

Observations biologiques sur cinq espèces d'Élasmobranches du Parc national du Banc d'Arguin (Mauritanie)

par

Bénédicte VALADOU (1), Jean-Claude BRÊTHES (1) & Cheikh Abdallahi Ould INEJIH (2)

RÉSUMÉ. - Dans le contexte des plans de conservation, la présente étude a pour objectif de fournir des informations biologiques de base sur cinq espèces d'Élasmobranches présentes dans les eaux du Parc national du Banc d'Arguin (Mauritanie). Ces espèces sont le milandre jaune *Paragaleus pectoralis*, le requin à museau pointu *Rhizoprionodon acutus*, la raie guitare *Rhinobatos cemiculus*, la pastenague marbrée *Dasyatis marmorata* et la mourine lusitanienne *Rhinoptera marginata*. Des données mensuelles ont été récoltées lors d'un programme d'enquêtes réalisées dans les villages de pêcheurs du Parc de 1998 à 2002. Sur les individus débarqués, le sexe a été noté et ont été mesurés la taille (longueur totale, pour les requins ; largeur du disque, pour les raies), la masse totale et celle des gonades, le diamètre des ovocytes et la longueur des foetus. Les données ont permis de déterminer la taille de première maturité sexuelle, le cycle de reproduction, la distribution des fréquences de taille par sexe, l'évolution de la sex-ratio par mois et la relation masse-longueur pour chacune des espèces. Le rôle que joue le Banc d'Arguin dans la biologie des populations de ces cinq espèces est mieux compris. Cette réserve naturelle serait une zone de reproduction pour *R. cemiculus*, *D. marmorata*, *R. acutus* et *P. pectoralis*, une zone de concentration de juvéniles pour *R. cemiculus* et une aire d'alimentation pour *R. marginata*.

ABSTRACT. - Biological and ecological data of five Elasmobranch species from the waters of the Banc d'Arguin National Park (Mauritania).

In the context of conservation plans, the present study presents biological information on five Elasmobranch species found in the waters of the Banc d'Arguin National Park (Mauritania, Eastern Atlantic) : the Atlantic weasel shark *Paragaleus pectoralis*, the milkshark *Rhizoprionodon acutus*, the blackchin guitarfish *Rhinobatos cemiculus*, the blue stingray *Dasyatis marmorata*, and the Lusitanian cownose ray *Rhinoptera marginata*. From 1998 to 2002, monthly data were gathered on fishes landed in the fishing villages of the Park. Individual size (total length for the sharks and disk width for the rays) was collected on 31,171 fishes. Sex, total somatic weight, gonad weight, ovocyst diameter, and fetus length were noted for 5,755 individuals. Sex-ratio (ratio males/total number of fishes) and gonado-somatic index (GSI) were derived. Maturity of females was assessed on the presence of ripe ovocysts and fertilized eggs. Maturity of males was defined with the pterygopod length. Size at first maturity (50% of mature individuals, LT50), as well as size of first gestation (LTg50) was calculated. The data allowed to draw the reproductive cycles. Mass-size relationship was also calculated. For *P. pectoralis*, LT50 is 92.5 cm for males and, for females, 106.7 cm, based on ovocysts, and 105.5 cm, based on eggs. LTg50 is 107.9 cm. Mean fecundity varies from 1 to 6 fetuses, with a maximum of 8, related with size. Parturition takes place in April and May and ovulation from April to June. The modal size of males is 90 cm. Gestation lasts 12 months. The size distribution of females is plurimodal, the dominant, largest, mode being 105 cm. Landed population is composed of immature and mature fishes. For *R. acutus*, LT50 is 80.0 cm for males and, for females, 95.4 cm, based on ovocysts, and 91.0 cm, based on eggs. LTg50 is 95.7 cm. Fecundity varies from 1 to 8 fetuses, related with female size. Ovulation and mating should occur in June and July and parturition in April and May. Gestation seems to last about 12 months. The modal size is 90 cm for the males and 100 cm for the females, and, generally, individuals are young mature fishes. For *R. cemiculus*, male LT50 is 138.1 cm and for females, 153.3 cm, based on the ovocysts, and 164.4 cm, based on the eggs. LTg50 is 165.8 cm. Fecundity varies from 2 to 4 fetuses, with an observed maximum of 12, independent of size. Egg and fetus development are taking place concurrently and mating and parturition occur both in September. Size distribution for males and females shows a mode at 135-140 cm and the majority of landed individuals are immature. For *D. marmorata*, male LT50 is 32.9 cm and for females, 40.2 cm, based on the ovocysts, and 40.6 cm, based on the eggs. LTg50 is 40.3 cm. Fecundity varies from 2 to 4 fetuses, related with size. Despite the scarcity of the data, one infers that ovulation and mating should occur in February and July while parturition should occur in November and June. This means two breedings per year and a gestation of about 5 months. Most of the males have a size varying between 30 and 36 cm, and for most of the females, between 36 and 44 cm. The majority of the landed individuals are mature. For *R. marginata*, LT50 is 77.5 cm for males and 80.2 for females, based on ovocysts. LTg50 is 79.3 cm. The estimated ovulation period is June and the parturition occurs between April and May. No data were available, neither on gestation duration nor on fecundity. Gestation lasts about 12 months. Most individuals of both sexes have a disk width varying from 66 to 75 cm and are mainly immature. The Banc d'Arguin appears to be a reproduction area for *R. cemiculus*, *D. marmorata*, *R. acutus* et *P. pectoralis* and a nursery for *R. cemiculus*, *R. acutus* and *P. pectoralis*. The area could be a feeding zone for *R. marginata*. For most species studied, fecundity is lower and size at maturity larger than observed for other populations. The hypothesis of independent local populations should be explored.

Key words. - Elasmobranchs - *Paragaleus pectoralis* - *Rhizoprionodon acutus* - *Rhinobatos cemiculus* - *Dasyatis marmorata* - *Rhinoptera marginata* - Tropical Eastern Atlantic - Banc d'Arguin National Park - Reproductive biology - Size at sexual maturity.

(1) Institut des sciences de la mer de Rimouski, 310 allée des Ursulines, Rimouski, Québec, G5L 3A1, CANADA.
[jean-claude_brethes@uqar.qc.ca]

(2) Institut mauritanien de recherches océanographiques et des pêches, Nouadhibou, MAURITANIE.