

FISH FAUNA IN GIANH RIVER BASIN, QUANG BINH PROVINCE, NORTH CENTRE VIETNAM

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We carried out 12 field surveys in 2003 - 2011 at 36 study sites and collected 5699 specimens. Over time of analysis, we have identified 181 fish species belong to 139 genera, 64 families of 16 orders of the ichthyofauna in Gianh River, 5 rare species recorded in the Red Book of Vietnam (2007), 84 species having economic value, 68 species in upstream, 64 species distributed in the middle, 61 species in downstream and 100 species in the estuary.

Keywords: *Cypriniformes, Perciformes, Fish fauna, Phong Nha – Ke Bang, classification, Vietnam, Gianh river, Quang Binh.*

IHTIOFAUNA DIN BAZINUL RÂULUI GIANH, PROVINCIA QUANG BINH, VIETNAMUL CENTRAL DE NORD

În perioada anilor 2003-2011 au fost efectuate 12 cercetări de teren la 36 de situri și au fost colectate 5699 de exemplare. În urma analizelor îndelungate am identificat 181 de specii de pești din cadrul a 139 genuri, 64 de familii cuprinse în 16 ordine ale ihtiofaunei din bazinul râului Gianh. Dintre acestea, 5 specii rare sunt înregistrate în Cartea Roșie a Vietnamului (2007), iar 84 de specii au valoare economică. 68 de specii au fost colectate în amonte, 64 de specii distribuite în cursul mijlociu al râului, 61 de specii în aval și 100 de specii din estuar.

Cuvinte-cheie: *pești Cipriniforme, pești Perciforme, ihtiofauna, Phong Nha – Ke Bang, clasificare, Vietnam, râul Gianh, Quang Binh.*

Introduction

The Gianh River in Quang Binh province in north center region Vietnam is about 158 km long and 4680 km² large. It starts from level 2017 m high of Co Pi mountain of Truong Son strains before running around in some districts of Quang Binh province such as Minh Hoa, Tuyen Hoa and Quang Trach. In addition, Son River (Phong Nha River) is a small branch in the north of this tributary with many cave system, underground streams from the Thuong Trach village, Bo Trach district and run through the Phong Nha – Ke Bang cave system then combine with Gianh River in My Trach village, Bo Trach district before reach up to the East Sea by Gianh estuary

Species composition of fish fauna in this region was investigated by Ho Anh Tuan, Nguyen Thai Tu and collaborators in the Con tributary, Phong Nha – Ke Bang National Park [27, 28, 29]. Nguyen Thai Tu, Ngo Si Van and Mai Thi Thanh Phuong [15, 20] had been studied insufficiency of species composition of fish fauna in the mainstream of Gianh River. It indicated that there was not full research of fish fauna in whole Gianh River basin. Hence, research on fish fauna in the Gianh River is very necessary to understand how biodiversity of fish and provide full scientific database for bio - conservation and fishing planning, sustainable exploration in special protection for the Phong Nha – Ke Bang National Park. Therefore, we take into account to study the topic "Fish fauna in Gianh river basin, Quang Binh Province, North Centre Vietnam"

1. Material and methods

Fish specimens were collected mainly from fishing men in these survey regions. Fishing tools are fishnets, rackets, casting – net, multi size fishing – rods and also professional tools of fish men such as: fishing basket, fishing traps, etc. Some other specimens was bought from local people. All samples were given full information in field trip diary, sampling notes, taking pictures and fixed with formaline 8- 10% and reserving with formaline 5% in Animal Laboratory of Department of Biology, Vinh University.

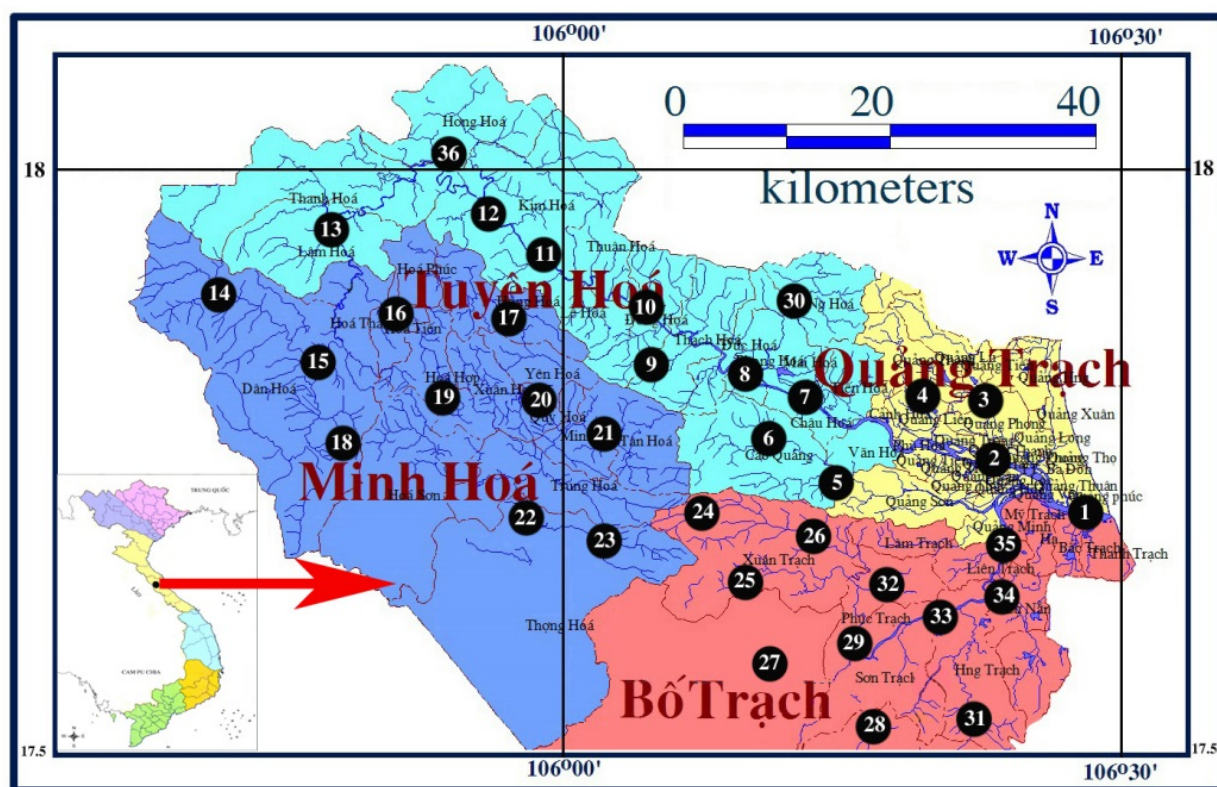


Fig.1. Map study fish in Gianh river basin

We use the following materials to Identification species: Chen Yiyu et al. (1998); Chu Xinluo, Zheng, Bashan, Dai Dingyuan (1999); Do Thi Nhu Nhung (2007); Freyhof, J., D.V. Serov (2001); Freyhof, J.F. Herder (2002); Hartel K. E., T. Nakabo (2003); Imamura, H., M. Komada (2006); Johnson T. F. C., Herman T. C. W. (1965); Knapp, Smith, Heemstra (1986); Kottelat, M. (1990, 2000); Mai Dinh Yen (1978, 1992); Menon A. G. K. (1977); Nakabo T (1982, 1983); Nguyen Huu Phung (2001); Nguyen Khac Huong (1991, 2007); Nguyen Nhat Thi (1991, 2001); Nguyen Van Hao, Ngo Sy Van (2001); Nguyen Van Hao (Vol. 2, Vol. 3); Nguyen Van Luc, Le Thi Thu Thao, Nguyen Phi Uy Vu (2007); Prokofiev A. M. (2010); (Rainboth, W.J) 1996; Roberts, T. R. (1998); Tetsji Nakabo (2002); William P. D. (1966); Yokogawa K., H. Endo, H. Sakaji (2008); Yue Peiqi et al (2000);

List of classes, Orders, families and subfamilies is sorted by William N. Eschmeyer and Jon David Fong 2015. Genera of subfamilies and species of genera is sorted by a to z. [39, 40].

2. Results and discussion

We conducted 12 field surveys in 2003 - 2011 at 36 study sites and collected 5699 specimens. Over time of analysis, we have identified 181 fish species belong to 139 genera, 64 families of 16 orders distributed in Gianh river basin in Quang Binh - North Central of Vietnam.

N ^o	Scientific name	1	2	Distribution			
				a	b	c	d
A	CLASS CHONDRICHTHYES						
I.	ORDER RAJIFORMES						
(1).	FAMILY RAJIDAE						
1.	<i>Dasyatis sinensis</i> (Steindachner, 1892)						+
II.	ORDER MYLIOBATIFORMES						
(2).	FAMILY GYMNURIDAE						
2.	<i>Gymnura poecilura</i> (Shaw, 1804)						+
B	CLASS ACTINOPTERYGII						
III.	ORDER OSTEOGLOSSIFORMES						

N ^o	Scientific name	1	2	Distribution			
				a	b	c	d
(3).	FAMILY NOTOPTERIDAE						
3.	<i>Notopterus notopterus</i> (Pallas, 1769)		*		+	+	+
IV.	ORDER ANGUILLIFORMES						
(4).	FAMILY ANGUILLIDAE						
4.	<i>Anguilla marmorata</i> Quoy & Gaimard, 1824	VU	*	+	+	+	+
(5).	FAMILY OPHICHTHIDAE						
1	Subfamily Ophichthinae						
5.	<i>Ophichthus celebicus</i> (Bleeker, 1856)						+
6.	<i>Pisodonophis boro</i> (Hamilton, 1822)						+
(6).	FAMILY CONGRIDAE						
2	Subfamily Congrinae						
7.	<i>Gnathophis nystromi</i> (Jordan & Snyder, 1901)						+
8.	<i>Rhynchoconger ectenurus</i> (Jor. & Ric., 1909)						+
V.	ORDER CLUPEIFORMES						
(7).	FAMILY CLUPEIDAE						
9.	<i>Clupanodon thrissa</i> (Linnaeus, 1758)	EN	*			+	+
10.	<i>Konosirus punctatus</i> (Tem. & Sch., 1846)	VU	*			+	+
11.	<i>Escualosa thoracata</i> (Valenciennes, 1847)						+
12.	<i>Sardinella albella</i> (Valenciennes, 1847)		*				+
(8).	FAMILY ENGRAULIDAE						
13.	<i>Thryssa vitirostris</i> (Gil. & Tho., 1908)						+
VI.	ORDER CYPRINIFORMES						
(9).	FAMILY CYPRINIDAE						
3	Subfamily Acheilognathinae						
14.	<i>Acheilognathus lamus</i> Tu, 1983			+	+		
15.	<i>Acheilognathus tonkinensis</i> (Vailant, 1892)			+			
16.	<i>Rhodeus kyphus</i> (Yen, 1978)			+			
17.	<i>Rhodeus ocellatus</i> (Kener, 1867)			+			
18.	<i>Rhodeus spinalis</i> Oshima, 1926			+			
4	Subfamily Cultrinae						
19.	<i>Cultrichthys erythropterus</i> (Basilewsky, 1855)				+		
20.	<i>Hemiculter leucisculus</i> (Basilewsky, 1855)		*	+	+		
21.	<i>Pseudohemiculter dispar</i> (Peters, 1881)			+	+		
5	Subfamily Cyprininae						
22.	<i>Carassioides acuminatus</i> (Richardson, 1846)		*	+	+	+	
23.	<i>Carassioides phongnhaensis</i> Tu & Tuan, 2003				+		
24.	<i>Carassius auratus</i> (Linnaeus, 1785)		*	+	+	+	
25.	<i>Cyprinus carpio</i> Linnaeus, 1758		*	+	+	+	
26.	<i>Cyprinus hieni</i> Tu & Tuan, 2003			+	+		
27.	<i>Cyprinus quidatensis</i> Tu, 1999			+			
6	Subfamily Barbinae						
28.	<i>Puntius brevis</i> (Bleeker, 1849)				+	+	
29.	<i>Puntius semifasciolatus</i> (Günther, 1868)			+	+	+	
7	Subfamily Labeoninae						
30.	<i>Cirrhinus molitorella</i> (Valenciennes, 1844)		*	+			
31.	<i>Garra imberba</i> Garman, 1912		*	+			
32.	<i>Osteochilus lini</i> Fowler, 1935				+	+	
33.	<i>Osteochilus salsburyi</i> Nichols & Pope, 1927		*		+	+	
8	Subfamily Squaliobarbinae						
34.	<i>Ctenopharyngodon idella</i> (Val., 1844)		*		+	+	
35.	<i>Squaliobarbus curriculus</i> (Richardson, 1846)		*		+	+	
9	Subfamily Xenocyprininae (Xenocyprinae)						
36.	<i>Hypophthalmichthys molitrix</i> (Valenciennes, 1844)		*		+	+	

N ^o	Scientific name	1	2	Distribution			
				a	b	c	d
10	Subfamily Gobioninae						
37.	<i>Hemibarbus umbrifer</i> (Lin, 1931)		*	+	+		
38.	<i>Microphysogobio kachekensis</i> (Oshima, 1926)		*	+	+		
39.	<i>Sarcocheilichthys parvus</i> Nichols, 1930			+	+		
40.	<i>Squalidus argentatus</i> (Sau. & Dab. Thi., 1874)			+	+		
11	Subfamily Danioninae						
41.	<i>Devario fangfangae</i> (Kottelat, 2000)			+			
42.	<i>Devario gigber</i> (Kottelat, 2000)			+			
43.	<i>Esomus metallicus</i> Ahl, 1923			+	+		
44.	<i>Esomus longimanus</i> (Lunel, 1881)				+	+	
45.	<i>Rasbora steineri</i> Nichols & Pope, 1927			+	+		
12	Incertae sedis Subfamily						
46.	<i>Hypsibarbus annamensis</i> (Pel. & Che., 1936)	VU	*	+			
47.	<i>Hypsibarbus macrosquamatus</i> (Mai, 1978)		*	+			
48.	<i>Nicholsicypris dorsohorizontalis</i> Ng. & Do., 1969		*	+	+		
49.	<i>Neolissochilus benasi</i> (Pellegrin & Chevey, 1936)		*	+			
50.	<i>Onychostoma gerlachi</i> (Peters, 1881)		*	+	+		
51.	<i>Opsariichthys bidens</i> Günther, 1873		*	+	+		
52.	<i>Paraspinibarbus macracanthus</i> (Pel. & Che., 1936)		*	+	+		
53.	<i>Poropuntius solitus</i> Kottelat, 2000		*	+			
54.	<i>Spinibarbus denticulatus</i> (Oshima, 1926)		*	+			
55.	<i>Spinibarbus hollandi</i> Oshima, 1919		*	+	+		
13	Subfamily Alburninae						
56.	<i>Metzia lineata</i> (Pellegrin, 1907)				+		
(10).	FAMILY COBITIDAE						
14	Subfamily Cobitinae						
57.	<i>Cobitis laoensis</i> (Sauvage, 1878)		*	+	+		
58.	<i>Misgurnus anguillicaulatus</i> (Cantor, 1842)		*		+	+	
59.	<i>Misgurnus mizolepis</i> Günther, 1888		*	+			
(11).	FAMILY BALITORIDAE						
60.	<i>Annamia normani</i> (Hora, 1931)			+			
61.	<i>Sewellia lineolata</i> (Valenciennes, 1836)			+			
(12).	FAMILY NEMACHEILIDAE						
62.	<i>Schistura finis</i> Kottelat, 2000			+			
63.	<i>Schistura hingi</i> (Herre, 1934)		*	+			
64.	<i>Schistura pervagata</i> Kottelat, 1998		*	+			
65.	<i>Schistura kottelati</i> Tuan et al			+			
66.	<i>Tracacichthys taeniatus</i> (Pel. & Che., 1936)		*	+	+		
VII.	ORDER SILURIFORMES						
(13).	FAMILY BAGRIDAE						
67.	<i>Mystus gulio</i> (Hamilton, 1822)			+	+		
68.	<i>Hemibagrus centralis</i> Mai, 1978		*	+	+		
69.	<i>Tachysurus virgatus</i> (Oshima, 1926)		*	+	+		
(14).	FAMILY SILURIDAE						
70.	<i>Silurus asotus</i> Linnaeus, 1758		*	+	+		
71.	<i>Pterocryptis cochinchinensis</i> (Val., 1840)		*	+	+		
(15).	FAMILY SISORIDAE						
15	Subfamily Glyptosterninae						
72.	<i>Glyptothorax laosensis</i> Fowler, 1934			+	+		
73.	<i>Glyptothorax interspinalis</i> (Mai, 1978)			+	+		
74.	<i>Glyptothorax quadriocellatus</i> (Mai, 1978)			+	+		
75.	<i>Glyptothorax zanaensis</i> Wu, He & Chu, 1981			+	+		
(16).	FAMILY CLARIIDAE						

N ^o	Scientific name	1	2	Distribution			
				a	b	c	d
76.	<i>Clarias fuscus</i> (Linnaeus, 1758)		*		+	+	
(17).	FAMILY PLOTOSIDAE						
77.	<i>Plotosus lineatus</i> (Thunberg năm 1787)		*			+	+
VIII.	ORDER AULOPIFORMES						
(18).	FAMILY SYNODONTIDAE						
16	Subfamily Harpadontinae						
78.	<i>Saurida elongata</i> (Tem. & Sch., 1846)		*				+
IX.	ORDER ATHERINIFORMES						
(19).	FAMILY ATHERINIDAE						
17	Subfamily Atherinomorinae						
79.	<i>Hypoatherina valenciennesi</i> (Bleeker, 1854)						+
X.	ORDER BELONIFORMES						
(20).	FAMILY BELONIDAE						
80.	<i>Strongylura strongylura</i> (van Hasselt, 1823)		*			+	+
(21).	FAMILY HEMIRAMPHIDAE						
81.	<i>Hyporhamphus sinensis</i> (Günther 1866)					+	+
XI.	ORDER SYNGNATHIFORMES						
(22).	FAMILY SYNGNATHIDAE						
18	Subfamily Syngnathinae						
82.	<i>Microphis cunocalus</i> (Hamilton, 1822)					+	+
83.	<i>Hippichthys spicifer</i> (Rüppell, 1838)					+	+
XII.	ORDER SYNBRANCHIFORMES						
(23).	FAMILY SYNBRANCHIDAE						
84.	<i>Monopterus albus</i> (Zuiew, 1793)		*	+	+	+	
(24).	FAMILY MASTACEMBELIDAE						
85.	<i>Mastacembelus armatus</i> (Lacepède, 1800)		*	+	+	+	
86.	<i>Sinobdella sinensis</i> (Bleeker, 1870)		*	+	+	+	
XIII.	ORDER SCORPAENIFORMES						
(25).	FAMILY TETRAROGIDAE						
87.	<i>Paracentropogon rubripinnis</i> (Tem. & Sch., 1843)						+
(26).	FAMILY SYNANCEIIDAE						
19	Subfamily Minoinae						
88.	<i>Minous pusillus</i> (Tem. & Sch., 1843)						+
(27).	FAMILY PLATYCEPHALIDAE						
89.	<i>Platycephalus indicus</i> (Linnaeus, 1758)		*			+	+
90.	<i>Rogadius serratus</i> (Cuvier, 1829)		*				+
91.	<i>Sorsogona tuberculata</i> (Cuvier, 1829)		*				+
XIV.	ORDER PERCIFORMES						
(28).	FAMILY AMBASSIDAE						
92.	<i>Ambassis ambassis</i> (Lacepède, 1802)			+	+	+	
(29).	FAMILY PERCICHTHYIDAE						
93.	<i>Coreoperca whiteheadi</i> Boulenger, 1900		*	+	+		
(30).	FAMILY LATIDE						
94.	<i>Lates calcarifer</i> (Bloch, 1790)		*			+	+
(31).	FAMILY SERRANIDAE						
20	Subfamily Epinephelinae						
95.	<i>Epinephelus awoara</i> (Tem. & Sch., 1842)		*				+
96.	<i>Epinephelus longispinis</i> (Kner, 1864)		*				+
(32).	FAMILY TERAPONTIDAE						
97.	<i>Terapon jarbua</i> (Forsskål, 1775)		*			+	+
98.	<i>Pelates sexlineatus</i> (Quoy & Gaimard, 1825)		*				+
(33).	FAMILY APOGONIDAE						
21	Subfamily Apogoninae						

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				a	b	c	d
99.	<i>Apogon poecilopterus</i> Cuvier, 1828						+
100.	<i>Ostorhinchus fasciatus</i> (White, 1790)						+
(34).	FAMILY SILLAGINIDAE						
101.	<i>Sillago maculata</i> Quoy & Gaimard, 1824		*				+
102.	<i>Sillago sihama</i> (Forsskål, 1775)		*				+
(35).	FAMILY CARANGIDAE						
103.	<i>Carangoides praeustus</i> (Bennett, 1830)		*			+	+
104.	<i>Selaroides leptolepis</i> (Cuvier, 1833)		*				+
105.	<i>Scomberoides lysan</i> (Forsskål, 1775)						+
(36).	FAMILY LEIOGNATHIDAE						
106.	<i>Eubleekeria splendens</i> (Cuvier, 1829)						+
107.	<i>Leiognathus equulus</i> (Forsskål, 1775)						+
108.	<i>Leiognathus brevisrostris</i> (Valenciennes, 1835)						+
109.	<i>Secutor ruconius</i> (Hamilton, 1822)						+
(37).	FAMILY LUTJANIDAE						
110.	<i>Lutjanus fulviflamma</i> (Forsskål, 1775)		*				+
111.	<i>Lutjanus russellii</i> (Bleeker, 1849)		*				+
112.	<i>Lutjanus fulvus</i> (Forster, 1801)						+
(38).	FAMILY GERREIDAE						
113.	<i>Gerres limbatus</i> Cuvier, 1830		*			+	+
114.	<i>Gerres decacanthus</i> (Bleeker, 1864)					+	+
115.	<i>Gerres filamentosus</i> Cuvier, 1829		*			+	+
(39).	FAMILY HAEMULIDAE						
22	Subfamily Haemulinae						
116.	<i>Pomadasys maculatus</i> (Bloch, 1793)		*				+
(40).	FAMILY SCIAENIDAE						
117.	<i>Argyrosomus pawak</i> Lin, 1940		*				+
(41).	FAMILY MULLIDAE						
118.	<i>Upeneus luzonius</i> Jordan & Seale, 1907						+
119.	<i>Upeneus subvittatus</i> (Tem. & Sch., 1843)						+
120.	<i>Upeneus tragula</i> Richardson, 1846						+
(42).	FAMILY DREPANEIDAE						
121.	<i>Drepane punctata</i> (Linnaeus, 1758)		*				+
(43).	FAMILY MONODACTYLIDAE						
122.	<i>Monodactylus argenteus</i> (Linnaeus, 1758)						+
(44).	FAMILY MUGILIDAE						
123.	<i>Liza affinis</i> (Günther, 1861)		*				+
(45).	FAMILY CICHLIDAE						
23	Subfamily Pseudocrenilabrinae						
124.	<i>Oreochromis niloticus</i> (Linnaeus, 1758)		*	+	+	+	+
(46).	FAMILY POMACENTRIDAE						
125.	<i>Pomacentrus nigricans</i> (Lacepède, 1802)						+
(47).	FAMILY BLENNIIDAE						
24	Subfamily Blenniinae						
126.	<i>Omobranchus fasciolatoceps</i> (Richardson, 1846)						+
(48).	FAMILY CALLIONYMIDAE						
127.	<i>Callionymus curvicornis</i> Valenciennes, 1837		*				+
128.	<i>Callionymus pleurostictus</i> Fricke, 1982						+
(49).	FAMILY ODONTOBUTIDAE						
129.	<i>Sineleotris chalmersi</i> Nichols & Pope, 1927		*	+	+		
130.	<i>Sineleotris namxamensis</i> Chen & Kottelat, 2004		*	+	+		
(50).	FAMILY ELEOTRIDAE						
25	Subfamily Butinae						

N ^o	Scientific name	1	2	Distribution			
				a	b	c	d
131.	<i>Bostrychus sinensis</i> Lacepède, 1801	CR	*			+	+
132.	<i>Butis butis</i> (Hamilton, 1822)					+	+
133.	<i>Butis koilomatodon</i> (Bleek, 1849)					+	+
26	Subfamily Eleotrinae						
134.	<i>Eleotris fusca</i> (Forster, 1801)					+	+
135.	<i>Eleotris melanosoma</i> Bleeker, 1853					+	+
(51).	FAMILY GOBIIDAE						
27	Subfamily Gobionellinae						
136.	<i>Chaeturichthys stigmatias</i> Richardson, 1844					+	+
137.	<i>Oligolepis acutipennis</i> (Valenciennes, 1837)				+	+	
138.	<i>Oxyurichthys microlepis</i> (Bleek, 1849)					+	+
139.	<i>Oxyurichthys tentacularis</i> (Valenciennes, 1837)		*			+	+
140.	<i>Rhinogobius giurinus</i> (Rutter, 1897)				+	+	
141.	<i>Rhinogobius leavelli</i> (Herre, 1935)		*	+	+		
142.	<i>Tridentiger trigonocephalus</i> (Gill, 1859)		*			+	
143.	<i>Ctenogobius brevirostris</i> Günther, 1861					+	+
144.	<i>Papuligobius uniporus</i> Chen & Kottelat, 2003		*	+	+		
28	Subfamily Oxudercinae						
145.	<i>Pseudapocryptes elongatus</i> (Cuvier, 1816)		*			+	+
29	Subfamily Gobiinae						
146.	<i>Acentrogobius caninus</i> (Valenciennes, 1837)					+	+
147.	<i>Acentrogobius nebulosus</i> (Forsskål, 1775)					+	+
148.	<i>Arcygobius baliurus</i> (Valenciennes, 1837)					+	+
149.	<i>Favonigobius aliciae</i> (Herre, 1936)					+	+
150.	<i>Glossogobius giuris</i> (Hamilton, 1822)		*	+	+		
151.	<i>Glossogobius olivaceus</i> (Tem. & Sch., 1845)					+	+
152.	<i>Oplopomus oplopomus</i> (Valenciennes, 1837)					+	+
153.	<i>Paragobiodon echinocephalus</i> (Ruppell, 1828)					+	+
154.	<i>Parachaeturichthys polynema</i> (Bleek, 1853)					+	+
155.	<i>Psammogobius biocellatus</i> (Valenciennes, 1837)					+	+
156.	<i>Yongeichthys criniger</i> (Valenciennes, 1837)					+	+
(52).	FAMILY SCATOPHAGIDAE						
157.	<i>Scatophagus argus</i> (Linnaeus, 1766)		*				+
(53).	FAMILY SIGANIDAE						
158.	<i>Siganus canaliculatus</i> (Park, 1797)		*				+
159.	<i>Siganus punctatissimus</i> Fowler & Bean, 1929						+
(54).	FAMILY SPHYRAENIDAE						
160.	<i>Sphyræna pinguis</i> Günther, 1874		*				+
(55).	FAMILY ANABANTIDAE						
161.	<i>Anabas testudineus</i> (Bloch, 1792)		*	+	+	+	+
(56).	FAMILY OSPHRONEMIDAE						
30	Subfamily Macropodusinae						
162.	<i>Macropodus opercularis</i> (Linnaeus, 1758)			+	+	+	
163.	<i>Macropodus spechti</i> Schreitmüller, 1936				+		
164.	<i>Macropodus erythropterus</i> Frey. & Her., 2002				+		
165.	<i>Trichopsis vittata</i> (Cuvier, 1831)				+		
31	Subfamily Luciocephalinae						
166.	<i>Trichopodus trichopterus</i> (Pallas, 1770)			+	+	+	
(57).	FAMILY CHANNIDAE						
167.	<i>Channa striata</i> (Bloch, 1793)		*	+	+	+	+
168.	<i>Channa gachua</i> (Hamilton, 1822)		*	+			
XV.	ORDER PLEURONECTIFORMES						

N ^o	Scientific name	1	2	Distribution			
				a	b	c	d
(58).	FAMILY PARALICHTHYIDAE						+
169.	<i>Paralichthys olivaceus</i> (Tem. & Sch., 1846)						+
170.	<i>Pseudorhombus cinnamoneus</i> (T. & Sch., 1846)						+
171.	<i>Pseudorhombus malayanus</i> Bleeker, 1865						+
(59).	FAMILY BOTHIDAE						
172.	<i>Engyprosopon longipelvis</i> Amaoka, 1969						+
(60).	FAMILY SOLEIDAE						
173.	<i>Aseraggodes xenicus</i> (Matsubara & Ochiai, 1963)		*				+
174.	<i>Heteromycteris japonicus</i> (Tem. & Sch., 1846)						+
175.	<i>Solea ovata</i> Richardson, 1846		*				+
(61).	FAMILY CYNOGLOSSIDAE						
32	Subfamily Cynoglossinae						
176.	<i>Cynoglossus cynoglossus</i> (Hamilton, 1822)						+
177.	<i>Cynoglossus lingua</i> Hammlton, 1822						+
178.	<i>Cynoglossus puncticeps</i> (Richardson, 1846)						+
XVI.	ORDER TETRAODONTIFORMES						
(62).	FAMILY TRIACANTHIDAE						
179.	<i>Triacanthus biaculeatus</i> (Bloch, 1786)						+
(63).	FAMILY MONACANTHIDAE						
180.	<i>Paramonacanthus japonicus</i> (Tilesius, 1809)						+
(64).	FAMILY TETRAODONTIDAE						
181.	<i>Lagocephalus sceleratus</i> (Gmelin, 1789)						+
Total		5	84	68	64	61	100

Note: - 1: Species in the Vietnam Red Book 2007
 - 2: Species with precious economic values
 - a: Upstream; b: Middle; c: Downstream; d: Estuary

Table 1 indicates that Order Perciformes is most diversity in number of families, genera and species (30 families with 46.9% of total family, 57 genera with 41 % genera and 77 species with 42.5% total species) and order Cypriniformes is second high diversity (37 genera with 26.6% of total and 53 species with 29.3% of total). The rest orders were less diversity.

According to Vietnam Red Book 2007, there were 5 species identified in the Gianh River belonging to conservation list such as: *Anguilla marmorata*, *Konosirus punctatus*; *Hypsibarbus annamensis* (Level VU), *Clupanodon thrissa* (Level EN) and *Bostrychus sinensis* (Level CR). In which, 2 species: *Anguilla marmorata* and *Clupanodon thrissa*, were all found many time in high quantity. Some species such as *Hypsibarbus annamensis*, *Clupanodon thrissa* and *Bostrychus sinensis* were found only 1 time with low quantity.

In our observation, there were 84 species providing quite high yield in the Gianh tributary. These species are also precious marketing and local people consume them every day. Therefore, these species were considered as economic development for local fish – men in this river basin.

Conclusion

Twelfth survey on the fish species composition of Ganh River basin, Quang Binh Province, North Centre Vietnam were carried out from 2003 to 2011. 181 fish species belong to 139 genera, 64 families of 16 orders are recorded, 5 rare species recorded in the Red Book of Vietnam (2007), 84 species having economic value, 68 species in upstream, 64 species distributed in the middle, 61 species in downstream and 100 species in the estuary.

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