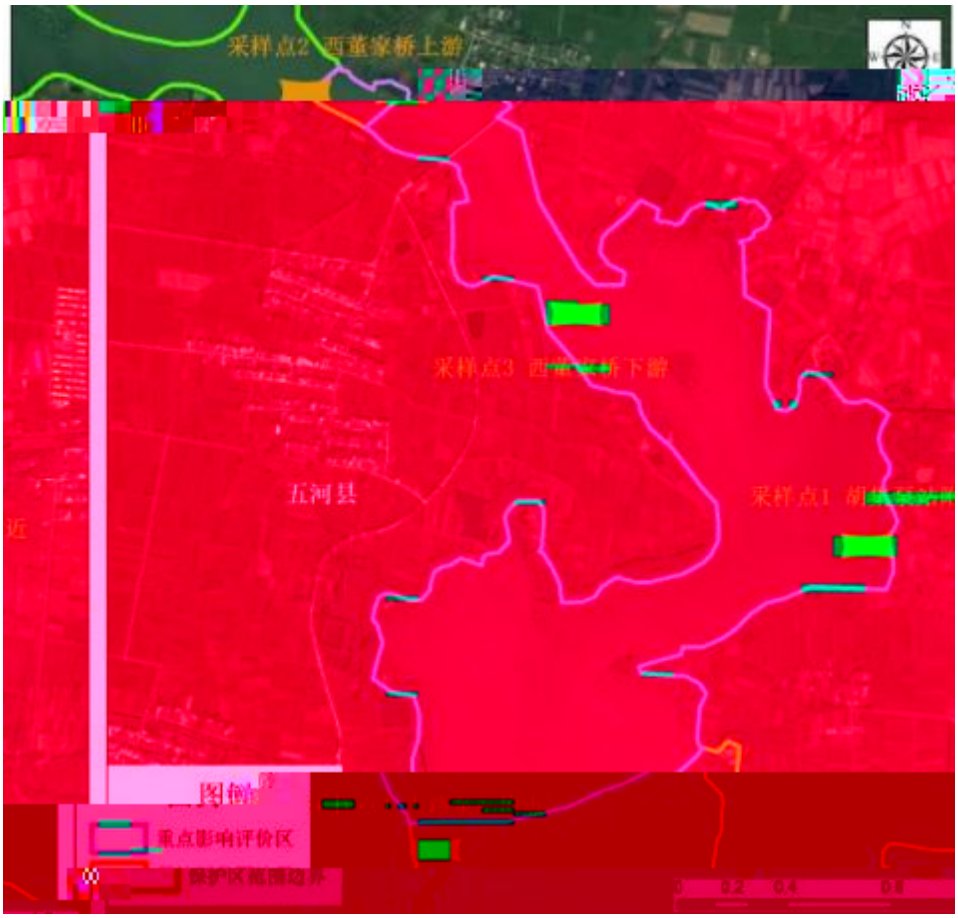


图4-7 沱湖区域水生生物调查样点图

4.6.2

4.6.2.1

1

4% 95%

2

. . ,1999.

. . ,1995.

. . ,1990.

. . ,1991.

1

19 5 10

10 52.63%

1

5.26% 6

4-8

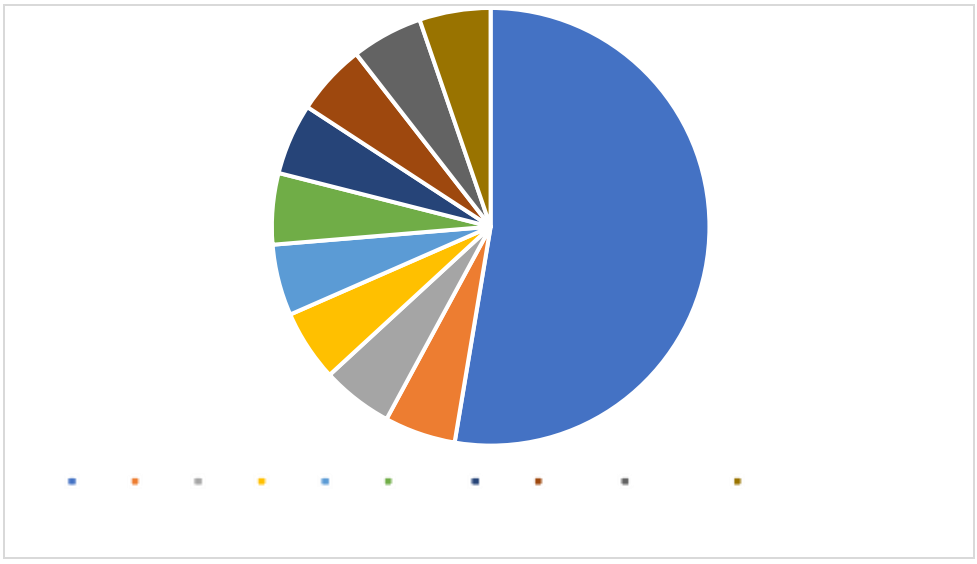


图4-8重点评价区鱼类类群组成

图4-9

. . : ,1999.

, . . : ,1991.

, . . : ,1979.

. . :

,1979.

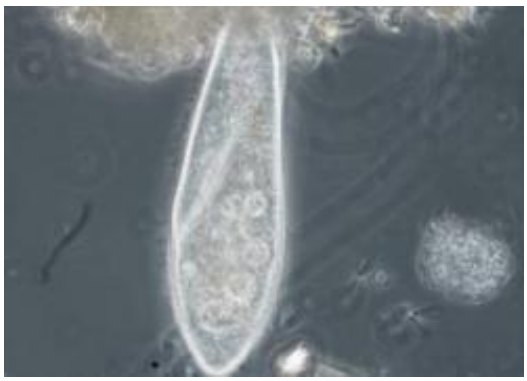
1

4 35

13 37.14% 5

14.29% 10

28.57% 7 20%



*Parameciums*p. *Brachionusangularia*

图4-9显微镜下的浮游生物

2

4-10 452.75ind./L

297~583ind./L 4 583ind./L

2 297ind./L 40%

30% 30%

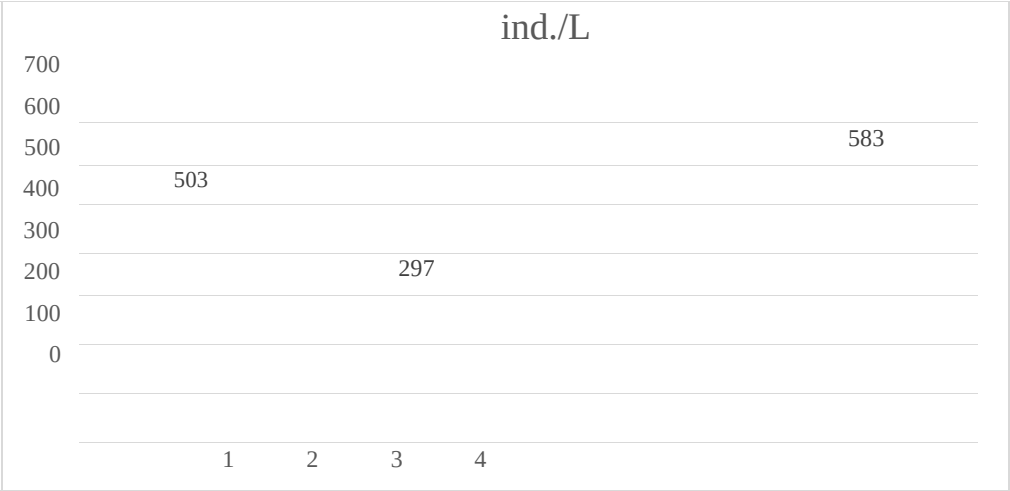


图4-10

4

2 4

3

图4-12

图4-13重点评价区浮游植物种类组成及比例

表4-11

Cryptophyta	20. *Cryptomonsovata*	+			+	
	21. *Chroomonasacuta*				+	
	22. *Chroomonascaudata*		+			
Euglenophyta	23. *Euglenacaudata*			+	+	
	24. Euglenaoxyuris	+		+	+	
	25. Phacustortus	+				
	26. Phacuslongicauda				+	
Chlorophyta	27. *Spirogyra*sp.	+		+	+	
	28. *Chlamydomonasovalis*	+	+	+		
	29. *Chlamydomonasglobosa*		+	+	+	
	30. *Pediastrumsimplex*	+	+	+	+	
	31. *Goniumsoclaie*	+	+			
	32. *Pandorinamorum*	+	+		+	
	33. *Characiumsubstricrum*	+				
	34. *Tetraedromtumlduium*				+	
	35. *Chlorellavulgaris*	+	+	+	+	
	36. *Selenastrumbibraianum*	+	+	+		
	37. *Oocystiselfiptica*				+	
	38. *Crucigeniaapiculeta*	+	+	+	+	
	39. *Scenedesmusobliquus*	+	+	+	+	

Melosiragranulata *Cyclotellameneghiniana*

*Oscillatoria*sp. *Merismopediamlnlma*

Pediastrumsimplex 3

Cyclotellameneghiniana Nitzschiaacicularis

*Oscillatoria*sp *Anabaena*sp 4

*Fragilaria*sp.

*Oscillatoria*sp *Merismopediatenulssma*

Chlorellavulgaris *Scenedesmusobliquus*

Scenedesmusacuminatus

3

4 65.48×10^4ind/L

36.5×10^4ind/L 32.12×10^4ind/L 71.80×10^4ind/L 0.86mg/L

0.59mg/L 0.45mg/L 1.01mg/L 4

3

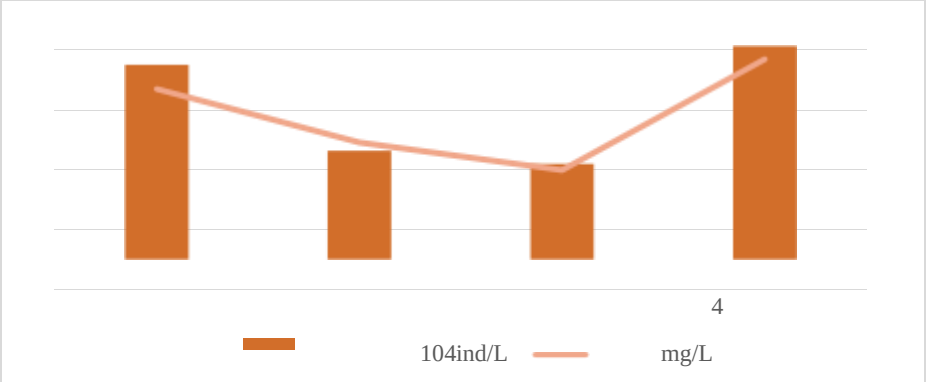


图4-14沱湖重点评价区浮游植物数量及生物量

4

4 4

3

30×10^4ind/L 30×10^4ind/L 100×10^4ind/L

100×10^4ind/L

4

2018

4.6.2.4

1

4 24 3

5 15 4 20.83% 62.50%

16.67%

*Chironomid*sp *Semisulcospiracancellata*

Radixswinhoei *Bellamyapurificata*

Corbiculafluminea *Limnodrilushoffmeisteri*

Branchiurasowerbyi 9

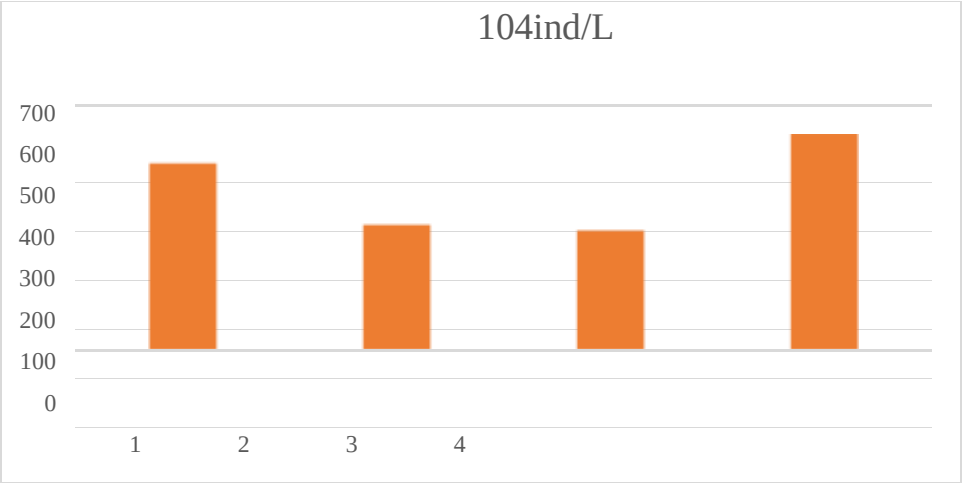
2

463.54ind./m^2 342.36-

618.82ind./m^2 4-15 4

618.82ind./m^2 1 2 3 534.55

358.46ind./m^2 342.36ind./m^2



4-15

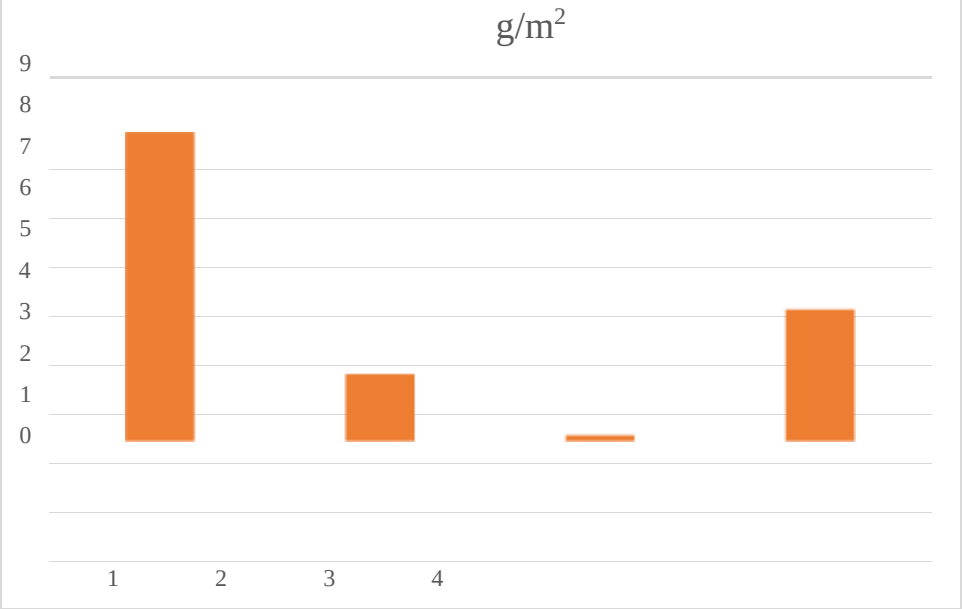
3

3.18g/m^2 0.15-7.62g/m^2

4-16 1

7.62g/m^2 2 4 1.65 3.25g/m^2 3

0.15g/m^2



4-16

4.6.2.5

1

2

2m×2m 2 10m×10m

2 1m×1m

2

29 57 73

7 *Najasmarina*

Potamogetonlucens *Hydrillaverticillata*

Ceratophyllumdemersum *Vallisineriaspiralis*

Najasminor *Potamogetoncrispus* 6

Eichhorniacrassipes *Potamogetonwrightii*

Euryaleferox *Nymphaeatetragona* *Nymphoidespeltata*

Trapaincisa 3 *Lemnaminor*

Hydrocharisdubia *Spirodelapolyrrhiza* 9

*Eleocharisdulcis*var.*tuberosa* *Acoruscalamus*

Juncuseffusus *Miscanthussacchariflous* *Zizaniacaduciflora*

Sagittariatrifolia *Phragmitesaustralis*

Arundodonax *Typhaorientalis*

48

73 1

3

15%

TaraxacummongolC

70%

Celosiaargentea *Polygonumlapathifolium*

80%

60%

75%

90%

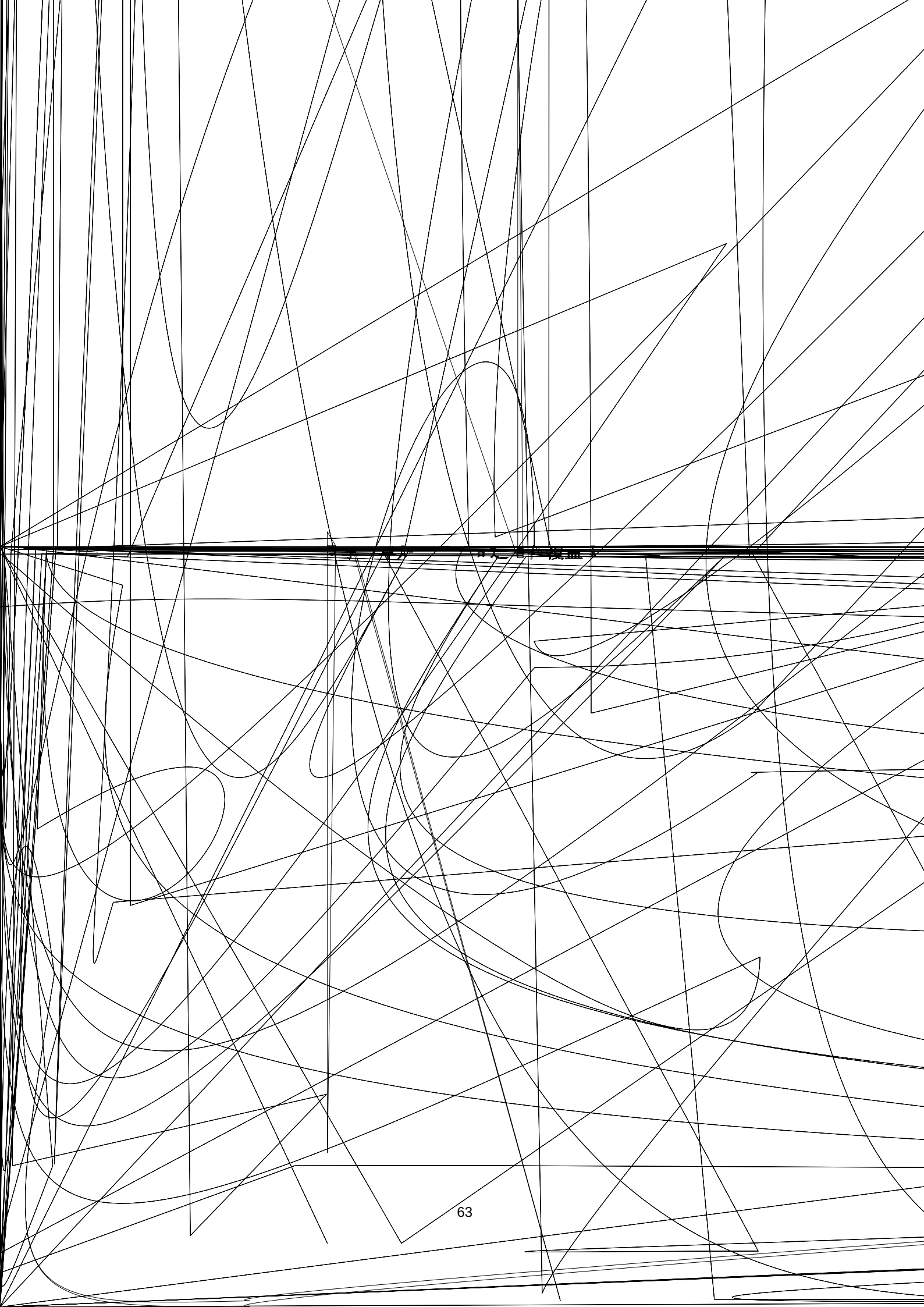
90%

95%

80%

Salvinianatans



99%

55 123 158

1

4 21

49 94

4 7

26

19 5 10 4 35 46 5

24 3 29

57 73

2

5

5.1

5.1.1

230.48hm^2 5.38%

5.1.2

207.36m 10 0.20

5.1.3

5.1.4

5.2

5.2.1

R Æ

5.3

5.3.1

1

2

3

35kV 306

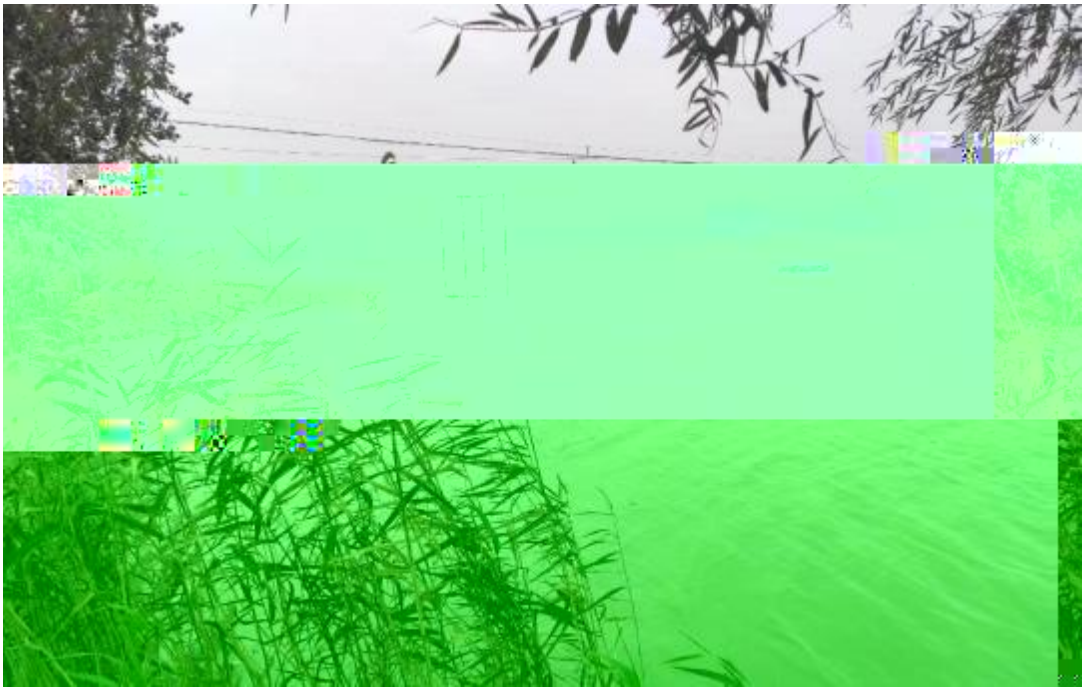


图5-1项目跨越点附近已有线路

2020

图5-2本工程沿线鸟巢类故障风险分布图

4

5.3.2

1

4

16

图5-3本工程与科考记录的重点保护鸟类活动区域位置关系图

5.4

图5-4沱湖周边水环境现状

5.6.2

5.6.3

5.6.4

5.6.5

5.7

5.7.1

1

2.5~3.5m

±1.5m

2

3

C30

C15 C15 100mm

5.6 8.8 HPB300 HRB400

5.7.2

61%

6

6.1

1

2

3

4 10 4

4 12

5

6

7

6.2

1

2

3

7

LY/T2242-2014

7-

7-1

二级指标	评分	权重	得分	综合得分
/ A1	50	0.27	13.5	50
/ A2	50	0.23	11.5	
/ A3	50	0.15	7.5	
A4	50	0.1	5	
A5	50	0.05	2.5	
A6	50	0.2	10	
B1	50	0.35	17.5	50
B2	50	0.3	15	
B3	50	0.05	2.5	
B4	50	0.2	10	
B5	50	0.1	5	
C1	50	0.3	15	50
C2	50	0.3	15	
/ C3	50	0.2	10	
C4	50	0.2	10	
D1	50	0.2	10	60
D2	50	0.2	10	
D3	70	0.5	35	
D4	50	0.1	5	
E1	50	0.3	15	50
E2	50	0.4	20	
E3	50	0.15	7.5	
E4	50	0.15	7.5	
F1	50	0.1	5	50
F2	50	0.2	10	
F3	50	0.35	17.5	

F4	50	0.3	15	
F5	50	0.05	2.5	

A B

C D E F 6

Si×Wi i=A~F

BI

Si Wi

BI 7-

7-3

BI=52 60

表7-2生态影响指数计算表

一级指标	一级指标得分Si	一级指标权重Wi	影响指数（BI）
/ A	50	0.2	10
B	50	0.2	10
/ C	50	0.2	10
D	60	0.2	12
E	50	0.1	5
F	50	0.1	5
BI	/	1	52

表7-3

1200MW

7.2

1200MW

1

2

3

4

F ╪ f