

# A Review of Taxonomic Studies of Batoids (Chondrichthyes: Batoidea) from East Asian Waters

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The modern cartilaginous fishes, class Chondrichthyes, are small group of Pisces, and comprising more 1,000 described valid species, and including approximately 190 genera, 55 families, and 15 orders. The Chondrichthyes consists of two subclasses, the Holocephali (chimeras) and the Elasmobranchii (sharks and rays). The dominant subclass Elasmobranchii includes sharks (Selachii) and rays (Batoidea), the former is more diverse than the latter in higher taxa (order, family, genus) but has fewer species. The Batoidea, batoids or rays, has long been recognized as monophyletic, however, the interrelationships of the groups are problematic and uncertain.

In order to review biodiversity and systematics of batoids, valid species name and supraspecific taxa from the published materials are studied. Batoids (including sawfishes, Pristiformes; electric rays, Torpediniformes; stingrays, Myliobatiformes; skates, Rajiformes; wedgefishes, Rhiniformes; and guitarfishes, Rhinobatiformes) is speciose and worldwide with about 580 species in 4 to 6 orders, 17 to 19 families, and about 75 genera. In East Asian waters, the previous records of the Batoidea reveal about 170 species belonging to 41 genera, 18 families, 6 orders. The largest group of batoid fauna in the area is order Myliobatiformes comprising about 80 species, 16 genera of 7 families. The predominant families are Dasyatidae (whiptail stingrays: 46 spp. of 6 genera), Arhynchobatidae (softnose skates: 26 spp. of 3 genera), and Rajidae (skates: 21 spp. of 6 genera). The predominant genera are *Bathyraja* (softnoseskates: 20 spp.), *Himantura* (whiprays: 19 spp.), and *Dasyatis* (fantailstingrays: 18 spp.). There are 23 species in the Yellow Sea, 70 species in the East China Sea, 82 species in the South China Sea, and 58 species in the North Pacific coast of Japan. Batoid fauna from the East Sea (Sea of Japan) is the poorest of the five regions, consisting of 14 species. Korean waters include only 28 species, 16 genera, 10 families and 5 orders of batoids. Two species is torpediniforms, 4 rhinobatiforms, arhynchobatiforms, 11 rajiforms and 10 myliobatiforms. By the earlier works, the systematics and a check list of the valid species of batoids will be presented.

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