

ORIGIN AND CURRENT STATUS OF THE PACIFIC POND TURTLE (*ACTINEMYS MARMORATA*) IN BRITISH COLUMBIA

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Abstract

The early history and present status of the Pacific (Western) Pond Turtle (*Actinemys marmorata*) in British Columbia is documented including known introductions. Evidence strongly suggests that the species is extirpated and never did occur naturally in the province.

Introduction

Over 70 years ago Storer (1932) observed “ancient errors in statements of animal distribution die slowly if at all” and the history of reports of turtles in British Columbia underscores the truth of this. The origin of the Pacific Pond Turtle (*Actinemys marmorata*), [formerly Western Pond Turtle (*Clemmys marmorata*) (Crother et al. 2003)], in British Columbia has long been uncertain. McTaggart-Cowan (1937) questioned early identifications by Lord (1866). Cook (1984) suggested that early records for Vancouver Island were of escaped or released captives originally from the United States. Buskirk (1991) questioned the authenticity of all records for the Fraser River watershed on the mainland of the province. Carl (1944) and subsequent revisions (Carl 1951, 1968) and Gregory and Campbell (1984), however, treated the species as part of the native herpetofauna. Cameron

and St. Clair (2002) argued that southwestern British Columbia had suitable habitat and the species might have been native.

This article reviews historical and recent reports of the Pacific (Western) Pond Turtle for British Columbia and provides documentation for a previously unrecorded introduction of turtles at Burnaby Lake on the southwest mainland coast of the province.

Historical Distribution in British Columbia

The Pacific Pond Turtle is endemic to western North America. There is a cluster of records for western Washington but the species mainly ranges from extreme southwestern Washington and western Oregon south through California, to northwestern Baja California and into Mexico, with a pocket in western north-central Nevada (Nussbaum 1983, Stebbins 1985, Iverson 1992). It has been introduced in central Oregon (Stebbins 1985, Iverson 1992). British Columbia records have been variously treated.

In the earliest comprehensive account of the amphibians and reptiles of British Columbia, Lord (1866) recounted observations and collections made in 1859-1860 as naturalist to the British Boundary Commission on Vancouver Island and the mainland from the coast to the western side of the Rocky Mountains (see Baker 2002 for an account of Lord's life). He recorded (Lord 1866:II:301) under *Actinemys marmorata* “I have seen them in nearly every lake and pond east and west of the Cascades. They also are common on Vancouver Island.” Earlier Lord (1866:II:103) commented “I believe this is the only species of freshwater turtle in British Columbia.”

He makes no mention, however, of Western Painted Turtles (*Chrysemys picta bellii*) which are now locally abundant in southern British Columbia (Thacker 1924, Holland 1937, Gregory and Campbell 1984) within the range given by Lord (1866:II:101-102), including Vancouver Island. His description of the turtles he saw is vague “The general colour

“...*Actinemys marmorata* were found several years after the exotics, leading to speculation that they could have been part of replacement market imports for exotics...”

is olive, with darker markings, the under-portion (or 'plastron') being a brilliant yellow." With imaginative mental gymnastics this statement could be interpreted to apply to either western turtle species, the Pacific Pond or the Painted, though it omits key characteristics of both, but most likely refers to the latter (Storer 1932). However, specimens from the Boundary Survey expedition were deposited in the British Museum and are cited by both Gray (1873) [fide Storer 1932] and Boulenger (1889) as Western Painted Turtles.

The source of Lord's original confusion may have been his reliance on a paper by Cooper (1860), who stated that *Actinemys marmorata* "the only turtle yet known from west of the Rocky Mountains, is common in freshwater ponds and rivers west of the Cascade Mountains, though less so in the Columbia than in the warmer ponds" [fide Storer 1932]. Storer (1932) points out that Cooper, like Lord, made no mention of painted turtles west of the Rocky Mountains. Boulenger (1889) records none from British Columbia under *Clemmys marmorata* (page 110) but four under *Chrysemys cinerea*, var. *bellii* (page 74): a, stuffed male "British Columbia. G. W. Dawson, Esq. British N. A. Boundary Comm."; b,c. two adult shells "British Columbia. J. K. Lord, Esq."; and d, "yg" [=young?] in spirits "Walla, British Columbia. J.K. Lord, Esq." [now in Washington state]. Storer (1937) reports examining all of these specimens in April 1934 and confirms their identity as painted turtles. He comments that on the bottle "d" there "are the following entries: first '*Actinemys marmorata* Presented by J. K. Lord, 'then, in another hand, '*Chrysemys bellii* *Chrysemys picta* var 3 p. Walla Walla see Brit. Columbia II, p. 301' [the latter obviously a reference to this specimen in Lord's book]. After the word *marmorata*, which is partly crossed out, is written in the later hand 'Lord not Agassiz'."

Kermode (1909) "listed *marmorata* from the mainland of British Columbia" (Storer 1937), presumably based on Lord's (1866) account, though if so, for unexplained reasons he omitted it from Vancouver Island. In 1934 Kermode sent a turtle from the island to Storer who identified it as a Painted Turtle (Storer 1937).

McTaggart-Cowan (1937), in his review of British Columbia amphibians and reptiles, comments

that "Lord (1866) reports it common on Vancouver Island, but since that time all turtles examined from Vancouver Island have proved to be *Chrysemys*". Storer (1937), however, had reported that "In 1929, Mr. Harlan I. Smith, Dominion Archaeologist, obtained some turtles in McCoy Lake, near Alberni on Vancouver Island, that were identified [sic] by Mr. Clyde L. Patch of the Canadian National Museum as *Damonia* sp. [= *Chinemys*]. Since Chinese have long been resident on Vancouver Island and are noted for importing various animals from their home country for food or medicinal use, it seems likely that the turtles were transported by them. George P. Holland of Vancouver (working on his MA on Painted Turtles in British Columbia: [Holland 1937: see Carman 1987, Becker 1987] (wrote in a letter October 9, 1934), that a Chinese curio dealer, Teen Jore, with stores in both Victoria and Vancouver, frequently stocks *Damonia reevesii* [*Chinemys reevesii*]. Possibly the animals found by Harlan Smith were escaped pets or their descendants. According to Mr. Holland, "the species seems to thrive in captivity in the local climate."

There are two specimens originally catalogued as *Damonia* from British Columbia dated "1929" (without day or month) in the collections of the Canadian Museum of Nature. One, NMC 1525 is labeled "Alberni, Vancouver Island. Alexander Gilmore." The other, NMC 1551, is labeled "Vancouver. Margaret White." McTaggart-Cowan (1938) repeats the evidence for the occurrence of painted turtles on Vancouver Island and accepts Lord's observations there as being this species.

In the Canadian Museum of Nature files there is an extract of a letter from A. Monks, a provincial game warden at Alberni, BC, apparently to C. L. Patch, dated 15 August 1929: "In reply to your letter of August 9, 1929, I beg to state that the turtle sent by Mr. Smith is not quite the same as the ones seen in the lakes in this locality, as the ones here grow to about twelve inches in length and about six inches wide. The colour is also different being black and yellow an[d] brown underneath while the one sent to you was mostly a grayish brown all over." Presumably, Monk's description is of painted turtles.

The exotic species is now known as *Chinemys reevesii* and its natural variation and habitat is summarized by Ernst and Barbour (1989). It is brown above and yellow below with dark brown

blotches on each plastral scute but has an irregular pattern of thin yellow lines on the head, limbs, and tail. It attains a carapace length of 236 mm and the upper shell has three longitudinal keels, a pronounced medial one and lower ones, on each side. It occurs in Japan, Korea, Taiwan, Hong Kong, and the Chinese mainland (Ernst and Barbour 1989). The species has apparently been moved within its native area by humans to such an extent and for so long that detailed morphological analysis of the 31 skeletal characters found high variability with little geographic correlation (Lovich et al. 1985). These authors also point out that the species has been used in food and medicines since at least 2737 B C, citing Moll (1982).

Holland (1937) and McTaggart-Cowan (1937, 1938), cited an individual examined and photographed as a valid record of *Clemmys marmorata* for British Columbia. It had been taken in the summer of 1933 near Burnaby Lake by Kenneth Racey but subsequently escaped. Holland (1937) adds another record later cited by Carl (1944, 1951, 1968) "11 taken in a slough on the Jericho Golf Links [Vancouver] in 1936, examined by Carl and identified by Mr. George P. Holland. One or both of these reports were the basis for the inclusion of the Pacific (Western) Pond Turtle in Canada in compilations including Mills (1948) [who includes only the McTaggart-Cowan report but not the one by Carl], Logier and Toner (1955, 1961), Campbell and Gregory (1984), Bury (1970), Nussbaum et al. (1983), Stebbins (1985), and Iverson (1992).

It is worth noting that the *Actinemys marmorata* were found several years after the exotics, leading to speculation that they could have been part of replacement market imports for exotics, the latter having become harder or more expensive to obtain. There certainly was traffic between British Columbia and San Francisco (as early as 1859, this is where Lord went to obtain mules for the boundary expedition (Lord 1866)). In addition, both observations come from the Vancouver urban area, and none have been reported in more remote areas. Carl (1944) states that "In San Francisco during the period 1920 to 1930 this turtle was sold as food for \$3 to \$6 a dozen."

An origin through introduction for the British Columbia reports was suggested by Cook (1970, 1977, 1984) and Campbell (1977). Gregory and

Campbell (1984) comment "Perhaps its status in British Columbia is partly or wholly related to the fact that it was exploited as food by humans early in the twentieth century and possibly earlier. In fact, the Pacific (Western) Pond Turtle may never have occurred naturally in this province; the two records could be of turtles escaped after being imported from the south for food."

There are references (undocumented as to source) to subsequent reports: Froom (1976) "There is a reported sighting from Burnaby Lake in 1961", Cook (1977) "the last report was in 1959", and Gregory and Campbell (1984) "last reported in 1966". The sources of each of these references were apparently based on information given by R. W. Campbell (see below).

Recent British Columbia Introductions

There are three occurrences of the Pacific Pond Turtle documented for the southwest mainland coast of British Columbia, all by G. R. Ryder. On 13 June 1956, a single turtle was found partially hauled out on a fallen tree at the outflow of Chadsey Creek, situated on the Fraser River side of Sumas Mountain. It appeared to be "about seven to eight inches in body length. Its colour was an olive brownish. The carapace was marked with dark lines and patterns that emanated from each vertebral plate [scute], and each costal, of which there were four. There were five vertebral plates [scutes]. The claws were well defined. The plastron was yellow with dark markings. The head was unpatterned and not striped." This site was explored on 7 May 1955 but no turtles were observed.

On 12 July 1956 three Pacific Pond Turtles were identified at Little Sumas Lake (locally, Goose Lake), near the present site of Sumas Lake Canal. Two turtles were together on a floating log near cattails (*Typha latifolia*) and one was hauled out on an old railway trestle in the water. This site is located where the old V V & E Railway trestle crosses the lake to continue to Sumas Mountain. These records may have been the basis for a communication from R. W. Campbell in 1959 cited by Cook (1977, 1984) and Campbell (1977).

Other occurrences were from sloughs associated with Nathan Creek in Glen Valley near Langley. Two Pacific Pond Turtles were found on 29 April 1960 on

a black cottonwood (*Populus balsamifera*) branch in the water near the edge of the creek. The following year, on 28 April, a single turtle was present in a small pool. Despite several trips to the area in following years none were seen again.

It is believed that the Pacific Pond Turtles discovered in Chadsey Creek, Little Sumas Lake, and Nathan Creek were intentionally released former captives as each of the sites had been visited many times prior to discovering the turtles.

The first documented introduction of the Pacific Pond Turtle in British Columbia occurred on 28 May 1961 when six “large turtles” were flown in by a resident on Burnaby Lake, from northern California and released in the lake at Deer Lake Creek (Figure 1). The turtles (species unknown at the time), were brought in for aesthetic reasons and were to be part of a personal “wildlife sanctuary” since turtles did not occur in the lake. At the time there was no regulation for importation of such exotics. Now it would be illegal but the legislation is not retroactive. The habitat appeared ideal. Burnaby Lake is a large, shallow, but permanent waterbody with dense beds of cattails, large and small streams and creeks, and a prolific source of food including the native yellow pond-lily (*Nuphar polysepalum*). The bottom is muddy and there appeared to be ample nesting sites.

During the summer of 1961 one to two turtles were observed by Milo D’Angeles basking on mud banks of Deer Lake Creek or hauled out on a wooden duck platform in the lake in the vicinity where they were released. The turtles were identified by R. W. Campbell in July. The last Pacific Pond Turtle was seen on 5 August 1961. The latter was apparently the basis for the 1961 mention by Froom (1976) at Burnaby Lake.

No Pacific Pond Turtles were seen anywhere in Burnaby Lake from 1962 to 1966 despite thorough bird nest-searching forays by canoe throughout the summers by R. W. Campbell and K. Kennedy.

In 1966 another introduction was attempted by Milo D’Angeles because the sex was not known for either of the earlier introductions and they might have been taken after the breeding season. Eight adult Pacific Pond Turtles (four of each sex determined by plastron shape) were again flown in from northern California and released on 20 April at the same location as the 1961 site. Only one to three

animals were seen within the first month near the release point. A single turtle was present throughout the summer until 8 September basking on logs, duck platforms, creek banks, and aquatic plants. These observations are the basis of the 1966 reports by Gregory and Campbell (1984). There is one other sighting for the lake, at Brunette Creek (about 4 km east), of a pond turtle hauled out on a large rotting log on 22 June. This suggests that some of the animals may have dispersed into other regions of Burnaby Lake.

No Pacific Pond Turtles were seen in Burnaby Lake in 1967 or afterwards. Another introduction was contemplated in 1967 but due to increasing industrial and urban pollution entering Burnaby Lake from Still Creek (west end), the idea was abandoned.



Figure 1. Deer Lake Creek, near Burnaby Lake, where Pacific Pond Turtles were introduced from northern California in 1961 and 1966. 11 February 2004 (R. Wayne Campbell).

Current Status

From 1973 through 2005, a total of 81 wetlands throughout the lower Fraser River valley have been visited and checked for wildlife, especially turtles and birds (Appendix 1). No Pacific Pond Turtles were encountered.

Historical and recent evidence strongly suggests that the Pacific (Western) Pond Turtle was introduced into British Columbia and never did occur naturally. Currently, the species is considered *extirpated* in the province by the Biodiversity Centre for Wildlife Studies and by the Committee on the Status of Endangered Wildlife in Canada (Cameron and St. Clair 2002).

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Appendix 1.

Between 1973 and 2005, C. G. and F. L. Bunnell, R. W. Campbell, A. Farr, and G. R. Ryder surveyed 81 wetlands for wildlife in the Lower Mainland, from Richmond and West Vancouver east to Hope in the lower Fraser River valley, British Columbia. Specific sites included: Addington Point, Albion, Aldergrove Park, Alderwood Park, Ambleside Park, North Alouette River, Ambleside, Belcarra, Blaney Lake, Boundary Park, Brydon Lagoon, Buntzen Lake, Burnaby Lake, Burwell Lake, Campbell Valley Park, Campbell Valley School, Catbird Slough, Colony Farm, Como Lake, Cougar Creek, Cranberry Slough, Crescent Park, Deas Slough, De Boville Slough, Deer Lake, Derby Reach, Dief Park, Earl Marriot School, Elgin Heritage Park,

Ewen Slough, Fraser Heights Park, Glenwood Park, Goose Lake, Granville Island, Green Timbers Lake, Gundersen Slough, Hatzic Lake, Hawthorne Rotary Park, Hayward Lake, Iona Island, Jericho Beach, Jerry Sulina Park, Judson Lake, Katzie Slough, Kilby Slough, Ladner Marsh, Lake Buntzen, Lake Errock, Latimer Pond, Latimer Lake, Lost Lagoon, Maria Slough, Matsqui Slough, McDonald Slough, McGillivray Slough, McLean Pond, Mundy Lake, Nathan Creek, Nicomekl River, Nicomen Slough, Pitt Lake, Pitt Marsh, Reifel Island, Rolley Lake, Sasamat Lake, Serpentine Fen, Southmere Pond, Stanley Park, Sturgeon Slough, Sullivan Park, Sumas Lake Canal, Surrey Lake, Tilbury Slough, Trinity Western, Tulley Slough, Tynehead, Westham Island, Widgeon Slough, Wood Duck Lake, Whonnock Lake, and Woodward Slough.

About the Authors

For 34 years Dr. Francis R. Cook held the position of Curator of Amphibians and Reptiles, and Research Scientist, at the National Museum of Canada (now Canadian Museum of Nature). In 1994 he retired and presently is affiliated with the museum as a Researcher Emeritus. He authored the book *Introduction to Canadian Amphibians and Reptiles* (National Museums of Canada; 1984) as well as 30 popular articles, 60 scientific papers, and 90 book reviews on herpetology in Canada. He presently serves as Editor (1962-1966; 1981 to present) of the scientific journal *Canadian Field-Naturalist*.

Wayne has authored books, scientific papers, and popular articles on amphibians and reptiles in British Columbia.

Glenn has been a dedicated field naturalist since 1943 and today still continues to explore and document in detail plants and animals he encounters in British Columbia.