



KRCA disc golf course

Scoped Environmental Impact Study

Kawartha Conservation

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→ **The Power of Commitment**



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S3	0	Chris Ellingwood	Amanda Smith	<i>Amanda Smith</i>	Chris Ellingwood	<i>C. Ellingwood</i>	May 4th, 2022

GHD

347 Pido Road, Unit 29

Peterborough, Ontario K9J 6X7, Canada

T 749-3317 | F 749-9248 | E info-northamerica@ghd.com | ghd.com

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Contents

1.	Introduction and Background	3
1.1	Scope and limitations	3
1.2	Study Rationale	3
1.2.1	Federal Legislation	3
1.2.2	Provincial Legislation	3
1.1.1	Local and Other Regulatory Bodies	5
1.3	Other Resources Referenced	5
1.1.2	Data Sources	5
1.1.3	Literature and Resources	5
1.4	Description of Development	5
2.	Approach	5
2.1	Site Study Methodology	6
2.2	Physical Site Characteristics	6
2.2.1	Biophysical Inventory	6
2.2.1.1	Vegetation	6
2.2.1.2	Birds and Other Wildlife	6
3.	Physical Site Characteristics	6
3.1	Biological Inventories	6
3.1.1	Vegetation	6
3.1.1.1	Level of Effort	6
3.1.1.2	ELC Code Descriptions	6
3.1.2	Birds and Other Wildlife	10
3.1.2.1	Breeding Birds	10
3.1.2.2	Other Wildlife	10
3.1.3	Significant Wildlife Habitat	10
4.	Discussion and Analysis	11
4.1	Species and Communities	11
4.1.1	Vegetation	11
4.1.2	Birds and Other Wildlife	11
4.1.2.1	Birds	11
4.1.2.2	Herpetozoa	11
4.1.2.3	Other Wildlife	11
4.2	Natural Features	11
5.	Impact Assessment and Recommendations	11
5.1	Species and Communities	12
5.1.1	Birds	12
5.1.2	Species at Risk	12
5.2	Natural Features	12
5.3	Meadow	12
5.4	Wildlife corridors	12
5.5	Invasive species	13
5.6	Restoration and enhancement	13
5.7	Education	13
5.8	Design principles	13

6.	Summary of Recommendations	15
6.1	General	15
7.	Conclusion	15
8.	References	16

1. Introduction and Background

GHD Limited has been retained by Kawartha Conservation to complete a scoped Environmental Impact Study (EIS) for a proposed disc golf course on a portion of the Ken Reid Conservation Area fronting on Kenrei Road.

The site has been left fallow and is in a mid-successional meadow state with trees and shrubs on portions of the site.

The EIS has been prepared to provide an assessment of the existing natural features, opportunities for preservation, invasive species management, impact assessment, enhancing biodiversity and balance between the golf course design features and the natural features. The opportunity for educational learning and promoting natural landscapes and wildlife habitat are also present.

1.1 Scope and limitations

This report has been prepared by GHD for *Kawartha Conservation* and may only be used and relied on by *Kawartha Conservation* for the purpose agreed between GHD and *Kawartha Conservation* as set out in section 1 of this report.

GHD otherwise disclaims responsibility to any person other than *Kawartha Conservation* arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report (refer section(s) 5 of this report). GHD disclaims liability arising from any of the assumptions being incorrect.

1.2 Study Rationale

This section identifies federal, provincial, and other regulatory legislation, policies, official plans (OP) and OP amendments that are applicable and relevant to the study area and the immediate vicinity. This includes policies that triggered the study requirements. These documents may identify natural features, Species at Risk and rare species, and other natural resources habitat and features relevant to this study.

1.2.1 Federal Legislation

Migratory Birds Convention Act

The purpose of the Migratory Birds Convention Act (MBCA 1994) is to implement the Convention by protecting and conserving migratory birds — as populations and individual birds — and their nests.

No work is permitted to proceed that would result in the destruction of active nests (i.e., nests with eggs or young birds), or the wounding or killing of bird species protected under the MBCA and/or Regulations under that Act.

1.2.2 Provincial Legislation

Endangered Species Act, 2007

The Ontario Endangered Species Act (ESA 2007) serves to:

1. To identify species at risk based on the best available scientific information, including information obtained from Community knowledge and aboriginal traditional knowledge.
2. To protect species that are at risk and their habitats, and to promote the recovery of species that are at risk.

3. To promote stewardship activities to assist in the protection and recovery of species that are at risk. 2007, c. 6, s. 1.

The ESA clearly defines the five classifications of species status as *extinct*, *extirpated*, *endangered*, *threatened*, or *special concern*, and provides guidelines on the process of species status determination.

Regulations made under this act include Ontario Regulation 230/08 and 242/08.

Ontario Regulation 230/08 provides the list of Species at Risk (SAR) in Ontario, which is updated regularly. This list was most recently consolidated on June 2, 2017. Species status provided in the list is assessed by an independent body, the Committee on the Status of Species at Risk in Ontario (COSSARO), based on the best-available science and Aboriginal Traditional Knowledge.

General habitat protection is afforded to all species listed as *endangered* or *threatened*. General habitat descriptions are technical, science-based documents that have been developed for some of the species that are most likely to be affected by human activity. Further information including a *Recovery Strategy* or *Management Plan* is required for each listed species, on a timeline dictated by the species status.

Provincial Policy Statement

The extent of Natural Heritage features found on or adjacent to the study area have been investigated within this EIA (Figure 1.1) and specifically Sections 2.1.4 to 2.1.8 of the Provincial Policy Statement (2014) apply to this project.

2.1.4 *Development and site alterations shall not be permitted in:*

- a. *significant wetlands in Ecoregions 5E, 6E and 7E;*

2.1.5 *Development and site alteration shall not be permitted in:*

- a. *significant wetlands in the Canadian Shield north of Ecoregions 5E, 6E and 7E;*
- b. *significant woodlands in Ecoregions 6E and 7E (excluding islands in Lake Huron and the St. Marys River);*
- c. *significant valleylands in Ecoregions 6E and 7E (excluding islands in Lake Huron and St. Marys River)*
- d. *significant wildlife habitat;*
- e. *significant areas of natural and scientific interest; unless it has been demonstrated that there will be no negative impacts on the natural features or their ecological functions.*

2.1.6 *Development and site alteration shall not be permitted in fish habitat except in accordance with provincial and federal requirements*

2.1.7 *Development and site alteration shall not be permitted in habitat of endangered species and threatened species, except in accordance with provincial and federal requirements.*

2.1.8 *Development and site alteration shall not be permitted on adjacent lands to the natural heritage features and areas identified in policies 2.1.4, 2.1.5, and 2.1.6 unless the ecological function of the adjacent lands has been evaluated and it has been demonstrated that there will be no negative impacts on the natural features or on their ecological functions*

Growth Plan for the Greater Golden Horseshoe, 2020

The Growth Plan for the Greater Golden Horseshoe, 2020 came into effect on August 28th, 2020, replacing the Growth Plan for the Greater Golden Horseshoe, 2019 (OMMAH, 2019). The plan was recently revised (effective May 16, 2019) with some changes to the natural heritage system policies and removing the provincial NHS mapping layers.

The 2020 Growth Plan for the Greater Golden Horseshoe is a long-term plan that works with the Greenbelt Plan, the Oak Ridges Moraine Conservation Plan and the Niagara Escarpment Plan to provide a framework for growth management in the region (OMMAH, 2020).

The Site is within the Growth Plan for the Greater Golden Horseshoe but is not within a designated settlement area. The County of Peterborough OP has designated a Natural Heritage System. The presence of the provincially significant wetland triggers the key hydrologic features policies (section 4.2.3 and 4.2.4). This includes the need for a Natural Heritage Evaluation, as per section 4.2.4(1). The requirements of the GPGGH were included in this EIS.

1.1.1 Local and Other Regulatory Bodies

Kawartha Region Conservation Authority Regulations and Policies

The Conservation Authority whose jurisdiction the study area falls under is the Kawartha Region Conservation Authority (KRCA). Under the Conservation Authorities Act, Ontario Regulations 182/06 *Development, Interference with Wetlands and Alterations to Shorelines and Watercourses* is applicable.

1.3 Other Resources Referenced

Prior to field surveys, background information for the study area and surrounding lands from a variety of sources were reviewed to provide context for the setting and sensitivity of the site. Background information sources include:

1.1.2 Data Sources

- Aerial imagery
- OMNRF Land Information Ontario (LIO) database mapping and Natural Heritage Information Centre (NHIC) Make a Map tool
- Ontario Breeding Bird Atlas data (Bird Studies Canada, 2007)
- Department of Fisheries and Oceans Species At Risk Mapping (DFO, 2022)
- E-bird, i-naturalist, personal birding records, Ontario Mammal Atlas, Ontario Herpetofaunal Atlas

1.1.3 Literature and Resources

- Natural Heritage Reference Manual (MNRF, 2010)
- Significant Wildlife Habitat Criteria Schedules for Ecoregion 6E. Peterborough, 38pp. (OMNRF, 2015)

1.4 Description of Development

The proposed development is for the creation of a 9-hole disc golf course on this portion of the Ken Reid Conservation Area. The site will be accessible only by trail from a parking lot off of the existing KRCA access road and not off of Kenrei Road. The design using working with nature principles in the design.

2. Approach

Our approach to preparation of the scoped EIS will consist of four distinct phases.

In the first phase we collected and review available information on the site including recent air photography, key natural features GIS mapping, Ministry of Northern Development Mines Natural Resources and Forestry (NDMNRF) and other data sources as listed above.

The second phase consisted of a site visit by our senior terrestrial biologist to confirm the data collected in the literature review, the field and any other natural features on the property. Surveys include Ecological Land Classification (ELC) mapping, vegetation community boundaries, wildlife corridors and linkages, and presence of significant Species at Risk (SAR). The presence of possible SAR on or adjacent to the property was derived from our field investigations and background literature. The significance of the features and ecological functions of the natural features were determined during our field surveys.

The third phase was the preparation of a scoped EIS report with specific mitigation measures for protecting the natural features and providing an impact assessment of the proposed disc golf course.

2.1 Site Study Methodology

2.2 Physical Site Characteristics

Site characteristics were assessed during our field visits. This included general documentation of existing disturbances, age of vegetation cover, topography and natural features.

2.2.1 Biophysical Inventory

2.2.1.1 Vegetation

ELC Survey Method

All vegetation encountered in the study area was inventoried during the site visit. Delineation and classification of the vegetation Community types was based on the Ecological Land Classification for Southern Ontario (Lee et al., 1998). General notes on disturbance, topography, soil types, soil moisture and state of each Community were also compiled. Wetland boundaries were confirmed in the field following the methodologies in the Ontario Wetland Evaluation System Southern Manual, Third Edition (OMNR, 2013 and updates, version 3.2).

Rare, significant or unusual species were searched for. Species significance or rarity on a national, provincial, regional and local level was based on published literature and standard status lists. These included SARA (2019), COSEWIC (2021), COSSARO (2021), Ontario Endangered Species Act (2008), Gartner Lee (1978) and Oldham et al. (1999).

2.2.1.2 Birds and Other Wildlife

Incidental observations of birds, snakes, turtles, mammals and other wildlife was noted during the field survey.

3. Physical Site Characteristics

3.1 Biological Inventories

3.1.1 Vegetation

3.1.1.1 Level of Effort

Vegetation communities within the study area were delineated by GHD biologists following the methodologies described in Section 2.2.2.1. The level of effort and environmental conditions have been summarized in Table 1

Table 1 Vegetation Surveys – Level of Effort

Survey Date	Survey Type	Weather	Start Time	Effort (person hrs)
August 3, 2022	ELC, SAR and wildlife	18 °C, beaufort wind-1-2, Cloudcover-0, no precipitation	08:30	1.5

3.1.1.2 ELC Code Descriptions

Three vegetation communities were identified within the study area. A plant list was compiled of the species identified during the site visit.

A total of 35 plant species were identified during field surveys. The dominant species in each community are described below.

KRCA frisbee golf course



- NDMNRF District Boundary
- OHN Waterbody
- MPAC Assessment Parcel
- Wetland, Non-Evaluated or Unknown

- disc golf course footprint
- 1 ELC community number



Community 3 *dry-fresh white cedar coniferous forest type (ELC Code: FOC2-1)*

Community 1 is located on the slope at the north edge of the field area. This community is associated with the limestone ledge and steep slope from the field down to the meadows and mixed forest of the conservation area. The edges contained several species associated with forest edges and a southern exposure, including black walnut, trembling aspen, basswood and black cherry.



Photo 1. View of woodland edge at northwest corner of proposed site. (Photo date: August 3, 2022)

Community 2 *cultural thicket (ELC Code: CUT1)*

Community 2 is the portions of the site where regeneration is at a mid-successional stage. This was present in the northern part of the site and the southeast portion where shrubs such as staghorn sumac, European buckthorn, hawthorn spp, apple trees and Tartarian honeysuckle were established in small clusters. Some of the patches of staghorn sumac were overmature and in decline.



Photo 2: View of dense staghorn sumac stand in north part of site (photo dated Aug. 3, 2022).

Community 1 *dry-fresh cultural old field meadow (ELC Code: CUM1-1)*

This community is an upland meadow dominated by grasses, including timothy, awnless brome, poverty oat grass, and reed canary grass. Other species in this abandoned meadow area included white bedstraw, New England aster, Canada thistle, common mullein, bull thistle, Viper's bugloss, Canada goldenrod, common St. John's wort, cow vetch, low hop clover, common milkweed, Philadelphia fleabane, rough-fruited cinquefoil, common ragweed, yarrow and birds-foot trefoil.



Photo 3: open meadow community, view facing north (photo date: Aug. 3, 2022)

3.1.2 Birds and Other Wildlife

3.1.2.1 Breeding Birds

Table 2 Breeding Bird Surveys – Level of Effort

A total of 11 bird species were identified during the site visit. Some of these species included American robin (*Turdus migratorius*), white-breasted nuthatch (*Sitta carolinensis*), American crow (*Cornus brachyrhynchos*), American goldfinch (*Spinus tristis*), black-capped chickadee (*Poecile atricapillus*), blue jay (*Cyanocitta cristata*), common raven (*Corvus corax*), field sparrow, indigo bunting and song sparrow (*Melospiza melodia*).

3.1.2.2 Other Wildlife

Five additional wildlife species were observed on the property as incidental observations. These species included: red squirrel (*Sciurus vulgaris*), eastern chipmunk, woodchuck, white-tailed deer (*Odocoileus virginiana*), and eastern meadow vole (*Microtus pennsylvanicus*). A few monarch butterflies were also observed foraging on nectar plants near the road.

3.1.3 Significant Wildlife Habitat

During our review of candidate significant wildlife habitat, the following were identified as potentially present on site: Amphibian Breeding Habitat (woodland), Woodland Area-sensitive bird Breeding Habitat, and Habitat for Special Concern and Rare Wildlife species.

4. Discussion and Analysis

4.1 Species and Communities

4.1.1 Vegetation

None of the plants identified during the ELC surveys, are considered Threatened on a federal and Endangered on a provincial level (COSEWIC, 2021; COSSARO, 2020).

None of the ecological communities (i.e., ELC ecosites or vegetation communities) found in the study are considered provincially rare (NHIC, 2021)

4.1.2 Birds and Other Wildlife

4.1.2.1 Birds

None of the bird species detected during GHD's breeding bird surveys are significant on a national (COSEWIC, 2021) and provincial level (COSSARO, 2020).

The Ontario Breeding Bird Atlas (OBBA – 2nd and 3rd atlas) records for the 10 km by 10km square that overlaps the property (17QK3639) included 8 bird species that listed nationally or provincially as species at risk (COSSARO 2021; SARA 2021; COSEWIC 2020). These records were of black tern (*Chlidonias niger*), eastern wood-pewee (*Contopus virens*), bank swallow (*Riparia riparia*), barn swallow (*Hirundo rustica*), wood thrush (*Hylocichla mustelina*), bobolink (*Dolichonyx oryzivorus*), eastern meadowlark (*Sturnella magna*) and Canada warbler.

There were no structures on site to support barn swallow nesting, nor were the bank habitats able to support bank swallow nesting. Open grassland habitat was identified on site, and therefore nesting habitat for eastern meadowlark and bobolink was possible. However the field is a later stage of succession, with grassland species unlikely. Wood thrush habitat may be present in the woodland on site (Community 1), as well as for eastern wood-pewee. Habitat for Canada warbler may be present in the alder swamp thicket, although none were identified during site visits.

4.1.2.2 Herpetozoa

Two Special Concern reptile species, the snapping turtle and midland painted turtle (COSEWIC, 2021; COSSARO, 2020) were identified as occurring in the NHIC square overlapping the site. Neither of these species or appropriate habitat were identified on site, and likely associated with the wetland and the Scugog River. 

4.1.2.3 Other Wildlife

No other federal or provincial species at risk were recorded on the Site during the site visit (COSEWIC 2021; COSSARO, 2020). Our background review using the Ontario Natural History Information Centre did not identify any significant wildlife species on the property. Habitat for foraging bats may exist on the property. GHD did not identify any candidate maternity roost trees on site.

4.2 Natural Features

5. Impact Assessment and Recommendations

The following section provides a description of the predicted impacts that may result from the proposed development. It also identifies mitigation measures to be implemented to avoid and/or minimize adverse effects to the natural environment features within or near the project. A full list of mitigation measures has been provided in Section 7.0. A summary of the impact assessment and recommendations is depicted in Table 7.

5.1 Species and Communities

5.1.1 Birds

There will be no impact to birds on the property as clearing is to be minimized. However, should any individual trees or shrubby areas be proposed for removal, it will be outside of the peak breeding bird season from April 15 to August 15 to be in compliance with the Migratory Birds Convention Act. If clearing is to occur in that timing window, a qualified biologist will complete a nest search to ensure no nests are inadvertently destroyed.

5.1.2 Species at Risk

No SAR species or SAR habitat is present on this parcel.

5.2 Natural Features

The woodland located along the ridge on the north side is outside of the development envelope for the disc golf course. No impacts on the woodland, edge trees or the functions are anticipated from the use proposed.

The ledge also may provide several key functions including as a wildlife corridor and habitat for species that require underground dens over the winter. Red-bellied snakes and garter snakes have historically been found in this area in large numbers and along Kenrei Road in the spring indicating that an area such as the limestone ledge may be providing habitat as a snake hibernaculum.

5.3 Meadow

The meadow vegetation will have minimal maintenance, leaving much of the meadow intact. This includes the diversity of plant species present, wildlife uses and wildlife habitat and foraging habitat for butterflies, insects, birds and small mammals.

The impact on the meadow from traditional City park style disc golf courses with open fairways, mowed grass throughout and planted trees is not the intention here from my understanding. Maintenance of the grassland habitat is important and can be incorporated into the design.

The inclusion of native species in the design, including low growing native grass species and native wildflowers is recommended. The preservation of existing meadow species such as common milkweed, a key species for breeding and nectaring by monarch butterflies is encouraged. Planting beds of native wildflower, butterfly friendly species where possible at tee boxes or edges of the holes, would enhance habitat for pollinator insects such as monarchs.

5.4 Wildlife corridors

Ken Reid Conservation Area is a large contiguous block of forest that provides for a wildlife corridor in this area. This is disrupted by the Scugog River and the lake, but species such as birds can traverse the area. The ledge on the north side of this site does provide for a corridor for deer, racoons, red fox, coyote and occasional black bear that have been found in the conservation area. The creation of the disc golf course will not impact on the continued function of the site and the adjacent woodland as a wildlife corridor.

Opportunities on site to create habitat features such as fencerows, native tree stands in the form of stepping stones, may provide an opportunity for local species to find cover and forage as they move through the area.

Lighting of corridors is a typical issue in urban areas and where park type disc golf courses are established. In this case Kenrei Road does not have overhead street lighting. No nighttime lighting or parking is proposed on this site as it will be for day users only.

5.5 Invasive species

Invasive species such as wild parsnip, dog strangling vine and garlic mustard, present in the larger area were not evident on site in part due to the density of the vegetation. Changes to the field from the development of the disc golf course and in play areas, may create edges that allow some of these species to invade the area. KRCA does have measures in place to address invasive species through their invasive species management plans

5.6 Restoration and enhancement

The field currently includes patches of regenerating white pine, white spruce, staghorn sumac and a few green ash trees. Those areas are to be maintained and be part of the design. Where trees are dead (ash and sumac) removal of those hazard trees and replacement with native tree species and shrubs that are indigenous to the area is recommended.

The field is in a mid-successional state but does include large open areas of grassland, the thickets, scattered individual trees and edge trees, as well as the northern woodland.

Ecologically, a diversity of habitats is desirable and benefits wildlife through biodiversity, microhabitats and a diverse ecosystem that includes plants, birds, insects, mammals, herps and other wildlife. Maintaining a diversity of habitats within the disc golf course layout, should be a key principle.

Enhancement or restoration of trees/shrubs on site and creating a buffer on the west side should include the use of native species that are indigenous to the Kenrei Road area.

Example of species that can provide multiple benefits including spring flowers, fruits/nuts/seeds, cover, foraging habitat and roosting habitat are numerous.

Species growing in the local area that may be planted include, but are not limited to, eastern white pine, red oak, white spruce, sugar maple, basswood, black cherry, trembling aspen, large-toothed aspen, red-osier dogwood, alternate leaved dogwood, ninebark, highbush cranberry, snowberry, eastern white cedar to name a few.

The use of plantings as part of the design can be beneficial to the wildlife but also an opportunity for education and showcasing how native species can be incorporated into facilities such as a park, disc golf course or backyard garden.

5.7 Education

The presence of golfers on site and the natural setting provides a unique opportunity to showcase the diversity of the area through education.

Education through signage or display boards would be important to include. Topics could include information on snake hibernaculum, monarch breeding, wildlife corridors, wetlands, conservation areas and meadow habitats.

As well as through the plantings on site and designing holes such that golfers are exposed to the diversity of the area and the wildlife present and using the native species along the holes.

5.8 Design principles

General design principles that can be considered in the design of the disc golf course, based on the natural features and habitats present on this site include the following:

1. Incorporate design with nature principles
2. Retain existing northern woodland and woodland edge habitats
3. Retain as much existing meadow as possible
4. Retain individual trees, shrubs and stands of regenerating trees where possible.

5. Showcase natural features such as woodland, diversity of trees, habitat for pollinating insects, mammals, birds and landscapes.
6. Use only native seed mixes, native grass species, native trees and shrubs in the design.
7. Create a buffer on the west side by enhancing the fencerow with native species.
8. No external lighting along holes or course.
9. Include butterfly garden/beds in design with milkweed.
10. Cutting of dead trees or shrubs within course may occur: replant where needed.
11. Design holes to use existing trees, copses of trees and shrubs as obstacles or back drop for the targets.
12. Provide educational signage re natural features, species and habitats
13. Include brush piles and rock piles if possible to act as cover for wildlife
14. Include bat roosting box installed on post in design

6. Summary of Recommendations

6.1 General

1. No development within the woodland.
2. A detailed sediment and erosion control plan will be completed for the site.
3. The overall existing drainage patterns for the site be maintained
4. Removal of vegetation within development envelopes and/or along access routes shall be done outside of the peak breeding bird season (April 15th – August 15th) as per Environment and Climate Change Canada's guidelines.
5. Any areas outside of the holes shall be vegetated as soon as possible after construction to stabilize the soils and re-establish vegetation cover.
6. Where it is feasible, native trees, shrubs, grasses and/or wildflower seed mixes shall be used.
7. Incorporate educational signage, butterfly gardens, bat houses if possible.

7. Conclusion

GHD Limited has prepared this Environmental Impact Study report to address potential environmental issues associated with a proposed development on a disc golf course on a site on Kenrei Road.

Significant natural features identified in the study area included a woodland.

Construction within the proposed development envelope will result in no negative impacts on the functions of identified natural features, provided the recommendations outlined in Sections 5 and 6 are implemented. GHD's recommendations have been made to address potential impacts to natural features and/or their functions during the site preparation, construction and postconstruction period.

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